

SHIMPO

High Precision Servo Reducers



Improving the Speed of Industry....

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A **Nidec** Group Company

SHIMPO

All for dreams

Letter from the President

The NIDEC-SHIMPO Corporation was originally founded in Kyoto Japan in 1952. Since our inception, we have made every possible effort to improve our manufacturing skill and capabilities, including the advancement of power transmission products to support new technologies and markets. NIDEC-SHIMPO initially established an industry-wide leadership position in the area of mechanical variable speed drives. We are very proud of our storied past with mechanical drive technology, through which NIDEC-SHIMPO helped contribute to the growth of the emerging industries that are now the cornerstone of our world economy today.

Over time, within the field of power transmission engineering, NIDEC-SHIMPO has maintained the highest level of skill and production quality throughout the industry. We have earned a reputation as a long term dependable partner to our customers, and this solid reputation is firmly supported by the many industrial awards we hold, such as the Japanese Machinery Society Award, and Deming Award, among others.

Today, the growing global market for motion control has focused a significant share of our time and energy towards providing higher precision solutions for our customers. This effort has led to the development of our ABLE product line, a complete offering of high-precision planetary speed reducers specific to servo-motor applications. This catalog provides in-depth technical details and specifications for the full ABLE product line.

NIDEC-SHIMPO promises to continue to provide high precision power transmission products at unmatched value, which solve the new requirements of our customer base and allow them to be competitive in an increasingly tough global market. Within our company, we have coined this promise as "A Dynamic SHIMPO for Growth" - a pledge by our employees to approach all of their day-to-day work activities with full effort, full dedication, and full energy to support the evolving needs of our customers.

Your continued support and loyal patronage to our company is highly appreciated. Thank you for your time.

Best Regards,
President
A. Kariya



*Please take 30 seconds
to register your catalog.
Every 500th Registrant
will receive an award
from SHIMPO.*



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NIDEC Corporation

With annual sales exceeding \$8 Billion for the fiscal year 2011, the NIDEC Corporation has become the world's dominant provider of small precision, mid-size motors and related drive technologies. Founded in 1973 by current Chairman of the Board and CEO, Shigenobu Nagamori, the NIDEC Corporation has built a portfolio of motor variety that is far reaching and impacts all of us during our daily routine. Regardless if its hard disk drive motors, fan motors for appliances, or automotive related, NIDEC Corporation provides the motor and drive technology that help keep our world moving forward.

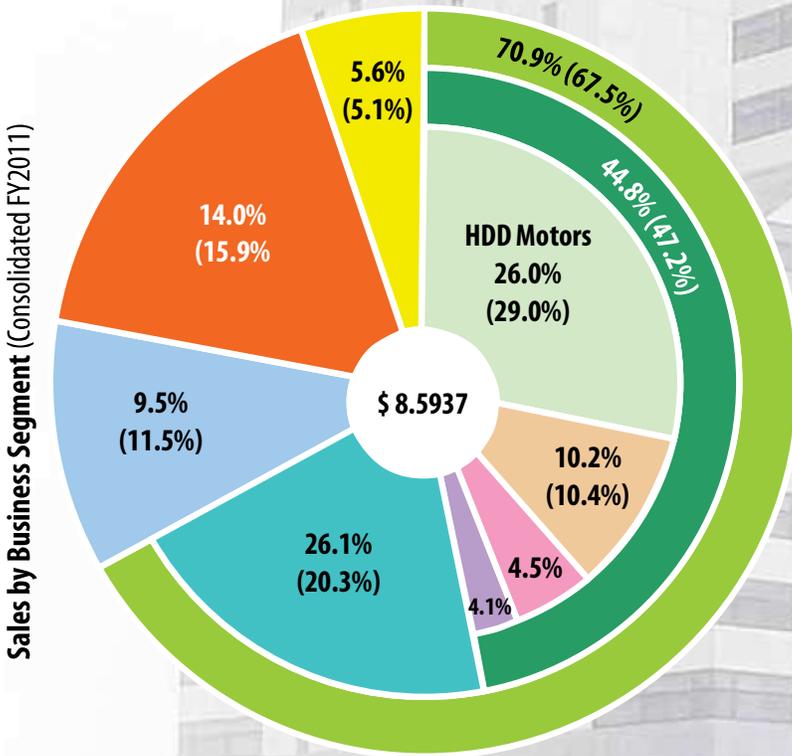
Corporate Headquarters
Kyoto, Japan

Share Listing
New York Stock Exchange
Tokyo Nikkei Stock Exchange

Bond Rating
JCR: A+
R&I: A+

Under the NIDEC Group umbrella there are more than 150 corporate subsidiaries spanning the globe. A consolidated group would total more than 100,000 employees that are supplying products and services to customers in more than 150 countries. The NIDEC Group companies can be categorized into the following complementary business segments;

Parenthetic percentages represent FY2010 mix



The NIDEC Group has numerous manufacturing plants across the globe including their own industrial park near Shanghai, China where many of the group companies have located their primary production operations. NIDEC Corporation maintains motor research laboratories in Kyoto, Shiga, and Nagano Japan in order to remain in the forefront of precision and mid-size motor technology.

The NIDEC Corporation continues to expand its portfolio in "all types of motors" and maintain its leadership position through aggressive product development and global acquisitions. The corporate slogan – **All for Dreams** - coined by founder Shigenobu Nagamori himself, epitomizes the NIDEC Group spirit and the promise to continue to deliver on the high value products and technologies that make our dreams possible.

Motors:

General Purpose Motors

Motors for automobiles, home electronic appliances and industrial equipment

Small Precision Motors

HDD Motors

Other DC Motors

Optical disk drives, OA equipment motors, polygon scanners, other brushless DC motors

Other Small Motors

Vibration motors, brush motors, stepping motors

Fan Motors

Game machine consoles, MPU cooling fans, PC/communications devices, home appliances, automobiles

Machinery:

Industrial robots, card readers, circuit board testers, high-speed pressing machines, chip mounters, measuring equipment, power transmission equipment, factory automation system

Electronic & Optical Components:

Camera shutters, camera lens units, switches, trimmer potentiometers, actuator units, processing, precision plastic mold products

Others:

Pivot assemblies, auto parts, logistics, services, musical products

We begin with dreams.
 Dreams drive our motivation.
 Dreams are our future.
 The world's dreams, people's dreams, our dreams.
 Our passion creates ideas that make dreams come alive.
 Technology and products that were only dreams become reality.

All for dreams
 Dreams challenge and the Nidec-Group
 will continue to meet the challenge.
 For the world's tomorrow,
 we will develop the world's first technologies and provide the world's best
 products. We will continue our part in creating a better society.

NIDEC-SHIMPO

NIDEC-SHIMPO has established itself over time as a leading supplier of drive technology and precision power transmission solutions to the industrial marketplace. Created in 1952, SHIMPO located its corporate headquarters and main production facility in Kyoto, Japan. With traditional roots that began imbedded in the development of mechanical variable speed powertrains, SHIMPO grew into a more diverse manufacturer of high precision and heavy duty power transmission products.

In 1994 the company was acquired by the NIDEC Corporation, and became formally known as NIDEC-SHIMPO. NIDEC-SHIMPO began to focus on the higher volume production needs that industry demanded as the global motion control and servo motor market grew at an accelerated rate. Soon after that ground was broken for NIDEC-SHIMPO's state-of-the-art manufacturing facility in Ping Hu China, approximately two hours outside of Shanghai.

Today NIDEC-SHIMPO is producing more than 30,000 servo motor speed reducers per month out of its Ping Hu facility. More impressive than the volume put forth is the consistent level of high quality attained. With the marketplace continuing to demand higher levels of precision, NIDEC-SHIMPO continues to push forward in the development of high quality, dependable products to meet those specifications, and at a price point that allows customers to be competitive in the global arena.

Sales and Distribution Network

NIDEC-SHIMPO has distribution channels that span the globe with stocking and service locations throughout Asia-Pacific, Europe, and the Americas – in total more than 30 locations. Within the Americas, NIDEC-SHIMPO has established its main headquarters in the Chicago, Illinois area. This location has been supporting the North America market for more than 30 years.

Recently, NIDEC-SHIMPO America implemented a kit build assembly program within its Chicago, Illinois location. The kit build program allows NIDEC-SHIMPO to provide a large variety of frame sizes and ratios within 48 hours for customers. The kit build program provides product variety, availability, and flexibility (minor customization of product) that are unmatched within the industry.

New offices and stocking points have been added in Mexico (Monterrey, Queretaro), and a subsidiary established in Brazil (Sao Paulo) to serve the expanding motion control needs of emerging markets in Latin and South America.

NIDEC-SHIMPO America has built a solid engineering and customer support infrastructure, sales and distribution network, and inventory program that have it poised to grow aggressively in the next few years. The goal, to obtain a level of brand awareness and a dominant marketshare position similar to that established by the SHIMPO brand name in the Asia Pacific region, looks very well within reach.



NIDEC-SHIMPO'S ultimate goal is to provide the highest quality of products and level of service to our customers throughout the world. To support the needs of a constantly expanding and evolving global economy, we continue to invest heavily in extending the footprint of our support network and distribution channels.

Today, NIDEC-SHIMPO has more than 2,000 employees with a presence across five continents. We continue to expand and improve our global capabilities in order to better serve the needs of our OEM customer in an increasingly competitive environment.



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- São Paulo

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- * Kyoto (Headquarters)
- Taiwan
- Seoul
- Beijing
- Shanghai
- Pinghu
- Xianggang
- Singapore
- India-Bangalore



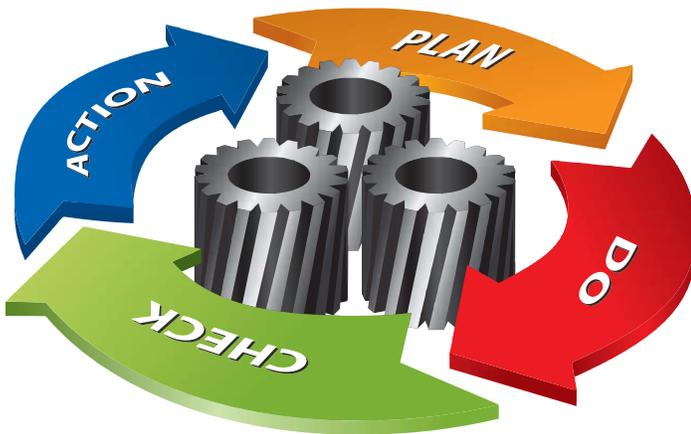
Unmatched Quality

The spirit of challenge is basic to the NIDEC-SHIMPO culture, influencing all aspects of product development, manufacturing, and servicing our customers. All of us at NIDEC-SHIMPO, as a team, swiftly start taking action toward our goals. The practice of challenging each individual employee has helped drive and cultivate the creative ideas behind the state-of-the-art technology within our power transmission products. NIDEC-SHIMPO and its employees place quality control on a pedestal and consider it to be the ultimate goal – an ongoing challenge, where we seek continuous improvement at levels previously thought unattainable.

In 1969 NIDEC-SHIMPO received “The Deming Award” for our outstanding quality control based on the Total Quality Control (TQC) Method. Since that time, NIDEC-SHIMPO’s desire to avoid causing any inconvenience to our customers, due to inferior product or service, has steered us towards internalizing a unique statistical Quality Control procedure across all departments and functional teams. Our rigid Quality Control program influences all aspects of production such as the sales and order processing activities, the design and resource allocation stages, manufacturing, and logistics. By instilling the Deming Cycles – *Plan, Do, Check, Action* – deep within our company culture, NIDEC-SHIMPO is manufacturing products that exceed our customer’s needs and specifications at a lower cost, faster delivery, and better service when benchmarked against any of our major competitors.



STATE-OF-THE-ART TECHNOLOGY



Regardless if the reducer is manufactured at our main facility in Asia or assembled at our Kit Build Center in the United States, all products will be tested with the same stringent quality control procedures and tests. Lot testing a few samples, like some of our competitors do, was never an option for NIDEC-SHIMPO.

NIDEC-SHIMPO holds certification for ISO 9001 and 14001. We took the certification process very seriously, realizing that NIDEC-SHIMPO must achieve global ISO standards in order to build our brand awareness and establish credibility abroad where

our presence in the local market is still fairly undeveloped. Our ISO Registration is the following;

ISO 9001 Compliance in the following activities

Design, development, manufacturing, and service (repair) of the following products,

- Planetary Speed Reducers
- Mechanical Variable Speed Drives
- Handheld Instrumentation (Digital Tachometers, Stroboscopes)
- Digital Controllers



ISO 14001 Compliance in the following activities

All design, development, manufacturing, and repair services at our main manufacturing facility, and at our Corporate headquarters.

In conclusion, NIDEC-SHIMPO will continue to challenge itself and our individual employees while striving for greater levels of product quality and services. It is a daunting challenge, as the incremental gains in quality become smaller and smaller and much harder to achieve. However, the challenge is ingrained within the spirit of each NIDEC-SHIMPO employee. This *Do It Now!* and *Follow Through!* attitude exhibited by our employees helps create superior products for the global marketplace.

Manufacturing Strength and Capabilities

As mentioned previously, NIDEC-SHIMPO has a state-of-the-art manufacturing plant located about 40 miles south of Shanghai in an industrial park in the Zhejiang province. The industrial park is the home to more than 20 NIDEC Group Company manufacturing plants, making NIDEC a very important employer for the local community. NIDEC is one of the first Japanese corporations to focus on establishing local manufacturing capabilities and a strong supply chain networks in China, as an important part of their strategy.

The primary NIDEC-SHIMPO manufacturing facility is now producing more than 30,000 reducers a month. The plant has achieved large scale production and economies of scale that is a major advantage over our competi-

tors. This manufacturing strength allows NIDEC-SHIMPO to provide unmatched value to our OEM customers, helping them to compete in a very price competitive global market.

NIDEC-SHIMPO has been very successful over the past decade at bringing new high performance and high quality products to the market. We have developed a core competency at quickly developing products and applying our know-how to efficiently scale-up a manufacturing process from bench testing to large volume production. We promise to leverage this intrinsic skill set in order to continue to push the product development envelope and provide even higher performance, cost-effective products to our customers.



Quality Control Program

Our high-volume and cost effective manufacturing capabilities would be meaningless if we did not have the appropriate quality control program in place. NIDEC-SHIMPO takes great pride in our product quality, and we have implemented numerous tests and metrics in order to insure our products exceed our customers' expectations.

Every reducer that leaves our manufacturing plant undergoes a series of performance tests before it's cleared for shipment. It is not satisfactory for NIDEC-SHIMPO to simply conduct lot testing. Each reducer is tested under ex-

treme duty cycle and duration simulated environments. The program includes the following tests – Noise Measurement, Continuous Load Testing, Shock Load Testing, and a Backlash Measurement Check. Besides final assembly performance testing, a quality control program is in place for any raw materials entering our manufacturing plant. This testing at the front end of our production process is crucial, and our quality inspections at the point-of-entry are as stringent as any testing done throughout our manufacturing process.



Americas Kit Assembly Center

In 2011, NIDEC-SHIMPO AMERICA launched a kit build program at their Itasca, IL facility to serve the North American market. The new Kit Build Center allows NIDEC-SHIMPO to quickly assemble a larger variety of high-precision planetary reducers, which surpasses all competition. The Kit Build Center can assemble any inline series (VRL, VRB, VRS) of reducers in most major ratios within a 2 to 4 day period. The larger frame sizes, especially the right-angle products are shipped from Japan within a 4 week period.

The Kit Build Center tests every assembled planetary reducer to make sure all performance specifications are

met. The battery of tests includes load testing, noise measurement, and backlash measurement, the same tests run by our manufacturing facility. The new Kit Build Center provides an excellent, quick, turn-around solution for Distributors working on single projects, OEMs requiring prototype units for test, and basic aftermarket support where required.

For more information about the Kit Build Center in North America, please contact your local NIDEC-SHIMPO sales office. Take advantage of the quick turn-around time in order to stay out in front of your competition. Contact NIDEC-SHIMPO today!



The Kit Assembly Cycle

**SHIMPO overseas factory
high volume manufacturing**



**Streamlined replenishment of
parts from factory overseas**



**Efficient inventory
of subassemblies &
parts in Itasca, IL**



**Large variety, fast delivery at
the most competitive price**



**Complete gearbox assembly
& testing in Itasca, IL**



The kit assembly cycle requires clear communication and coordination between all parties involved at every stage of the cycle. If quality control is slighted at any stage, the kit assembly program will not maintain the high-level of performance our customers expect from our products. At every stage, NIDEC-SHIMPO makes efficient communication and stringent control procedures priority number one.

Gear Reducer Selection Overview

						
Product Series		VRL	VRB	VRS	VRT	EVL
Catalog Page		14	54	94	140	186
Axis of Orientation		Coaxial	Coaxial	Coaxial	Coaxial	Right Angle
Gear Description		Planetary helical	Planetary helical	Planetary helical	Planetary helical	Spiral bevel/Planetary
Frame	Smallest	070	060	060	064	070
	Largest	235	220	240	285	235
	Variety	6	6	7	7	6
Ratio	Minimum	3	3	3	4	3
	Maximum	100	100	100	100	100
	Variety	22	22	22	19	22
Installation						
Rounded, Tapping Holes on Casing		■				■
Square, Through Holes on Casing			■	■		
Rounded, Through Holes on Casing					■	
Lubrication						
Grease		■	■	■	■	■
Oil						
Input						
Direct Clamp		■	■	■	■	■
Keyed Shaft						
Output						
Smooth shaft with tapping hole		■	■	■		■
Shaft with tapping hole and keyway		■	■	■		■
Flanged connection					■	
Flange with hollow bore						
Bearing Type on Output						
Ball bearing		■	■		■	■
Tapered Roller Bearing				■	■	
Cross Roller Bearing						
Performance Specification						
Radial Load		Ordinary	Ordinary	Excellent	Excellent	Ordinary
Thrust Load		Ordinary	Ordinary	Excellent	Excellent	Ordinary
Backlash Rating	< 1 arc-min					
	≤ 2 arc-min					
	≤ 3 arc-min			■	■	■
	≤ 5 arc-min	■				
	≤ 6 arc-min					
	≤ 8 arc-min					■
	≤ 9 arc-min					
≤ 10 arc-min						
≤ 11 arc-min						■
Torsional Rigidity		Ordinary	Ordinary	Excellent	Excellent	Ordinary
Efficiency		Excellent	Excellent	Excellent	Excellent	Excellent

						
Product Series		EVBB	EVVS	EVSH	EVSR	EVSE
Catalog Page		214	242	270	276	286
Axis of Orientation		Right Angle	Right Angle	Off-set rotary stage	Right Angle	Coaxial
Gear Description		Spiral bevel/Planetary	Spiral bevel/Planetary	Planetary w/ Rotary stage	Roller gear/cam mechanism	Cycloidal
Frame	Smallest	060	060	052 (B frame)	040	B03
	Largest	220	240	078 (C frame)	240	F07
	Variety	6	7	2	7	10
Ratio	Minimum	3	3	12	15	11
	Maximum	100	100	324	Various*	71
	Variety	22	22	9	Various*	7
Installation						
Rounded, Tapping Holes on Casing						
Square, Through Holes on Casing		■	■	■	■*	
Rounded, Through Holes on Casing						■**
Lubrication						
Grease		■	■	■	■	■
Oil						■
Input						
Direct Clamp		■	■	■	■*	■
Keyed Shaft						■
Output						
Smooth shaft with tapping hole		■	■			
Shaft with tapping hole and keyway		■	■			
Flanged connection						■**
Flange with hollow bore				■	■	
Bearing Type on Output						
Ball bearing		■				■
Tapered Roller Bearing			■			■
Cross Roller Bearing				■	■	
Performance Specification						
Radial Load		Ordinary	Excellent	Ordinary	Excellent	Ordinary
Thrust Load		Ordinary	Excellent	Excellent	Excellent	Ordinary
Backlash Rating	< 1 arc-min					
	≤ 2 arc-min			■		
	≤ 3 arc-min					
	≤ 5 arc-min			■		
	≤ 6 arc-min	■	■			■
	≤ 8 arc-min					
	≤ 9 arc-min	■	■			
≤ 10 arc-min				■		
≤ 11 arc-min						
Torsional Rigidity		Ordinary	Excellent	Ordinary	Excellent	Excellent
Efficiency		Excellent	Excellent	Excellent	Ordinary	Excellent

NOTE:

* (STR) motor connection to VRB/EVB reducer

** (ER) several mounting styles available

SHIMPO ABLE Gear Reducers



Industrial Areas of Expertise



Machine Tool and Metal Forming

A selection of robust and durable speed reducers, both planetary and cycloidal, for heavier duty or high shock load applications. Many choices for the different levels of precision, torque ratings, and mounting options required on the different axes of movement.



Custom Assembly and Test Automation

A wide variety of frame sizes and ratios are available for immediate delivery to solve any inertia matching application within turn-key projects. The hollow-bore rotary products and planetary reducers with high torsional rigidity characteristics are ideal for many indexing applications.



Packaging and Filling Machinery

An assortment of inline and right angle speed reducers at different price points, depending on the specifications needed. For the OEM, this provides ideal, cost-effective, gear reduction solutions for exported packaging equipment or applications where you are transitioning from induction motor or hydraulics to servo motor technology.



Printing and Converting Equipment

Our reducers are designed to minimize the heat generated, and they are therefore capable of operating at higher speeds and within continuous duty environments. An assortment of size and ratio combinations are available that allow proper selection to maximize operating efficiency for varying cycle speeds.



Medical and Health Care Related Systems

We offer extremely accurate positioning characteristics and high quality gear reducers that maintain a level of performance consistency required in medical applications. Our inline speed reducers are ideal for commercial equipment applications involving pumping, mobile equipment, and smooth positioning.



Semiconductor and Circuit Manufacturing

A broad offering of high precision, clean room friendly planetary and hollow-bore rotary reducers that are preferable over belt drives and other reduction methods that can introduce contamination. Custom coatings and materials are available for OEM applications when necessary for corrosive chamber environments and different clean room classifications.

VRL-SERIES

An excellent choice when requiring good accuracy and reliability at an exceptional value. This inline planetary reducer has a thread-in mounting style along with a level of precision and torque capacity that is best-in-class. Offered in a concentric shaft design, with a maximum 5 arc-min backlash rating, the VRL is an accurate, high performance, cost effective solution for any OEM.

The VRL Series has dimensions that allow the reducer to be a direct substitute for some other common competitor models. The machining quality of the helical planetary gears means a very quiet and more efficient reducer than other competitive products that are at a similar price point. The Able Series is the perfect solution for servomotor applications such as gantries, injection-molding machines, pick and place automation, and linear slides.

	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy	
Optimal	■	■	■	■	10
	■	■	■	■	9
	■	■	■	■	8
	■	■	■	■	7
	■	■	■	■	6
Exceptional	■	■	■	■	5
	■	■	■	■	4
	■	■	■	■	3
	■	■	■	■	2
Suitable	■	■	■	■	1



VRL-SERIES

- Industry Standard Mounting Dimensions
- Large variety of frame sizes and ratios
- Thread-in Mounting Style
- Best-In-Class Backlash (≤ 5 arc-min)
- Ships in 48 hours
- Assembled in the USA

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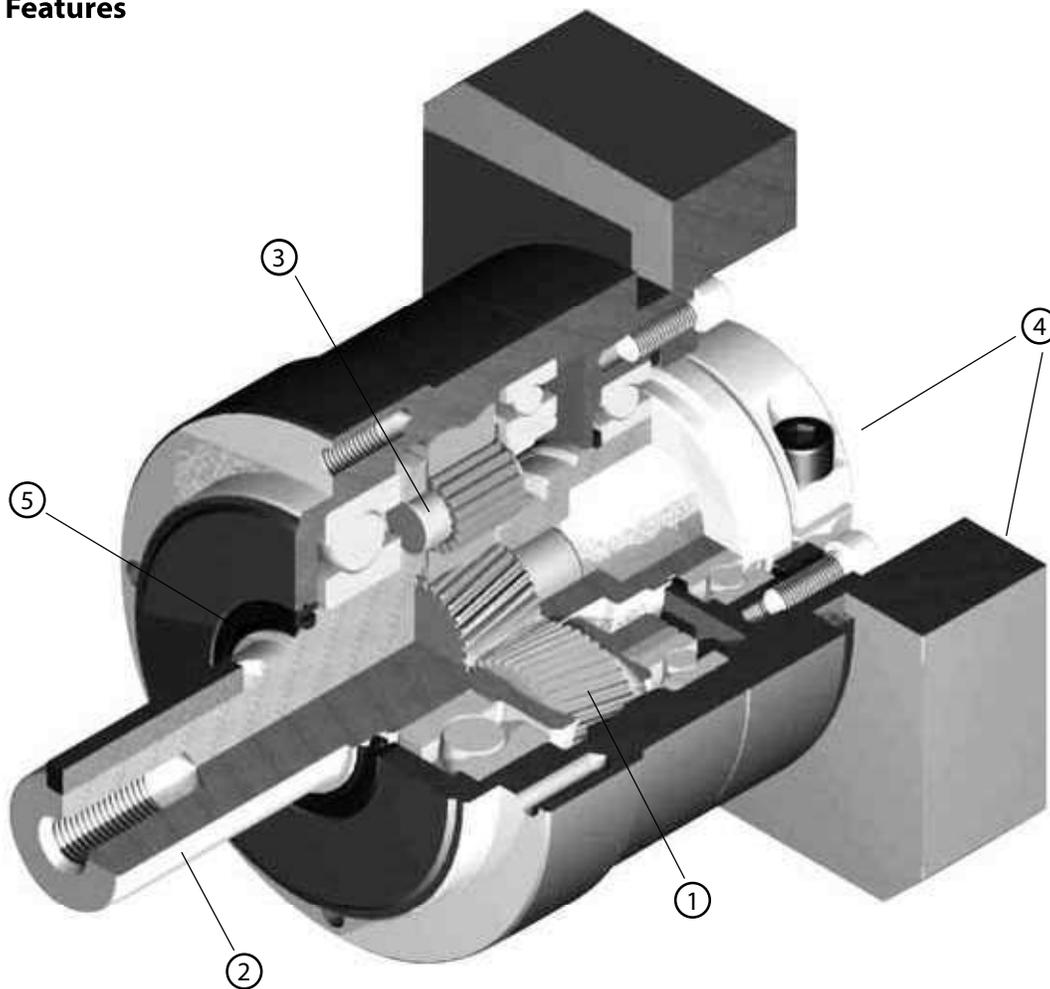
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VRL-SERIES Inline shaft

VRL-Series- Features



- ① Quiet operation: Helical cut gears contribute to reduced vibration and noise
- ② High precision: Standard backlash is 5 arc-min, ideal for most machines
- ③ High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ④ Adapter bushing connection: Enables a simple, effective attachment to most servo motors
- ⑤ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑥ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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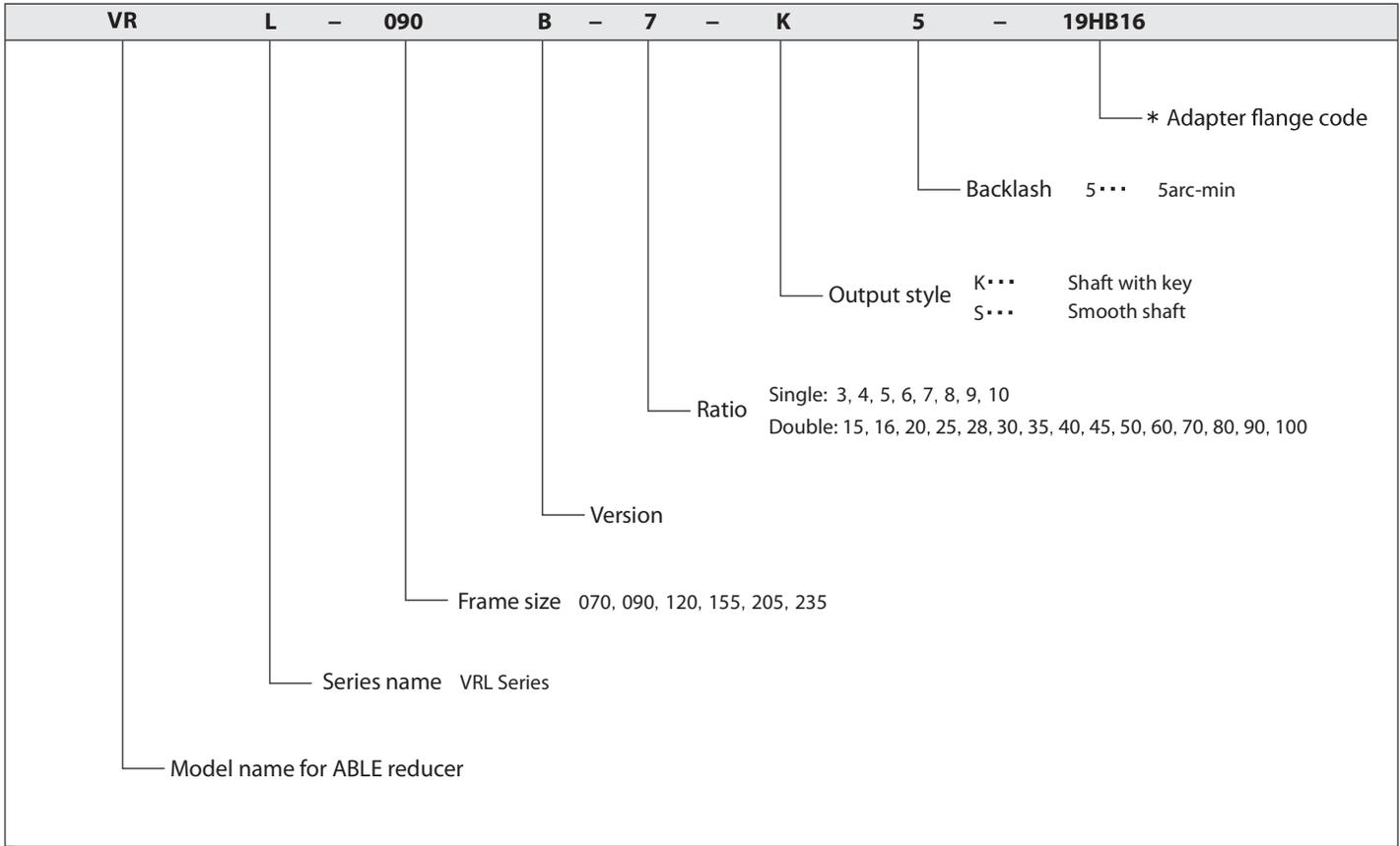
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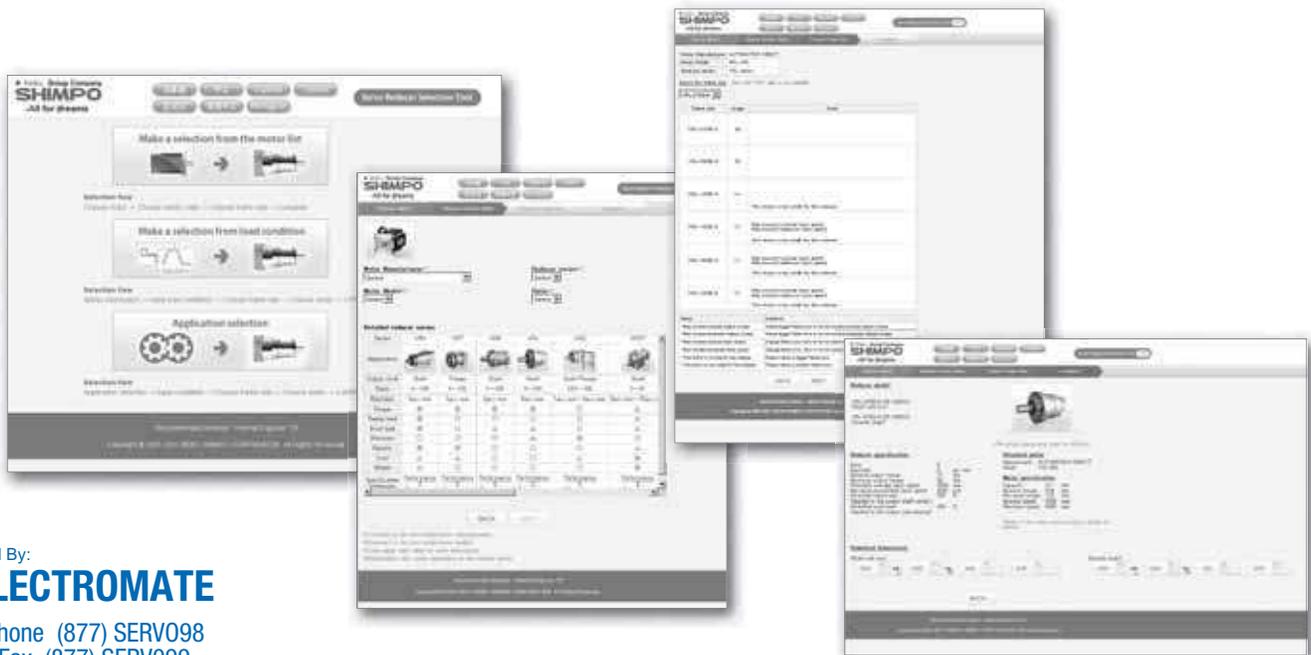
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VRL-Series – Model Number



*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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VRL-SERIES Inline shaft

VRL-070 – 1-Stage Specifications

Frame Size	070									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.15							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.140	0.095	0.077	0.068	0.062	0.059	0.057	0.056
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.220	0.170	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.430	0.380	0.360	0.360	0.350	0.350	0.340	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.5							

VRL-070 – 2-Stage Specifications

Frame Size	070									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	1000
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.7							

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VRL-070 – 2-Stage Specifications

Frame Size	070										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18		
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	35		
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.04								
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200		
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100		
Maximum Radial Load	[N]	*9	1200								
Maximum Axial Load	[N]	*10	1100								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.130	0.130	0.130	0.130	0.130	0.13	0.13		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	66								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.7								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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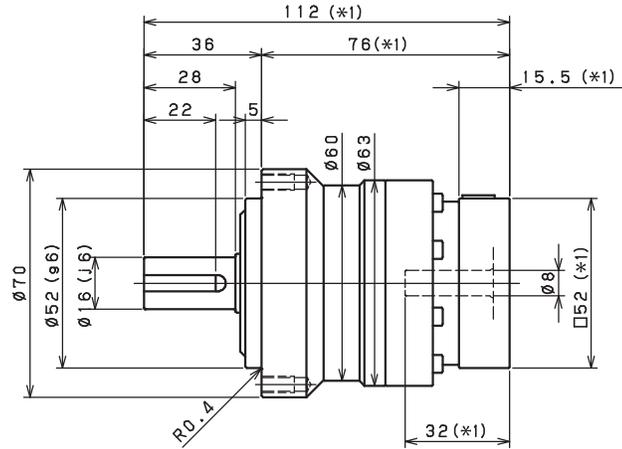
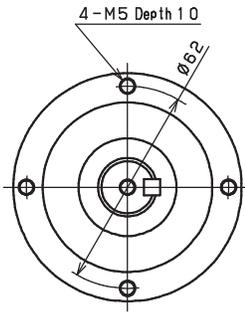


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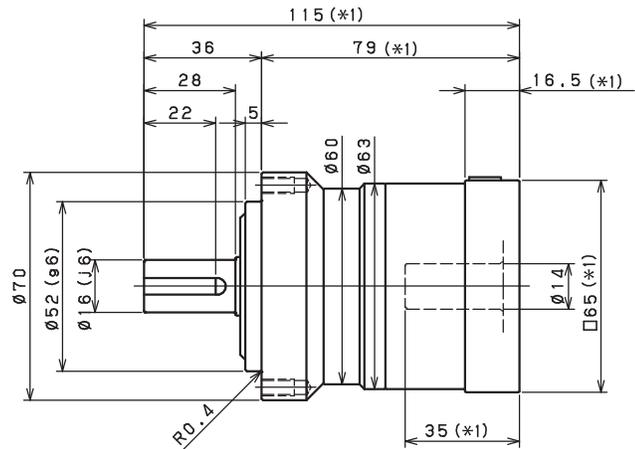
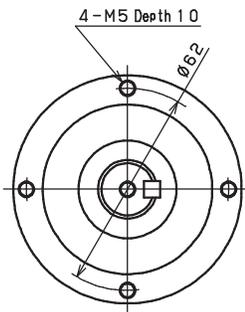
VRL-SERIES Inline shaft

VRL-070 – 1-Stage Dimensions

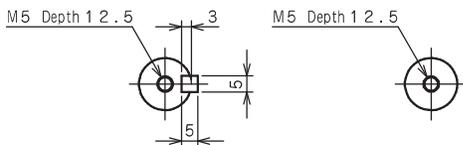
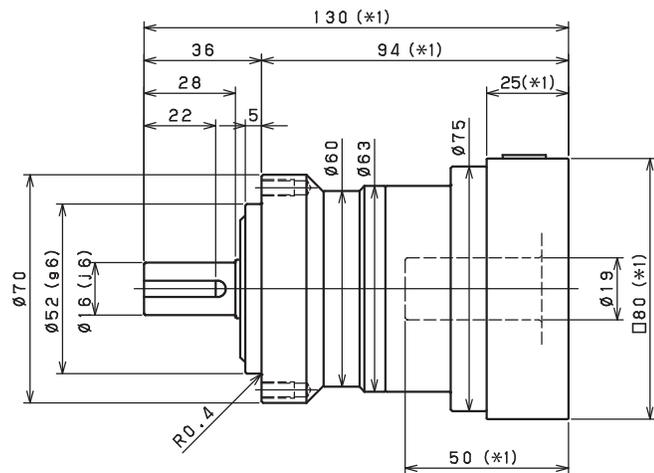
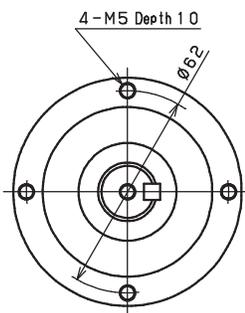
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



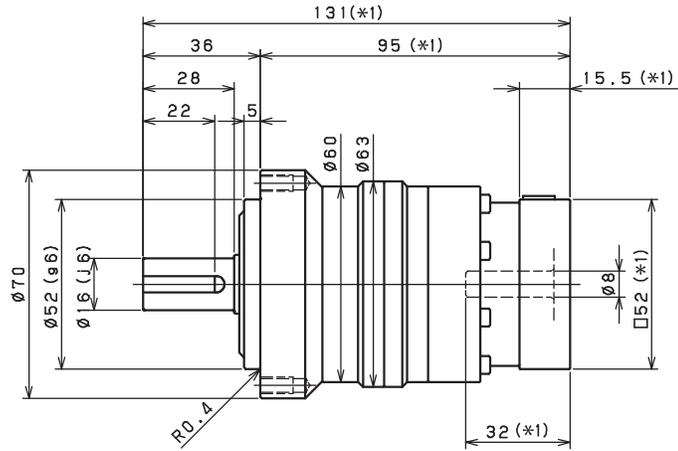
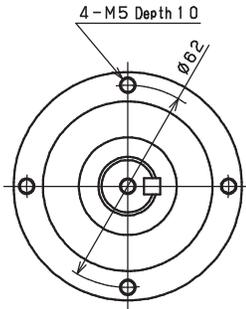
Shaft with key

Smooth shaft

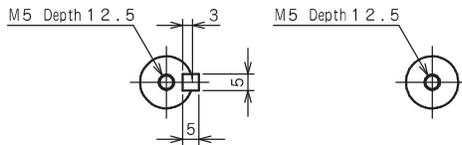
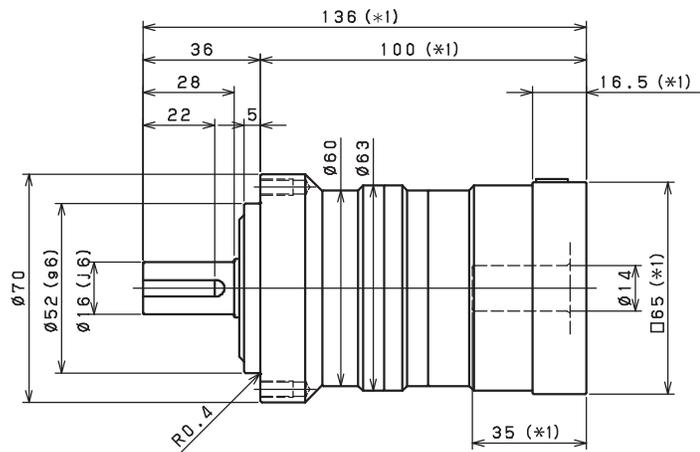
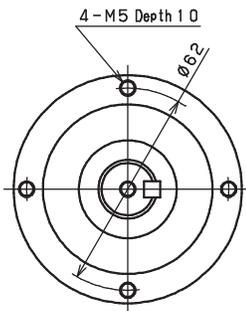
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-070 – 2-Stage Dimensions

Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

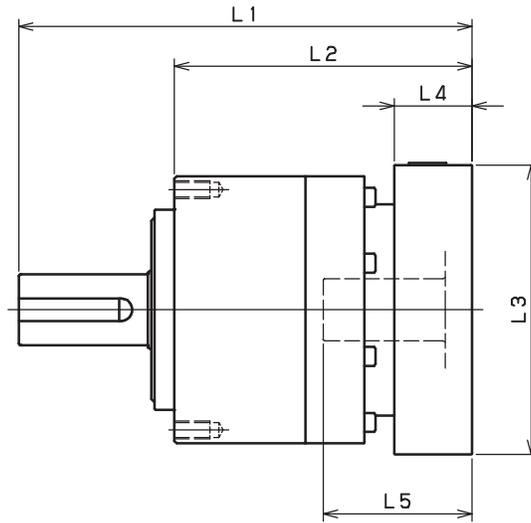


Shaft with key

Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-070 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRL-070B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	112	76	□52	15.5	32
	AB·AE·AH·AJ·AK	117	81	□52	20.5	37
	BA·BB·BD·BE	112	76	□60	15.5	32
	BC·BF	117	81	□60	20.5	37
	CA	117	81	□70	20.5	37
VRL-070B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	115	79	□65	16.5	35
	BC·BH·BM	120	84	□65	21.5	40
	BL	125	89	□65	26.5	45
	CA	115	79	□70	16.5	35
	CB	120	84	□70	21.5	40
	DA·DB·DC·DD·DF·DH	115	79	□80	16.5	35
	DE	120	84	□80	21.5	40
	DG	125	89	□80	26.5	45
	EA·EB·EC	115	79	□90	16.5	35
	ED	125	89	□90	26.5	45
VRL-070B-□-□-19** (Input shaft bore $\leq \phi 19$)	FA	115	79	□100	16.5	35
	GA	115	79	□115	16.5	35
	DA·DB·DC	130	94	□80	25	50
	DD	140	104	□80	35	60
	DE	135	99	□80	30	55
	EA	135	99	□90	30	55
	EB	130	94	□90	25	50
	EC	140	104	□90	35	60
	FA	130	94	□100	25	50
	FB	140	104	□100	35	60
	GA·GC	135	99	□115	30	55
	GB·GD	130	94	□115	25	50
	HA	130	94	□130	25	50
HB	145	109	□130	40	65	
HC·HD·HE	135	99	□130	30	55	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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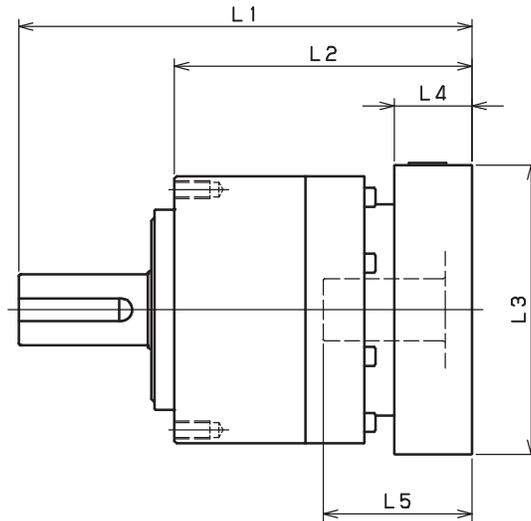
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VRL-070 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-070B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	131	95	□52	15.5	32
	AB·AE·AH·AJ·AK	136	100	□52	20.5	37
	BA·BB·BD·BE	131	95	□60	15.5	32
	BC·BF	136	100	□60	20.5	37
	CA	136	100	□70	20.5	37
VRL-070B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	136	100	□65	16.5	35
	BC·BH·BM	141	105	□65	21.5	40
	BL	146	110	□65	26.5	45
	CA	136	100	□70	16.5	35
	CB	141	105	□70	21.5	40
	DA·DB·DC·DD·DF·DH	136	100	□80	16.5	35
	DE	141	105	□80	21.5	40
	DG	146	110	□80	26.5	45
	EA·EB·EC	136	100	□90	16.5	35
	ED	146	110	□90	26.5	45
	FA	136	100	□100	16.5	35
GA	136	100	□115	16.5	35	
VRL-070B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA·GC	--	--	--	--	--
	GB·GD	--	--	--	--	--
	HA	--	--	--	--	--
	HB	--	--	--	--	--
	HC·HD·HE	--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRL-SERIES Inline shaft

VRL-090 – 1-Stage Specifications

Frame Size	090											
Stage	1-Stage											
Ratio	Unit	Note	3	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000									
Maximum Input Speed	[rpm]	*5	6000									
No Load Running Torque	[Nm]	*6	0.35									
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200		
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600		
Maximum Radial Load	[N]	*9	2400									
Maximum Axial Load	[N]	*10	2200									
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.720	0.490	0.400	0.360	0.320	0.310	0.290	0.290		
Moment of Inertia ($\leq \emptyset 19$)	--	--	1.200	0.950	0.860	0.820	0.790	0.770	0.760	0.750		
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	3.200	3.000	2.900	2.800	2.800	2.800	2.800	2.800		
Efficiency	[%]	*11	95									
Torsional Rigidity	[Nm/arc-min]	*12	10									
Maximum Torsional Backlash	[arc-min]	--	≤ 5									
Noise Level	[dB]	*13	67									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	3.5									

VRL-090 – 2-Stage Specifications

Frame Size	090											
Stage	2-Stage											
Ratio	Unit	Note	15	16	20	25	28	30	35	40		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250		
Nominal Input Speed	[rpm]	*4	3000									
Maximum Input Speed	[rpm]	*5	6000									
No Load Running Torque	[Nm]	*6	0.06									
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900		
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200		
Maximum Radial Load	[N]	*9	2400									
Maximum Axial Load	[N]	*10	2200									
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.130	0.150	0.130	0.120	0.140	0.100	0.120	0.099		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250		
Moment of Inertia ($\leq \emptyset 19$)	--	--	0.720	0.740	0.720	0.710	0.730	0.700	0.710	0.700		
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90									
Torsional Rigidity	[Nm/arc-min]	*12	10									
Maximum Torsional Backlash	[arc-min]	--	≤ 5									
Noise Level	[dB]	*13	67									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	4									

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VRL-090 – 2-Stage Specifications

Frame Size	090										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.06								
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400		
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200		
Maximum Radial Load	[N]	*9	2400								
Maximum Axial Load	[N]	*10	2200								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 19$)	--	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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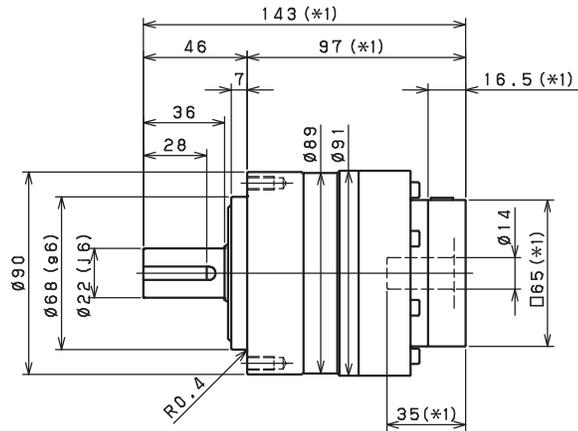
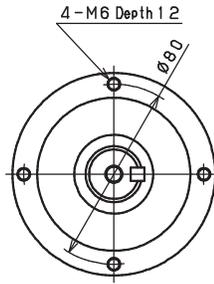
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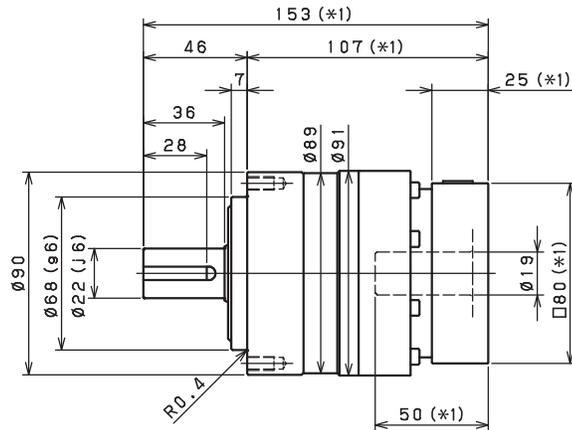
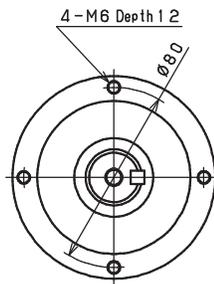
VRL-SERIES Inline shaft

VRL-090 – 1-Stage Dimensions

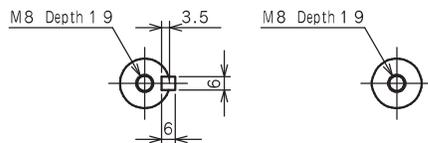
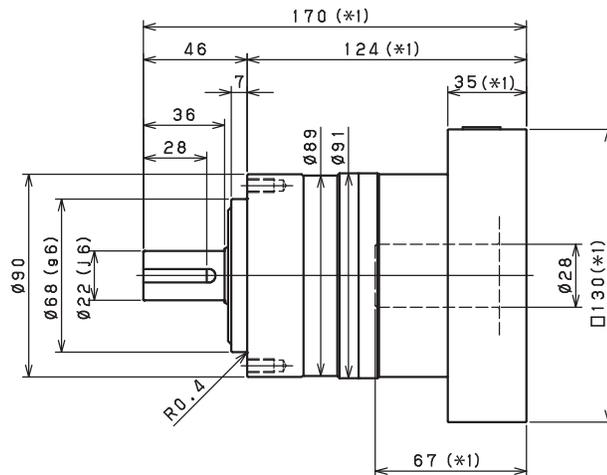
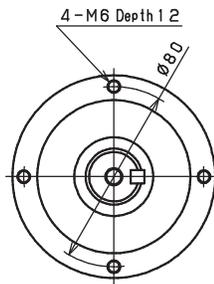
Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



Input shaft bore $\leq \varnothing 28$



Shaft with key

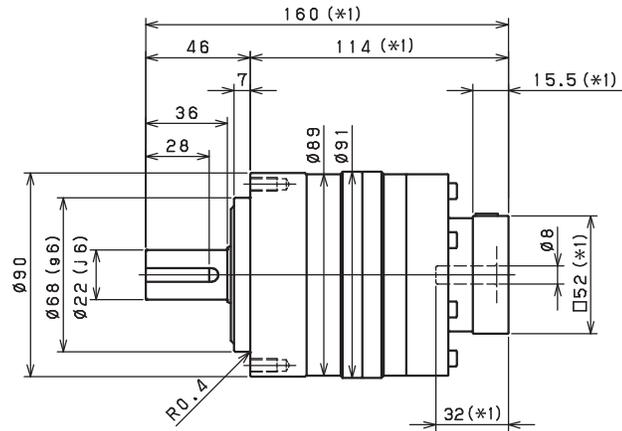
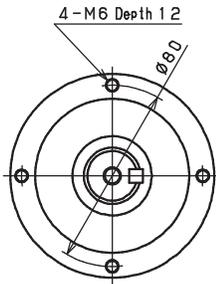
Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

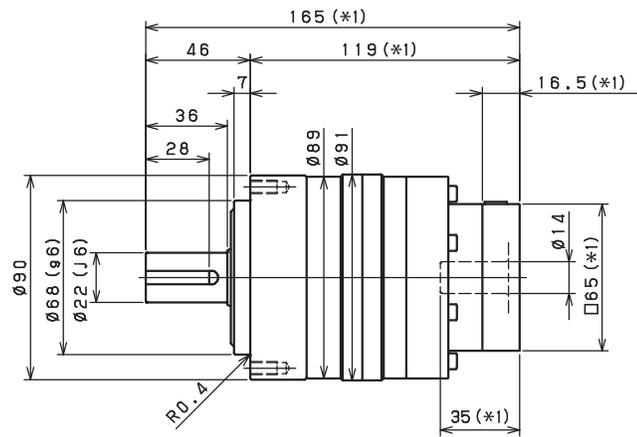
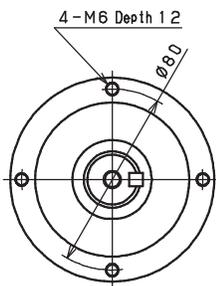
VRL-090 - 2-Stage Dimensions

VRL

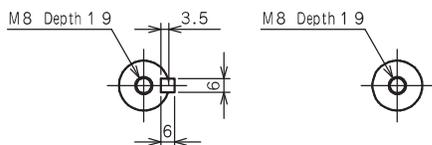
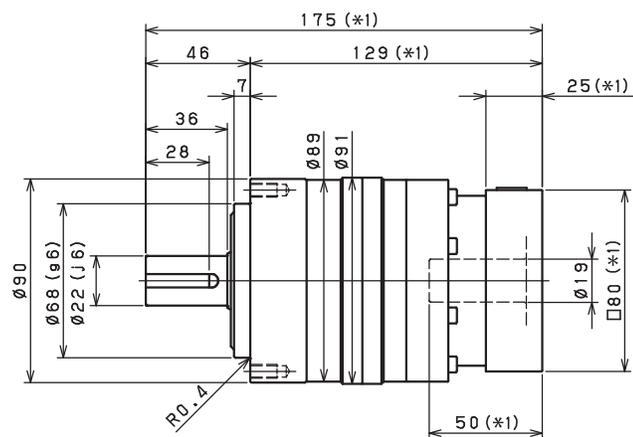
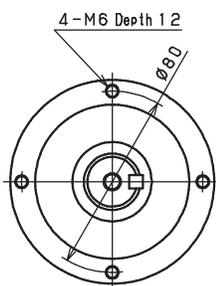
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



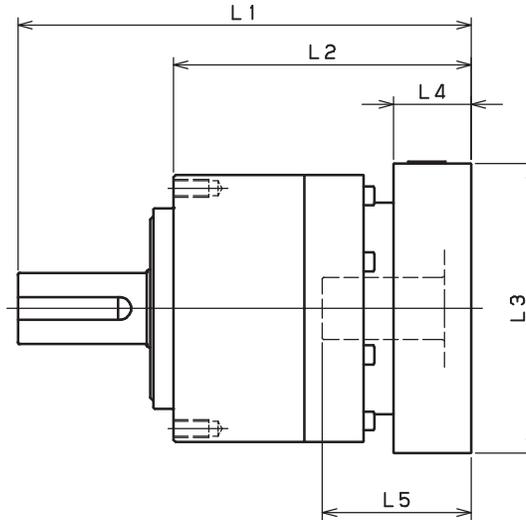
Shaft with key

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL-090 – 1-Stage Adapter Dimensions



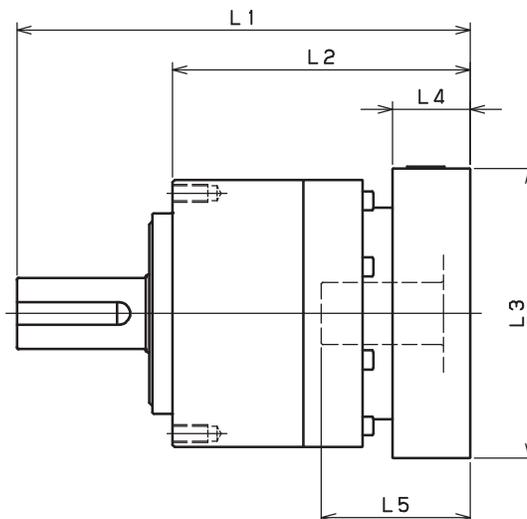
Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRL-090B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	--	--	--	--	--
	AB·AE·AH·AJ·AK	--	--	--	--	--
	BA·BB·BD·BE	--	--	--	--	--
	BC·BF	--	--	--	--	--
	CA	--	--	--	--	--
VRL-090B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	143	97	□65	16.5	35
	BC·BH·BM	148	102	□65	21.5	40
	BL	153	107	□65	26.5	45
	CA	143	97	□70	16.5	35
	CB	148	102	□70	21.5	40
	DA·DB·DC·DD·DF·DH	143	97	□80	16.5	35
	DE	148	102	□80	21.5	40
	DG	153	107	□80	26.5	45
	EA·EB·EC	143	97	□90	16.5	35
	ED	153	107	□90	26.5	45
	FA	143	97	□100	16.5	35
	GA	143	97	□115	16.5	35
VRL-090B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	153	107	□80	25	50
	DD	163	117	□80	35	60
	DE	158	112	□80	30	55
	EA	158	112	□90	30	55
	EB	153	107	□90	25	50
	EC	163	117	□90	35	60
	FA	153	107	□100	25	50
	FB	163	117	□100	35	60
	GA·GC	158	112	□115	30	55
	GB·GD	153	107	□115	25	50
	HA	153	107	□130	25	50
	HB	168	122	□130	40	65
VRL-090B-□-□-28** (Input shaft bore $\leq \phi 28$)	HC·HD·HE	158	112	□130	30	55
	FA·FB·FC	170	124	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	170	124	□115	35	67
	HA·HC·HD	170	124	□130	35	67
	HB	180	134	□130	45	77
	JA·JB·JC	170	124	□150	35	67
	KA·KB	170	124	□180	35	67
	KD	180	134	□180	45	77
	LA	170	124	□200	35	67
	MA	170	124	□220	35	67

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRL-090 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-090B-□-□-8** (Input shaft bore ≤ φ 8)	AA·AC·AD·AF·AG	160	114	□52	15.5	32
	AB·AE·AH·AJ·AK	165	119	□52	20.5	37
	BA·BB·BD·BE	160	114	□60	15.5	32
	BC·BF	165	119	□60	20.5	37
	CA	165	119	□70	20.5	37
VRL-090B-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	165	119	□65	16.5	35
	BC·BH·BM	170	124	□65	21.5	40
	BL	175	129	□65	26.5	45
	CA	165	119	□70	16.5	35
	CB	170	124	□70	21.5	40
	DA·DB·DC·DD·DF·DH	165	119	□80	16.5	35
	DE	170	124	□80	21.5	40
	DG	175	129	□80	26.5	45
	EA·EB·EC	165	119	□90	16.5	35
	ED	175	129	□90	26.5	45
	FA	165	119	□100	16.5	35
	GA	165	119	□115	16.5	35
	VRL-090B-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	175	129	□80	25
DD		185	139	□80	35	60
DE		180	134	□80	30	55
EA		180	134	□90	30	55
EB		175	129	□90	25	50
EC		185	139	□90	35	60
FA		175	129	□100	25	50
FB		185	139	□100	35	60
GA·GC		180	134	□115	30	55
GB·GD		175	129	□115	25	50
HA		175	129	□130	25	50
HB		190	144	□130	40	65
HC·HD·HE		180	134	□130	30	55
VRL-090B-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	--	--	--	--	--
	GA·GB·GC·GD·GE·GF·GG	--	--	--	--	--
	HA·HC·HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA·JB·JC	--	--	--	--	--
	KA·KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
MA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRL-SERIES Inline shaft

VRL-120 – 1-Stage Specifications

Frame Size	120									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*14	1.30							
Permitted Radial Load	[N]	*6	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*7	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*8	4300							
Maximum Axial Load	[N]	*9	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]		--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]		3.300	2.000	1.600	1.300	1.100	1.000	0.980	0.950
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]		5.300	4.100	3.600	3.300	3.200	3.100	3.000	3.000
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]		13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	71							
Protection Class		*15	IP 55 (IP 65)							
Ambient Temperature	[°C]		0-40							
Permitted Housing Temperature	[°C]	*16	90							
Weight	[kg]	*10	7.8							

VRL-120 – 2-Stage Specifications

Frame Size	120									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*14	0.42							
Permitted Radial Load	[N]	*6	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*7	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*8	4300							
Maximum Axial Load	[N]	*9	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]		0.430	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]		0.860	0.920	0.830	0.820	0.880	0.740	0.810	0.730
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]		2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]		--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	71							
Protection Class		*15	IP 55 (IP 65)							
Ambient Temperature	[°C]		0-40							
Permitted Housing Temperature	[°C]	*16	90							
Weight	[kg]	*10	8.7							

VRL-120 – 2-Stage Specifications

Frame Size	120										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120		
Maximum Output Torque	[Nm]	*2	225	330	330	330	330	225	225		
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*14	0.42								
Permitted Radial Load	[N]	*6	3300	3400	3600	3800	4000	4200	4300		
Permitted Axial Load	[N]	*7	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*8	4300								
Maximum Axial Load	[N]	*9	3900								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]		0.370	0.280	0.280	0.280	0.280	0.270	0.270		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]		0.800	0.730	0.730	0.730	0.730	0.730	0.730		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]		2.700	2.700	2.700	2.700	2.700	2.700	2.700		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]		--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	71								
Protection Class		*15	IP 55 (IP 65)								
Ambient Temperature	[°C]		0-40								
Permitted Housing Temperature	[°C]	*16	90								
Weight	[kg]	*10	8.7								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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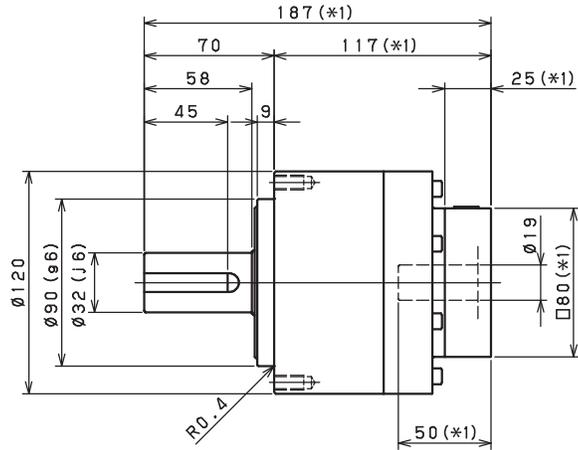
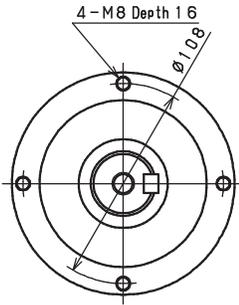


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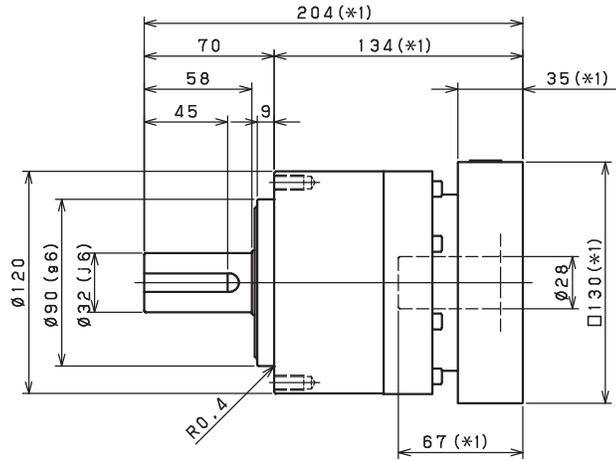
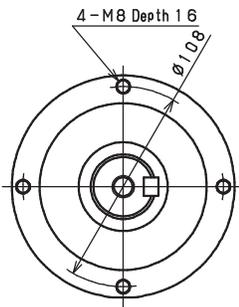
VRL-SERIES Inline shaft

VRL-120 – 1-Stage Dimensions

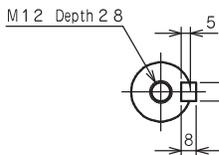
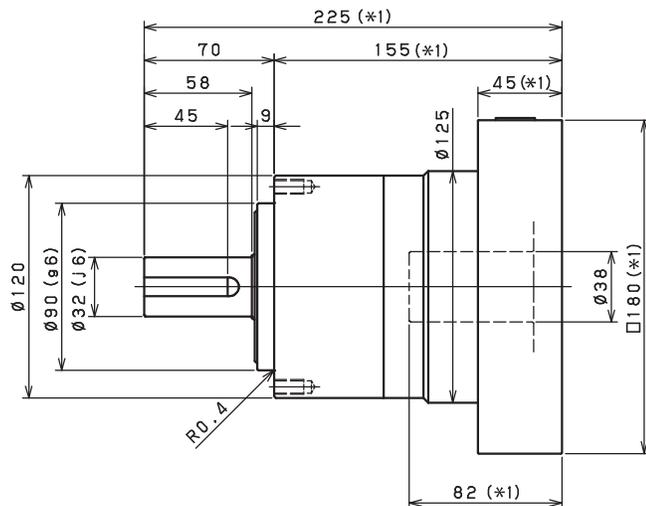
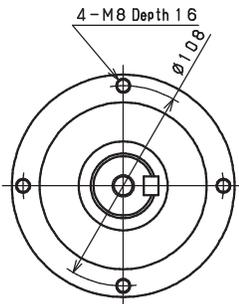
Input shaft bore $\leq \phi 19$



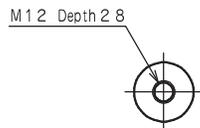
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Shaft with key

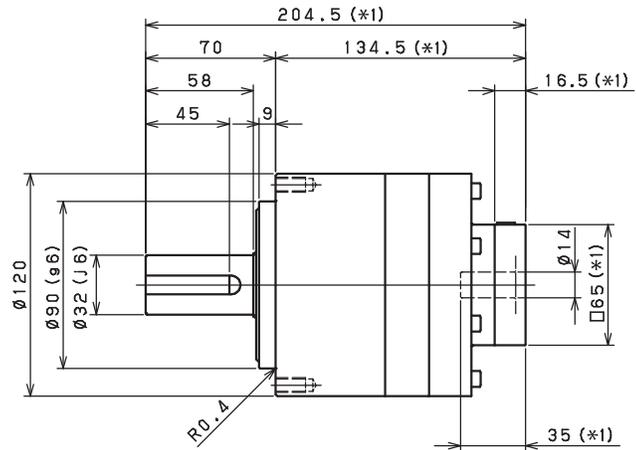
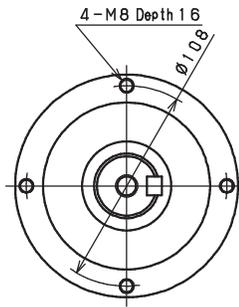


Smooth shaft

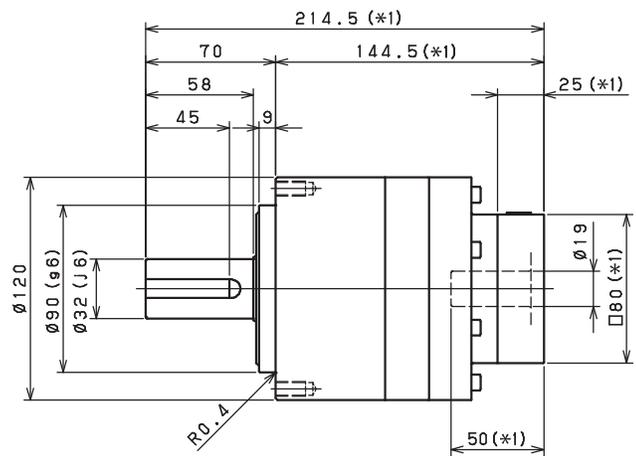
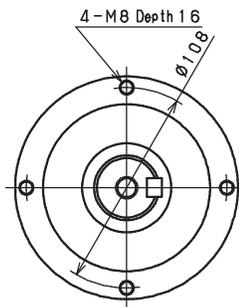
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-120 – 2-Stage Dimensions

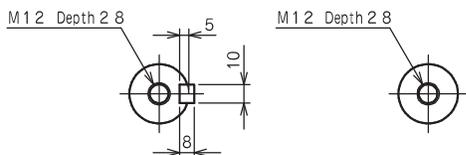
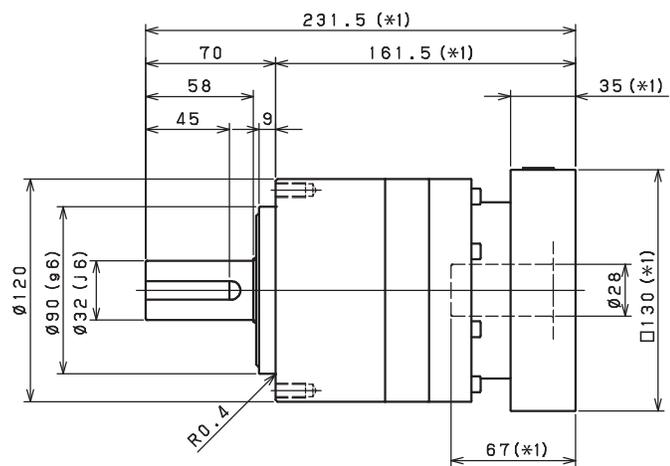
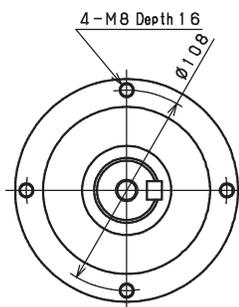
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



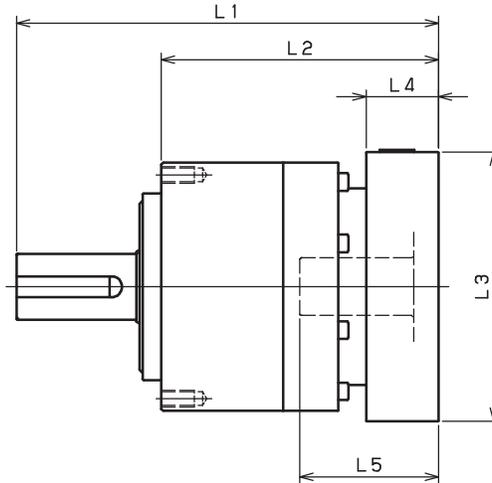
Input shaft bore $\leq \phi 28$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-SERIES Inline shaft

VRL-120 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage					
		L1	L2	L3	L4	L5	
VRL-120B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA•BB•BD•BE•BF•BG•BJ•BK	-	-	-	-	-	
	BC•BH•BM	-	-	-	-	-	
	BL	-	-	-	-	-	
	CA	-	-	-	-	-	
	CB	-	-	-	-	-	
	DA•DB•DC•DD•DF•DH	-	-	-	-	-	
	DE	-	-	-	-	-	
	DG	-	-	-	-	-	
	EA•EB•EC	-	-	-	-	-	
	ED	-	-	-	-	-	
	FA	-	-	-	-	-	
	GA	-	-	-	-	-	
VRL-120B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA•DB•DC	187	117	□80	25	50	
	DD	197	127	□80	35	60	
	DE	192	122	□80	30	55	
	EA	192	122	□90	30	55	
	EB	187	117	□90	25	50	
	EC	197	127	□90	35	60	
	FA	187	117	□100	25	50	
	FB	197	127	□100	35	60	
	GA•GC	192	122	□115	30	55	
	GB•GD	187	117	□115	25	50	
	HA	187	117	□130	25	50	
	HB	202	132	□130	40	65	
VRL-120B-□-□-28** (Input shaft bore $\leq \phi 28$)	HC•HD•HE	192	122	□130	30	55	
	FA•FB•FC	204	134	□100	35	67	
	GA•GB•GC•GD•GE•GF•GG	204	134	□115	35	67	
	HA•HC•HD	204	134	□130	35	67	
	HB	214	144	□130	45	77	
	JA•JB•JC	204	134	□150	35	67	
	KA•KB	204	134	□180	35	67	
	KD	214	144	□180	45	77	
	LA	204	134	□200	35	67	
	MA	204	134	□220	35	67	
	VRL-120B-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	225	155	□130	45	82
		HB	220	150	□130	40	77
JA		225	155	□150	45	82	
KA•KB•KC		225	155	□180	45	82	
LA		225	155	□200	45	82	
LB		235	165	□200	55	92	
MA•MB		225	155	□220	45	82	
NA		225	155	□250	45	82	

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*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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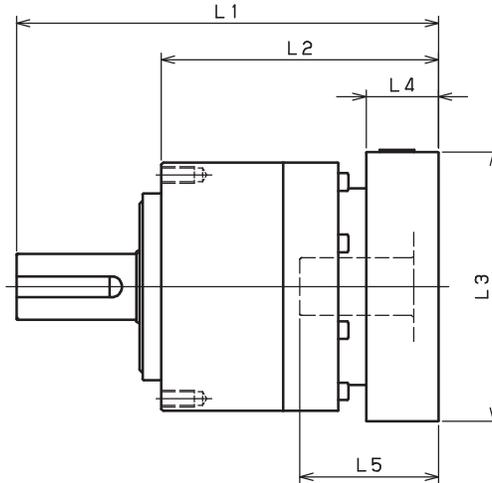
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For an explanation on the Adapter Flange Code, please turn to page 300

VRL-120 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-120B-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	204.5	134.5	□ 65	16.5	35
	BC·BH·BM	209.5	139.5	□ 65	21.5	40
	BL	214.5	144.5	□ 65	26.5	45
	CA	204.5	134.5	□ 70	16.5	35
	CB	209.5	139.5	□ 70	21.5	40
	DA·DB·DC·DD·DF·DH	204.5	134.5	□ 80	16.5	35
	DE	209.5	139.5	□ 80	21.5	40
	DG	214.5	144.5	□ 80	26.5	45
	EA·EB·EC	204.5	134.5	□ 90	16.5	35
	ED	214.5	144.5	□ 90	26.5	45
	FA	204.5	134.5	□ 100	16.5	35
GA	204.5	134.5	□ 115	16.5	35	
VRL-120B-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	214.5	144.5	□ 80	25	50
	DD	224.5	154.5	□ 80	35	60
	DE	219.5	149.5	□ 80	30	55
	EA	219.5	149.5	□ 90	30	55
	EB	214.5	144.5	□ 90	25	50
	EC	224.5	154.5	□ 90	35	60
	FA	214.5	144.5	□ 100	25	50
	FB	224.5	154.5	□ 100	35	60
	GA·GC	219.5	149.5	□ 115	30	55
	GB·GD	214.5	144.5	□ 115	25	50
	HA	214.5	144.5	□ 130	25	50
HB	229.5	159.5	□ 130	40	65	
HC·HD·HE	219.5	149.5	□ 130	30	55	
VRL-120B-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	231.5	161.5	□ 100	35	67
	GA·GB·GC·GD·GE·GF·GG	231.5	161.5	□ 115	35	67
	HA·HC·HD	231.5	161.5	□ 130	35	67
	HB	241.5	171.5	□ 130	45	77
	JA·JB·JC	231.5	161.5	□ 150	35	67
	KA·KB	231.5	161.5	□ 180	35	67
	KD	241.5	171.5	□ 180	45	77
	LA	231.5	161.5	□ 200	35	67
VRL-120B-□-□-38** (Input shaft bore ≤ φ 38)	MA	231.5	161.5	□ 220	35	67
	HA	-	-	-	-	-
	HB	-	-	-	-	-
	JA	-	-	-	-	-
	KA·KB·KC	-	-	-	-	-
	LA	-	-	-	-	-
	MA·MB	-	-	-	-	-
NA	-	-	-	-	-	

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*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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For an explanation on the Adapter Flange Code, please turn to page 300

VRL-SERIES Inline shaft

VRL-155 – 1-Stage Specifications

Frame Size	155									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	12.000	7.500	5.800	4.900	4.100	3.800	3.600	3.500
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	20.000	15.000	14.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	34.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	16							

VRL-155 – 2-Stage Specifications

Frame Size	155									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	18							

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VRL-155 – 2-Stage Specifications

Frame Size	155										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240		
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470		
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	0.56								
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100		
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200		
Maximum Radial Load	[N]	*9	9100								
Maximum Axial Load	[N]	*10	8200								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	18								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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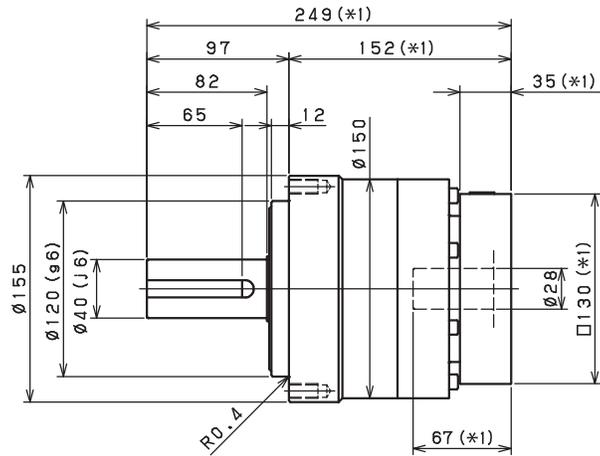
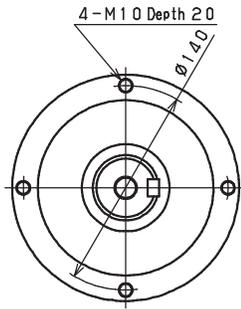
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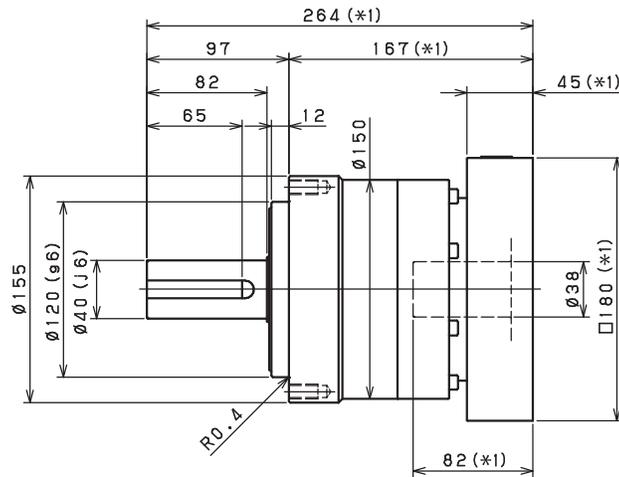
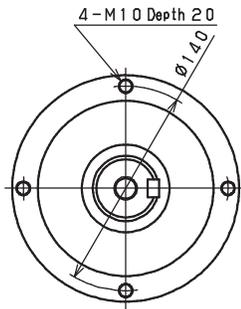
VRL-SERIES Inline shaft

VRL-155 – 1-Stage Dimensions

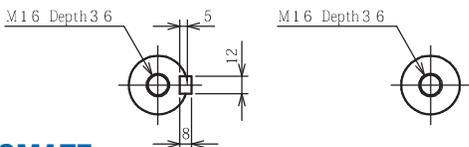
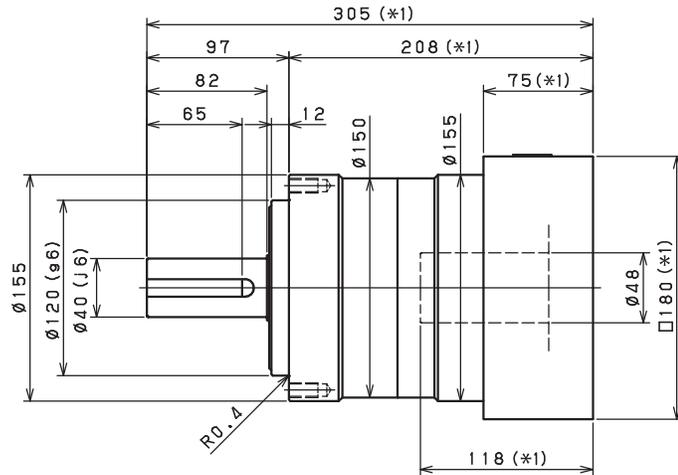
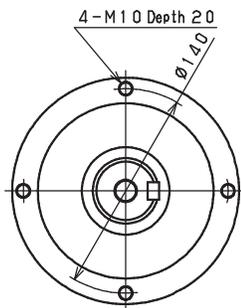
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



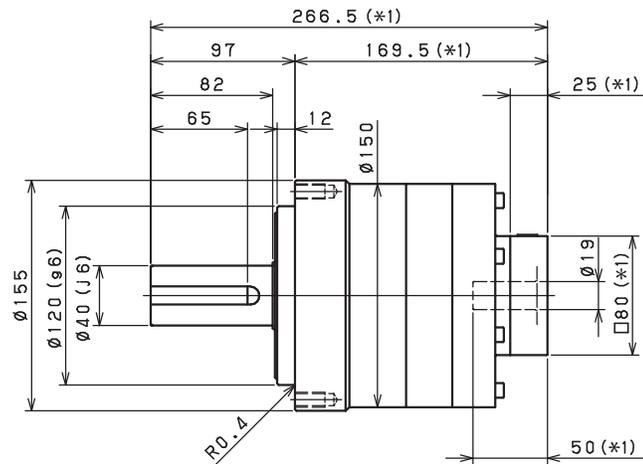
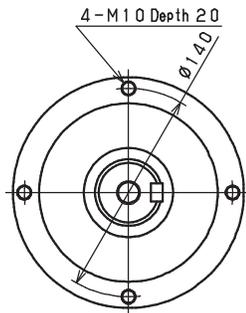
Shaft with key

Smooth shaft

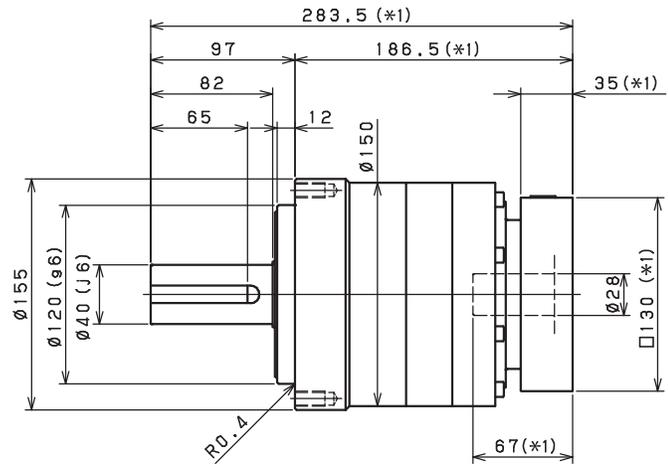
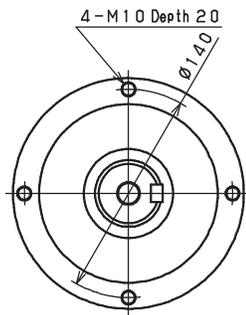
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-155 – 2-Stage Dimensions

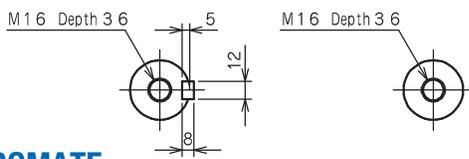
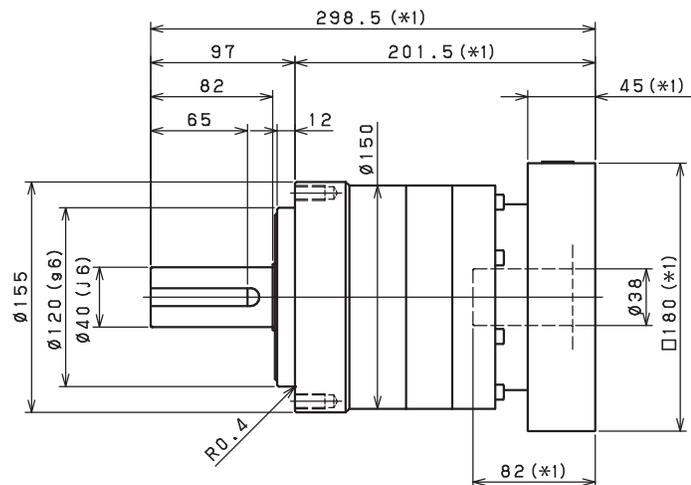
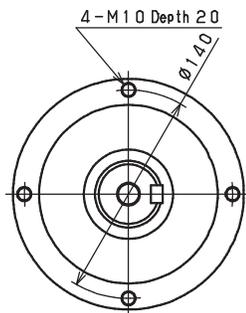
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



*1) Length will vary depending on motor

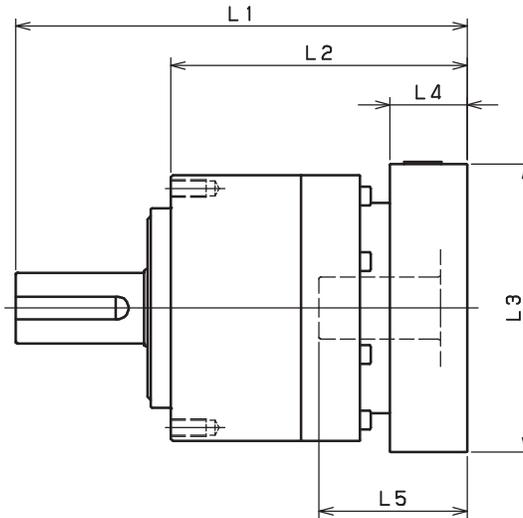
*2) Bushing will be inserted to adapt to motor shaft

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Smooth shaft

VRL-155 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRL-155B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
	HB	-	-	-	-	-
	HC·HD·HE	-	-	-	-	-
VRL-155B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	249	152	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	249	152	□115	35	67
	HA·HC·HD	249	152	□130	35	67
	HB	259	162	□130	45	77
	JA·JB·JC	249	152	□150	35	67
	KA·KB	249	152	□180	35	67
	KD	259	162	□180	45	77
	LA	249	152	□200	35	67
VRL-155B-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	249	152	□220	35	67
	HA	264	167	□130	45	82
	HB	259	162	□130	40	77
	JA	264	167	□150	45	82
	KA·KB·KC	264	167	□180	45	82
	LA	264	167	□200	45	82
	LB	274	177	□200	55	92
VRL-155B-□-□-48** (Input shaft bore $\leq \phi 48$)	MA·MB	264	167	□220	45	82
	NA	264	167	□250	45	82
	KB·KC	285	188	□180	55	98
	KA	305	208	□180	75	118
	LA	285	188	□200	55	98
	MA	285	188	□220	55	98
	MB	305	208	□220	75	118
VRL-155B-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	305	208	□250	75	118
	PA	305	208	□280	75	118

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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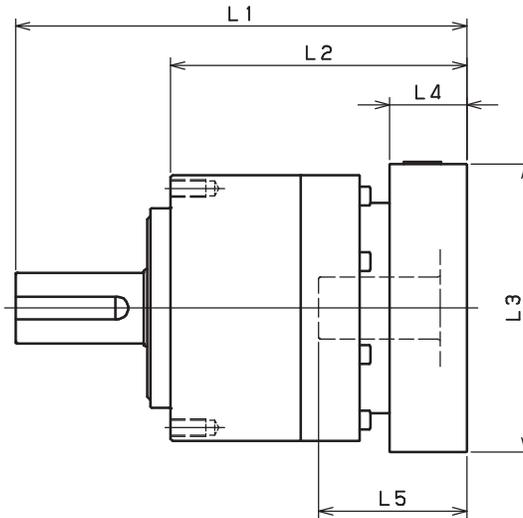
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VRL-155 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-155B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	266.5	169.5	□80	25	50
	DD	276.5	179.5	□80	35	60
	DE	271.5	174.5	□80	30	55
	EA	271.5	174.5	□90	30	55
	EB	266.5	169.5	□90	25	50
	EC	276.5	179.5	□90	35	60
	FA	266.5	169.5	□100	25	50
	FB	276.5	179.5	□100	35	60
	GA·GC	271.5	174.5	□115	30	55
	GB·GD	266.5	169.5	□115	25	50
	HA	266.5	169.5	□130	25	50
	HB	281.5	184.5	□130	40	65
	HC·HD·HE	271.5	174.5	□130	30	55
VRL-155B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	283.5	186.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	283.5	186.5	□115	35	67
	HA·HC·HD	283.5	186.5	□130	35	67
	HB	293.5	196.5	□130	45	77
	JA·JB·JC	283.5	186.5	□150	35	67
	KA·KB	283.5	186.5	□180	35	67
	KD	293.5	196.5	□180	45	77
	LA	283.5	186.5	□200	35	67
VRL-155B-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	283.5	186.5	□220	35	67
	HA	298.5	201.5	□130	45	82
	HB	293.5	196.5	□130	40	77
	JA	298.5	201.5	□150	45	82
	KA·KB·KC	298.5	201.5	□180	45	82
	LA	298.5	201.5	□200	45	82
	LB	308.5	211.5	□200	55	92
VRL-155B-□-□-48** (Input shaft bore $\leq \phi 48$)	MA·MB	298.5	201.5	□220	45	82
	NA	298.5	201.5	□250	45	82
	KB·KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRL-SERIES Inline shaft

VRL-205 – 1-Stage Specifications

Frame Size	205									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	5600	6200	6700	7100	7400	7800	8100	8400
Permitted Axial Load	[N]	*8	4300	4900	5400	5800	6300	6600	7000	7300
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	44.000	28.000	22.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	66.000	50.000	44.000	41.000	38.000	37.000	36.000	36.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	130.000	110.000	100.000	100.000	99.000	97.000	97.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

VRL-205 – 2-Stage Specifications

Frame Size	205									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	9600	9800	11000	11000	12000	12000	13000	13000
Permitted Axial Load	[N]	*8	8700	8900	9900	11000	11000	12000	13000	13000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	4.700	5.400	4.400	4.200	4.900	3.200	4.100	3.200
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	40							

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VRL-205 – 2-Stage Specifications

Frame Size	205										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500		
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970		
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200		
Nominal Input Speed	[rpm]	*4	1500								
Maximum Input Speed	[rpm]	*5	3000								
No Load Running Torque	[Nm]	*6	1.39								
Permitted Radial Load	[N]	*7	14000	14000	15000	15000	15000	15000	15000		
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000		
Maximum Radial Load	[N]	*9	15000								
Maximum Axial Load	[N]	*10	14000								
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	40								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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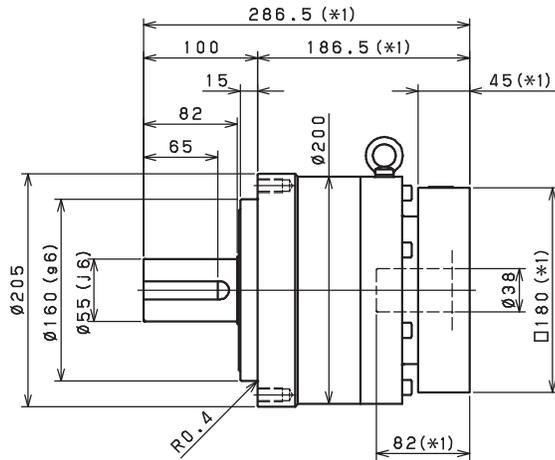
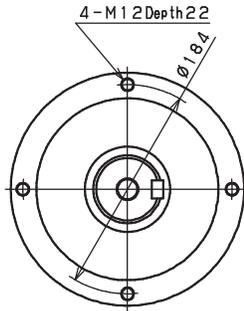


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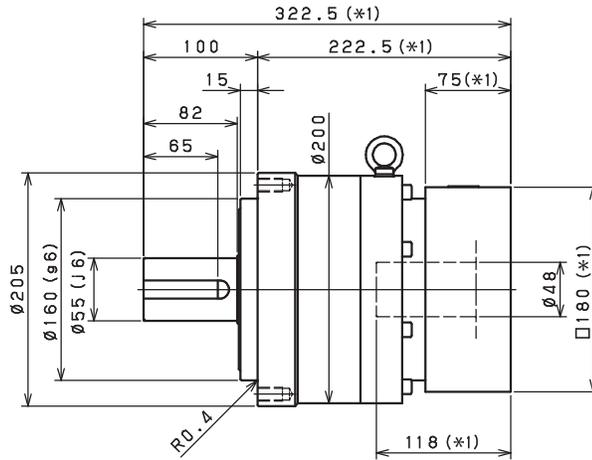
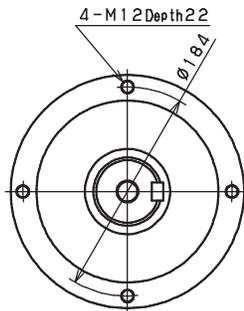
VRL-SERIES Inline shaft

VRL-205 – 1-Stage Dimensions

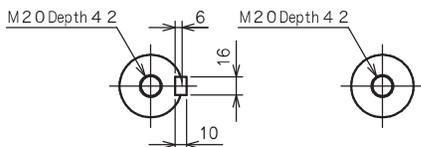
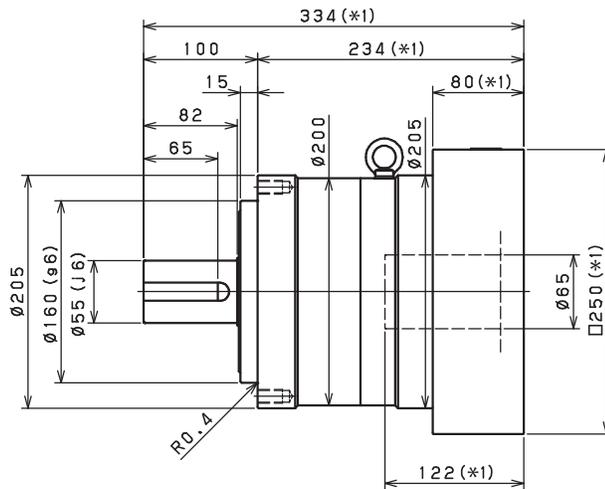
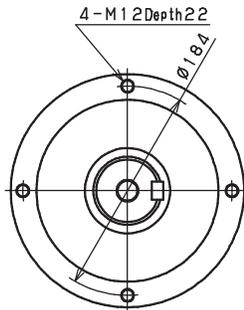
Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



Input shaft bore $\leq \phi 65$



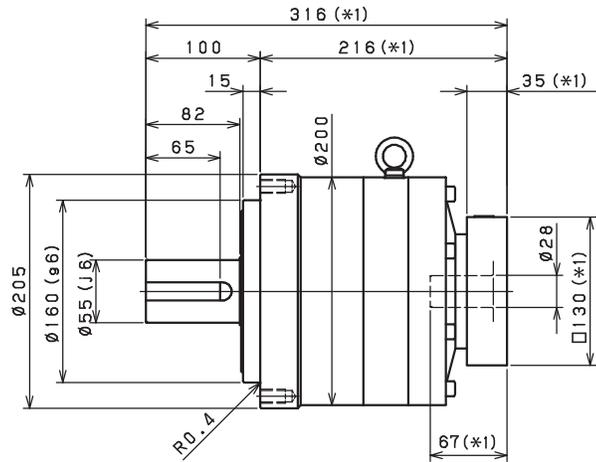
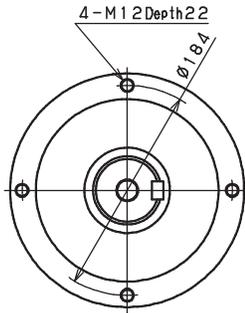
Shaft with key

Smooth shaft

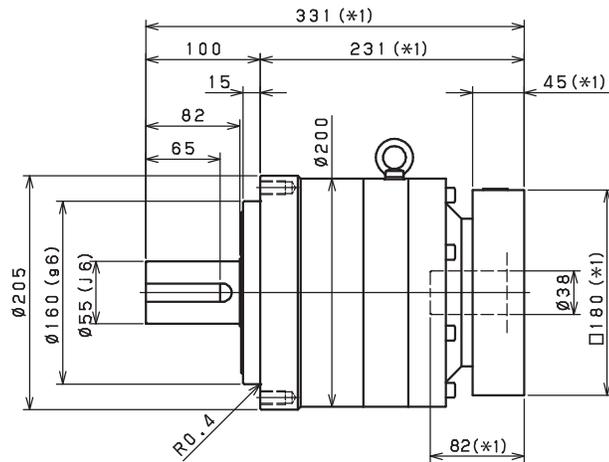
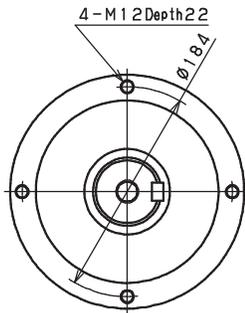
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-205 – 2-Stage Dimensions

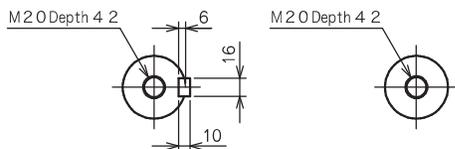
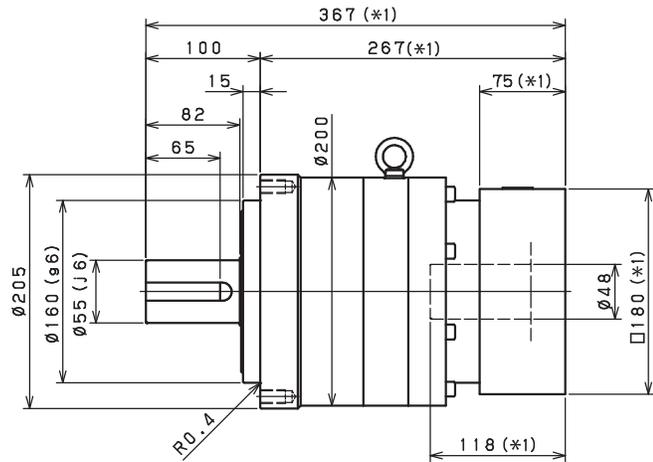
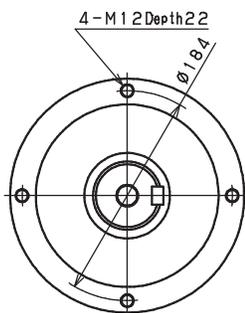
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



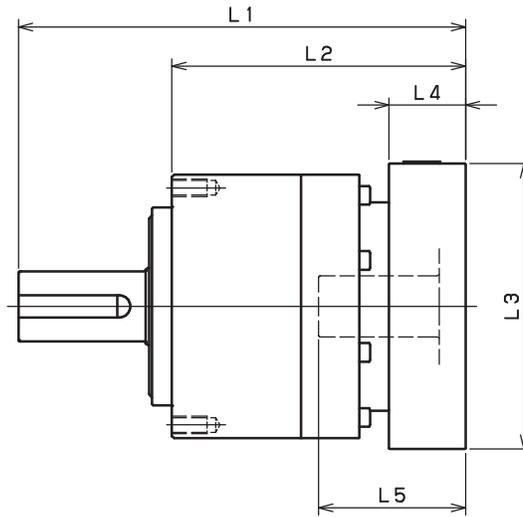
Shaft: with key

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRL-205 – 1-Stage Adapter Dimensions



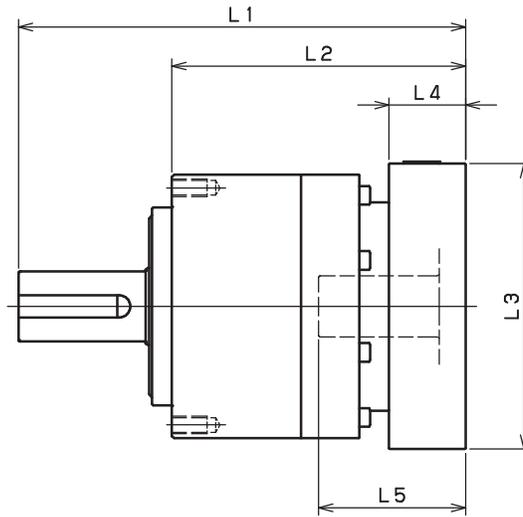
Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRL-205B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA•FB•FC	--	--	--	--	--
	GA•GB•GC•GD•GE•GF•GG	--	--	--	--	--
	HA•HC•HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA•JB•JC	--	--	--	--	--
	KA•KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
VRL-205B-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	286.5	186.5	□130	45	82
	HB	281.5	181.5	□130	40	77
	JA	286.5	186.5	□150	45	82
	KA•KB•KC	286.5	186.5	□180	45	82
	LA	286.5	186.5	□200	45	82
	LB	296.5	196.5	□200	55	92
	MA•MB	286.5	186.5	□220	45	82
	NA	286.5	186.5	□250	45	82
VRL-205B-□-□-48** (Input shaft bore $\leq \phi 48$)	KB•KC	302.5	202.5	□180	55	98
	KA	322.5	222.5	□180	75	118
	LA	302.5	202.5	□200	55	98
	MA	302.5	202.5	□220	55	98
	MB	322.5	222.5	□220	75	118
	NA	322.5	222.5	□250	75	118
VRL-205B-□-□-65** (Input shaft bore $\leq \phi 65$)	PA	322.5	222.5	□280	75	118
	MA•MB•MC•MD	334	234	□220	80	122
	NA	334	234	□250	80	122
	PA	354	254	□280	100	142
	PB	364	264	□280	110	152
QA	354	254	□320	100	142	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft.

For an explanation on the Adapter Flange Code, please turn to page 300

VRL-205 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-205B-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	316	216	□ 100	35	67
	GA·GB·GC·GD·GE·GF·GG	316	216	□ 115	35	67
	HA·HC·HD	316	216	□ 130	35	67
	HB	326	226	□ 130	45	77
	JA·JB·JC	316	216	□ 150	35	67
	KA·KB	316	216	□ 180	35	67
	KD	326	226	□ 180	45	77
	LA	316	216	□ 200	35	67
VRL-205B-□-□-38** (Input shaft bore ≤ φ 38)	MA	316	216	□ 220	35	67
	HA	331	231	□ 130	45	82
	HB	326	226	□ 130	40	77
	JA	331	231	□ 150	45	82
	KA·KB·KC	331	231	□ 180	45	82
	LA	331	231	□ 200	45	82
	LB	341	241	□ 200	55	92
	MA·MB	331	231	□ 220	45	82
VRL-205B-□-□-48** (Input shaft bore ≤ φ 48)	NA	331	231	□ 250	45	82
	KB·KC	347	247	□ 180	55	98
	KA	367	267	□ 180	75	118
	LA	347	247	□ 200	55	98
	MA	347	247	□ 220	55	98
	MB	367	267	□ 220	75	118
VRL-205B-□-□-65** (Input shaft bore ≤ φ 65)	NA	367	267	□ 250	75	118
	PA	367	267	□ 280	75	118
	MA·MB·MC·MD	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-
PB	-	-	-	-	-	
QA	-	-	-	-	-	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft.

For an explanation on the Adapter Flange Code, please turn to page 300

VRL-SERIES Inline shaft

VRL-235 – 1-Stage Specifications

Frame Size	235									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	2.92							
Permitted Radial Load	[N]	*7	5800	6400	6900	7300	7700	8000	8400	8700
Permitted Axial Load	[N]	*8	6400	7200	7900	8600	9200	9700	10000	11000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	90.000	62.000	52.000	47.000	42.000	40.000	39.000	38.000
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	61							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	55							

VRL-235 – 2-Stage Specifications

Frame Size	235									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.14							
Permitted Radial Load	[N]	*7	9900	10000	11000	12000	12000	13000	13000	14000
Permitted Axial Load	[N]	*8	13000	13000	14000	14000	14000	14000	14000	14000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	36.000	37.000	35.000	35.000	36.000	34.000	35.000	33.000
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 5							
Noise Level	[dB]	*13	61							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	57							

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VRL-235 – 2-Stage Specifications

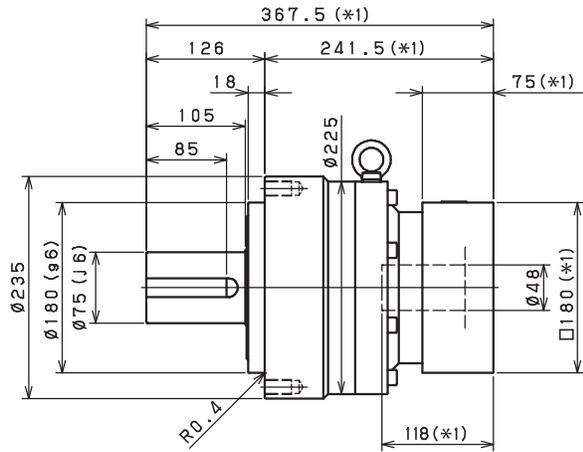
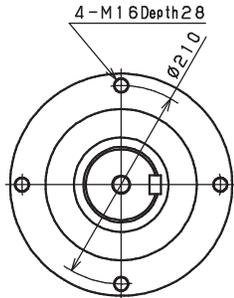
Frame Size	235										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000		
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200		
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.14								
Permitted Radial Load	[N]	*7	14000	15000	15000	15000	15000	15000	15000		
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000		
Maximum Radial Load	[N]	*9	15000								
Maximum Axial Load	[N]	*10	14000								
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000		
Moment of Inertia (≤ Ø 48)	[kgcm ²]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia (≤ Ø 65)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	400								
Maximum Torsional Backlash	[arc-min]	--	≤ 5								
Noise Level	[dB]	*13	61								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	57								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRL070/090/120; 2,000 rpm for VRL155; 1,500 rpm for VRL205; 1,000 rpm for VRL235
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

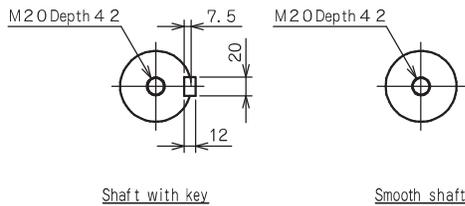
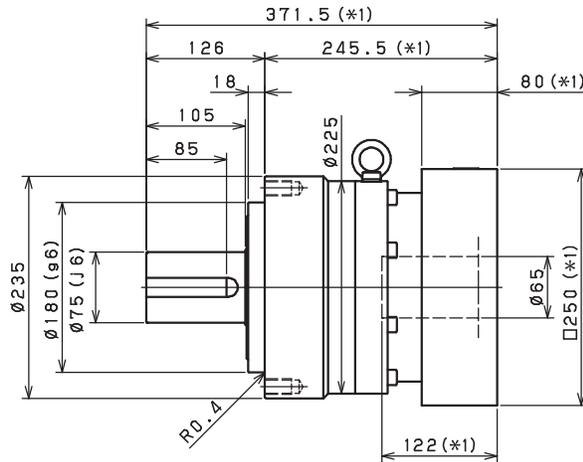
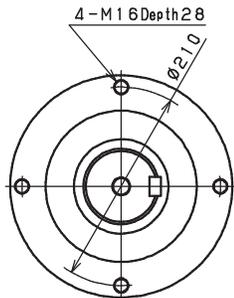
VRL-SERIES Inline shaft

VRL-235 – 1-Stage Dimensions

Input shaft bore $\cong \varnothing 48$



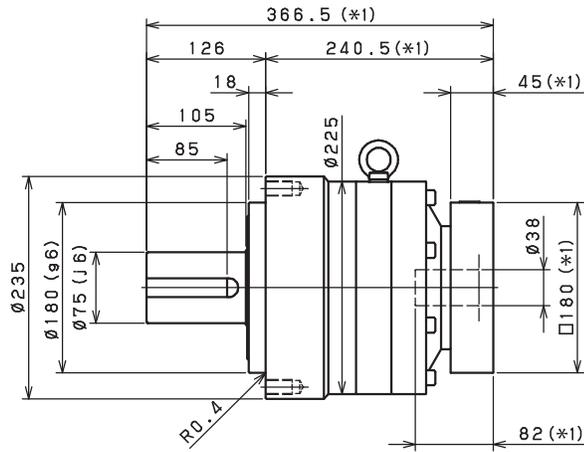
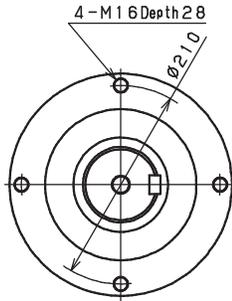
Input shaft bore $\cong \varnothing 65$



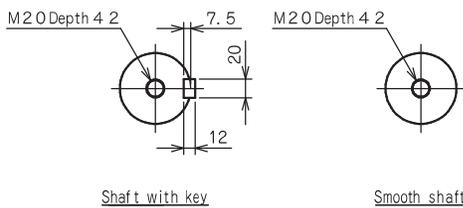
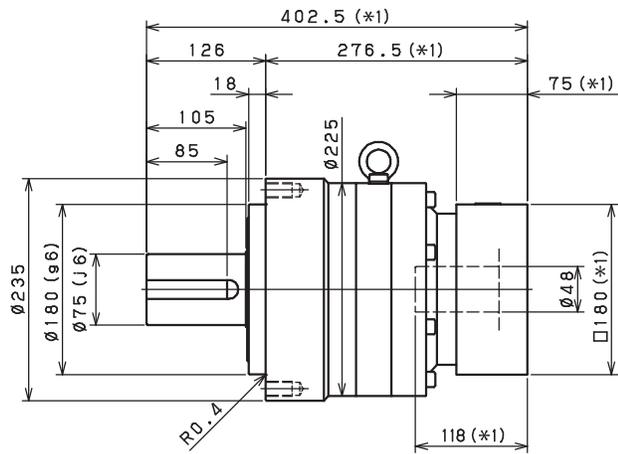
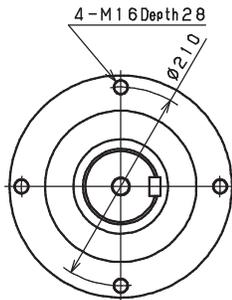
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-235 – 2-Stage Dimensions

Input shaft bore $\leq \varnothing 38$



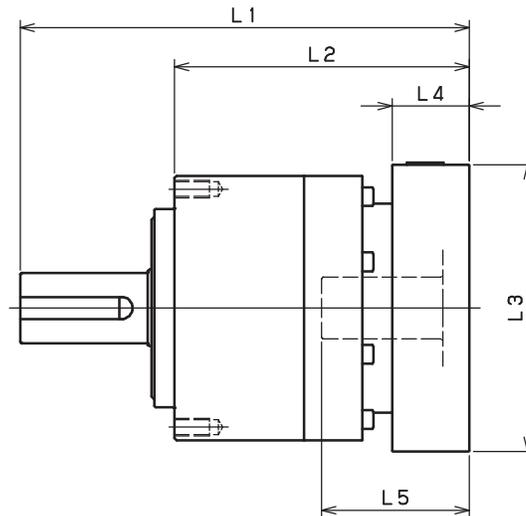
Input shaft bore $\leq \varnothing 48$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRL-SERIES Inline shaft

VRL-235 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRL-235B-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	--	--	--	--	--
	HB	--	--	--	--	--
	JA	--	--	--	--	--
	KA·KB·KC	--	--	--	--	--
	LA	--	--	--	--	--
	LB	--	--	--	--	--
	MA·MB	--	--	--	--	--
VRL-235B-□-□-48** (Input shaft bore $\leq \phi 48$)	KB·KC	347.5	221.5	□180	55	98
	KA	367.5	241.5	□180	75	118
	LA	347.5	221.5	□200	55	98
	MA	347.5	221.5	□220	55	98
	MB	367.5	241.5	□220	75	118
	NA	367.5	241.5	□250	75	118
	PA	367.5	241.5	□280	75	118
VRL-235B-□-□-65** (Input shaft bore $\leq \phi 65$)	MA·MB·MC·MD	371.5	245.5	□220	80	122
	NA	371.5	245.5	□250	80	122
	PA	391.5	265.5	□280	100	142
	PB	401.5	275.5	□280	110	152
	QA	391.5	265.5	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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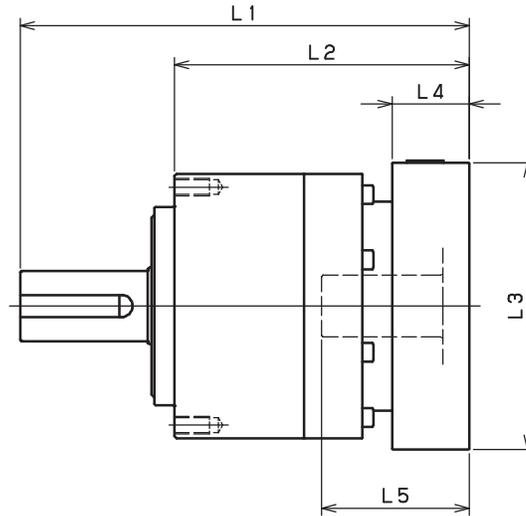
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VRL-235 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRL-235B-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	366.5	240.5	□130	45	82
	HB	361.5	235.5	□130	40	77
	JA	366.5	240.5	□150	45	82
	KA·KB·KC	366.5	240.5	□180	45	82
	LA	366.5	240.5	□200	45	82
	LB	376.5	250.5	□200	55	92
	MA·MB	366.5	240.5	□220	45	82
VRL-235B-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	366.5	240.5	□250	45	82
	KB·KC	382.5	256.5	□180	55	98
	KA	402.5	276.5	□180	75	118
	LA	382.5	256.5	□200	55	98
	MA	382.5	256.5	□220	55	98
	MB	402.5	276.5	□220	75	118
	NA	402.5	276.5	□250	75	118
VRL-235B-□-□-65** (Input shaft bore $\leq \phi 65$)	PA	402.5	276.5	□280	75	118
	MA·MB·MC·MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
	QA	--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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A valuable alternative for OEMs that need a high-performance gear reducer, and prefer a flexible mounting design to make it easier to assemble the reducer onto their machinery. The positional accuracy and torque handling capabilities are an ideal fit for packaging machinery, medical equipment, and custom assembly cell automation.

The VRB Series reducer and its standard mounting flange are a dimensional replacement for a few common competitive models. The maximum output torque peaks at 2,300 Nm, and the VRB provides a backlash rating of <3 arc-minutes as its standard, which means this series provides solid performance at an exceptional value.

	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy	
Optimal					10
					9
					8
					7
Exceptional					6
					5
					4
					3
Suitable					2
					1

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VRB-SERIES

- Industry Standard Mounting Dimensions
- Large variety of frame sizes and ratios
- Thru-bolt Mounting Style
- Best-In-Class Backlash (≤ 3 arc-min)
- Ships in 48 hours
- Assembled in the USA

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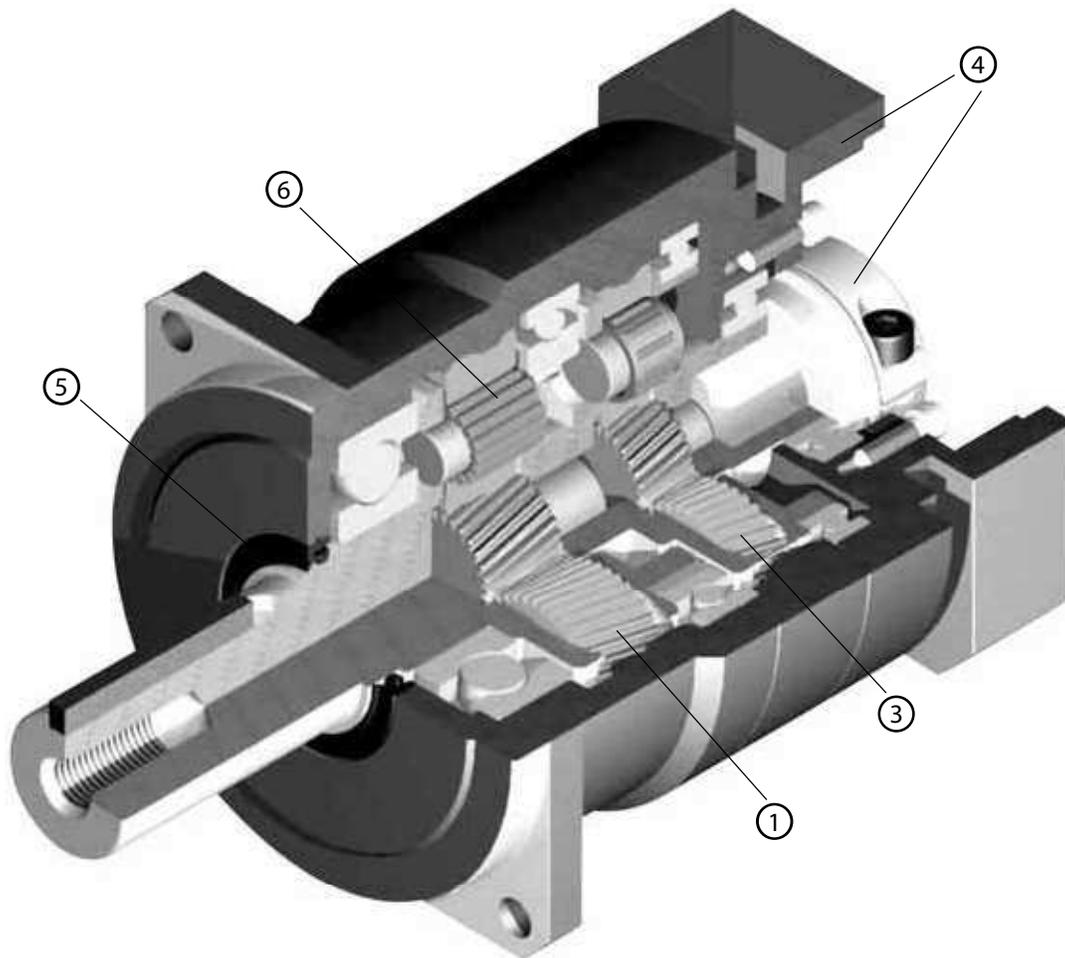
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VRB-SERIES Inline shaft

VRB-Series – Features



- ① Quiet operation: Helical cut gears contribute to reduced vibration and noise
- ② High precision: Standard backlash is 3 arc-min, ideal for higher levels of positional accuracy
- ③ High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ④ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ⑤ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑥ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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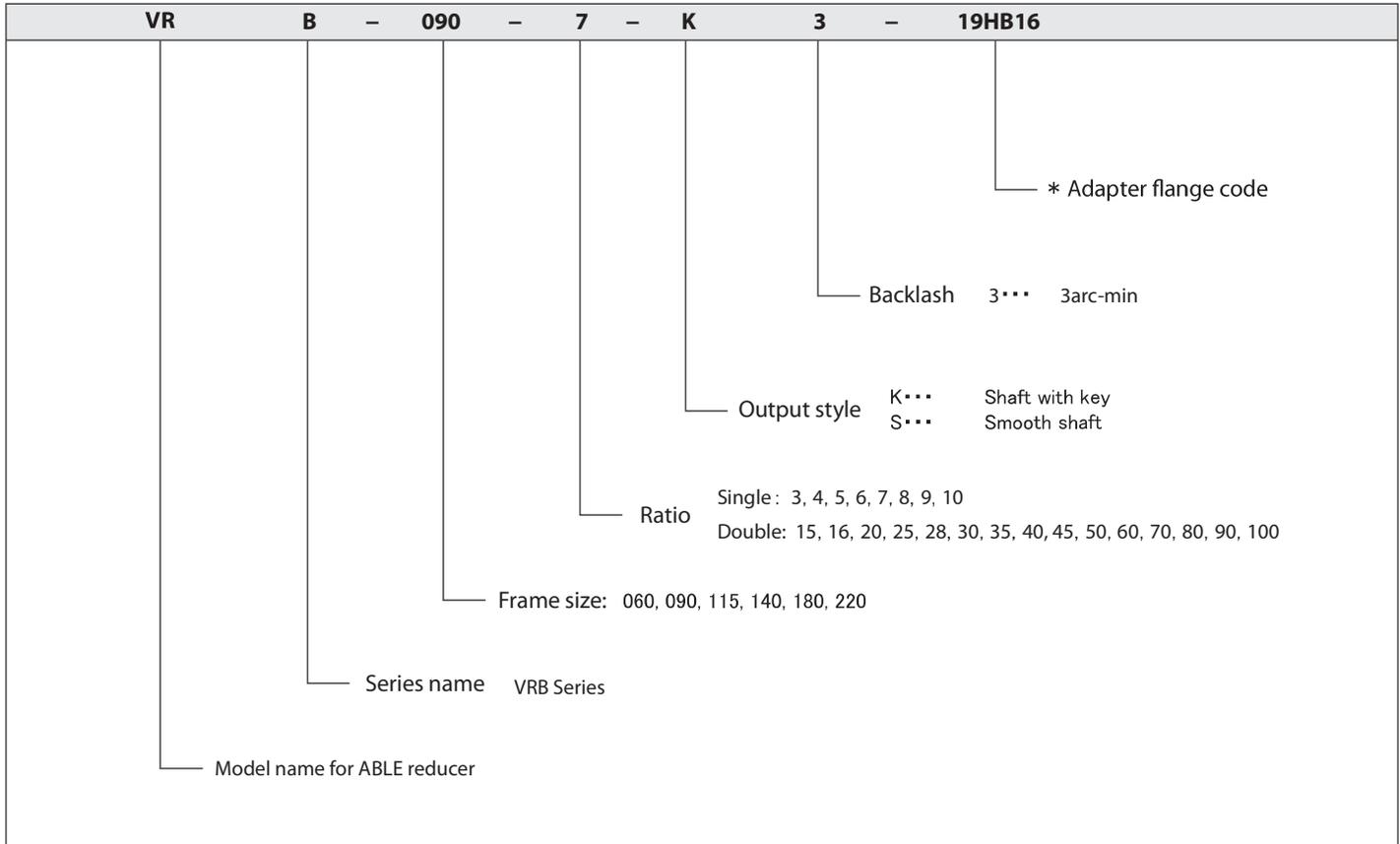
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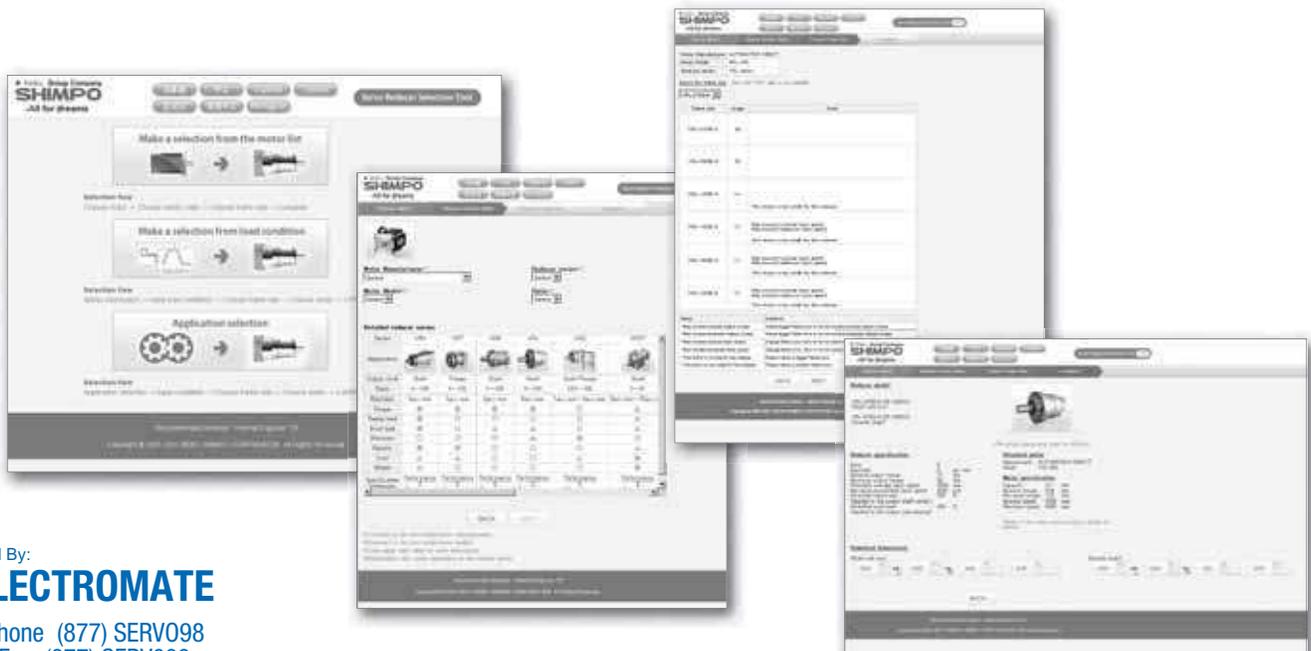
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VRB-Series – Model Number



*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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VRB-SERIES Inline shaft

VRB-o6o – 1-Stage Specifications

Frame Size	060									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.15							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.140	0.095	0.077	0.068	0.062	0.059	0.057	0.056
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.220	0.170	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.430	0.380	0.360	0.360	0.350	0.350	0.340	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.4							

VRB-o6o – 2-Stage Specifications

Frame Size	060									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	1000
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.6							

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VRB-060 – 2-Stage Specifications

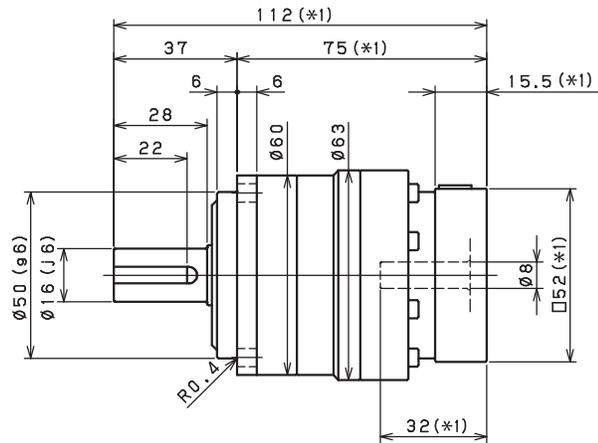
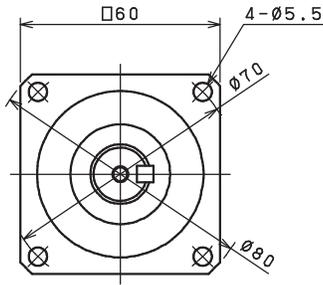
Frame Size	060										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18		
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	35		
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.04								
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200		
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100		
Maximum Radial Load	[N]	*9	1200								
Maximum Axial Load	[N]	*10	1100								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.130	0.130	0.130	0.130	0.130	0.130	0.130		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	66								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.6								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

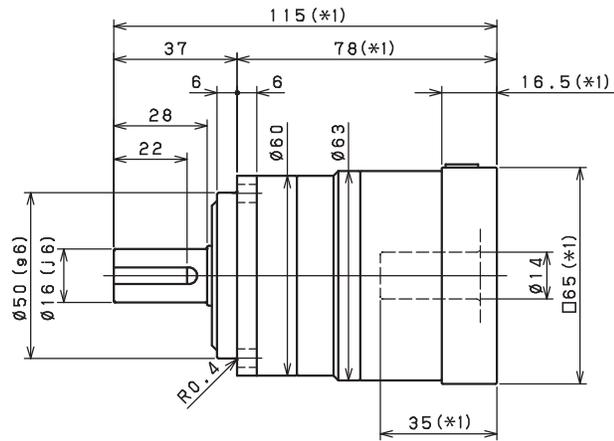
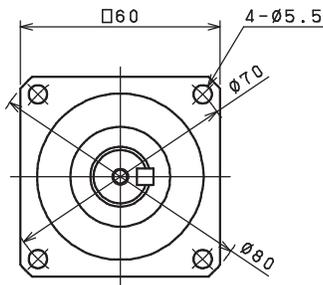
VRB-SERIES Inline shaft

VRB-o6o – 1-Stage Dimensions

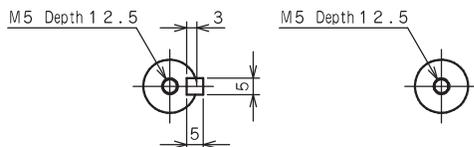
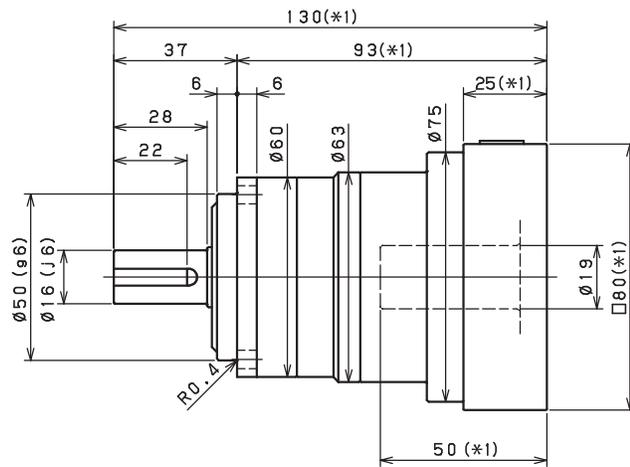
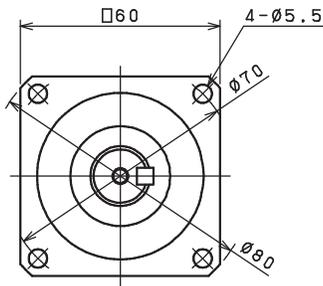
Input shaft bore $\cong \varnothing 8$



Input shaft bore $\cong \varnothing 14$



Input shaft bore $\cong \varnothing 19$



Shaft with key

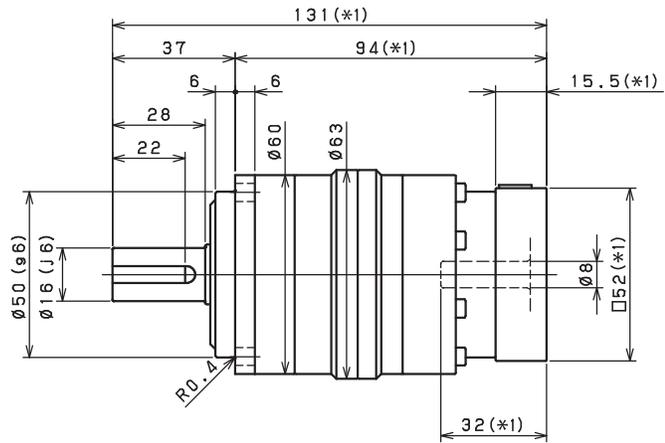
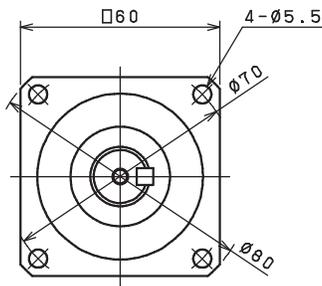
Smooth shaft

*1) Length will vary depending on motor

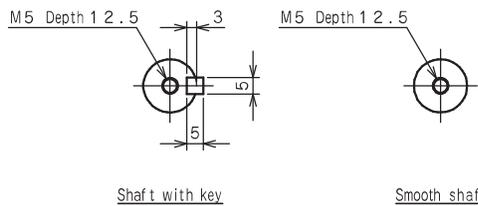
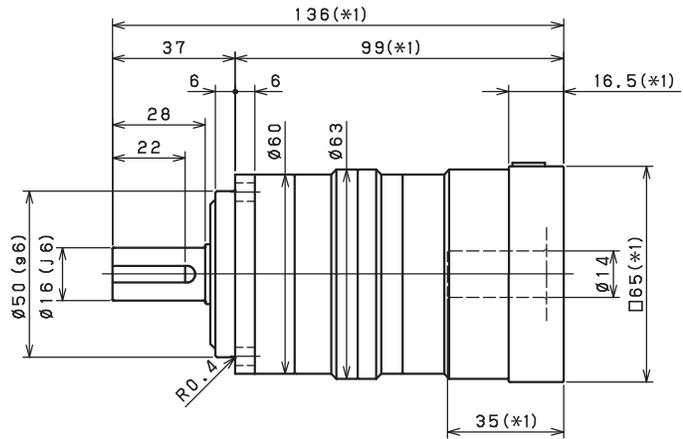
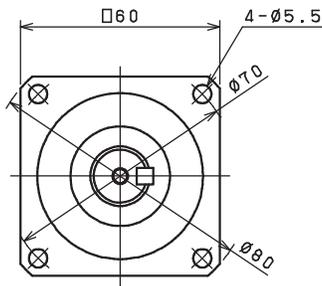
*2) Bushing will be inserted to adapt to motor shaft

VRB-o6o – 2-Stage Dimensions

Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



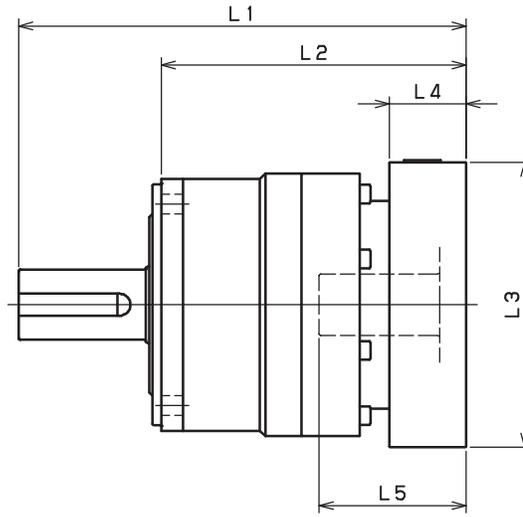
Shaft with key

Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-SERIES Inline shaft

VRB-o6o – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-060-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	112	75	□52	15.5	32
	AB·AE·AH·AJ·AK	117	80	□52	20.5	37
	BA·BB·BD·BE	112	75	□60	15.5	32
	BC·BF	117	80	□60	20.5	37
	CA	117	80	□70	20.5	37
VRB-060-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	115	78	□65	16.5	35
	BC·BH·BM	120	83	□65	21.5	40
	BL	125	88	□65	26.5	45
	CA	115	78	□70	16.5	35
	CB	120	83	□70	21.5	40
	DA·DB·DC·DD·DF·DH	115	78	□80	16.5	35
	DE	120	83	□80	21.5	40
	DG	125	88	□80	26.5	45
	EA·EB·EC	115	78	□90	16.5	35
	ED	125	88	□90	26.5	45
	FA	115	78	□100	16.5	35
VRB-060-□-□-19** (Input shaft bore $\leq \phi 19$)	GA	115	78	□115	16.5	35
	DA·DB·DC	130	93	□80	25	50
	DD	140	103	□80	35	60
	DE	135	98	□80	30	55
	EA	135	98	□90	30	55
	EB	130	93	□90	25	50
	EC	140	103	□90	35	60
	FA	130	93	□100	25	50
	FB	140	103	□100	35	60
	GA·GC	135	98	□115	30	55
	GB·GD	130	93	□115	25	50
	HA	130	93	□130	25	50
	HB	145	108	□130	40	65
HC·HD·HE	135	98	□130	30	55	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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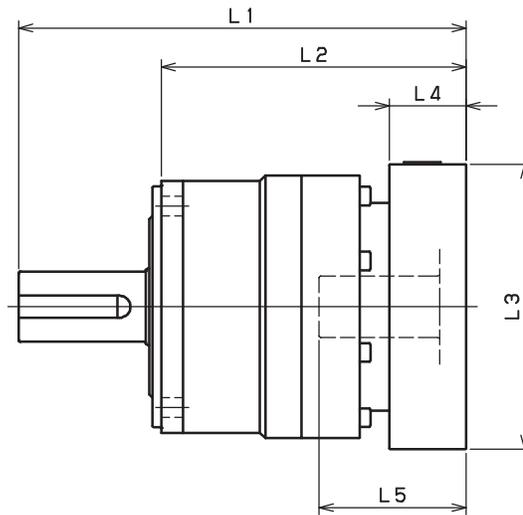
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VRB-060 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRB-060-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	131	94	□52	15.5	32
	AB·AE·AH·AJ·AK	136	99	□52	20.5	37
	BA·BB·BD·BE	131	94	□60	15.5	32
	BC·BF	136	99	□60	20.5	37
	CA	136	99	□70	20.5	37
VRB-060-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	136	99	□65	16.5	35
	BC·BH·BM	141	104	□65	21.5	40
	BL	146	109	□65	26.5	45
	CA	136	99	□70	16.5	35
	CB	141	104	□70	21.5	40
	DA·DB·DC·DD·DF·DH	136	99	□80	16.5	35
	DE	141	104	□80	21.5	40
	DG	146	109	□80	26.5	45
	EA·EB·EC	136	99	□90	16.5	35
	ED	146	109	□90	26.5	45
	FA	136	99	□100	16.5	35
GA	136	99	□115	16.5	35	
VRB-060-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA·GC	--	--	--	--	--
	GB·GD	--	--	--	--	--
	HA	--	--	--	--	--
HB	--	--	--	--	--	
HC·HD·HE	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRB-SERIES Inline shaft

VRB-090 – 1-Stage Specifications

Frame Size	090									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.35							
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.720	0.490	0.400	0.360	0.320	0.310	0.290	0.290
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	1.200	0.950	0.860	0.820	0.790	0.770	0.760	0.750
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	3.200	3.000	2.900	2.800	2.800	2.800	2.800	2.800
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	3.7							

VRB-090 – 2-Stage Specifications

Frame Size	090									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.06							
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.130	0.150	0.130	0.120	0.140	0.100	0.120	0.099
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.720	0.740	0.720	0.710	0.730	0.700	0.710	0.700
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.2							

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VRB-090 – 2-Stage Specifications

Frame Size	090										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.06								
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400		
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200		
Maximum Radial Load	[N]	*9	2400								
Maximum Axial Load	[N]	*10	2200								
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690		
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4.2								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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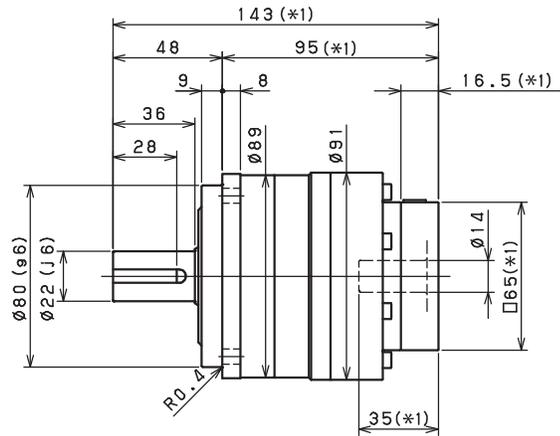
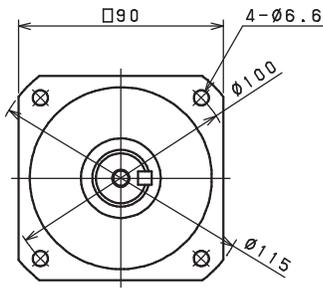


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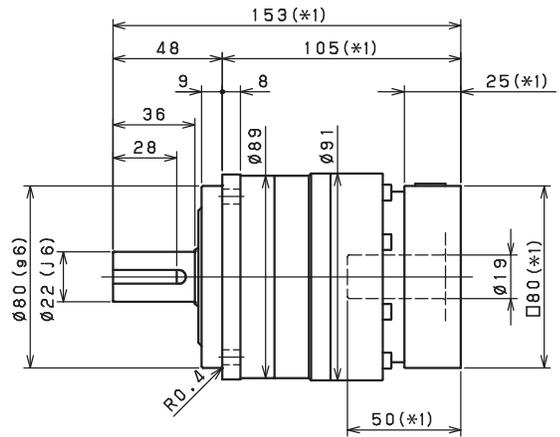
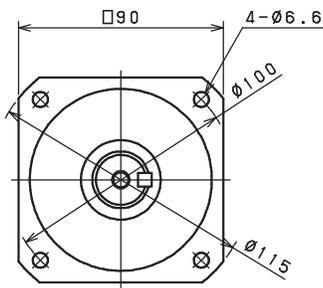
VRB-SERIES Inline shaft

VRB-090 – 1-Stage Dimensions

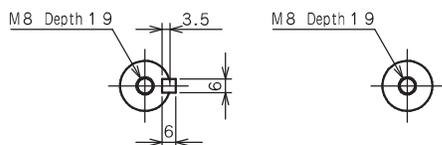
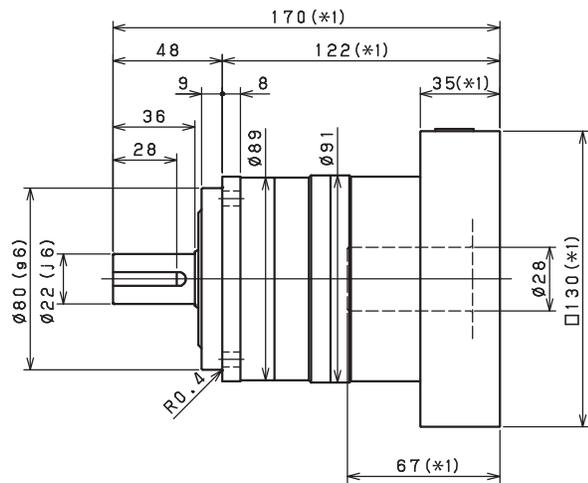
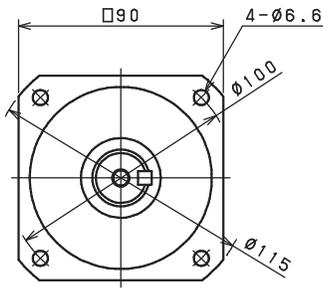
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



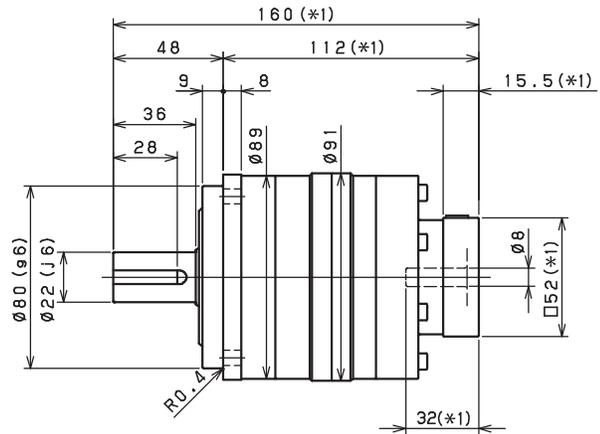
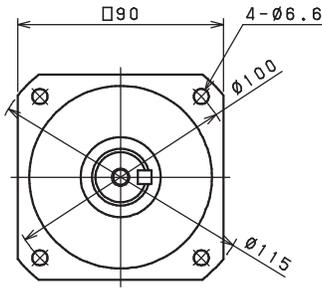
Shaft with key

Smooth shaft

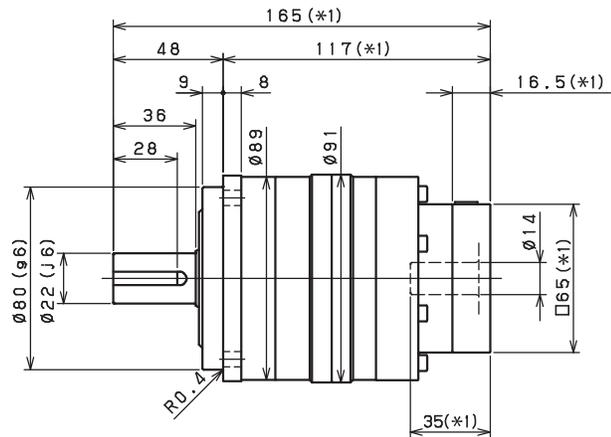
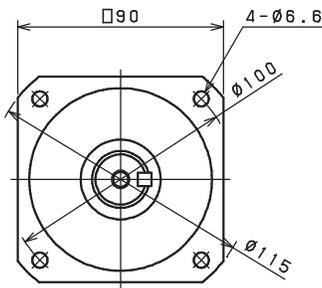
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-090 – 2-Stage Dimensions

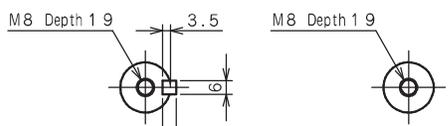
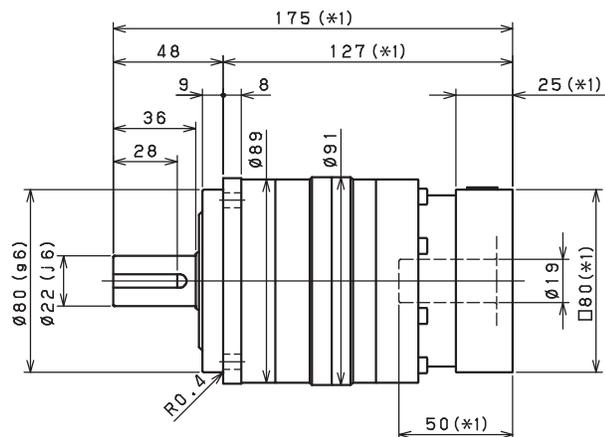
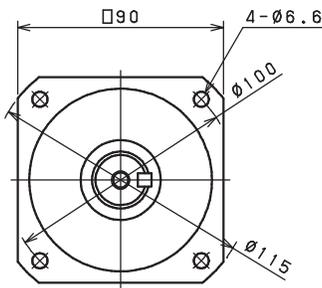
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Shaft with key

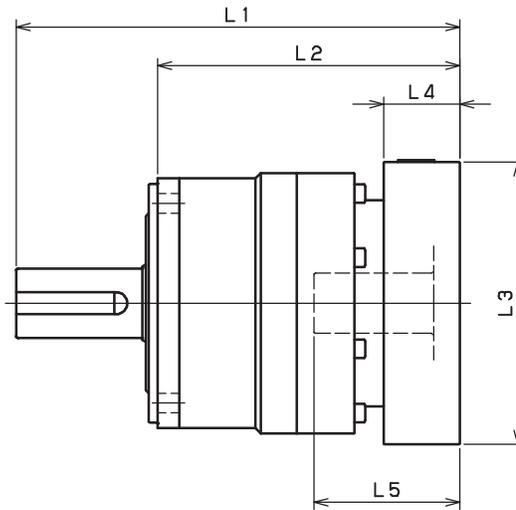
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB-SERIES Inline shaft

VRB-090 – 1-Stage Adapter Dimensions



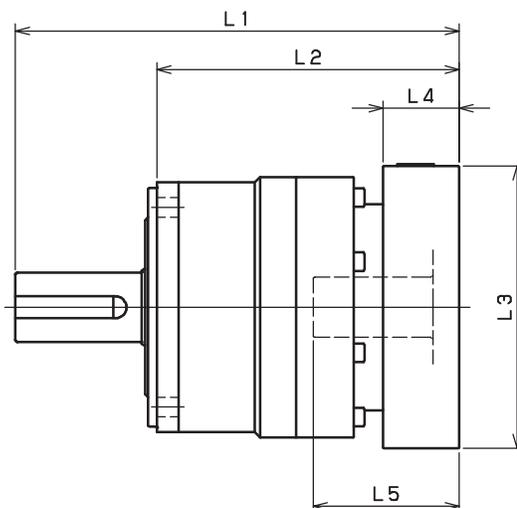
Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-090-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	--	--	--	--	--
	AB·AE·AH·AJ·AK	--	--	--	--	--
	BA·BB·BD·BE	--	--	--	--	--
	BC·BF	--	--	--	--	--
	CA	--	--	--	--	--
VRB-090-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	143	95	□65	16.5	35
	BC·BH·BM	148	100	□65	21.5	40
	BL	153	105	□65	26.5	45
	CA	143	95	□70	16.5	35
	CB	148	100	□70	21.5	40
	DA·DB·DC·DD·DF·DH	143	95	□80	16.5	35
	DE	148	100	□80	21.5	40
	DG	153	105	□80	26.5	45
	EA·EB·EC	143	95	□90	16.5	35
	ED	153	105	□90	26.5	45
	FA	143	95	□100	16.5	35
	GA	143	95	□115	16.5	35
VRB-090-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	153	105	□80	25	50
	DD	163	115	□80	35	60
	DE	158	110	□80	30	55
	EA	158	110	□90	30	55
	EB	153	105	□90	25	50
	EC	163	115	□90	35	60
	FA	153	105	□100	25	50
	FB	163	115	□100	35	60
	GA·GC	158	110	□115	30	55
	GB·GD	153	105	□115	25	50
	HA	153	105	□130	25	50
	HB	168	120	□130	40	65
	HC·HD·HE	158	110	□130	30	55
	FA·FB·FC	170	122	□100	35	67
VRB-090-□-□-28** (Input shaft bore $\leq \phi 28$)	GA·GB·GC·GD·GE·GF·GG	170	122	□115	35	67
	HA·HC·HD	170	122	□130	35	67
	HB	180	132	□130	45	77
	JA·JB·JC	170	122	□150	35	67
	KA·KB	170	122	□180	35	67
	KD	180	132	□180	45	77
	LA	170	122	□200	35	67
	MA	170	122	□220	35	67

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRB-090 – 2-Stage Adapter Dimensions



VRB

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRB-090-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	160	112	□52	15.5	32
	AB·AE·AH·AJ·AK	165	117	□52	20.5	37
	BA·BB·BD·BE	160	112	□60	15.5	32
	BC·BF	165	117	□60	20.5	37
	CA	165	117	□70	20.5	37
VRB-090-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	165	117	□65	16.5	35
	BC·BH·BM	170	122	□65	21.5	40
	BL	175	127	□65	26.5	45
	CA	165	117	□70	16.5	35
	CB	170	122	□70	21.5	40
	DA·DB·DC·DD·DF·DH	165	117	□80	16.5	35
	DE	170	122	□80	21.5	40
	DG	175	127	□80	26.5	45
	EA·EB·EC	165	117	□90	16.5	35
	ED	175	127	□90	26.5	45
	FA	165	117	□100	16.5	35
GA	165	117	□115	16.5	35	
VRB-090-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	175	127	□80	25	50
	DD	185	137	□80	35	60
	DE	180	132	□80	30	55
	EA	180	132	□90	30	55
	EB	175	127	□90	25	50
	EC	185	137	□90	35	60
	FA	175	127	□100	25	50
	FB	185	137	□100	35	60
	GA·GC	180	132	□115	30	55
	GB·GD	175	127	□115	25	50
	HA	175	127	□130	25	50
	HB	190	142	□130	40	65
	HC·HD·HE	180	132	□130	30	55
VRB-090-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	--	--	--	--	--
	GA·GB·GC·GD·GE·GF·GG	--	--	--	--	--
	HA·HC·HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA·JB·JC	--	--	--	--	--
	KA·KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
MA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRB-SERIES Inline shaft

VRB-115 – 1-Stage Specifications

Frame Size	115									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.30							
Permitted Radial Load	[N]	*7	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*8	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	3.300	2.000	1.600	1.300	1.100	1.000	0.980	0.950
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	5.300	4.100	3.600	3.300	3.200	3.100	3.000	3.000
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	71							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8							

VRB-115 – 2-Stage Specifications

Frame Size	115									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.42							
Permitted Radial Load	[N]	*7	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*8	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.430	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.860	0.920	0.830	0.820	0.880	0.740	0.810	0.730
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	71							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.9							

VRB-115 – 2-Stage Specifications

Frame Size	115										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120		
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	225		
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.42								
Permitted Radial Load	[N]	*7	3300	3400	3600	3800	4000	4200	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300								
Maximum Axial Load	[N]	*10	3900								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.370	0.280	0.280	0.280	0.280	0.270	0.270		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.800	0.730	0.730	0.730	0.730	0.730	0.730		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.700	2.700	2.700	2.700	2.700	2.700	2.700		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	71								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	8.9								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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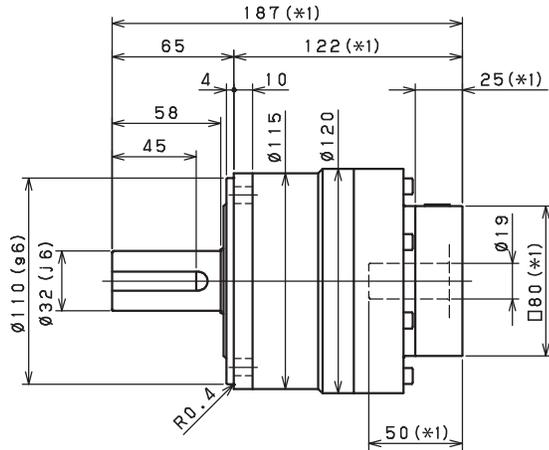
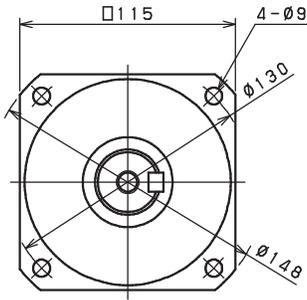


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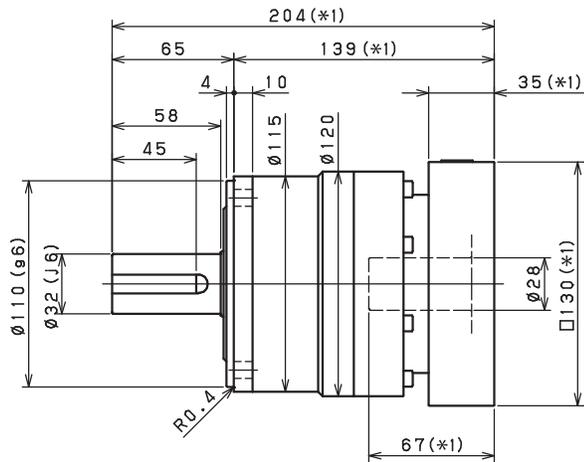
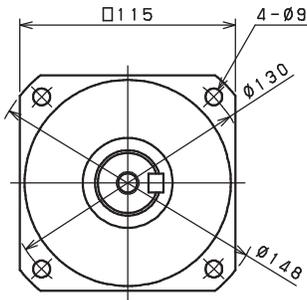
VRB-SERIES Inline shaft

VRB-115 – 1-Stage Dimensions

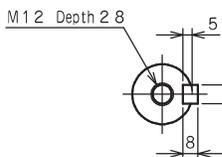
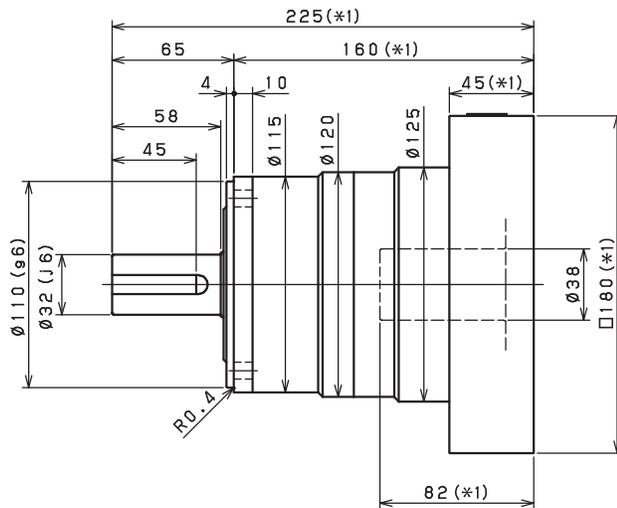
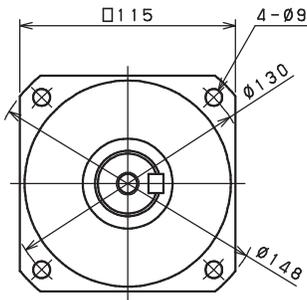
Input shaft bore $\leq \varnothing 19$



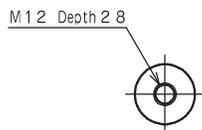
Input shaft bore $\leq \varnothing 28$



Input shaft bore $\leq \varnothing 38$



Shaft with key

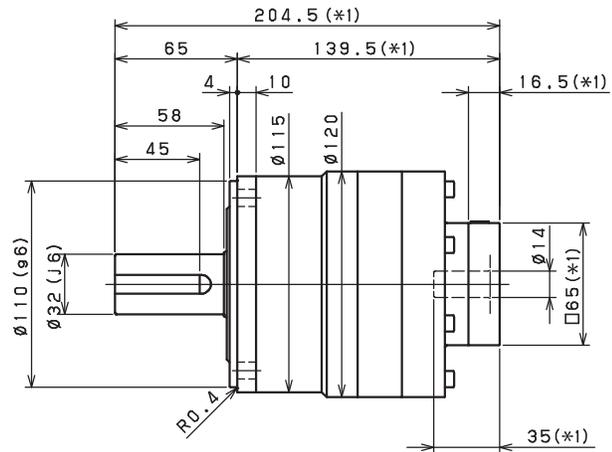
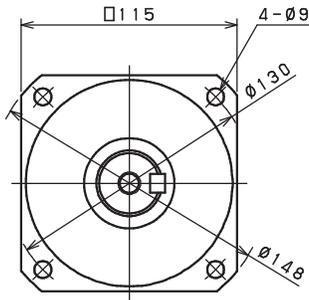


Smooth shaft

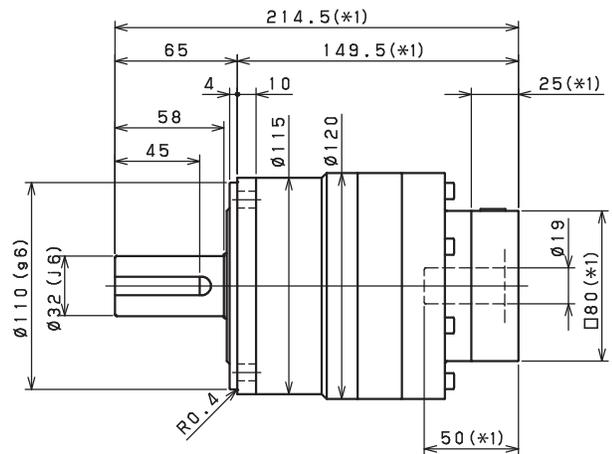
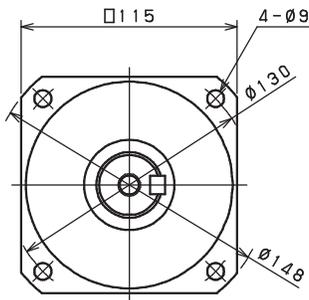
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-115 – 2-Stage Dimensions

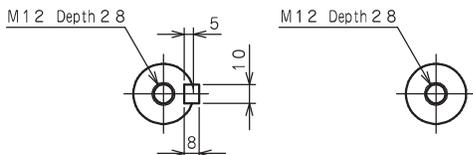
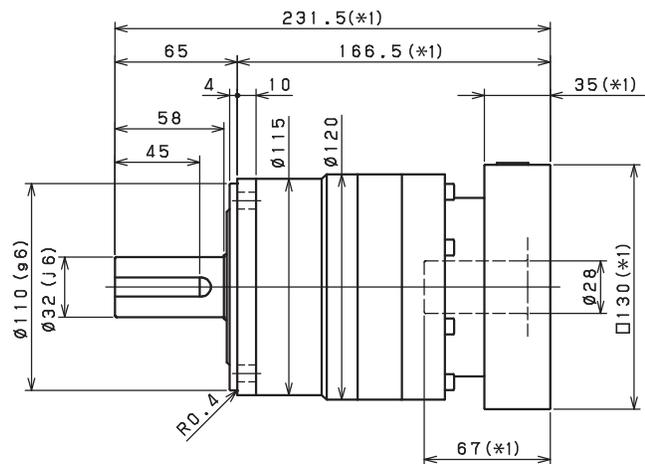
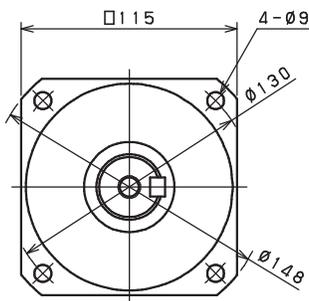
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Shaft with key

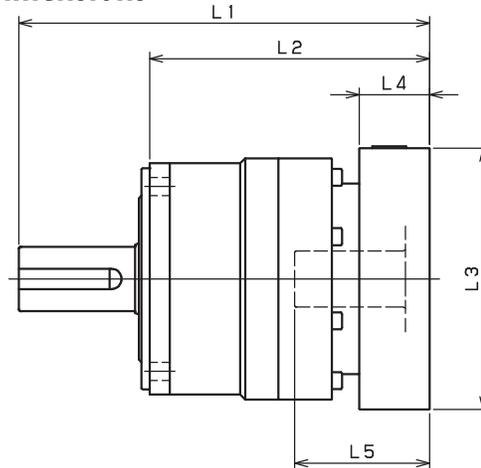
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB-SERIES Inline shaft

VRB-115 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-115-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	--	--	--	--	--
	BC·BH·BM	--	--	--	--	--
	BL	--	--	--	--	--
	CA	--	--	--	--	--
	CB	--	--	--	--	--
	DA·DB·DC·DD·DF·DH	--	--	--	--	--
	DE	--	--	--	--	--
	DG	--	--	--	--	--
	EA·EB·EC	--	--	--	--	--
	ED	--	--	--	--	--
	FA	--	--	--	--	--
GA	--	--	--	--	--	
VRB-115-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	187	122	□80	25	50
	DD	197	132	□80	35	60
	DE	192	127	□80	30	55
	EA	192	127	□90	30	55
	EB	187	122	□90	25	50
	EC	197	132	□90	35	60
	FA	187	122	□100	25	50
	FB	197	132	□100	35	60
	GA·GC	192	127	□115	30	55
	GB·GD	187	122	□115	25	50
	HA	187	122	□130	25	50
	HB	202	137	□130	40	65
	HC·HD·HE	192	127	□130	30	55
VRB-115-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	204	139	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	204	139	□115	35	67
	HA·HC·HD	204	139	□130	35	67
	HB	214	149	□130	45	77
	JA·JB·JC	204	139	□150	35	67
	KA·KB	204	139	□180	35	67
	KD	214	149	□180	45	77
	LA	204	139	□200	35	67
VRB-115-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	204	139	□220	35	67
	HA	225	160	□130	45	82
	HB	220	155	□130	40	77
	JA	225	160	□150	45	82
	KA·KB·KC	225	160	□180	45	82
	LA	225	160	□200	45	82
	LB	235	170	□200	55	92
MA·MB	225	160	□220	45	82	
NA	225	160	□250	45	82	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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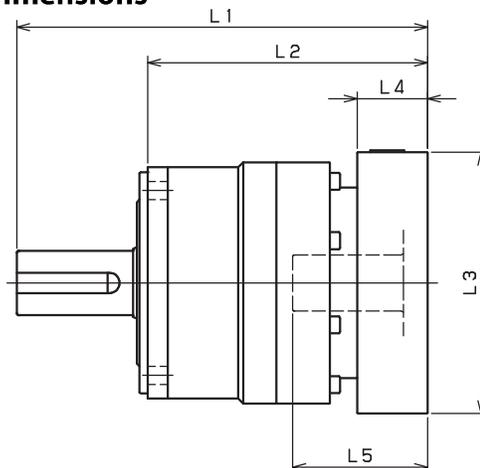
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VRB-115 – 2-Stage Adapter Dimensions



VRB

Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-115-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	204.5	139.5	□65	16.5	35
	BC·BH·BM	209.5	144.5	□65	21.5	40
	BL	214.5	149.5	□65	26.5	45
	CA	204.5	139.5	□70	16.5	35
	CB	209.5	144.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	204.5	139.5	□80	16.5	35
	DE	209.5	144.5	□80	21.5	40
	DG	214.5	149.5	□80	26.5	45
	EA·EB·EC	204.5	139.5	□90	16.5	35
	ED	214.5	149.5	□90	26.5	45
	FA	204.5	139.5	□100	16.5	35
	GA	204.5	139.5	□115	16.5	35
	VRB-115-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	214.5	149.5	□80	25
DD		224.5	159.5	□80	35	60
DE		219.5	154.5	□80	30	55
EA		219.5	154.5	□90	30	55
EB		214.5	149.5	□90	25	50
EC		224.5	159.5	□90	35	60
FA		214.5	149.5	□100	25	50
FB		224.5	159.5	□100	35	60
GA·GC		219.5	154.5	□115	30	55
GB·GD		214.5	149.5	□115	25	50
HA		214.5	149.5	□130	25	50
HB		229.5	164.5	□130	40	65
HC·HD·HE		219.5	154.5	□130	30	55
VRB-115-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	231.5	166.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	231.5	166.5	□115	35	67
	HA·HC·HD	231.5	166.5	□130	35	67
	HB	241.5	176.5	□130	45	77
	JA·JB·JC	231.5	166.5	□150	35	67
	KA·KB	231.5	166.5	□180	35	67
	KD	241.5	176.5	□180	45	77
	LA	231.5	166.5	□200	35	67
VRB-115-□-□-38** (Input shaft bore ≤ φ 38)	MA	231.5	166.5	□220	35	67
	HA	--	--	--	--	--
	HB	--	--	--	--	--
	JA	--	--	--	--	--
	KA·KB·KC	--	--	--	--	--
	LA	--	--	--	--	--
	LB	--	--	--	--	--
MA·MB	--	--	--	--	--	
NA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRB-SERIES Inline shaft

VRB-140 – 1-Stage Specifications

Frame Size	140									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	12.000	7.500	5.800	4.900	4.100	3.800	3.600	3.500
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	20.000	15.000	14.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	34.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	16							

VRB-140 – 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	17							

VRB-140 – 2-Stage Specifications

Frame Size	140										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240		
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470		
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	0.56								
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100		
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200		
Maximum Radial Load	[N]	*9	9100								
Maximum Axial Load	[N]	*10	8200								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	17								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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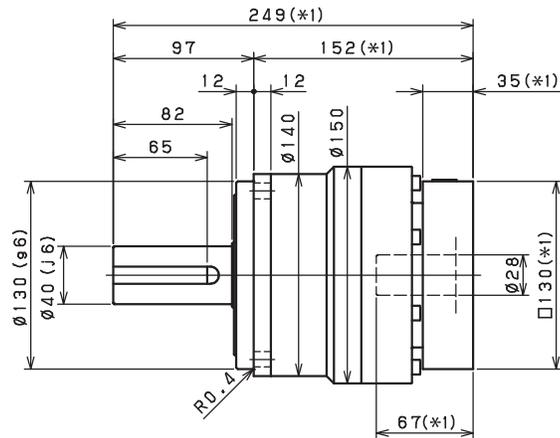
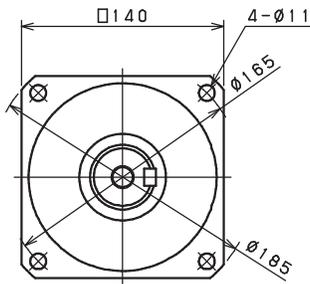


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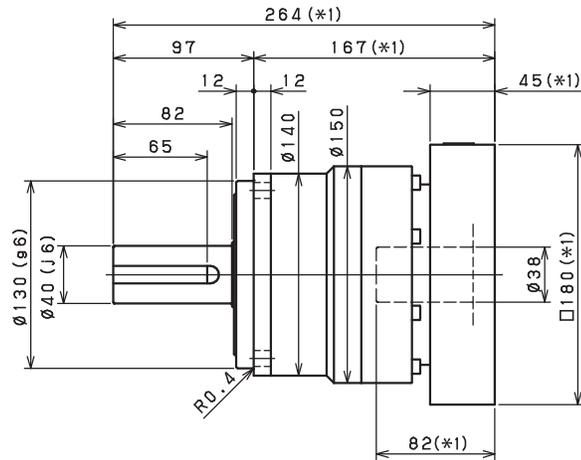
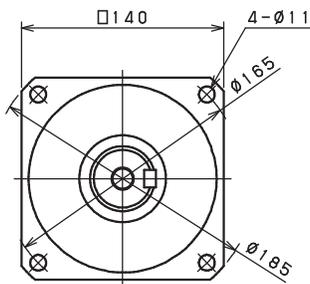
VRB-SERIES Inline shaft

VRB-140 – 1-Stage Dimensions

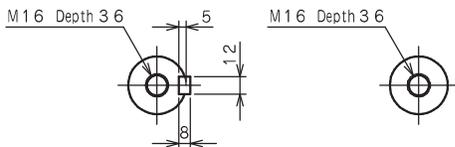
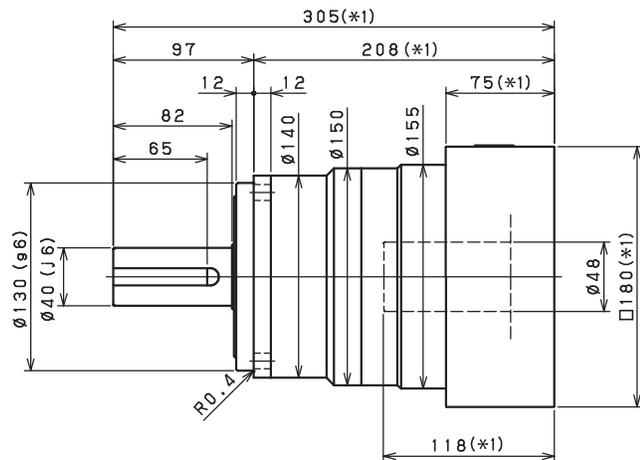
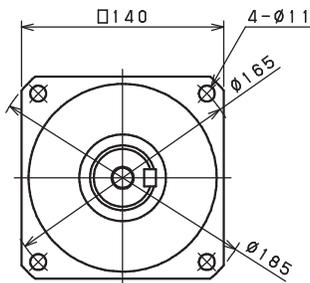
Input shaft bore $\cong \varnothing 28$



Input shaft bore $\cong \varnothing 38$



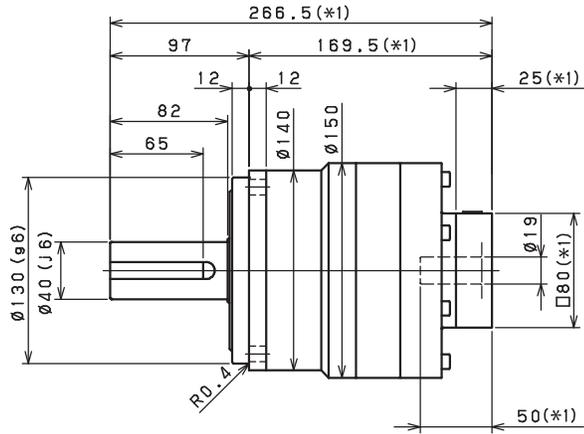
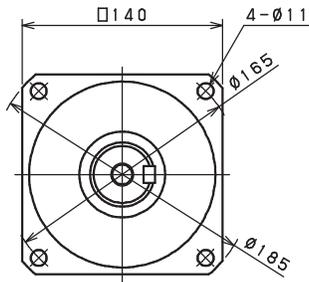
Input shaft bore $\cong \varnothing 48$



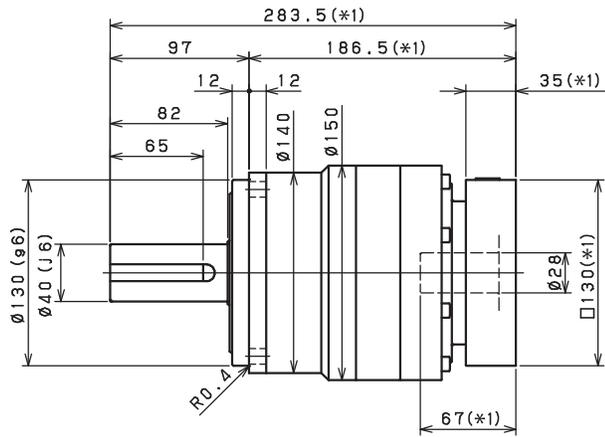
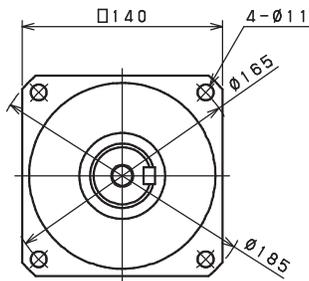
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-140 – 2-Stage Dimensions

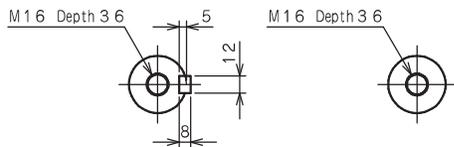
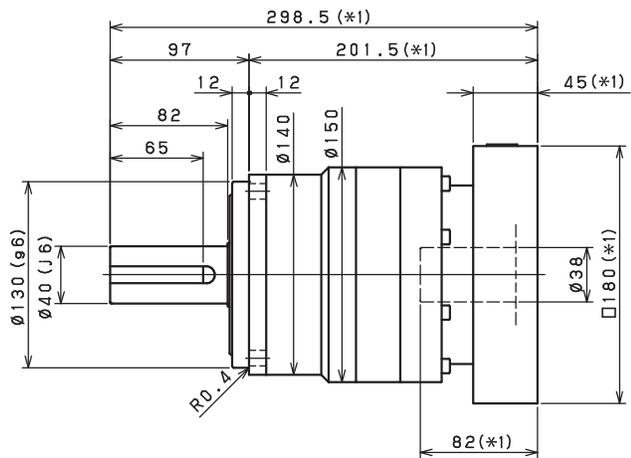
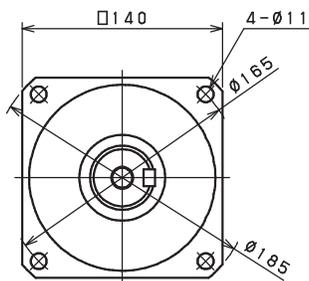
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Shaft with key

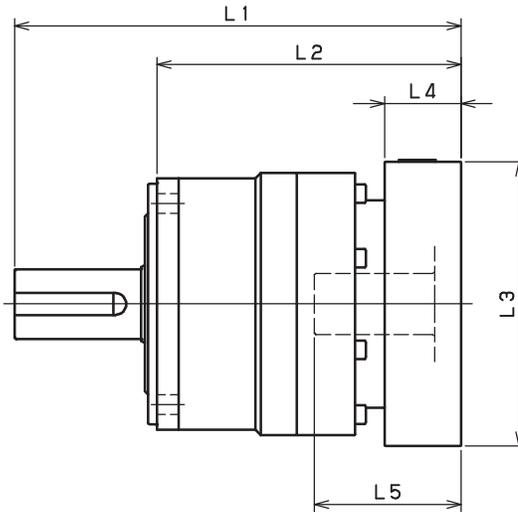
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRB-SERIES Inline shaft

VRB-140 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-140-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA·GC	--	--	--	--	--
	GB·GD	--	--	--	--	--
	HA	--	--	--	--	--
	HB	--	--	--	--	--
HC·HD·HE	--	--	--	--	--	
VRB-140-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	249	152	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	249	152	□115	35	67
	HA·HC·HD	249	152	□130	35	67
	HB	259	162	□130	45	77
	JA·JB·JC	249	152	□150	35	67
	KA·KB	249	152	□180	35	67
	KD	259	162	□180	45	77
	LA	249	152	□200	35	67
VRB-140-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	249	152	□220	35	67
	HA	264	167	□130	45	82
	HB	259	162	□130	40	77
	JA	264	167	□150	45	82
	KA·KB·KC	264	167	□180	45	82
	LA	264	167	□200	45	82
	LB	274	177	□200	55	92
	MA·MB	264	167	□220	45	82
VRB-140-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	264	167	□250	45	82
	KB·KC	285	188	□180	55	98
	KA	305	208	□180	75	118
	LA	285	188	□200	55	98
	MA	285	188	□220	55	98
	MB	305	208	□220	75	118
VRB-140-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	305	208	□250	75	118
	PA	305	208	□280	75	118

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft.

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For an explanation on the Adapter Flange Code, please turn to page 300

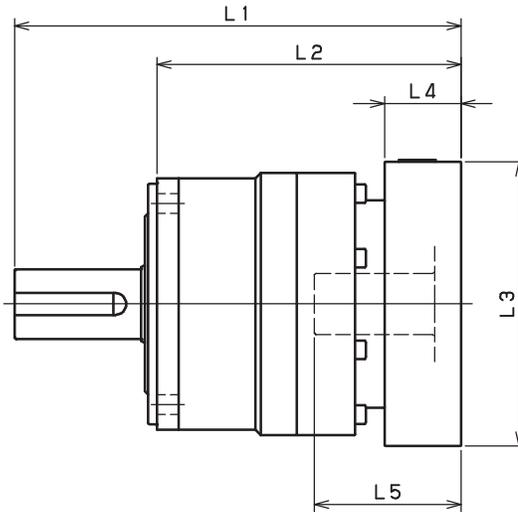
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VRB-140 – 2-Stage Adapter Dimensions



VRB

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRB-140-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	266.5	169.5	□ 80	25	50
	DD	276.5	179.5	□ 80	35	60
	DE	271.5	174.5	□ 80	30	55
	EA	271.5	174.5	□ 90	30	55
	EB	266.5	169.5	□ 90	25	50
	EC	276.5	179.5	□ 90	35	60
	FA	266.5	169.5	□ 100	25	50
	FB	276.5	179.5	□ 100	35	60
	GA·GC	271.5	174.5	□ 115	30	55
	GB·GD	266.5	169.5	□ 115	25	50
	HA	266.5	169.5	□ 130	25	50
	HB	281.5	184.5	□ 130	40	65
	HC·HD·HE	271.5	174.5	□ 130	30	55
	FA·FB·FC	283.5	186.5	□ 100	35	67
VRB-140-□-□-28** (Input shaft bore ≤ φ 28)	GA·GB·GC·GD·GE·GF·GG	283.5	186.5	□ 115	35	67
	HA·HC·HD	283.5	186.5	□ 130	35	67
	HB	293.5	196.5	□ 130	45	77
	JA·JB·JC	283.5	186.5	□ 150	35	67
	KA·KB	283.5	186.5	□ 180	35	67
	KD	293.5	196.5	□ 180	45	77
	LA	283.5	186.5	□ 200	35	67
	MA	283.5	186.5	□ 220	35	67
VRB-140-□-□-38** (Input shaft bore ≤ φ 38)	HA	298.5	201.5	□ 130	45	82
	HB	293.5	196.5	□ 130	40	77
	JA	298.5	201.5	□ 150	45	82
	KA·KB·KC	298.5	201.5	□ 180	45	82
	LA	298.5	201.5	□ 200	45	82
	LB	308.5	211.5	□ 200	55	92
	MA·MB	298.5	201.5	□ 220	45	82
	NA	298.5	201.5	□ 250	45	82
VRB-140-□-□-48** (Input shaft bore ≤ φ 48)	KB·KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-
	NA	-	-	-	-	-
PA	-	-	-	-	-	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft.

VRB-SERIES Inline shaft

VRB-180 – 1-Stage Specifications

Frame Size	180									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	5600	6200	6700	7100	7400	7800	8100	8400
Permitted Axial Load	[N]	*8	4300	4900	5400	5800	6300	6600	7000	7300
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	44.000	28.000	22.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	66.000	50.000	44.000	41.000	38.000	37.000	36.000	36.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	130.000	110.000	100.000	100.000	99.000	97.000	97.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	36							

VRB-180 – 2-Stage Specifications

Frame Size	180									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	9600	9800	11000	11000	12000	12000	13000	13000
Permitted Axial Load	[N]	*8	8700	8900	9900	11000	11000	12000	13000	13000
Maximum Radial Load	[N]	*9	15000							
Maximum Axial Load	[N]	*10	14000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	4.700	5.400	4.400	4.200	4.900	3.200	4.100	3.200
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	37							

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VRB-180 – 2-Stage Specifications

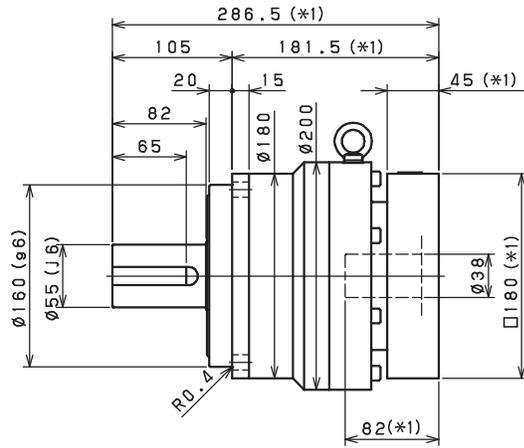
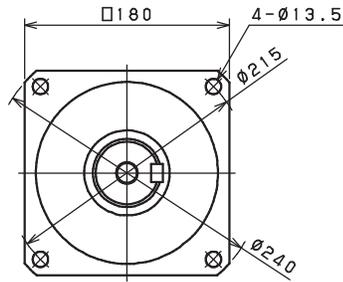
Frame Size	180										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500		
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970		
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200		
Nominal Input Speed	[rpm]	*4	1500								
Maximum Input Speed	[rpm]	*5	3000								
No Load Running Torque	[Nm]	*6	1.39								
Permitted Radial Load	[N]	*7	14000	14000	15000	15000	15000	15000	15000		
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000		
Maximum Radial Load	[N]	*9	15000								
Maximum Axial Load	[N]	*10	14000								
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100		
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000		
Moment of Inertia (≤ Ø 48)	[kgcm ²]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia (≤ Ø 65)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	37								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

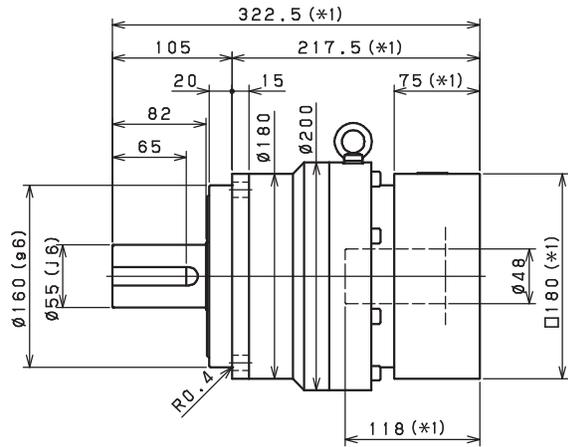
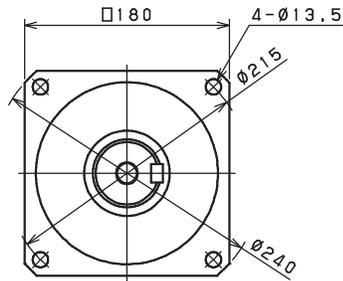
VRB-SERIES Inline shaft

VRB-180 – 1-Stage Dimensions

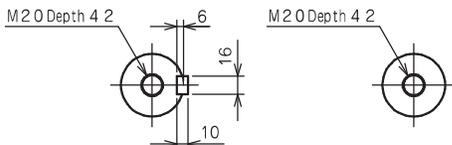
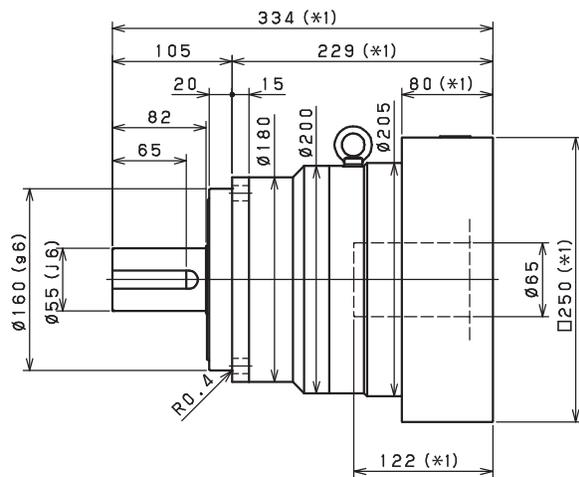
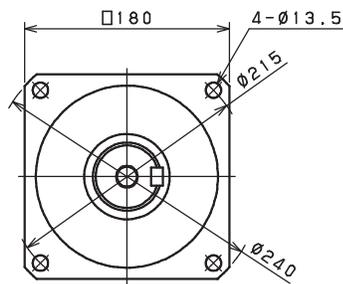
Input shaft bore $\cong \varnothing 38$



Input shaft bore $\cong \varnothing 48$



Input shaft bore $\cong \varnothing 65$



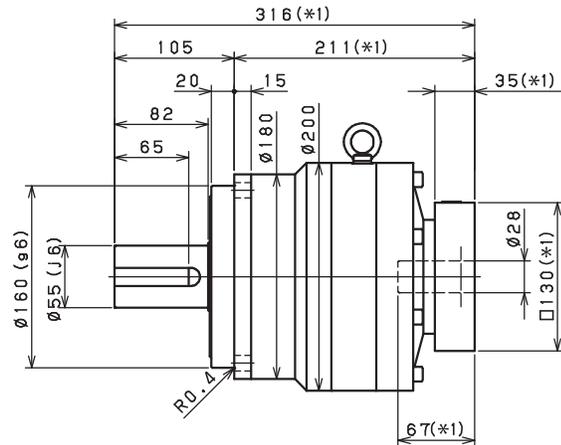
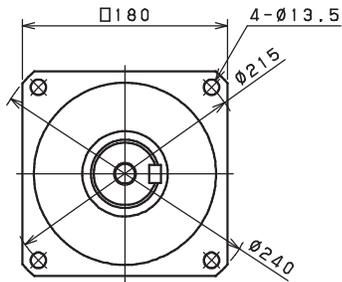
Shaft with key

Smooth shaft

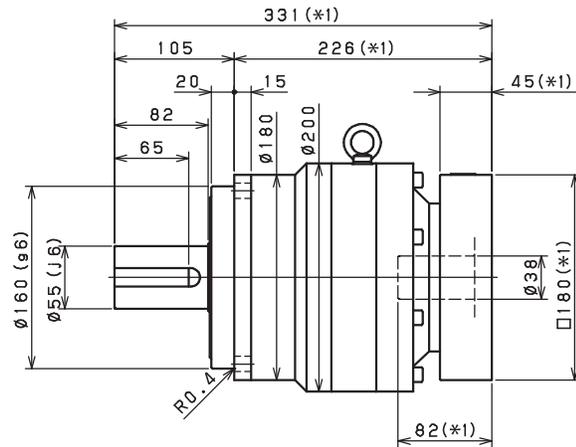
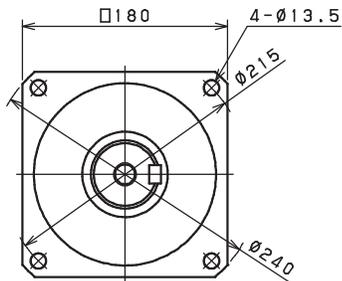
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-180 – 2-Stage Dimensions

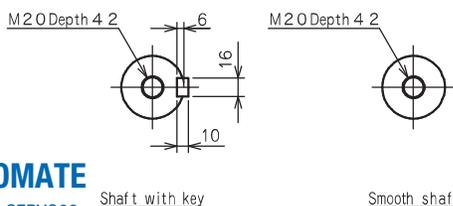
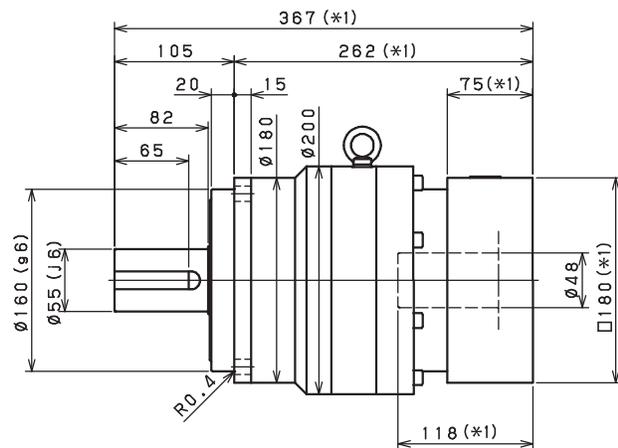
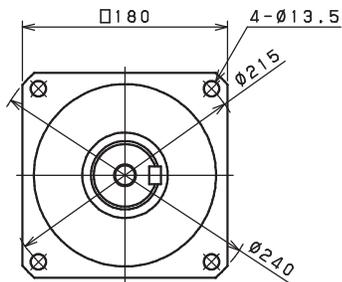
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



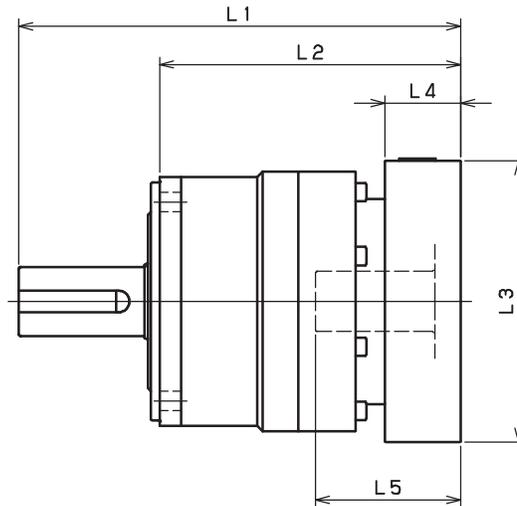
Input shaft bore $\leq \phi 48$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRB-SERIES Inline shaft

VRB-180 – 1-Stage Adapter Dimensions



Model Number	**Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-180-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	--	--	--	--	--
	GA·GB·GC·GD·GE·GF·GG	--	--	--	--	--
	HA·HC·HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA·JB·JC	--	--	--	--	--
	KA·KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
VRB-180-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	--	--	--	--	--
	HA	286.5	181.5	□130	45	82
	HB	281.5	176.5	□130	40	77
	JA	286.5	181.5	□150	45	82
	KA·KB·KC	286.5	181.5	□180	45	82
	LA	286.5	181.5	□200	45	82
	LB	296.5	191.5	□200	55	92
	MA·MB	286.5	181.5	□220	45	82
VRB-180-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	286.5	181.5	□250	45	82
	KB·KC	302.5	197.5	□180	55	98
	KA	322.5	217.5	□180	75	118
	LA	302.5	197.5	□200	55	98
	MA	302.5	197.5	□220	55	98
	MB	322.5	217.5	□220	75	118
	NA	322.5	217.5	□250	75	118
	PA	322.5	217.5	□280	75	118
VRB-180-□-□-65** (Input shaft bore $\leq \phi 65$)	MA·MB·MC·MD	334	229	□220	80	122
	NA	334	229	□250	80	122
	PA	354	249	□280	100	142
	PB	364	259	□280	110	152
	QA	354	249	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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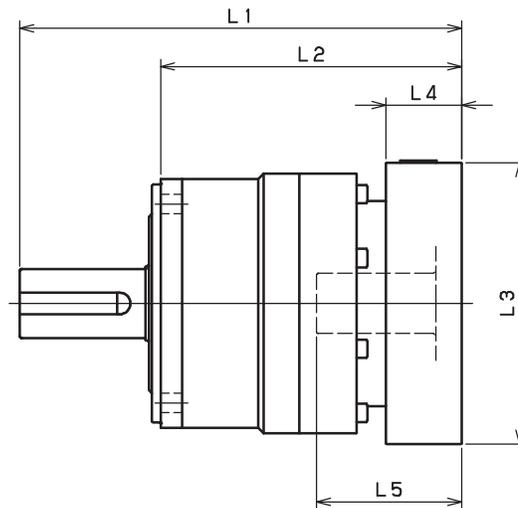
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VRB-180 – 2-Stage Adapter Dimensions



VRB

Model Number	**Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRB-180-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	316	211	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	316	211	□115	35	67
	HA·HC·HD	316	211	□130	35	67
	HB	326	221	□130	45	77
	JA·JB·JC	316	211	□150	35	67
	KA·KB	316	211	□180	35	67
	KD	326	221	□180	45	77
	LA	316	211	□200	35	67
VRB-180-□-□-38** (Input shaft bore ≤ φ 38)	MA	316	211	□220	35	67
	HA	331	226	□130	45	82
	HB	326	221	□130	40	77
	JA	331	226	□150	45	82
	KA·KB·KC	331	226	□180	45	82
	LA	331	226	□200	45	82
	LB	341	236	□200	55	92
	MA·MB	331	226	□220	45	82
VRB-180-□-□-48** (Input shaft bore ≤ φ 48)	NA	331	226	□250	45	82
	KB·KC	347	242	□180	55	98
	KA	367	262	□180	75	118
	LA	347	242	□200	55	98
	MA	347	242	□220	55	98
	MB	367	262	□220	75	118
VRB-180-□-□-65** (Input shaft bore ≤ φ 65)	NA	367	262	□250	75	118
	PA	367	262	□280	75	118
	MA·MB·MC·MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
	QA	--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRB-SERIES Inline shaft

VRB-220 – 1-Stage Specifications

Frame Size	220											
Stage	1-Stage											
Ratio	Unit	Note	3	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000		
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600		
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000		
Nominal Input Speed	[rpm]	*4	1000									
Maximum Input Speed	[rpm]	*5	2000									
No Load Running Torque	[Nm]	*6	2.92									
Permitted Radial Load	[N]	*7	5800	6400	6900	7300	7700	8000	8400	8700		
Permitted Axial Load	[N]	*8	6400	7200	7900	8600	9200	9700	10000	11000		
Maximum Radial Load	[N]	*9	15000									
Maximum Axial Load	[N]	*10	14000									
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	90.000	62.000	52.000	47.000	42.000	40.000	39.000	38.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000		
Efficiency	[%]	*11	97									
Torsional Rigidity	[Nm/arc-min]	*12	400									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	61									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	53									

VRB-220 – 2-Stage Specifications

Frame Size	220											
Stage	2-Stage											
Ratio	Unit	Note	15	16	20	25	28	30	35	40		
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500		
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300		
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000		
Nominal Input Speed	[rpm]	*4	1000									
Maximum Input Speed	[rpm]	*5	2000									
No Load Running Torque	[Nm]	*6	1.14									
Permitted Radial Load	[N]	*7	9900	10000	11000	12000	12000	13000	13000	14000		
Permitted Axial Load	[N]	*8	13000	13000	14000	14000	14000	14000	14000	14000		
Maximum Radial Load	[N]	*9	15000									
Maximum Axial Load	[N]	*10	14000									
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	36.000	37.000	35.000	35.000	36.000	34.000	35.000	33.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92									
Torsional Rigidity	[Nm/arc-min]	*12	400									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	61									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	54									

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VRB-220 – 2-Stage Specifications

Frame Size	220										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000		
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200		
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.14								
Permitted Radial Load	[N]	*7	14000	15000	15000	15000	15000	15000	15000		
Permitted Axial Load	[N]	*8	14000	14000	14000	14000	14000	14000	14000		
Maximum Radial Load	[N]	*9	15000								
Maximum Axial Load	[N]	*10	14000								
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	400								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	61								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	54								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRB060/090/115; 2,000 rpm for VRB140; 1,500 rpm for VRB180; 1,000 rpm for VRB220
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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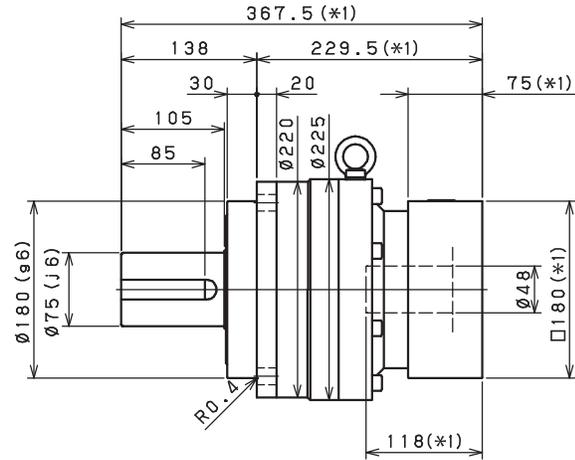
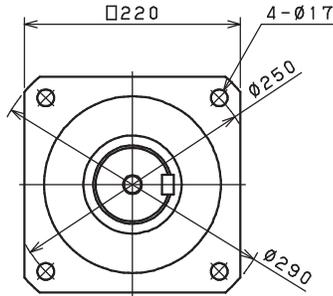


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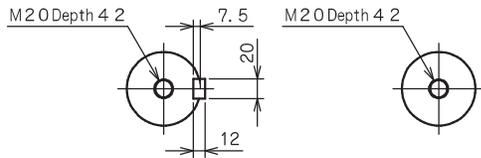
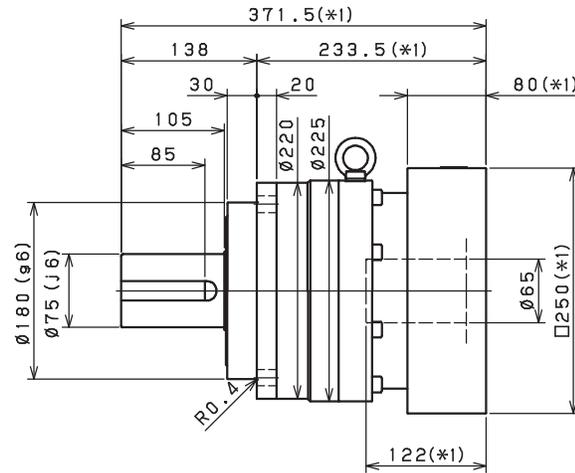
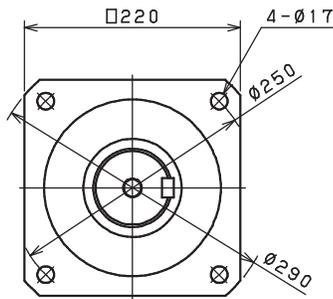
VRB-SERIES Inline shaft

VRB-220 – 1-Stage Dimensions

Input shaft bore $\leq \phi 48$



Input shaft bore $\leq \phi 65$



Shaft with key

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

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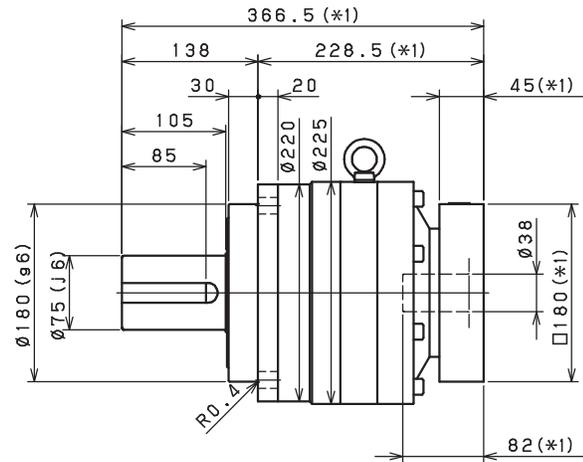
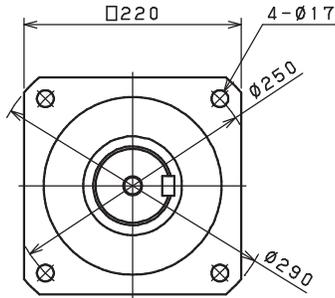
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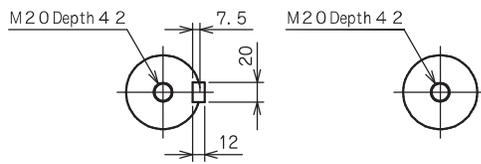
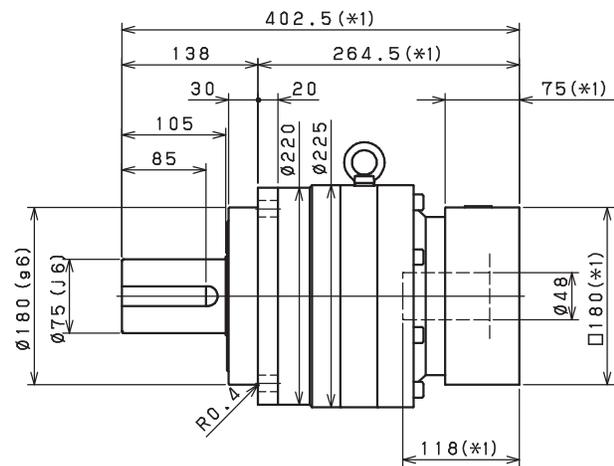
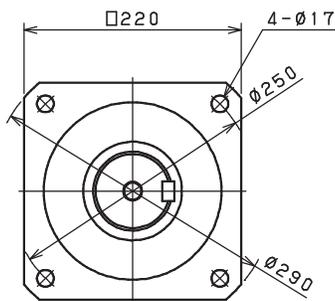
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VRB-220 – 2-Stage Dimensions

Input shaft bore $\leq \varnothing 38$



Input shaft bore $\leq \varnothing 48$



Shaft with key

Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

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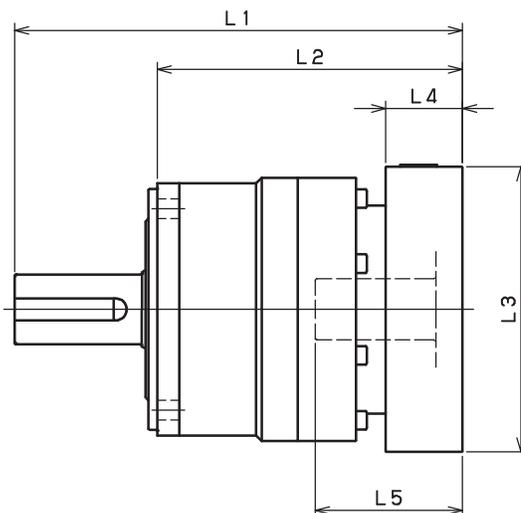
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VRB-SERIES Inline shaft

VRB-220 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRB-220-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	--	--	--	--	--
	HB	--	--	--	--	--
	JA	--	--	--	--	--
	KA • KB • KC	--	--	--	--	--
	LA	--	--	--	--	--
	LB	--	--	--	--	--
	MA • MB	--	--	--	--	--
VRB-220-□-□-48** (Input shaft bore $\leq \phi 48$)	KB • KC	347.5	209.5	□180	55	98
	KA	367.5	229.5	□180	75	118
	LA	347.5	209.5	□200	55	98
	MA	347.5	209.5	□220	55	98
	MB	367.5	229.5	□220	75	118
	NA	367.5	229.5	□250	75	118
VRB-220-□-□-65** (Input shaft bore $\leq \phi 65$)	MA • MB • MC • MD	371.5	233.5	□220	80	122
	NA	371.5	233.5	□250	80	122
	PA	391.5	253.5	□280	100	142
	PB	401.5	263.5	□280	110	152
	QA	391.5	253.5	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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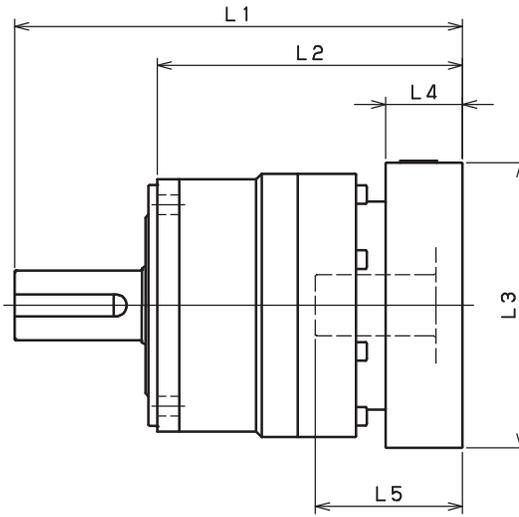
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VRB-220 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRB-220-□-□-38** (Input shaft bore ≤ φ 38)	HA	366.5	228.5	□130	45	82
	HB	361.5	223.5	□130	40	77
	JA	366.5	228.5	□150	45	82
	KA·KB·KC	366.5	228.5	□180	45	82
	LA	366.5	228.5	□200	45	82
	LB	376.5	238.5	□200	55	92
	MA·MB	366.5	228.5	□220	45	82
VRB-220-□-□-48** (Input shaft bore ≤ φ 48)	NA	366.5	228.5	□250	45	82
	KB·KC	382.5	244.5	□180	55	98
	KA	402.5	264.5	□180	75	118
	LA	382.5	244.5	□200	55	98
	MA	382.5	244.5	□220	55	98
	MB	402.5	264.5	□220	75	118
	NA	402.5	264.5	□250	75	118
VRB-220-□-□-65** (Input shaft bore ≤ φ 65)	PA	402.5	264.5	□280	75	118
	MA·MB·MC·MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
QA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRS-SERIES

This planetary series has exceptional load capabilities, and is an ideal selection for higher speed and continuous duty applications. The tapered roller bearings at the output of the reducer allow the VRS reducer to handle larger radial and thrust loads. This internal design provides an extremely smooth running and quiet reducer even with challenging static forces.

The VRS series is a premier inline speed reducer with a maximum 3 arc-min backlash rating and an output torque peaking at 3,700 Nm. The VRS series is commonly utilized in applications such as higher speed packaging and converting equipment, printing machinery and any servo application requiring very low backlash in a more demanding environment.

Optimal																			10
																			9
																			8
Exceptional																			7
																			6
																			5
																			4
Suitable																			3
																			2
																			1
	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy															

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VRS-SERIES

- Industry Standard Mounting Dimensions
- Large variety of frame sizes and ratios
- Thru-bolt Mounting Style
- Best-In-Class Backlash (≤ 3 arc-min)
- Impressive Radial and Axial Load Ratings
- Ships in 48 hours
- Assembled in the USA

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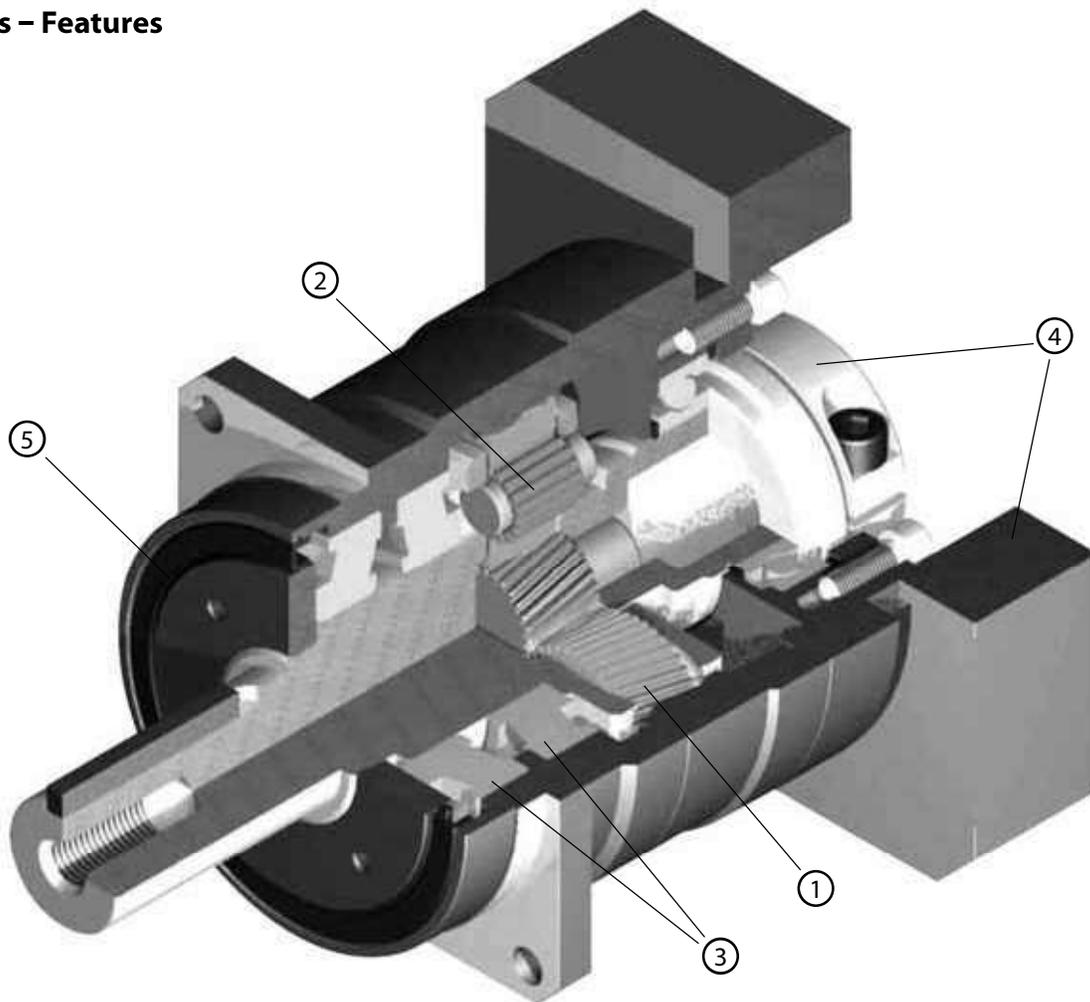
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VRS-SERIES Inline shaft

VRS-Series – Features



- ① High precision: Standard backlash is 3 arc-min, ideal for higher levels of positional accuracy
- ② High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ③ High load capacity: Taper roller bearings were added to the output section to increase radial and axial load ratings
- ④ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ⑤ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑥ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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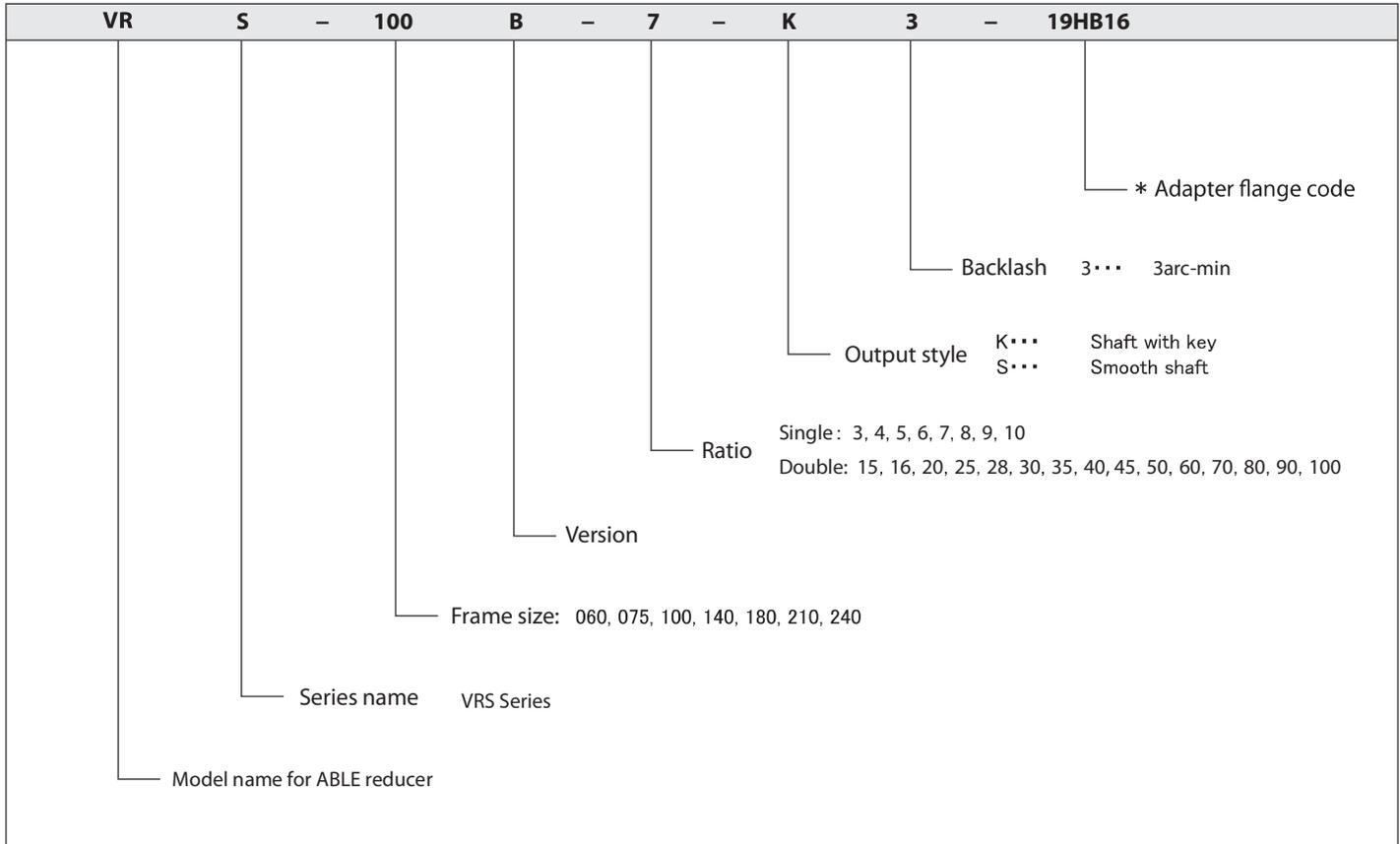
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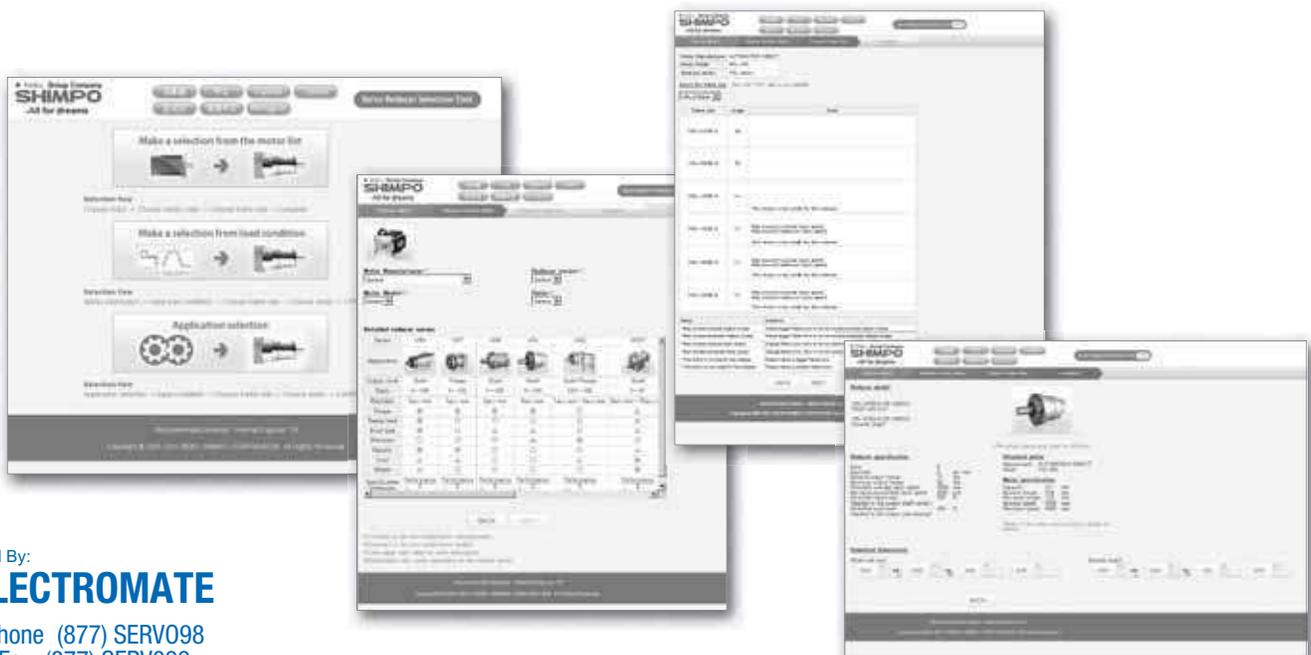
VRS-Series – Model Number



VRS

*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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VRS-SERIES Inline shaft

VRS-o6o – 1-Stage Specifications

Frame Size	060									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	27	18	18
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	50	35	35
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	100	80	80
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.15							
Permitted Radial Load	[N]	*7	1700	1900	2000	2100	2200	2300	2400	2400
Permitted Axial Load	[N]	*8	2300	2500	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.150	0.100	0.080	0.070	0.064	0.060	0.058	0.056
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.230	0.180	0.160	0.150	0.140	0.140	0.140	0.140
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.440	0.390	0.370	0.360	0.350	0.350	0.350	0.340
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.6							

VRS-o6o – 2-Stage Specifications

Frame Size	060									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	27	27
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	50	50
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	100	100
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.04							
Permitted Radial Load	[N]	*7	2800	2800	3000	3000	3000	3000	3000	3000
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.055	0.057	0.054	0.053	0.055	0.049	0.053	0.049
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.140	0.140	0.130	0.130	0.140	0.130	0.130	0.130
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	66							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.8							

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VRS-060 – 2-Stage Specifications

Frame Size	060										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	18	27	27	27	27	18	18		
Maximum Acceleration Torque	[Nm]	*2	35	50	50	50	50	35	35		
Emergency Stop Torque	[Nm]	*3	80	100	100	100	100	80	80		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.04								
Permitted Radial Load	[N]	*7	3000	3000	3000	3000	3000	3000	3000		
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700		
Maximum Radial Load	[N]	*9	3000								
Maximum Axial Load	[N]	*10	2700								
Moment of Inertia (≤Ø 8)	[kgcm ²]	--	0.053	0.049	0.049	0.049	0.049	0.049	0.049		
Moment of Inertia (≤ Ø 14)	[kgcm ²]	--	0.130	0.130	0.130	0.130	0.130	0.130	0.130		
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	66								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.8								

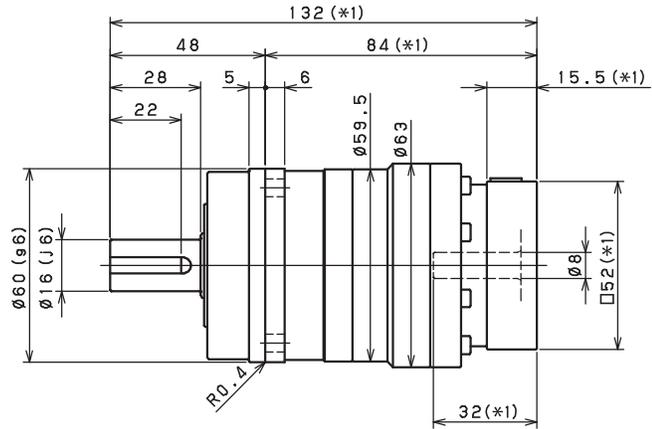
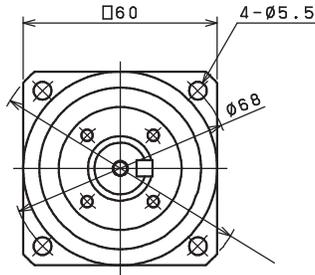
- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

VRS

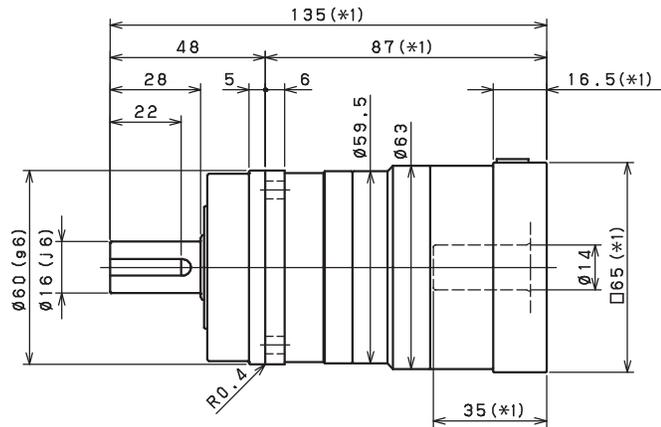
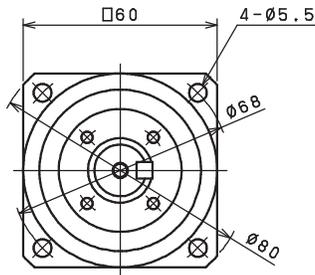
VRS-SERIES Inline shaft

VRS-o6o – 1-Stage Dimensions

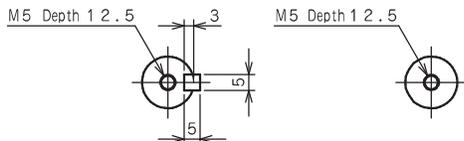
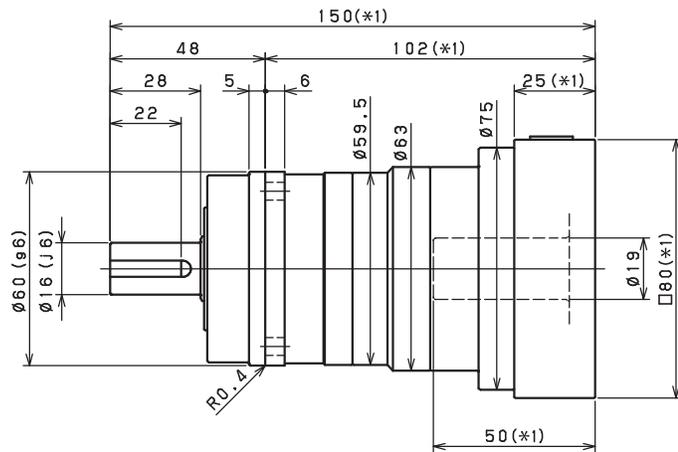
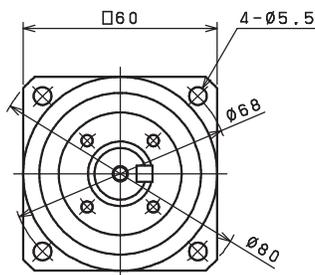
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

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Shaft with key

Smooth shaft

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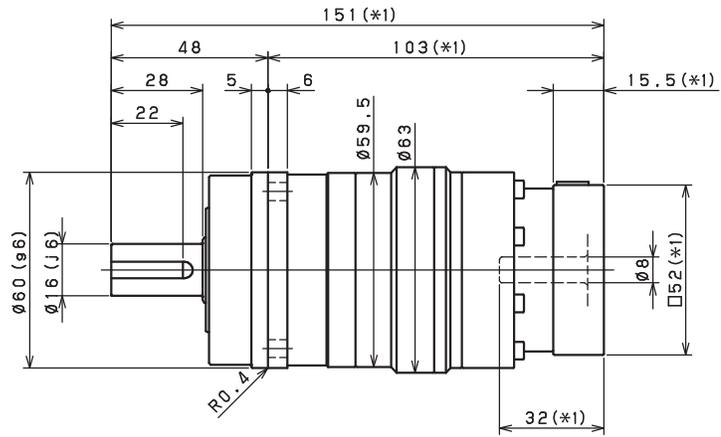
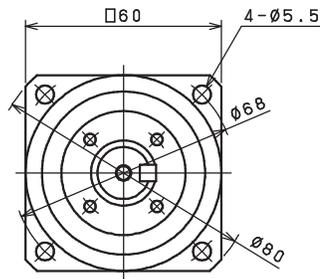
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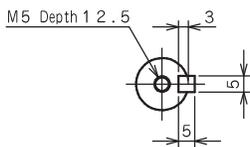
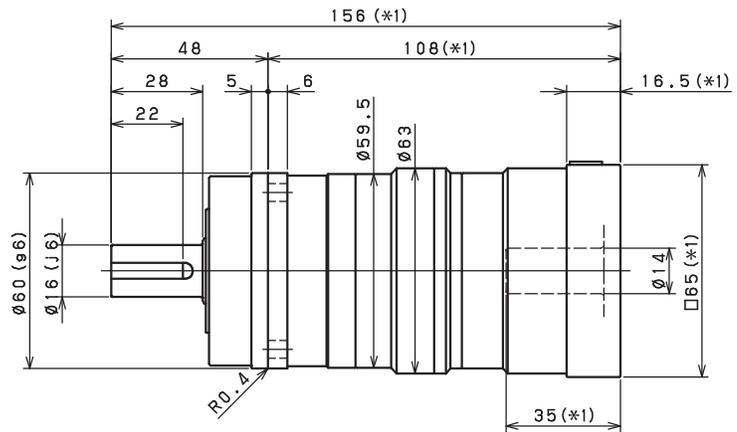
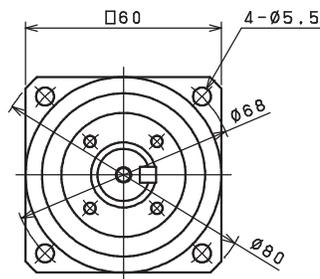
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VRS-o6o – 2-Stage Dimensions

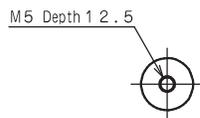
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Shaft with key



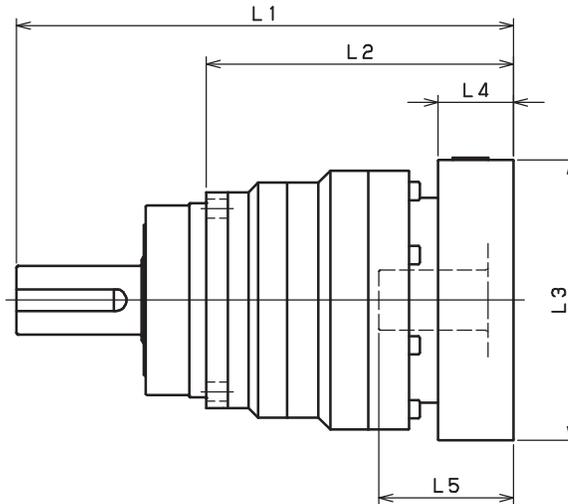
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS-SERIES Inline shaft

VRS-o6o – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-060B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	132	84	□52	15.5	32
	AB·AE·AH·AJ·AK	137	89	□52	20.5	37
	BA·BB·BD·BE	132	84	□60	15.5	32
	BC·BF	137	89	□60	20.5	37
	CA	137	89	□70	20.5	37
VRS-060B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	135	87	□65	16.5	35
	BC·BH·BM	140	92	□65	21.5	40
	BL	145	97	□65	26.5	45
	CA	135	87	□70	16.5	35
	CB	140	92	□70	21.5	40
	DA·DB·DC·DD·DF·DH	135	87	□80	16.5	35
	DE	140	92	□80	21.5	40
	DG	145	97	□80	26.5	45
	EA·EB·EC	135	87	□90	16.5	35
	ED	145	97	□90	26.5	45
	FA	135	87	□100	16.5	35
	GA	135	87	□115	16.5	35
VRS-060B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	150	102	□80	25	50
	DD	160	112	□80	35	60
	DE	155	107	□80	30	55
	EA	155	107	□90	30	55
	EB	150	102	□90	25	50
	EC	160	112	□90	35	60
	FA	150	102	□100	25	50
	FB	160	112	□100	35	60
	GA·GC	155	107	□115	30	55
	GB·GD	150	102	□115	25	50
	HA	150	102	□130	25	50
	HB	165	117	□130	40	65
HC·HD·HE	155	107	□130	30	55	

*1) Single reduction : 1/3~1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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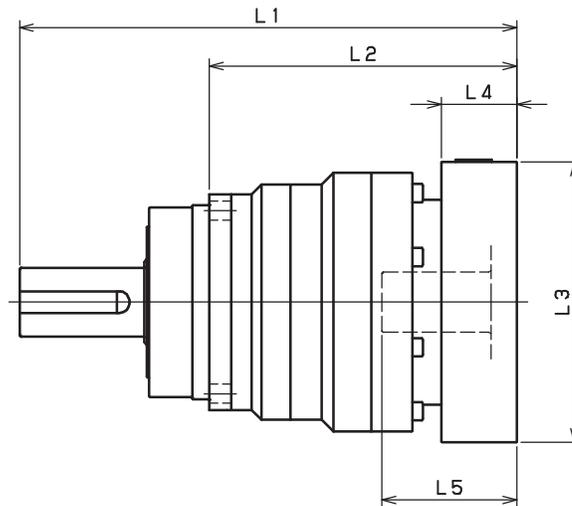
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VRS-o6o – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-060B-□-□-8** (Input shaft bore ≤ φ 8)	AA·AC·AD·AF·AG	151	103	□52	15.5	32
	AB·AE·AH·AJ·AK	156	108	□52	20.5	37
	BA·BB·BD·BE	151	103	□60	15.5	32
	BC·BF	156	108	□60	20.5	37
	CA	156	108	□70	20.5	37
VRS-060B-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	156	108	□65	16.5	35
	BC·BH·BM	161	113	□65	21.5	40
	BL	166	118	□65	26.5	45
	CA	156	108	□70	16.5	35
	CB	161	113	□70	21.5	40
	DA·DB·DC·DD·DF·DH	156	108	□80	16.5	35
	DE	161	113	□80	21.5	40
	DG	166	118	□80	26.5	45
	EA·EB·EC	156	108	□90	16.5	35
	ED	166	118	□90	26.5	45
	FA	156	108	□100	16.5	35
GA	156	108	□115	16.5	35	
VRS-060B-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
HB	-	-	-	-	-	
HC·HD·HE	-	-	-	-	-	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRS-SERIES Inline shaft

VRS-075 – 1-Stage Specifications

Frame Size	075											
Stage	1-Stage											
Ratio	Unit	Note	3	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000									
Maximum Input Speed	[rpm]	*5	6000									
No Load Running Torque	[Nm]	*6	0.35									
Permitted Radial Load	[N]	*7	2300	2500	2700	2800	3000	3100	3200	3300		
Permitted Axial Load	[N]	*8	3400	3700	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300									
Maximum Axial Load	[N]	*10	3900									
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.670	0.470	0.380	0.340	0.310	0.300	0.290	0.290		
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	1.100	0.930	0.850	0.810	0.780	0.760	0.750	0.750		
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	3.100	2.900	2.900	2.800	2.800	2.800	2.800	2.800		
Efficiency	[%]	*11	95									
Torsional Rigidity	[Nm/arc-min]	*12	10									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	67									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	3.4									

VRS-075 – 2-Stage Specifications

Frame Size	075											
Stage	2-Stage											
Ratio	Unit	Note	15	16	20	25	28	30	35	40		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	75	75		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	125	125		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	250	250		
Nominal Input Speed	[rpm]	*4	3000									
Maximum Input Speed	[rpm]	*5	6000									
No Load Running Torque	[Nm]	*6	0.06									
Permitted Radial Load	[N]	*7	3700	3800	4000	4300	4300	4300	4300	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300									
Maximum Axial Load	[N]	*10	3900									
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.130	0.140	0.130	0.120	0.140	0.099	0.120	0.098		
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.280	0.300	0.280	0.280	0.290	0.250	0.270	0.250		
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.720	0.730	0.720	0.710	0.730	0.700	0.710	0.690		
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90									
Torsional Rigidity	[Nm/arc-min]	*12	10									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	67									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	3.8									

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VRS-075 – 2-Stage Specifications

Frame Size	075										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.06								
Permitted Radial Load	[N]	*7	4300	4300	4300	4300	4300	4300	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300								
Maximum Axial Load	[N]	*10	3900								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.120	0.098	0.098	0.097	0.097	0.097	0.097		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.710	0.690	0.690	0.690	0.690	0.690	0.690		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	3.8								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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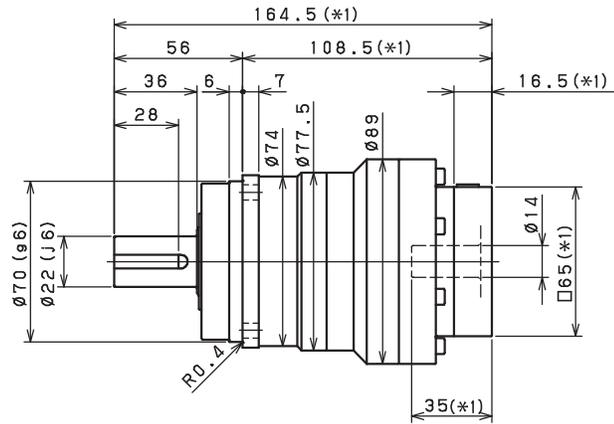
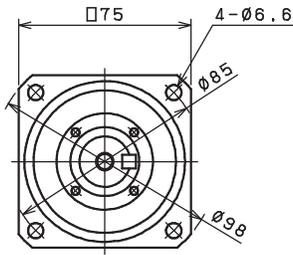
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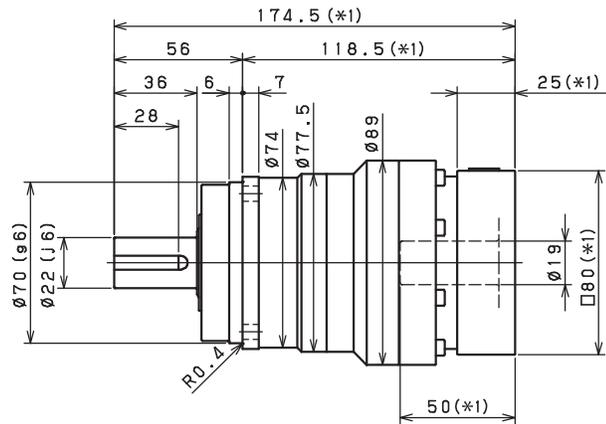
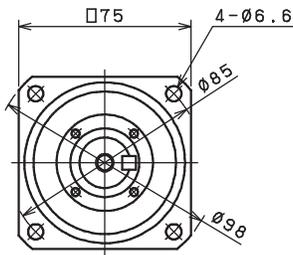
VRS-SERIES Inline shaft

VRS-075 - 1-Stage Dimensions

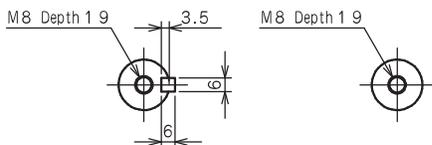
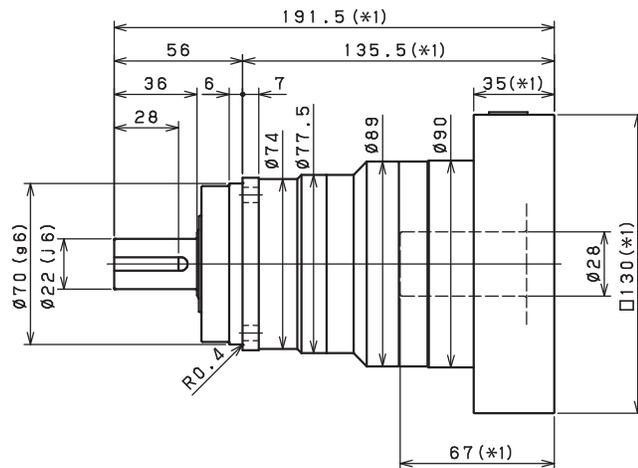
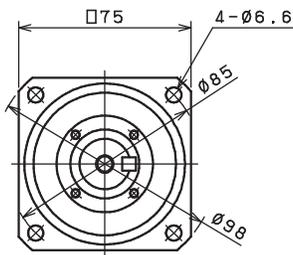
Input shaft bore $\cong \phi 14$



Input shaft bore $\cong \phi 19$



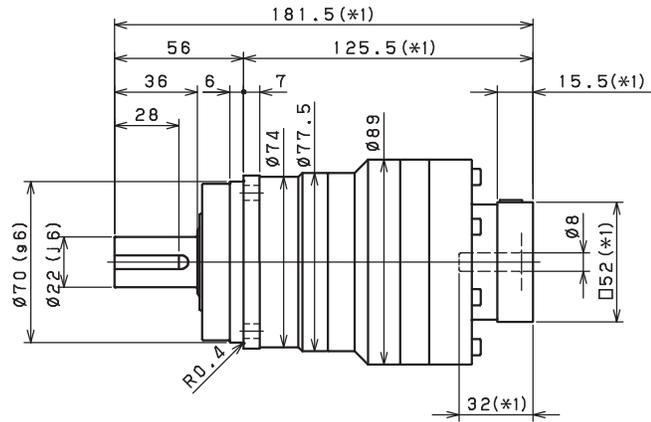
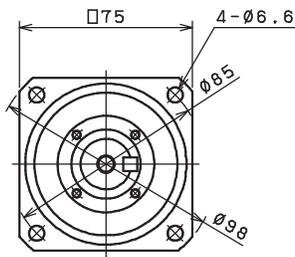
Input shaft bore $\cong \phi 28$



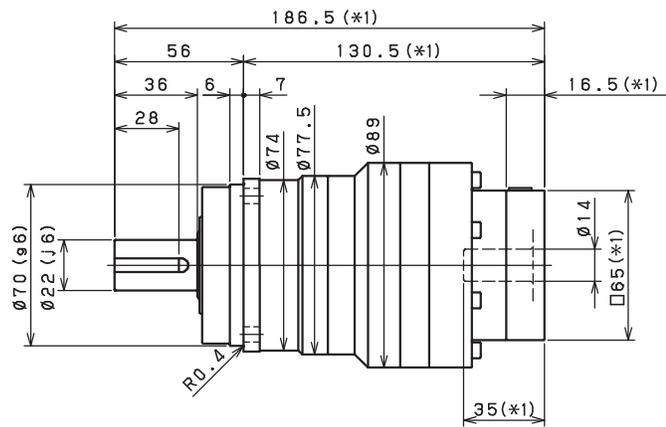
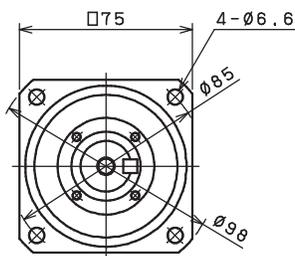
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS-075 – 2-Stage Dimensions

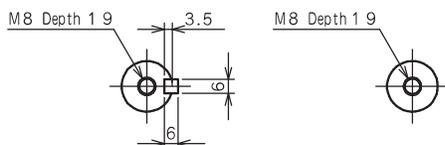
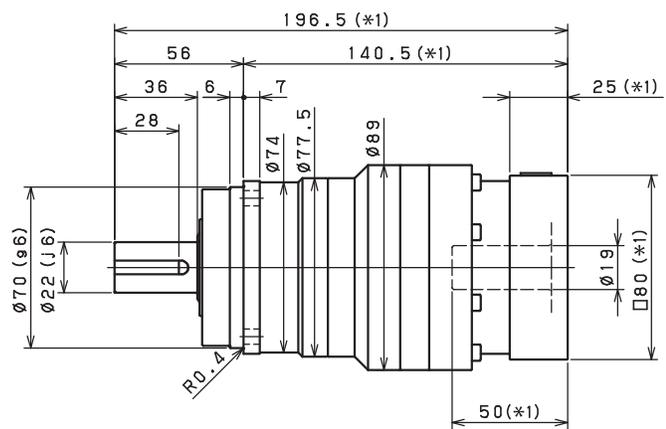
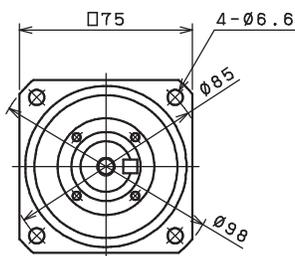
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



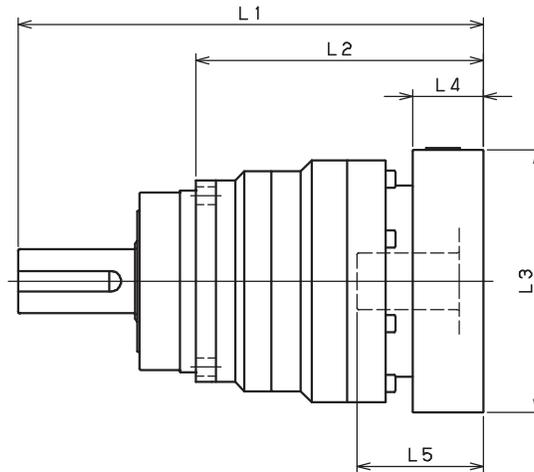
Input shaft bore $\leq \phi 19$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS-SERIES Inline shaft

VRS-075 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-075B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	--	--	--	--	--
	AB·AE·AH·AJ·AK	--	--	--	--	--
	BA·BB·BD·BE	--	--	--	--	--
	BC·BF	--	--	--	--	--
	CA	--	--	--	--	--
VRS-075B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	164.5	108.5	□65	16.5	35
	BC·BH·BM	169.5	113.5	□65	21.5	40
	BL	174.5	118.5	□65	26.5	45
	CA	164.5	108.5	□70	16.5	35
	CB	169.5	113.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	164.5	108.5	□80	16.5	35
	DE	169.5	113.5	□80	21.5	40
	DG	174.5	118.5	□80	26.5	45
	EA·EB·EC	164.5	108.5	□90	16.5	35
	ED	174.5	118.5	□90	26.5	45
	FA	164.5	108.5	□100	16.5	35
VRS-075B-□-□-19** (Input shaft bore $\leq \phi 19$)	GA	164.5	108.5	□115	16.5	35
	DA·DB·DC	174.5	118.5	□80	25	50
	DD	184.5	128.5	□80	35	60
	DE	179.5	123.5	□80	30	55
	EA	179.5	123.5	□90	30	55
	EB	174.5	118.5	□90	25	50
	EC	184.5	128.5	□90	35	60
	FA	174.5	118.5	□100	25	50
	FB	184.5	128.5	□100	35	60
	GA·GC	179.5	123.5	□115	30	55
	GB·GD	174.5	118.5	□115	25	50
	HA	174.5	118.5	□130	25	50
	HB	189.5	133.5	□130	40	65
HC·HD·HE	179.5	123.5	□130	30	55	
VRS-075B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	191.5	135.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	191.5	135.5	□115	35	67
	HA·HC·HD	191.5	135.5	□130	35	67
	HB	201.5	145.5	□130	45	77
	JA·JB·JC	191.5	135.5	□150	35	67
	KA·KB	191.5	135.5	□180	35	67
	KD	201.5	145.5	□180	45	77
	LA	191.5	135.5	□200	35	67
MA	191.5	135.5	□220	35	67	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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For an explanation on the Adapter Flange Code, please turn to page 300

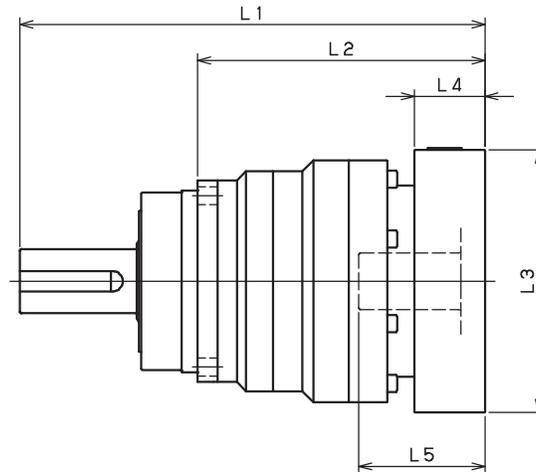
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VRS-075 – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-075B-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	181.5	125.5	□52	15.5	32
	AB·AE·AH·AJ·AK	186.5	130.5	□52	20.5	37
	BA·BB·BD·BE	181.5	125.5	□60	15.5	32
	BC·BF	186.5	130.5	□60	20.5	37
	CA	186.5	130.5	□70	20.5	37
VRS-075B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	186.5	130.5	□65	16.5	35
	BC·BH·BM	191.5	135.5	□65	21.5	40
	BL	196.5	140.5	□65	26.5	45
	CA	186.5	130.5	□70	16.5	35
	CB	191.5	135.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	186.5	130.5	□80	16.5	35
	DE	191.5	135.5	□80	21.5	40
	DG	196.5	140.5	□80	26.5	45
	EA·EB·EC	186.5	130.5	□90	16.5	35
	ED	196.5	140.5	□90	26.5	45
	FA	186.5	130.5	□100	16.5	35
VRS-075B-□-□-19** (Input shaft bore $\leq \phi 19$)	GA	186.5	130.5	□115	16.5	35
	DA·DB·DC	196.5	140.5	□80	25	50
	DD	206.5	150.5	□80	35	60
	DE	201.5	145.5	□80	30	55
	EA	201.5	145.5	□90	30	55
	EB	196.5	140.5	□90	25	50
	EC	206.5	150.5	□90	35	60
	FA	196.5	140.5	□100	25	50
	FB	206.5	150.5	□100	35	60
	GA·GC	201.5	145.5	□115	30	55
	GB·GD	196.5	140.5	□115	25	50
	HA	196.5	140.5	□130	25	50
	HB	211.5	155.5	□130	40	65
HC·HD·HE	201.5	145.5	□130	30	55	
VRS-075B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	--	--	--	--	--
	GA·GB·GC·GD·GE·GF·GG	--	--	--	--	--
	HA·HC·HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA·JB·JC	--	--	--	--	--
	KA·KB	--	--	--	--	--
	KD	--	--	--	--	--
LA	--	--	--	--	--	
MA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRS-SERIES Inline shaft

VRS-100 – 1-Stage Specifications

Frame Size	100									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	120	120	180	180	180	180	120	120
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	330	225	225
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	625	500	500
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.30							
Permitted Radial Load	[N]	*7	3400	3700	4000	4200	4400	4600	4800	4900
Permitted Axial Load	[N]	*8	4800	5200	5600	5900	6100	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	3.200	2.000	1.500	1.300	1.100	1.000	0.960	0.930
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	5.200	4.000	3.600	3.300	3.100	3.000	3.000	3.000
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	13.000	12.000	11.000	11.000	11.000	11.000	11.000	11.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	71							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.1							

VRS-100 – 2-Stage Specifications

Frame Size	100									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	180	180
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	330	330
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	625	625
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.42							
Permitted Radial Load	[N]	*7	5600	5700	6100	6500	6700	6900	7000	7000
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.420	0.480	0.400	0.380	0.440	0.290	0.370	0.280
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.860	0.910	0.830	0.820	0.870	0.740	0.810	0.730
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	2.800	2.900	2.800	2.800	2.800	2.700	2.700	2.700
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	71							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	8.8							

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VRS-100 – 2-Stage Specifications

Frame Size	100										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120		
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	225		
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.42								
Permitted Radial Load	[N]	*7	7000	7000	7000	7000	7000	7000	7000		
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300		
Maximum Radial Load	[N]	*9	7000								
Maximum Axial Load	[N]	*10	6300								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.370	0.280	0.280	0.280	0.280	0.270	0.270		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.800	0.730	0.730	0.730	0.730	0.730	0.730		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.700	2.700	2.700	2.700	2.700	2.700	2.700		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	71								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	8.8								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

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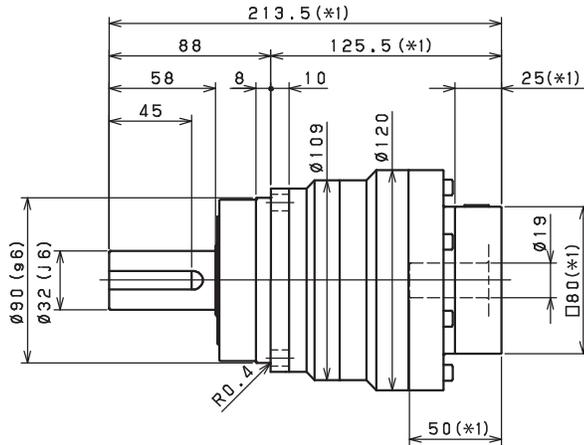
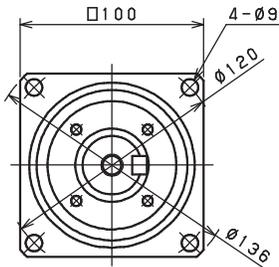
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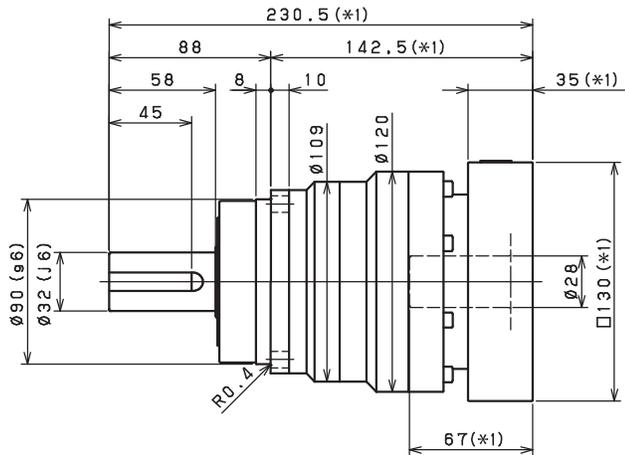
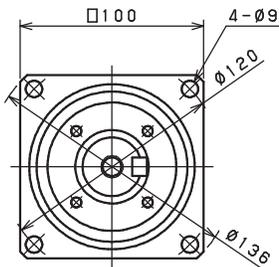
VRS-SERIES Inline shaft

VRS-100 – 1-Stage Dimensions

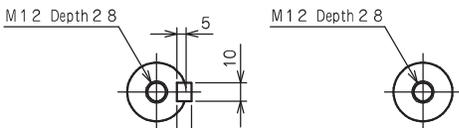
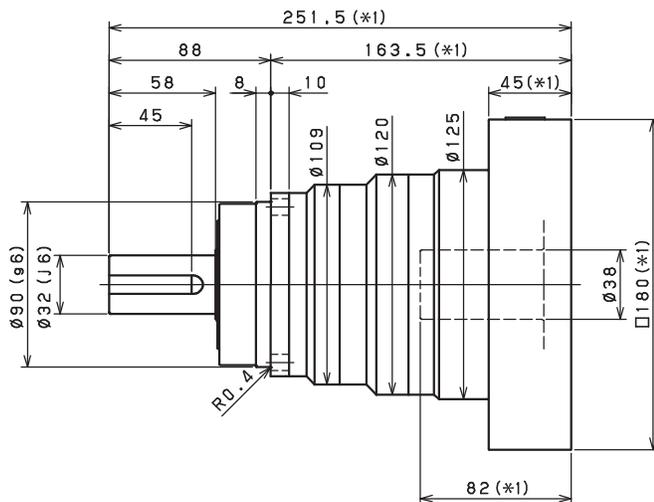
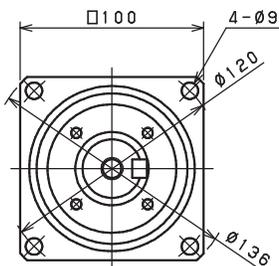
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



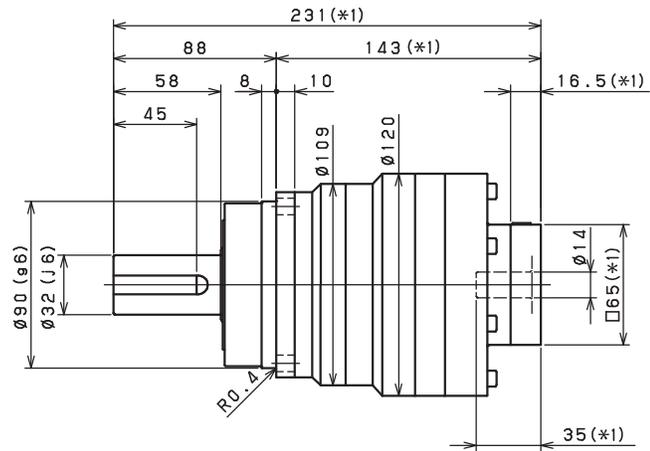
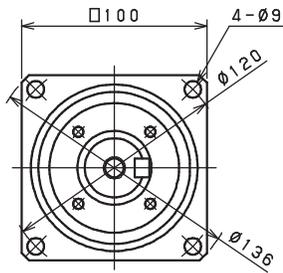
Shaft with key

Smooth shaft

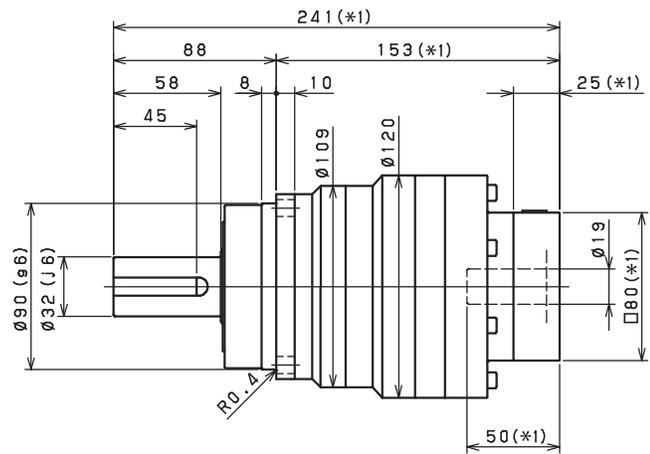
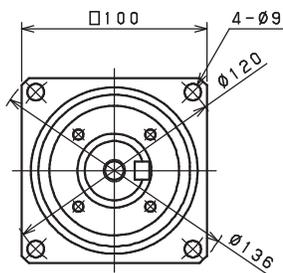
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS-100 – 2-Stage Dimensions

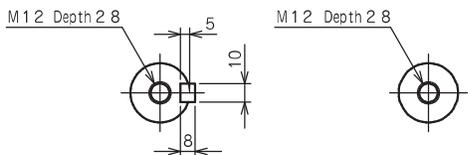
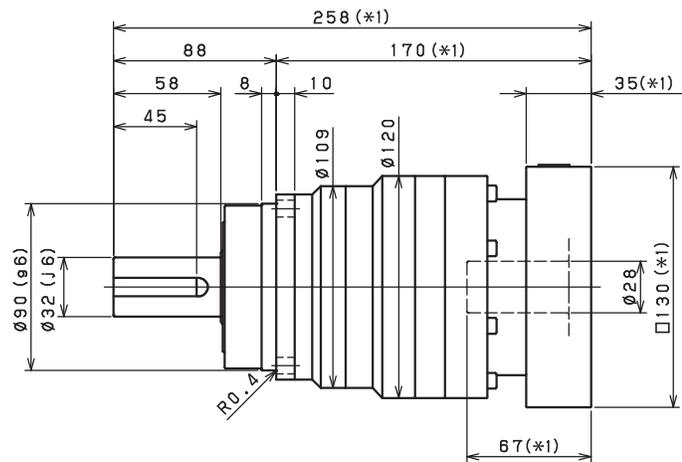
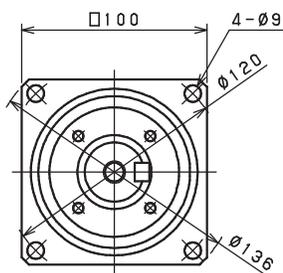
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Shaft with key

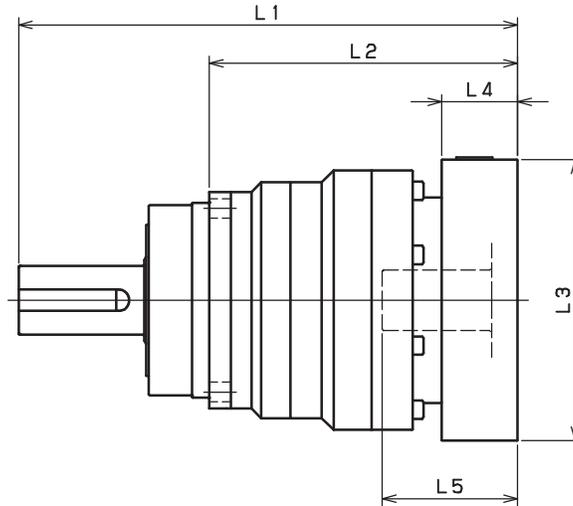
Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS

VRS-SERIES Inline shaft

VRS-100 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-100B-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	--	--	--	--	--
	BC·BH·BM	--	--	--	--	--
	BL	--	--	--	--	--
	CA	--	--	--	--	--
	CB	--	--	--	--	--
	DA·DB·DC·DD·DF·DH	--	--	--	--	--
	DE	--	--	--	--	--
	DG	--	--	--	--	--
	EA·EB·EC	--	--	--	--	--
	ED	--	--	--	--	--
	FA	--	--	--	--	--
GA	--	--	--	--	--	
VRS-100B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	213.5	125.5	□80	25	50
	DD	223.5	135.5	□80	35	60
	DE	218.5	130.5	□80	30	55
	EA	218.5	130.5	□90	30	55
	EB	213.5	125.5	□90	25	50
	EC	223.5	135.5	□90	35	60
	FA	213.5	125.5	□100	25	50
	FB	223.5	135.5	□100	35	60
	GA·GC	218.5	130.5	□115	30	55
	GB·GD	213.5	125.5	□115	25	50
	HA	213.5	125.5	□130	25	50
HB	228.5	140.5	□130	40	65	
HC·HD·HE	218.5	130.5	□130	30	55	
VRS-100B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	230.5	142.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	230.5	142.5	□115	35	67
	HA·HC·HD	230.5	142.5	□130	35	67
	HB	240.5	152.5	□130	45	77
	JA·JB·JC	230.5	142.5	□150	35	67
	KA·KB	230.5	142.5	□180	35	67
	KD	240.5	152.5	□180	45	77
	LA	230.5	142.5	□200	35	67
VRS-100B-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	230.5	142.5	□220	35	67
	HA	251.5	163.5	□130	45	82
	HB	246.5	158.5	□130	40	77
	JA	251.5	163.5	□150	45	82
	KA·KB·KC	251.5	163.5	□180	45	82
	LA	251.5	163.5	□200	45	82
	LB	261.5	173.5	□200	55	92
MA·MB	251.5	163.5	□220	45	82	
NA	251.5	163.5	□250	45	82	

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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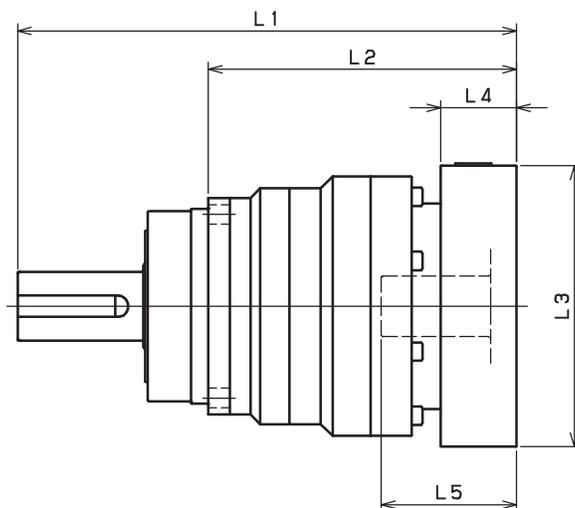
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For an explanation on the Adapter Flange Code, please turn to page 300

VRS-100 – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-100B-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	231	143	□65	16.5	35
	BC·BH·BM	236	148	□65	21.5	40
	BL	241	153	□65	26.5	45
	CA	231	143	□70	16.5	35
	CB	236	148	□70	21.5	40
	DA·DB·DC·DD·DF·DH	231	143	□80	16.5	35
	DE	236	148	□80	21.5	40
	DG	241	153	□80	26.5	45
	EA·EB·EC	231	143	□90	16.5	35
	ED	241	153	□90	26.5	45
	FA	231	143	□100	16.5	35
GA	231	143	□115	16.5	35	
VRS-100B-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	241	153	□80	25	50
	DD	251	163	□80	35	60
	DE	246	158	□80	30	55
	EA	246	158	□90	30	55
	EB	241	153	□90	25	50
	EC	251	163	□90	35	60
	FA	241	153	□100	25	50
	FB	251	163	□100	35	60
	GA·GC	246	158	□115	30	55
	GB·GD	241	153	□115	25	50
	HA	241	153	□130	25	50
HB	256	168	□130	40	65	
HC·HD·HE	246	158	□130	30	55	
FA·FB·FC	258	170	□100	35	67	
VRS-100B-□-□-28** (Input shaft bore ≤ φ 28)	GA·GB·GC·GD·GE·GF·GG	258	170	□115	35	67
	HA·HC·HD	258	170	□130	35	67
	HB	268	180	□130	45	77
	JA·JB·JC	258	170	□150	35	67
	KA·KB	258	170	□180	35	67
	KD	268	180	□180	45	77
	LA	258	170	□200	35	67
MA	258	170	□220	35	67	
VRS-100B-□-□-38** (Input shaft bore ≤ φ 38)	HA	-	-	-	-	-
	HB	-	-	-	-	-
	JA	-	-	-	-	-
	KA·KB·KC	-	-	-	-	-
	LA	-	-	-	-	-
	LB	-	-	-	-	-
	MA·MB	-	-	-	-	-
NA	-	-	-	-	-	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRS-SERIES Inline shaft

VRS-140 – 1-Stage Specifications

Frame Size	140									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	240	240	360	360	360	360	240	240
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	700	470	470
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1250	1000	1000
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	1.63							
Permitted Radial Load	[N]	*7	6700	7400	7900	8300	8700	9100	9400	9700
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	12.000	7.400	5.800	4.900	4.100	3.800	3.600	3.400
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	20.000	15.000	13.000	13.000	12.000	12.000	11.000	11.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	42.000	37.000	36.000	35.000	34.000	34.000	34.000	33.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	17							

VRS-140 – 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	360	360
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	700	700
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1250	1250
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	0.56							
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000	10000
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	1.300	1.500	1.200	1.100	1.400	0.850	1.100	0.830
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	3.200	3.500	3.100	3.100	3.300	2.800	3.100	2.800
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000	10.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	19							

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VRS-140 – 2-Stage Specifications

Frame Size	140										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240		
Maximum Acceleration Torque	[Nm]	*2	470	700	700	700	700	470	470		
Emergency Stop Torque	[Nm]	*3	1000	1250	1250	1250	1250	1000	1000		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	0.56								
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000		
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000		
Maximum Radial Load	[N]	*9	10000								
Maximum Axial Load	[N]	*10	9000								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.100	0.810	0.810	0.800	0.800	0.800	0.800		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	3.000	2.800	2.800	2.800	2.800	2.800	2.800		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11.000	10.000	10.000	10.000	10.000	10.000	10.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	19								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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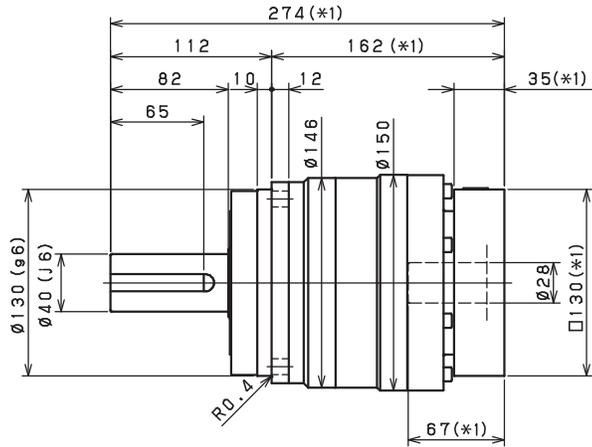
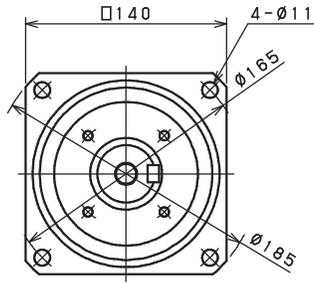


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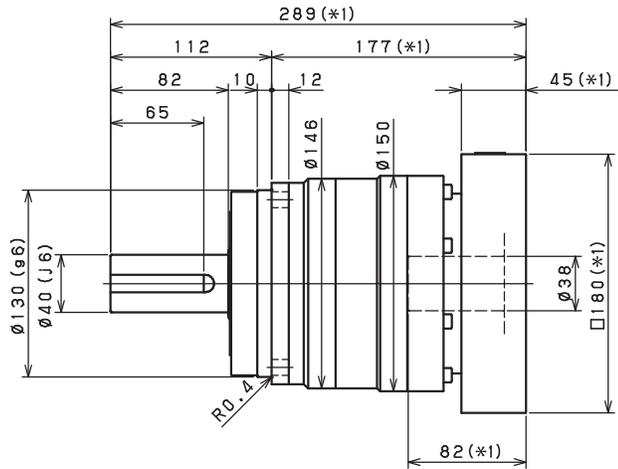
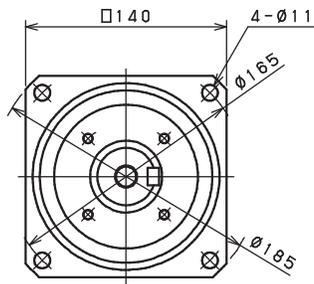
VRS-SERIES Inline shaft

VRS-140 – 1-Stage Dimensions

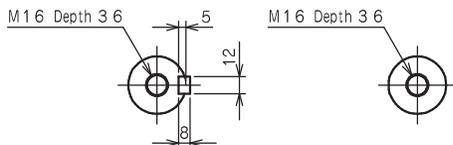
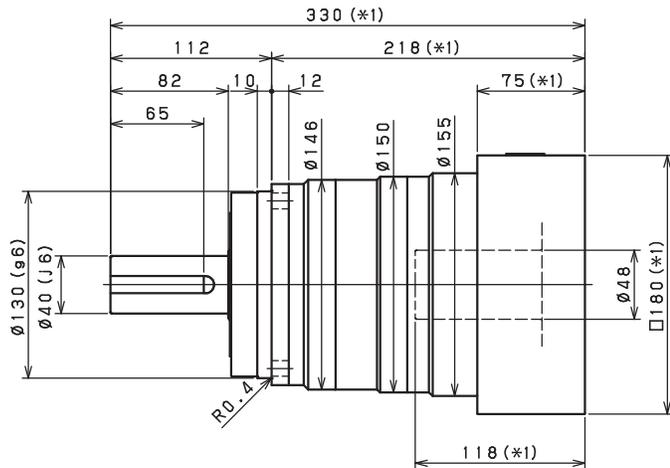
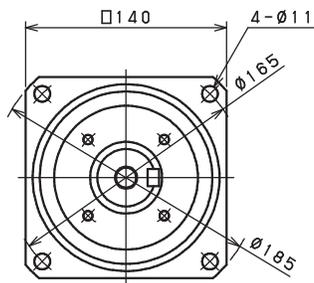
Input shaft bore $\leq \varnothing 28$



Input shaft bore $\leq \varnothing 38$



Input shaft bore $\leq \varnothing 48$



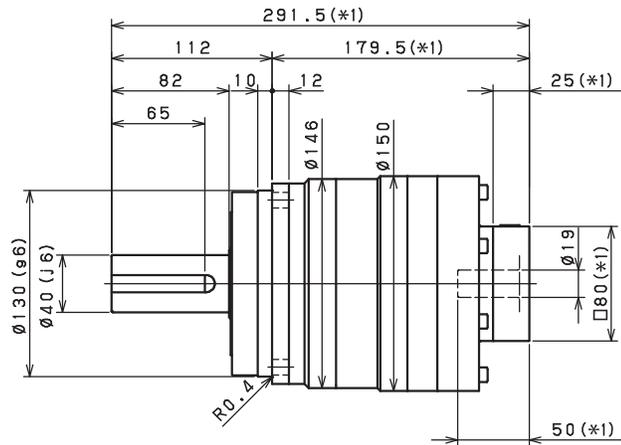
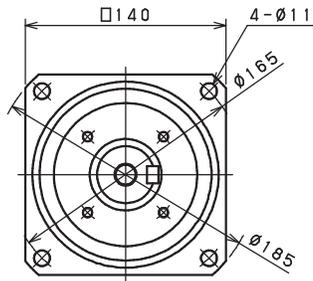
Shaft with key

Smooth shaft

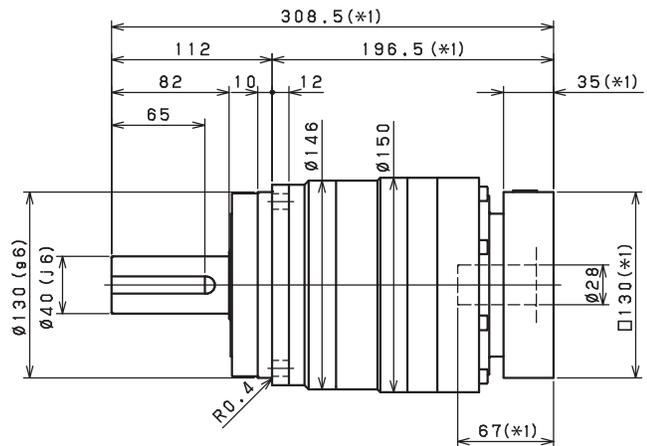
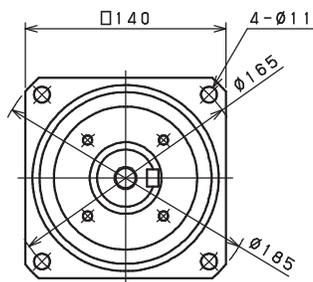
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS-140 – 2-Stage Dimensions

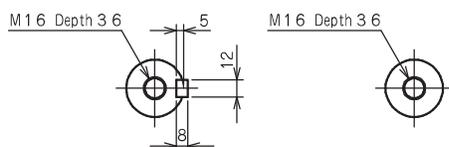
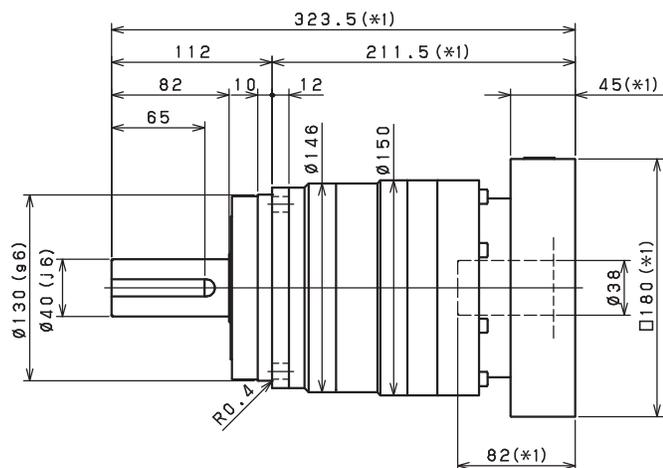
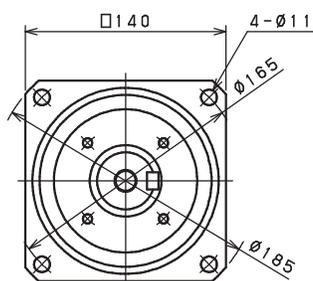
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Shaft with key

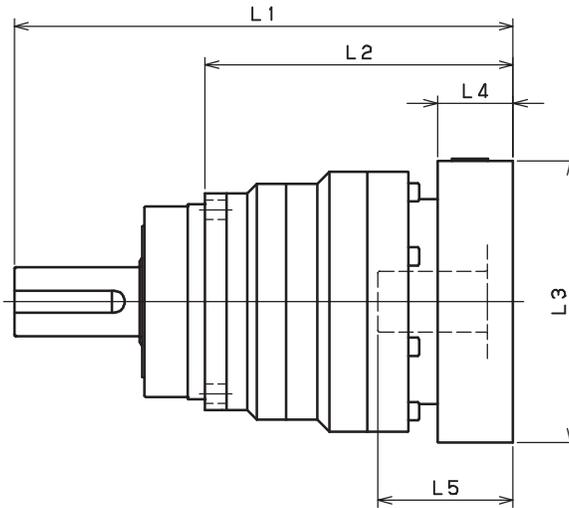
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS-SERIES Inline shaft

VRS-140 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-140B-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA·GC	--	--	--	--	--
	GB·GD	--	--	--	--	--
	HA	--	--	--	--	--
	HB	--	--	--	--	--
	HC·HD·HE	--	--	--	--	--
	VRS-140B-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	274	162	□100	35
GA·GB·GC·GD·GE·GF·GG		274	162	□115	35	67
HA·HC·HD		274	162	□130	35	67
HB		284	172	□130	45	77
JA·JB·JC		274	162	□150	35	67
KA·KB		274	162	□180	35	67
KD		284	172	□180	45	77
LA		274	162	□200	35	67
VRS-140B-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	274	162	□220	35	67
	HA	289	177	□130	45	82
	HB	284	172	□130	40	77
	JA	289	177	□150	45	82
	KA·KB·KC	289	177	□180	45	82
	LA	289	177	□200	45	82
	LB	299	187	□200	55	92
	MA·MB	289	177	□220	45	82
VRS-140B-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	289	177	□250	45	82
	KB·KC	310	198	□180	55	98
	KA	330	218	□180	75	118
	LA	310	198	□200	55	98
	MA	310	198	□220	55	98
	MB	330	218	□220	75	118
	NA	330	218	□250	75	118
PA	330	218	□280	75	118	

*1) Single reduction : 1/3~1/10

*2) Bushing will be inserted to adapt to motor shaft

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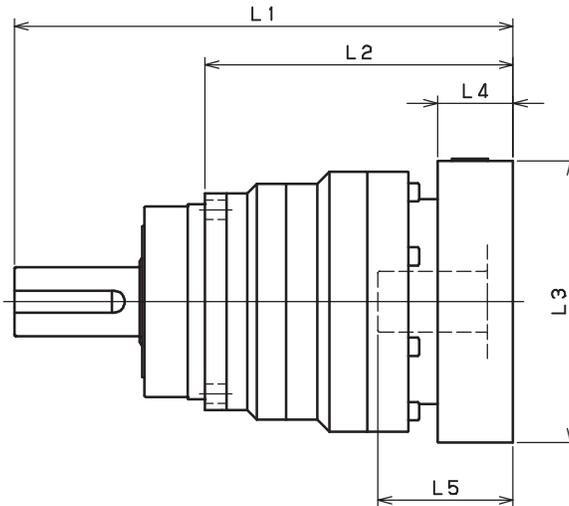
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VRS-140 – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-140B-□-□-19** (Input shaft bore ≤ φ 19)	DA•DB•DC	291.5	179.5	□80	25	50
	DD	301.5	189.5	□80	35	60
	DE	296.5	184.5	□80	30	55
	EA	296.5	184.5	□90	30	55
	EB	291.5	179.5	□90	25	50
	EC	301.5	189.5	□90	35	60
	FA	291.5	179.5	□100	25	50
	FB	301.5	189.5	□100	35	60
	GA•GC	296.5	184.5	□115	30	55
	GB•GD	291.5	179.5	□115	25	50
	HA	291.5	179.5	□130	25	50
	HB	306.5	194.5	□130	40	65
	HC•HD•HE	296.5	184.5	□130	30	55
	VRS-140B-□-□-28** (Input shaft bore ≤ φ 28)	FA•FB•FC	308.5	196.5	□100	35
GA•GB•GC•GD•GE•GF•GG		308.5	196.5	□115	35	67
HA•HC•HD		308.5	196.5	□130	35	67
HB		318.5	206.5	□130	45	77
JA•JB•JC		308.5	196.5	□150	35	67
KA•KB		308.5	196.5	□180	35	67
KD		318.5	206.5	□180	45	77
VRS-140B-□-□-38** (Input shaft bore ≤ φ 38)	LA	308.5	196.5	□200	35	67
	MA	308.5	196.5	□220	35	67
	HA	323.5	211.5	□130	45	82
	HB	318.5	206.5	□130	40	77
	JA	323.5	211.5	□150	45	82
	KA•KB•KC	323.5	211.5	□180	45	82
	LA	323.5	211.5	□200	45	82
	LB	333.5	221.5	□200	55	92
VRS-140B-□-□-48** (Input shaft bore ≤ φ 48)	MA•MB	323.5	211.5	□220	45	82
	NA	323.5	211.5	□250	45	82
	KB•KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-
	NA	-	-	-	-	-
PA	-	-	-	-	-	

*1) Double reduction : 1/15~1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRS-SERIES Inline shaft

VRS-180 – 1-Stage Specifications

Frame Size	180									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	750	500	500
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	1400	970	970
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2750	2200	2200
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	2.68							
Permitted Radial Load	[N]	*7	12000	13000	14000	15000	16000	17000	17000	18000
Permitted Axial Load	[N]	*8	16000	17000	17000	17000	17000	17000	17000	17000
Maximum Radial Load	[N]	*9	19000							
Maximum Axial Load	[N]	*10	17000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	42.000	27.000	21.000	18.000	16.000	15.000	14.000	14.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	64.000	49.000	43.000	40.000	38.000	37.000	36.000	36.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	120.000	110.000	100.000	100.000	98.000	97.000	96.000	96.000
Efficiency	[%]	*11	95							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

VRS-180 – 2-Stage Specifications

Frame Size	180									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	750	750
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	1400	1400
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2750	2750
Nominal Input Speed	[rpm]	*4	1500							
Maximum Input Speed	[rpm]	*5	3000							
No Load Running Torque	[Nm]	*6	1.39							
Permitted Radial Load	[N]	*7	19000	19000	19000	19000	19000	19000	19000	19000
Permitted Axial Load	[N]	*8	17000	17000	17000	17000	17000	17000	17000	17000
Maximum Radial Load	[N]	*9	19000							
Maximum Axial Load	[N]	*10	17000							
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	4.700	5.400	4.300	4.200	4.900	3.200	4.100	3.200
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	12.000	13.000	12.000	12.000	13.000	11.000	12.000	11.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	34.000	35.000	34.000	34.000	35.000	33.000	34.000	33.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	90							
Torsional Rigidity	[Nm/arc-min]	*12	175							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	67							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	39							

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VRS-180 – 2-Stage Specifications

Frame Size	180										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	500	750	750	750	750	500	500		
Maximum Acceleration Torque	[Nm]	*2	970	1400	1400	1400	1400	970	970		
Emergency Stop Torque	[Nm]	*3	2200	2750	2750	2750	2750	2200	2200		
Nominal Input Speed	[rpm]	*4	1500								
Maximum Input Speed	[rpm]	*5	3000								
No Load Running Torque	[Nm]	*6	1.39								
Permitted Radial Load	[N]	*7	19000	19000	19000	19000	19000	19000	19000		
Permitted Axial Load	[N]	*8	17000	17000	17000	17000	17000	17000	17000		
Maximum Radial Load	[N]	*9	19000								
Maximum Axial Load	[N]	*10	17000								
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.000	3.100	3.100	3.100	3.100	3.100	3.100		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	12.000	11.000	11.000	11.000	11.000	11.000	11.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	34.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	39								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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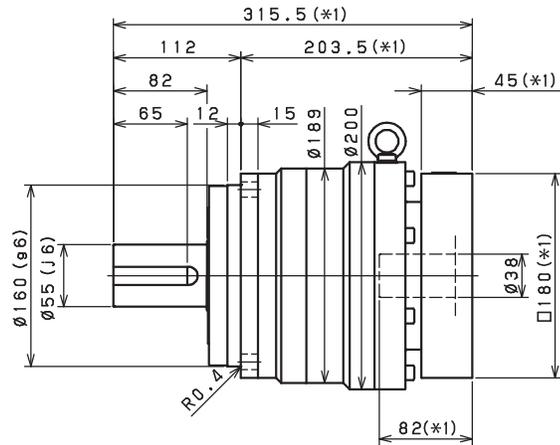
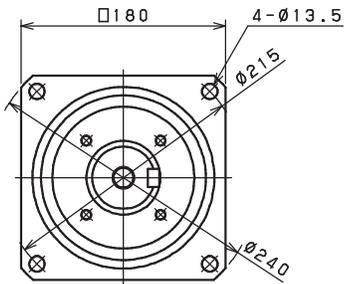
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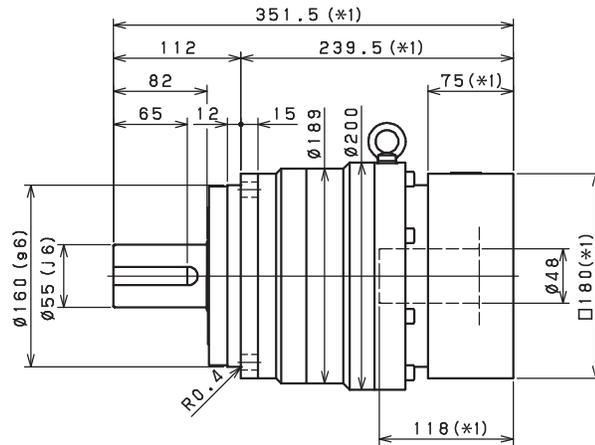
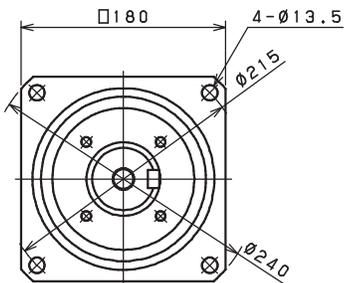
VRS-SERIES Inline shaft

VRS-180 – 1-Stage Dimensions

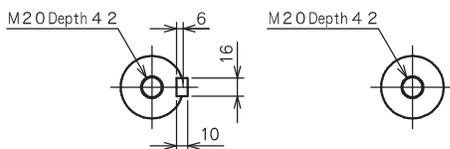
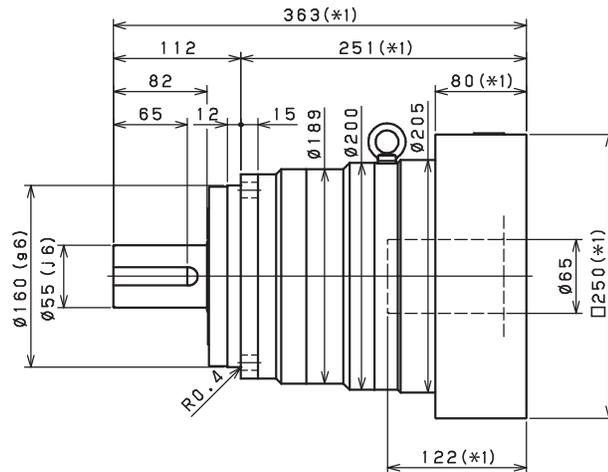
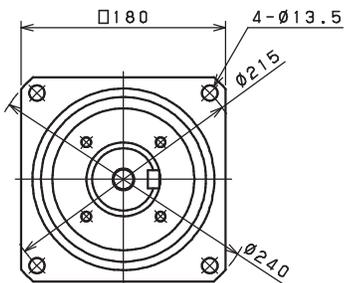
Input shaft bore $\leq \varnothing 38$



Input shaft bore $\leq \varnothing 48$



Input shaft bore $\leq \varnothing 65$



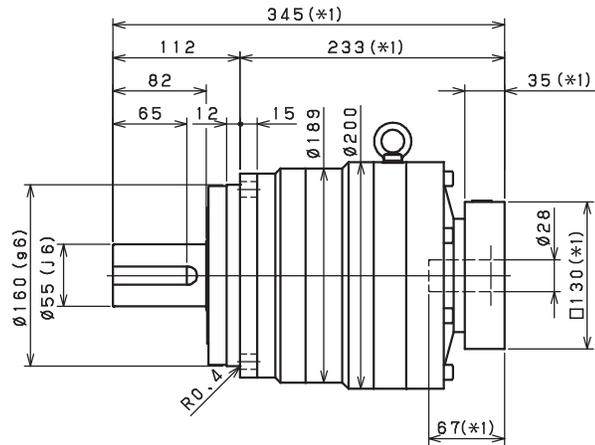
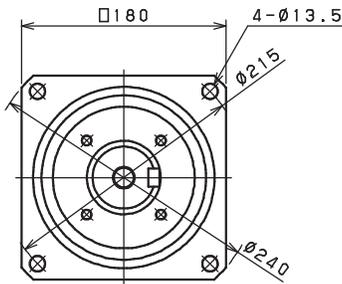
Shaft with key

Smooth shaft

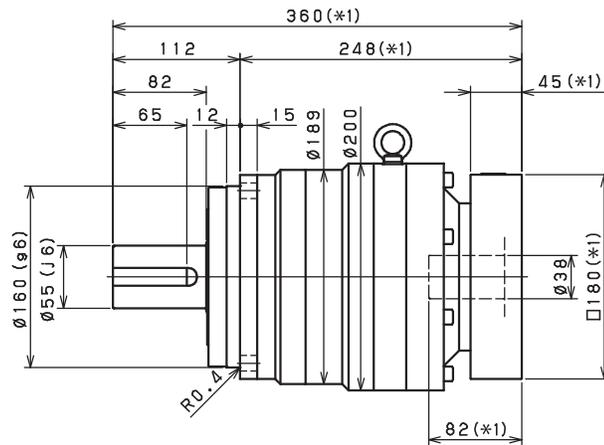
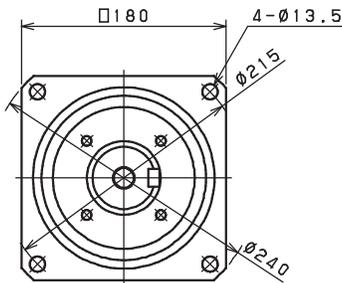
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS-180 – 2-Stage Dimensions

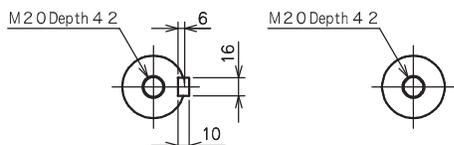
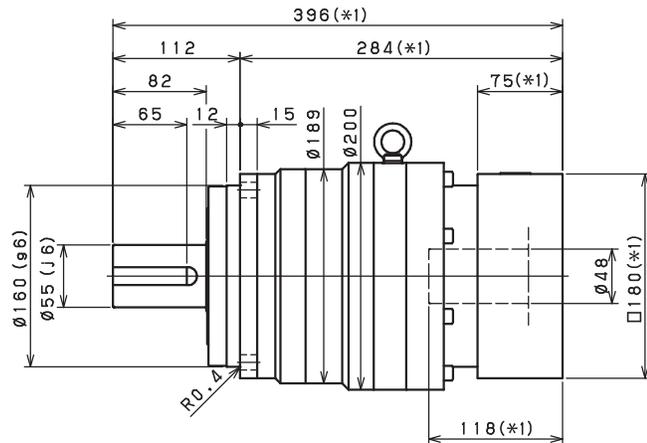
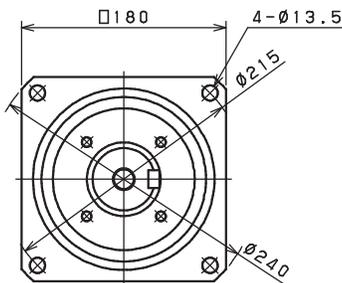
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



Shaft with key

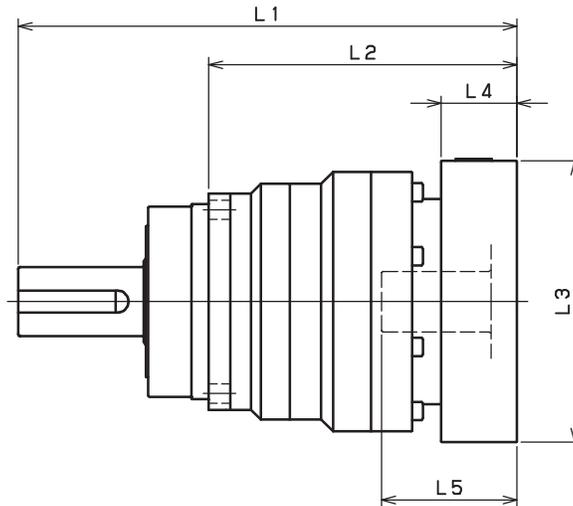
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRS-SERIES Inline shaft

VRS-180o – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-180B-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	--	--	--	--	--
	GA·GB·GC·GD·GE·GF·GG	--	--	--	--	--
	HA·HC·HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA·JB·JC	--	--	--	--	--
	KA·KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
VRS-180B-□-□-38** (Input shaft bore ≤ φ 38)	HA	315.5	203.5	□130	45	82
	HB	310.5	198.5	□130	40	77
	JA	315.5	203.5	□150	45	82
	KA·KB·KC	315.5	203.5	□180	45	82
	LA	315.5	203.5	□200	45	82
	LB	325.5	213.5	□200	55	92
	MA·MB	315.5	203.5	□220	45	82
	NA	315.5	203.5	□250	45	82
VRS-180B-□-□-48** (Input shaft bore ≤ φ 48)	KB·KC	331.5	219.5	□180	55	98
	KA	351.5	239.5	□180	75	118
	LA	331.5	219.5	□200	55	98
	MA	331.5	219.5	□220	55	98
	MB	351.5	239.5	□220	75	118
	NA	351.5	239.5	□250	75	118
	PA	351.5	239.5	□280	75	118
	MA·MB·MC·MD	363	251	□220	80	122
VRS-180B-□-□-65** (Input shaft bore ≤ φ 65)	NA	363	251	□250	80	122
	PA	383	271	□280	100	142
	PB	393	281	□280	110	152
	QA	383	271	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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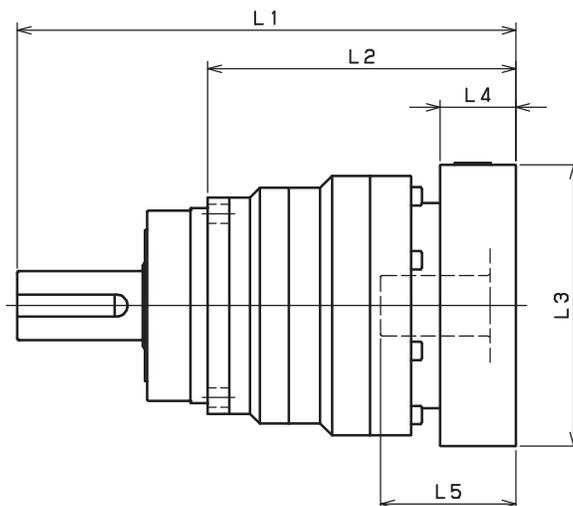
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VRS-180 – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-180B-□-□-28** (Input shaft bore ≤ φ 28)	FA·FB·FC	345	233	□ 100	35	67
	GA·GB·GC·GD·GE·GF·GG	345	233	□ 115	35	67
	HA·HC·HD	345	233	□ 130	35	67
	HB	355	243	□ 130	45	77
	JA·JB·JC	345	233	□ 150	35	67
	KA·KB	345	233	□ 180	35	67
	KD	355	243	□ 180	45	77
	LA	345	233	□ 200	35	67
	MA	345	233	□ 220	35	67
	VRS-180B-□-□-38** (Input shaft bore ≤ φ 38)	HA	360	248	□ 130	45
HB		355	243	□ 130	40	77
JA		360	248	□ 150	45	82
KA·KB·KC		360	248	□ 180	45	82
LA		360	248	□ 200	45	82
LB		370	258	□ 200	55	92
MA·MB		360	248	□ 220	45	82
NA		360	248	□ 250	45	82
VRS-180B-□-□-48** (Input shaft bore ≤ φ 48)	KB·KC	376	264	□ 180	55	98
	KA	396	284	□ 180	75	118
	LA	376	264	□ 200	55	98
	MA	376	264	□ 220	55	98
	MB	396	284	□ 220	75	118
	NA	396	284	□ 250	75	118
	PA	396	284	□ 280	75	118
VRS-180B-□-□-65** (Input shaft bore ≤ φ 65)	MA·MB·MC·MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
	QA	--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRS-SERIES Inline shaft

VRS-210 – 1-Stage Specifications

Frame Size	210									
Stage	1-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1500	1000	1000
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	2200	1900	1600
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	5000	4000	4000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	2.92							
Permitted Radial Load	[N]	*7	17000	18000	20000	21000	22000	23000	24000	24000
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000	22000
Maximum Radial Load	[N]	*9	24000							
Maximum Axial Load	[N]	*10	22000							
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	92.000	63.000	53.000	47.000	43.000	40.000	39.000	38.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	150.000	120.000	110.000	110.000	100.000	100.000	99.000	98.000
Efficiency	[%]	*11	97							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	61							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	59							

VRS-210 – 2-Stage Specifications

Frame Size	210									
Stage	2-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1500	1500
Maximum Acceleration Torque	[Nm]	*2	1600	2300	2300	2300	2300	1600	2300	2300
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	5000	5000
Nominal Input Speed	[rpm]	*4	1000							
Maximum Input Speed	[rpm]	*5	2000							
No Load Running Torque	[Nm]	*6	1.14							
Permitted Radial Load	[N]	*7	24000	24000	24000	24000	24000	24000	24000	24000
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000	22000
Maximum Radial Load	[N]	*9	24000							
Maximum Axial Load	[N]	*10	22000							
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	14.000	16.000	14.000	14.000	15.000	12.000	13.000	12.000
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	36.000	37.000	36.000	35.000	36.000	34.000	35.000	33.000
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	92							
Torsional Rigidity	[Nm/arc-min]	*12	400							
Maximum Torsional Backlash	[arc-min]	--	≤ 3							
Noise Level	[dB]	*13	61							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	60							

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VRS-210 – 2-Stage Specifications

Frame Size	210										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	1000	1500	1500	1500	1500	1000	1000		
Maximum Acceleration Torque	[Nm]	*2	1300	2300	2300	2300	1800	1300	1200		
Emergency Stop Torque	[Nm]	*3	4000	5000	5000	5000	5000	4000	4000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.14								
Permitted Radial Load	[N]	*7	24000	24000	24000	24000	24000	24000	24000		
Permitted Axial Load	[N]	*8	22000	22000	22000	22000	22000	22000	22000		
Maximum Radial Load	[N]	*9	24000								
Maximum Axial Load	[N]	*10	22000								
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	13.000	12.000	12.000	12.000	12.000	12.000	12.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	35.000	33.000	33.000	33.000	33.000	33.000	33.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	400								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	61								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	60								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,5000 rpm for VRS180/210; 1,000 rpm for VRS240

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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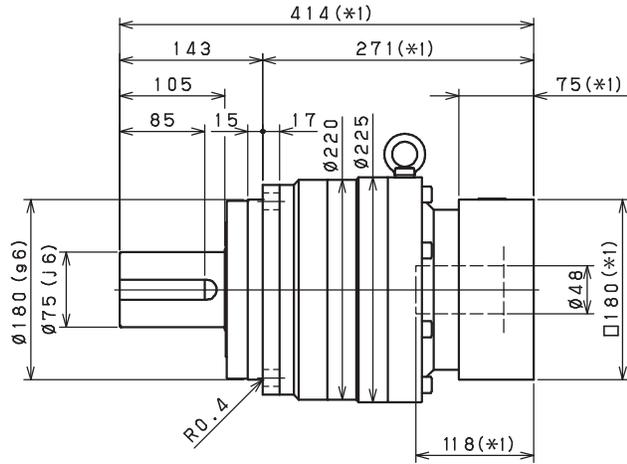
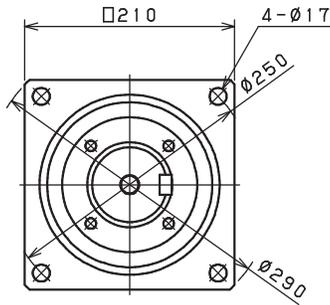
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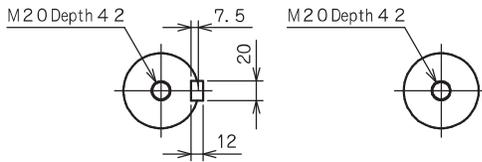
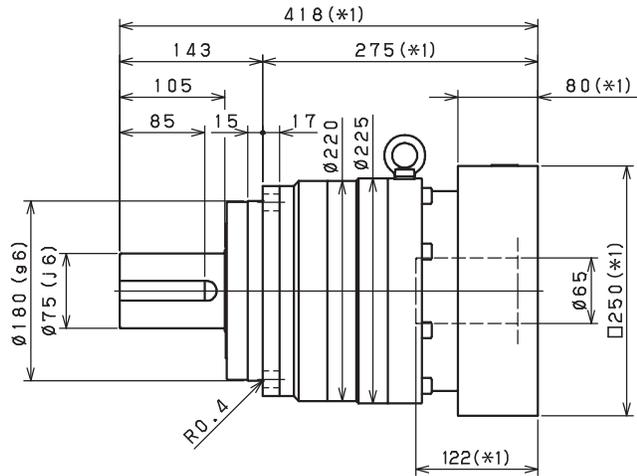
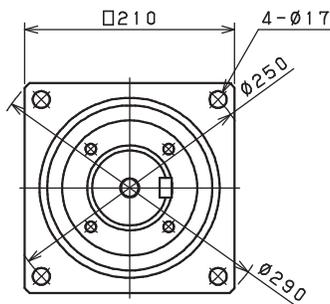
VRS-SERIES Inline shaft

VRS-210 – 1-Stage Dimensions

Input shaft bore $\leq \phi 48$



Input shaft bore $\leq \phi 65$



Shaft with key

Smooth shaft

*1) Length will vary depending on motor.

*2) Bushing will be inserted to adapt to motor shaft

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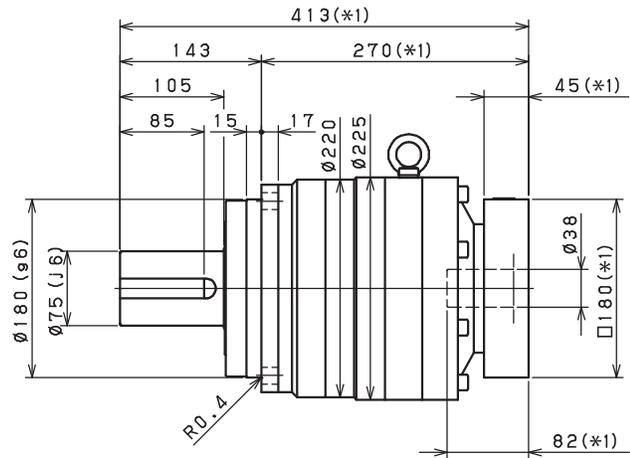
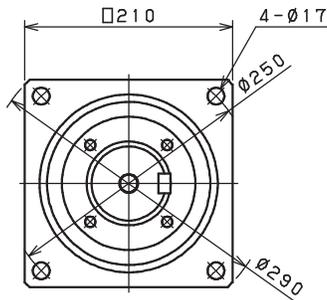
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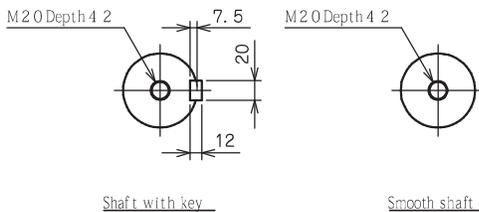
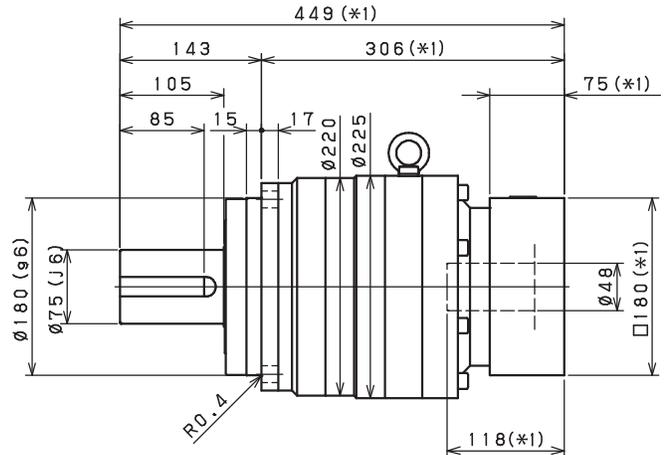
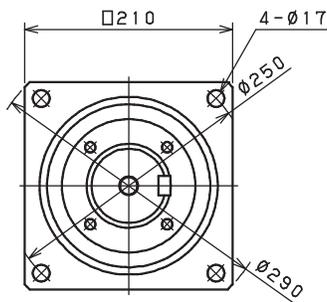
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VRS-210 – 2-Stage Dimensions

Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



- *1) Length will vary depending on motor.
- *2) Bushing will be inserted to adapt to motor shaft

VRS

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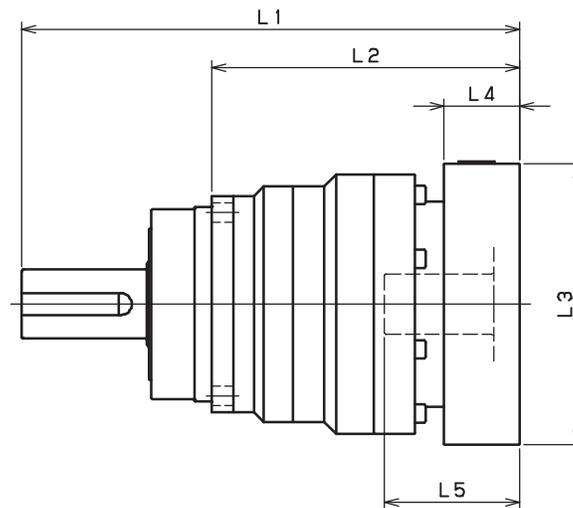
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VRS-SERIES Inline shaft

VRS-210 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-210B-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	--	--	--	--	--
	HB	--	--	--	--	--
	JA	--	--	--	--	--
	KA·KB·KC	--	--	--	--	--
	LA	--	--	--	--	--
	LB	--	--	--	--	--
	MA·MB	--	--	--	--	--
VRS-210B-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	--	--	--	--	--
	KB·KC	394	251	□180	55	98
	KA	414	271	□180	75	118
	LA	394	251	□200	55	98
	MA	394	251	□220	55	98
	MB	414	271	□220	75	118
	NA	414	271	□250	75	118
VRS-210B-□-□-65** (Input shaft bore $\leq \phi 65$)	PA	414	271	□280	75	118
	MA·MB·MC·MD	418	275	□220	80	122
	NA	418	275	□250	80	122
	PA	438	295	□280	100	142
	PB	448	305	□280	110	152
	QA	438	295	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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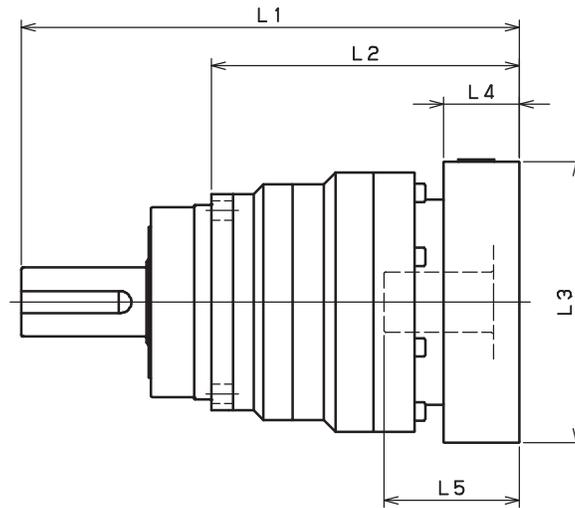
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VRS-210 – 2-Stage Adapter Dimensions



VRS

Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-210B-□-□-38** (Input shaft bore ≤ φ 38)	HA	413	270	□130	45	82
	HB	408	265	□130	40	77
	JA	413	270	□150	45	82
	KA·KB·KC	413	270	□180	45	82
	LA	413	270	□200	45	82
	LB	423	280	□200	55	92
	MA·MB	413	270	□220	45	82
VRS-210B-□-□-48** (Input shaft bore ≤ φ 48)	NA	413	270	□250	45	82
	KB·KC	429	286	□180	55	98
	KA	449	306	□180	75	118
	LA	429	286	□200	55	98
	MA	429	286	□220	55	98
	MB	449	306	□220	75	118
	NA	449	306	□250	75	118
VRS-210B-□-□-65** (Input shaft bore ≤ φ 65)	PA	449	306	□280	75	118
	MA·MB·MC·MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
QA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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VRS-SERIES Inline shaft

VRS-240 – 1-Stage Specifications

Frame Size	240											
Stage	1-Stage											
Ratio	Unit	Note	3	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	2400	1600	1600		
Maximum Acceleration Torque	[Nm]	*2	2500	3700	3700	3700	3700	3600	3000	2600		
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	8000	6000	6000		
Nominal Input Speed	[rpm]	*4	1000									
Maximum Input Speed	[rpm]	*5	2000									
No Load Running Torque	[Nm]	*6	5.96									
Permitted Radial Load	[N]	*7	21000	22000	24000	25000	26000	28000	29000	29000		
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000	27000		
Maximum Radial Load	[N]	*9	30000									
Maximum Axial Load	[N]	*10	27000									
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	220.000	160.000	130.000	120.000	110.000	110.000	110.000	100.000		
Efficiency	[%]	*11	97									
Torsional Rigidity	[Nm/arc-min]	*12	550									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	62									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	85									

VRS-240 – 2-Stage Specifications

Frame Size	240											
Stage	2-Stage											
Ratio	Unit	Note	15	16	20	25	28	30	35	40		
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	1600	2400	2400		
Maximum Acceleration Torque	[Nm]	*2	2500	3700	3700	3700	3700	2500	3700	3700		
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	6000	8000	8000		
Nominal Input Speed	[rpm]	*4	1000									
Maximum Input Speed	[rpm]	*5	2000									
No Load Running Torque	[Nm]	*6	1.28									
Permitted Radial Load	[N]	*7	30000	30000	30000	30000	30000	30000	30000	30000		
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000	27000		
Maximum Radial Load	[N]	*9	30000									
Maximum Axial Load	[N]	*10	27000									
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	40.000	43.000	39.000	39.000	41.000	35.000	38.000	35.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92									
Torsional Rigidity	[Nm/arc-min]	*12	550									
Maximum Torsional Backlash	[arc-min]	--	≤ 3									
Noise Level	[dB]	*13	62									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	89									

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VRS-240 – 2-Stage Specifications

Frame Size	240										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	1600	2400	2400	2400	2400	1600	1600		
Maximum Acceleration Torque	[Nm]	*2	2100	3700	3700	3700	2700	2100	1800		
Emergency Stop Torque	[Nm]	*3	6000	8000	8000	8000	8000	6000	6000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.28								
Permitted Radial Load	[N]	*7	30000	30000	30000	30000	30000	30000	30000		
Permitted Axial Load	[N]	*8	27000	27000	27000	27000	27000	27000	27000		
Maximum Radial Load	[N]	*9	30000								
Maximum Axial Load	[N]	*10	27000								
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	38.000	35.000	35.000	34.000	34.000	34.000	34.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	550								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	62								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	89								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRS060/075/100; 2,000 rpm for VRS140; 1,500 rpm for VRS180/210; 1,000 rpm for VRS240
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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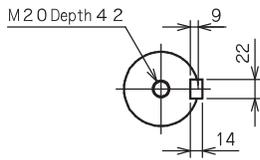
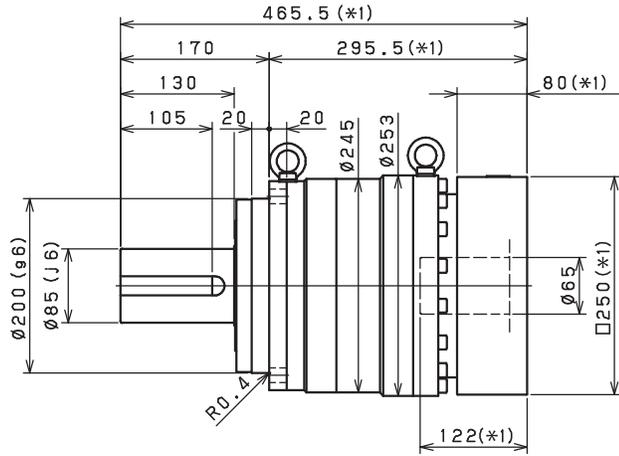
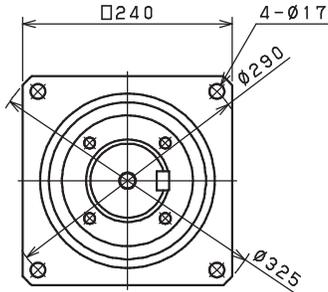


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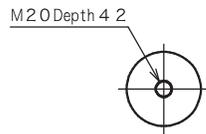
VRS-SERIES Inline shaft

VRS-240 – 1-Stage Dimensions

Input shaft bore $\cong \phi 65$



Shaft with key



Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

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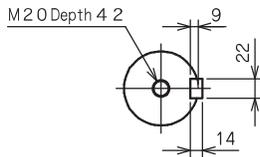
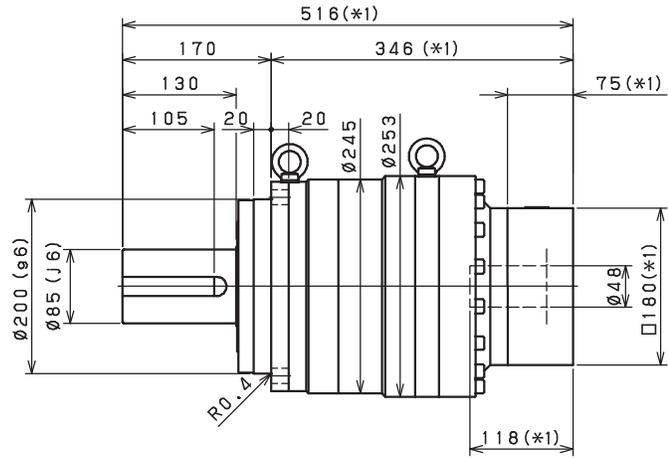
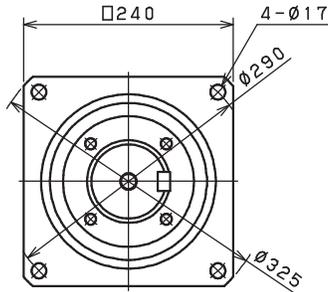
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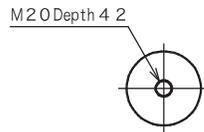
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VRS-240 – 2-Stage Dimensions

Input shaft bore $\leq \phi 48$



Shaft with key



Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRS

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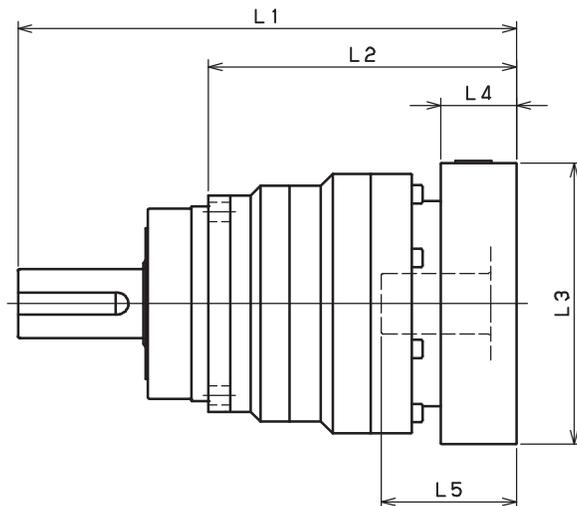
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VRS-SERIES Inline shaft

VRS-240 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRS-240B-□-□-48** (Input shaft bore $\leq \phi 48$)	KB·KC	--	--	--	--	--
	KA	--	--	--	--	--
	LA	--	--	--	--	--
	MA	--	--	--	--	--
	MB	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
VRS-240B-□-□-65** (Input shaft bore $\leq \phi 65$)	MA·MB·MC·MD	465.5	295.5	□220	80	122
	NA	465.5	295.5	□250	80	122
	PA	485.5	315.5	□280	100	142
	PB	495.5	325.5	□280	110	152
	QA	485.5	315.5	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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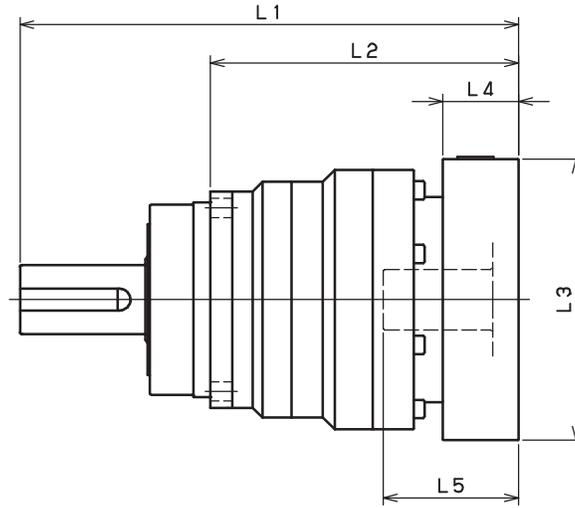
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VRS-240 – 2-Stage Adapter Dimensions



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Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRS-240B-□-□-48** (Input shaft bore $\leq \phi 48$)	KB·KC	496	326	□180	55	98
	KA	516	346	□180	75	118
	LA	496	326	□200	55	98
	MA	496	326	□220	55	98
	MB	516	346	□220	75	118
	NA	516	346	□250	75	118
	PA	516	346	□280	75	118
VRS-240B-□-□-65** (Input shaft bore $\leq \phi 65$)	MA·MB·MC·MD	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-
	PB	-	-	-	-	-
	QA	-	-	-	-	-

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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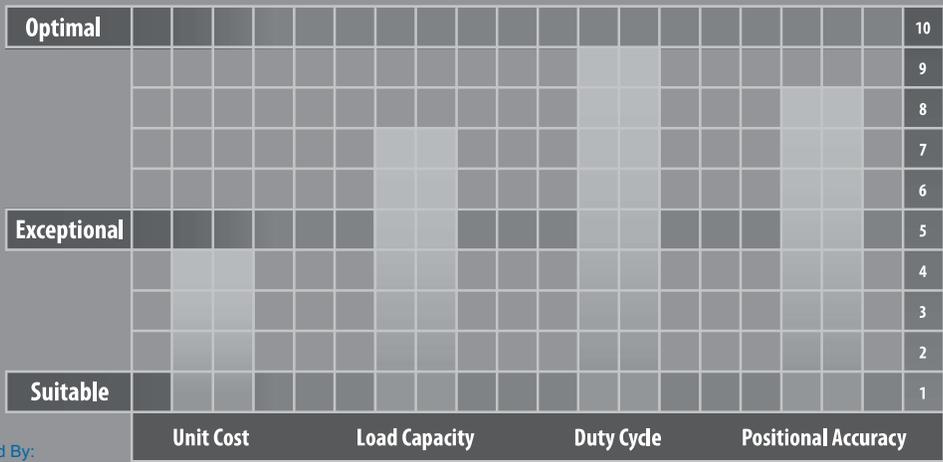
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VRT-SERIES

The VRT series sets the new standard in applications requiring extremely high-torque ratings and rigidity. The compact design and hub-style output is ideal for equipment requiring high speed, high precision indexing movement. The remarkable torsional stiffness and the low backlash of the planetary gearing combine to provide outstanding positioning accuracy.

With a backlash rating less than 3 arc-minutes and exceptional torque handling capabilities, the VRT offers a high performance robust planetary solution for OEM customers. The VRT reducer is often used for larger indexing applications and dial tables commonly found in packaging and filling equipment and assembly automation systems.





VRT-SERIES

- ISO9409 Robotics Industry Mounting Interface
- Superior Flexibility in Mounting of Pinions, Pulleys and Turntables
- Exceptional Torsional Rigidity for High Positional Accuracy needs
- Nice Compact and Robust Design
- Impressive Radial and Axial Load Capability

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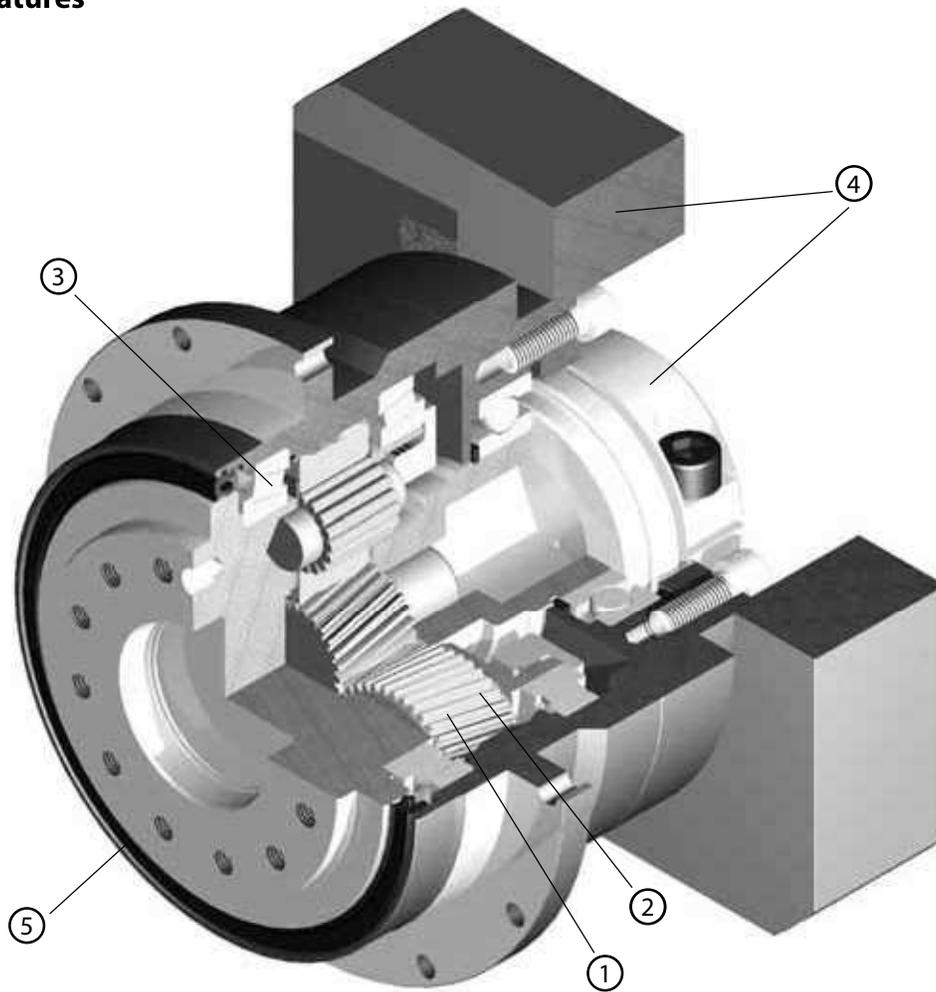
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VRT-SERIES Inline shaft

VRT-Series – Features



- ① High precision: Standard backlash is 3 arc-min, ideal for higher levels of positional accuracy
- ② High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ③ High load capacity: Tapered roller bearings were added to the output section to increase radial and axial load ratings. * Frame sizes 064 – 090 use ball bearing design
- ④ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ⑤ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑥ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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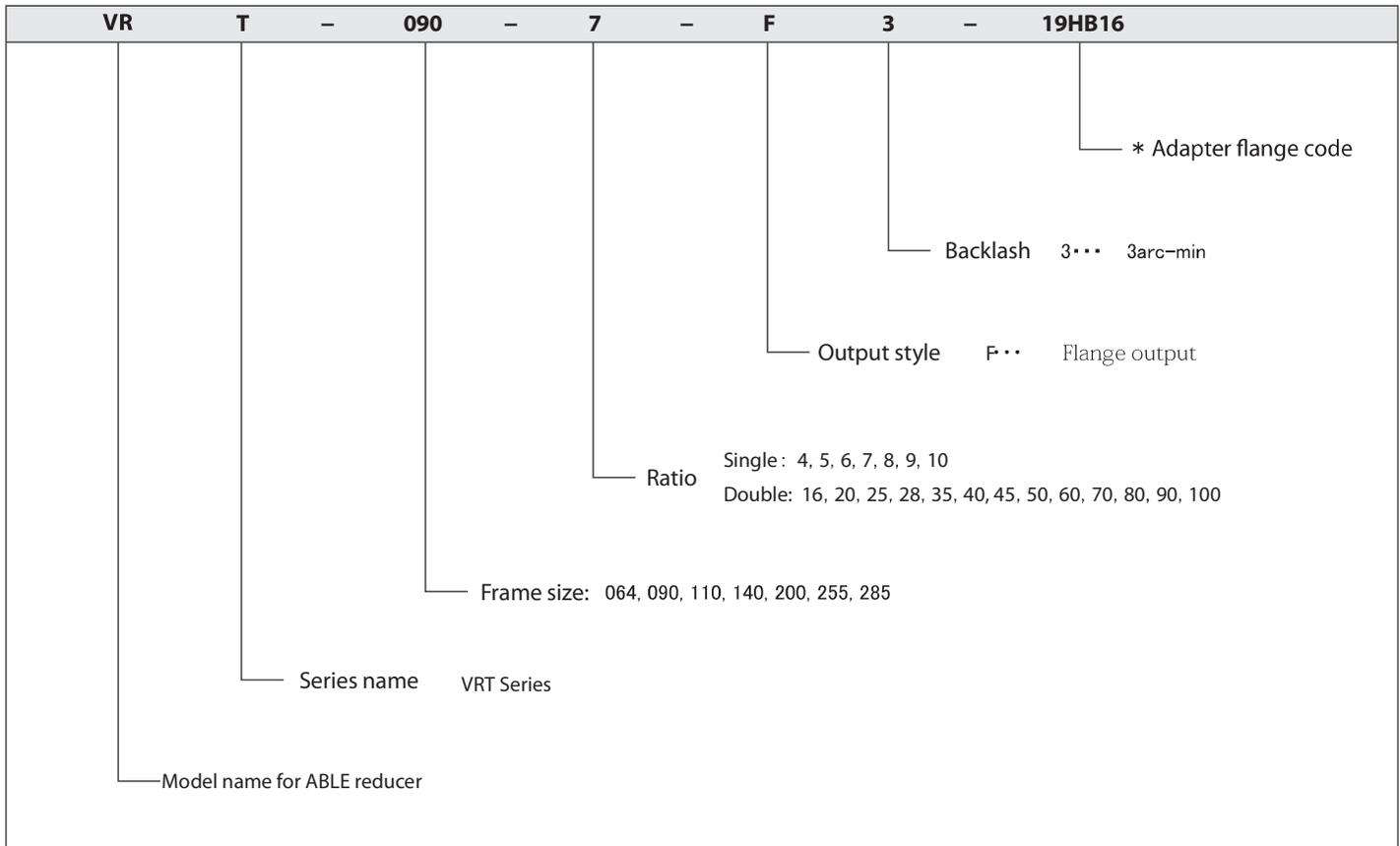
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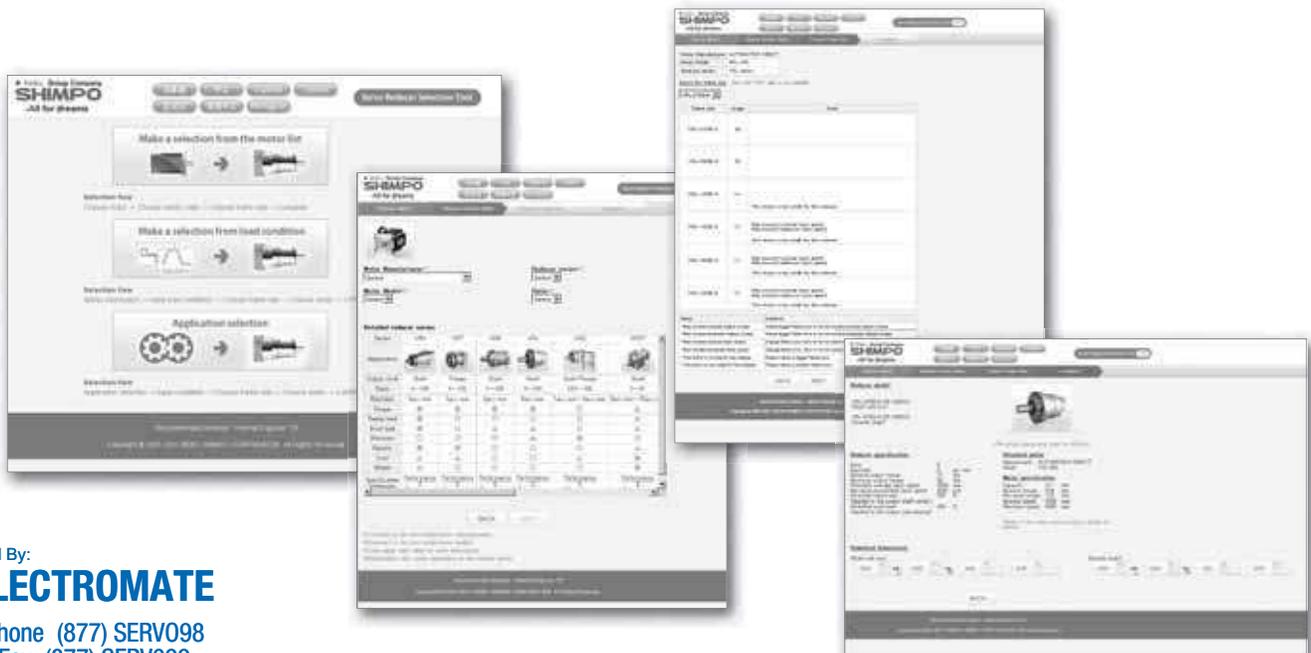
VRT-Series – Model Number



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*1) Adapter flange code
Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
Selection tool www.nidec-shimpo.co.jp/selection/eng



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VRT-o64 – 1-Stage Specifications

Frame Size	064										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	27	27	27	27	27	18	18		
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	50	35	35		
Emergency Stop Torque	[Nm]	*3	100	100	100	100	100	80	80		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.15								
Permitted Radial Load	[N]	*7	370	400	420	440	460	480	500		
Permitted Axial Load	[N]	*8	360	390	430	460	480	510	530		
Maximum Radial Load	[N]	*9	1500								
Maximum Axial Load	[N]	*10	750								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.130	0.100	0.085	0.075	0.068	0.064	0.062		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.210	0.180	0.170	0.150	0.150	0.140	0.140		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.400	0.400	0.400	0.400	0.400	0.400	0.400		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	66								
Protection Class	--	*14	55 (65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.4								

VRT-o64 – 2-Stage Specifications

Frame Size	064										
Stage	2-Stage										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	27	27	27	27	27	27	18		
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	50	50	35		
Emergency Stop Torque	[Nm]	*3	100	100	100	100	100	100	80		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.04								
Permitted Radial Load	[N]	*7	580	630	680	700	760	790	820		
Permitted Axial Load	[N]	*8	650	720	750	750	750	750	750		
Maximum Radial Load	[N]	*9	1500								
Maximum Axial Load	[N]	*10	750								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.059	0.055	0.054	0.056	0.053	0.049	0.530		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.140	0.140	0.130	0.140	0.130	0.130	0.130		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	66								
Protection Class	--	*14	55 (65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.6								

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VRT-064 – 2-Stage Specifications

Frame Size	064								
Stage	2-Stage								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	27	27	27	27	18	18	
Maximum Acceleration Torque	[Nm]	*2	50	50	50	50	35	35	
Emergency Stop Torque	[Nm]	*3	100	100	100	100	80	80	
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.04						
Permitted Radial Load	[N]	*7	850	910	950	1000	1000	1100	
Permitted Axial Load	[N]	*8	750	750	750	750	750	750	
Maximum Radial Load	[N]	*9	1500						
Maximum Axial Load	[N]	*10	750						
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.049	0.049	0.049	0.049	0.049	0.049	
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.130	0.130	0.130	0.130	0.130	0.130	
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	3						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	66						
Protection Class	--	*14	55 (65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	1.6						

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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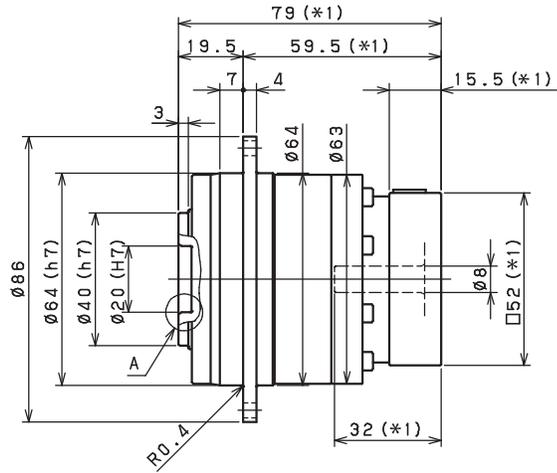
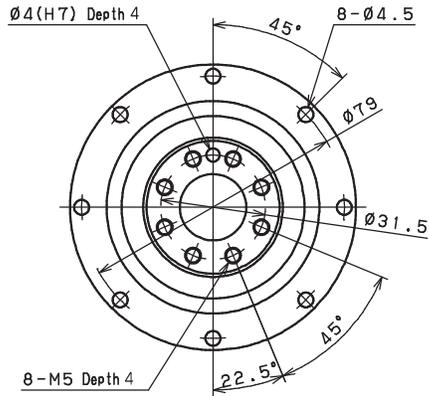


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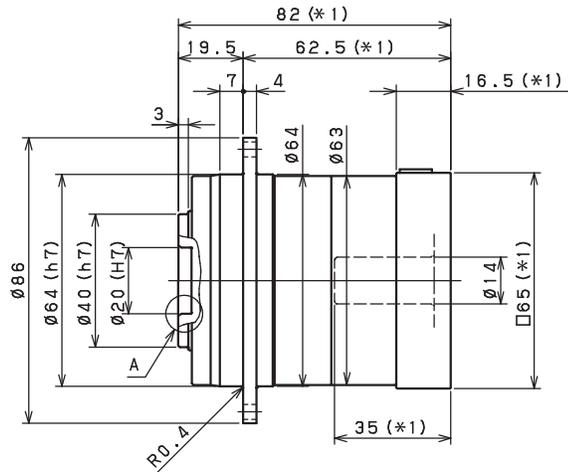
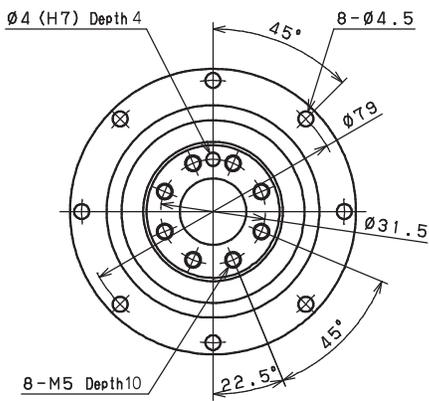
VRT-SERIES Inline shaft

VRT-o64 - 1-Stage Dimensions

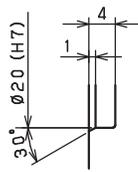
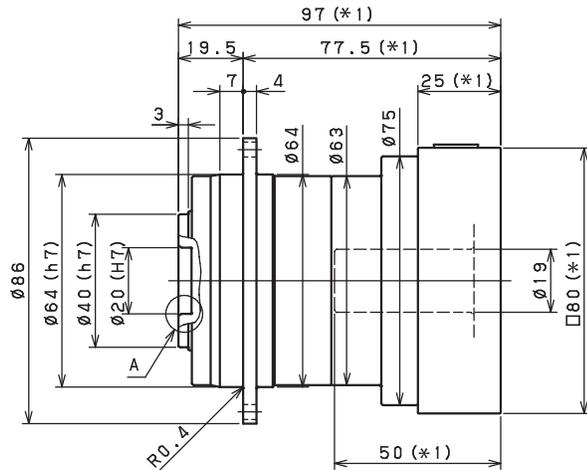
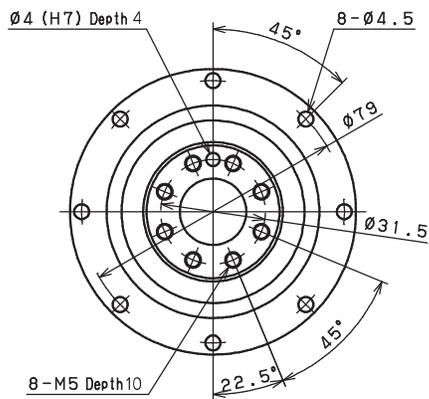
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



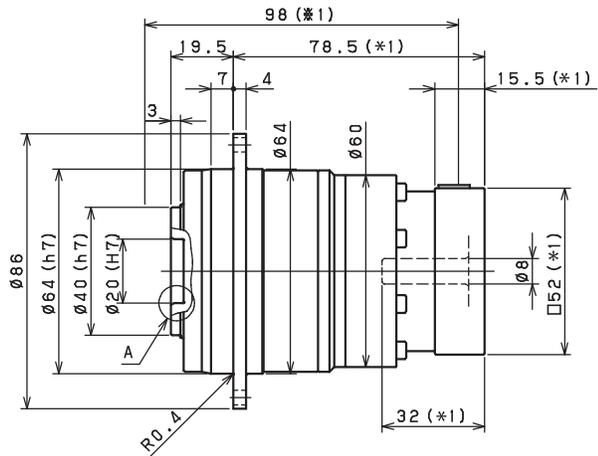
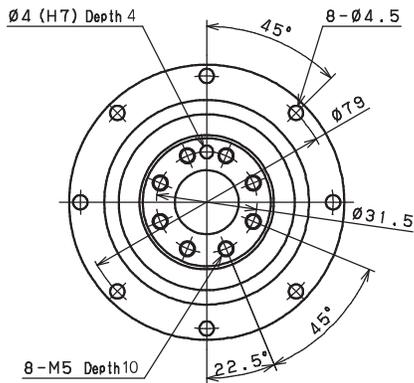
Enlarged detail A

*1) Length will vary depending on motor

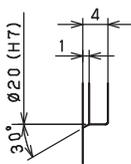
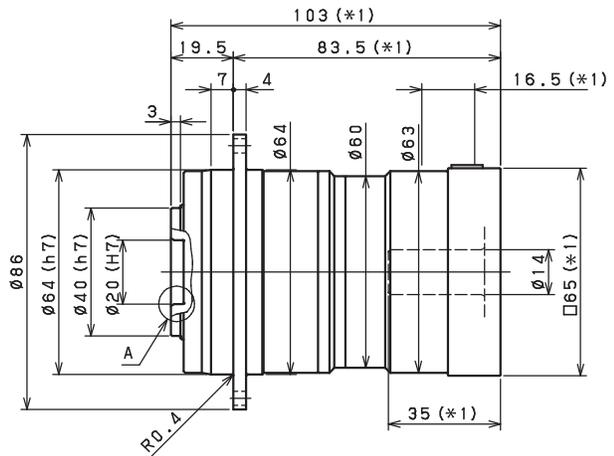
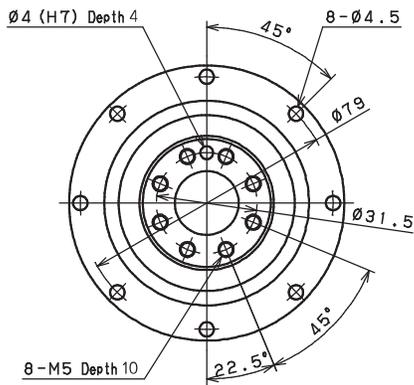
*2) Bushing will be inserted to adapt to motor shaft

VRT-o64 – 2-Stage Dimensions

Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Enlarged detail A

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

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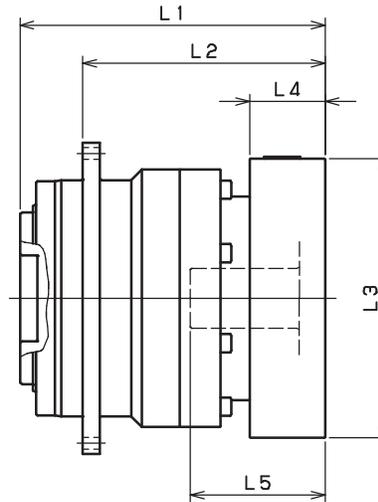
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VRT-SERIES Inline shaft

VRT-064 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-064-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	79	59.5	□52	15.5	32
	AB·AE·AH·AJ·AK	84	64.5	□52	20.5	37
	BA·BB·BD·BE	79	59.5	□60	15.5	32
	BC·BF	84	64.5	□60	20.5	37
	CA	84	64.5	□70	20.5	37
VRT-064-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	82	62.5	□65	16.5	35
	BC·BH·BM	87	67.5	□65	21.5	40
	BL	92	72.5	□65	26.5	45
	CA	82	62.5	□70	16.5	35
	CB	87	67.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	82	62.5	□80	16.5	35
	DE	87	67.5	□80	21.5	40
	DG	92	72.5	□80	26.5	45
	EA·EB·EC	82	62.5	□90	16.5	35
	ED	92	72.5	□90	26.5	45
	FA	82	62.5	□100	16.5	35
	GA	82	62.5	□115	16.5	35
VRT-064-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	97	77.5	□80	25	50
	DD	107	87.5	□80	35	60
	DE	102	82.5	□80	30	55
	EA	102	82.5	□90	30	55
	EB	97	77.5	□90	25	50
	EC	107	87.5	□90	35	60
	FA	97	77.5	□100	25	50
	FB	107	87.5	□100	35	60
	GA·GC	102	82.5	□115	30	55
	GB·GD	97	77.5	□115	25	50
	HA	97	77.5	□130	25	50
	HB	112	92.5	□130	40	65
	HC·HD·HE	102	82.5	□130	30	55

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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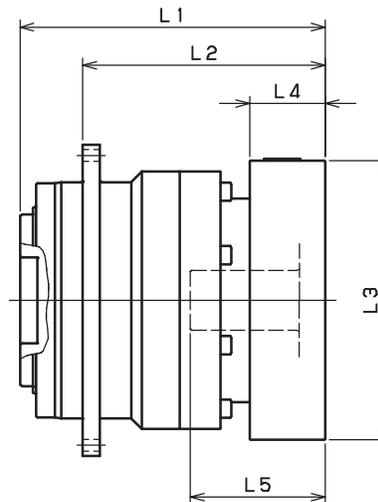
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VRT-064 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-064-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	98	78.5	□52	15.5	32
	AB·AE·AH·AJ·AK	103	83.5	□52	20.5	37
	BA·BB·BD·BE	98	78.5	□60	15.5	32
	BC·BF	103	83.5	□60	20.5	37
	CA	103	83.5	□70	20.5	37
VRT-064-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	103	83.5	□65	16.5	35
	BC·BH·BM	108	88.5	□65	21.5	40
	BL	113	93.5	□65	26.5	45
	CA	103	83.5	□70	16.5	35
	CB	108	88.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	103	83.5	□80	16.5	35
	DE	108	88.5	□80	21.5	40
	DG	113	93.5	□80	26.5	45
	EA·EB·EC	103	83.5	□90	16.5	35
	ED	113	93.5	□90	26.5	45
	FA	103	83.5	□100	16.5	35
	GA	103	83.5	□115	16.5	35
	VRT-064-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	--	--	--	--
DD		--	--	--	--	--
DE		--	--	--	--	--
EA		--	--	--	--	--
EB		--	--	--	--	--
EC		--	--	--	--	--
FA		--	--	--	--	--
FB		--	--	--	--	--
GA·GC		--	--	--	--	--
GB·GD		--	--	--	--	--
HA		--	--	--	--	--
HB		--	--	--	--	--
HC·HD·HE		--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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VRT-SERIES Inline shaft

VRT-090 – 1-Stage Specifications

Frame Size	090										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	75	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	125	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	250	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.35								
Permitted Radial Load	[N]	*7	720	780	830	870	910	950	980		
Permitted Axial Load	[N]	*8	620	680	740	790	830	880	920		
Maximum Radial Load	[N]	*9	3300								
Maximum Axial Load	[N]	*10	1700								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	-	-	-	-	-	-	-		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.770	0.580	0.480	0.410	0.370	0.350	0.330		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.200	1.000	0.940	0.880	0.840	0.810	0.800		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.900	2.900	2.800	2.800	2.800	2.800	2.800		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	3.6								

VRT-090 – 2-Stage Specifications

Frame Size	090								
Stage	2-Stage								
Ratio	Unit	Note	16	20	25	28	35	40	
Nominal Output Torque	[Nm]	*1	75	75	75	75	75	75	
Maximum Acceleration Torque	[Nm]	*2	125	125	125	125	125	125	
Emergency Stop Torque	[Nm]	*3	250	250	250	250	250	250	
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.06						
Permitted Radial Load	[N]	*7	1200	1200	1300	1400	1500	1600	
Permitted Axial Load	[N]	*8	1100	1200	1400	1400	1600	1700	
Maximum Radial Load	[N]	*9	3300						
Maximum Axial Load	[N]	*10	1700						
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.160	0.140	0.130	0.140	0.130	0.100	
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.310	0.290	0.280	0.300	0.280	0.250	
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.750	0.730	0.720	0.730	0.720	0.700	
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	10						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	67						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	4						

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VRT-090 – 2-Stage Specifications

Frame Size	090										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	50	75	75	75	75	50	50		
Maximum Acceleration Torque	[Nm]	*2	80	125	125	125	125	80	80		
Emergency Stop Torque	[Nm]	*3	200	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.06								
Permitted Radial Load	[N]	*7	1600	1700	1800	1900	2000	2000	2100		
Permitted Axial Load	[N]	*8	1700	1700	1700	1700	1700	1700	1700		
Maximum Radial Load	[N]	*9	3300								
Maximum Axial Load	[N]	*10	1700								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.120	0.100	0.099	0.098	0.098	0.098	0.098		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.270	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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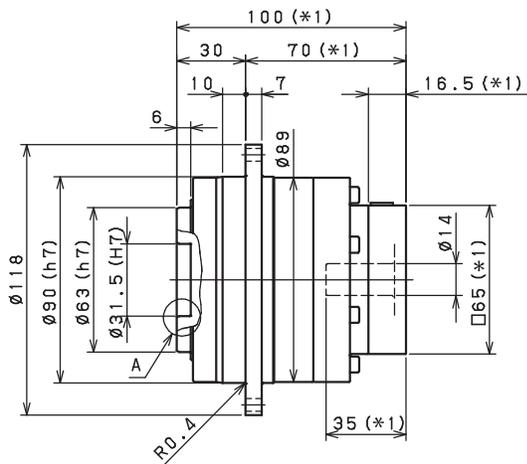
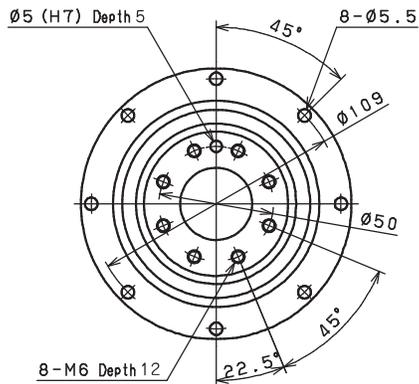


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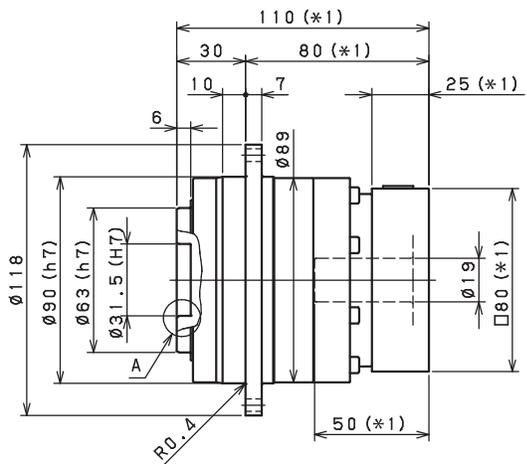
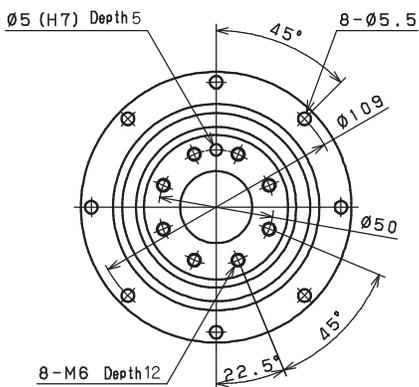
VRT-SERIES Inline shaft

VRT-090 – 1-Stage Dimensions

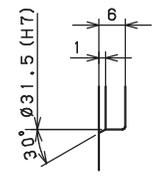
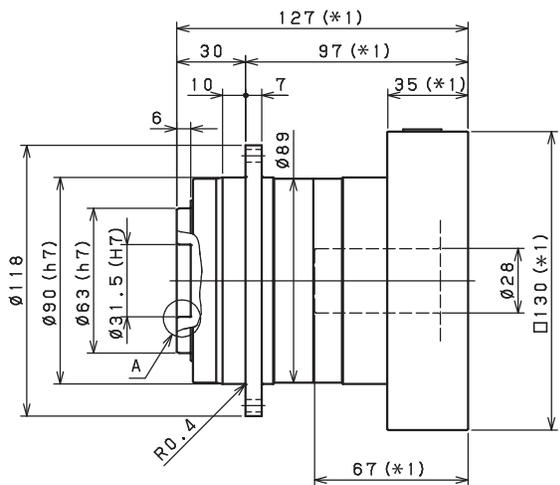
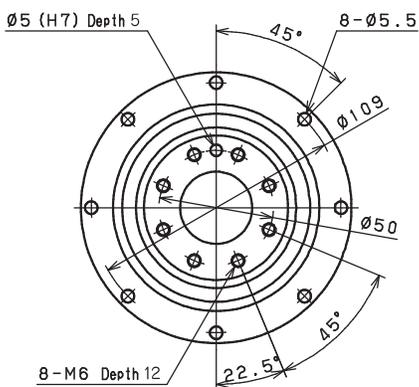
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

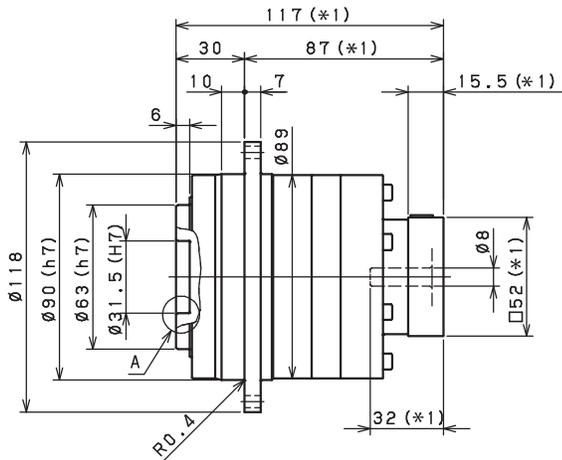
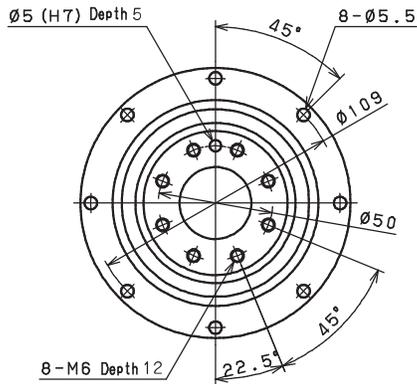


Enlarged detail A

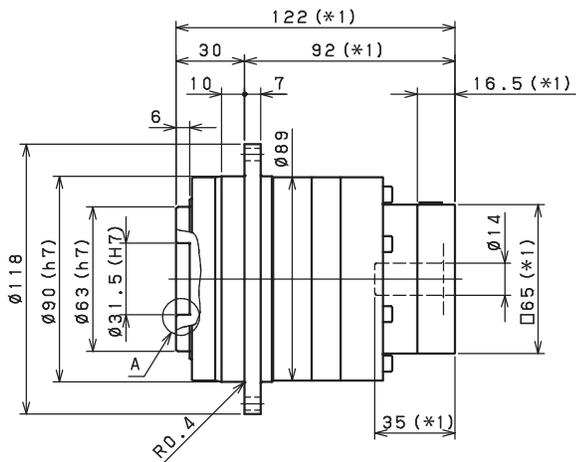
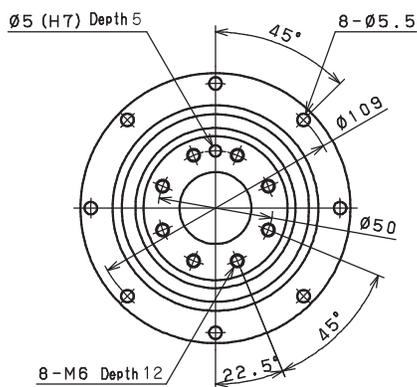
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRT-090 – 2-Stage Dimensions

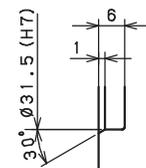
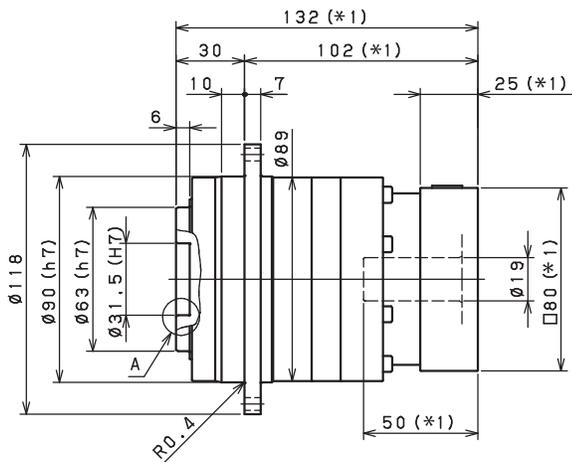
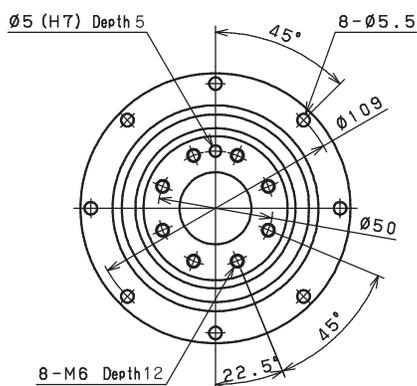
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



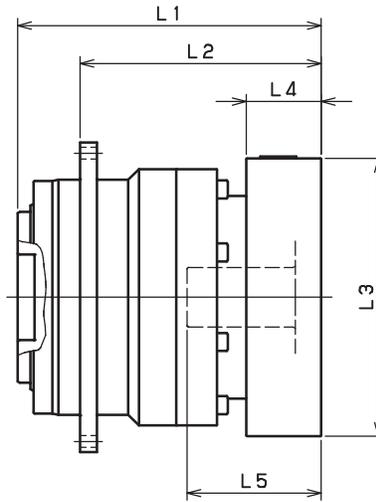
Input shaft bore $\leq \phi 19$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRT-SERIES Inline shaft

VRT-090 – 1-Stage Adapter Dimensions

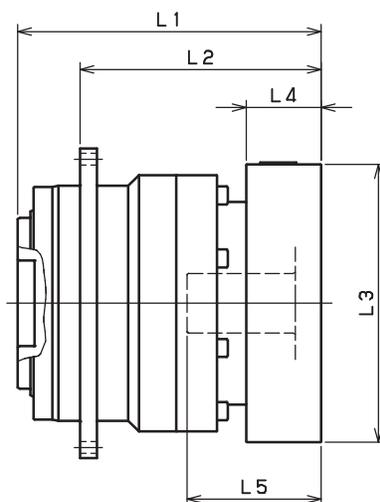


Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-090-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	-	-	-	-	-
	AB·AE·AH·AJ·AK	-	-	-	-	-
	BA·BB·BD·BE	-	-	-	-	-
	BC·BF	-	-	-	-	-
	CA	-	-	-	-	-
VRT-090-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	100	70	□65	16.5	35
	BC·BH·BM	105	75	□65	21.5	40
	BL	110	80	□65	26.5	45
	CA	100	70	□70	16.5	35
	CB	105	75	□70	21.5	40
	DA·DB·DC·DD·DF·DH	100	70	□80	16.5	35
	DE	105	75	□80	21.5	40
	DG	110	80	□80	26.5	45
	EA·EB·EC	100	70	□90	16.5	35
	ED	110	80	□90	26.5	45
	FA	100	70	□100	16.5	35
GA	100	70	□115	16.5	35	
VRT-090-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	110	80	□80	25	50
	DD	120	90	□80	35	60
	DE	115	85	□80	30	55
	EA	115	85	□90	30	55
	EB	110	80	□90	25	50
	EC	120	90	□90	35	60
	FA	110	80	□100	25	50
	FB	120	90	□100	35	60
	GA·GC	115	85	□115	30	55
	GB·GD	110	80	□115	25	50
	HA	110	80	□130	25	50
	HB	125	95	□130	40	65
	HC·HD·HE	115	85	□130	30	55
VRT-090-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	127	97	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	127	97	□115	35	67
	HA·HC·HD	127	97	□130	35	67
	HB	137	107	□130	45	77
	JA·JB·JC	127	97	□150	35	67
	KA·KB	127	97	□180	35	67
	KD	137	107	□180	45	77
	LA	127	97	□200	35	67
	MA	127	97	□220	35	67

*1) Single reduction : 1/3~1/10

*2) Bushing will be inserted to adapt to motor shaft

VRT-090 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-090-□-□-8** (Input shaft bore $\leq \phi 8$)	AA·AC·AD·AF·AG	117	87	□52	15.5	32
	AB·AE·AH·AJ·AK	122	92	□52	20.5	37
	BA·BB·BD·BE	117	87	□60	15.5	32
	BC·BF	122	92	□60	20.5	37
	CA	122	92	□70	20.5	37
VRT-090-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	122	92	□65	16.5	35
	BC·BH·BM	127	97	□65	21.5	40
	BL	132	102	□65	26.5	45
	CA	122	92	□70	16.5	35
	CB	127	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	122	92	□80	16.5	35
	DE	127	97	□80	21.5	40
	DG	132	102	□80	26.5	45
	EA·EB·EC	122	92	□90	16.5	35
	ED	132	102	□90	26.5	45
	FA	122	92	□100	16.5	35
VRT-090-□-□-19** (Input shaft bore $\leq \phi 19$)	GA	122	92	□115	16.5	35
	DA·DB·DC	132	102	□80	25	50
	DD	142	112	□80	35	60
	DE	137	107	□80	30	55
	EA	137	107	□90	30	55
	EB	132	102	□90	25	50
	EC	142	112	□90	35	60
	FA	132	102	□100	25	50
	FB	142	112	□100	35	60
	GA·GC	137	107	□115	30	55
	GB·GD	132	102	□115	25	50
	HA	132	102	□130	25	50
	HB	147	117	□130	40	65
HC·HD·HE	137	107	□130	30	55	
VRT-090-□-□-28** (Input shaft bore $\leq \phi 28$)	FA·FB·FC	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	-	-	-	-	-
	HA·HC·HD	-	-	-	-	-
	HB	-	-	-	-	-
	JA·JB·JC	-	-	-	-	-
	KA·KB	-	-	-	-	-
	KD	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-

*1) Double reduction : 1/15~1/100

*2) Bushing will be inserted to adapt to motor shaft

VRT-SERIES Inline shaft

VRT-110 – 1-Stage Specifications

Frame Size	110										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120		
Maximum Acceleration Torque	[Nm]	*2	330	330	330	330	330	225	225		
Emergency Stop Torque	[Nm]	*3	625	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	1.30								
Permitted Radial Load	[N]	*7	4100	4400	4600	4800	5000	5200	5400		
Permitted Axial Load	[N]	*8	3500	3800	4000	4200	4300	4300	4300		
Maximum Radial Load	[N]	*9	8500								
Maximum Axial Load	[N]	*10	4300								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	-	-	-	-	-	-	-		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.500	1.900	1.500	1.300	1.200	1.100	1.000		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.600	3.900	3.600	3.300	3.200	3.100	3.000		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	12.000	12.000	11.000	11.000	11.000	11.000	11.000		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	71								
Protection Class	--	*14	IP 55 (IP65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	7								

VRT-110 – 2-Stage Specifications

Frame Size	110								
Stage	2-Stage								
Ratio	Unit	Note	16	20	25	28	35	40	
Nominal Output Torque	[Nm]	*1	180	180	180	180	180	180	
Maximum Acceleration Torque	[Nm]	*2	330	330	330	330	330	330	
Emergency Stop Torque	[Nm]	*3	625	625	625	625	625	625	
Nominal Input Speed	[rpm]	*4	3000						
Maximum Input Speed	[rpm]	*5	6000						
No Load Running Torque	[Nm]	*6	0.42						
Permitted Radial Load	[N]	*7	6200	6600	7100	7300	7800	8200	
Permitted Axial Load	[N]	*8	4300	4300	4300	4300	4300	4300	
Maximum Radial Load	[N]	*9	8500						
Maximum Axial Load	[N]	*10	4300						
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.510	0.420	0.400	0.450	0.380	0.290	
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.950	0.850	0.830	0.890	0.810	0.740	
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.900	2.800	2.800	2.800	2.800	2.700	
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	-	-	-	-	-	-	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	31						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	71						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	7.7						

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VRT-110 – 2-Stage Specifications

Frame Size	110										
Stage	2-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	120	180	180	180	180	120	120		
Maximum Acceleration Torque	[Nm]	*2	225	330	330	330	330	225	225		
Emergency Stop Torque	[Nm]	*3	500	625	625	625	625	500	500		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.42								
Permitted Radial Load	[N]	*7	8400	8500	8500	8500	8500	8500	8500		
Permitted Axial Load	[N]	*8	4300	4300	4300	4300	4300	4300	4300		
Maximum Radial Load	[N]	*9	8500								
Maximum Axial Load	[N]	*10	4300								
Moment of Inertia (≤ Ø 14)	[kgcm ²]	--	0.370	0.280	0.280	0.280	0.280	0.280	0.280		
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	0.810	0.730	0.730	0.730	0.730	0.730	0.730		
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	2.700	2.700	2.700	2.700	2.700	2.700	2.700		
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	-	-	-	-	-	-	-		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	71								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	7.7								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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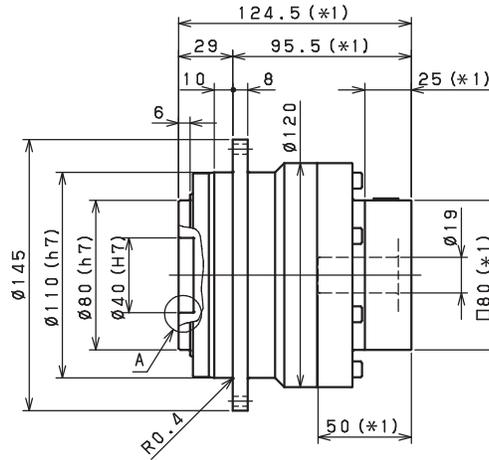
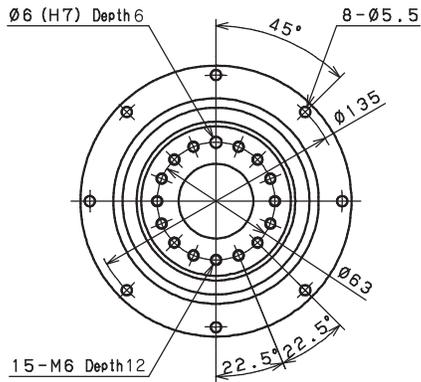


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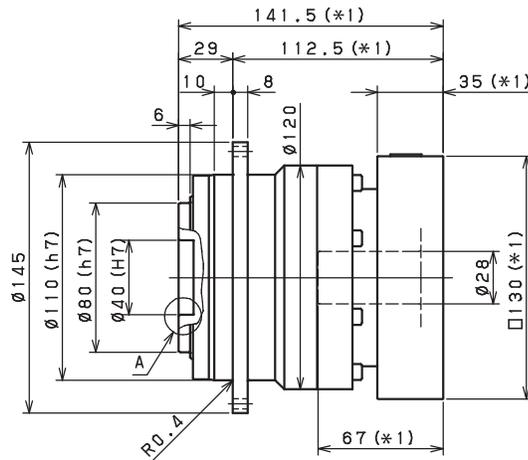
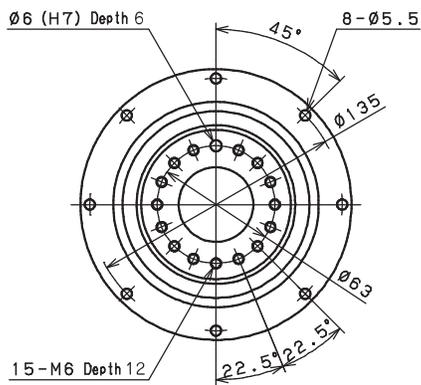
VRT-SERIES Inline shaft

VRT-110 – 1-Stage Dimensions

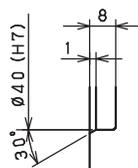
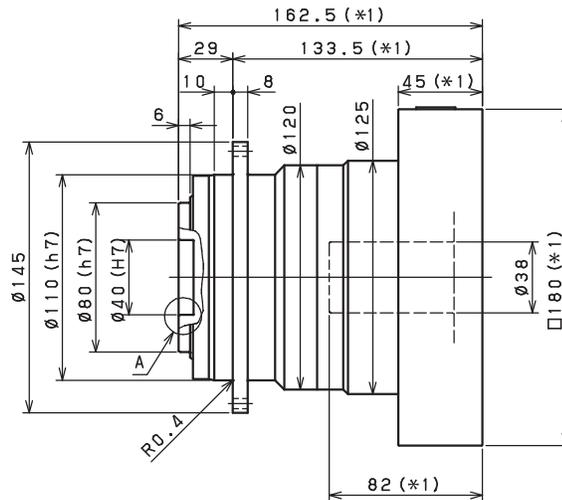
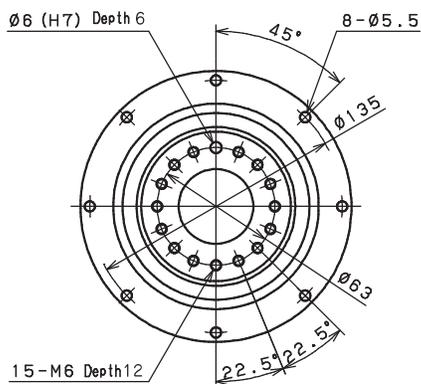
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



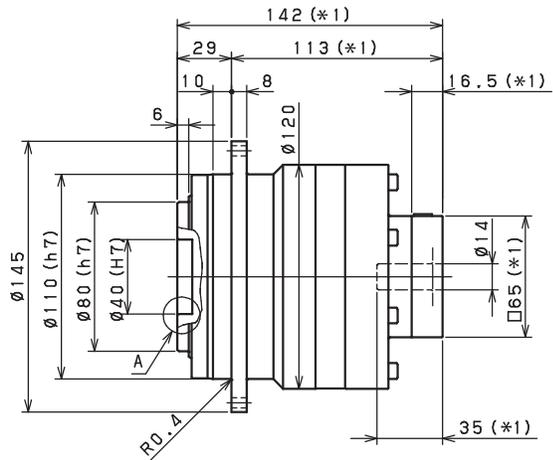
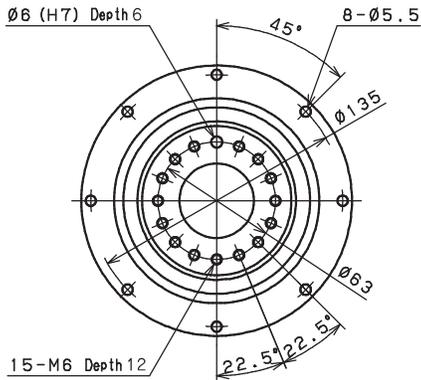
Enlarged detail A

*1) Length will vary depending on motor

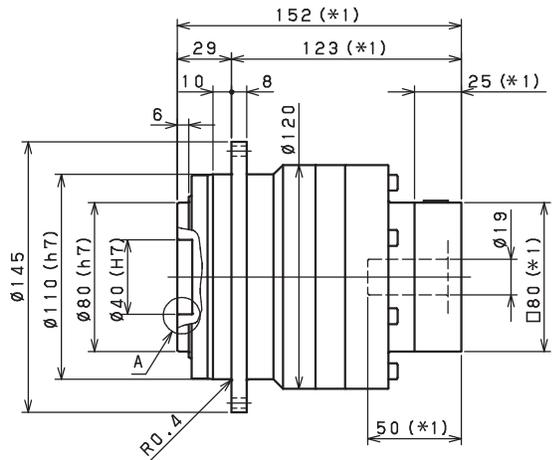
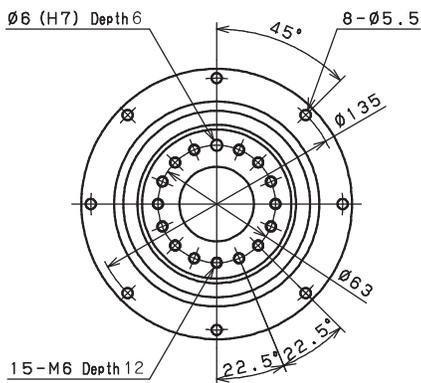
*2) Bushing will be inserted to adapt to motor shaft

VRT-110 – 2-Stage Dimensions

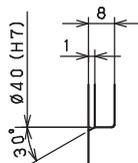
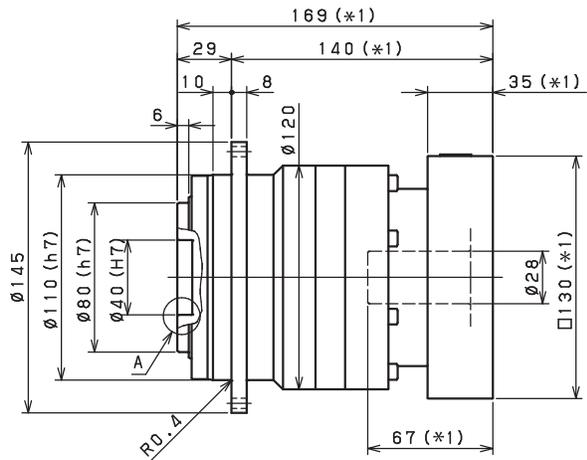
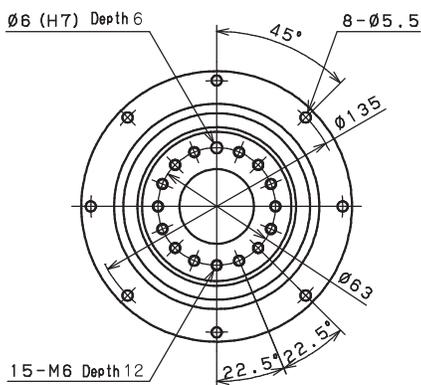
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Enlarged detail A

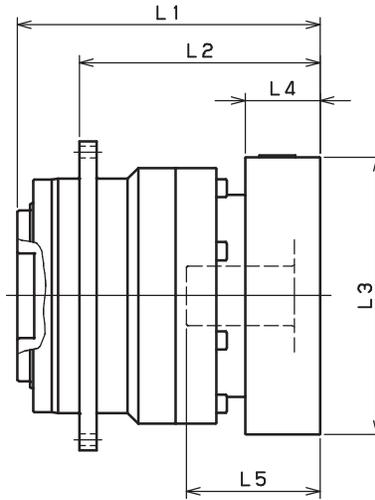
*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT

VRT-SERIES Inline shaft

VRT-110 – 1-Stage Adapter Dimensions



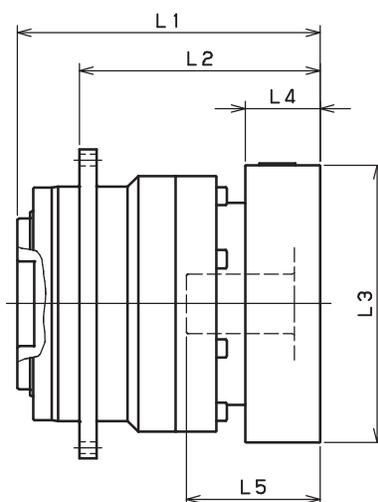
Model number	** Adapter Code	1-Stage					
		L1	L2	L3	L4	L5	
VRT-110-□-□-14** (Input shaft bore $\leq \phi 14$)	BA·BB·BD·BE·BF·BG·BJ·BK	--	--	--	--	--	
	BC·BH·BM	--	--	--	--	--	
	BL	--	--	--	--	--	
	CA	--	--	--	--	--	
	CB	--	--	--	--	--	
	DA·DB·DC·DD·DF·DH	--	--	--	--	--	
	DE	--	--	--	--	--	
	DG	--	--	--	--	--	
	EA·EB·EC	--	--	--	--	--	
	ED	--	--	--	--	--	
	FA	--	--	--	--	--	
	GA	--	--	--	--	--	
	VRT-110-□-□-19** (Input shaft bore $\leq \phi 19$)	DA·DB·DC	124.5	95.5	□80	25	50
		DD	134.5	105.5	□80	35	60
DE		129.5	100.5	□80	30	55	
EA		129.5	100.5	□90	30	55	
EB		124.5	95.5	□90	25	50	
EC		134.5	105.5	□90	35	60	
FA		124.5	95.5	□100	25	50	
FB		134.5	105.5	□100	35	60	
GA·GC		129.5	100.5	□115	30	55	
GB·GD		124.5	95.5	□115	25	50	
HA		124.5	95.5	□130	25	50	
HB		139.5	110.5	□130	40	65	
HC·HD·HE		129.5	100.5	□130	30	55	
VRT-110-□-□-28** (Input shaft bore $\leq \phi 28$)		FA·FB·FC	141.5	112.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	141.5	112.5	□115	35	67	
	HA·HC·HD	141.5	112.5	□130	35	67	
	HB	151.5	122.5	□130	45	77	
	JA·JB·JC	141.5	112.5	□150	35	67	
	KA·KB	141.5	112.5	□180	35	67	
	KD	151.5	122.5	□180	45	77	
	LA	141.5	112.5	□200	35	67	
VRT-110-□-□-38** (Input shaft bore $\leq \phi 38$)	MA	141.5	112.5	□220	35	67	
	HA	162.5	133.5	□130	45	82	
	HB	157.5	128.5	□130	40	77	
	JA	162.5	133.5	□150	45	82	
	KA·KB·KC	162.5	133.5	□180	45	82	
	LA	162.5	133.5	□200	45	82	
	LB	172.5	143.5	□200	55	92	
MA·MB	162.5	133.5	□220	45	82		
NA	162.5	133.5	□250	45	82		

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-110 – 2-Stage Adapter Dimensions



Model number	** Adapter Code	2-Stage					
		L1	L2	L3	L4	L5	
VRT-110-□-□-14** (Input shaft bore ≤ φ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	142	113	□65	16.5	35	
	BC·BH·BM	147	118	□65	21.5	40	
	BL	152	123	□65	26.5	45	
	CA	142	113	□70	16.5	35	
	CB	147	118	□70	21.5	40	
	DA·DB·DC·DD·DF·DH	142	113	□80	16.5	35	
	DE	147	118	□80	21.5	40	
	DG	152	123	□80	26.5	45	
	EA·EB·EC	142	113	□90	16.5	35	
	ED	152	123	□90	26.5	45	
	FA	142	113	□100	16.5	35	
	GA	142	113	□115	16.5	35	
	VRT-110-□-□-19** (Input shaft bore ≤ φ 19)	DA·DB·DC	152	123	□80	25	50
		DD	162	133	□80	35	60
DE		157	128	□80	30	55	
EA		157	128	□90	30	55	
EB		152	123	□90	25	50	
EC		162	133	□90	35	60	
FA		152	123	□100	25	50	
FB		162	133	□100	35	60	
GA·GC		157	128	□115	30	55	
GB·GD		152	123	□115	25	50	
HA		152	123	□130	25	50	
HB		167	138	□130	40	65	
HC·HD·HE		157	128	□130	30	55	
VRT-110-□-□-28** (Input shaft bore ≤ φ 28)		FA·FB·FC	169	140	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	169	140	□115	35	67	
	HA·HC·HD	169	140	□130	35	67	
	HB	179	150	□130	45	77	
	JA·JB·JC	169	140	□150	35	67	
	KA·KB	169	140	□180	35	67	
	KD	179	150	□180	45	77	
	LA	169	140	□200	35	67	
VRT-110-□-□-38** (Input shaft bore ≤ φ 38)	MA	169	140	□220	35	67	
	HA	-	-	-	-	-	
	HB	-	-	-	-	-	
	JA	-	-	-	-	-	
	KA·KB·KC	-	-	-	-	-	
	LA	-	-	-	-	-	
	LB	-	-	-	-	-	
MA·MB	-	-	-	-	-		
NA	-	-	-	-	-		

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-SERIES Inline shaft

VRT-140 – 1-Stage Specifications

Frame Size	140										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	240	360	360	360	360	240	240		
Maximum Acceleration Torque	[Nm]	*2	700	700	700	700	700	470	470		
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1250	1250	1000	1000		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	1.63								
Permitted Radial Load	[N]	*7	7200	7700	8100	8500	8900	9200	9500		
Permitted Axial Load	[N]	*8	5000	5300	5600	5900	6100	6300	6500		
Maximum Radial Load	[N]	*9	13000								
Maximum Axial Load	[N]	*10	6500								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	9.500	7.100	5.800	4.800	4.300	4.000	3.800		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	17.000	15.000	14.000	13.000	12.000	12.000	12.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	39.000	37.000	36.000	35.000	34.000	34.000	34.000		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	14								

VRT-140 – 2-Stage Specifications

Frame Size	140										
Stage	2-Stage										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	360	360	360	360	360	360	240		
Maximum Acceleration Torque	[Nm]	*2	700	700	700	700	700	700	470		
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1250	1250	1250	1000		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	0.56								
Permitted Radial Load	[N]	*7	11000	12000	12000	13000	13000	13000	13000		
Permitted Axial Load	[N]	*8	6500	6500	6500	6500	6500	6500	6500		
Maximum Radial Load	[N]	*9	13000								
Maximum Axial Load	[N]	*10	6500								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.700	1.300	1.200	1.400	1.100	0.850	1.100		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	3.600	3.200	3.200	3.400	3.100	2.800	3.100		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	11.000	11.000	11.000	11.000	11.000	10.000	11.000		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	15								

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VRT-140 – 2-Stage Specifications

Frame Size	140								
Stage	2-Stage								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	360	360	360	360	240	240	
Maximum Acceleration Torque	[Nm]	*2	700	700	700	700	470	470	
Emergency Stop Torque	[Nm]	*3	1250	1250	1250	1250	1000	1000	
Nominal Input Speed	[rpm]	*4	2000						
Maximum Input Speed	[rpm]	*5	4000						
No Load Running Torque	[Nm]	*6	0.56						
Permitted Radial Load	[N]	*7	13000	13000	13000	13000	13000	13000	
Permitted Axial Load	[N]	*8	6500	6500	6500	6500	6500	6500	
Maximum Radial Load	[N]	*9	13000						
Maximum Axial Load	[N]	*10	6500						
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	0.830	0.820	0.810	0.810	0.800	0.800	
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	2.800	2.800	2.800	2.800	2.800	2.800	
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	10.000	10.000	10.000	10.000	10.000	10.000	
Moment of Inertia (≤ Ø 48)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	175						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	67						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	15						

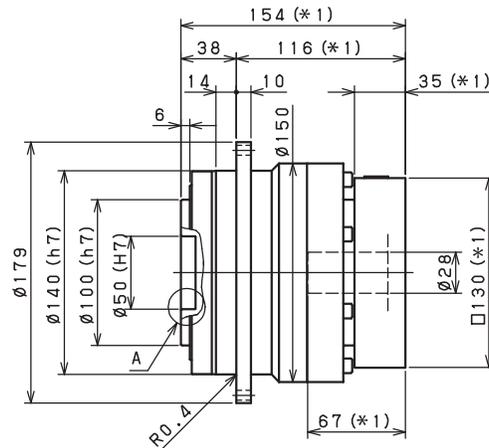
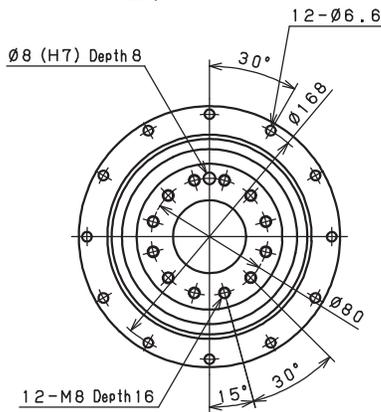
- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

VRT

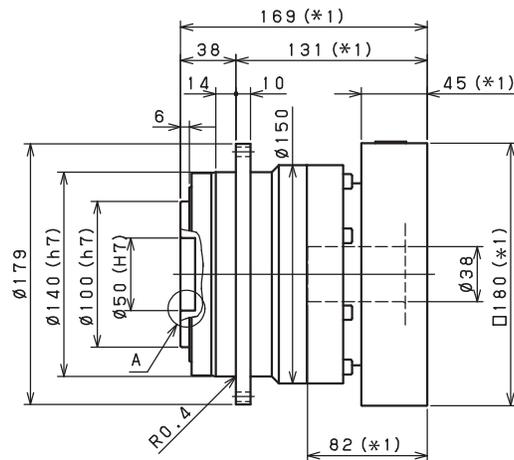
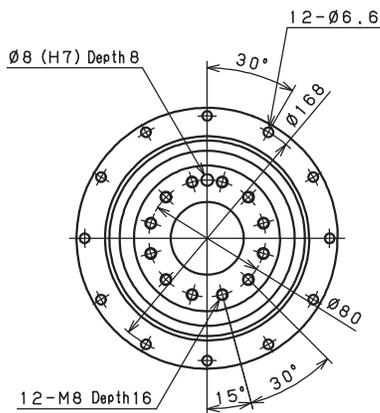
VRT-SERIES Inline shaft

VRT-140 – 1-Stage Dimensions

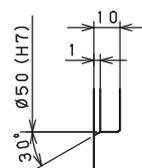
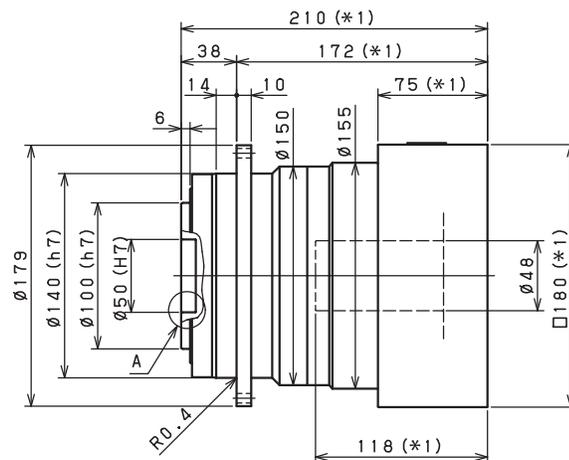
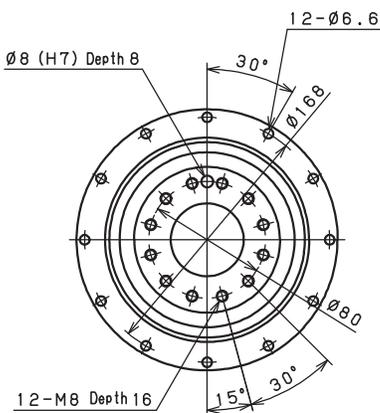
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



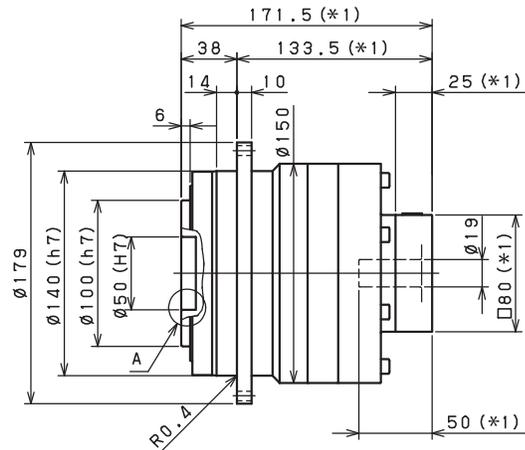
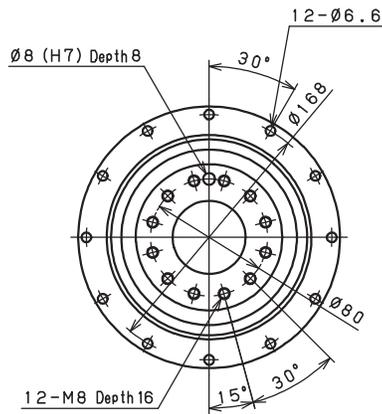
Enlarged detail A

*1) Length will vary depending on motor.

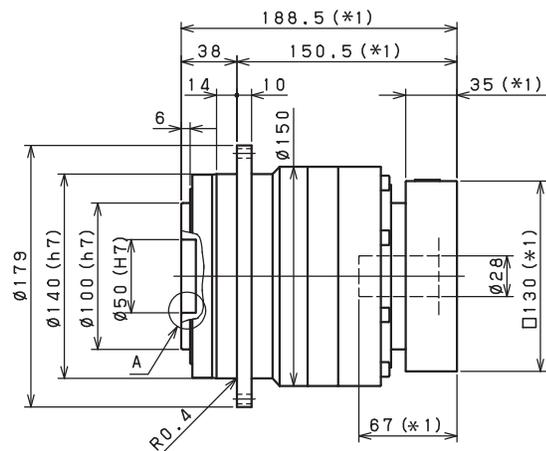
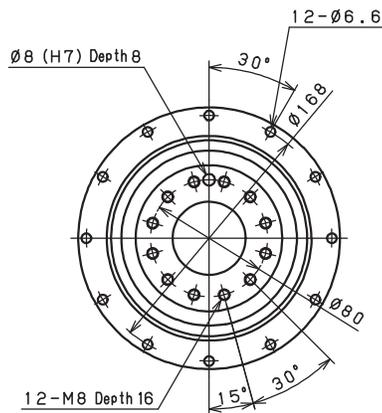
*2) Bushing will be inserted to adapt to motor shaft

VRT-140 – 2-Stage Dimensions

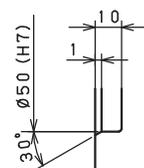
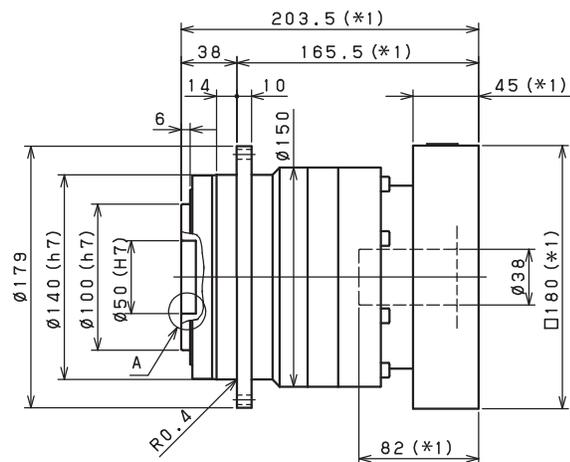
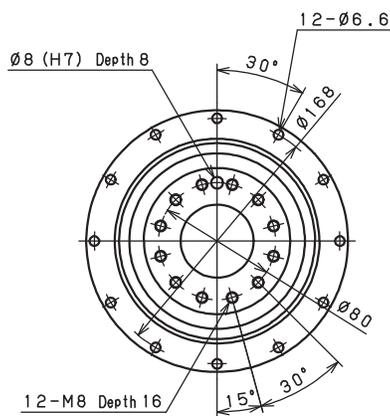
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



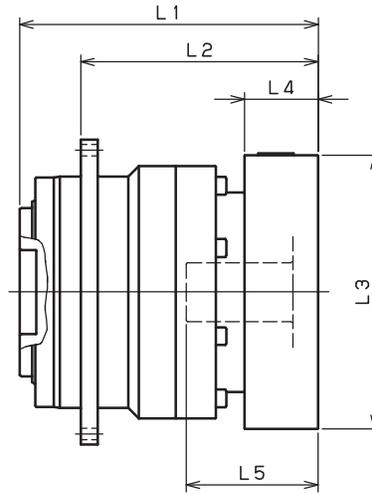
Enlarged detail A

- *1) Length will vary depending on motor.
- *2) Bushing will be inserted to adapt to motor shaft

VRT

VRT-SERIES Inline shaft

VRT-140 – 1-Stage Adapter Dimensions



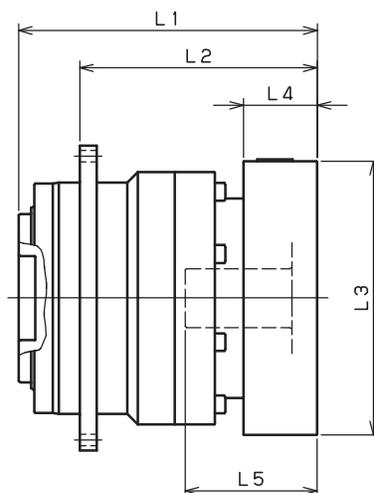
Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-140-□-□-19** (Input shaft bore ≤φ19)	DA • DB • DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA • GC	--	--	--	--	--
	GB • GD	--	--	--	--	--
	HA	--	--	--	--	--
	HB	--	--	--	--	--
	HC • HD • HE	--	--	--	--	--
	VRT-140-□-□-28** (Input shaft bore ≤φ28)	FA • FB • FC	154	116	□100	35
GA • GB • GC • GD • GE • GF • GG		154	116	□115	35	67
HA • HC • HD		154	116	□130	35	67
HB		164	126	□130	45	77
JA • JB • JC		154	116	□150	35	67
KA • KB		154	116	□180	35	67
KD		164	126	□180	45	77
LA		154	116	□200	35	67
MA		154	116	□220	35	67
VRT-140-□-□-38** (Input shaft bore ≤φ38)		HA	169	131	□130	45
	HB	164	126	□130	40	77
	JA	169	131	□150	45	82
	KA • KB • KC	169	131	□180	45	82
	LA	169	131	□200	45	82
	LB	179	141	□200	55	92
	MA • MB	169	131	□220	45	82
	NA	169	131	□250	45	82
VRT-140-□-□-48** (Input shaft bore ≤φ48)	KB • KC	190	152	□180	55	98
	KA	210	172	□180	75	118
	LA	190	152	□200	55	98
	MA	190	152	□220	55	98
	MB	210	172	□220	75	118
	NA	210	172	□250	75	118
	PA	210	172	□280	75	118

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-140 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-140-□-□-19** (Input shaft bore ≤φ19)	DA • DB • DC	171.5	133.5	□80	25	50
	DD	181.5	143.5	□80	35	60
	DE	176.5	138.5	□80	30	55
	EA	176.5	138.5	□90	30	55
	EB	171.5	133.5	□90	25	50
	EC	181.5	143.5	□90	35	60
	FA	171.5	133.5	□100	25	50
	FB	181.5	143.5	□100	35	60
	GA • GC	176.5	138.5	□115	30	55
	GB • GD	171.5	133.5	□115	25	50
	HA	171.5	133.5	□130	25	50
	HB	186.5	148.5	□130	40	65
	HC • HD • HE	176.5	138.5	□130	30	55
	FA • FB • FC	188.5	150.5	□100	35	67
VRT-140-□-□-28** (Input shaft bore ≤φ28)	GA • GB • GC • GD • GE • GF • GG	188.5	150.5	□115	35	67
	HA • HC • HD	188.5	150.5	□130	35	67
	HB	198.5	160.5	□130	45	77
	JA • JB • JC	188.5	150.5	□150	35	67
	KA • KB	188.5	150.5	□180	35	67
	KD	198.5	160.5	□180	45	77
	LA	188.5	150.5	□200	35	67
	MA	188.5	150.5	□220	35	67
	HA	203.5	165.5	□130	45	82
	HB	198.5	160.5	□130	40	77
VRT-140-□-□-38** (Input shaft bore ≤φ38)	JA	203.5	165.5	□150	45	82
	KA • KB • KC	203.5	165.5	□180	45	82
	LA	203.5	165.5	□200	45	82
	LB	213.5	175.5	□200	55	92
	MA • MB	203.5	165.5	□220	45	82
	NA	203.5	165.5	□250	45	82
	KB • KC	--	--	--	--	--
	KA	--	--	--	--	--
VRT-140-□-□-48** (Input shaft bore ≤φ48)	LA	--	--	--	--	--
	MA	--	--	--	--	--
	MB	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-SERIES Inline shaft

VRT-200 – 1-Stage Specifications

Frame Size	200										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	750	750	750	750	750	500	500		
Maximum Acceleration Torque	[Nm]	*2	1400	1400	1400	1400	1400	970	970		
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2750	2750	2200	2200		
Nominal Input Speed	[rpm]	*4	1500								
Maximum Input Speed	[rpm]	*5	3000								
No Load Running Torque	[Nm]	*6	2.68								
Permitted Radial Load	[N]	*7	12000	13000	14000	15000	15000	16000	16000		
Permitted Axial Load	[N]	*8	8300	8900	9400	9800	10000	11000	11000		
Maximum Radial Load	[N]	*9	25000								
Maximum Axial Load	[N]	*10	13000								
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	43.000	32.000	25.000	21.000	19.000	17.000	16.000		
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	65.000	54.000	47.000	43.000	41.000	39.000	38.000		
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	130.000	110.000	110.000	100.000	100.000	100.000	99.000		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	37								

VRT-200 – 2-Stage Specifications

Frame Size	200										
Stage	2-Stage										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	750	750	750	750	750	750	500		
Maximum Acceleration Torque	[Nm]	*2	1400	1400	1400	1400	1400	1400	970		
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2750	2750	2750	2200		
Nominal Input Speed	[rpm]	*4	1500								
Maximum Input Speed	[rpm]	*5	3000								
No Load Running Torque	[Nm]	*6	1.39								
Permitted Radial Load	[N]	*7	19000	20000	21000	22000	24000	25000	25000		
Permitted Axial Load	[N]	*8	13000	13000	13000	13000	13000	13000	13000		
Maximum Radial Load	[N]	*9	25000								
Maximum Axial Load	[N]	*10	13000								
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	6.400	5.000	4.600	5.300	4.300	3.300	4.100		
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	14.000	13.000	12.000	13.000	12.000	11.000	12.000		
Moment of Inertia ($\leq \emptyset 48$)	[kgcm ²]	--	36.000	35.000	34.000	35.000	34.000	33.000	34.000		
Moment of Inertia ($\leq \emptyset 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	175								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	67								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	37								

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VRT-200 – 2-Stage Specifications

Frame Size	200								
Stage	2-Stage								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	750	750	750	750	500	500	
Maximum Acceleration Torque	[Nm]	*2	1400	1400	1400	1400	970	970	
Emergency Stop Torque	[Nm]	*3	2750	2750	2750	2750	2200	2200	
Nominal Input Speed	[rpm]	*4	1500						
Maximum Input Speed	[rpm]	*5	3000						
No Load Running Torque	[Nm]	*6	1.39						
Permitted Radial Load	[N]	*7	25000	25000	25000	25000	25000	25000	
Permitted Axial Load	[N]	*8	13000	13000	13000	13000	13000	13000	
Maximum Radial Load	[N]	*9	25000						
Maximum Axial Load	[N]	*10	13000						
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	3.200	3.200	3.100	3.100	3.100	3.100	
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	11.000	11.000	11.000	11.000	11.000	11.000	
Moment of Inertia (≤ Ø 48)	[kgcm ²]	--	33.000	33.000	33.000	33.000	33.000	33.000	
Moment of Inertia (≤ Ø 65)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	175						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	67						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	37						

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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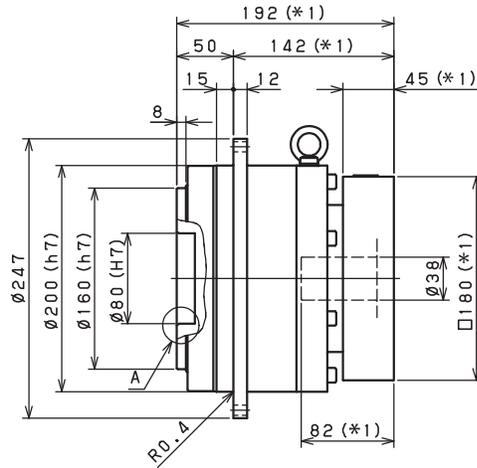
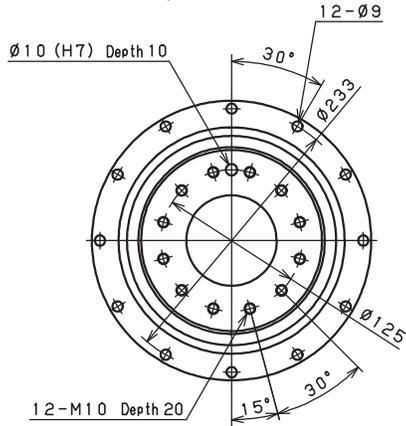


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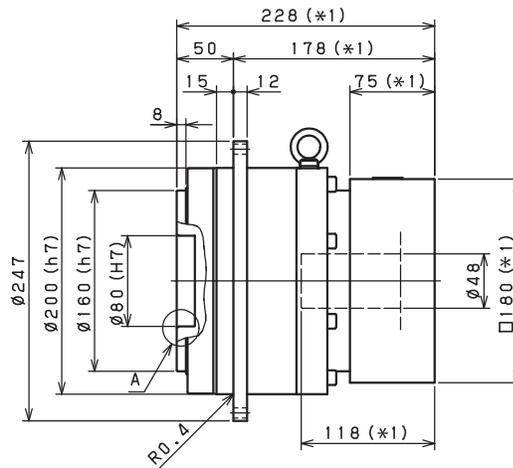
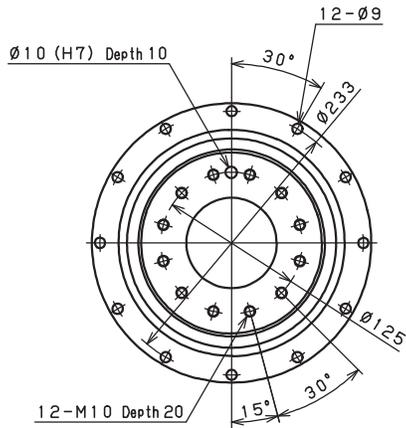
VRT-SERIES Inline shaft

VRT-200 – 1-Stage Dimensions

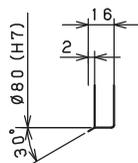
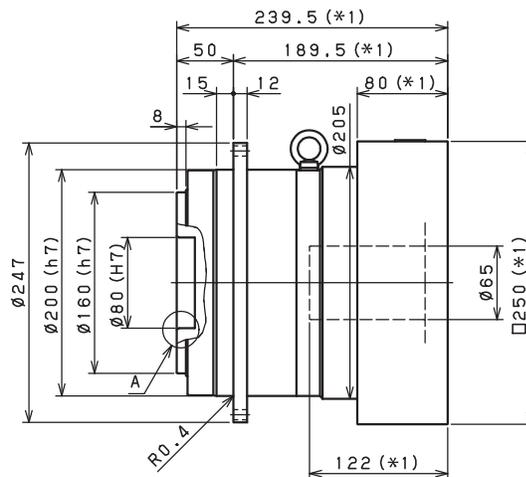
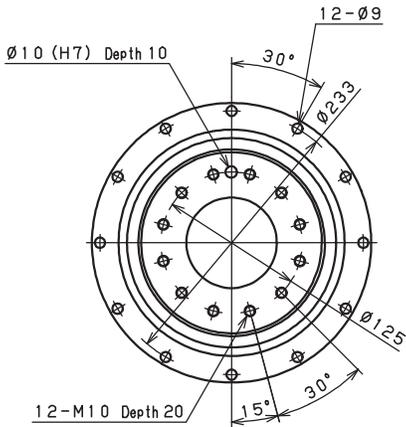
Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



Input shaft bore $\leq \phi 65$

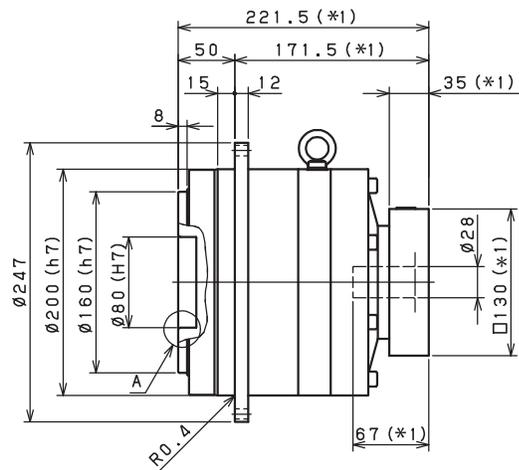
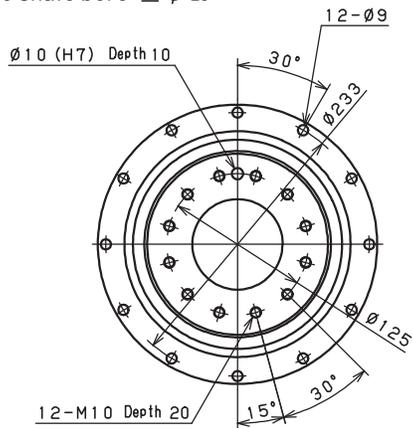


Enlarged detail A

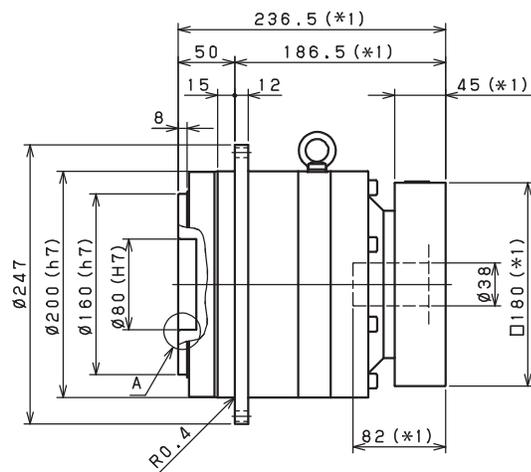
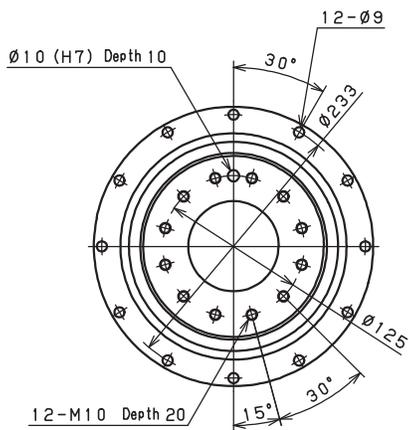
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRT-200 – 2-Stage Dimensions

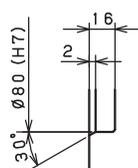
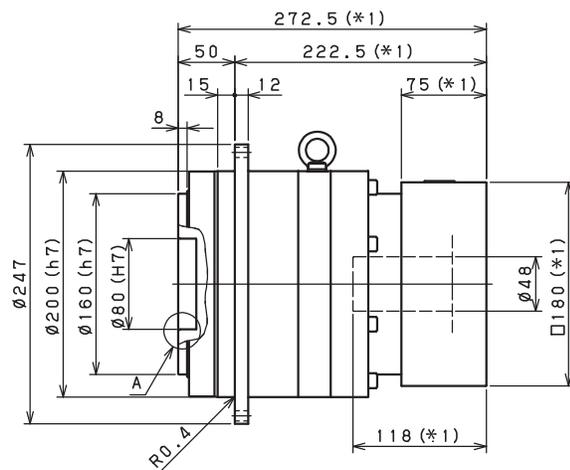
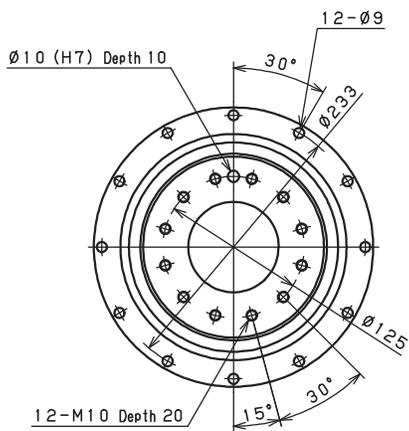
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Input shaft bore $\leq \phi 48$



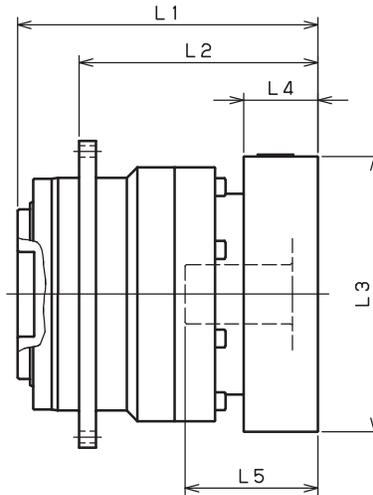
Enlarged detail A

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

VRT-SERIES Inline shaft

VRT-200 – 1-Stage Adapter Dimensions



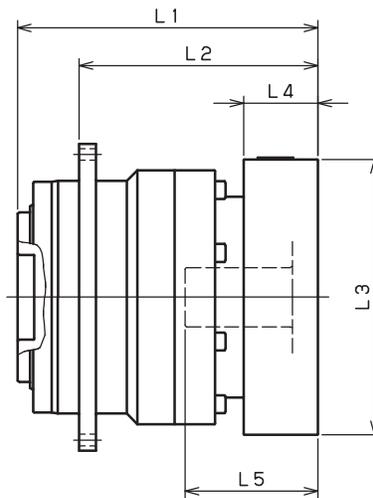
Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-200-□-□-28** (Input shaft bore $\leq \phi 28$)	FA • FB • FC	--	--	--	--	--
	GA • GB • GC • GD • GE • GF • GG	--	--	--	--	--
	HA • HC • HD	--	--	--	--	--
	HB	--	--	--	--	--
	JA • JB • JC	--	--	--	--	--
	KA • KB	--	--	--	--	--
	KD	--	--	--	--	--
	LA	--	--	--	--	--
	MA	--	--	--	--	--
	HA	192	142	□130	45	82
VRT-200-□-□-38** (Input shaft bore $\leq \phi 38$)	HB	187	137	□130	40	77
	JA	192	142	□150	45	82
	KA • KB • KC	192	142	□180	45	82
	LA	192	142	□200	45	82
	LB	202	152	□200	55	92
	MA • MB	192	142	□220	45	82
	NA	192	142	□250	45	82
	KB • KC	208	158	□180	55	98
VRT-200-□-□-48** (Input shaft bore $\leq \phi 48$)	KA	228	178	□180	75	118
	LA	208	158	□200	55	98
	MA	208	158	□220	55	98
	MB	228	178	□220	75	118
	NA	228	178	□250	75	118
	PA	228	178	□280	75	118
	MA • MB • MC • MD	239.5	189.5	□220	80	122
VRT-200-□-□-65** (Input shaft bore $\leq \phi 65$)	NA	239.5	189.5	□250	80	122
	PA	259.5	209.5	□280	100	142
	PB	269.5	219.5	□280	110	152
	QA	259.5	209.5	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-200 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-200-□-□-28** (Input shaft bore $\leq \phi 28$)	FA • FB • FC	221.5	171.5	□100	35	67
	GA • GB • GC • GD • GE • GF • GG	221.5	171.5	□115	35	67
	HA • HC • HD	221.5	171.5	□130	35	67
	HB	231.5	181.5	□130	45	77
	JA • JB • JC	221.5	171.5	□150	35	67
	KA • KB	221.5	171.5	□180	35	67
	KD	231.5	181.5	□180	45	77
	LA	221.5	171.5	□200	35	67
	MA	221.5	171.5	□220	35	67
	VRT-200-□-□-38** (Input shaft bore $\leq \phi 38$)	HA	236.5	186.5	□130	45
HB		231.5	181.5	□130	40	77
JA		236.5	186.5	□150	45	82
KA • KB • KC		236.5	186.5	□180	45	82
LA		236.5	186.5	□200	45	82
LB		246.5	196.5	□200	55	92
MA • MB		236.5	186.5	□220	45	82
VRT-200-□-□-48** (Input shaft bore $\leq \phi 48$)	NA	236.5	186.5	□250	45	82
	KB • KC	252.5	202.5	□180	55	98
	KA	272.5	222.5	□180	75	118
	LA	252.5	202.5	□200	55	98
	MA	252.5	202.5	□220	55	98
	MB	272.5	222.5	□220	75	118
	NA	272.5	222.5	□250	75	118
VRT-200-□-□-65** (Input shaft bore $\leq \phi 65$)	PA	272.5	222.5	□280	75	118
	MA • MB • MC • MD	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
	PB	--	--	--	--	--
QA	--	--	--	--	--	

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-255 – 1-Stage Specifications

Frame Size	255										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	2400	2400	2400	2400	2400	1600	1600		
Maximum Acceleration Torque	[Nm]	*2	3700	3700	3700	3700	3600	3000	2600		
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	8000	8000	6000	6000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	5.96								
Permitted Radial Load	[N]	*7	19000	20000	22000	23000	24000	24000	25000		
Permitted Axial Load	[N]	*8	15000	16000	17000	18000	19000	20000	20000		
Maximum Radial Load	[N]	*9	40000								
Maximum Axial Load	[N]	*10	20000								
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	180.000	150.000	130.000	120.000	110.000	110.000	110.000		
Efficiency	[%]	*11	97								
Torsional Rigidity	[Nm/arc-min]	*12	550								
Maximum Torsional Backlash	[Nm/arc-min]	--	≤ 3								
Noise Level	[dB]	*13	62								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	73								

VRT-255 – 2-Stage Specifications

Frame Size	255										
Stage	2-Stage										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	2400	2400	2400	2400	2400	2400	1600		
Maximum Acceleration Torque	[Nm]	*2	3700	3700	3700	3700	3700	3700	2100		
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	8000	8000	8000	6000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.28								
Permitted Radial Load	[N]	*7	29000	31000	33000	34000	37000	38000	39000		
Permitted Axial Load	[N]	*8	20000	20000	20000	20000	20000	20000	20000		
Maximum Radial Load	[N]	*9	40000								
Maximum Axial Load	[N]	*10	20000								
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	44.000	40.000	39.000	41.000	38.000	35.000	38.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	550								
Maximum Torsional Backlash	[Nm/arc-min]	--	≤ 3								
Noise Level	[dB]	*13	62								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	78								

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VRT-255 – 2-Stage Specifications

Frame Size	255								
Stage	2-Stage								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	2400	2400	2400	2400	1600	1600	
Maximum Acceleration Torque	[Nm]	*2	3700	3700	3700	2700	2100	1800	
Emergency Stop Torque	[Nm]	*3	8000	8000	8000	8000	6000	6000	
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.28						
Permitted Radial Load	[N]	*7	40000	40000	40000	40000	40000	40000	
Permitted Axial Load	[N]	*8	20000	20000	20000	20000	20000	20000	
Maximum Radial Load	[N]	*9	40000						
Maximum Axial Load	[N]	*10	20000						
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	35.000	35.000	35.000	35.000	34.000	34.000	
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	550						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	62						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	78						

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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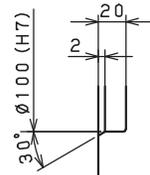
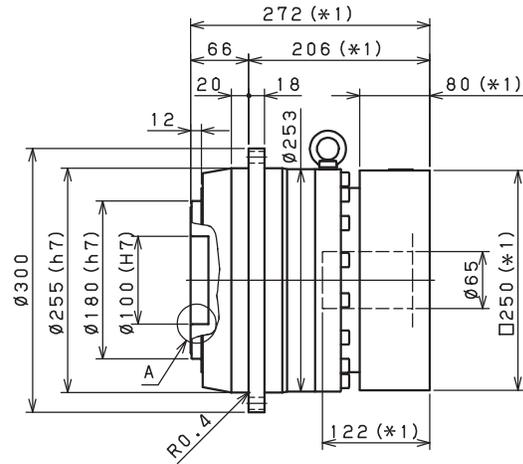
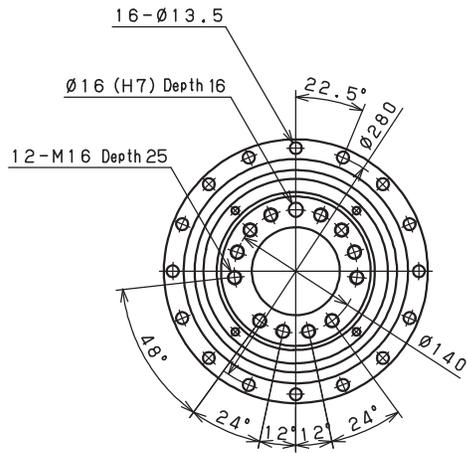


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VRT-SERIES Inline shaft

VRT-255 – 1-Stage Dimensions

Input shaft bore $\leq \phi 65$



Enlarged detail A

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

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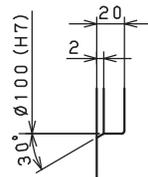
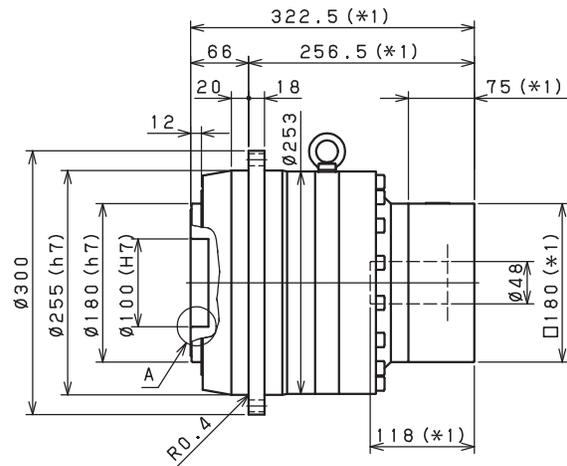
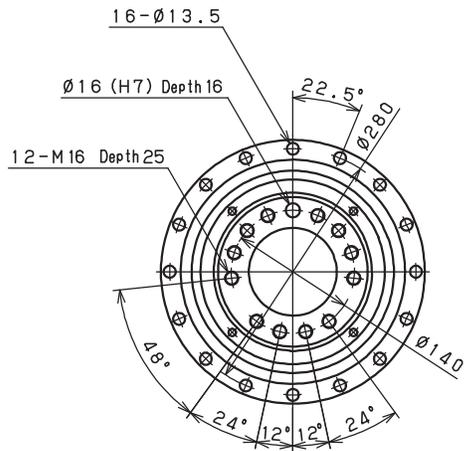
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VRT-255 – 2-Stage Dimensions

Input shaft bore $\leq \phi 48$



Enlarged detail A

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

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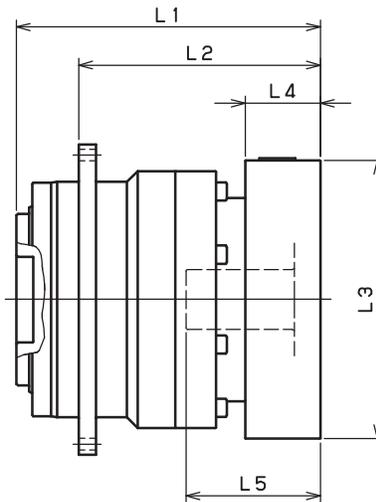
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VRT-SERIES Inline shaft

VRT-255 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-255-□-□-48** (Input shaft bore $\leq \phi 48$)	KB • KC	--	--	--	--	--
	KA	--	--	--	--	--
	LA	--	--	--	--	--
	MA	--	--	--	--	--
	MB	--	--	--	--	--
	NA	--	--	--	--	--
	PA	--	--	--	--	--
VRT-255-□-□-65** (Input shaft bore $\leq \phi 65$)	MA • MB • MC • MD	272	206	□220	80	122
	NA	272	206	□250	80	122
	PA	292	226	□280	100	142
	PB	302	236	□280	110	152
	QA	292	226	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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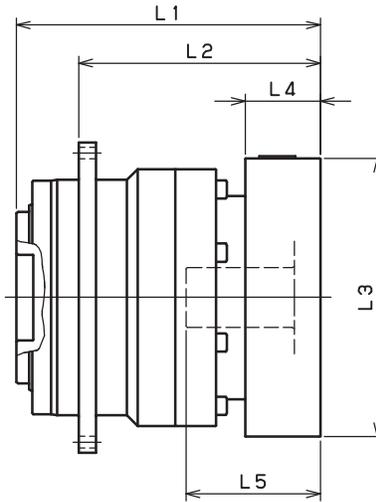
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VRT-255 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-255-□-□-48** (Input shaft bore $\leq \phi 48$)	KB • KC	302.5	236.5	□180	55	98
	KA	322.5	256.5	□180	75	118
	LA	302.5	236.5	□200	55	98
	MA	302.5	236.5	□220	55	98
	MB	322.5	256.5	□220	75	118
	NA	322.5	256.5	□250	75	118
	PA	322.5	256.5	□280	75	118
VRT-255-□-□-65** (Input shaft bore $\leq \phi 65$)	MA • MB • MC • MD	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-
	PB	-	-	-	-	-
	QA	-	-	-	-	-

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT-SERIES Inline shaft

VRT-285 – 1-Stage Specifications

Frame Size	285										
Stage	1-Stage										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	3300	3300	3300	3300	3300	2200	2200		
Maximum Acceleration Torque	[Nm]	*2	5300	5300	5300	5300	5200	4300	3700		
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	12000	12000	10000	10000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	6.10								
Permitted Radial Load	[N]	*7	27000	28000	30000	31000	33000	34000	35000		
Permitted Axial Load	[N]	*8	20000	21000	23000	24000	25000	25000	25000		
Maximum Radial Load	[N]	*9	50000								
Maximum Axial Load	[N]	*10	25000								
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	250.000	200.000	160.000	140.000	130.000	120.000	120.000		
Efficiency	[%]	*11	97								
Torsional Rigidity	[Nm/arc-min]	*12	850								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	63								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	94								

VRT-285 – 2-Stage Specifications

Frame Size	285										
Stage	2-Stage										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	2750	3300	3300	3300	3300	3300	2200		
Maximum Acceleration Torque	[Nm]	*2	5300	5300	5300	5300	5300	5300	2900		
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	12000	12000	12000	10000		
Nominal Input Speed	[rpm]	*4	1000								
Maximum Input Speed	[rpm]	*5	2000								
No Load Running Torque	[Nm]	*6	1.10								
Permitted Radial Load	[N]	*7	40000	43000	46000	48000	50000	50000	50000		
Permitted Axial Load	[N]	*8	25000	25000	25000	25000	25000	25000	25000		
Maximum Radial Load	[N]	*9	50000								
Maximum Axial Load	[N]	*10	25000								
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	48.000	42.000	41.000	42.000	39.000	36.000	38.000		
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	92								
Torsional Rigidity	[Nm/arc-min]	*12	850								
Maximum Torsional Backlash	[arc-min]	--	≤ 3								
Noise Level	[dB]	*13	63								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	100								

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VRT-285 – 2-Stage Specifications

Frame Size	285								
Stage	2-Stage								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	3300	3300	3300	3300	2200	2200	
Maximum Acceleration Torque	[Nm]	*2	5300	5300	5300	3900	2900	2500	
Emergency Stop Torque	[Nm]	*3	12000	12000	12000	12000	10000	10000	
Nominal Input Speed	[rpm]	*4	1000						
Maximum Input Speed	[rpm]	*5	2000						
No Load Running Torque	[Nm]	*6	1.10						
Permitted Radial Load	[N]	*7	50000	50000	50000	50000	50000	50000	
Permitted Axial Load	[N]	*8	25000	25000	25000	25000	25000	25000	
Maximum Radial Load	[N]	*9	50000						
Maximum Axial Load	[N]	*10	25000						
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	35.000	35.000	35.000	35.000	35.000	35.000	
Moment of Inertia ($\leq \varnothing 65$)	[kgcm ²]	--	--	--	--	--	--	--	
Efficiency	[%]	*11	92						
Torsional Rigidity	[Nm/arc-min]	*12	850						
Maximum Torsional Backlash	[arc-min]	--	≤ 3						
Noise Level	[dB]	*13	63						
Protection Class	--	*14	IP 55 (IP 65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	100						

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for VRT064/090/110; 2,000 rpm for VRT140/200/255; 1,000 rpm for VRT285
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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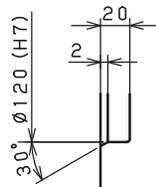
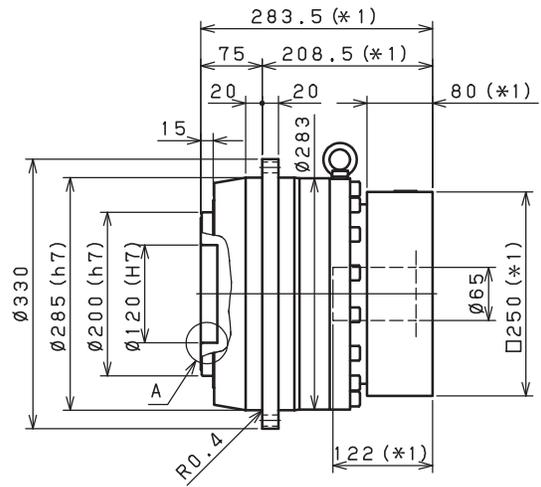
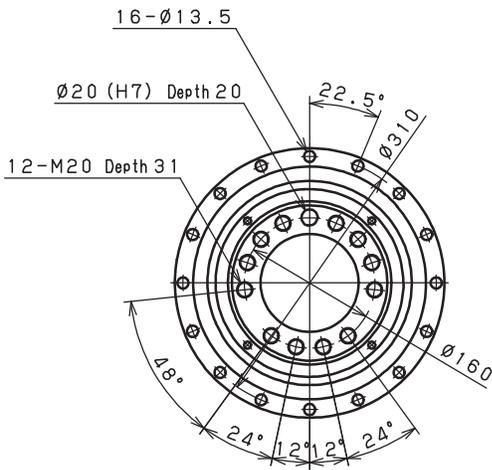


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VRT-SERIES Inline shaft

VRT-285 – 1-Stage Dimensions

Input shaft bore $\leq \phi 65$



Enlarged detail A

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

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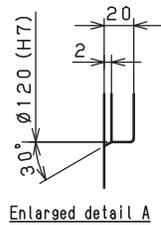
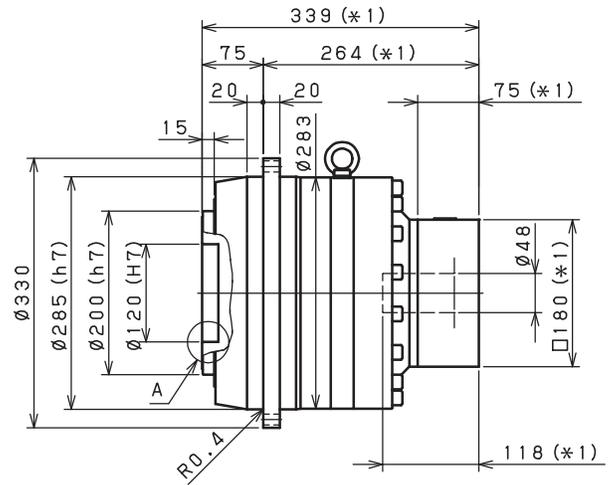
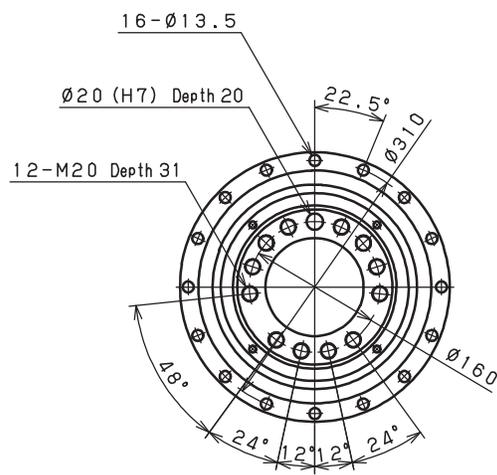
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VRT-285 – 2-Stage Dimensions

Input shaft bore $\leq \phi 48$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

VRT

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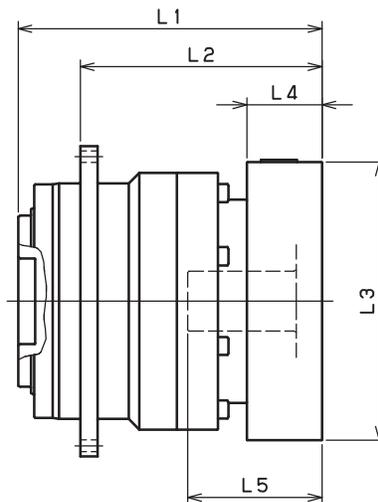
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VRT-SERIES Inline shaft

VRT-285 – 1-Stage Adapter Dimensions



Model Number	** Adapter Code	1-Stage				
		L1	L2	L3	L4	L5
VRT-285-□-□-48** (Input shaft bore ≤φ48)	KB • KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-
VRT-285-□-□-65** (Input shaft bore ≤φ65)	MA • MB • MC • MD	283.5	208.5	□220	80	122
	NA	283.5	208.5	□250	80	122
	PA	303.5	228.5	□280	100	142
	PB	313.5	238.5	□280	110	152
	QA	303.5	228.5	□320	100	142

*1) Single reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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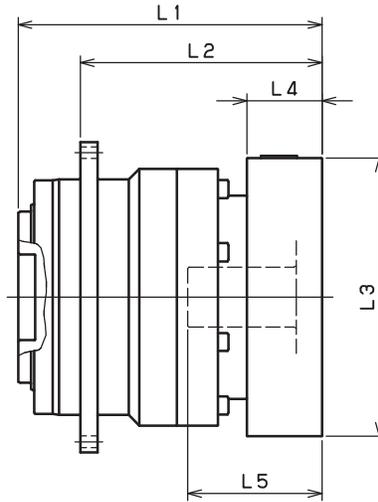
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VRT-285 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
VRT-285-□-□-48** (Input shaft bore ≤φ48)	KB • KC	319	244	□180	55	98
	KA	339	264	□180	75	118
	LA	319	244	□200	55	98
	MA	319	244	□220	55	98
	MB	339	264	□220	75	118
	NA	339	264	□250	75	118
	PA	339	264	□280	75	118
VRT-285-□-□-65** (Input shaft bore ≤φ65)	MA • MB • MC • MD	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-
	PB	-	-	-	-	-
	QA	-	-	-	-	-

*1) Double reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

VRT

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EVL-SERIES

The right-angle equivalent to the VRL series, the EVL provides the customer with an excellent solution when space and clearance are a serious limitation. For a right-angle solution, the EVL Series is an intelligent choice providing impressive precision and durability at an exceptional value. Using a 1:1 spiral bevel gear for the right-angle connection, an 8 arc-min backlash rating can be achieved by the EVL series at reduction ratios ranging from 3:1 – 100:1.

The EVL planetary gear reducer is a perfect solution for OEM equipment such as packaging, assembly automation, and any advanced conveyor systems requiring sortation or multi-speed/positioning. The EVL reducers are offered in a variety of frame sizes and ratios and they have maximum loads approaching 600 NM.

	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy	
Optimal					10
					9
					8
					7
					6
Exceptional					5
					4
					3
					2
Suitable					1

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EVL-SERIES

- Industry Standard Mounting Dimensions
- Large Variety of Reduction Ratios to choose from
- Thread-in Mounting Style
- Best-in-class Value for Right Angle Reducers
- Low Backlash (≤ 8 arc-min)
- Space-saving Design
- Readily Available

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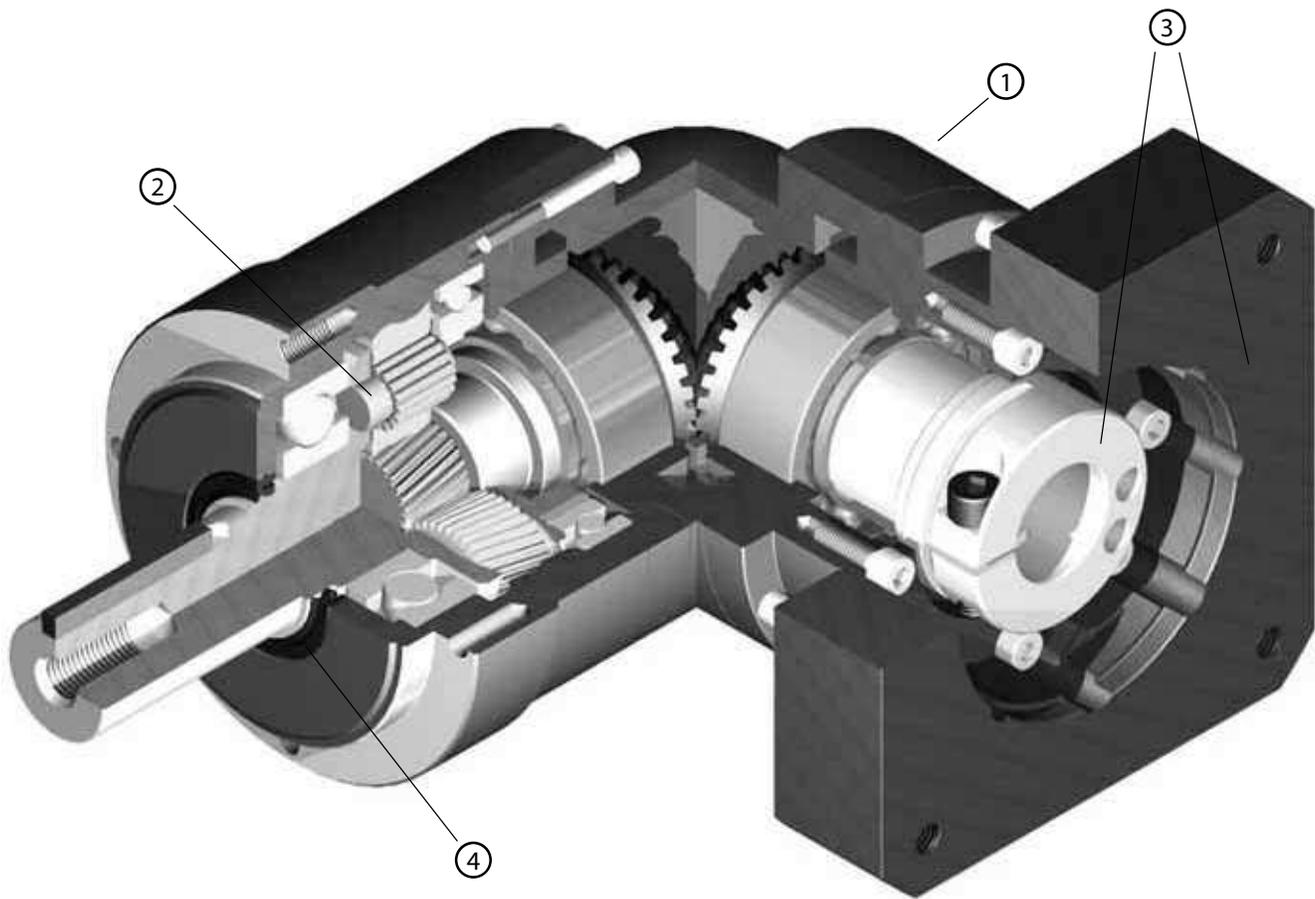
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EVL-SERIES Right angle shaft

EVL-Series – Features



- ① Space-saving features: Right angle reducer utilizes a spiral bevel gear. Motor can be located at a 90 degree position from the reducer providing a more compact footprint
- ② High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ③ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ④ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑤ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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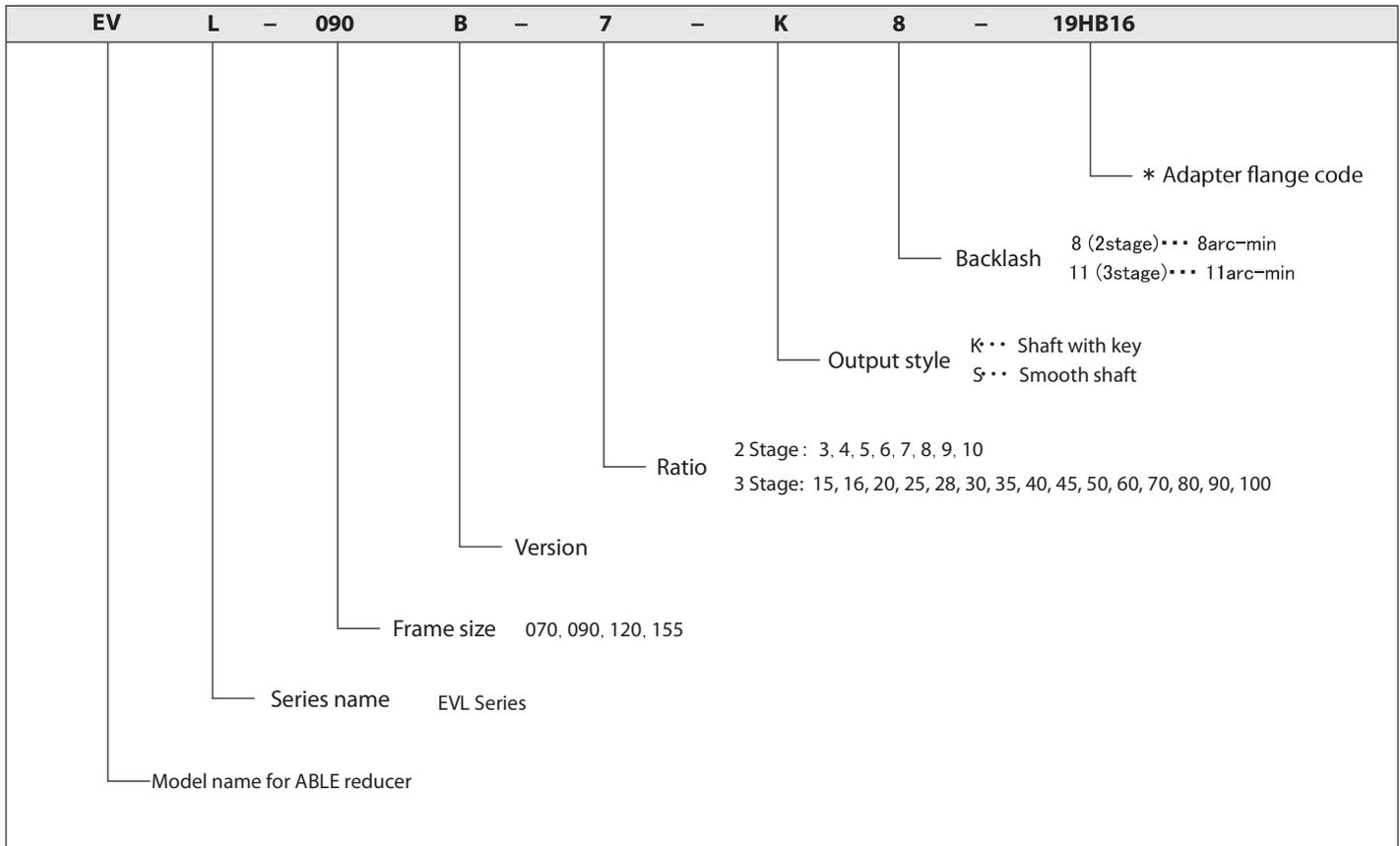
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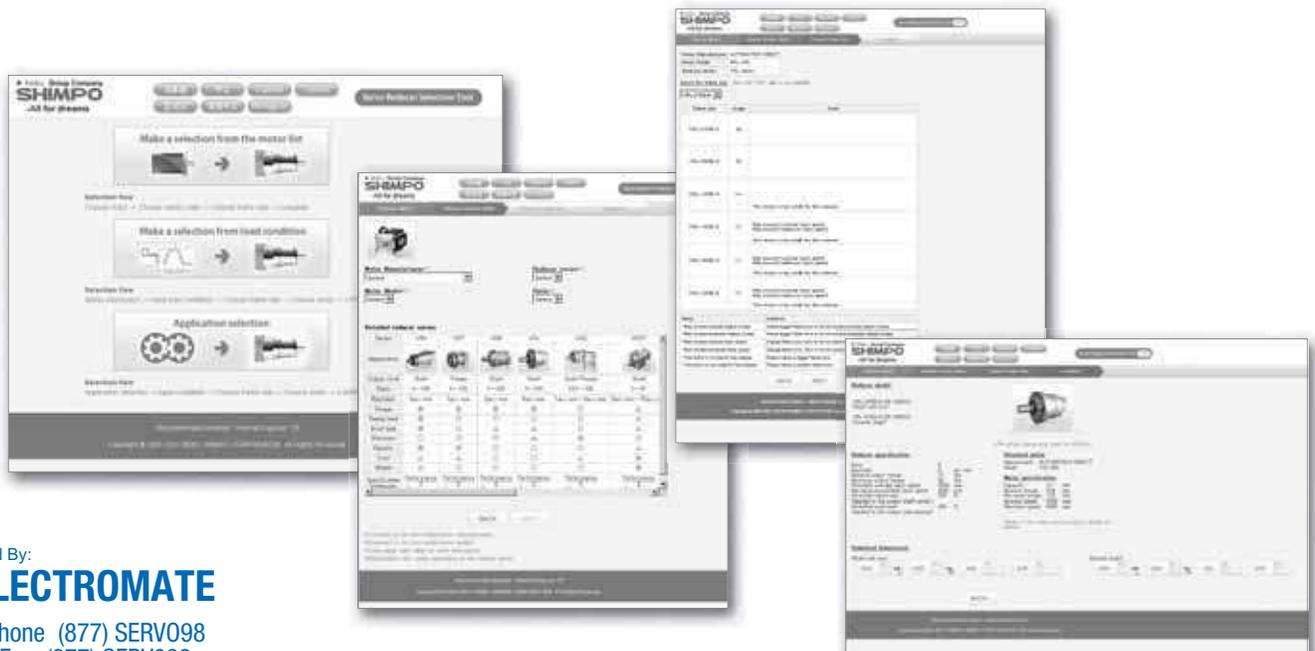
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EVL-Series – Model Number



*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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EVL

EVL-SERIES Right angle shaft

EVL-070 – 2-Stage Specifications

Frame Size	070									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	12	16	22	24	24	24	16	16
Maximum Acceleration Torque	[Nm]	*2	24	32	40	45	45	45	32	32
Emergency Stop Torque	[Nm]	*3	50	65	80	90	90	90	65	65
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.33							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.310	0.270	0.250	0.240	0.230	0.230	0.230	0.230
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.390	0.340	0.320	0.310	0.310	0.310	0.300	0.300
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.580	0.530	0.510	0.500	0.500	0.500	0.490	0.490
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 8							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.9							

EVL-070 – 3-Stage Specifications

Frame Size	070									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	24	24
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	45	45
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	90	90
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.20							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	100
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.073	0.079	0.071	0.071	0.077	0.062	0.070	0.061
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.118	0.124	0.116	0.115	0.122	0.106	0.115	0.106
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 11							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.7							

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EVL-070 – 3-Stage Specifications

Frame Size	070										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	16		
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	32		
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	65		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.20								
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200		
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100		
Maximum Radial Load	[N]	*9	1200								
Maximum Axial Load	[N]	*10	1100								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.070	0.061	0.061	0.061	0.061	0.061	0.061		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.115	0.106	0.106	0.105	0.105	0.105	0.105		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 11								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.7								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVL070/090/120; 2,000 rpm for EVL155

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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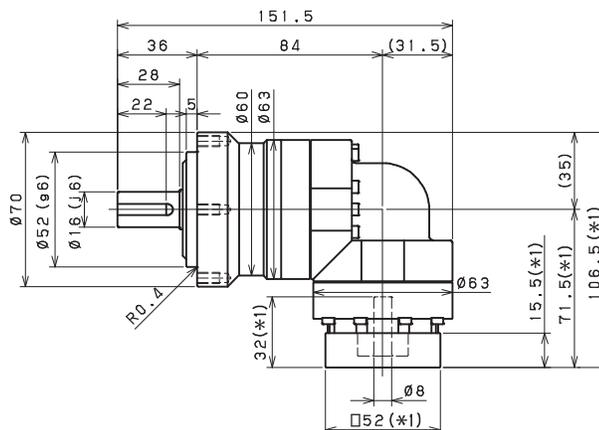
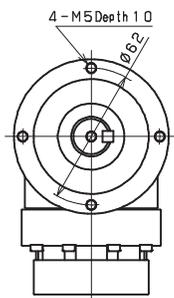
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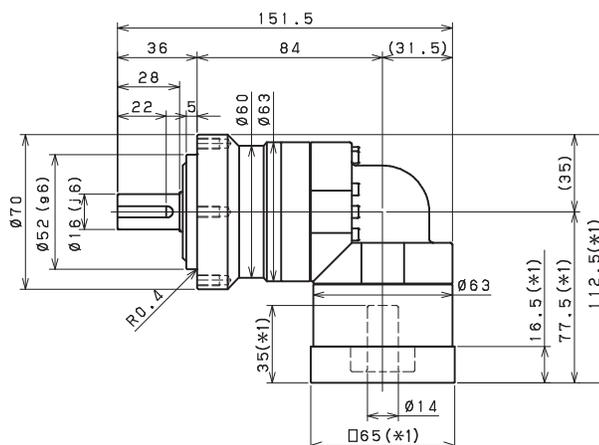
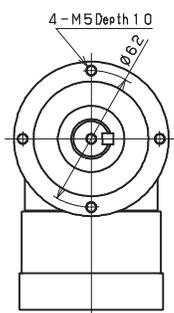
EVL-SERIES Right angle shaft

EVL-070 – 2-Stage Dimensions

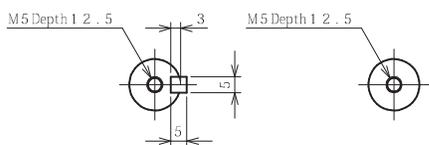
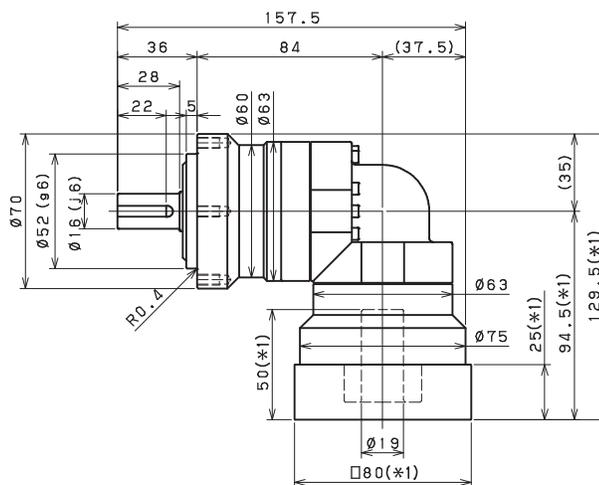
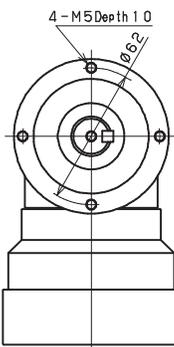
Input shaft bore $\leq \varnothing 8$



Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



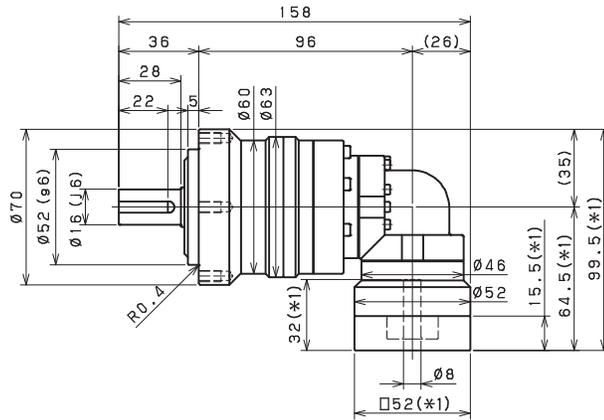
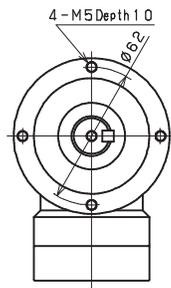
Shaft with key

Smooth shaft

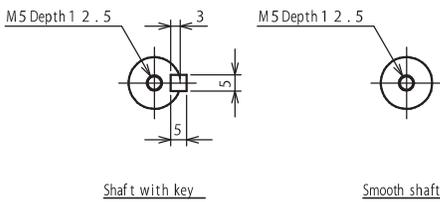
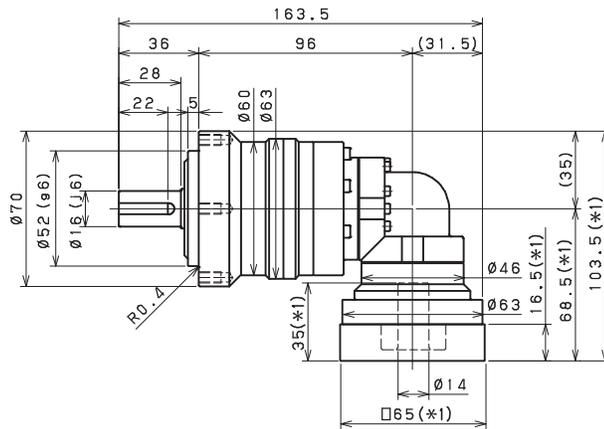
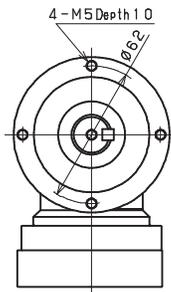
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVL-070 – 3-Stage Dimensions

Input shaft bore $\leq \varnothing 8$



Input shaft bore $\leq \varnothing 14$

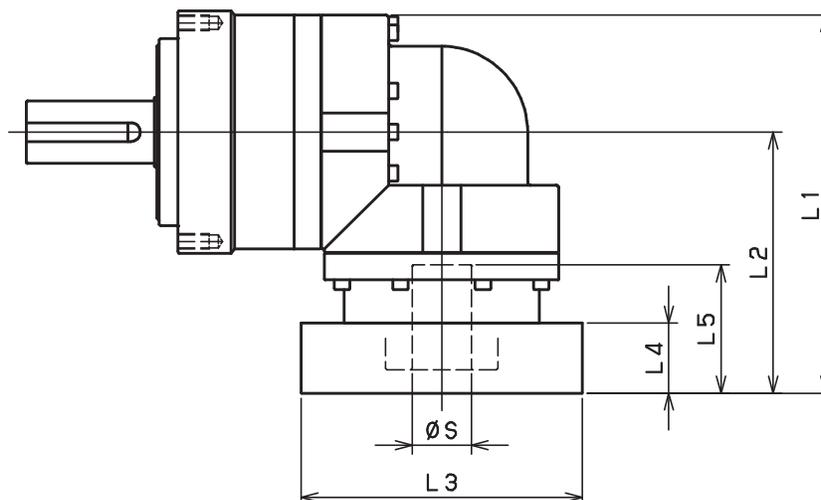


- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVL

EVL-SERIES Right angle shaft

EVL-070 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVL-070B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	106.5	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	111.5	76.5	□52	20.5	37
	BA·BB·BD·BE	106.5	71.5	□60	15.5	32
	BC·BF	111.5	76.5	□60	20.5	37
	CA	111.5	76.5	□70	20.5	37
EVL-070B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	112.5	77.5	□65	16.5	35
	BC·BH	117.5	82.5	□65	21.5	40
	BL	122.5	87.5	□65	26.5	45
	CA	112.5	77.5	□70	16.5	35
	CB	117.5	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	112.5	77.5	□80	16.5	35
	DE	117.5	82.5	□80	21.5	40
	DG	122.5	87.5	□80	26.5	45
	EA·EB·EC	112.5	77.5	□90	16.5	35
	ED	122.5	87.5	□90	26.5	45
	FA	112.5	77.5	□100	16.5	35
EVL-070B-□-□-19** (14 < S ≤ 19)	GA	112.5	77.5	□115	16.5	35
	DA·DB·DC	129.5	94.5	□80	25	50
	DD	139.5	104.5	□80	35	60
	DE	134.5	99.5	□80	30	55
	EA	134.5	99.5	□90	30	55
	EB	129.5	94.5	□90	25	50
	EC	139.5	104.5	□90	35	60
	FA	129.5	94.5	□100	25	50
	FB	139.5	104.5	□100	35	60
	GA·GC	134.5	99.5	□115	30	55
	GB·GD	129.5	94.5	□115	25	50
HA	129.5	94.5	□130	25	50	
HB	144.5	109.5	□130	40	65	
HC·HD·HE	134.5	99.5	□130	30	55	

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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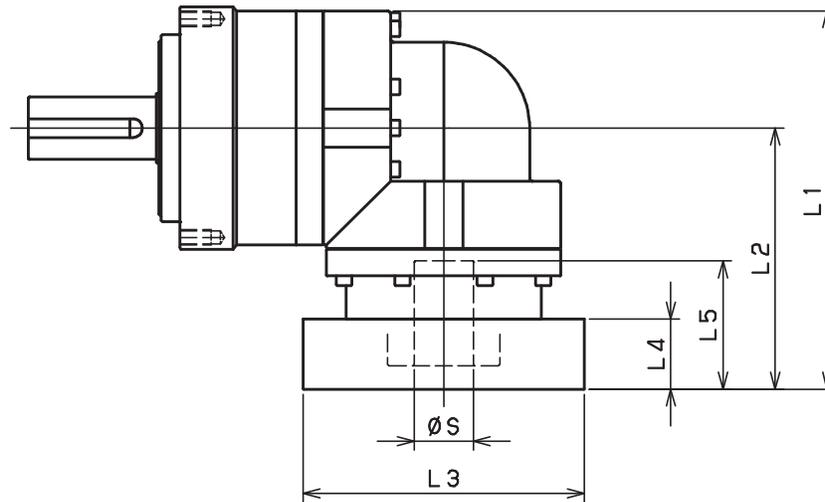
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EVL-070 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVL-070B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	99.5	64.5	□52	15.5	32
	AB·AE·AH·AJ·AK	104.5	69.5	□52	20.5	37
	BA·BB·BD·BE	99.5	64.5	□60	15.5	32
	BC·BF	104.5	69.5	□60	20.5	37
	CA	104.5	69.5	□70	20.5	37
EVL-070B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	103.5	68.5	□65	16.5	35
	BC·BH	108.5	73.5	□65	21.5	40
	BL	113.5	78.5	□65	26.5	45
	CA	103.5	68.5	□70	16.5	35
	CB	108.5	73.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	103.5	68.5	□80	16.5	35
	DE	108.5	73.5	□80	21.5	40
	DG	113.5	78.5	□80	26.5	45
	EA·EB·EC	103.5	68.5	□90	16.5	35
	ED	113.5	78.5	□90	26.5	45
	FA	103.5	68.5	□100	16.5	35
	GA	103.5	68.5	□115	16.5	35
	EVL-070B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	--	--	--	--
DD		--	--	--	--	--
DE		--	--	--	--	--
EA		--	--	--	--	--
EB		--	--	--	--	--
EC		--	--	--	--	--
FA		--	--	--	--	--
FB		--	--	--	--	--
GA·GC		--	--	--	--	--
GB·GD		--	--	--	--	--
HA		--	--	--	--	--
HB		--	--	--	--	--
HC·HD·HE		--	--	--	--	--

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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EVL-SERIES Right angle shaft

EVL-090 – 2-Stage Specifications

Frame Size	090									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	45	60	65	65	65	65	45	45
Maximum Acceleration Torque	[Nm]	*2	65	90	90	90	90	90	65	65
Emergency Stop Torque	[Nm]	*3	130	170	220	220	220	220	170	170
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.13							
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	2.120	1.890	1.800	1.760	1.730	1.710	1.700	1.690
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	2.450	2.220	2.130	2.090	2.060	2.040	2.030	2.020
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	4.570	4.350	4.260	4.210	4.180	4.170	4.160	4.150
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 8							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.9							

EVL-090 – 3-Stage Specifications

Frame Size	090									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	65	65
Maximum Acceleration Torque	[Nm]	*2	65	110	110	110	110	65	110	110
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	220	220
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.55							
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.340	0.380	0.330	0.320	0.370	0.250	0.320	0.250
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.410	0.460	0.400	0.400	0.450	0.330	0.400	0.320
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	0.600	0.650	0.590	0.590	0.640	0.510	0.590	0.510
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 11							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.3							

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EVL-090 – 3-Stage Specifications

Frame Size	090										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	45		
Maximum Acceleration Torque	[Nm]	*2	65	110	1110	110	110	65	65		
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	170		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.55								
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400		
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200		
Maximum Radial Load	[N]	*9	2400								
Maximum Axial Load	[N]	*10	2200								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.320	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.390	0.320	0.320	0.320	0.320	0.320	0.320		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.580	0.510	0.510	0.510	0.510	0.510	0.510		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 11								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4.3								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVL070/090/120; 2,000 rpm for EVL155

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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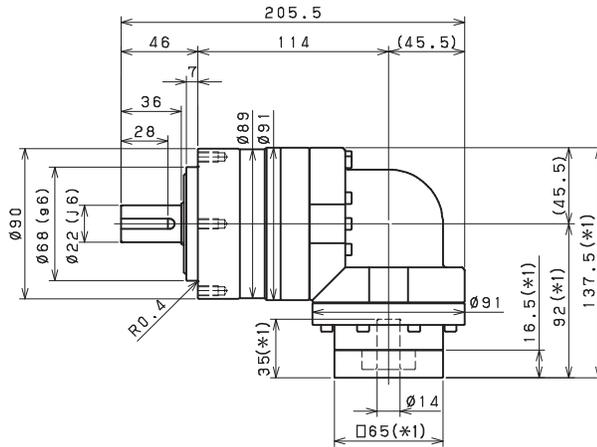
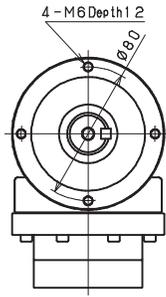
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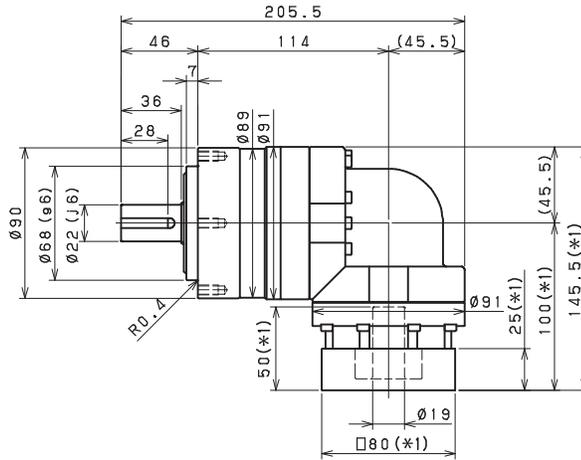
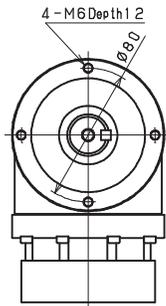
EVL-SERIES Right angle shaft

EVL-090 – 2-Stage Dimensions

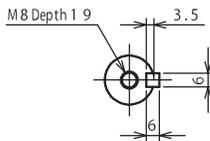
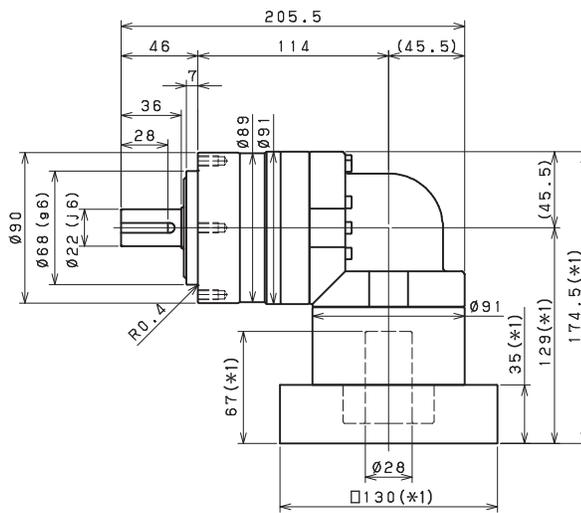
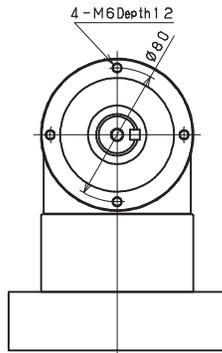
Input shaft bore $\cong \varnothing 14$



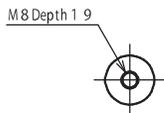
Input shaft bore $\cong \varnothing 19$



Input shaft bore $\cong \varnothing 28$



Shaft with key

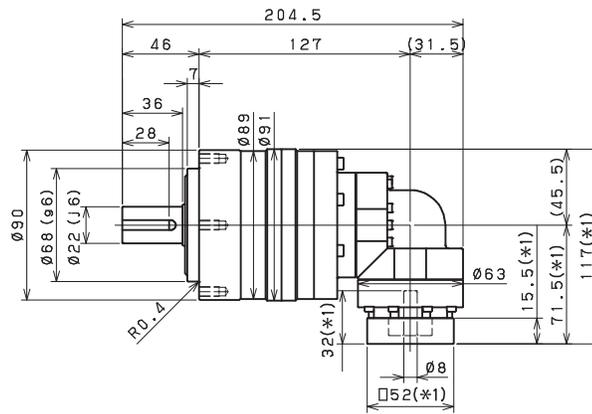
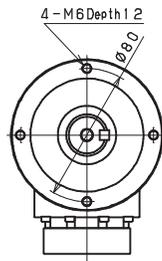


Smooth shaft

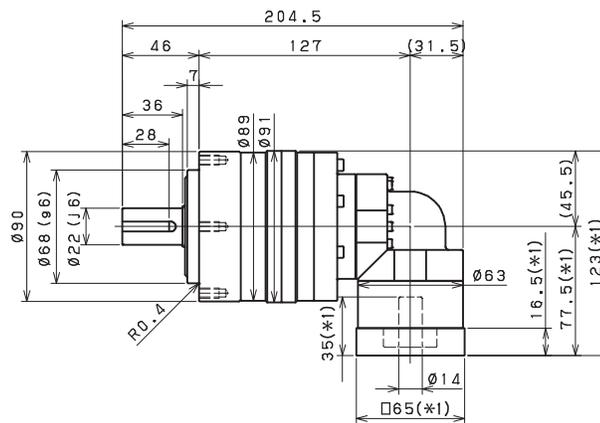
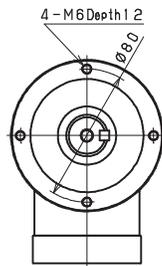
- *1) Length will vary depending on motor.
- *2) Bushing will be inserted to adapt to motor shaft

EVL-090 – 3-Stage Dimensions

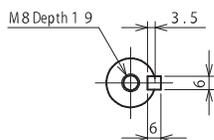
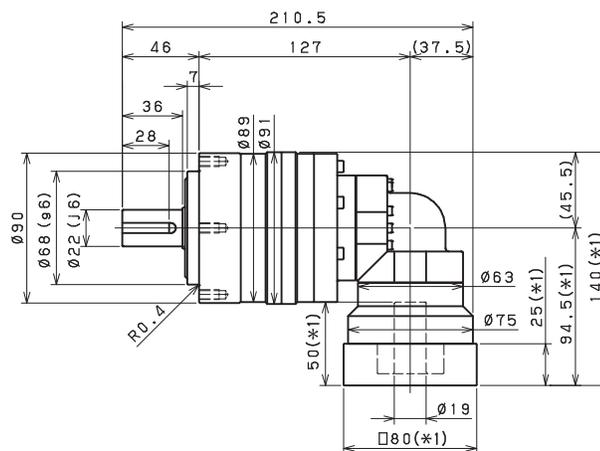
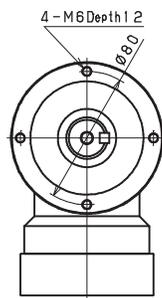
Input shaft bore $\leq \varnothing 8$



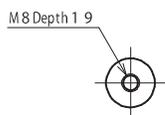
Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



Shaft with key



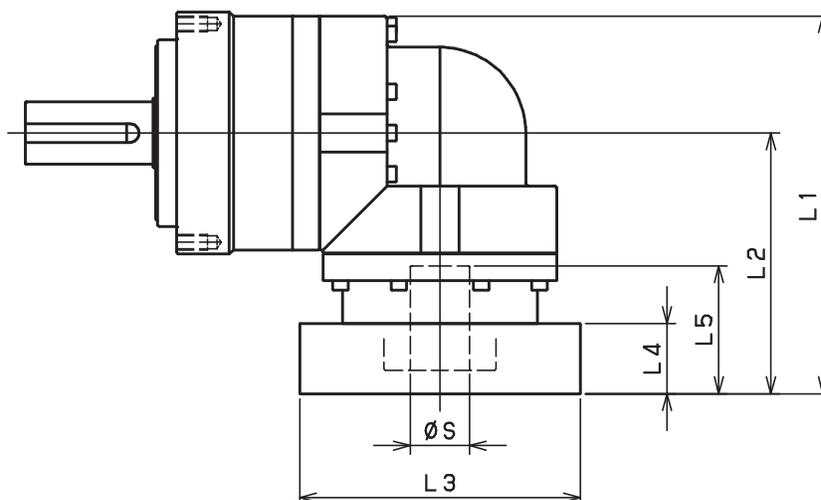
Smooth shaft

*1) Length will vary depending on motor.

*2) Bushing will be inserted to adapt to motor shaft

EVL-SERIES Right angle shaft

EVL-090 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVL-090B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	-	-	-	-	-
	AB·AE·AH·AJ·AK	-	-	-	-	-
	BA·BB·BD·BE	-	-	-	-	-
	BC·BF	-	-	-	-	-
	CA	-	-	-	-	-
EVL-090B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	137.5	92	□65	16.5	35
	BC·BH	142.5	97	□65	21.5	40
	BL	147.5	102	□65	26.5	45
	CA	137.5	92	□70	16.5	35
	CB	142.5	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	137.5	92	□80	16.5	35
	DE	142.5	97	□80	21.5	40
	DG	147.5	102	□80	26.5	45
	EA·EB·EC	137.5	92	□90	16.5	35
	ED	147.5	102	□90	26.5	45
	FA	137.5	92	□100	16.5	35
GA	137.5	92	□115	16.5	35	
EVL-090B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	145.5	100	□80	25	50
	DD	155.5	110	□80	35	60
	DE	150.5	105	□80	30	55
	EA	150.5	105	□90	30	55
	EB	145.5	100	□90	25	50
	EC	155.5	110	□90	35	60
	FA	145.5	100	□100	25	50
	FB	155.5	110	□100	35	60
	GA·GC	150.5	105	□115	30	55
	GB·GD	145.5	100	□115	25	50
	HA	145.5	100	□130	25	50
	HB	160.5	115	□130	40	65
	HC·HD·HE	150.5	105	□130	30	55
	FA·FB·FC	174.5	129	□100	35	67
EVL-090B-□-□-28** (19 < S ≤ 28)	GA·GB·GC·GD·GE·GF·GG	174.5	129	□115	35	67
	HA·HC·HD	174.5	129	□130	35	67
	HB	184.5	139	□130	45	77
	JA·JB·JC	174.5	129	□150	35	67
	KA·KB	174.5	129	□180	35	67
	LA	174.5	129	□200	35	67
	MA	174.5	129	□220	35	67

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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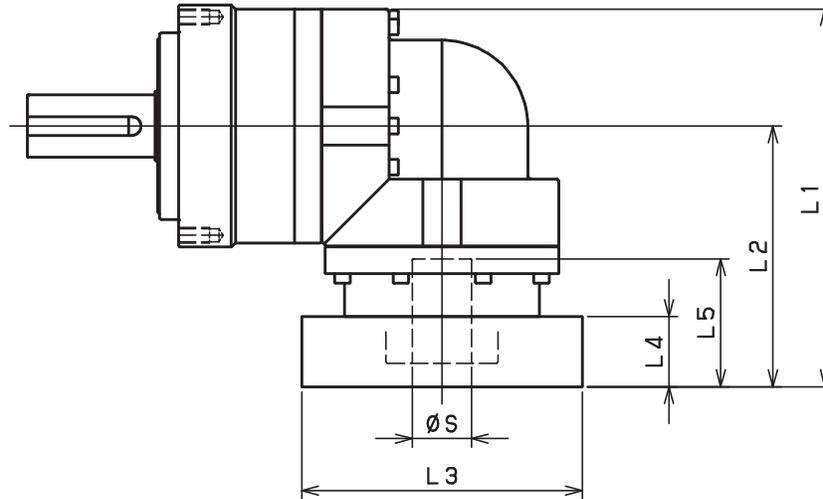
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For an explanation on the Adapter Flange Code, please turn to page 300

EVL-090 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVL-090B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	117	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	122	76.5	□52	20.5	37
	BA·BB·BD·BE	117	71.5	□60	15.5	32
	BC·BF	122	76.5	□60	20.5	37
	CA	122	76.5	□70	20.5	37
EVL-090B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	123	77.5	□65	16.5	35
	BC·BH	128	82.5	□65	21.5	40
	BL	133	87.5	□65	26.5	45
	CA	123	77.5	□70	16.5	35
	CB	128	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	123	77.5	□80	16.5	35
	DE	128	82.5	□80	21.5	40
	DG	133	87.5	□80	26.5	45
	EA·EB·EC	123	77.5	□90	16.5	35
	ED	133	87.5	□90	26.5	45
	FA	123	77.5	□100	16.5	35
	GA	123	77.5	□115	16.5	35
EVL-090B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	140	94.5	□80	25	50
	DD	150	104.5	□80	35	60
	DE	145	99.5	□80	30	55
	EA	145	99.5	□90	30	55
	EB	140	94.5	□90	25	50
	EC	150	104.5	□90	35	60
	FA	140	94.5	□100	25	50
	FB	150	104.5	□100	35	60
	GA·GC	145	99.5	□115	30	55
	GB·GD	140	94.5	□115	25	50
	HA	140	94.5	□130	25	50
	HB	155	109.5	□130	40	65
	HC·HD·HE	145	99.5	□130	30	55
EVL-090B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	-	-	-	-	-
	HA·HC·HD	-	-	-	-	-
	HB	-	-	-	-	-
	JA·JB·JC	-	-	-	-	-
	KA·KB	-	-	-	-	-
	LA	-	-	-	-	-
MA	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

EVL-SERIES Right angle shaft

EVL-120 – 2-Stage Specifications

Frame Size	120									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	75	100	120	150	150	150	110	110
Maximum Acceleration Torque	[Nm]	*2	150	200	240	300	300	300	200	200
Emergency Stop Torque	[Nm]	*3	320	430	500	550	550	550	450	450
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.88							
Permitted Radial Load	[N]	*7	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*8	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.740	5.490	5.020	4.770	4.650	4.550	4.490	4.460
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	8.340	7.080	6.610	6.360	6.240	6.140	6.080	6.050
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	15.410	14.150	13.690	13.430	13.310	13.220	13.160	13.120
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 8							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10.2							

EVL-120 – 3-Stage Specifications

Frame Size	120									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	110	130	150	150	150	110	150	150
Maximum Acceleration Torque	[Nm]	*2	200	260	300	300	300	200	300	300
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	550	550
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.11							
Permitted Radial Load	[N]	*7	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*8	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	2.250	2.460	2.200	2.180	2.400	1.870	2.160	1.860
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.580	2.790	2.530	2.510	2.730	2.200	2.490	2.190
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.700	4.910	4.650	4.640	4.860	4.330	4.620	4.320
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 11							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10							

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EVL-120 – 3-Stage Specifications

Frame Size	120										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	110	150	150	150	150	110	110		
Maximum Acceleration Torque	[Nm]	*2	200	300	300	300	300	200	200		
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	450		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	1.11								
Permitted Radial Load	[N]	*7	3300	3400	3600	3800	4000	4200	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300								
Maximum Axial Load	[N]	*10	3900								
Moment of Inertia (≤ Ø 14)	[kgcm ²]	--	2.150	1.860	1.850	1.850	1.850	1.850	1.850		
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	2.480	2.190	2.180	2.180	2.180	2.180	2.180		
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	4.610	4.310	4.310	4.310	4.310	4.310	4.310		
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 11								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	10								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVL070/090/120; 2,000 rpm for EVL155
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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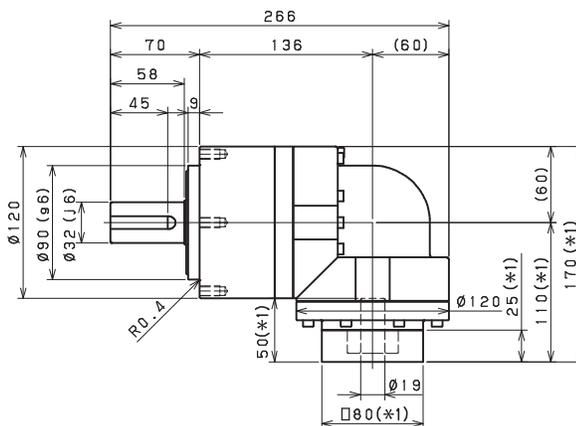
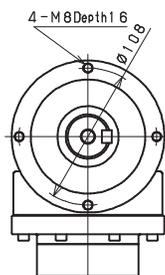


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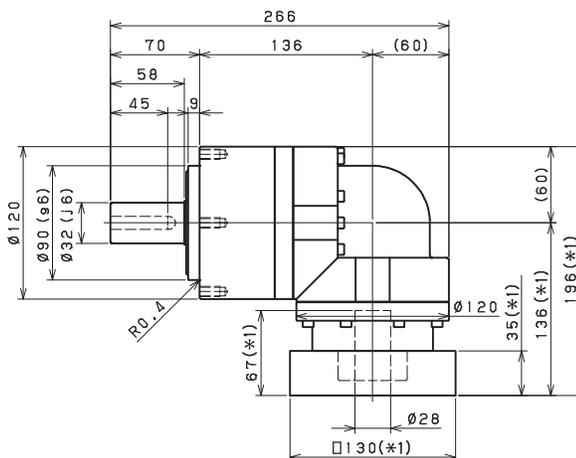
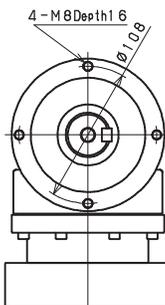
EVL-SERIES Right angle shaft

EVL-120 – 2-Stage Dimensions

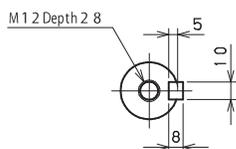
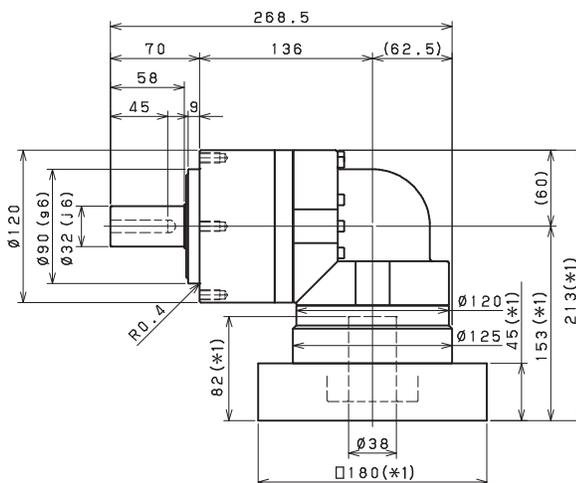
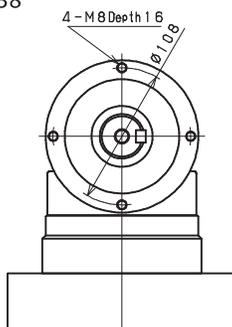
Input shaft bore $\leq \varnothing 19$



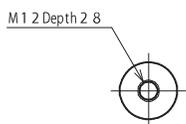
Input shaft bore $\leq \varnothing 28$



Input shaft bore $\leq \varnothing 38$



Shaft with key

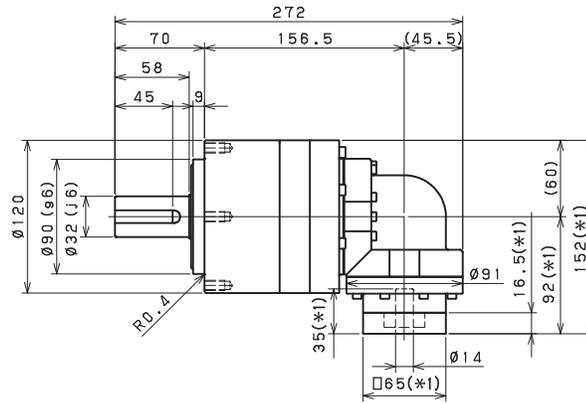
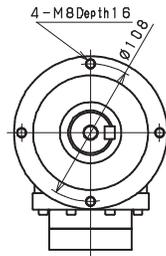


Smooth shaft

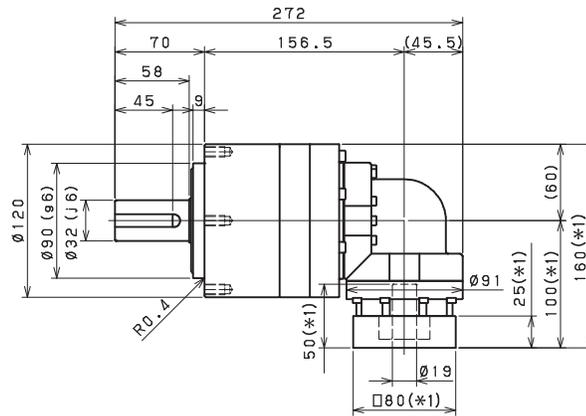
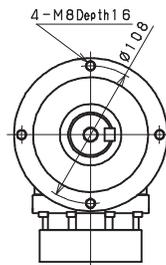
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVL-120 – 3-Stage Dimensions

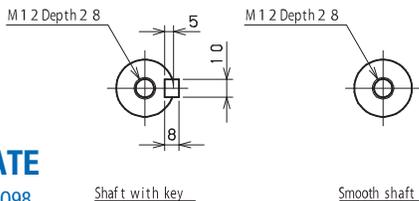
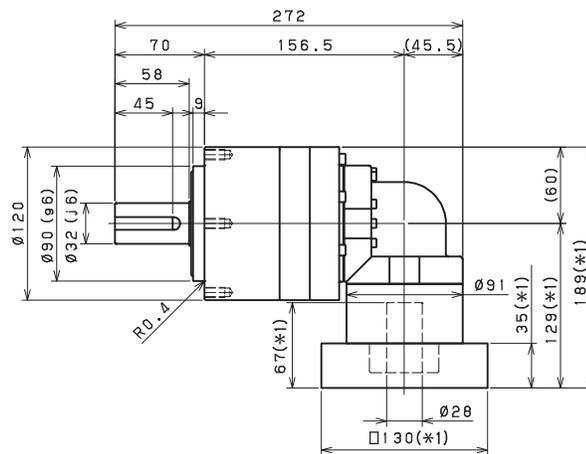
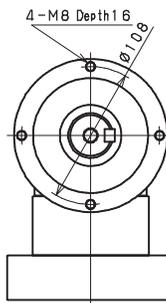
Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



Input shaft bore $\leq \varnothing 28$

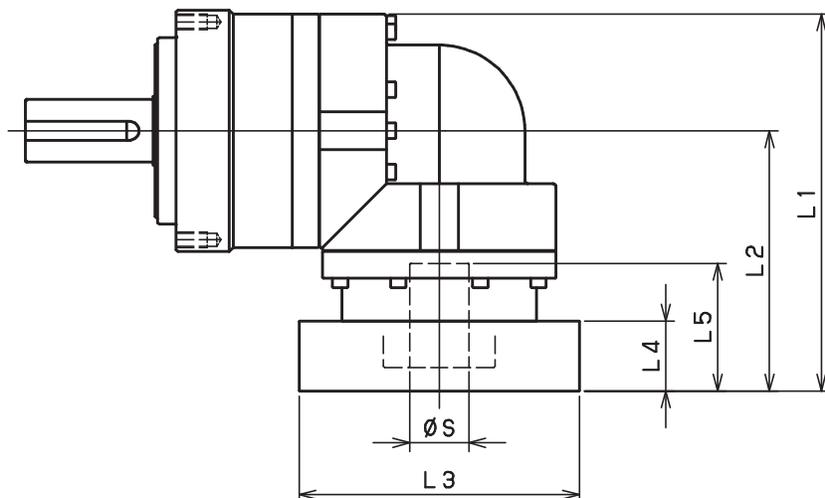


- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVL

EVL-SERIES Right angle shaft

EVL-120 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVL-120B-□-□-14** (S ≤ 14)	BA • BB • BD • BE • BF • BG • BJ • BK	--	--	--	--	--
	BC • BH	--	--	--	--	--
	BL	--	--	--	--	--
	CA	--	--	--	--	--
	CB	--	--	--	--	--
	DA • DB • DC • DD • DF • DH	--	--	--	--	--
	DE	--	--	--	--	--
	DG	--	--	--	--	--
	EA • EB • EC	--	--	--	--	--
	ED	--	--	--	--	--
	FA	--	--	--	--	--
EVL-120B-□-□-19** (14 < S ≤ 19)	DA • DB • DC	170	110	□80	25	50
	DD	180	120	□80	35	60
	DE	175	115	□80	30	55
	EA	175	115	□90	30	55
	EB	170	110	□90	25	50
	EC	180	120	□90	35	60
	FA	170	110	□100	25	50
	FB	180	120	□100	35	60
	GA • GC	175	115	□115	30	55
	GB • GD	170	110	□115	25	50
	HA	170	110	□130	25	50
	HB	185	125	□130	40	65
	HC • HD • HE	175	115	□130	30	55
EVL-120B-□-□-28** (19 < S ≤ 28)	FA • FB • FC	196	136	□100	35	67
	GA • GB • GC • GD • GE • GF • GG	196	136	□115	35	67
	HA • HC • HD	196	136	□130	35	67
	HB	206	146	□130	45	77
	JA • JB • JC	196	136	□150	35	67
	KA • KB	196	136	□180	35	67
	LA	196	136	□200	35	67
EVL-120B-□-□-38** (28 < S ≤ 38)	MA	196	136	□220	35	67
	HA	213	153	□130	45	82
	HB	208	148	□130	40	77
	JA	213	153	□150	45	82
	KA • KB • KC	213	153	□180	45	82
	LA	213	153	□200	45	82
	LB	223	163	□200	55	92
EVL-120B-□-□-38** (28 < S ≤ 38)	MA • MB	213	153	□220	45	82
	NA	213	153	□250	45	82

*1) Double reduction : 1/3 ~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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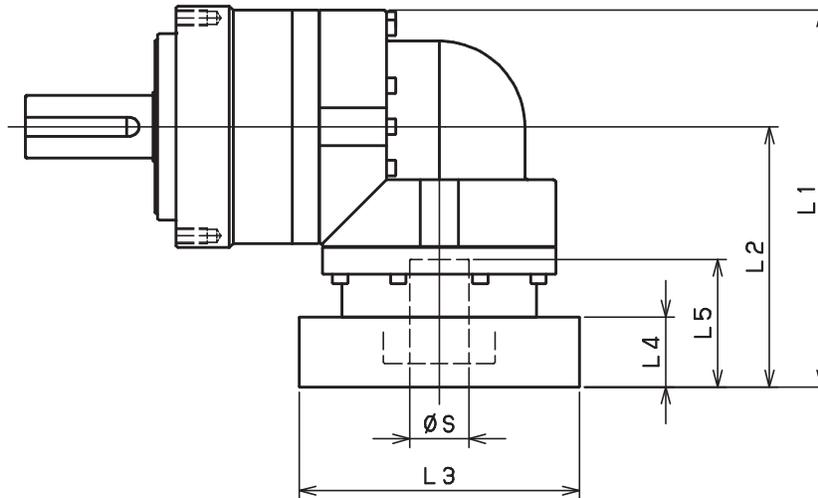
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EVL-120 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVL-120B-□-□-14** (S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	152	92	□65	16.5	35
	BC·BH	157	97	□65	21.5	40
	BL	162	102	□65	26.5	45
	CA	152	92	□70	16.5	35
	CB	157	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	152	92	□80	16.5	35
	DE	157	97	□80	21.5	40
	DG	162	102	□80	26.5	45
	EA·EB·EC	152	92	□90	16.5	35
	ED	162	102	□90	26.5	45
	FA	152	92	□100	16.5	35
	GA	152	92	□115	16.5	35
EVL-120B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	160	100	□80	25	50
	DD	170	110	□80	35	60
	DE	165	105	□80	30	55
	EA	165	105	□90	30	55
	EB	160	100	□90	25	50
	EC	170	110	□90	35	60
	FA	160	100	□100	25	50
	FB	170	110	□100	35	60
	GA·GC	165	105	□115	30	55
	GB·GD	160	100	□115	25	50
	HA	160	100	□130	25	50
	HB	175	115	□130	40	65
HC·HD·HE	165	105	□130	30	55	
EVL-120B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	189	129	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	189	129	□115	35	67
	HA·HC·HD	189	129	□130	35	67
	HB	199	139	□130	45	77
	JA·JB·JC	189	129	□150	35	67
	KA·KB	189	129	□180	35	67
	LA	189	129	□200	35	67
MA	189	129	□220	35	67	
EVL-120B-□-□-38** (28 < S ≤ 38)	HA	-	-	-	-	-
	HB	-	-	-	-	-
	JA	-	-	-	-	-
	KA·KB·KC	-	-	-	-	-
	LA	-	-	-	-	-
	MA·MB	-	-	-	-	-
NA	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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EVL-SERIES Right angle shaft

EVL-155 – 2-Stage Specifications

Frame Size	155											
Stage	2-Stage											
Ratio	Unit	Note	3	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	130	170	200	260	300	300	200	200		
Maximum Acceleration Torque	[Nm]	*2	260	340	400	520	600	600	400	400		
Emergency Stop Torque	[Nm]	*3	700	950	1100	1100	1100	1100	750	750		
Nominal Input Speed	[rpm]	*4	2000									
Maximum Input Speed	[rpm]	*5	4000									
No Load Running Torque	[Nm]	*6	3.26									
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700		
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100		
Maximum Radial Load	[N]	*9	9100									
Maximum Axial Load	[N]	*10	8200									
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	23.130	18.570	16.910	16.010	15.580	15.230	14.770	14.660		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	27.500	22.940	21.280	20.380	19.950	19.610	19.410	19.030		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	40.730	36.170	34.510	33.610	33.180	32.840	32.370	32.260		
Efficiency	[%]	*11	93									
Torsional Rigidity	[Nm/arc-min]	*12	60									
Maximum Torsional Backlash	[arc-min]	--	≤ 8									
Noise Level	[dB]	*13	85									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	19.8									

EVL-155 – 3-Stage Specifications

Frame Size	155											
Stage	3-Stage											
Ratio	Unit	Note	15	16	20	25	28	30	35	40		
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	300	300		
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	600	600		
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	1100	1100		
Nominal Input Speed	[rpm]	*4	2000									
Maximum Input Speed	[rpm]	*5	4000									
No Load Running Torque	[Nm]	*6	2.56									
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500		
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500		
Maximum Radial Load	[N]	*9	9100									
Maximum Axial Load	[N]	*10	8200									
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.400	7.290	6.220	6.150	7.090	4.990	6.090	4.950		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	8.000	8.880	7.810	7.750	8.680	6.580	7.690	6.540		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	15.070	15.960	14.890	14.820	15.760	13.660	14.760	13.610		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88									
Torsional Rigidity	[Nm/arc-min]	*12	60									
Maximum Torsional Backlash	[arc-min]	--	≤ 11									
Noise Level	[dB]	*13	85									
Protection Class	--	*14	IP 55 (IP 65)									
Ambient Temperature	[°C]	--	0-40									
Permitted Housing Temperature	[°C]	--	90									
Weight	[kg]	*15	20.4									

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EVL-155 – 3-Stage Specifications

Frame Size	155										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	200		
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	400		
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	750		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	2.56								
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100		
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200		
Maximum Radial Load	[N]	*9	9100								
Maximum Axial Load	[N]	*10	8200								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.070	4.930	4.920	4.910	4.910	4.910	4.910		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	7.660	6.520	6.510	6.510	6.500	6.500	6.500		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14.740	13.590	13.590	13.580	13.580	13.570	13.570		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 11								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	20.4								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVL070/090/120; 2,000 rpm for EVL155

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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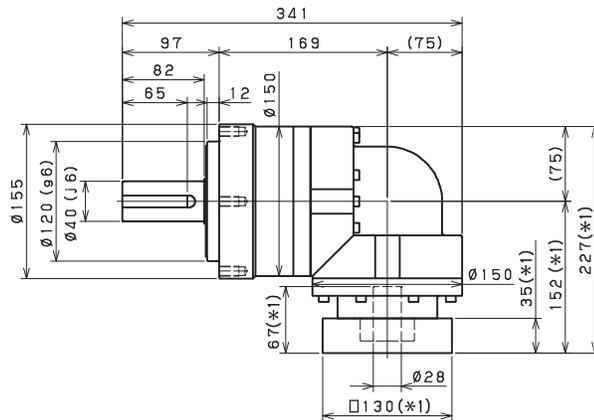
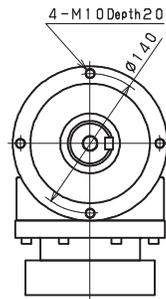
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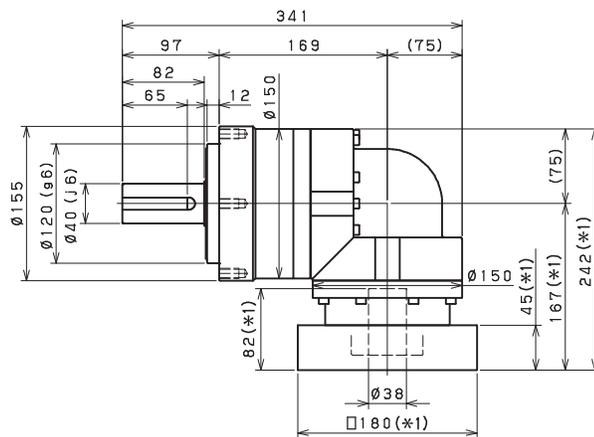
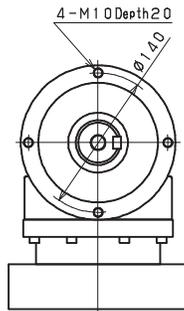
EVL-SERIES Right angle shaft

EVL-155 – 2-Stage Dimensions

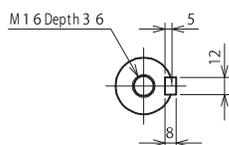
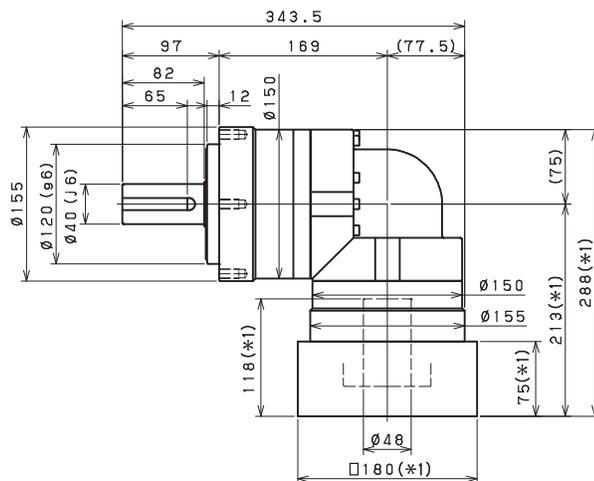
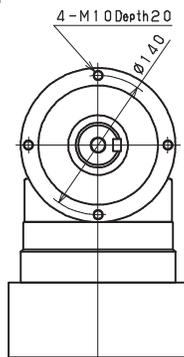
Input shaft bore $\leq \varnothing 28$



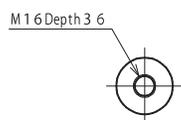
Input shaft bore $\leq \varnothing 38$



Input shaft bore $\leq \varnothing 48$



Shaft with key

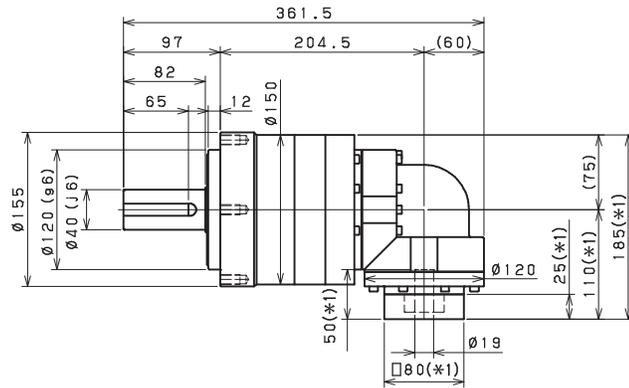
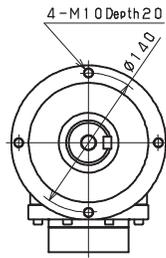


Smooth shaft

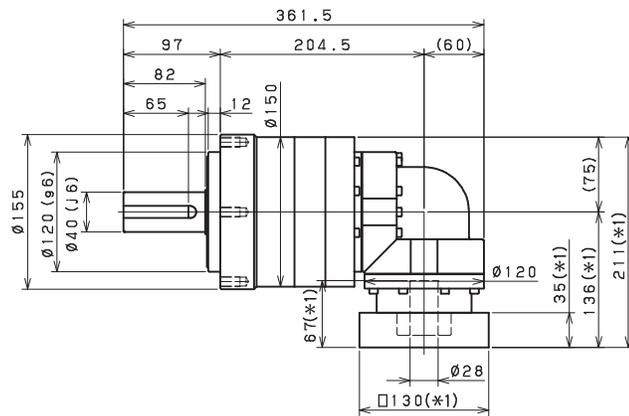
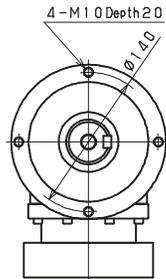
- *1) Length will vary depending on motor.
- *2) Bushing will be inserted to adapt to motor shaft

EVL-155 – 3-Stage Dimensions

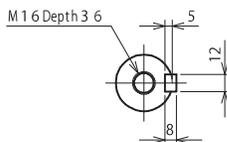
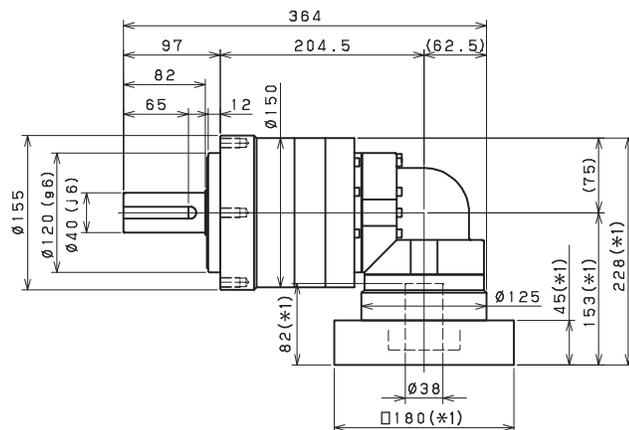
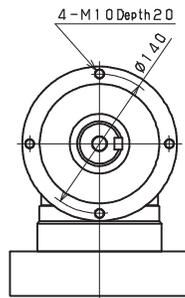
Input shaft bore $\leq \varnothing 19$



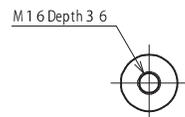
Input shaft bore $\leq \varnothing 28$



Input shaft bore $\leq \varnothing 38$



Shaft with key



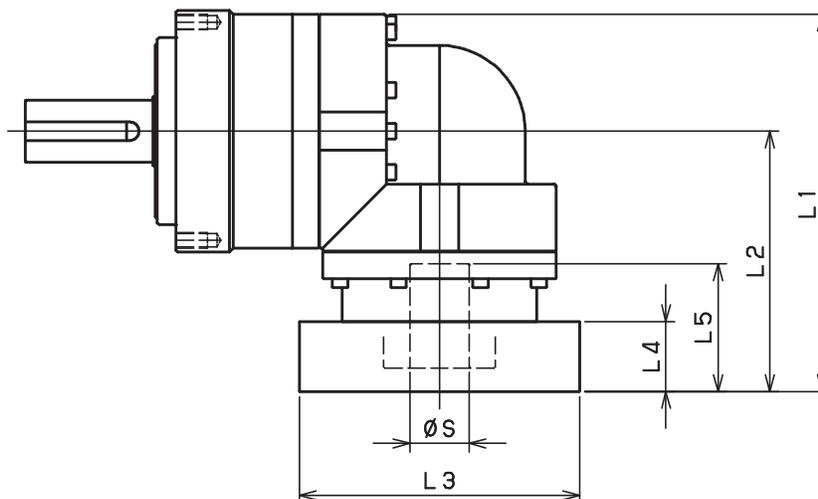
Smooth shaft

*1) Length will vary depending on motor.

*2) Bushing will be inserted to adapt to motor shaft

EVL-SERIES Right angle shaft

EVL-155 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVL-155B-□-□-19** (S ≤ 19)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
	HB	-	-	-	-	-
	HC·HD·HE	-	-	-	-	-
EVL-155B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	229.5	152	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	229.5	152	□115	35	67
	HA·HC·HD	229.5	152	□130	35	67
	HB	239.5	162	□130	45	77
	JA·JB·JC	229.5	152	□150	35	67
	KA·KB	229.5	152	□180	35	67
	LA	229.5	152	□200	35	67
EVL-155B-□-□-38** (28 < S ≤ 38)	MA	229.5	152	□220	35	67
	HA	244.5	167	□130	45	82
	HB	239.5	162	□130	40	77
	JA	244.5	167	□150	45	82
	KA·KB·KC	244.5	167	□180	45	82
	LA	244.5	167	□200	45	82
	LB	254.5	177	□200	55	92
EVL-155B-□-□-48** (38 < S ≤ 48)	MA·MB	244.5	167	□220	45	82
	NA	244.5	167	□250	45	82
	KB·KC	270.5	193	□180	55	98
	KA	290.5	213	□180	75	118
	LA	270.5	193	□200	55	98
	MA	270.5	193	□220	55	98
	MB	290.5	213	□220	75	118
EVL-155B-□-□-48** (38 < S ≤ 48)	NA	290.5	213	□250	75	118
	PA	290.5	213	□280	75	118

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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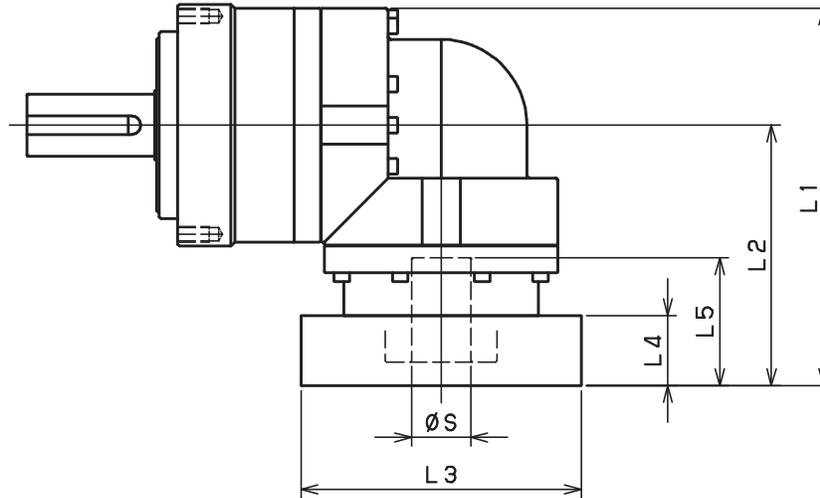
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EVL-155 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVL-155B-□-□-19** (S ≤ 19)	DA·DB·DC	187.5	110	□80	25	50
	DD	197.5	120	□80	35	60
	DE	192.5	115	□80	30	55
	EA	192.5	115	□90	30	55
	EB	187.5	110	□90	25	50
	EC	197.5	120	□90	35	60
	FA	187.5	110	□100	25	50
	FB	197.5	120	□100	35	60
	GA·GC	192.5	115	□115	30	55
	GB·GD	187.5	110	□115	25	50
	HA	187.5	110	□130	25	50
	HB	202.5	125	□130	40	65
	HC·HD·HE	192.5	115	□130	30	55
EVL-155B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	213.5	136	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	213.5	136	□115	35	67
	HA·HC·HD	213.5	136	□130	35	67
	HB	223.5	146	□130	45	77
	JA·JB·JC	213.5	136	□150	35	67
	KA·KB	213.5	136	□180	35	67
	LA	213.5	136	□200	35	67
EVL-155B-□-□-38** (28 < S ≤ 38)	MA	213.5	136	□220	35	67
	HA	230.5	153	□130	45	82
	HB	225.5	148	□130	40	77
	JA	230.5	153	□150	45	82
	KA·KB·KC	230.5	153	□180	45	82
	LA	230.5	153	□200	45	82
	LB	240.5	163	□200	55	92
EVL-155B-□-□-48** (38 < S ≤ 48)	MA·MB	230.5	153	□220	45	82
	NA	230.5	153	□250	45	82
	KB·KC	--	--	--	--	--
	KA	--	--	--	--	--
	LA	--	--	--	--	--
	MA	--	--	--	--	--
	MB	--	--	--	--	--
NA	--	--	--	--	--	
PA	--	--	--	--	--	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

EVB-SERIES

This series is the right-angle version of the VRB, offering a compact configuration and output design that provides an OEM with maximum flexibility. The through-bolt flange design at the output makes it much easier to assemble the reducer onto machinery. A 1:1 spiral bevel gear for the right-angle connection maintains good positional accuracy at ratios ranging from 3:1 – 100:1. The EVB units will have a minimum backlash of 6 arc-minutes and maximum loads approaching 600 NM.

Equipment manufacturers building custom assembly automation systems will find the flexibility and space-saving features of the EVB an ideal fit for their unique projects. The EVB provides an excellent option when performance, space, and cost all equally impact your reducer selection.

	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy	
Optimal					10
					9
					8
					7
					6
Exceptional					5
					4
					3
					2
Suitable					1

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EVB-SERIES

- Industry Standard Mounting Dimensions
- Large Variety of Reduction Ratios to choose from
- Thru-bolt Mounting Style
- Maximum Flexibility for Mounting and Clearance Constraints
- Low Backlash (≤ 6 arc-min)
- Space-saving Design
- Readily Available

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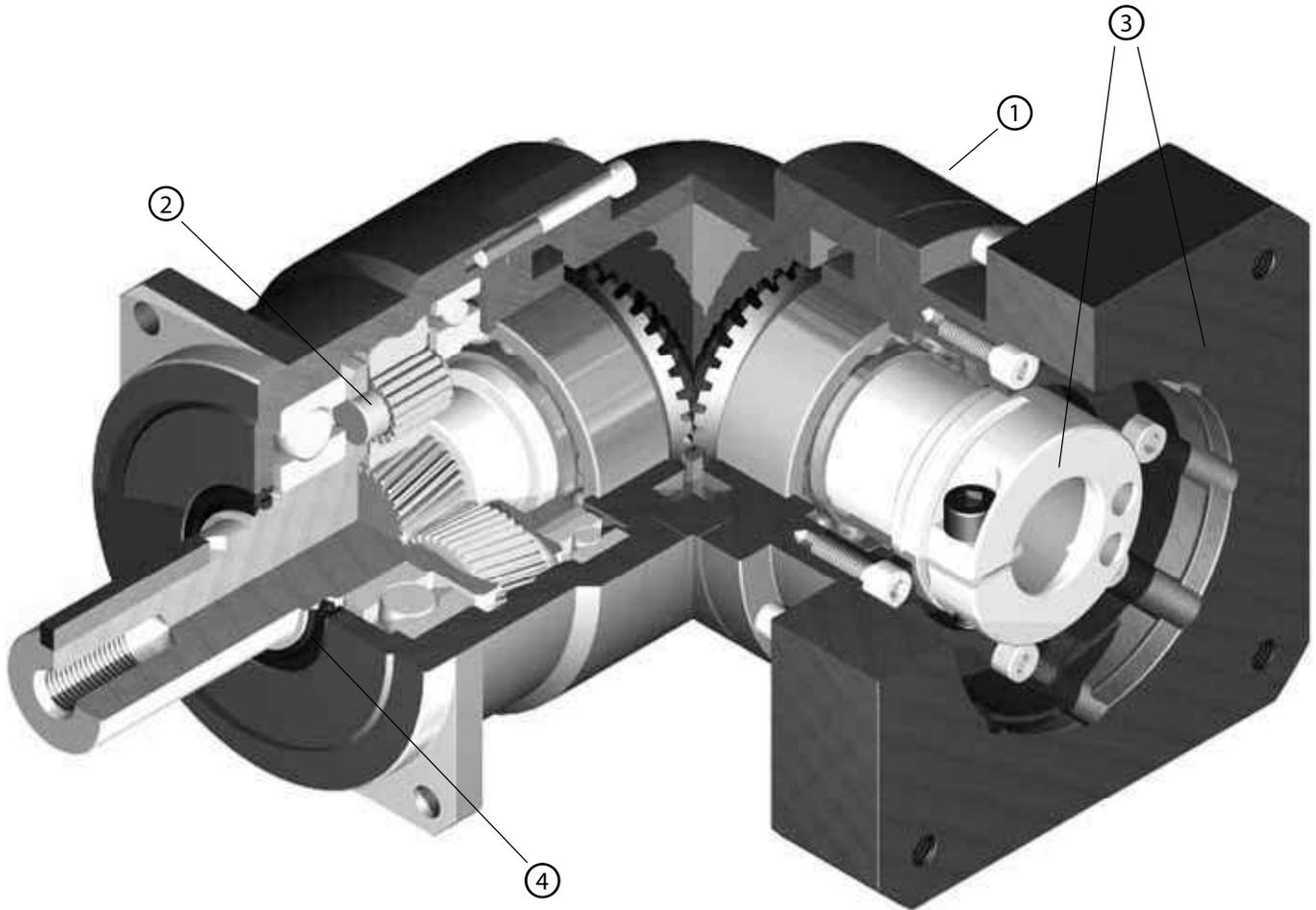
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EVB-SERIES Right angle shaft

EVB-Series – Features



- ① Space-saving features: Right angle reducer utilizes a spiral bevel gear. Motor can be located at a 90 degree position from the reducer providing a more compact footprint
- ② High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- ③ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ④ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑤ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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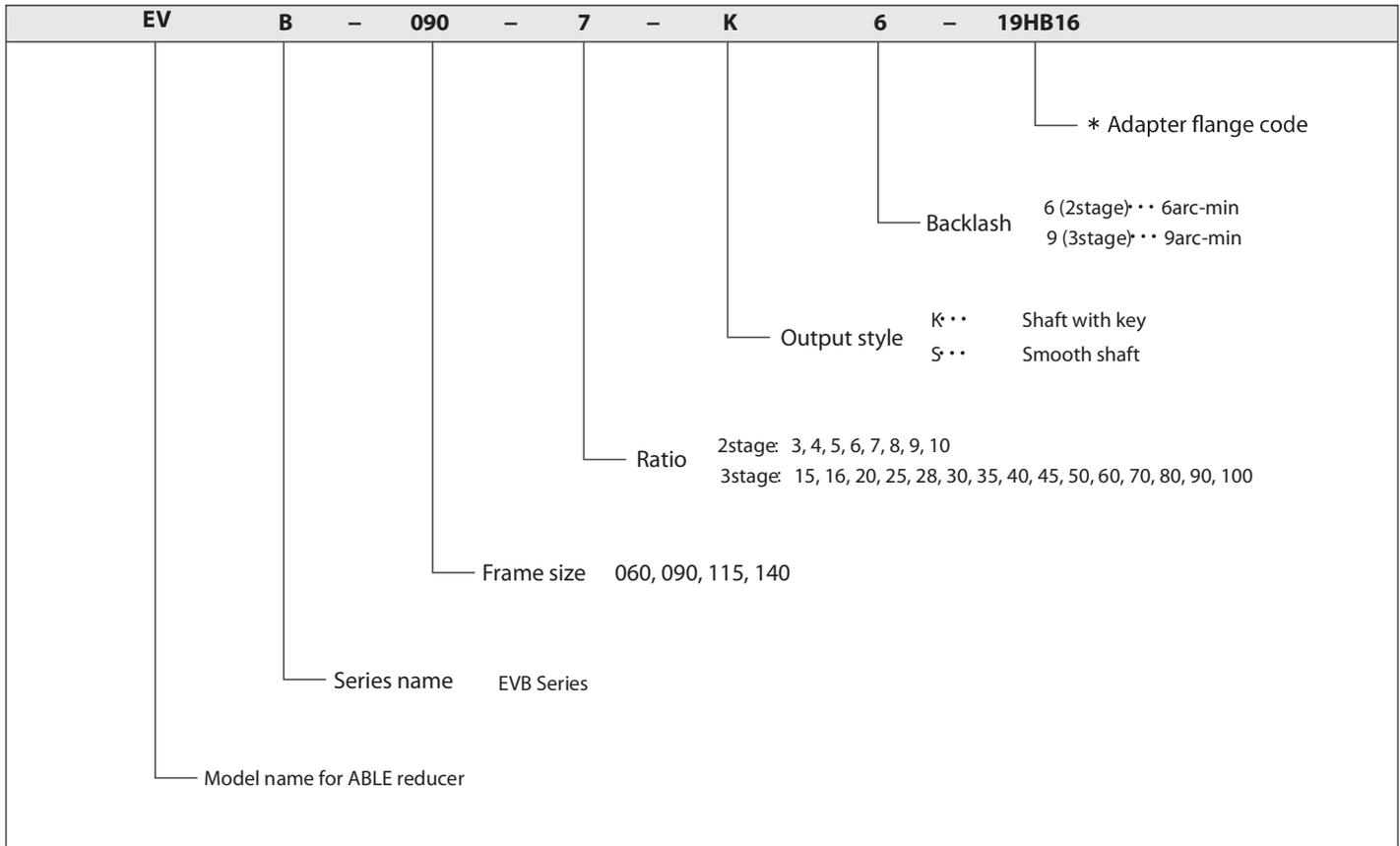
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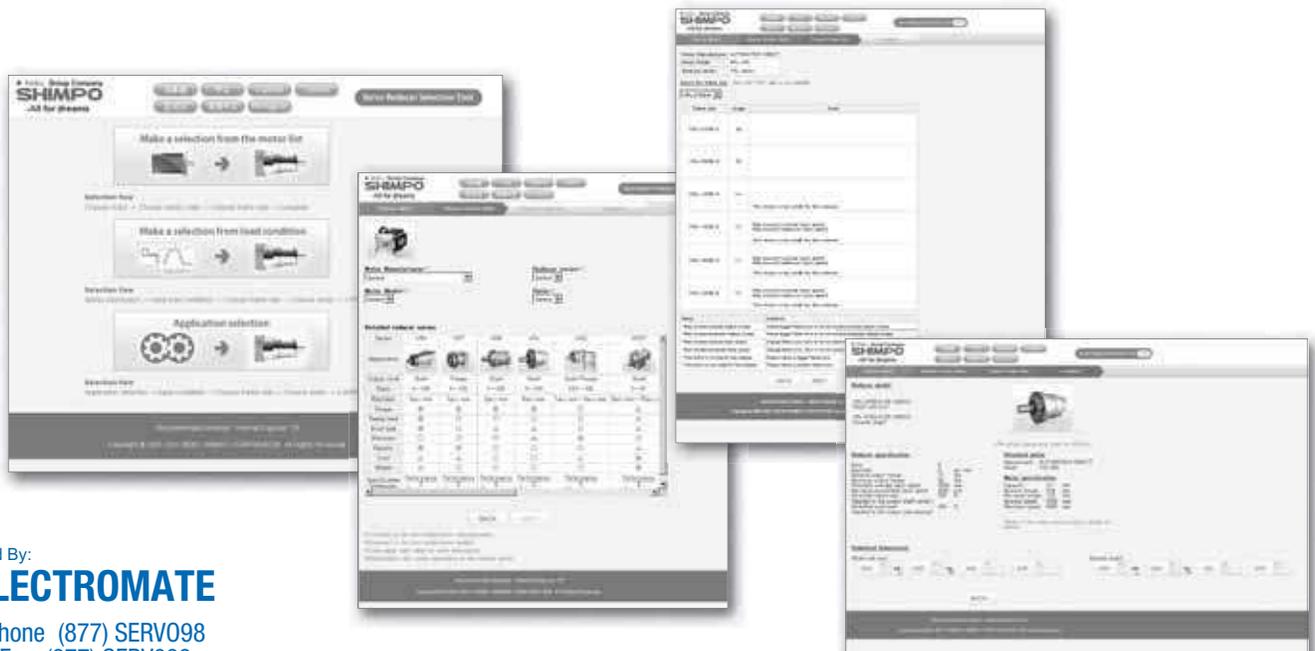
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EVB-Series – Model Number



*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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EVB

EVB-SERIES Right angle shaft

EVB-o6o – 2-Stage Specifications

Frame Size	060									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	12	16	22	24	24	24	16	16
Maximum Acceleration Torque	[Nm]	*2	24	32	40	45	45	45	32	32
Emergency Stop Torque	[Nm]	*3	50	65	80	90	90	90	65	65
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.33							
Permitted Radial Load	[N]	*7	430	470	510	540	570	600	620	640
Permitted Axial Load	[N]	*8	310	360	390	430	460	480	510	530
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.310	0.270	0.250	0.240	0.230	0.230	0.230	0.230
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.390	0.340	0.320	0.310	0.310	0.310	0.300	0.300
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.580	0.530	0.510	0.500	0.500	0.500	0.490	0.490
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.8							

EVB-o6o – 3-Stage Specifications

Frame Size	060									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	24	24
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	45	45
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	90	90
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.20							
Permitted Radial Load	[N]	*7	740	750	810	870	910	930	980	1000
Permitted Axial Load	[N]	*8	630	650	720	790	830	860	920	970
Maximum Radial Load	[N]	*9	1200							
Maximum Axial Load	[N]	*10	1100							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.073	0.079	0.071	0.071	0.077	0.062	0.070	0.061
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.118	0.124	0.116	0.115	0.122	0.106	0.115	0.106
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.6							

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EVB-060 – 3-Stage Specifications

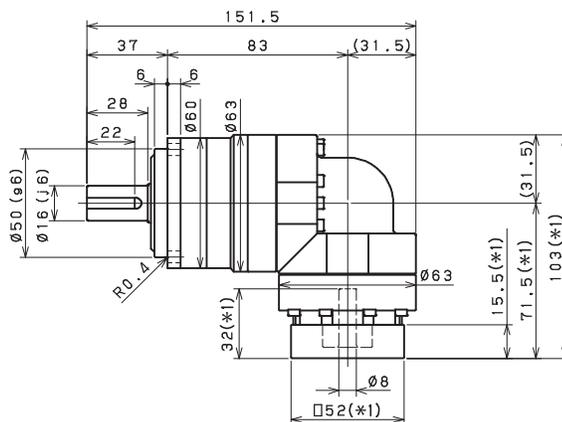
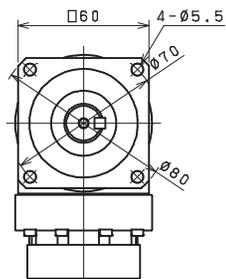
Frame Size	060										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	16		
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	32		
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	65		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.20								
Permitted Radial Load	[N]	*7	1100	1100	1200	1200	1200	1200	1200		
Permitted Axial Load	[N]	*8	1000	1100	1100	1100	1100	1100	1100		
Maximum Radial Load	[N]	*9	1200								
Maximum Axial Load	[N]	*10	1100								
Moment of Inertia (≤ Ø 8)	[kgcm ²]	--	0.070	0.061	0.061	0.061	0.061	0.061	0.061		
Moment of Inertia (≤ Ø 14)	[kgcm ²]	--	0.115	0.106	0.106	0.105	0.105	0.105	0.105		
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.6								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVB060/090/115; 2,000 rpm for EVB140
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

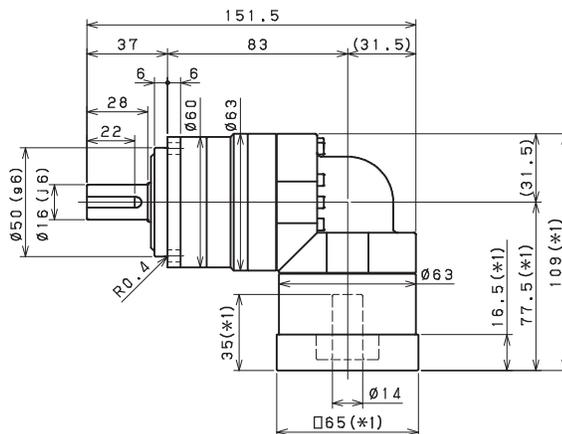
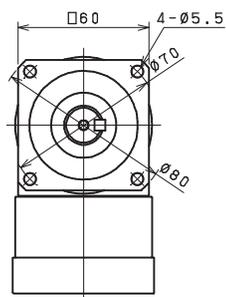
EVB-SERIES Right angle shaft

EVB-o6o – 2-Stage Dimensions

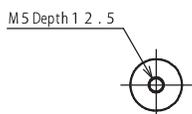
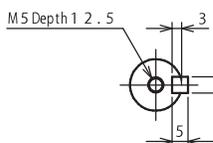
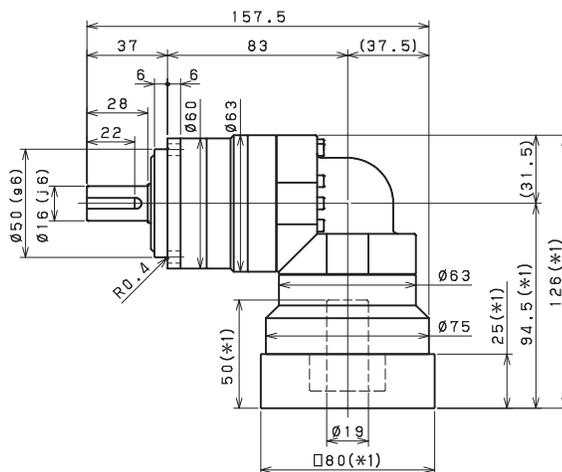
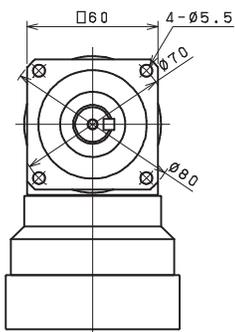
Input shaft bore $\leq \varnothing 8$



Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



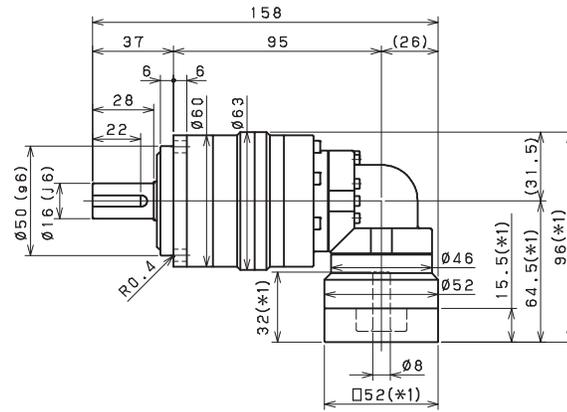
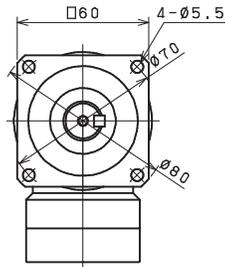
Shaft with key

Smooth shaft

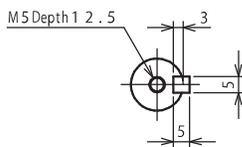
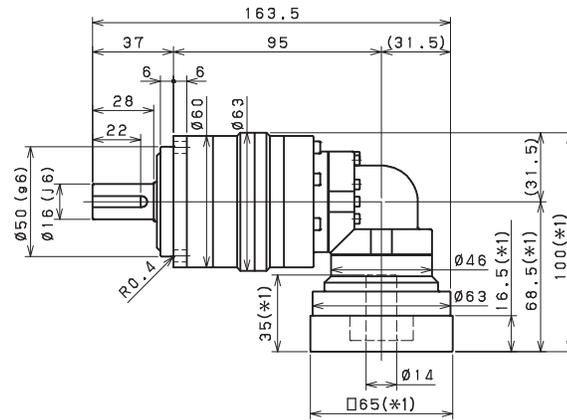
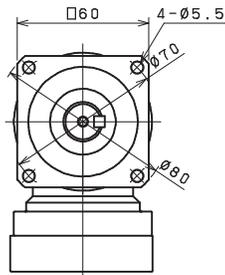
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVB-o6o – 3-Stage Dimensions

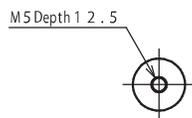
Input shaft bore $\leq \varnothing 8$



Input shaft bore $\leq \varnothing 14$



Shaft with key



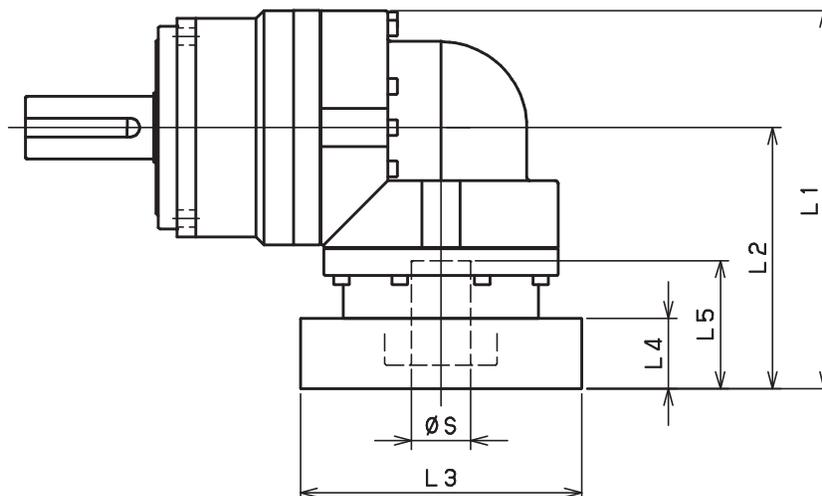
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

EVB-SERIES Right angle shaft

EVB-o6o – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVB-060-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	103	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	108	76.5	□52	20.5	37
	BA·BB·BD·BE	103	71.5	□60	15.5	32
	BC·BF	108	76.5	□60	20.5	37
	CA	108	76.5	□70	20.5	37
EVB-060-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	109	77.5	□65	16.5	35
	BC·BH	114	82.5	□65	21.5	40
	BL	119	87.5	□65	26.5	45
	CA	109	77.5	□70	16.5	35
	CB	114	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	109	77.5	□80	16.5	35
	DE	114	82.5	□80	21.5	40
	DG	119	87.5	□80	26.5	45
	EA·EB·EC	109	77.5	□90	16.5	35
	ED	119	87.5	□90	26.5	45
	FA	109	77.5	□100	16.5	35
GA	109	77.5	□115	16.5	35	
EVB-060-□-□-19** (14 < S ≤ 19)	DA·DB·DC	126	94.5	□80	25	50
	DD	136	104.5	□80	35	60
	DE	131	99.5	□80	30	55
	EA	131	99.5	□90	30	55
	EB	126	94.5	□90	25	50
	EC	136	104.5	□90	35	60
	FA	126	94.5	□100	25	50
	FB	136	104.5	□100	35	60
	GA·GC	131	99.5	□115	30	55
	GB·GD	126	94.5	□115	25	50
	HA	126	94.5	□130	25	50
	HB	141	109.5	□130	40	65
	HC·HD·HE	131	99.5	□130	30	55

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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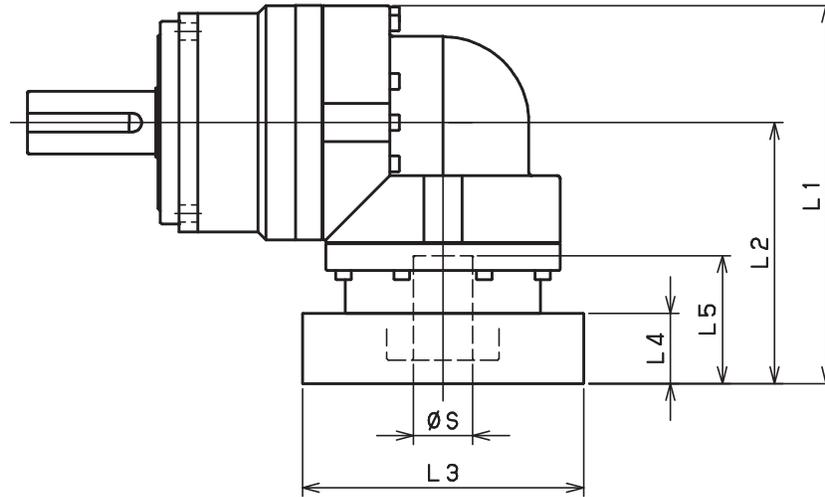
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EVB-o6o – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVB-060-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	96	64.5	□52	15.5	32
	AB·AE·AH·AJ·AK	101	69.5	□52	20.5	37
	BA·BB·BD·BE	96	64.5	□60	15.5	32
	BC·BF	101	69.5	□60	20.5	37
	CA	101	69.5	□70	20.5	37
EVB-060-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	100	68.5	□65	16.5	35
	BC·BH	105	73.5	□65	21.5	40
	BL	110	78.5	□65	26.5	45
	CA	100	68.5	□70	16.5	35
	CB	105	73.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	100	68.5	□80	16.5	35
	DE	105	73.5	□80	21.5	40
	DG	110	78.5	□80	26.5	45
	EA·EB·EC	100	68.5	□90	16.5	35
	ED	110	78.5	□90	26.5	45
	FA	100	68.5	□100	16.5	35
GA	100	68.5	□115	16.5	35	
EVB-060-□-□-19** (14 < S ≤ 19)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
HB	-	-	-	-	-	
HC·HD·HE	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

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EVB-SERIES Right angle shaft

EVB-090 – 2-Stage Specifications

Frame Size	090									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	45	60	65	65	65	65	45	45
Maximum Acceleration Torque	[Nm]	*2	65	90	90	90	90	90	65	65
Emergency Stop Torque	[Nm]	*3	130	170	220	220	220	220	170	170
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.13							
Permitted Radial Load	[N]	*7	810	890	960	1000	1100	1100	1200	1200
Permitted Axial Load	[N]	*8	930	1100	1200	1300	1300	1400	1500	1600
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	2.120	1.890	1.800	1.760	1.730	1.710	1.700	1.690
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.450	2.220	2.130	2.090	2.060	2.040	2.030	2.020
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.570	4.350	4.260	4.210	4.180	4.170	4.160	4.150
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	5.1							

EVB-090 – 3-Stage Specifications

Frame Size	090									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	65	65
Maximum Acceleration Torque	[Nm]	*2	65	110	110	110	110	65	110	110
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	220	220
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.55							
Permitted Radial Load	[N]	*7	1400	1400	1500	1600	1700	1700	1800	1900
Permitted Axial Load	[N]	*8	1900	1900	2100	2200	2200	2200	2200	2200
Maximum Radial Load	[N]	*9	2400							
Maximum Axial Load	[N]	*10	2200							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.340	0.380	0.330	0.320	0.370	0.250	0.320	0.250
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.410	0.460	0.400	0.400	0.450	0.330	0.400	0.320
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.600	0.650	0.590	0.590	0.640	0.510	0.590	0.510
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.4							

EVB-090 – 3-Stage Specifications

Frame Size	090										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	45		
Maximum Acceleration Torque	[Nm]	*2	65	110	110	110	110	65	65		
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	170		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.55								
Permitted Radial Load	[N]	*7	2000	2100	2200	2300	2400	2400	2400		
Permitted Axial Load	[N]	*8	2200	2200	2200	2200	2200	2200	2200		
Maximum Radial Load	[N]	*9	2400								
Maximum Axial Load	[N]	*10	2200								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.320	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.390	0.320	0.320	0.320	0.320	0.320	0.320		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.580	0.510	0.510	0.510	0.510	0.510	0.510		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4.4								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVB060/090/115; 2,000 rpm for EVB140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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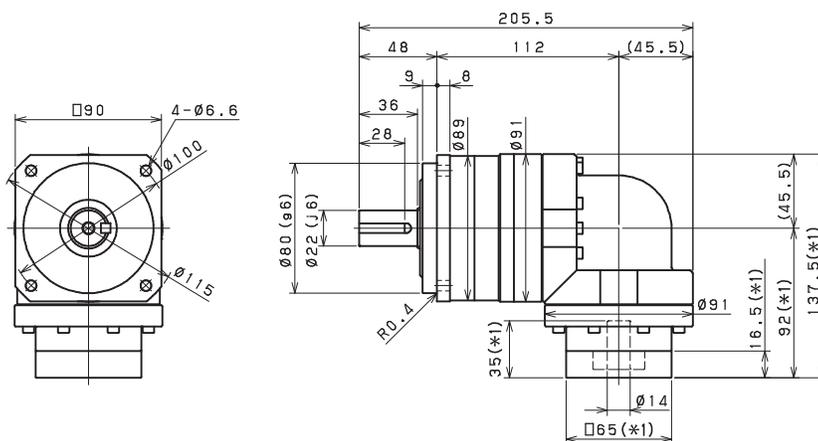
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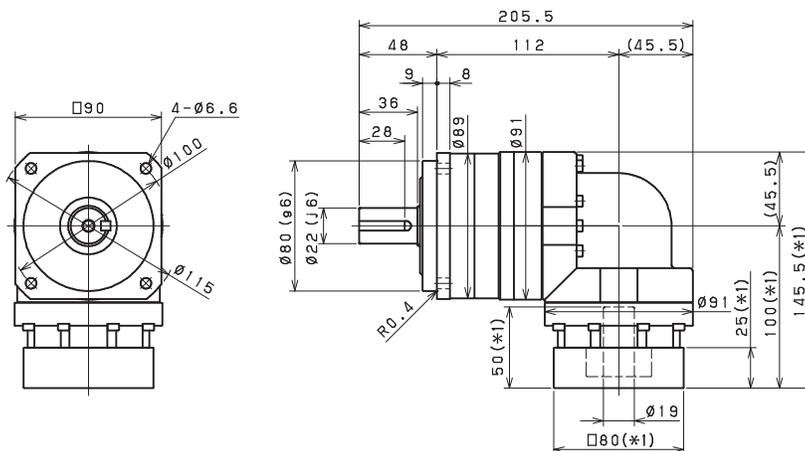
EVB-SERIES Right angle shaft

EVB-090 – 2-Stage Dimensions

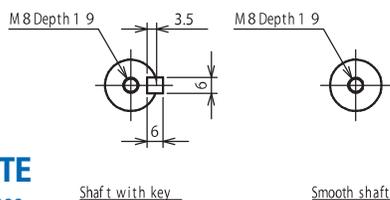
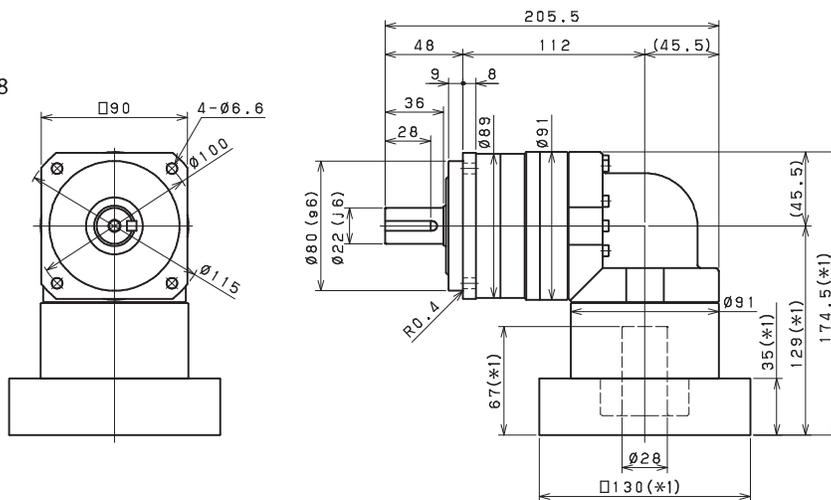
Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



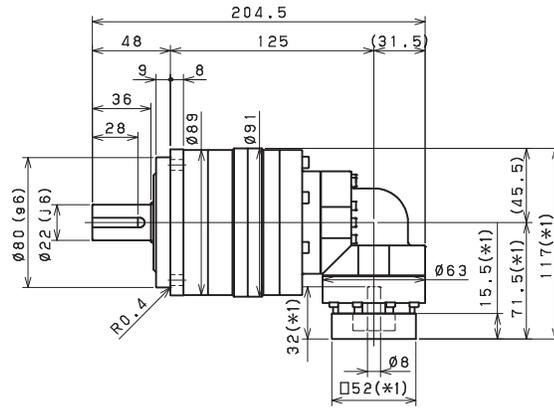
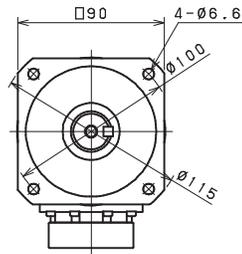
Input shaft bore $\leq \varnothing 28$



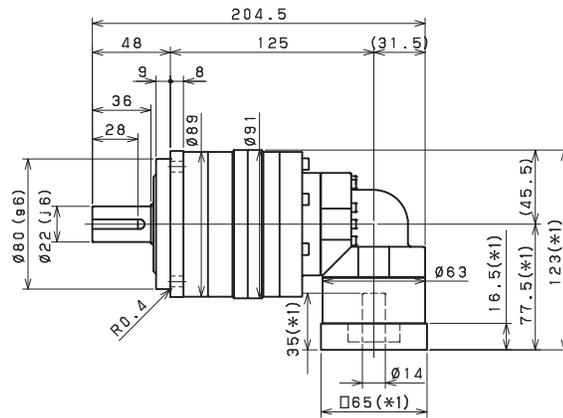
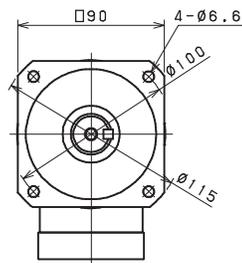
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVB-090 – 3-Stage Dimensions

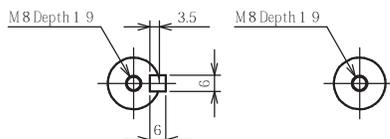
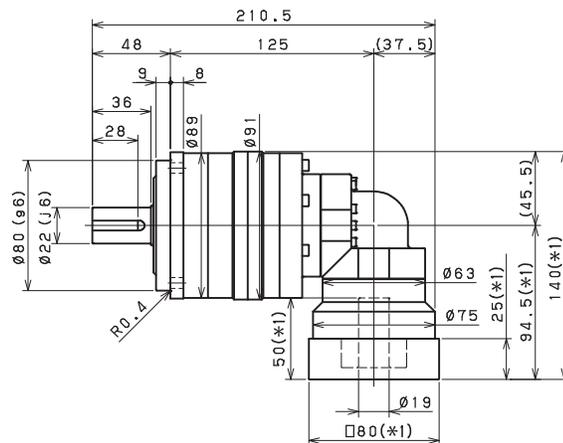
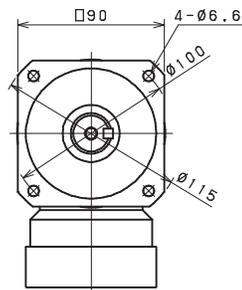
Input shaft bore $\leq \varnothing 8$



Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



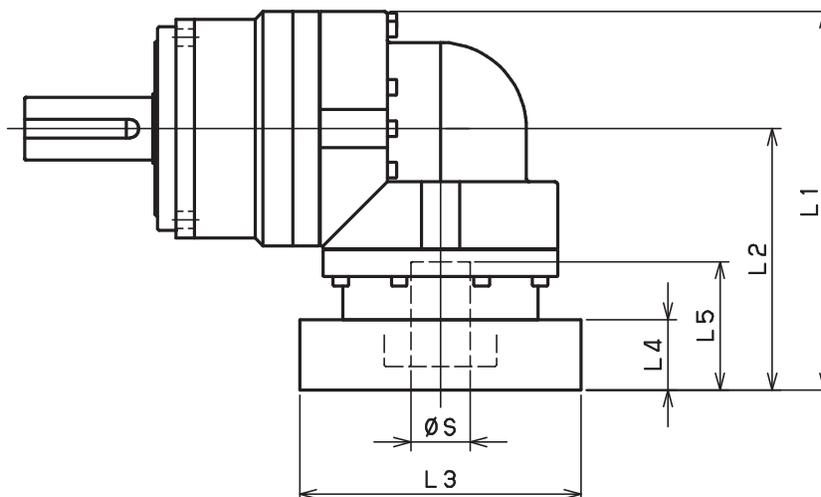
Shaft with key

Smooth shaft

- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVB-SERIES Right angle shaft

EVB-090 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVB-090-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	--	--	--	--	--
	AB·AE·AH·AJ·AK	--	--	--	--	--
	BA·BB·BD·BE	--	--	--	--	--
	BC·BF	--	--	--	--	--
	CA	--	--	--	--	--
EVB-090-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	137.5	92	□65	16.5	35
	BC·BH	142.5	97	□65	21.5	40
	BL	147.5	102	□65	26.5	45
	CA	137.5	92	□70	16.5	35
	CB	142.5	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	137.5	92	□80	16.5	35
	DE	142.5	97	□80	21.5	40
	DG	147.5	102	□80	26.5	45
	EA·EB·EC	137.5	92	□90	16.5	35
	ED	147.5	102	□90	26.5	45
	FA	137.5	92	□100	16.5	35
EVB-090-□-□-19** (14 < S ≤ 19)	GA	137.5	92	□115	16.5	35
	DA·DB·DC	145.5	100	□80	25	50
	DD	155.5	110	□80	35	60
	DE	150.5	105	□80	30	55
	EA	150.5	105	□90	30	55
	EB	145.5	100	□90	25	50
	EC	155.5	110	□90	35	60
	FA	145.5	100	□100	25	50
	FB	155.5	110	□100	35	60
	GA·GC	150.5	105	□115	30	55
	GB·GD	145.5	100	□115	25	50
	HA	145.5	100	□130	25	50
	HB	160.5	115	□130	40	65
EVB-090-□-□-28** (19 < S ≤ 28)	HC·HD·HE	150.5	105	□130	30	55
	FA·FB·FC	174.5	129	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	174.5	129	□115	35	67
	HA·HC·HD	174.5	129	□130	35	67
	HB	184.5	139	□130	45	77
	JA·JB·JC	174.5	129	□150	35	67
	KA·KB	174.5	129	□180	35	67
	LA	174.5	129	□200	35	67
	MA	174.5	129	□220	35	67

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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For an explanation on the Adapter Flange Code, please turn to page 300

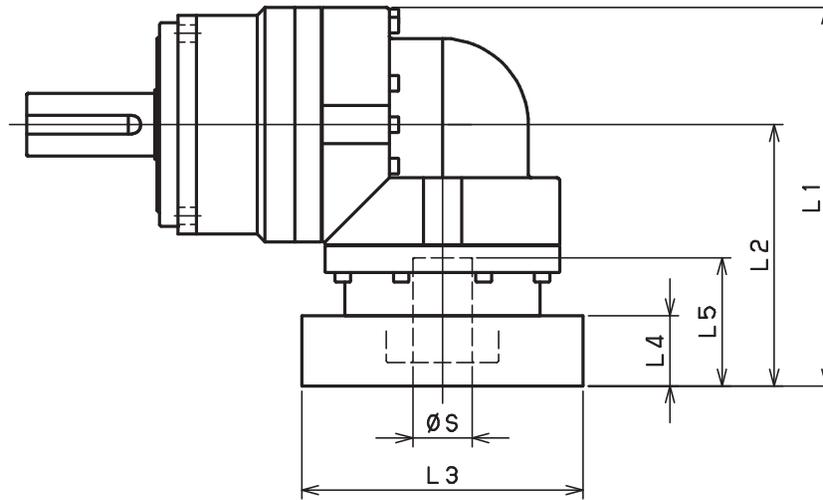
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EVB-090 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVB-090-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	117	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	122	76.5	□52	20.5	37
	BA·BB·BD·BE	117	71.5	□60	15.5	32
	BC·BF	122	76.5	□60	20.5	37
	CA	122	76.5	□70	20.5	37
EVB-090-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	123	77.5	□65	16.5	35
	BC·BH	128	82.5	□65	21.5	40
	BL	133	87.5	□65	26.5	45
	CA	123	77.5	□70	16.5	35
	CB	128	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	123	77.5	□80	16.5	35
	DE	128	82.5	□80	21.5	40
	DG	133	87.5	□80	26.5	45
	EA·EB·EC	123	77.5	□90	16.5	35
	ED	133	87.5	□90	26.5	45
	FA	123	77.5	□100	16.5	35
	GA	123	77.5	□115	16.5	35
EVB-090-□-□-19** (14 < S ≤ 19)	DA·DB·DC	140	94.5	□80	25	50
	DD	150	104.5	□80	35	60
	DE	145	99.5	□80	30	55
	EA	145	99.5	□90	30	55
	EB	140	94.5	□90	25	50
	EC	150	104.5	□90	35	60
	FA	140	94.5	□100	25	50
	FB	150	104.5	□100	35	60
	GA·GC	145	99.5	□115	30	55
	GB·GD	140	94.5	□115	25	50
	HA	140	94.5	□130	25	50
	HB	155	109.5	□130	40	65
	HC·HD·HE	145	99.5	□130	30	55
EVB-090-□-□-28** (19 < S ≤ 28)	FA·FB·FC	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	-	-	-	-	-
	HA·HC·HD	-	-	-	-	-
	HB	-	-	-	-	-
	JA·JB·JC	-	-	-	-	-
	KA·KB	-	-	-	-	-
	LA	-	-	-	-	-
MA	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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EVB-SERIES Right angle shaft

EVB-115 – 2-Stage Specifications

Frame Size	115									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	75	100	120	150	150	150	110	110
Maximum Acceleration Torque	[Nm]	*2	150	200	240	300	300	300	200	200
Emergency Stop Torque	[Nm]	*3	320	430	500	550	550	550	450	450
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.88							
Permitted Radial Load	[N]	*7	1300	1500	1600	1700	1800	1900	1900	2000
Permitted Axial Load	[N]	*8	1500	1700	1900	2000	2100	2300	2400	2500
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.740	5.490	5.020	4.770	4.650	4.550	4.490	4.460
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	8.340	7.080	6.610	6.360	6.240	6.140	6.080	6.050
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	15.410	14.150	13.690	13.430	13.310	13.220	13.160	13.120
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10.4							

EVB-115 – 3-Stage Specifications

Frame Size	115									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	110	130	150	150	150	110	150	150
Maximum Acceleration Torque	[Nm]	*2	200	260	300	300	300	200	300	300
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	550	550
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.11							
Permitted Radial Load	[N]	*7	2300	2300	2500	2700	2800	2900	3000	3200
Permitted Axial Load	[N]	*8	3000	3100	3400	3700	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	3900							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	2.250	2.460	2.200	2.180	2.400	1.870	2.160	1.860
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.580	2.790	2.530	2.510	2.730	2.200	2.490	2.190
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.700	4.910	4.650	4.640	4.860	4.330	4.620	4.320
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10.1							

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EVB-115 – 3-Stage Specifications

Frame Size	115										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	110	150	150	150	150	110	110		
Maximum Acceleration Torque	[Nm]	*2	200	300	300	300	300	200	200		
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	450		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	1.11								
Permitted Radial Load	[N]	*7	3300	3400	3600	3800	4000	4200	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300								
Maximum Axial Load	[N]	*10	3900								
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	2.150	1.860	1.850	1.850	1.850	1.850	1.850		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.480	2.190	2.180	2.180	2.180	2.180	2.180		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.610	4.310	4.310	4.310	4.310	4.310	4.310		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	10.1								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVB060/090/115; 2,000 rpm for EVB140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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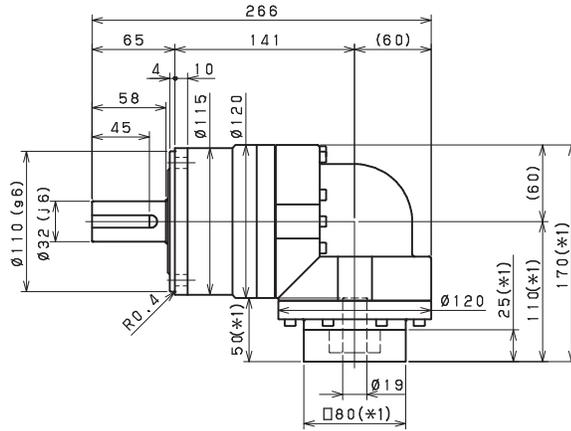
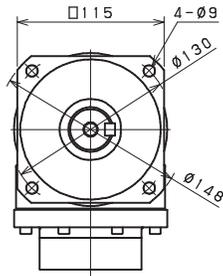
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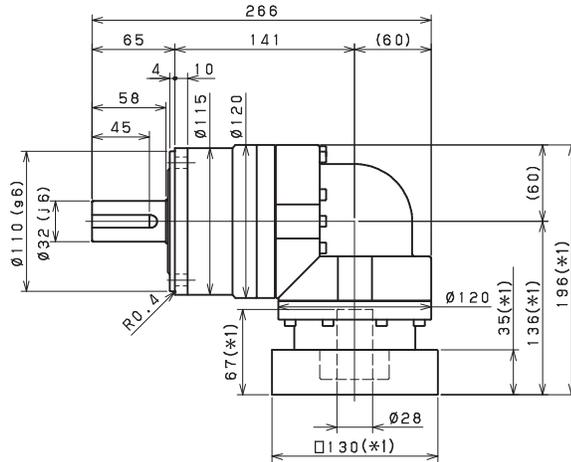
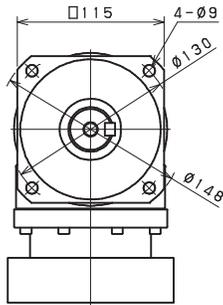
EVB-SERIES Right angle shaft

EVB-115 – 2-Stage Dimensions

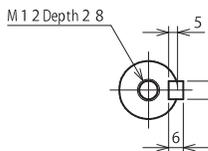
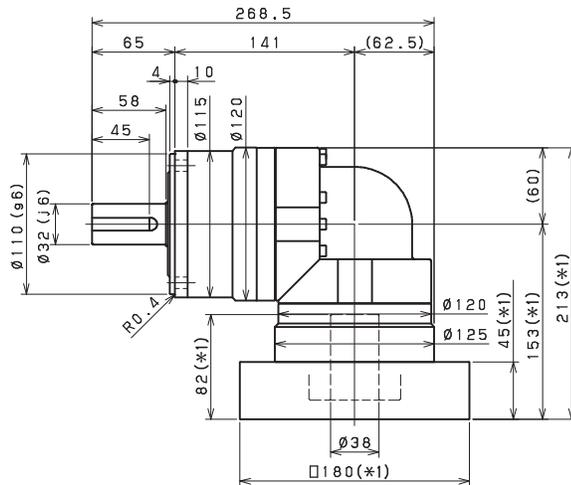
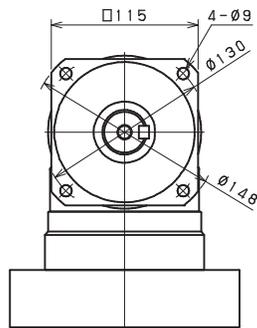
Input shaft bore $\cong \varnothing 19$



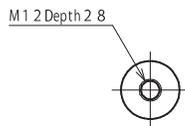
Input shaft bore $\cong \varnothing 28$



Input shaft bore $\cong \varnothing 38$



Shaft with key

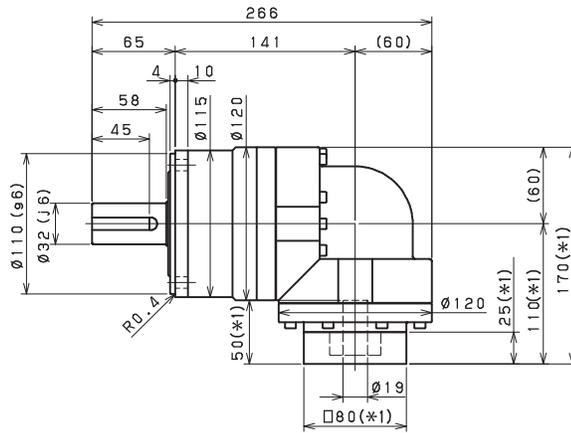
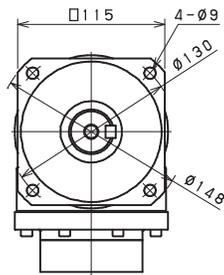


Smooth shaft

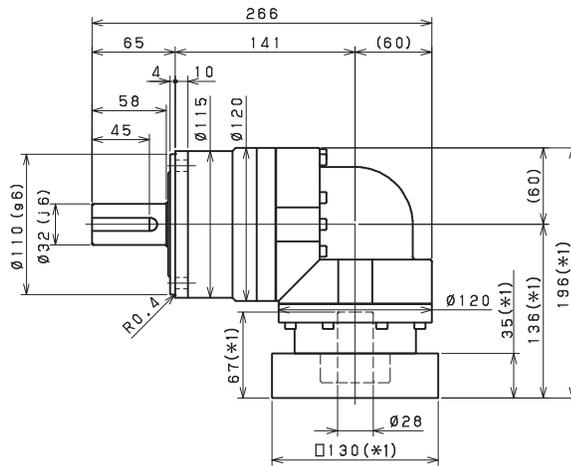
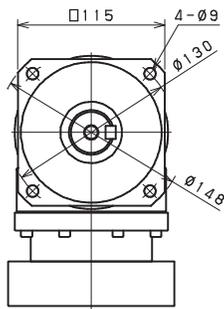
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVB-115 – 3-Stage Dimensions

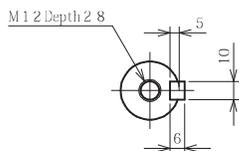
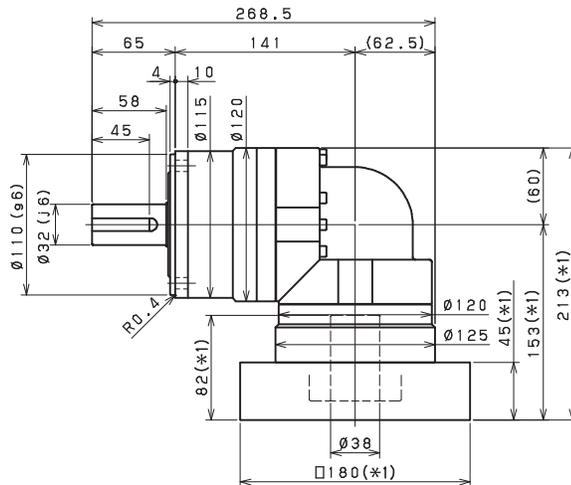
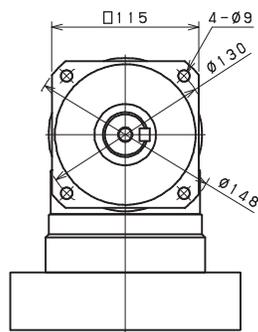
Input shaft bore $\cong \varnothing 14$



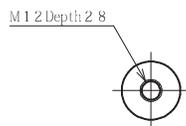
Input shaft bore $\cong \varnothing 19$



Input shaft bore $\cong \varnothing 28$



Shaft with key



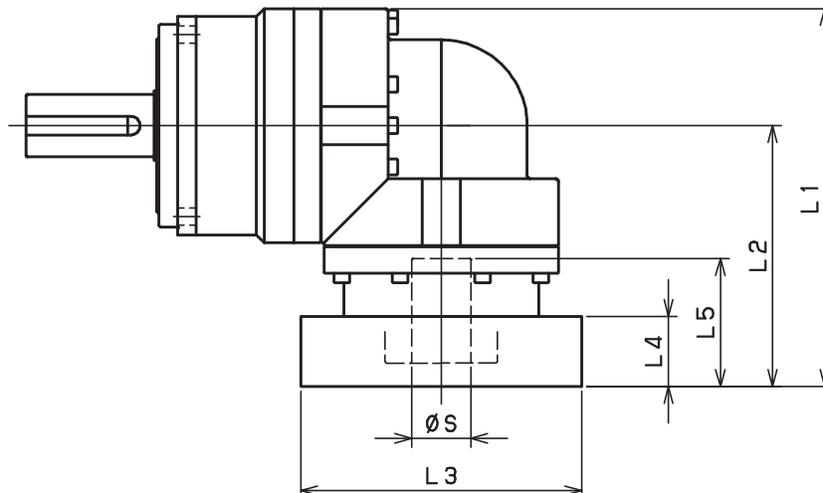
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

EVB-SERIES Right angle shaft

EVB-115 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVB-115-□-□-14** (S ≤ 14)	BA • BB • BD • BE • BF • BG • BJ • BK	-	-	-	-	-
	BC • BH	-	-	-	-	-
	BL	-	-	-	-	-
	CA	-	-	-	-	-
	CB	-	-	-	-	-
	DA • DB • DC • DD • DF • DH	-	-	-	-	-
	DE	-	-	-	-	-
	DG	-	-	-	-	-
	EA • EB • EC	-	-	-	-	-
	ED	-	-	-	-	-
	FA	-	-	-	-	-
EVB-115-□-□-19** (14 < S ≤ 19)	DA • DB • DC	170	110	□80	25	50
	DD	180	120	□80	35	60
	DE	175	115	□80	30	55
	EA	175	115	□90	30	55
	EB	170	110	□90	25	50
	EC	180	120	□90	35	60
	FA	170	110	□100	25	50
	FB	180	120	□100	35	60
	GA • GC	175	115	□115	30	55
	GB • GD	170	110	□115	25	50
	HA	170	110	□130	25	50
	HB	185	125	□130	40	65
	HC • HD • HE	175	115	□130	30	55
EVB-115-□-□-28** (19 < S ≤ 28)	FA • FB • FC	196	136	□100	35	67
	GA • GB • GC • GD • GE • GF • GG	196	136	□115	35	67
	HA • HC • HD	196	136	□130	35	67
	HB	206	146	□130	45	77
	JA • JB • JC	196	136	□150	35	67
	KA • KB	196	136	□180	35	67
	LA	196	136	□200	35	67
EVB-115-□-□-38** (28 < S ≤ 38)	MA	196	136	□220	35	67
	HA	213	153	□130	45	82
	HB	208	148	□130	40	77
	JA	213	153	□150	45	82
	KA • KB • KC	213	153	□180	45	82
	LA	213	153	□200	45	82
	LB	223	163	□200	55	92
	MA • MB	213	153	□220	45	82
NA	213	153	□250	45	82	

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*1) Double reduction : 1/3 ~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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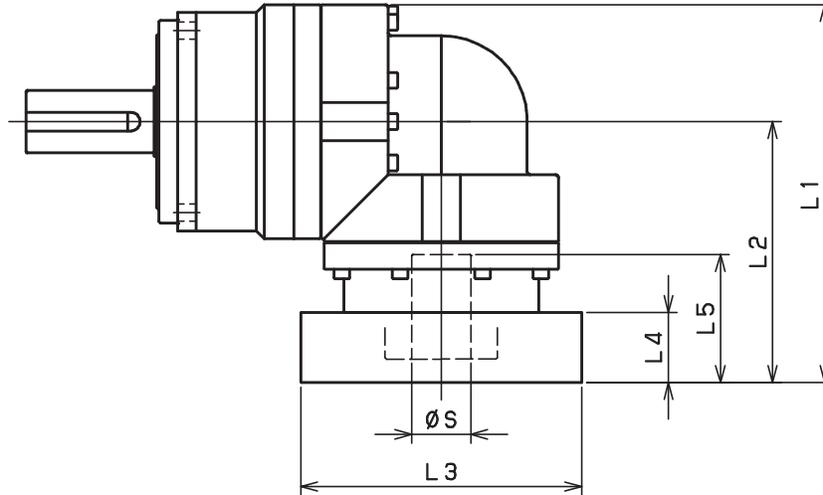
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For an explanation on the Adapter Flange Code, please turn to page 300

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EVB-115 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVB-115-□-□-14** (S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	152	92	□65	16.5	35
	BC·BH	157	97	□65	21.5	40
	BL	162	102	□65	26.5	45
	CA	152	92	□70	16.5	35
	CB	157	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	152	92	□80	16.5	35
	DE	157	97	□80	21.5	40
	DG	162	102	□80	26.5	45
	EA·EB·EC	152	92	□90	16.5	35
	ED	162	102	□90	26.5	45
	FA	152	92	□100	16.5	35
	GA	152	92	□115	16.5	35
EVB-115-□-□-19** (14 < S ≤ 19)	DA·DB·DC	160	100	□80	25	50
	DD	170	110	□80	35	60
	DE	165	105	□80	30	55
	EA	165	105	□90	30	55
	EB	160	100	□90	25	50
	EC	170	110	□90	35	60
	FA	160	100	□100	25	50
	FB	170	110	□100	35	60
	GA·GC	165	105	□115	30	55
	GB·GD	160	100	□115	25	50
	HA	160	100	□130	25	50
	HB	175	115	□130	40	65
EVB-115-□-□-28** (19 < S ≤ 28)	HC·HD·HE	165	105	□130	30	55
	FA·FB·FC	189	129	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	189	129	□115	35	67
	HA·HC·HD	189	129	□130	35	67
	HB	199	139	□130	45	77
	JA·JB·JC	189	129	□150	35	67
	KA·KB	189	129	□180	35	67
	LA	189	129	□200	35	67
EVB-115-□-□-38** (28 < S ≤ 38)	MA	189	129	□220	35	67
	HA	-	-	-	-	-
	HB	-	-	-	-	-
	JA	-	-	-	-	-
	KA·KB·KC	-	-	-	-	-
	LA	-	-	-	-	-
	MA·MB	-	-	-	-	-
NA	-	-	-	-	-	

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*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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EVB-SERIES Right angle shaft

EVB-140 – 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	130	170	200	260	300	300	200	200
Maximum Acceleration Torque	[Nm]	*2	260	340	400	520	600	600	400	400
Emergency Stop Torque	[Nm]	*3	700	950	1100	1100	1100	1100	750	750
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	3.26							
Permitted Radial Load	[N]	*7	3200	3500	3800	4000	4200	4400	4600	4700
Permitted Axial Load	[N]	*8	2400	2700	3000	3300	3500	3700	3900	4100
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	23.130	18.570	16.910	16.010	15.580	15.230	14.770	14.660
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	27.500	22.940	21.280	20.380	19.950	19.610	19.410	19.030
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	40.730	36.170	34.510	33.610	33.180	32.840	32.370	32.260
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	19.1							

EVB-140 – 3-Stage Specifications

Frame Size	140									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	300	300
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	600	600
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	1100	1100
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	2.56							
Permitted Radial Load	[N]	*7	5400	5500	6000	6400	6700	6800	7200	7500
Permitted Axial Load	[N]	*8	4900	5000	5500	6100	6400	6600	7000	7500
Maximum Radial Load	[N]	*9	9100							
Maximum Axial Load	[N]	*10	8200							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.400	7.290	6.220	6.150	7.090	4.990	6.090	4.950
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	8.000	8.880	7.810	7.750	8.680	6.580	7.690	6.540
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	15.070	15.960	14.890	14.820	15.760	13.660	14.760	13.610
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	19.6							

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EVB-140 – 3-Stage Specifications

Frame Size	140										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	200		
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	400		
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	750		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	2.56								
Permitted Radial Load	[N]	*7	7800	8100	8600	9100	9100	9100	9100		
Permitted Axial Load	[N]	*8	7900	8200	8200	8200	8200	8200	8200		
Maximum Radial Load	[N]	*9	9100								
Maximum Axial Load	[N]	*10	8200								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.070	4.930	4.920	4.910	4.910	4.910	4.910		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	7.660	6.520	6.510	6.510	6.500	6.500	6.500		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14.740	13.590	13.590	13.580	13.580	13.570	13.570		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	19.6								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVB060/090/115; 2,000 rpm for EVB140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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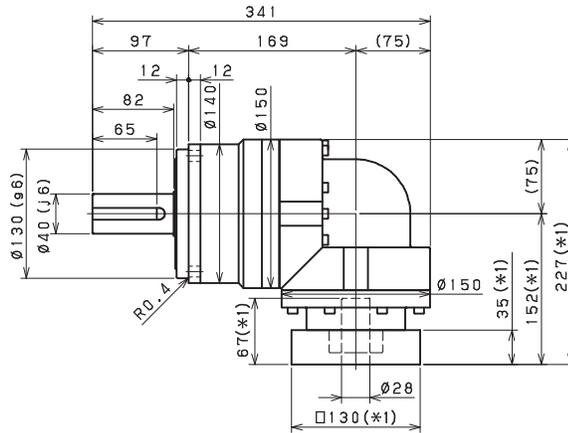
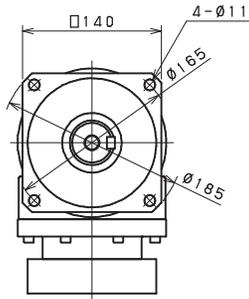
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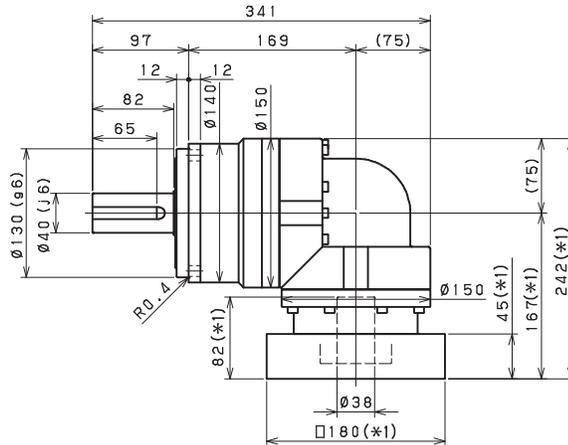
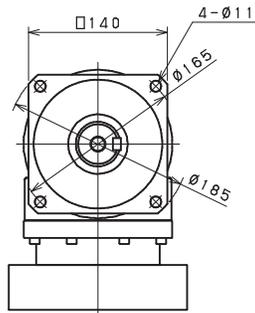
EVB-SERIES Right angle shaft

EVB-140 – 2-Stage Dimensions

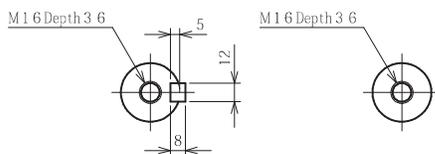
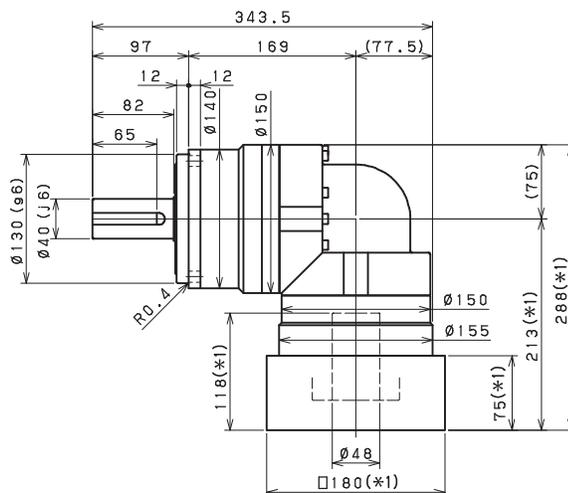
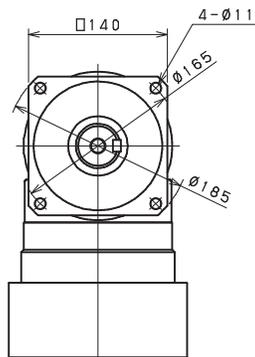
Input shaft bore $\cong \varnothing 28$



Input shaft bore $\cong \varnothing 38$



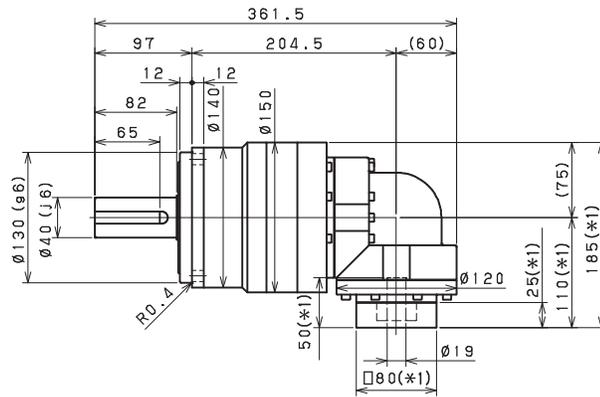
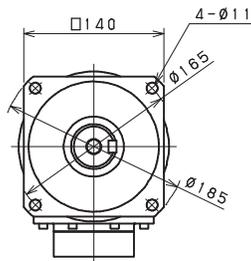
Input shaft bore $\cong \varnothing 48$



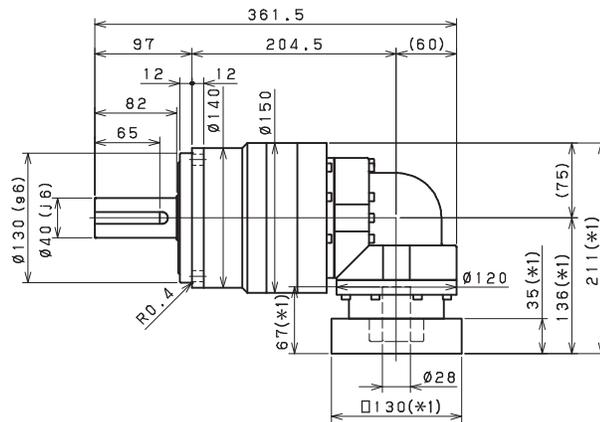
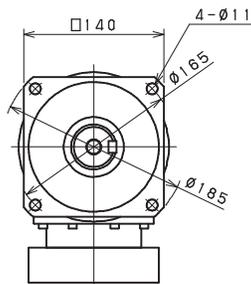
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVB-140 – 3-Stage Dimensions

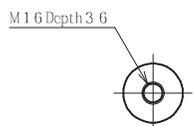
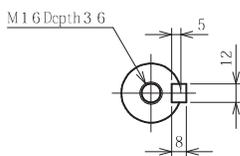
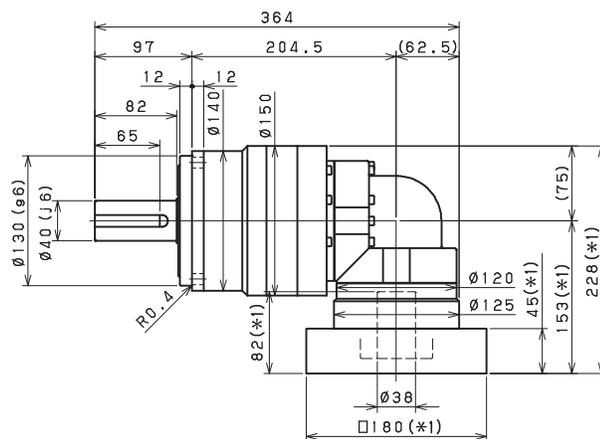
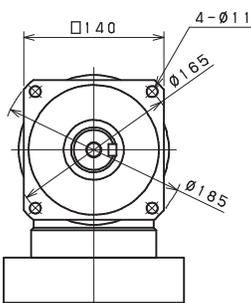
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$



Shaft with key

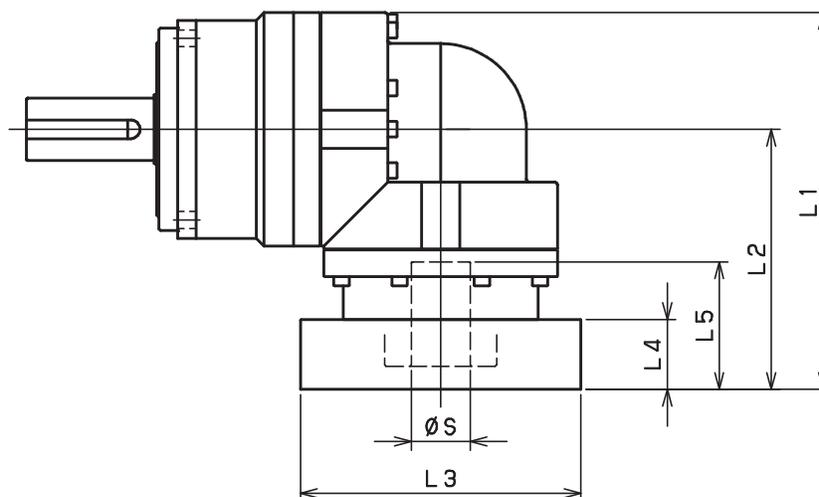
Smooth shaft

*1) Length will vary depending on motor

*2) Bushing will be inserted to adapt to motor shaft

EVB-SERIES Right angle shaft

EVB-140 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVB-140-□-□-19** (S ≤ 19)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
	HB	-	-	-	-	-
	HC·HD·HE	-	-	-	-	-
EVB-140-□-□-28** (19 < S ≤ 28)	FA·FB·FC	227	152	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	227	152	□115	35	67
	HA·HC·HD	227	152	□130	35	67
	HB	237	162	□130	45	77
	JA·JB·JC	227	152	□150	35	67
	KA·KB	227	152	□180	35	67
	LA	227	152	□200	35	67
EVB-140-□-□-38** (28 < S ≤ 38)	MA	227	152	□220	35	67
	HA	242	167	□130	45	82
	HB	237	162	□130	40	77
	JA	242	167	□150	45	82
	KA·KB·KC	242	167	□180	45	82
	LA	242	167	□200	45	82
	LB	252	177	□200	55	92
EVB-140-□-□-48** (38 < S ≤ 48)	MA·MB	242	167	□220	45	82
	NA	242	167	□250	45	82
	KB·KC	268	193	□180	55	98
	KA	288	213	□180	75	118
	LA	268	193	□200	55	98
	MA	268	193	□220	55	98
	MB	288	213	□220	75	118
EVB-140-□-□-48** (38 < S ≤ 48)	NA	288	213	□250	75	118
	PA	288	213	□280	75	118

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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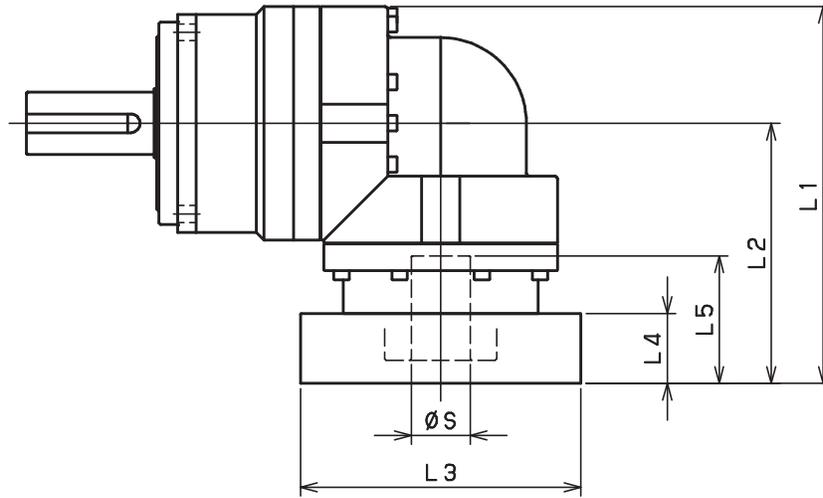
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EVB-140 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVB-140-□-□-19** (S ≤ 19)	DA·DB·DC	185	110	□80	25	50
	DD	195	120	□80	35	60
	DE	190	115	□80	30	55
	EA	190	115	□90	30	55
	EB	185	110	□90	25	50
	EC	195	120	□90	35	60
	FA	185	110	□100	25	50
	FB	195	120	□100	35	60
	GA·GC	190	115	□115	30	55
	GB·GD	185	110	□115	25	50
	HA	185	110	□130	25	50
	HB	200	125	□130	40	65
	HC·HD·HE	190	115	□130	30	55
	EVB-140-□-□-28** (19 < S ≤ 28)	FA·FB·FC	211	136	□100	35
GA·GB·GC·GD·GE·GF·GG		211	136	□115	35	67
HA·HC·HD		211	136	□130	35	67
HB		221	146	□130	45	77
JA·JB·JC		211	136	□150	35	67
KA·KB		211	136	□180	35	67
LA		211	136	□200	35	67
MA		211	136	□220	35	67
EVB-140-□-□-38** (28 < S ≤ 38)	HA	228	153	□130	45	82
	HB	223	148	□130	40	77
	JA	228	153	□150	45	82
	KA·KB·KC	228	153	□180	45	82
	LA	228	153	□200	45	82
	LB	238	163	□200	55	92
	MA·MB	228	153	□220	45	82
	NA	228	153	□250	45	82
EVB-140-□-□-48** (38 < S ≤ 48)	KB·KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-
	NA	-	-	-	-	-
	PA	-	-	-	-	-

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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For an explanation on the Adapter Flange Code, please turn to page 300

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EVS-SERIES

For applications that require exceptional load capabilities in an optimum foot print, the EVS series is an ideal choice. The right-angle equivalent to the VRS, the EVS internal design provides an extremely smooth running, quiet reducer even when challenging static forces are applied. The tapered roller bearings at the output side allow the EVS to handle larger radial and thrust load forces than the typical planetary reducer.

The EVS series is a high precision right-angle reducer having a maximum 6 arc-min backlash rating, while handling high output torque loads that peak output torque peaking at 600 Nm. The series is commonly utilized in automated assembly and test applications or in custom robotic tooling. Very low backlash and extreme radial and thrust load capabilities are critical characteristics for these types of applications.

	Unit Cost	Load Capacity	Duty Cycle	Positional Accuracy	
Optimal					10
					9
					8
					7
					6
Exceptional					5
					4
					3
Suitable					2
					1

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EVS-SERIES

- Industry Standard Mounting Dimensions
- Large Variety of Reduction Ratios to choose from
- Thru-bolt Mounting Style
- Low Backlash (≤ 6 arc-min)
- Space-saving Design
- Highest Radial and Axial Load Ratings among Right-angle options
- Readily Available

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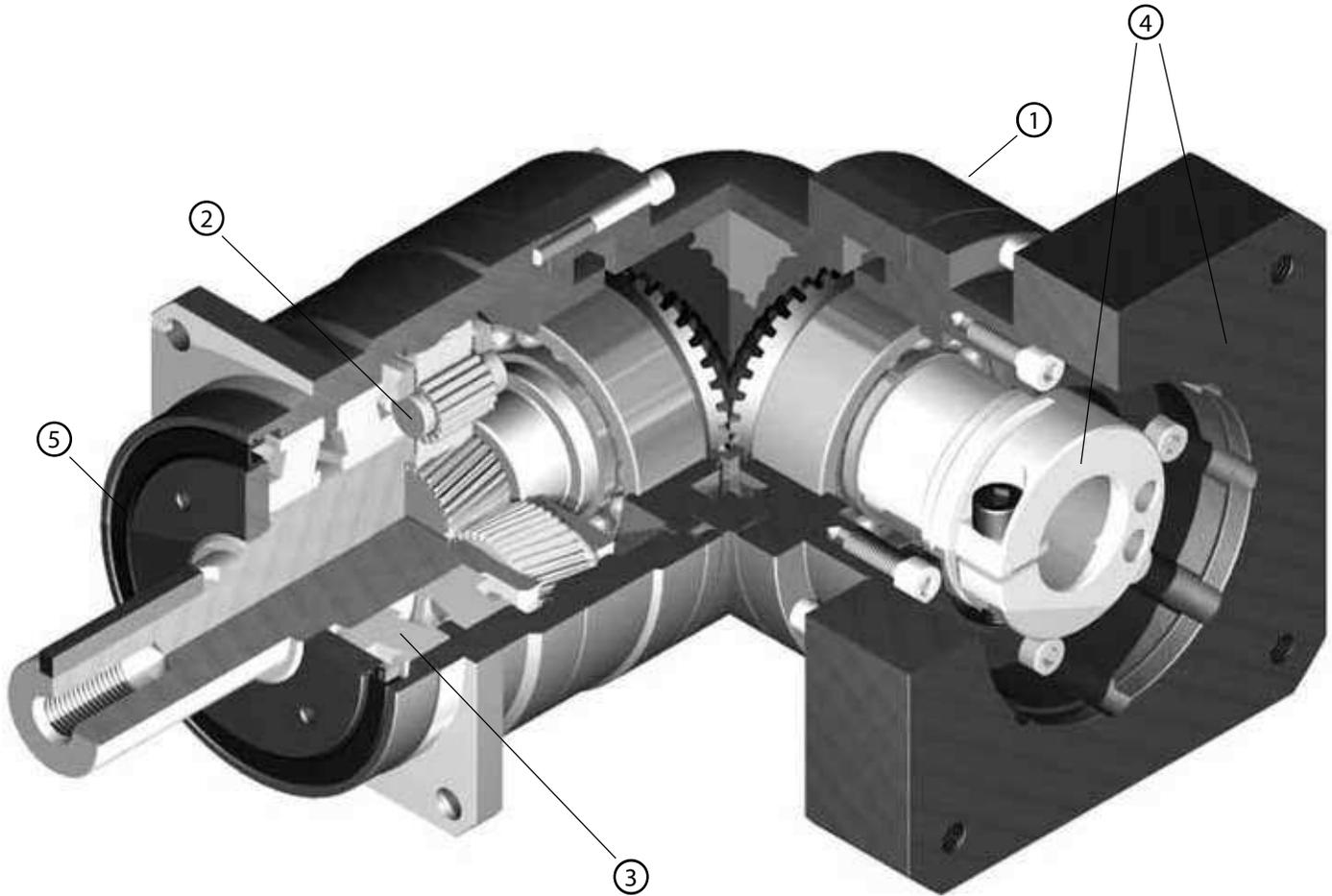
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EVS-SERIES Right angle shaft

EVS-Series – Features



- ① Space-saving features: Right angle reducer utilizes a spiral bevel gear. Motor can be located at a 90 degree position from the reducer providing a more compact footprint
- ② High rigidity & torque: Rigidity and torque are achieved by using uncaged needle roller bearings
- ③ High load capacity: Tapered roller bearings were added to the output section to increase radial and axial load ratings
- ④ Adapter-bushing connection: Enables a simple, effective attachment to most servo motors
- ⑤ No leakage through the seal: High viscosity, anti-separation grease does not liquefy and does not migrate away from the gears
- ⑥ Maintenance-free: No need to replace the grease for the life of the unit. The reducer can be positioned in any orientation

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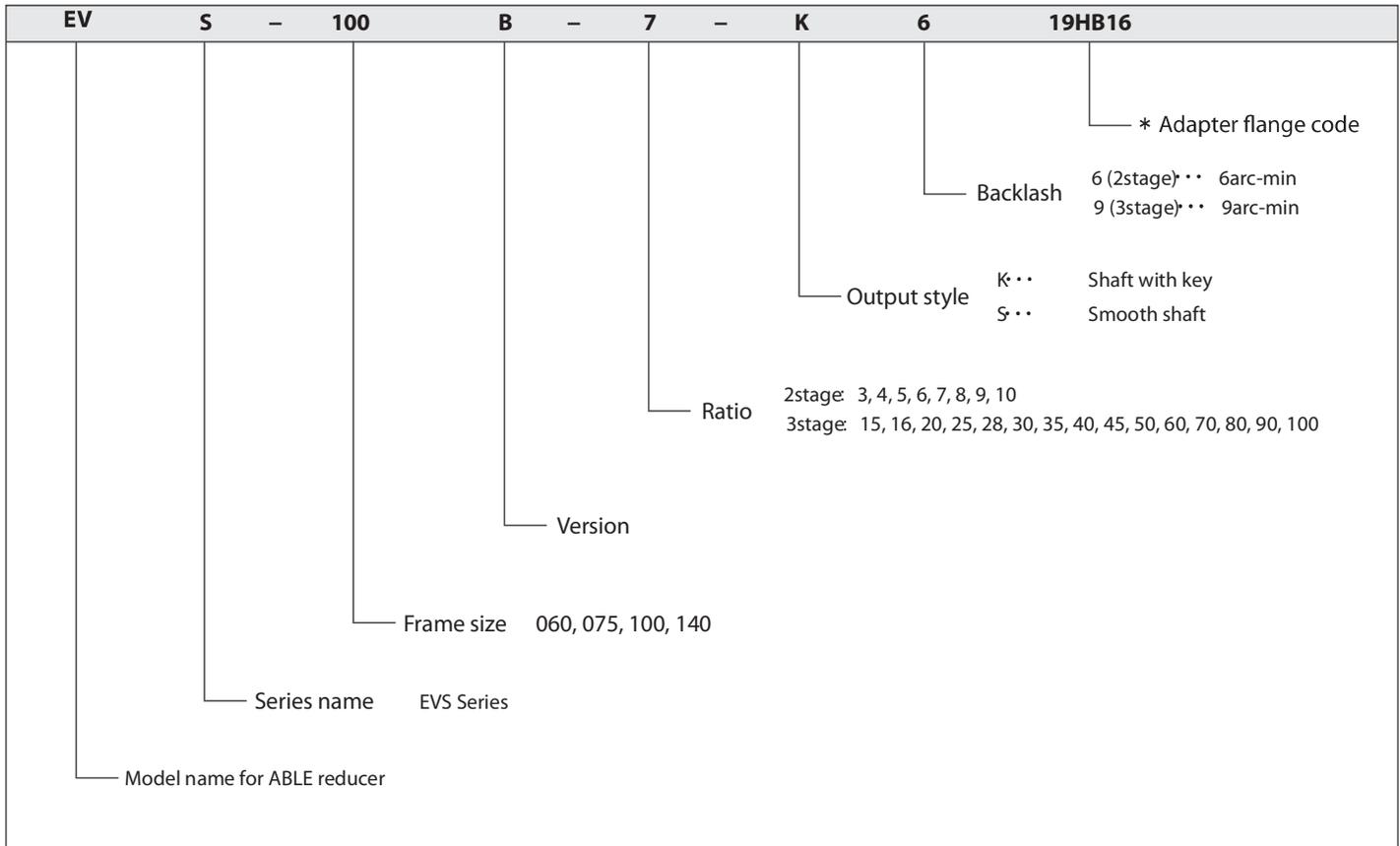
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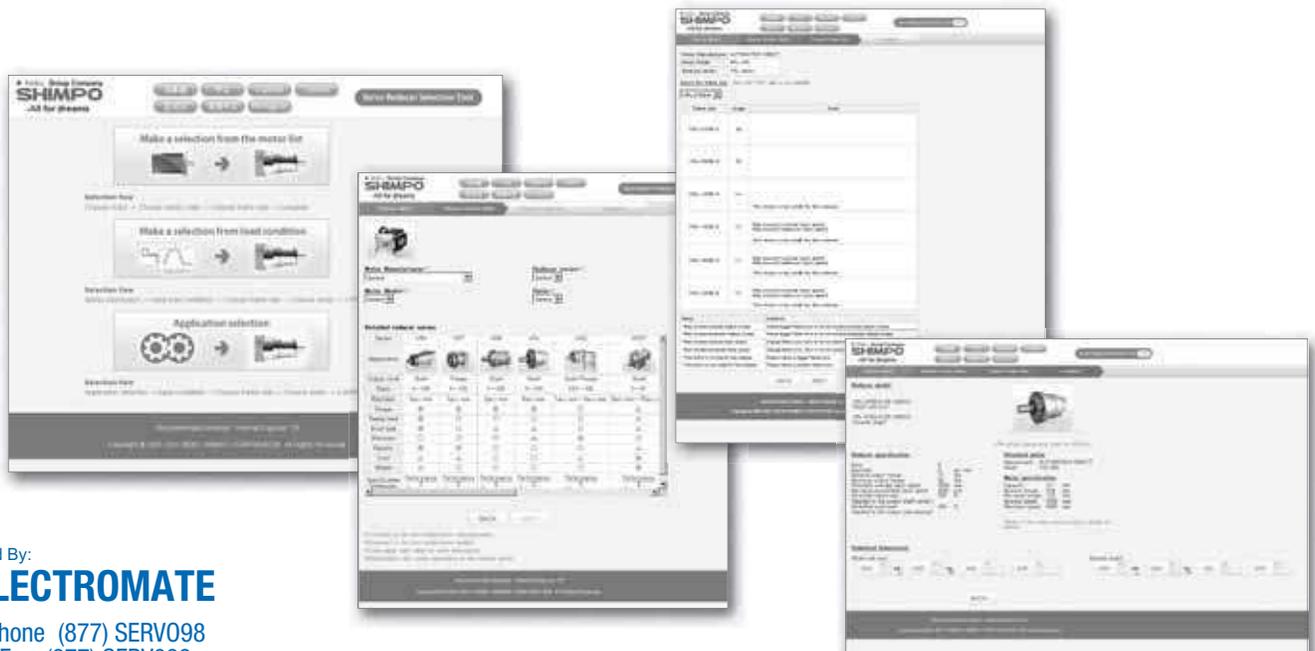
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EVS-Series – Model Number



*1) Adapter flange code
 Adapter flange code varies depending on the motor.

Contact us for additional information or refer to our online reducer selection tool.
 Selection tool www.nidec-shimpo.co.jp/selection/eng



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EVS

EVS-SERIES Right angle shaft

EVS-o6o – 2-Stage Specifications

Frame Size	060									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	12	16	22	24	24	24	16	16
Maximum Acceleration Torque	[Nm]	*2	24	32	40	45	45	45	32	32
Emergency Stop Torque	[Nm]	*3	50	65	80	90	90	90	65	65
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.33							
Permitted Radial Load	[N]	*7	1700	1900	2000	2100	2200	2300	2400	2400
Permitted Axial Load	[N]	*8	2300	2500	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.320	0.271	0.251	0.242	0.235	0.232	0.229	0.228
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.395	0.346	0.326	0.317	0.310	0.307	0.304	0.303
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.584	0.535	0.516	0.506	0.500	0.496	0.494	0.492
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	2							

EVS-o6o – 3-Stage Specifications

Frame Size	060									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	24	24
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	45	45
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	90	90
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.20							
Permitted Radial Load	[N]	*7	2800	2800	3000	3000	3000	3000	3000	3000
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700	2700
Maximum Radial Load	[N]	*9	3000							
Maximum Axial Load	[N]	*10	2700							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.074	0.079	0.072	0.071	0.077	0.062	0.070	0.061
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.118	0.124	0.116	0.115	0.122	0.106	0.115	0.106
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	3							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	1.8							

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EVS-o6o – 3-Stage Specifications

Frame Size	060										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	16	24	24	24	24	16	16		
Maximum Acceleration Torque	[Nm]	*2	32	45	45	45	45	32	32		
Emergency Stop Torque	[Nm]	*3	65	90	90	90	90	65	65		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.20								
Permitted Radial Load	[N]	*7	3000	3000	3000	3000	3000	3000	3000		
Permitted Axial Load	[N]	*8	2700	2700	2700	2700	2700	2700	2700		
Maximum Radial Load	[N]	*9	3000								
Maximum Axial Load	[N]	*10	2700								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.070	0.061	0.061	0.061	0.061	0.061	0.061		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.115	0.106	0.106	0.106	0.105	0.105	0.105		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	3								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	1.8								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVSo60/075/100; 2,000 rpm for EVS140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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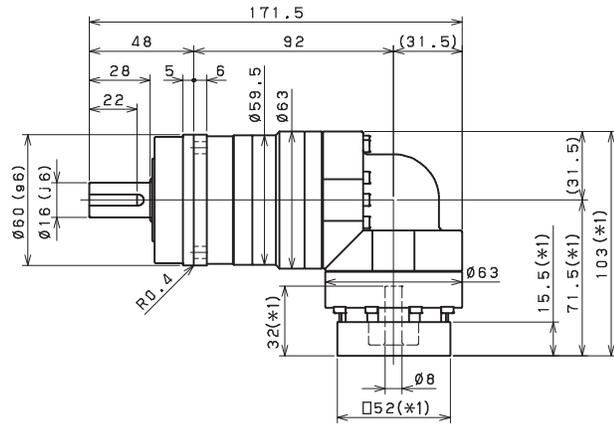
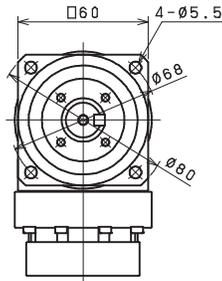
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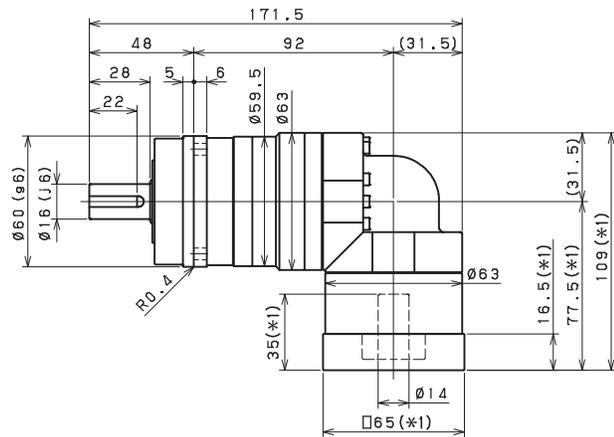
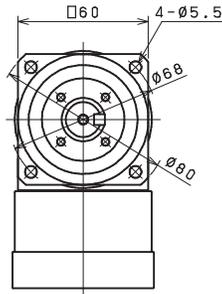
EVS-SERIES Right angle shaft

EVS-o6o – 2-Stage Dimensions

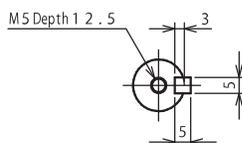
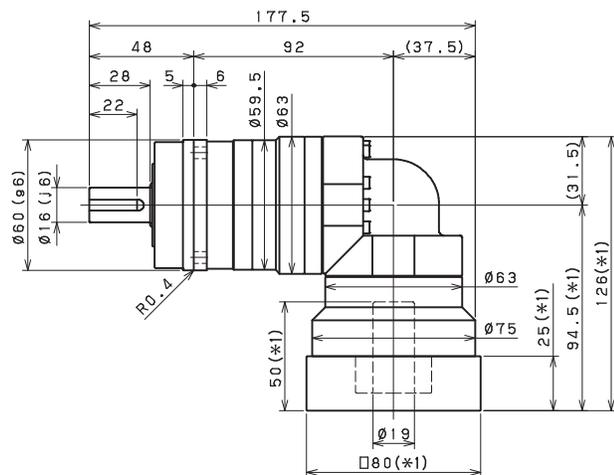
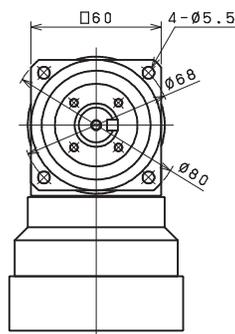
Input shaft bore $\leq \varnothing 8$



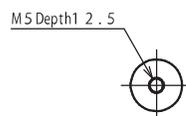
Input shaft bore $\leq \varnothing 14$



Input shaft bore $\leq \varnothing 19$



Shaft with key

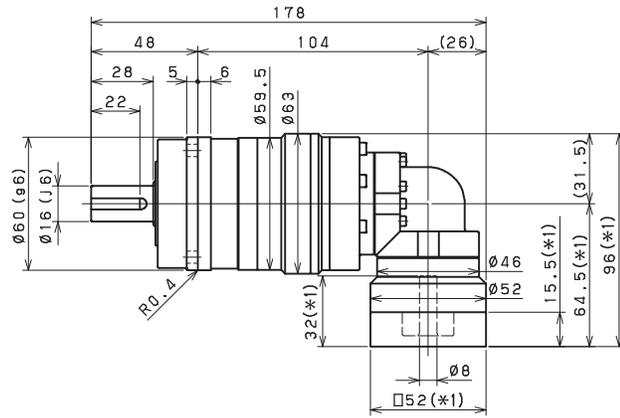
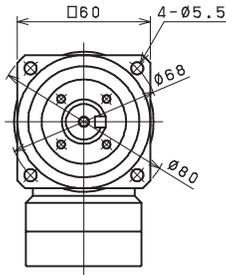


Smooth shaft

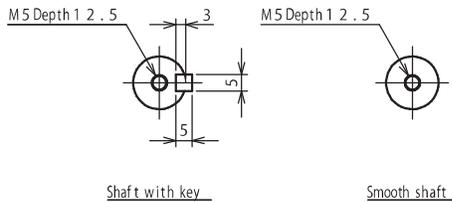
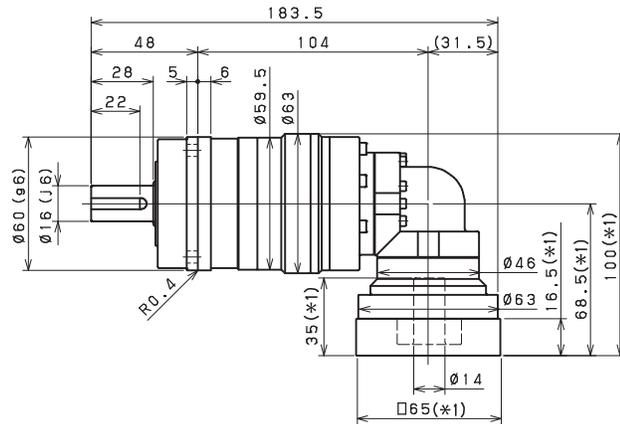
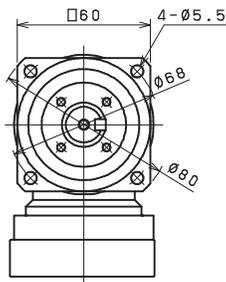
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-o6o – 3-Stage Dimensions

Input shaft bore $\leq \phi 8$



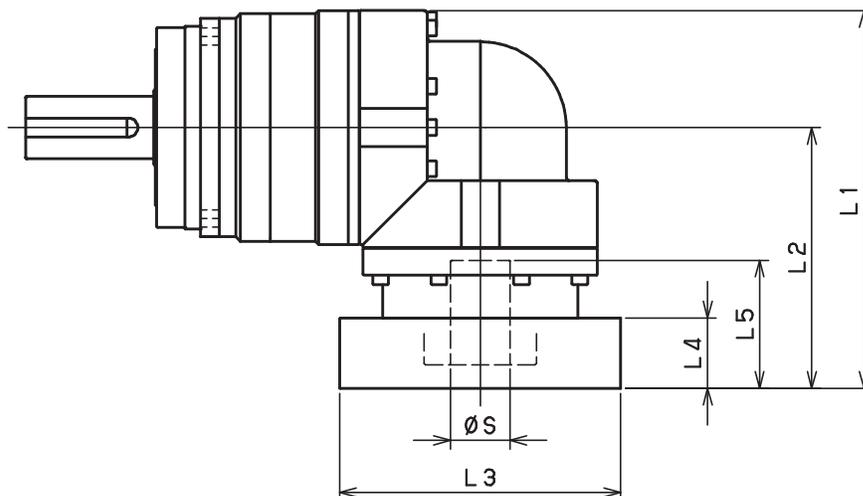
Input shaft bore $\leq \phi 14$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-SERIES Right angle shaft

EVS-o6o – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVS-060B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	103	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	108	76.5	□52	20.5	37
	BA·BB·BD·BE	103	71.5	□60	15.5	32
	BC·BF	108	76.5	□60	20.5	37
	CA	108	76.5	□70	20.5	37
EVS-060B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	109	77.5	□65	16.5	35
	BC·BH	114	82.5	□65	21.5	40
	BL	119	87.5	□65	26.5	45
	CA	109	77.5	□70	16.5	35
	CB	114	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	109	77.5	□80	16.5	35
	DE	114	82.5	□80	21.5	40
	DG	119	87.5	□80	26.5	45
	EA·EB·EC	109	77.5	□90	16.5	35
	ED	119	87.5	□90	26.5	45
	FA	109	77.5	□100	16.5	35
	GA	109	77.5	□115	16.5	35
	EVS-060B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	126	94.5	□80	25
DD		136	104.5	□80	35	60
DE		131	99.5	□80	30	55
EA		131	99.5	□90	30	55
EB		126	94.5	□90	25	50
EC		136	104.5	□90	35	60
FA		126	94.5	□100	25	50
FB		136	104.5	□100	35	60
GA·GC		131	99.5	□115	30	55
GB·GD		126	94.5	□115	25	50
HA		126	94.5	□130	25	50
HB		141	109.5	□130	40	65
HC·HD·HE		131	99.5	□130	30	55

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft.

For an explanation on the Adapter Flange Code, please turn to page 300

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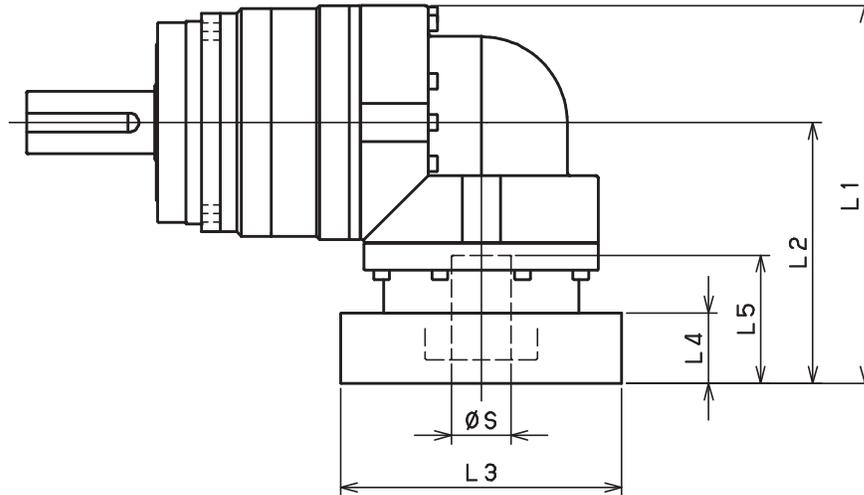
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EVS-o6o – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVS-060B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	96	64.5	□52	15.5	32
	AB·AE·AH·AJ·AK	101	69.5	□52	20.5	37
	BA·BB·BD·BE	96	64.5	□60	15.5	32
	BC·BF	101	69.5	□60	20.5	37
	CA	101	69.5	□70	20.5	37
EVS-060B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	100	68.5	□65	16.5	35
	BC·BH	105	73.5	□65	21.5	40
	BL	110	78.5	□65	26.5	45
	CA	100	68.5	□70	16.5	35
	CB	105	73.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	100	68.5	□80	16.5	35
	DE	105	73.5	□80	21.5	40
	DG	110	78.5	□80	26.5	45
	EA·EB·EC	100	68.5	□90	16.5	35
	ED	110	78.5	□90	26.5	45
	FA	100	68.5	□100	16.5	35
	GA	100	68.5	□115	16.5	35
EVS-060B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	-	-	-	-	-
	DD	-	-	-	-	-
	DE	-	-	-	-	-
	EA	-	-	-	-	-
	EB	-	-	-	-	-
	EC	-	-	-	-	-
	FA	-	-	-	-	-
	FB	-	-	-	-	-
	GA·GC	-	-	-	-	-
	GB·GD	-	-	-	-	-
	HA	-	-	-	-	-
	HB	-	-	-	-	-
HC·HD·HE	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft.

For an explanation on the Adapter Flange Code, please turn to page 300

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EVS-SERIES Right angle shaft

EVS-075 – 2-Stage Specifications

Frame Size	075									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	45	60	65	65	65	65	45	45
Maximum Acceleration Torque	[Nm]	*2	65	90	90	90	90	90	65	65
Emergency Stop Torque	[Nm]	*3	130	170	220	220	220	220	170	170
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.13							
Permitted Radial Load	[N]	*7	2300	2500	2700	2800	3000	3100	3200	3300
Permitted Axial Load	[N]	*8	3400	3700	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	2.070	1.870	1.780	1.740	1.720	1.700	1.690	1.690
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	2.400	2.200	2.110	2.070	2.050	2.030	2.020	2.020
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	4.530	4.320	4.240	4.200	4.170	4.160	4.150	4.150
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.8							

EVS-075 – 3-Stage Specifications

Frame Size	075									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	65	65
Maximum Acceleration Torque	[Nm]	*2	65	110	110	110	110	65	110	110
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	220	220
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	0.55							
Permitted Radial Load	[N]	*7	3700	3800	4000	4300	4300	4300	4300	4300
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900	3900
Maximum Radial Load	[N]	*9	4300							
Maximum Axial Load	[N]	*10	3900							
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.330	0.380	0.330	0.320	0.370	0.250	0.320	0.250
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.410	0.460	0.400	0.400	0.450	0.320	0.400	0.320
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.600	0.650	0.590	0.590	0.640	0.510	0.580	0.510
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	10							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	80							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	4.1							

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EVS-075 – 3-Stage Specifications

Frame Size	075										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	45	65	65	65	65	45	45		
Maximum Acceleration Torque	[Nm]	*2	65	110	110	110	110	65	65		
Emergency Stop Torque	[Nm]	*3	170	220	220	220	220	170	170		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	0.55								
Permitted Radial Load	[N]	*7	4300	4300	4300	4300	4300	4300	4300		
Permitted Axial Load	[N]	*8	3900	3900	3900	3900	3900	3900	3900		
Maximum Radial Load	[N]	*9	4300								
Maximum Axial Load	[N]	*10	3900								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.320	0.250	0.250	0.250	0.250	0.250	0.250		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.390	0.320	0.320	0.320	0.320	0.320	0.320		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.580	0.510	0.510	0.510	0.510	0.510	0.510		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	10								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	80								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4.1								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVS060/075/100; 2,000 rpm for EVS140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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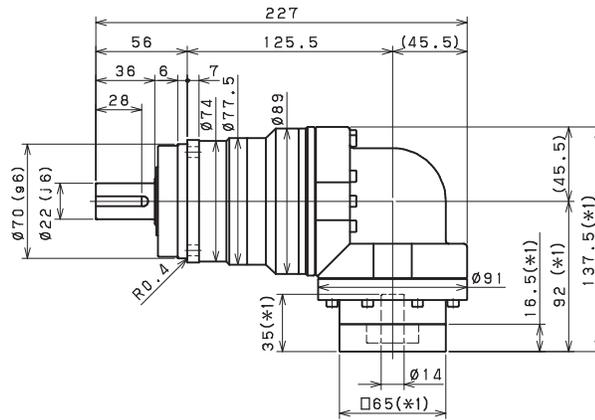
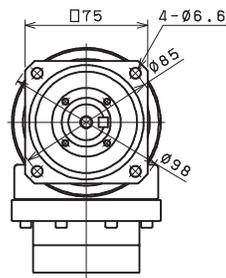
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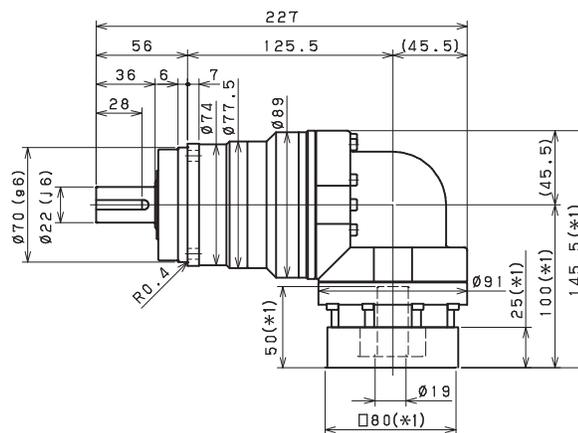
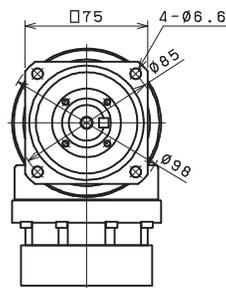
EVS-SERIES Right angle shaft

EVS-075 – 2-Stage Dimensions

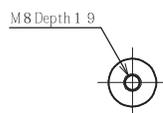
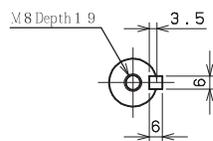
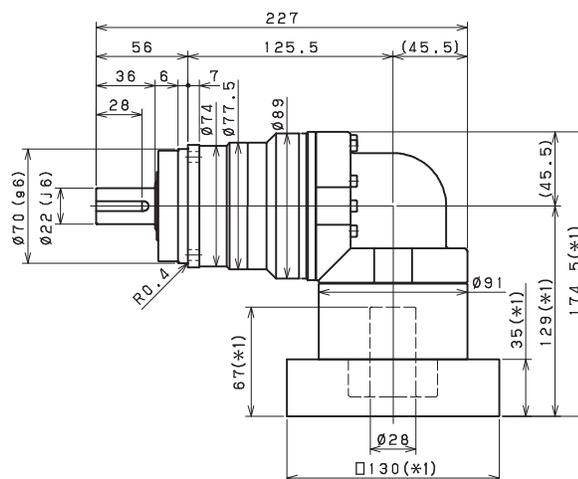
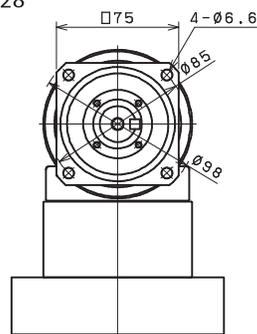
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



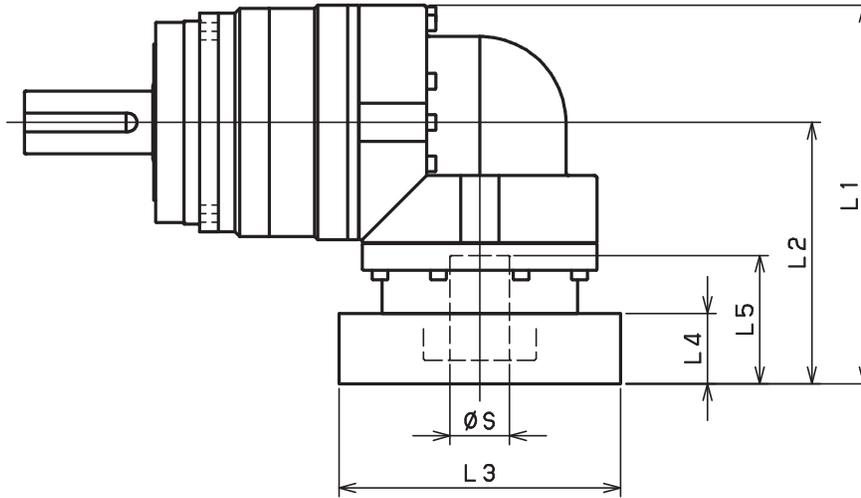
Input shaft bore $\leq \phi 28$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-SERIES Right angle shaft

EVS-075 – 2-Stage Adapter Dimensions



Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVS-075B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	-	-	-	-	-
	AB·AE·AH·AJ·AK	-	-	-	-	-
	BA·BB·BD·BE	-	-	-	-	-
	BC·BF	-	-	-	-	-
	CA	-	-	-	-	-
EVS-075B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	137.5	92	□65	16.5	35
	BC·BH	142.5	97	□65	21.5	40
	BL	147.5	102	□65	26.5	45
	CA	137.5	92	□70	16.5	35
	CB	142.5	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	137.5	92	□80	16.5	35
	DE	142.5	97	□80	21.5	40
	DG	147.5	102	□80	26.5	45
	EA·EB·EC	137.5	92	□90	16.5	35
	ED	147.5	102	□90	26.5	45
	FA	137.5	92	□100	16.5	35
	GA	137.5	92	□115	16.5	35
EVS-075B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	145.5	100	□80	25	50
	DD	155.5	110	□80	35	60
	DE	150.5	105	□80	30	55
	EA	150.5	105	□90	30	55
	EB	145.5	100	□90	25	50
	EC	155.5	110	□90	35	60
	FA	145.5	100	□100	25	50
	FB	155.5	110	□100	35	60
	GA·GC	150.5	105	□115	30	55
	GB·GD	145.5	100	□115	25	50
	HA	145.5	100	□130	25	50
	HB	160.5	115	□130	40	65
	HC·HD·HE	150.5	105	□130	30	55
EVS-075B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	174.5	129	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	174.5	129	□115	35	67
	HA·HC·HD	174.5	129	□130	35	67
	HB	184.5	139	□130	45	77
	JA·JB·JC	174.5	129	□150	35	67
	KA·KB	174.5	129	□180	35	67
	LA	174.5	129	□200	35	67
MA	174.5	129	□220	35	67	

*1) Double reduction : 1/3~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

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For an explanation on the Adapter Flange Code, please turn to page 300

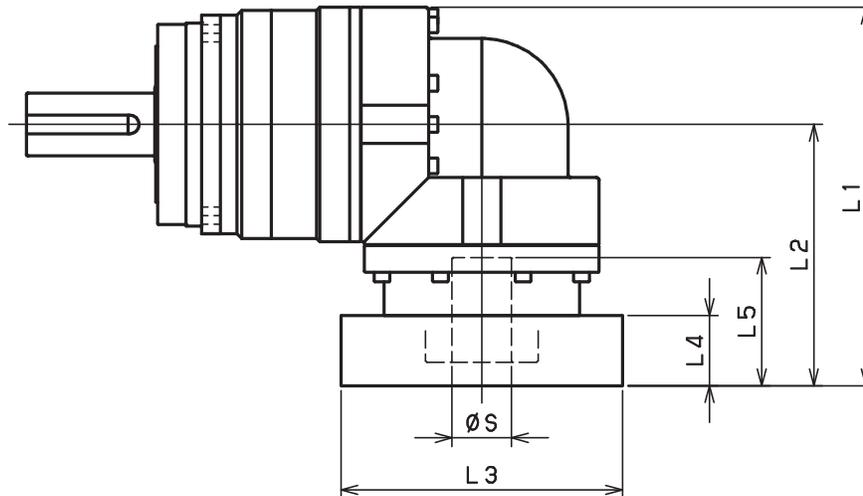
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EVS-075 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVS-075B-□-□-8** (S ≤ 8)	AA·AC·AD·AF·AG	116	71.5	□52	15.5	32
	AB·AE·AH·AJ·AK	121	76.5	□52	20.5	37
	BA·BB·BD·BE	116	71.5	□60	15.5	32
	BC·BF	121	76.5	□60	20.5	37
	CA	121	76.5	□70	20.5	37
EVS-075B-□-□-14** (8 < S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	122	77.5	□65	16.5	35
	BC·BH	127	82.5	□65	21.5	40
	BL	132	87.5	□65	26.5	45
	CA	122	77.5	□70	16.5	35
	CB	127	82.5	□70	21.5	40
	DA·DB·DC·DD·DF·DH	122	77.5	□80	16.5	35
	DE	127	82.5	□80	21.5	40
	DG	132	87.5	□80	26.5	45
	EA·EB·EC	122	77.5	□90	16.5	35
	ED	132	87.5	□90	26.5	45
	FA	122	77.5	□100	16.5	35
	GA	122	77.5	□115	16.5	35
EVS-075B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	139	94.5	□80	25	50
	DD	149	104.5	□80	35	60
	DE	144	99.5	□80	30	55
	EA	144	99.5	□90	30	55
	EB	139	94.5	□90	25	50
	EC	149	104.5	□90	35	60
	FA	139	94.5	□100	25	50
	FB	149	104.5	□100	35	60
	GA·GC	144	99.5	□115	30	55
	GB·GD	139	94.5	□115	25	50
	HA	139	94.5	□130	25	50
	HB	154	109.5	□130	40	65
EVS-075B-□-□-28** (19 < S ≤ 28)	HC·HD·HE	144	99.5	□130	30	55
	FA·FB·FC	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	-	-	-	-	-
	HA·HC·HD	-	-	-	-	-
	HB	-	-	-	-	-
	JA·JB·JC	-	-	-	-	-
	KA·KB	-	-	-	-	-
	LA	-	-	-	-	-
MA	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

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EVS-SERIES Right angle shaft

EVS-100 – 2-Stage Specifications

Frame Size	100									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	75	100	120	150	150	150	110	110
Maximum Acceleration Torque	[Nm]	*2	150	200	240	300	300	300	200	200
Emergency Stop Torque	[Nm]	*3	320	430	500	550	550	550	450	450
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.88							
Permitted Radial Load	[N]	*7	3400	3700	4000	4200	4400	4600	4800	4900
Permitted Axial Load	[N]	*8	4800	5200	5600	5900	6100	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	6.610	5.410	4.970	4.730	4.620	4.530	4.470	4.450
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	8.210	7.010	6.570	6.330	6.220	6.120	6.070	6.040
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	15.280	14.080	13.640	13.400	13.290	13.200	13.140	13.110
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10.5							

EVS-100 – 3-Stage Specifications

Frame Size	100									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	110	130	150	150	150	110	150	150
Maximum Acceleration Torque	[Nm]	*2	200	260	300	300	300	200	300	300
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	550	550
Nominal Input Speed	[rpm]	*4	3000							
Maximum Input Speed	[rpm]	*5	6000							
No Load Running Torque	[Nm]	*6	1.11							
Permitted Radial Load	[N]	*7	5600	5700	6100	6500	6700	6900	7000	7000
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300	6300
Maximum Radial Load	[N]	*9	7000							
Maximum Axial Load	[N]	*10	6300							
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	2.240	2.450	2.190	2.180	2.400	1.870	2.160	1.860
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	2.570	2.780	2.520	2.510	2.730	2.200	2.490	2.190
Moment of Inertia ($\leq \emptyset 28$)	[kgcm ²]	--	4.700	4.910	4.650	4.630	4.860	4.330	4.620	4.320
Moment of Inertia ($\leq \emptyset 38$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	31							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	10.1							

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EVS-100 – 3-Stage Specifications

Frame Size	100										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	110	150	150	150	150	110	110		
Maximum Acceleration Torque	[Nm]	*2	200	300	300	300	300	200	200		
Emergency Stop Torque	[Nm]	*3	450	550	550	550	550	450	450		
Nominal Input Speed	[rpm]	*4	3000								
Maximum Input Speed	[rpm]	*5	6000								
No Load Running Torque	[Nm]	*6	1.11								
Permitted Radial Load	[N]	*7	7000	7000	7000	7000	7000	7000	7000		
Permitted Axial Load	[N]	*8	6300	6300	6300	6300	6300	6300	6300		
Maximum Radial Load	[N]	*9	7000								
Maximum Axial Load	[N]	*10	6300								
Moment of Inertia (≤ Ø 14)	[kgcm ²]	--	2.150	1.860	1.850	1.850	1.850	1.850	1.850		
Moment of Inertia (≤ Ø 19)	[kgcm ²]	--	2.480	2.190	2.180	2.180	2.180	2.180	2.180		
Moment of Inertia (≤ Ø 28)	[kgcm ²]	--	4.610	4.310	4.310	4.310	4.310	4.310	4.310		
Moment of Inertia (≤ Ø 38)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	31								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	10.1								

- *1) At nominal input speed, service life is 20,000 hours
- *2) The maximum torque when starting or stopping operation
- *3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)
- *4) The maximum average input speed
- *5) The maximum intermittent input speed
- *6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVS060/075/100; 2,000 rpm for EVS140
- *7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)
- *8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)
- *9) The maximum radial load that the reducer can accept
- *10) The maximum axial load that the reducer can accept
- *11) The efficiency at the nominal torque rating
- *12) This does not include the lost motion
- *13) Contact NIDEC-SHIMPO for the testing conditions and environment
- *14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options
- *15) The weight may vary slightly between models

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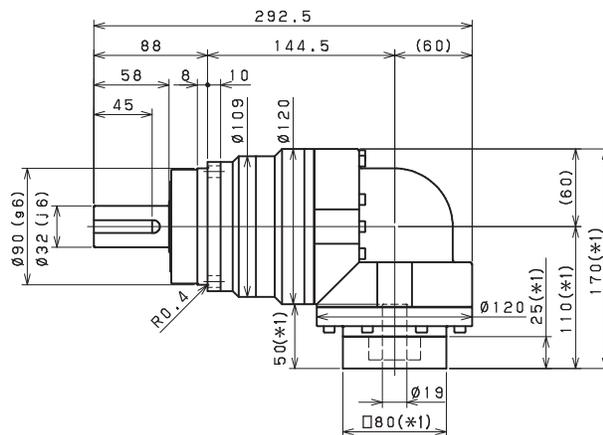
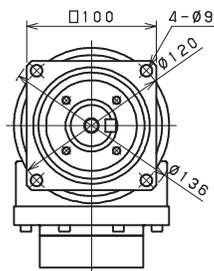


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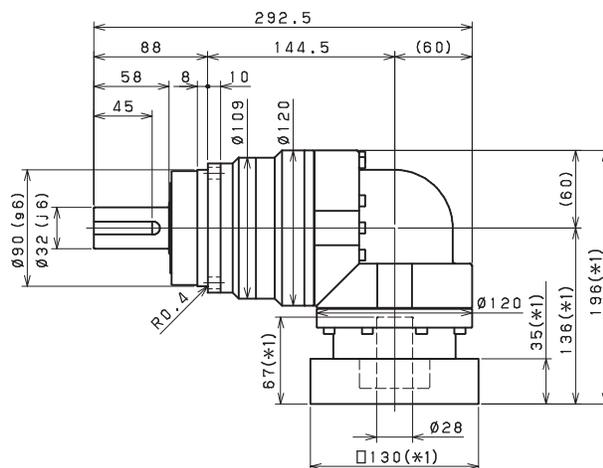
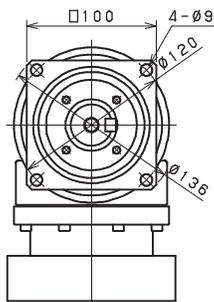
EVS-SERIES Right angle shaft

EVS-100 – 2-Stage Dimensions

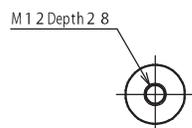
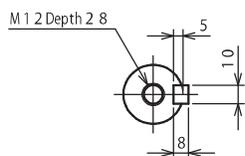
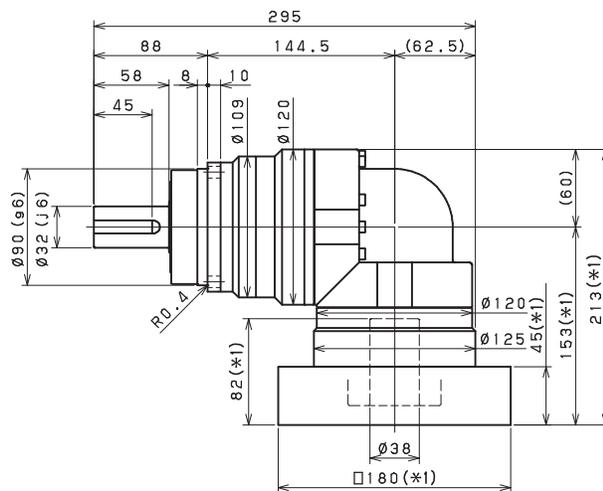
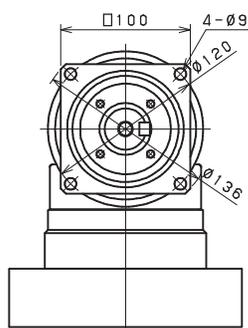
Input shaft bore $\leq \varnothing 19$



Input shaft bore $\leq \varnothing 28$



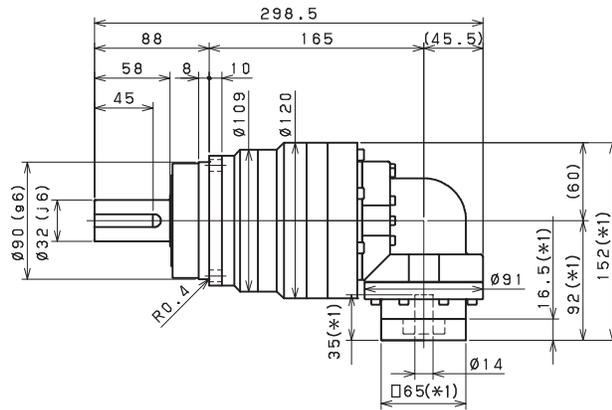
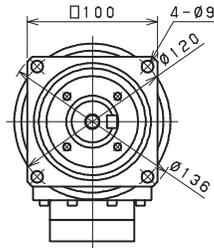
Input shaft bore $\leq \varnothing 38$



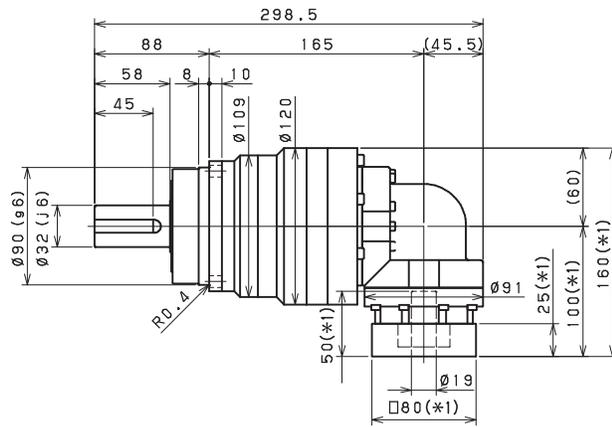
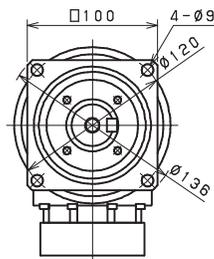
- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-100 – 3-Stage Dimensions

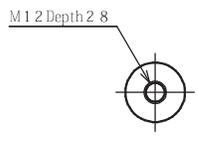
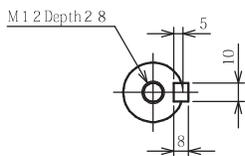
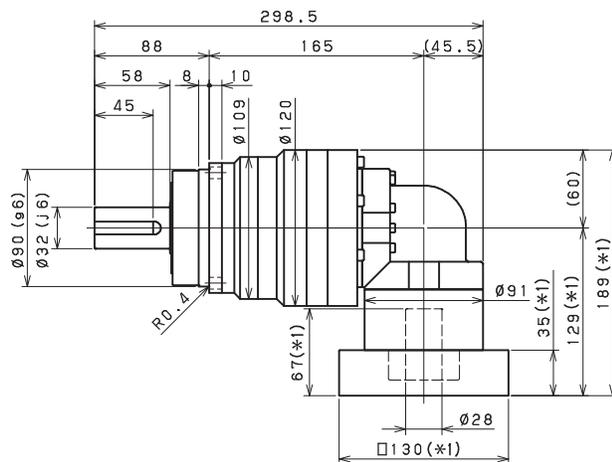
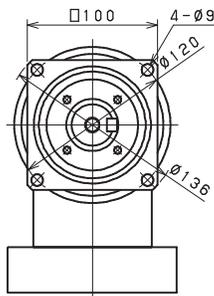
Input shaft bore $\cong \varnothing 14$



Input shaft bore $\cong \varnothing 19$



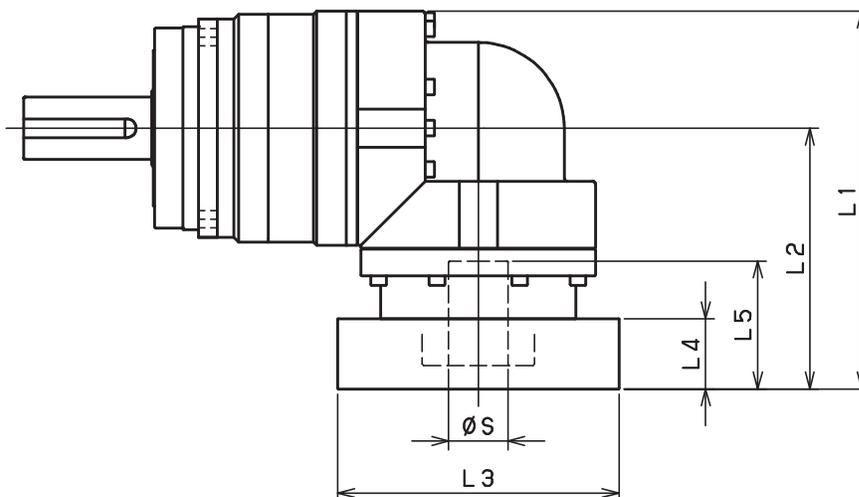
Input shaft bore $\cong \varnothing 28$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-SERIES Right angle shaft

EVS-100 – 2-Stage Adapter Dimensions

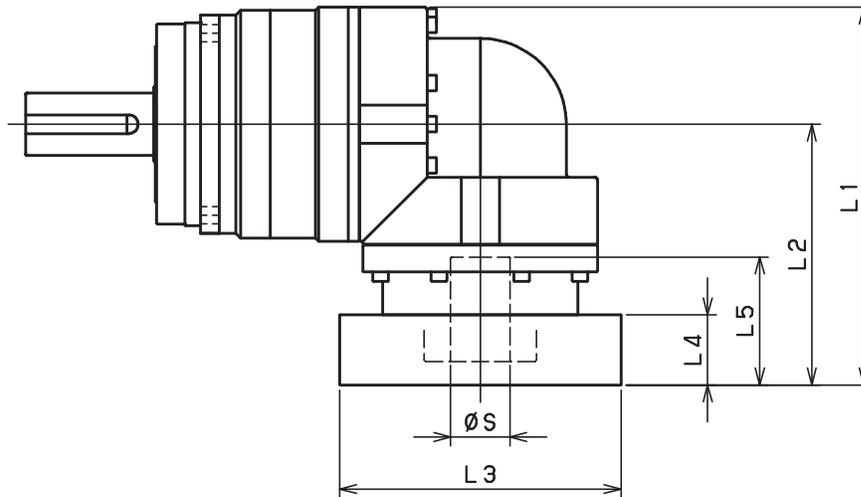


Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVS-100B-□-□-14** (S ≤ 14)	BA • BB • BD • BE • BF • BG • BJ • BK	-	-	-	-	-
	BC • BH	-	-	-	-	-
	BL	-	-	-	-	-
	CA	-	-	-	-	-
	CB	-	-	-	-	-
	DA • DB • DC • DD • DF • DH	-	-	-	-	-
	DE	-	-	-	-	-
	DG	-	-	-	-	-
	EA • EB • EC	-	-	-	-	-
	ED	-	-	-	-	-
	FA	-	-	-	-	-
EVS-100B-□-□-19** (14 < S ≤ 19)	DA • DB • DC	170	110	□80	25	50
	DD	180	120	□80	35	60
	DE	175	115	□80	30	55
	EA	175	115	□90	30	55
	EB	170	110	□90	25	50
	EC	180	120	□90	35	60
	FA	170	110	□100	25	50
	FB	180	120	□100	35	60
	GA • GC	175	115	□115	30	55
	GB • GD	170	110	□115	25	50
	HA	170	110	□130	25	50
	HB	185	125	□130	40	65
	HC • HD • HE	175	115	□130	30	55
	FA • FB • FC	196	136	□100	35	67
EVS-100B-□-□-28** (19 < S ≤ 28)	GA • GB • GC • GD • GE • GF • GG	196	136	□115	35	67
	HA • HC • HD	196	136	□130	35	67
	HB	206	146	□130	45	77
	JA • JB • JC	196	136	□150	35	67
	KA • KB	196	136	□180	35	67
	LA	196	136	□200	35	67
	MA	196	136	□220	35	67
EVS-100B-□-□-38** (28 < S ≤ 38)	HA	213	153	□130	45	82
	HB	208	148	□130	40	77
	JA	213	153	□150	45	82
	KA • KB • KC	213	153	□180	45	82
	LA	213	153	□200	45	82
	LB	223	163	□200	55	92
	MA • MB	213	153	□220	45	82
NA	213	153	□250	45	82	

*1) Double reduction : 1/3 ~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

EVS-100 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVS-100B-□-□-14** (S ≤ 14)	BA·BB·BD·BE·BF·BG·BJ·BK	152	92	□65	16.5	35
	BC·BH	157	97	□65	21.5	40
	BL	162	102	□65	26.5	45
	CA	152	92	□70	16.5	35
	CB	157	97	□70	21.5	40
	DA·DB·DC·DD·DF·DH	152	92	□80	16.5	35
	DE	157	97	□80	21.5	40
	DG	162	102	□80	26.5	45
	EA·EB·EC	152	92	□90	16.5	35
	ED	162	102	□90	26.5	45
	FA	152	92	□100	16.5	35
	GA	152	92	□115	16.5	35
EVS-100B-□-□-19** (14 < S ≤ 19)	DA·DB·DC	160	100	□80	25	50
	DD	170	110	□80	35	60
	DE	165	105	□80	30	55
	EA	165	105	□90	30	55
	EB	160	100	□90	25	50
	EC	170	110	□90	35	60
	FA	160	100	□100	25	50
	FB	170	110	□100	35	60
	GA·GC	165	105	□115	30	55
	GB·GD	160	100	□115	25	50
	HA	160	100	□130	25	50
	HB	175	115	□130	40	65
	HC·HD·HE	165	105	□130	30	55
	FA·FB·FC	189	129	□100	35	67
EVS-100B-□-□-28** (19 < S ≤ 28)	GA·GB·GC·GD·GE·GF·GG	189	129	□115	35	67
	HA·HC·HD	189	129	□130	35	67
	HB	199	139	□130	45	77
	JA·JB·JC	189	129	□150	35	67
	KA·KB	189	129	□180	35	67
	LA	189	129	□200	35	67
	MA	189	129	□220	35	67
EVS-100B-□-□-38** (28 < S ≤ 38)	HA	-	-	-	-	-
	HB	-	-	-	-	-
	JA	-	-	-	-	-
	KA·KB·KC	-	-	-	-	-
	LA	-	-	-	-	-
	LB	-	-	-	-	-
MA·MB	-	-	-	-	-	
NA	-	-	-	-	-	

*1) Triple reduction : 1/15~ 1/100

*2) Bushing will be inserted to adapt to motor shaft

EVS-SERIES Right angle shaft

EVS-140 – 2-Stage Specifications

Frame Size	140									
Stage	2-Stage									
Ratio	Unit	Note	3	4	5	6	7	8	9	10
Nominal Output Torque	[Nm]	*1	130	170	200	260	300	300	200	200
Maximum Acceleration Torque	[Nm]	*2	260	340	400	520	600	600	400	400
Emergency Stop Torque	[Nm]	*3	700	950	1100	1100	1100	1100	750	750
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	3.26							
Permitted Radial Load	[N]	*7	6700	7400	7900	8300	8700	9100	9400	9700
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	23.010	18.490	16.850	15.970	15.550	15.210	14.750	14.640
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	27.380	22.860	21.220	20.340	19.920	19.580	19.120	19.020
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	40.610	36.090	34.450	33.570	33.150	32.810	32.250	32.250
Efficiency	[%]	*11	93							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 6							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	20.6							

EVS-140 – 3-Stage Specifications

Frame Size	140									
Stage	3-Stage									
Ratio	Unit	Note	15	16	20	25	28	30	35	40
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	300	300
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	600	600
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	1100	1100
Nominal Input Speed	[rpm]	*4	2000							
Maximum Input Speed	[rpm]	*5	4000							
No Load Running Torque	[Nm]	*6	2.56							
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000	10000
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000	9000
Maximum Radial Load	[N]	*9	10000							
Maximum Axial Load	[N]	*10	9000							
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.400	7.290	6.220	6.150	7.090	4.990	6.090	4.940
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	7.990	8.880	7.810	7.750	8.680	6.580	7.680	6.540
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	15.060	15.950	14.880	14.820	15.750	13.660	14.760	13.610
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--	--
Efficiency	[%]	*11	88							
Torsional Rigidity	[Nm/arc-min]	*12	60							
Maximum Torsional Backlash	[arc-min]	--	≤ 9							
Noise Level	[dB]	*13	85							
Protection Class	--	*14	IP 55 (IP 65)							
Ambient Temperature	[°C]	--	0-40							
Permitted Housing Temperature	[°C]	--	90							
Weight	[kg]	*15	20.7							

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EVS-140 – 3-Stage Specifications

Frame Size	140										
Stage	3-Stage										
Ratio	Unit	Note	45	50	60	70	80	90	100		
Nominal Output Torque	[Nm]	*1	200	300	300	300	300	200	200		
Maximum Acceleration Torque	[Nm]	*2	400	600	600	600	600	400	400		
Emergency Stop Torque	[Nm]	*3	750	1100	1100	1100	1100	750	750		
Nominal Input Speed	[rpm]	*4	2000								
Maximum Input Speed	[rpm]	*5	4000								
No Load Running Torque	[Nm]	*6	2.56								
Permitted Radial Load	[N]	*7	10000	10000	10000	10000	10000	10000	10000		
Permitted Axial Load	[N]	*8	9000	9000	9000	9000	9000	9000	9000		
Maximum Radial Load	[N]	*9	10000								
Maximum Axial Load	[N]	*10	9000								
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	6.070	4.930	4.920	4.910	4.910	4.910	4.910		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	7.660	6.520	6.510	6.510	6.500	6.500	6.500		
Moment of Inertia ($\leq \varnothing 38$)	[kgcm ²]	--	14.730	13.590	13.590	13.580	13.580	13.570	13.570		
Moment of Inertia ($\leq \varnothing 48$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Efficiency	[%]	*11	88								
Torsional Rigidity	[Nm/arc-min]	*12	60								
Maximum Torsional Backlash	[arc-min]	--	≤ 9								
Noise Level	[dB]	*13	85								
Protection Class	--	*14	IP 55 (IP 65)								
Ambient Temperature	[°C]	--	0-40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	20.7								

*1) At nominal input speed, service life is 20,000 hours

*2) The maximum torque when starting or stopping operation

*3) The maximum torque allowed under a stress situation (Permitted 1,000 times during service life)

*4) The maximum average input speed

*5) The maximum intermittent input speed

*6) This is the torque at no load applied on the input shaft. The input speed is as follows; 3,000 rpm for EVS060/075/100; 2,000 rpm for EVS140

*7) At this load and nominal input speed, service life will be 20,000 hours. (The radial load applied to the output side bearing)

*8) At this load and nominal input speed, service life will be 20,000 hours. (The axial load applied to the output shaft center)

*9) The maximum radial load that the reducer can accept

*10) The maximum axial load that the reducer can accept

*11) The efficiency at the nominal torque rating

*12) This does not include the lost motion

*13) Contact NIDEC-SHIMPO for the testing conditions and environment

*14) IP65 (wash-down) is available as an option. Contact NIDEC-SHIMPO for more details and our food grade options

*15) The weight may vary slightly between models

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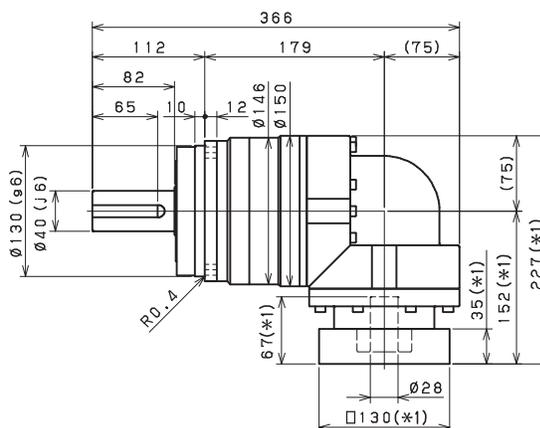
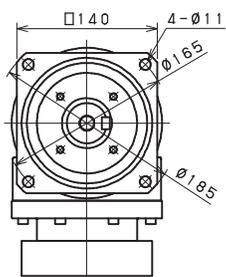
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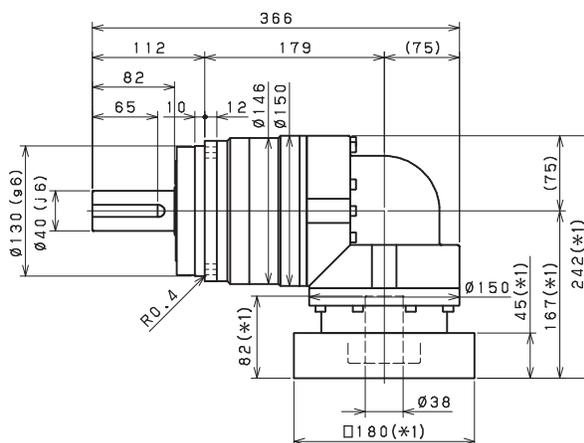
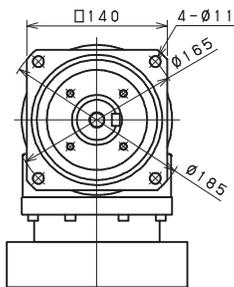
EVS-SERIES Right angle shaft

EVS-140 – 2-Stage Dimensions

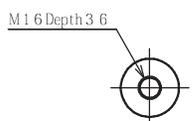
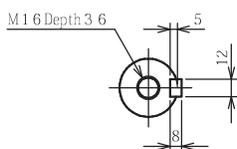
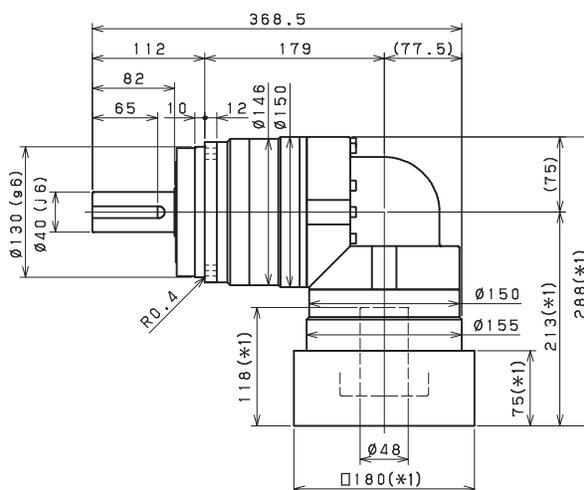
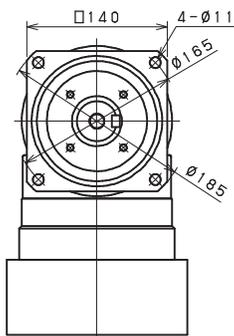
Input shaft bore $\leq \varnothing 28$



Input shaft bore $\leq \varnothing 38$



Input shaft bore $\leq \varnothing 48$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

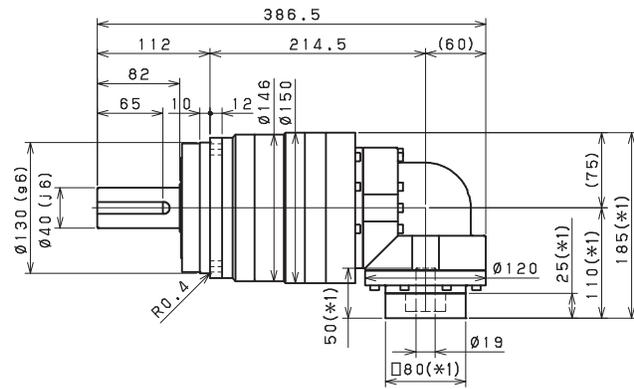
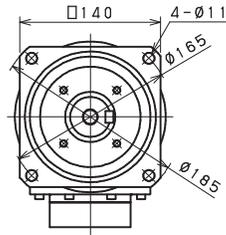
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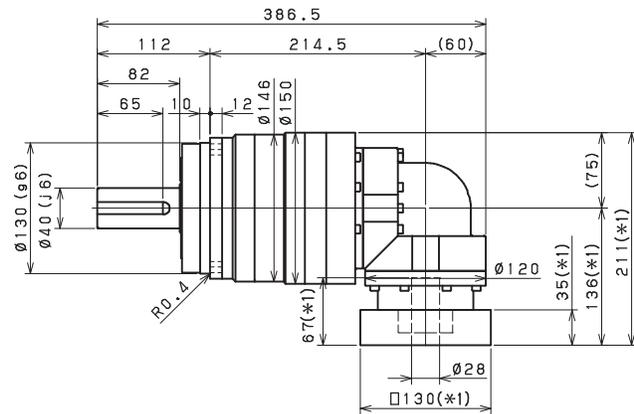
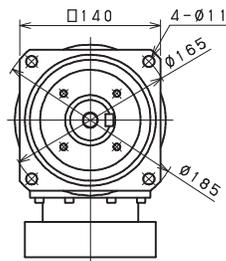
Smooth shaft

EVS-140 – 3-Stage Dimensions

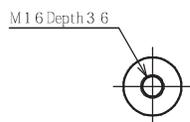
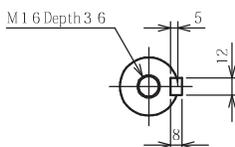
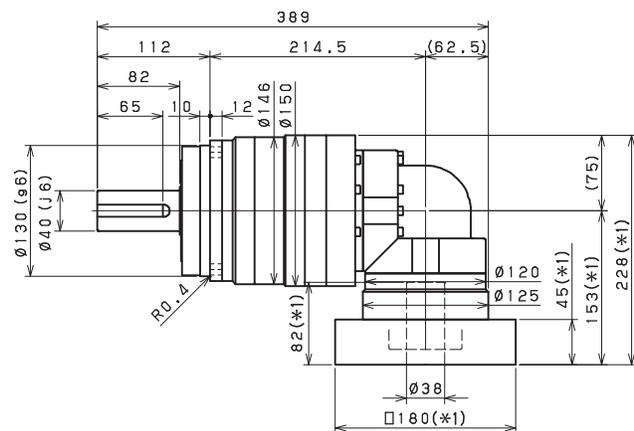
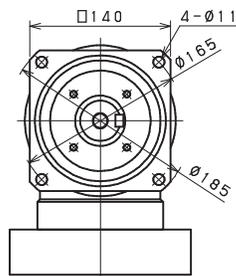
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$



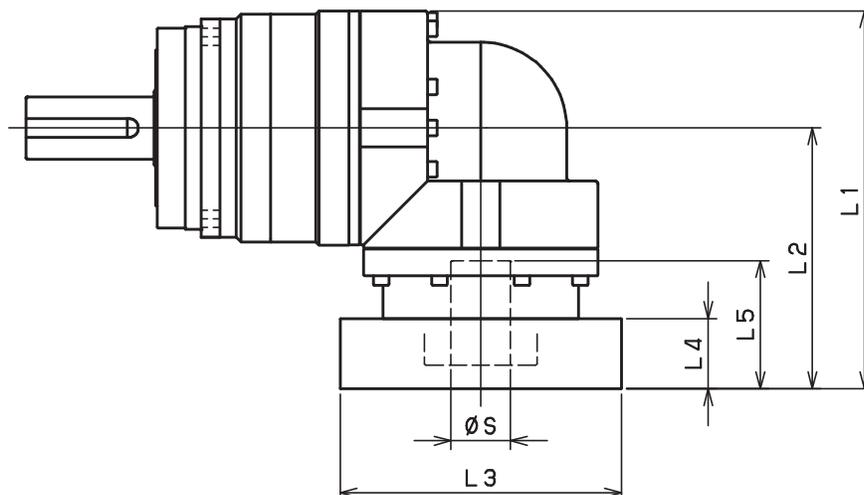
Input shaft bore $\leq \phi 38$



- *1) Length will vary depending on motor
- *2) Bushing will be inserted to adapt to motor shaft

EVS-SERIES Right angle shaft

EVS-140 – 2-Stage Adapter Dimensions



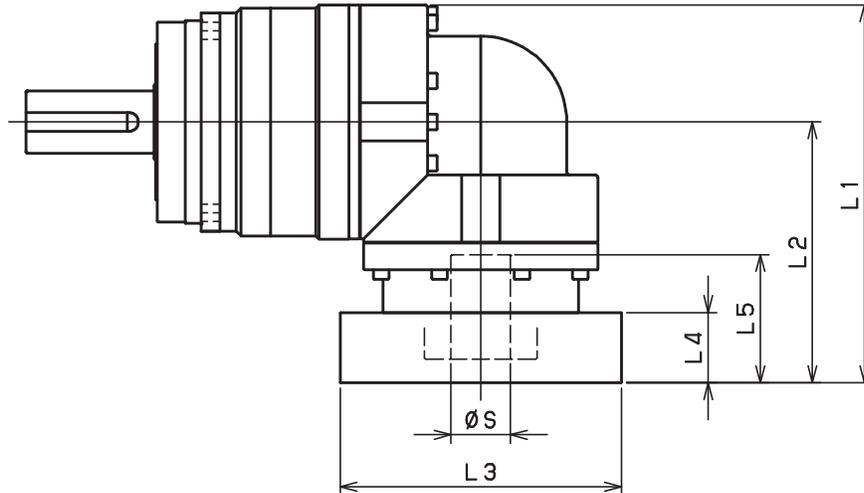
Model Number	** Adapter Code	2-Stage				
		L1	L2	L3	L4	L5
EVS-140B-□-□-19** (S ≤ 19)	DA·DB·DC	--	--	--	--	--
	DD	--	--	--	--	--
	DE	--	--	--	--	--
	EA	--	--	--	--	--
	EB	--	--	--	--	--
	EC	--	--	--	--	--
	FA	--	--	--	--	--
	FB	--	--	--	--	--
	GA·GC	--	--	--	--	--
	GB·GD	--	--	--	--	--
	HA	--	--	--	--	--
	HB	--	--	--	--	--
	HC·HD·HE	--	--	--	--	--
EVS-140B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	227	152	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	227	152	□115	35	67
	HA·HC·HD	227	152	□130	35	67
	HB	237	162	□130	45	77
	JA·JB·JC	227	152	□150	35	67
	KA·KB	227	152	□180	35	67
	LA	227	152	□200	35	67
EVS-140B-□-□-38** (28 < S ≤ 38)	MA	227	152	□220	35	67
	HA	242	167	□130	45	82
	HB	237	162	□130	40	77
	JA	242	167	□150	45	82
	KA·KB·KC	242	167	□180	45	82
	LA	242	167	□200	45	82
	LB	252	177	□200	55	92
EVS-140B-□-□-48** (38 < S ≤ 48)	MA·MB	242	167	□220	45	82
	NA	242	167	□250	45	82
	KB·KC	268	193	□180	55	98
	KA	288	213	□180	75	118
	LA	268	193	□200	55	98
	MA	268	193	□220	55	98
	MB	288	213	□220	75	118
EVS-140B-□-□-48** (38 < S ≤ 48)	NA	288	213	□250	75	118
	PA	288	213	□280	75	118

*1) Double reduction : 1/3 ~ 1/10

*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

EVS-140 – 3-Stage Adapter Dimensions



Model Number	** Adapter Code	3-Stage				
		L1	L2	L3	L4	L5
EVS-140B-□-□-19** (S ≤ 19)	DA·DB·DC	185	110	□80	25	50
	DD	195	120	□80	35	60
	DE	190	115	□80	30	55
	EA	190	115	□90	30	55
	EB	185	110	□90	25	50
	EC	195	120	□90	35	60
	FA	185	110	□100	25	50
	FB	195	120	□100	35	60
	GA·GC	190	115	□115	30	55
	GB·GD	185	110	□115	25	50
	HA	185	110	□130	25	50
	HB	200	125	□130	40	65
	HC·HD·HE	190	115	□130	30	55
	EVS-140B-□-□-28** (19 < S ≤ 28)	FA·FB·FC	211	136	□100	35
GA·GB·GC·GD·GE·GF·GG		211	136	□115	35	67
HA·HC·HD		211	136	□130	35	67
HB		221	146	□130	45	77
JA·JB·JC		211	136	□150	35	67
KA·KB		211	136	□180	35	67
LA		211	136	□200	35	67
EVS-140B-□-□-38** (28 < S ≤ 38)	MA	211	136	□220	35	67
	HA	228	153	□130	45	82
	HB	223	148	□130	40	77
	JA	228	153	□150	45	82
	KA·KB·KC	228	153	□180	45	82
	LA	228	153	□200	45	82
	LB	238	163	□200	55	92
	MA·MB	228	153	□220	45	82
EVS-140B-□-□-48** (38 < S ≤ 48)	NA	228	153	□250	45	82
	KB·KC	-	-	-	-	-
	KA	-	-	-	-	-
	LA	-	-	-	-	-
	MA	-	-	-	-	-
	MB	-	-	-	-	-

*1) Triple reduction : 1/15~ 1/100

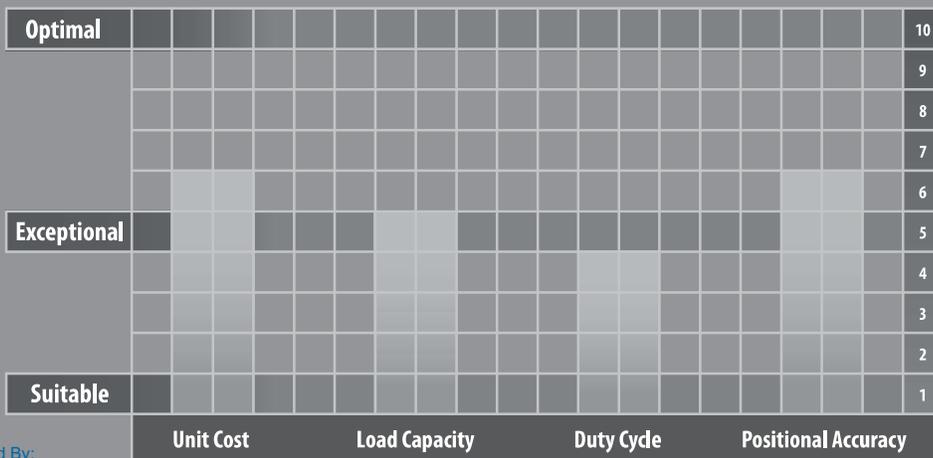
*2) Bushing will be inserted to adapt to motor shaft

For an explanation on the Adapter Flange Code, please turn to page 300

STH-SERIES

The STH is a mid-range speed and torque gear reducer that sets a new standard for rotary positioning performance at an exceptional price point. A SHIMPO planetary reducer is the interface between the servo motor and STH rotary stage. The ABLE reducer features simple mounting of nearly any small to medium servo motor, and gives the complete STH package net ratios ranging from 12:1 through 324:1.

The rotary stage has very large crossed roller output bearings, allowing for impressive thrust loads and tilting moments. A generous hollow bore provides clearance for wiring, tubing, or threaded rod to be passed through to effectors, fillers, or any other active machinery. The STH fills the need for a high-performance, price competitive option to your traditional style indexers and cam units.





STH-SERIES

- 85 mm pass-through hole allows use of air lines or wiring
- Input is compatible with most servo motor brands
- Exceptional value for small to mid-range indexing applications
- Available ratios range from 12:1 through 324:1
- Ships within 48 hours
- Assembled in the USA

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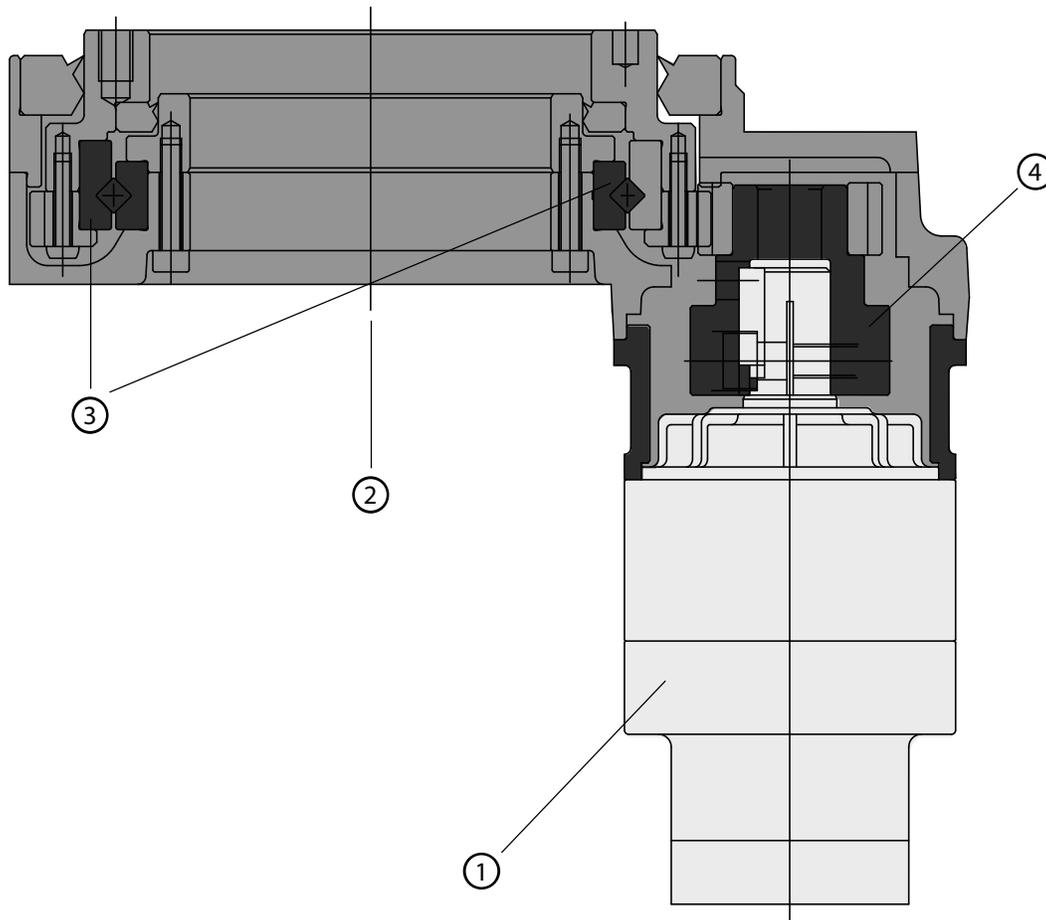
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STH-SERIES Hollow output rotary actuators

STH-Series – Features



- ① One or two stage planetary reducer
- ② 85 mm hollow bore diameter
- ③ Heavy duty cross-roller bearing
- ④ Final stage primary gear

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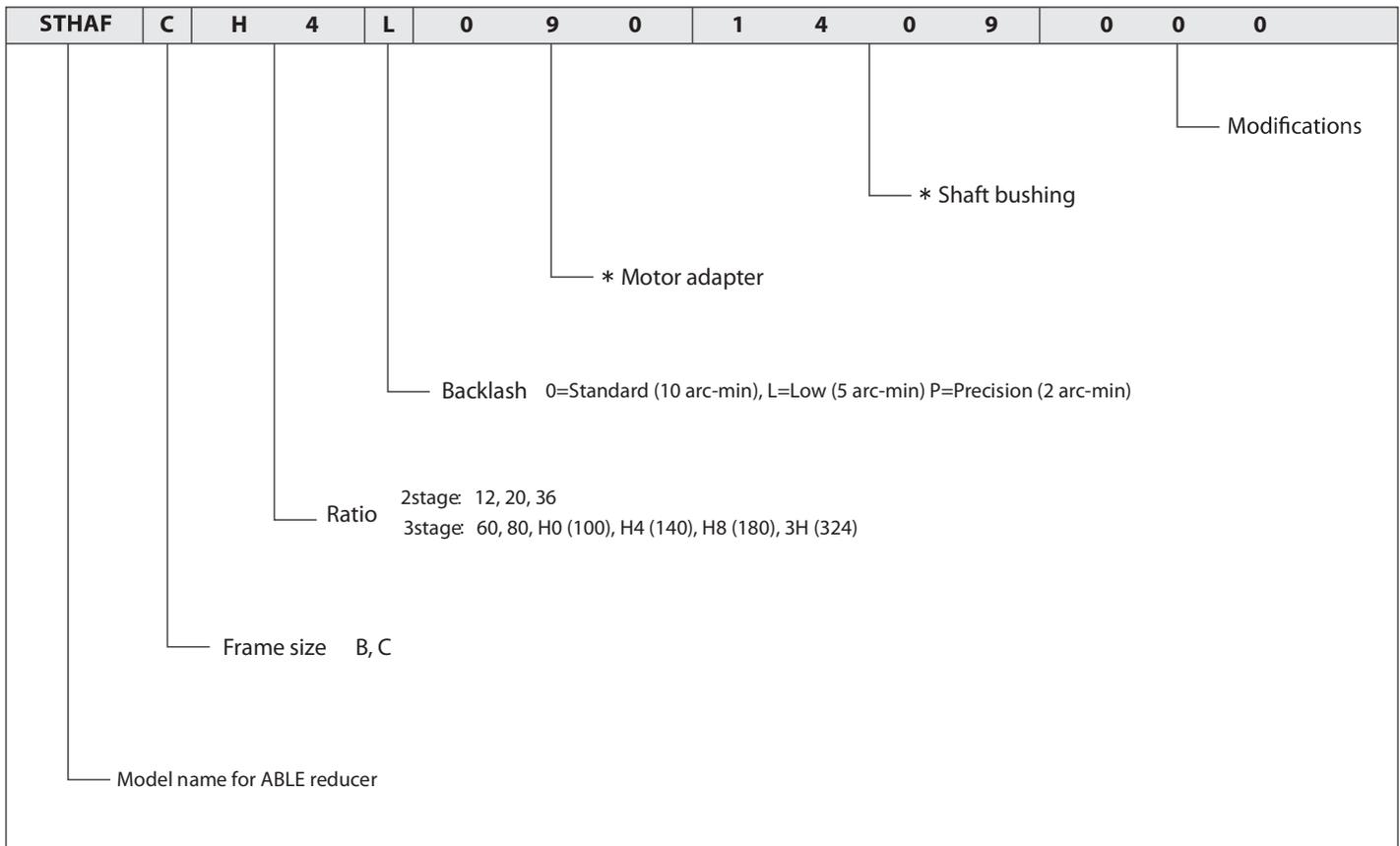
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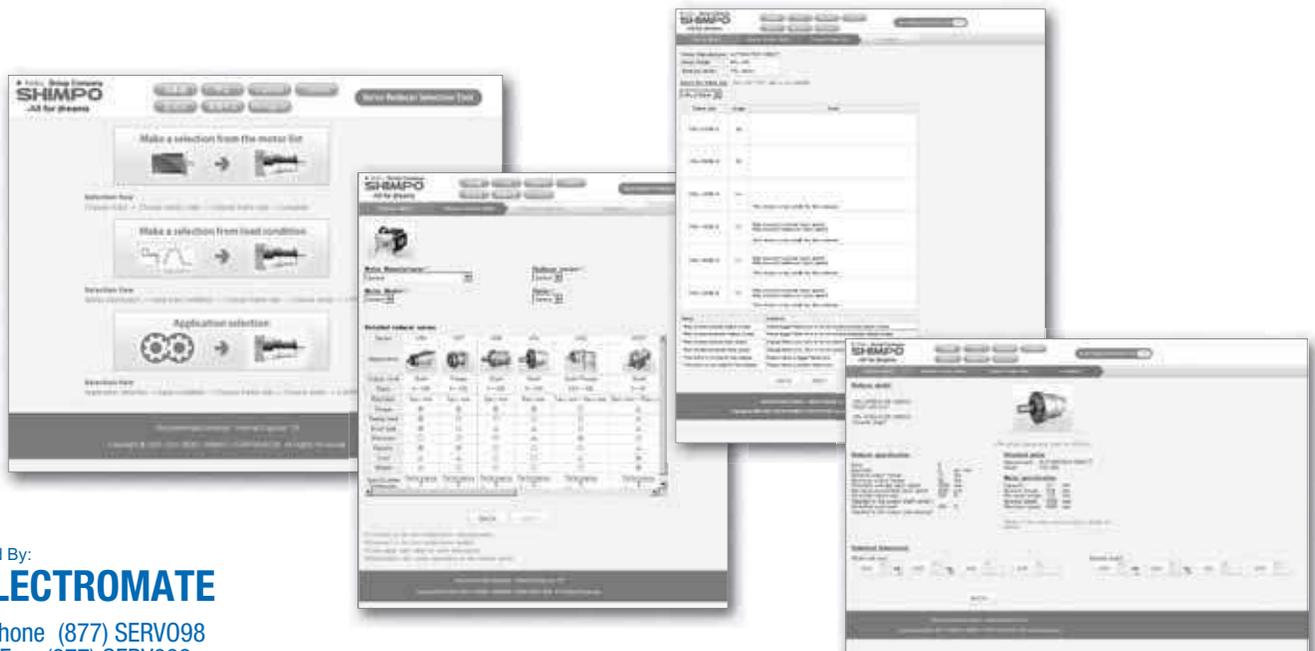
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STH-Series – Model Number



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STH

STH-SERIES Hollow output rotary actuators

STH 2-Stage Specifications

Frame Size			B			C		
Stage			2-Stage					
Ratio	Unit	Note	12:1	20:1	36:1	12:1	20:1	36:1
Nominal Torque	[Nm]	*1	10	13	13	71	71	71
Acceleration Torque	[Nm]	--	24	31	29	160	160	160
Emergency Stop Torque	[Nm]	--	36	46	43	240	240	240
Nominal Input Speed	[rpm]	--	3000			3000		
Maximum Input Speed	[rpm]	--	6000			6000		
Maximum Surface Runout	[mm]	--	0.07			0.07		
Reflected Inertia	[kg-m ² x10 ⁻³]	*2	104.100	47.100	25.000	210.940	122.680	91.104
Accuracy	[arc-sec]	--	±60			±60		
Torsional Rigidity	[Nm/arc-min]	--	7.60			7.60		
Backlash	[arc-min]	*3	10 (5, 2 optional)			10 (5, 2 optional)		
Maximum Axial Load	[N]	--	4000			4000		
Maximum Radial Load	[N]	--	5000			5000		
Maximum Tilting Moment Load	[Nm]	--	200			200		
Maximum Deflection	[mm]	--	0.70			0.70		
Efficiency	[%]	--	60	60	60	85	85	85
Noise Level	[dbA]	--	72	65	65	72	65	65
Maximum Ambient Temperature	[°C]	--	40			40		
Maximum Surface Temperature	[°C]	--	90			90		
Protection	--	--	IP 65			IP 65		
Unit Life	[hr]	--	20000			20000		
Weight	[kg]	--	5.90			7.40		

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STH 3-Stage Specifications

Frame Size			B					
Stage			3-Stage					
Ratio	Unit	Note	60:1	80:1	100:1	140:1	180:1	324:1
Nominal Torque	[Nm]	*1	13	13	18	18	18	18
Acceleration Torque	[Nm]	--	33	33	36	36	36	36
Emergency Stop Torque	[Nm]	--	50	50	54	54	54	54
Nominal Input Speed	[rpm]	--	3000					
Maximum Input Speed	[rpm]	--	6000					
Maximum Surface Runout	[mm]	--	0.070					
Reflected Inertia	[kg-m ² x10 ⁻³]	*2	7.400	5.880	5.090	2.540	0.780	0.490
Accuracy	[arc-sec]	--	±60					
Torsional Rigidity	[Nm/arc-min]	--	7.60					
Backlash	[arc-min]	*3	10 (5, 2 optional)					
Maximum Axial Load	[N]	--	4000					
Maximum Radial Load	[N]	--	5000					
Maximum Tilting Moment Load	[Nm]	--	200					
Maximum Deflection	[mm]	--	0.70					
Efficiency	[%]	--	70	70	70	70	70	70
Noise Level	[dbA]	--	65	65	65	65	65	65
Maximum Ambient Temperature	[°C]	--	40					
Maximum Surface Temperature	[°C]	--	90					
Protection	--	--	IP 65					
Unit Life	[hr]	--	20000					
Weight	[kg]	--	5.90					

*1) At nominal input speed

*2) At input shaft

*3) Optional: 2 & 5 arc-min

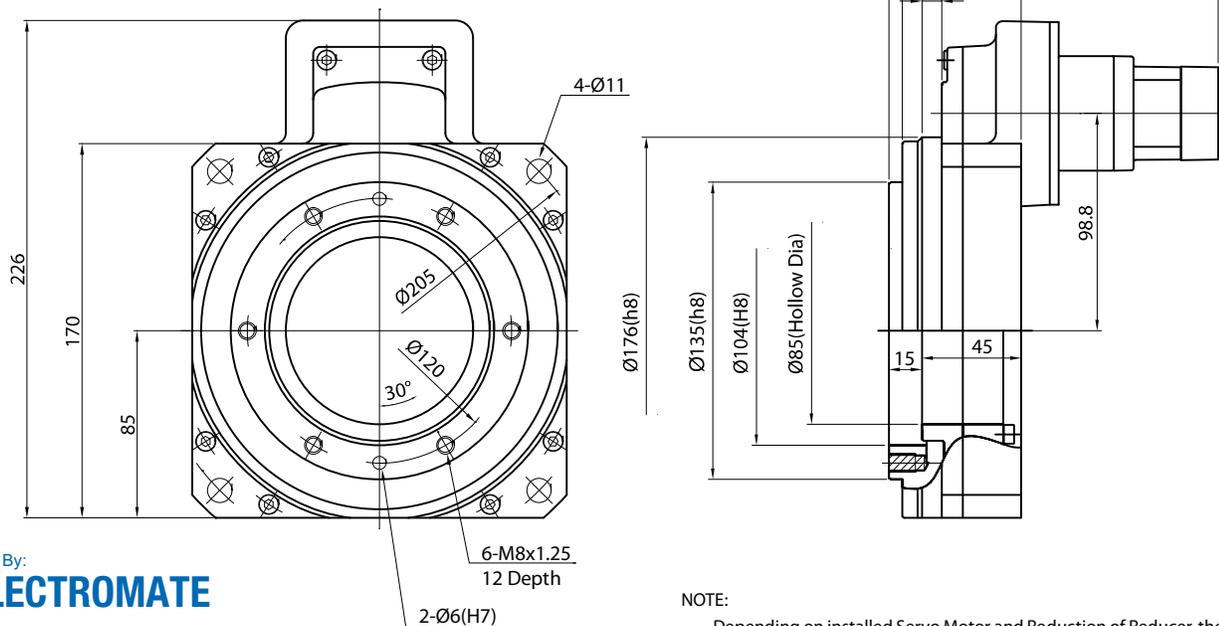
STH 3-Stage Specifications

Frame Size	C							
	3-Stage							
Ratio	Unit	Note	60:1	80:1	100:1	140:1	180:1	324:1
Nominal Torque	[Nm]	*1	85	85	85	85	85	85
Acceleration Torque	[Nm]	--	160	160	160	160	160	160
Emergency Stop Torque	[Nm]	--	240	240	240	240	240	240
Nominal Input Speed	[rpm]	--	3000					
Maximum Input Speed	[rpm]	--	6000					
Maximum Surface Runout	[mm]	--	0.07					
Reflected Inertia	[kg-m ² x10 ⁻³]	*2	36.285	34.617	32.656	16.377	3.825	3.530
Accuracy	[arc-sec]	--	±60					
Torsional Rigidity	[Nm/arc-min]	--	7.60					
Backlash	[arc-min]	*3	10 (5, 2 optional)					
Maximum Axial Load	[N]	--	4000					
Maximum Radial Load	[N]	--	5000					
Maximum Tilting Moment Load	[Nm]	--	200					
Maximum Deflection	[mm]	--	0.70					
Efficiency	[%]	--	85	85	85	85	85	85
Noise Level	[dbA]	--	65	65	65	65	65	65
Maximum Ambient Temperature	[°C]	--	40					
Maximum Surface Temperature	[°C]	--	90					
Protection	--	--	IP 65					
Unit Life	[hr]	--	20000					
Weight	[kg]	--	7.40					

- *1) At nominal input speed
- *2) At input shaft
- *3) Optional: 2 & 5 arc-min

STH 2-Stage & 3-Stage Dimensions

Frame Size	B	C
Overall Length (L)	mm	mm
Double Stage	149.5	204.5
Triple Stage	155.0	207.0



NOTE:
Depending on installed Servo Motor and Reduction of Reducer, the "L" dimensions varies slightly

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- Compatible with nearly any servo motor
- High output torque, high rigidity, high moment loads
- Large variety of reduction ratios to choose from
- Zero backlash, with precision as tight as 20 arc-secs
- Large hollow shaft design allows use of air lines or wiring
- Multiple ratios to match application requirements

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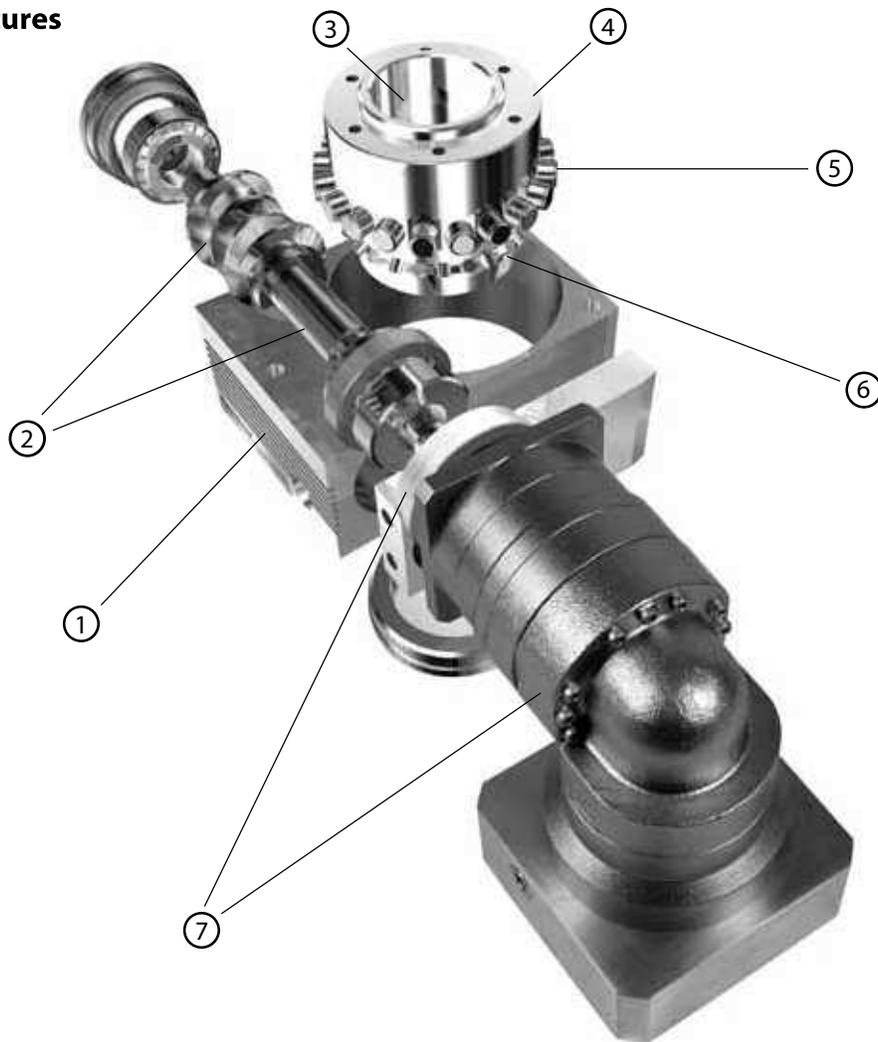
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STR-SERIES Hollow output rotary actuators

STR-Series – Features



- ① Housing constructed from aluminum alloy
- ② Special worm input shaft providing screw like transmission
- ③ Hollow-bore output shaft
- ④ Output shaft
- ⑤ Cam roller followers
- ⑥ Cross-roller bearing
- ⑦ Direct connection to VRB or EVB planetary reducer

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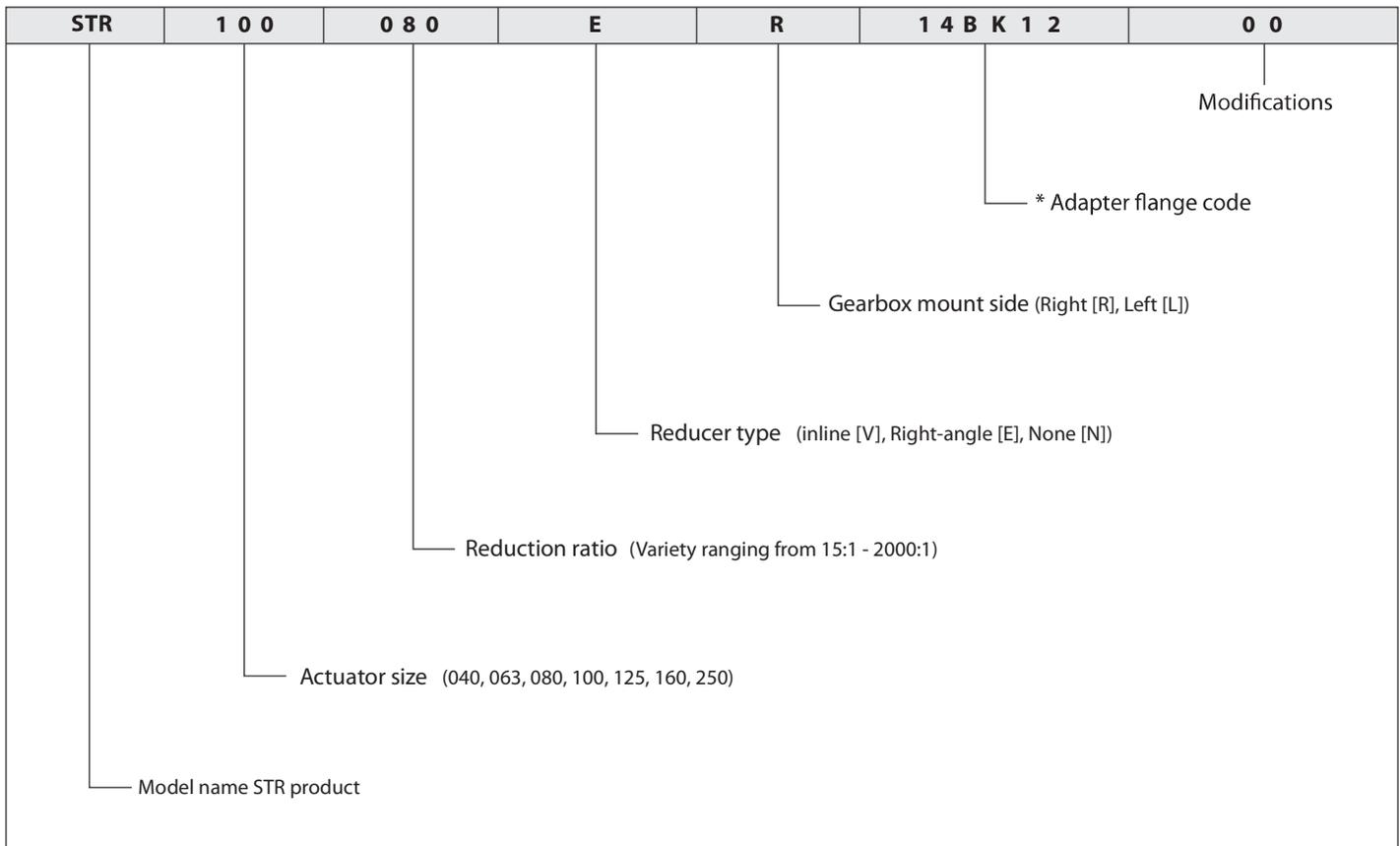
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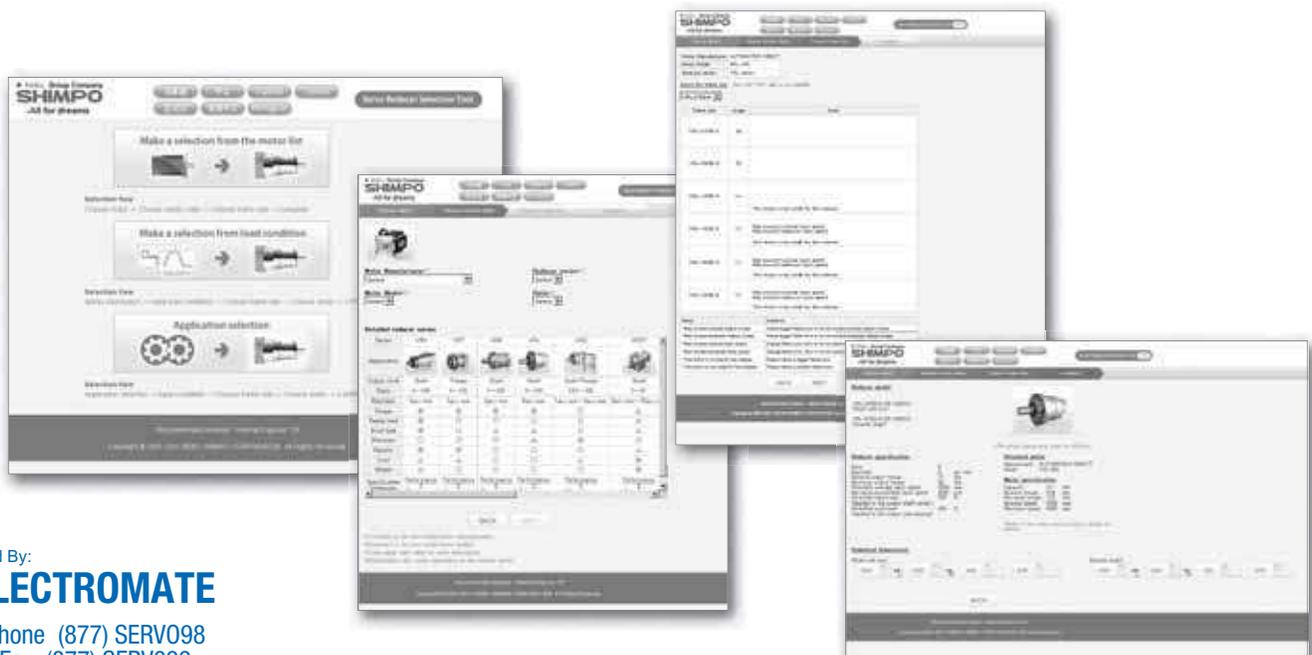
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STR-Series – Model Number



*1) Adapter flange code
Adapter flange code varies depending on the motor.

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Selection tool www.nidec-shimpo.co.jp/selection/eng



STR-SERIES Hollow output rotary actuators

STR-040, 063, 080, 100 - Specifications

Frame Size			040	063	080	100
Ratio	Units	Notes	45/75/105/150	60/100/140/200	60/100/140/200	60/100/140/200
Nominal Torque	[Nm]	*1	27.4	69.2	112.9	330.0
Acceleration Torque	[Nm]	--	57.7	129.3	202.3	564.8
No Load Torque	[Nm]	*2	0.50	0.80	1.30	2.60
Nominal Input Speed	[rpm]	*3	900	800	700	600
Maximum Input Speed	[rpm]	*4	3000	3000	2500	2000
Reflected Inertia	[kg-m ² x10 ⁻⁴]	*5	0.292	0.862	3.066	8.687
Accuracy	[arc-sec]	--	90	60	40	40
Surface Runout	[µm (max)]	--	10	10	10	10
Maximum Axial Load	[N]	--	999	1657	3302	3724
Maximum Radial Load	[N]	--	669	1359	2819	3109
Maximum Tilting Moment Load	[Nm]	--	33	79	210	284
Efficiency	[%]	--	80	82	80	82
Weight	[kg]	--	2.5	5.6	11.6	21.5

*1) STR available without reducer for lower reduction ratios; STR 040 is 15:1, and ≥ STR 063 is 20:1. However, unit would require a motor adapter. Complete ratio variety ranges from 15:1 (20:1) – 2,000:1. Contact NIDEC-SHIMPO for details

*2) At nominal input speed

*3) Speeds are at the actuator input. Limits when used with additional gearbox are higher

*4) At input shaft

*5) Weight does not include the VRB or EVB reducer. Refer to the VRB and EVB sections for individual weights

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STR-125, 160, 250 - Specifications

Frame Size			125	160	250
Ratio	Units	Notes	60/100/140/200	60/100/140/200	60/100/140/200
Nominal Torque	[Nm]	*1	548.4	1164.9	4005.7
Acceleration Torque	[Nm]	--	938.6	1888.0	6071.7
No Load Torque	[Nm]	*2	3.80	6.60	14.50
Nominal Input Speed	[rpm]	*3	600	500	400
Maximum Input Speed	[rpm]	*4	1600	1000	800
Reflected Inertia	[kg-m ² x10 ⁻⁴]	*5	14.853	46.988	430.041
Accuracy	[arc-sec]	--	40	120	120
Surface Runout	[µm (max)]	--	10	20	20
Maximum Axial Load	[N]	--	8178	17170	38051
Maximum Radial Load	[N]	--	7452	7283	11165
Maximum Tilting Moment Load	[Nm]	--	764	1216.3	2478.6
Efficiency	[%]	--	80	80	80
Weight	[kg]	--	36.3	126.0	383.0

*1) STR available without reducer for lower reduction ratios; STR 040 is 15:1, and ≥ STR 063 is 20:1. However, unit would require a motor adapter. Complete ratio variety ranges from 15:1 (20:1) – 2,000:1. Contact NIDEC-SHIMPO for details

*2) At nominal input speed

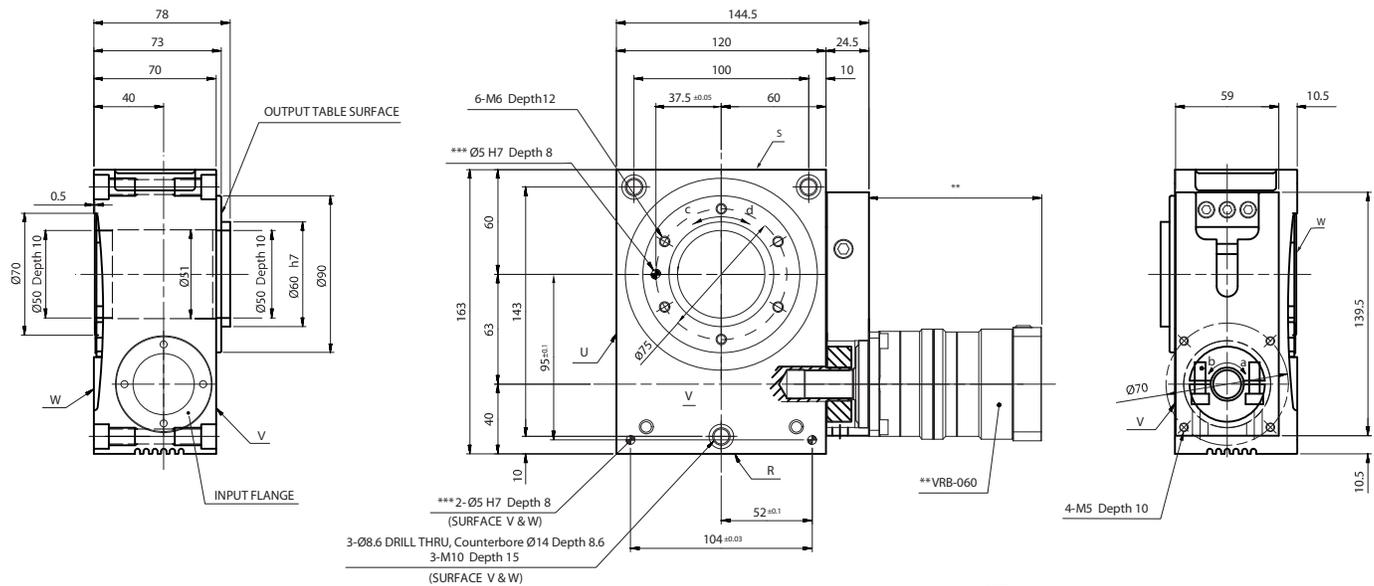
*3) Speeds are at the actuator input. Limits when used with additional gearbox are higher

*4) At input shaft

*5) Weight does not include the VRB or EVB reducer. Refer to the VRB and EVB sections for individual weights

NOTE: Drawings for the STR 040 and 250 frame sizes are not included in this catalog. The STR 040 frame size will use either a SHIMPO inline VRAF or right-angle NEVAF series reducer, whose performance and dimensional data is not included in this catalog. Contact NIDEC-SHIMPO for more information about the STR 040 and 250 frame sizes

STR-o63 Dimensions with VRB-o60



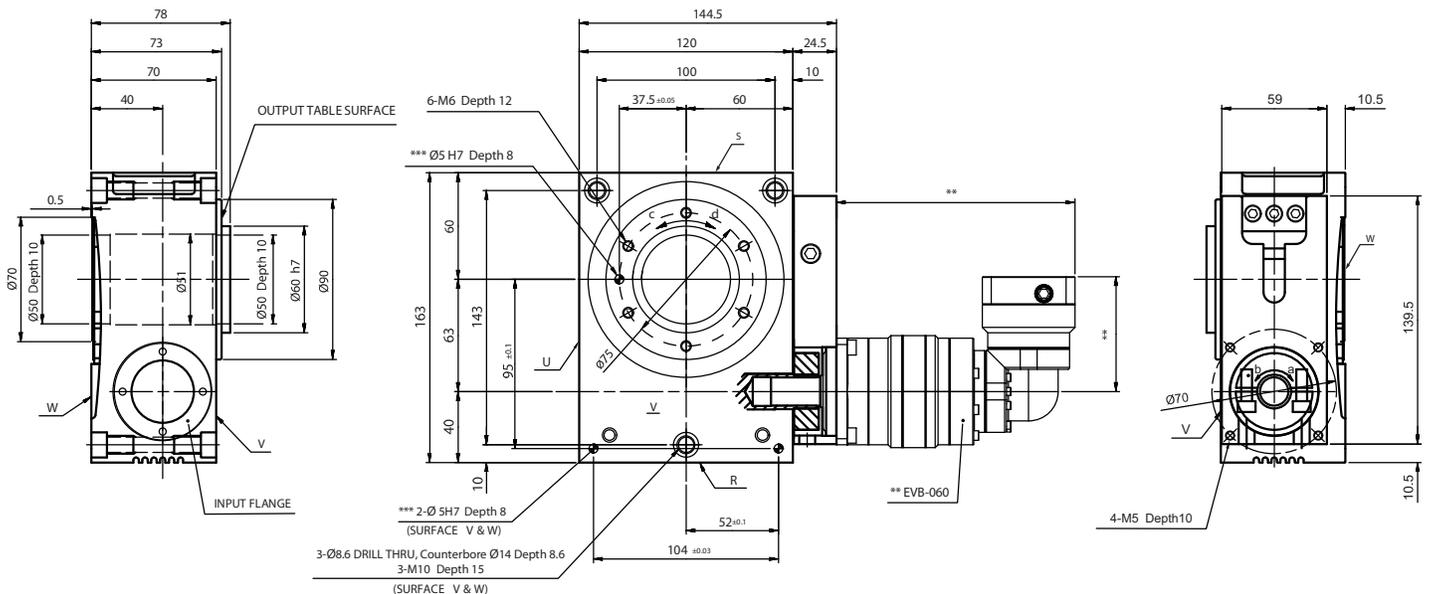
NOTE:

** Refer to page 58, for VRB-o60 dimensions
 *** Optional

ROTATION:

a=d
 a=c (upon special request)

STR-o63 Dimensions with EVB-o60



NOTE:

** Refer to page 218, for EVB-o60 dimensions
 *** Optional

ROTATION:

a=d
 a=c (upon special request)

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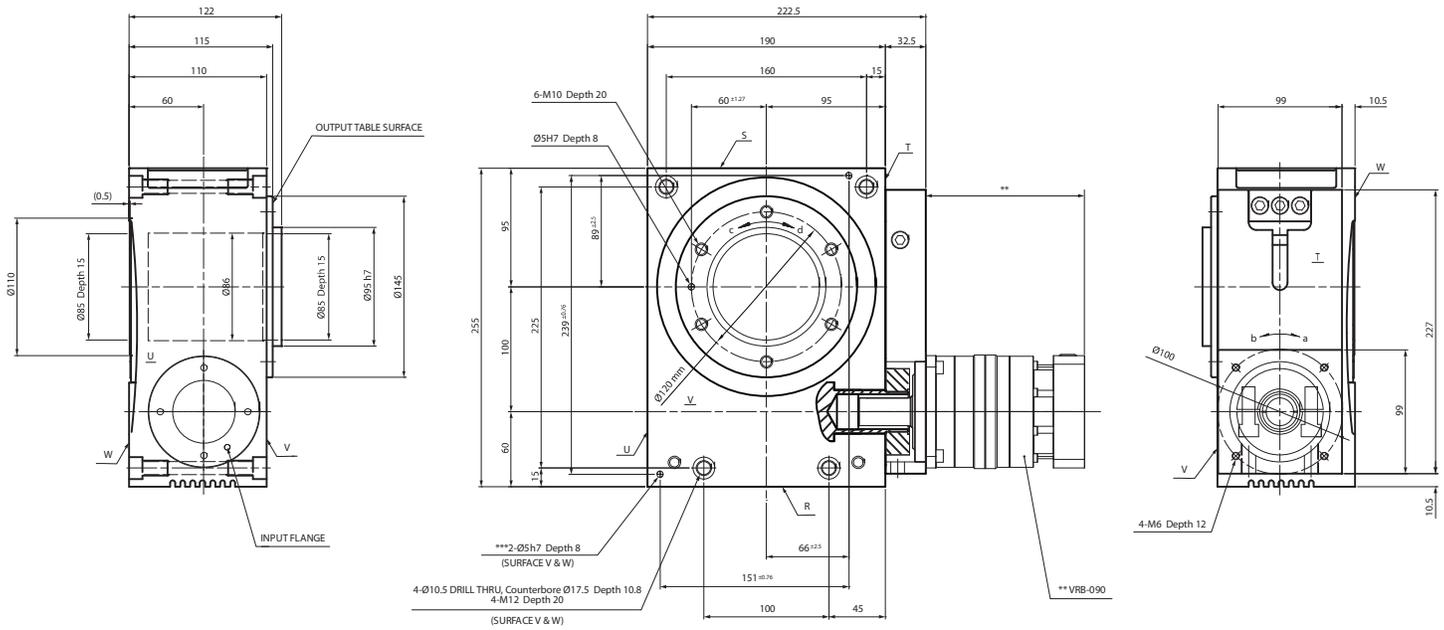
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STR-100 Dimensions with VRB-090



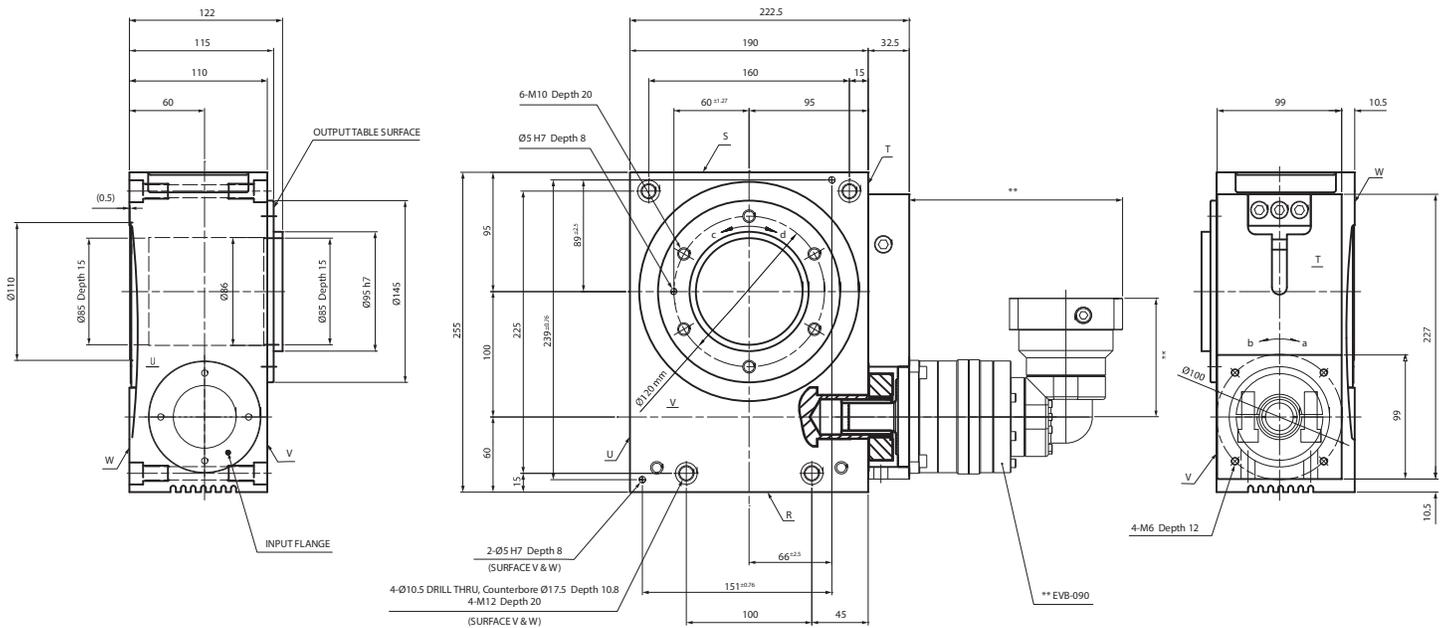
NOTE:

** Refer to page 64, for VRB-090 dimensions
 *** Optional

ROTATION:

a=d
 a=c (upon special request)

STR-100 Dimensions with EVB-090



NOTE:

** Refer to page 224, for EVB-090 dimensions
 *** Optional

ROTATION:

a=d
 a=c (upon special request)

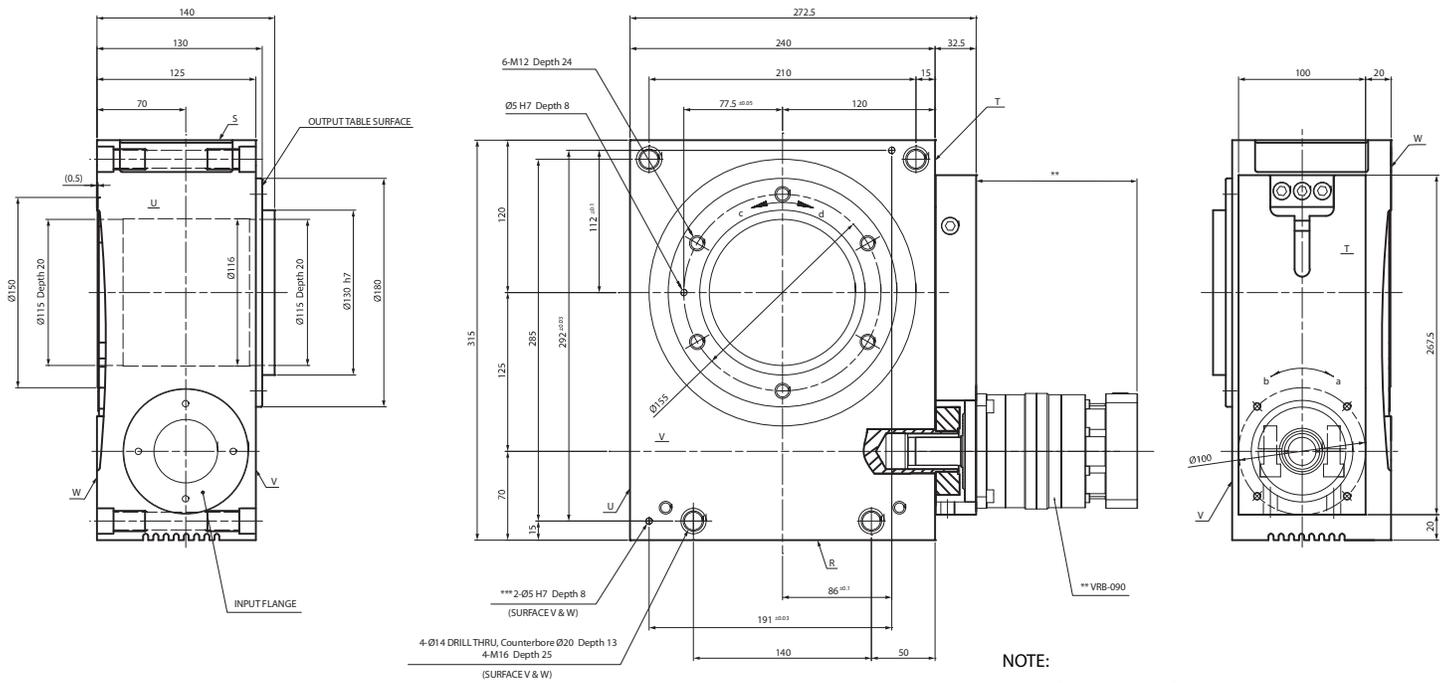
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STR

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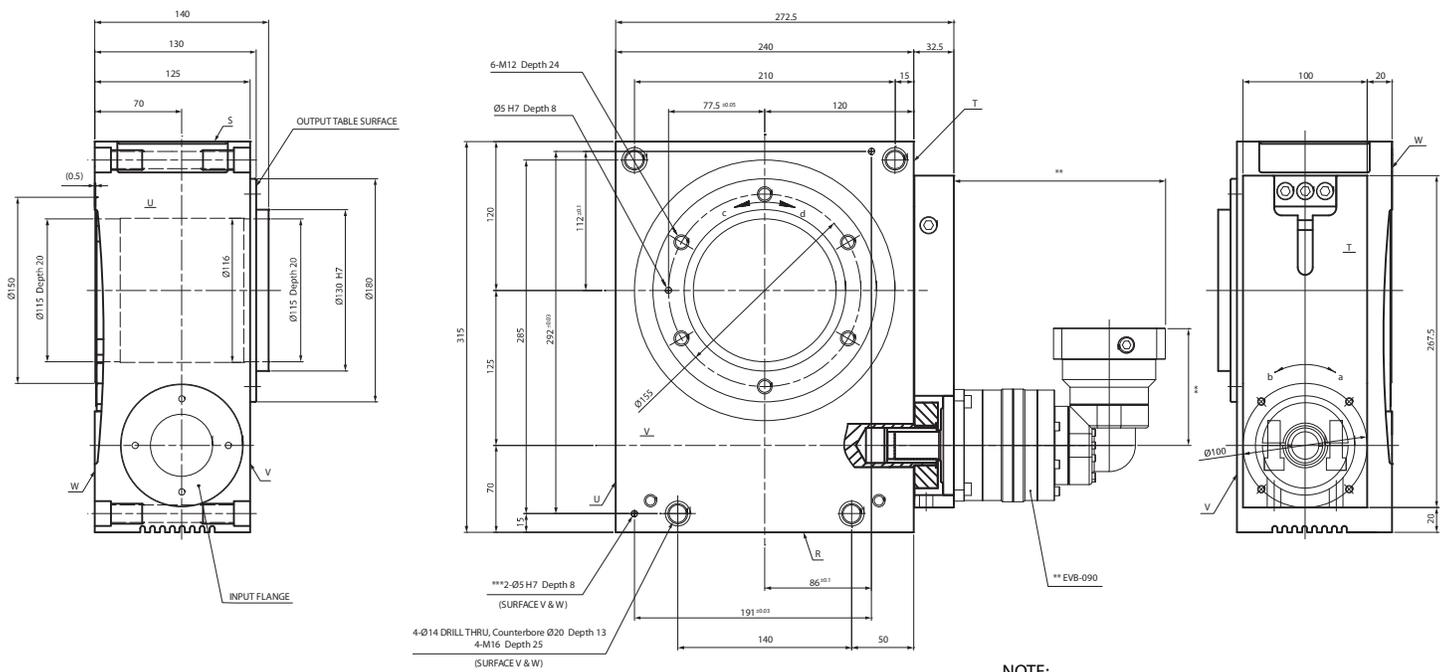
STR-125 Dimensions with VRB-090



NOTE:
 ** Refer to page 64, for VRB-090 dimensions
 *** Optional

ROTATION:
 a=d
 a=c (upon special request)

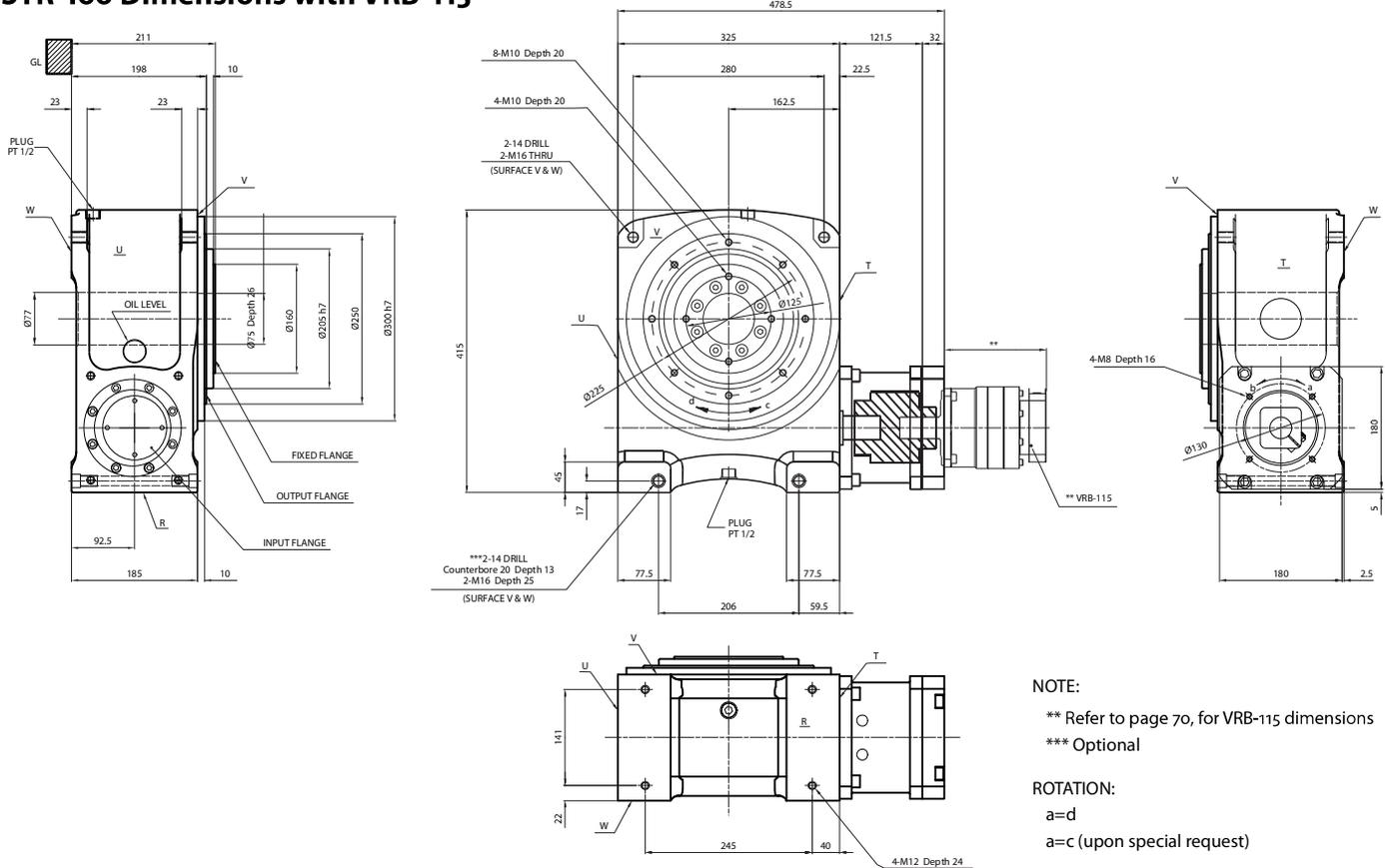
STR-125 Dimensions with EVB-090



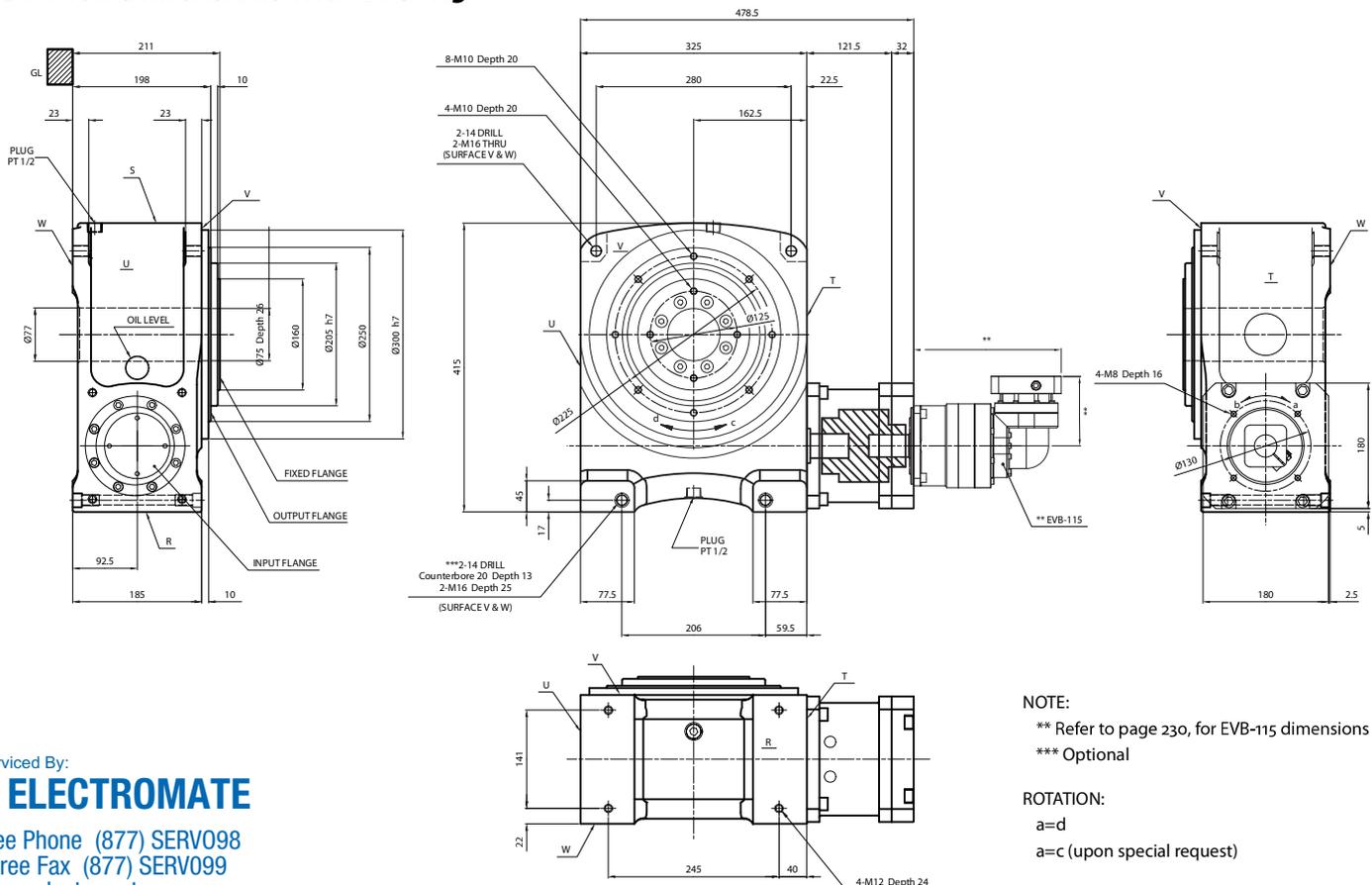
NOTE:
 ** Refer to page 224, for EVB-090 dimensions
 *** Optional

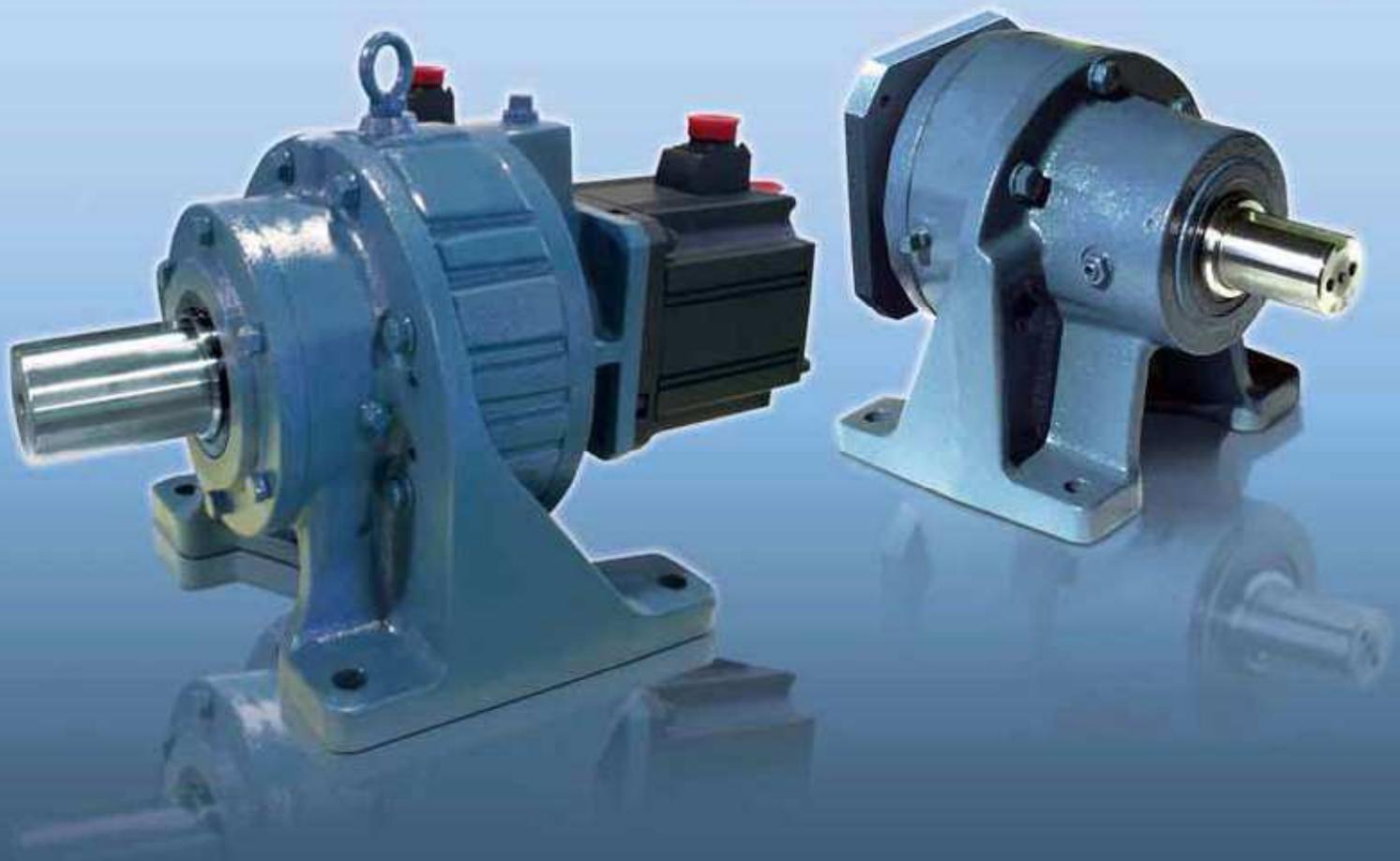
ROTATION:
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 a=c (upon special request)

STR-160 Dimensions with VRB-115



STR-160 Dimensions with EVB-115





ER-SERIES

- High efficiency cycloidal reducer design
- Multiple inputs: NEMA C-Face, Servo Square Flange, Shaft Input, Shovel Base, Top Mount
- Straddle mount output shaft bearings (sizes D, E, F)
- Multiple mounting options: Base, flange, ring
- Readily available
- Assembled in the USA

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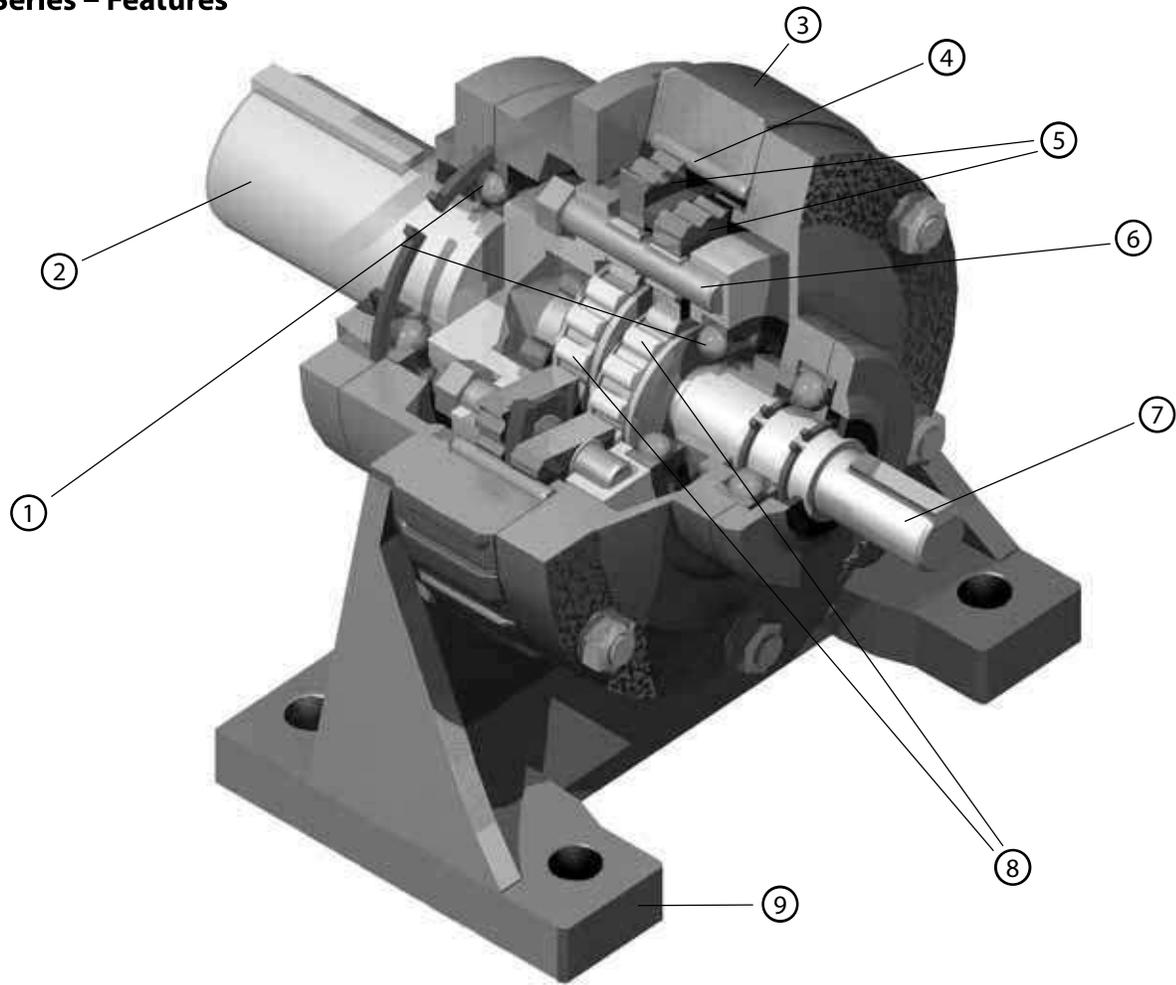
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ER-SERIES Circulute 3000 cycloidal reducer

ER-Series – Features



- ① Output shaft bearings
- ② Output shaft
- ③ Internal pin housing
- ④ Internal pin
- ⑤ Wheels
- ⑥ Carrier pins
- ⑦ Input shaft
- ⑧ Eccentric roller bearings
- ⑨ Various mounting options

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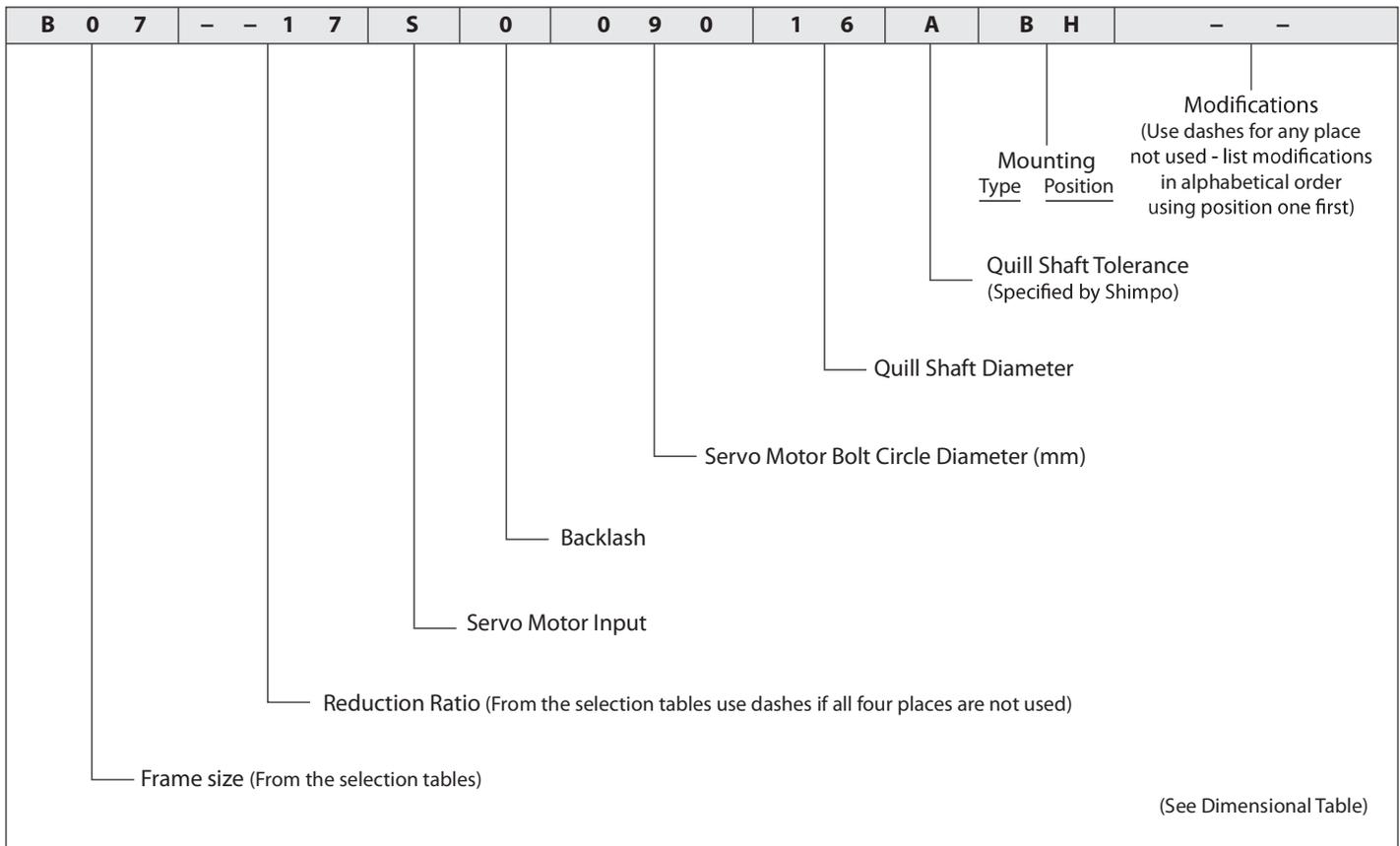
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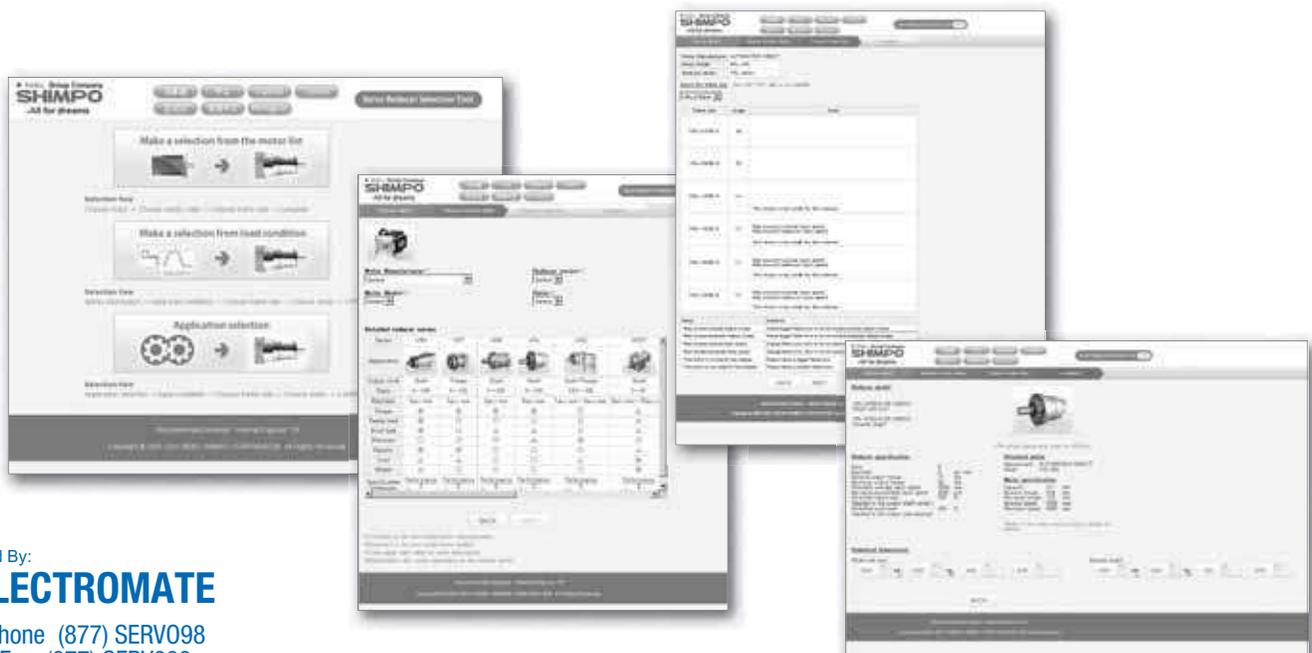
ER-Series – Model Number



Backlash

- *1) Standard Backlash: Approximately 60 arc-min - 0
- *2) Precision Backlash: Less than 6 arc-min - P

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 Selection tool www.nidec-shimpo.co.jp/selection/eng



ER-SERIES Circulute 3000 cycloidal reducer

Rating Table - 3000 rpm Input, Single Reduction, Precision Backlash (less than 6 arc-min)

Frame Size	Ratio	Units	Notes	11	17	29	35	47	59	71
B03	Input	[kW]	--	1.430	1.160	0.710	0.560	0.390	0.320	0.250
	Nominal Output Torque	[Nm]	*1	45.000	56.300	59.200	56.600	52.800	54.000	51.400
	Emergency Stopping Torque	[Nm]	*2	112	141	148	141	132	135	128
	Torsional Rigidity	[Nm/arc-min]	--	3.000	4.700	5.000	5.400	5.400	5.400	5.400
	Moment of Inertia	[kg-cm ²]	--	0.716	0.969	0.927	0.927	0.927	0.927	0.927
B07	Input	[kW]	--	1.900	1.540	0.950	0.750	0.520	0.430	0.340
	Nominal Output Torque	[Nm]	*1	60.000	75.000	78.900	75.400	78.200	79.900	76.100
	Emergency Stopping Torque	[Nm]	*2	150	188	197	189	196	200	190
	Torsional Rigidity	[Nm/arc-min]	--	3.000	4.700	5.000	5.400	5.400	5.400	5.400
	Moment of Inertia	[kg-cm ²]	--	0.716	0.969	0.927	0.927	0.927	0.927	0.927
C03	Input	[kW]	--	2.910	2.690	1.690	1.550	1.080	0.860	0.710
	Nominal Output Torque	[Nm]	*1	91.700	131	140	155	145	145	144
	Emergency Stopping Torque	[Nm]	*2	229	328	350	388	362	362	361
	Torsional Rigidity	[Nm/arc-min]	--	6.200	11.200	11.900	12.600	12.600	12.600	12.600
	Moment of Inertia	[kg-cm ²]	--	3.118	3.412	4.171	4.129	4.086	4.086	4.086
C07	Input	[kW]	--	3.880	3.590	2.250	2.060	1.430	1.140	0.950
	Nominal Output Torque	[Nm]	*1	122	175	187	207	214	214	214
	Emergency Stopping Torque	[Nm]	*2	306	437	467	517	536	536	535
	Torsional Rigidity	[Nm/arc-min]	--	6.200	11.200	11.900	12.600	12.600	12.600	12.600
	Moment of Inertia	[kg-cm ²]	--	3.118	3.412	4.171	4.129	4.086	4.086	4.086
D03	Input	[kW]	--	6.830	5.380	3.400	3.010	2.240	1.720	1.360
	Nominal Output Torque	[Nm]	*1	215	262	282	302	302	290	277
	Emergency Stopping Torque	[Nm]	*2	538	654	705	754	754	725	693
	Torsional Rigidity	[Nm/arc-min]	--	17.800	23.000	25.200	27.400	27.400	27.400	27.400
	Moment of Inertia	[kg-cm ²]	--	7.752	10.996	12.007	11.754	11.754	11.754	11.501
D07	Input	[kW]	--	9.110	7.170	4.530	4.010	2.990	2.290	1.820
	Nominal Output Torque	[Nm]	*1	287	349	376	402	447	430	411
	Emergency Stopping Torque	[Nm]	*2	718	872	940	1,010	1,120	1,070	1,030
	Torsional Rigidity	[Nm/arc-min]	--	17.800	23.000	25.200	27.400	27.400	27.400	27.400
	Moment of Inertia	[kg-cm ²]	--	7.752	10.996	12.007	11.754	11.754	11.754	11.501

*1) The reducer can continuously sustain this torque value without overheating

*2) The reducer can sustain this torque value for 1000 cycles without failure

*3) Acceleration torque is 1.5 times the nominal output torque

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Rating Table - 2000 rpm Input, Single Reduction, Precision Backlash (less than 6 arc-min)

Frame Size	Ratio	Units	Notes	11	17	29	35	47	59	71
E03	Input	[kW]	--	13.100	11.600	9.710	8.050	5.390	4.430	3.420
	Nominal Output Torque	[Nm]	*1	618	849	1,210	1,210	1,090	1,120	1,040
	Emergency Stopping Torque	[Nm]	*2	1,540	2,120	3,030	3,030	2,730	2,800	2,600
	Torsional Rigidity	[Nm/arc-min]	--	54.800	70.400	85.200	85.200	85.200	85.200	85.200
	Moment of Inertia	[kg-cm ²]	--	31.512	52.661	49.291	48.869	48.448	48.448	48.027
E07	Input	[kW]	--	17.400	15.500	13.000	10.700	7.190	5.910	4.570
	Nominal Output Torque	[Nm]	*1	824	1,130	1,610	1,610	1,450	1,500	1,390
	Emergency Stopping Torque	[Nm]	*2	2,060	2,660	3,520	3,520	3,520	3,520	3,480
	Torsional Rigidity	[Nm/arc-min]	--	54.800	70.400	85.200	85.200	85.200	85.200	85.200
	Moment of Inertia	[kg-cm ²]	--	31.512	52.661	49.291	48.869	48.448	48.448	48.027
F03	Input	[kW]	--	20.200	19.900	17.000	14.800	10.800	8.170	6.790
	Nominal Output Torque	[Nm]	*1	953	1,450	2,120	2,230	2,180	2,070	2,070
	Emergency Stopping Torque	[Nm]	*2	2,380	3,630	5,300	5,580	5,450	5,180	5,180
	Torsional Rigidity	[Nm/arc-min]	--	116.700	122.300	133.400	133.400	133.400	133.400	133.400
	Moment of Inertia	[kg-cm ²]	--	87.628	74.989	130.178	127.650	127.650	127.650	125.122
F07	Input	[kW]	--	26.900	26.500	22.600	19.800	14.400	10.900	9.060
	Nominal Output Torque	[Nm]	*1	1,270	1,940	2,820	2,970	2,900	2,760	2,760
	Emergency Stopping Torque	[Nm]	*2	3,180	4,850	7,050	7,350	7,350	6,900	6,900
	Torsional Rigidity	[Nm/arc-min]	--	116.700	122.300	133.400	133.400	133.400	133.400	133.400
	Moment of Inertia	[kg-cm ²]	--	87.628	74.989	130.178	127.650	127.650	127.650	125.122

*1) The reducer can continuously sustain this torque value without overheating

*2) The reducer can sustain this torque value for 1000 cycles without failure

*3) Acceleration torque is 1.5 times the nominal output torque

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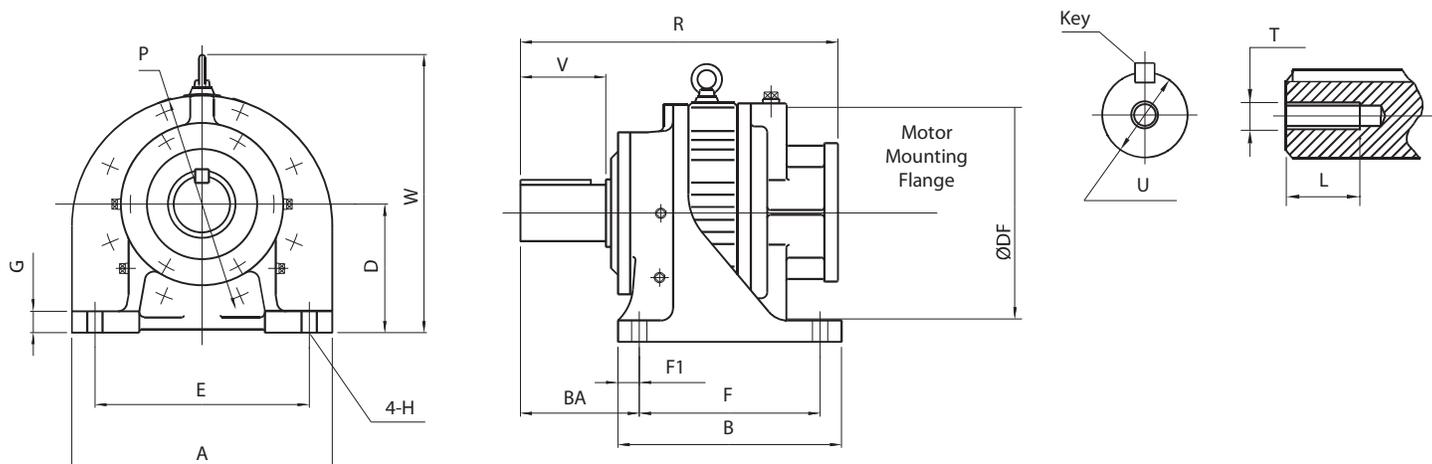
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ER-SERIES Circulute 3000 cycloidal reducer

ER Common Dimensions – Single Stage Base Mount



Frame Size	Units	A	B	BA	D	DF	E	F	F1	G	H	P
A03 - A07	[mm]	175.01	119.89	65.28	89.99	N/A	145.03	89.92	14.99	16.00	11.94	147.07
A190 - A195	[mm]	180.09	134.87	59.94	100.00	N/A	150.11	89.92	14.99	11.94	10.92	147.07
B01 - B07	[mm]	175.01	150.11	85.85	115.01	N/A	145.03	119.89	14.99	16.00	11.94	150.11
B195 - B105	[mm]	180.09	134.87	59.94	100.00	N/A	150.11	89.92	14.99	11.94	10.92	150.11
B20H	[mm]	180.09	134.87	59.94	119.99	N/A	150.11	89.92	14.99	11.94	10.92	150.11
C01 - C07	[mm]	219.96	189.99	103.38	140.00	N/A	180.09	150.11	20.07	22.10	14.99	189.99
C110 - C115	[mm]	230.12	154.94	82.04	119.99	N/A	189.99	115.06	20.07	14.99	13.97	189.99
C225	[mm]	230.12	154.94	82.04	140.00	N/A	189.99	115.06	20.07	14.99	13.97	189.99
D01 - D07	[mm]	275.08	230.12	135.38	165.00	N/A	225.04	180.09	24.89	25.91	19.05	234.95
D135	[mm]	330.20	195.07	100.08	149.99	N/A	290.07	145.03	24.89	22.10	18.03	234.95
D145	[mm]	330.20	195.07	119.89	149.99	N/A	290.07	145.03	24.89	22.10	18.03	234.95
D225	[mm]	330.20	195.07	119.89	159.99	N/A	290.07	145.03	24.89	22.10	18.03	233.68
E01 - E07	[mm]	359.92	299.97	150.88	184.99	312.93	299.97	249.94	24.89	29.97	22.10	299.97
E165	[mm]	409.96	238.00	138.94	159.99	312.93	369.82	150.11	43.94	24.89	18.03	299.97
E370 - E375	[mm]	430.02	335.03	124.97	200.00	312.93	379.98	275.08	29.97	29.97	22.10	414.02
F03 - F07	[mm]	424.94	365.00	194.82	210.01	368.05	350.01	294.89	35.05	35.05	24.89	359.92

*1) Sizes A through B do not have a lifting eye

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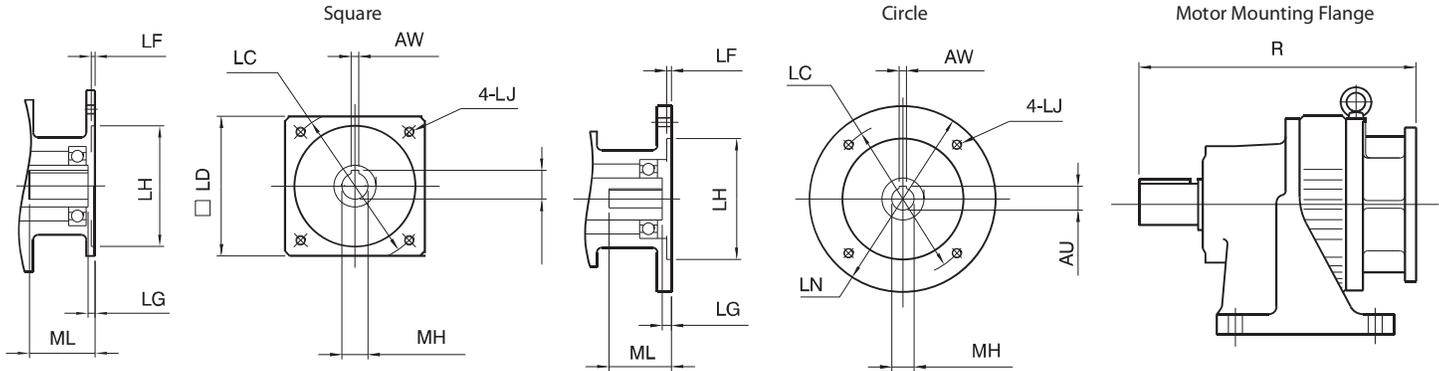
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ER Flange Dimensions – Single Stage Base Mount



Frame Size	LC	LD	LF	LG	LH	LN	LJ	MH	ML	R	Net Weight (kg)
A03 - A07	70	--	5	5	50	120	M5	14, 16	37	202.692	9.98
	90	--	5	7	70	120	M6	16, 19	57	212.60	9.98
	100	--	7	7	80	120	M6	16, 19	--	214.63	9.98
	115	100	7	7	95	--	M6	19, 24	57	212.60	9.98
	145	110	7	8	110	--	M8	22, 24	--	212.60	12.70
B03 - B07	70	--	5	5	50	120	M5	14, 16	37	238.00	16.33
	90	--	5	7	70	120	M6	16, 19	57	247.90	16.33
	100	--	7	7	80	120	M6	16, 19	--	249.94	16.33
	115	100	7	7	95	--	M6	19, 24	57	247.90	16.33
	145	110	7	8	110	--	M8	22, 24	--	247.90	17.23
C03 - C07	90	--	7	7	70	160	M6	16	--	293.88	30.84
	100	--	7	7	80	120	M6	16, 19	--	300.99	30.84
	115	130	7	7	95	--	M6	22, 24	--	293.88	30.84
	145	130	7	8	110	--	M8	24, 28	--	293.88	30.84
	200	176	7	7	114.3	--	M12	28, 35	--	328.93	38.55
D03 - D07	115	--	7	7	95	200	M6	22, 24	--	354.08	52.15
	145	130	8	8	110	--	M8	22, 24	--	349.00	52.15
	165	--	8	8	130	200	M10	24, 28	--	360.93	52.15
	200	176	10	7	114.3	--	M12	28, 35	--	378.97	56.69
	215	--	10	10	180	300	M12	35, 38	--	399.03	61.22
E03 - E07	145	--	10	7	110	250	M8	24, 28	--	409.96	111.56
	165	176	7	7	130	--	M12	24, 28	--	399.03	101.59
	200	176	7	6	114.3	--	M12	28, 35	--	399.03	101.59
	215	--	10	11	180	300	M12	35, 38	--	459.99	116.55
	235	--	8	11	200	350	M12	38, 42	--	494.03	129.71
F03 - F07	200	--	10	7	114.3	300	M12	28, 35	--	546.10	207.71
	215	--	10	8	180	300	M12	35, 38	--	546.10	207.71
	235	--	5	11	200	300	M12	38, 42	--	546.10	207.71
	265	--	5	11	230	400	M12	42, 48	--	564.90	219.50

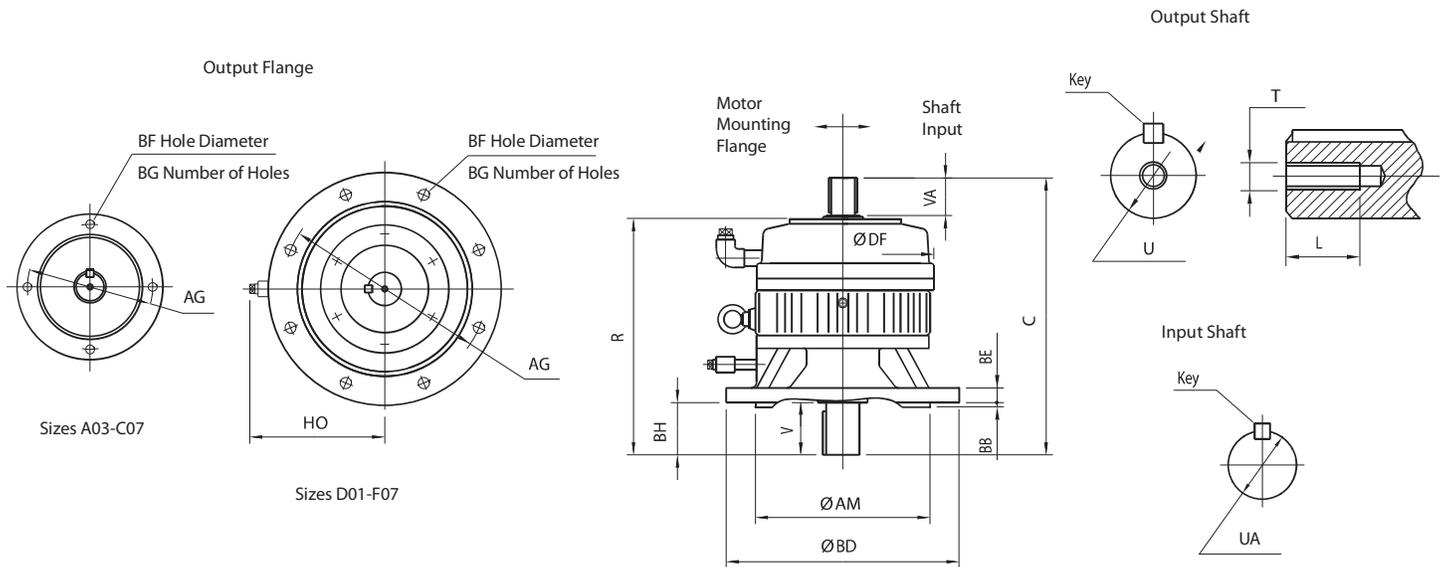
MH	AU	AW	ML
14	16	5	32
16	18	5	37
19	21.5	6	42
22	25	8	57
24	27	8	67

MH	AU	AW	ML
28	31	8	67
35	38	10	67
38	41	10	88
42	45	12	118
48	51.5	14	118

- *1) Other servo flanges and bore sizes are available. Contact Shimpo Drives Customer Service for additional information
- *2) All dimensions are in mm, except for «R» dimension, which is in inches
- *3) To download CAD drawings, visit our website: www.shimpodrives.com
- *4) The "R" dimension is the length from input flange face to output shaft end

ER-SERIES Circulute 3000 cycloidal reducer

ER Common Dimensions – Single Stage Flange Mount



Frame Size	Units	AG	AM	BB	BD	BE	BF	BG	BH	HO
A03 - A07	[mm]	130.05	110.01	4.06	160.02	13.97	11.94	101.60	29.97	N/A
B01 - B07	[mm]	165.10	130.00	4.06	199.90	13.97	11.94	101.60	40.13	N/A
C01 - C07	[mm]	214.88	180.01	4.06	249.94	18.03	14.99	101.60	55.12	N/A
D01 - D07	[mm]	264.92	230.00	5.08	299.97	22.10	14.99	203.20	70.10	184.91
E01 - E07	[mm]	350.01	300.00	7.87	400.05	24.89	19.05	203.20	89.92	230.12
F03 - F07	[mm]	400.05	350.01	7.87	450.09	24.89	19.05	203.20	109.98	260.10

Frame Size	Units	Output Shaft				
		U	V	Key	T	L
A03 - A07	[mm]	22.23	30.23	4.78x4.78x24.89	N/A	N/A
B01 - B07	[mm]	34.925	50.80	7.95x7.95x44.96	N/A	N/A
C01 - C07	[mm]	44.450	63.50	9.53x9.53x54.86	N/A	N/A
D01 - D07	[mm]	63.500	95.25	15.88x15.88x74.93	M10 x 1.5	18.03
E01 - E07	[mm]	73.025	111.00	19.05x19.05x95.00	M20 x 2.5	35.05
F03 - F07	[mm]	92.075	139.70	22.23x22.23x115.06	M20 x 2.5	35.05

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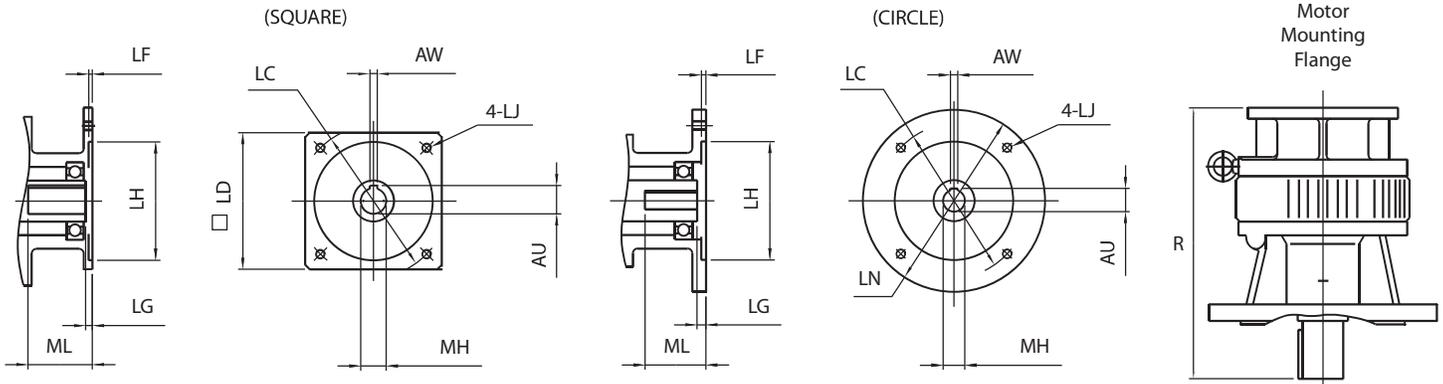
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ER Flange Dimensions – Single Stage Flange Mount



Frame Size	LC	LD	LF	LG	LH	LN	LJ	MH	ML	R	Net Weight (kg)
A03 - A07	70	--	5	5	50	120	M5	14, 16	37	202.69	9.98
	90	--	5	7	70	120	M6	16, 19	57	212.60	9.98
	100	--	7	7	80	120	M6	16, 19	--	214.63	9.98
	115	100	7	7	95	--	M6	19, 24	57	212.60	9.98
	145	110	7	8	110	--	M8	22, 24	--	212.60	12.70
B03 - B07	70	--	5	5	50	120	M5	14, 16	37	238.00	16.33
	90	--	5	7	70	120	M6	16, 19	57	247.90	16.33
	100	--	7	7	80	120	M6	16, 19	--	249.94	16.33
	115	100	7	7	95	--	M6	19, 24	57	247.90	16.33
	145	110	7	8	110	--	M8	22, 24	--	247.90	17.23
C03 - C07	90	--	7	7	70	160	M6	16	--	293.88	30.84
	100	--	7	7	80	120	M6	16, 19	--	300.99	30.84
	115	130	7	7	95	--	M6	22, 24	--	293.88	30.84
	145	130	7	8	110	--	M8	24, 28	--	293.88	30.84
	200	176	7	7	114.3	--	M12	28, 35	--	328.93	38.55
D03 - D07	115	--	7	7	95	200	M6	22, 24	--	354.08	52.15
	145	130	8	8	110	--	M8	22, 24	--	349.00	52.15
	165	--	8	8	130	200	M10	24, 28	--	360.93	52.15
	200	176	10	7	114.3	--	M12	28, 35	--	378.97	56.69
	215	--	10	10	180	300	M12	35, 38	--	399.03	61.22
E03 - E07	145	--	10	7	110	250	M8	24, 28	--	409.96	111.56
	165	176	7	7	130	--	M12	24, 28	--	399.03	101.59
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	215	--	10	11	180	300	M12	35, 38	--	459.99	116.55
	235	--	8	11	200	350	M12	38, 42	--	494.03	129.71
F03 - F07	200	--	10	7	114.3	300	M12	28, 35	--	546.10	207.71
	215	--	10	8	180	300	M12	35, 38	--	546.10	207.71
	235	--	5	11	200	300	M12	38, 42	--	546.10	207.71
	265	--	5	11	230	400	M12	42, 48	--	564.90	219.50

MH	AU	AW	ML
14	16	5	32
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MH	AU	AW	ML
28	31	8	67
35	38	10	67
38	41	10	88
42	45	12	118
48	51.5	14	118

- *1) Other servo flanges and bore sizes are available. Contact Shippo Drives Customer Service for additional information
- *2) All dimensions are in mm, except for «R» dimension, which is in inches
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Technical Information

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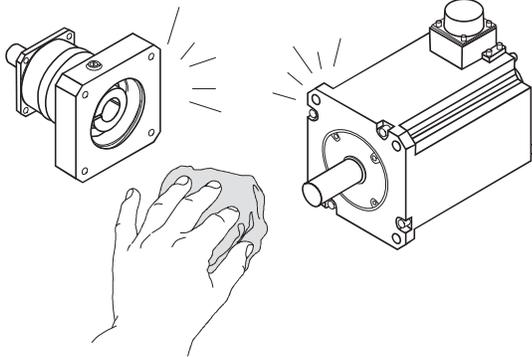
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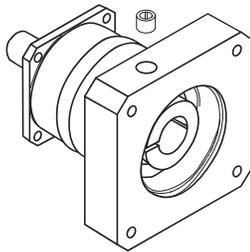
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Installation Instructions

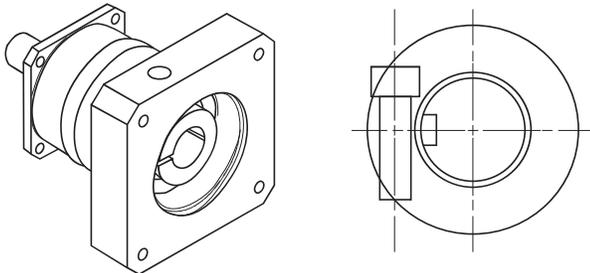
Mounting Procedure to Motor



1. Wipe off anti-rust agent and oil on the motor shaft.



2. Remove the plug.



3. Turn the input shaft until the cap screw is seen. Make sure the cap screw is loosened. Place reducer vertically on the flat surface so the motor mounting part faces up.

NOTE: In case the bushing has been attached, see reducer drawing example below to fix.

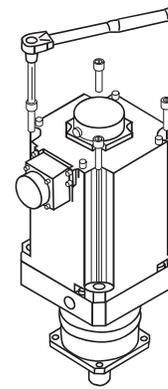
Table 1

Bolt Size	Motor Installing Bolts		Clamping Bolts	
	Nm	kgfm	Nm	kgfm
M3	1.1	0.11	1.9	0.18
M4	2.5	0.26	4.3	0.44
M5	5.1	0.52	8.7	0.89
M6	8.7	0.89	15	1.5
M8	21	2.1	36	3.7
M10	42	4.3	71	7.2
M12	72	7.3	125	13
M16	134	14	--	--

Table 2

Bolt Size	Tightening Torque	
	Nm	kgfm
M3	1.9	0.18
M4	4.3	0.44
M5	8.7	0.89
M6	15	1.5
M8	36	3.7
M10	71	7.2
M12	125	13
M16	310	32
M20	603	62

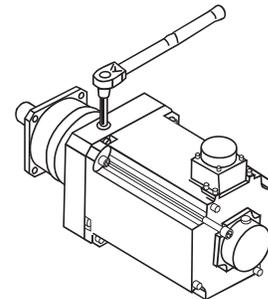
* Recommended bolt: Strength 12.9



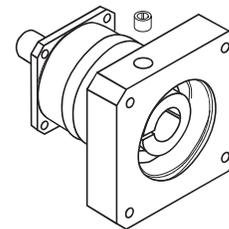
4. Carefully and gently insert the motor shaft into the input shaft. Make sure the motor flange is perfectly fit to the reducer's flange. Tighten the motor by installing and tightening bolts to the proper torque. (See table 1)

Reducer Installation

After confirming the installation surface is flat and clean, tighten the bolt using a torque wrench to the proper torque. (See table 2)



5. Tighten the clamping bolt of the input shaft with torque wrench to the proper torque. (See table 1)



6. Reinstall the plug. The procedure is complete.

Cautions for Operation

- When the reducer is delivered to you, confirm that you received the exact model that you ordered.
Please wipe out the input and output shaft of the reducer which is covered by anti-corrosive oil.
 - * Remove rubber cap on the input shaft before you wipe the shafts.
 - * Lubricant (grease) is already filled in the reducer. The reducer is ready for operation out of the box.

Fixation and Installation

- Avoid use in places where rain or water drops directly, unless special wash down design.
 - In case of use outdoors or in a places where dust and water drops directly, consult SHIMPO in advance.
- Install at 0°~40°C of surrounding temperature.
 - In case of use at temperature out of the mentioned (0°~40°C) range, consult SHIMPO in advance.
- Firmly fix with a bolt onto a solid stand without vibration.
- Install in a convenient location for future repair and inspection.

Cautions Prior to Starting the Operation

- Reducer can be used on arrival, since it has already been filled with lubrication.
- At initial operation, check the rotating direction of the output shaft and then gradually apply load.

Cautions During Operation

- Avoid overload.
- Ensure that input speed shall not exceed the number of maximum revolutions per minute specified.
- In the event the following occurs, stop the operation and check the following points:
 - If temperature sharply increases
 - If an abnormal noise appears sharply
 - If the number of revolutions becomes unstable sharply
- In the event the following occurs, respond immediately to the issue or contact us as soon as possible.
 - Is it under overload condition?
 - Is lubricant insufficient or deteriorated, or was another lubricant applied?
 - Is the axis, gear, and/or motor input damaged?
 - Are any connections unstable?

Disassembly

- ABLE REDUCER is designed to not be disassembled.

Lubricant Use

- The ABLE REDUCER is of grease-seal type in all models.
A specified amount of grease is filled at factory release so you can use as soon as it is delivered to you.
- It is impossible to exchange grease.
- In case of use outside of the recommended temperature range, consult SHIMPO in advance.

Daily Check Points

- Is the reducer case temperature excessively high during operation? (Up to + 50°C is not significant.)
- Is there an abnormal noise in the bearing, gear, etc?
- Is there an abnormal vibration in the reducer?
 - * Upon an abnormal phenomenon, immediately stop the operation and contact us.
- Is there a lubricant leak?

Periodic Check Points

- Are there overload and abnormal rotation?
- Are free, sprocket, and reducer assembling bolts loose?
- Is there an abnormal condition in the electric system?
- Checkup and repair of major parts
 - * Upon an abnormal condition, immediately stop the operation and contact us.
- Oil leak
 - * Upon an oil leak, contact us.

Scrapping

Whenever scrapping the ABLE REDUCER, classify the parts by material into industrial wastes as specified in the laws and regulations of your local government. Materials of construction can be divided into the following four categories:

1. Rubber parts: Oil seal, seat packing, rubber cap, seal used for bearing on the motor flange, etc.
2. Aluminum parts: Motor flange, output shaft holder
3. Grease: Wipe off the grease from the individual parts with dry cloth and scrap into oils.
4. Iron parts: Parts other than those mentioned in the above

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Adapter Flange Codes

Adapter Flange Codes

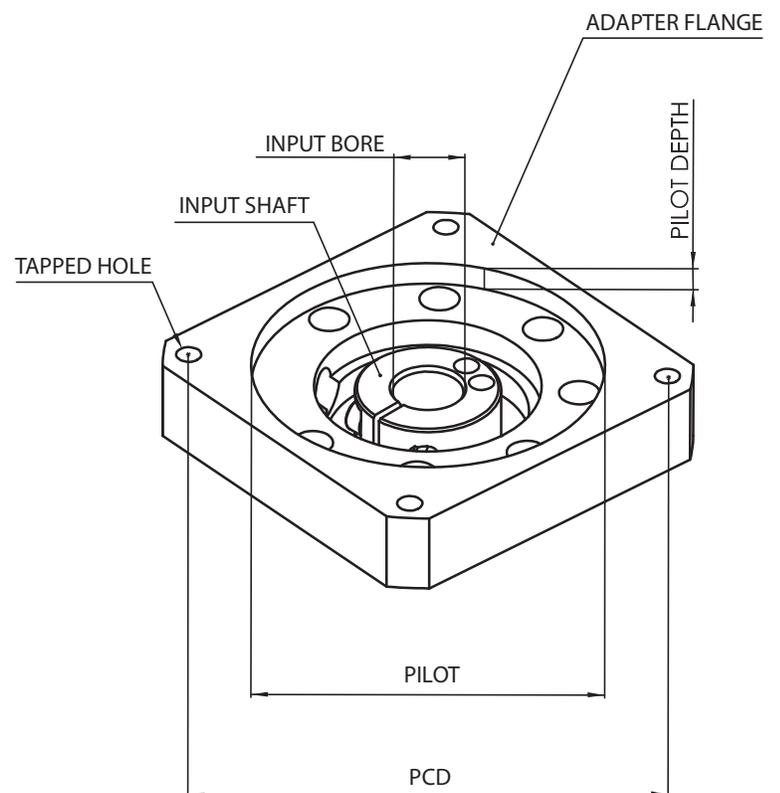
These tables provide an explanation for the adapter codes. The tables start with Input Bore measurement and the Part # Code, which are indicated at the end of every model code. For each Part # Code, the Pilot, PCD, Tapped Hole, and Pilot Depth, are explained.

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
65	MA	114.3	200	M12	8
65	MC	180	215	M12	8
65	MD	180	265	M12	8
65	MB	200	235	M12	8
65	NA	230	265	M12	8
65	PA	250	300	M16	8
65	PB	250	320	M16	18
65	QA	300	350	M16	8

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
48	KB	110	130	8.8	8
48	KA	114.3	200	M12	8
48	KC	130	215	M12	8
48	LA	180	215	M12	8
48	MA	180	265	M12	8
48	MB	200	235	M12	8
48	NA	230	265	M12	8
48	PA	250	300	M16	8

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
38	HA	110	130	8.8	8
38	HB	110	145	M8	8
38	JA	130	165	M10	8
38	KA	114.3	200	M12	8
38	KB	130	215	M10	8
38	KC	130	215	M12	8
38	LA	180	215	M12	8
38	LB	180	215	M12	18
38	MA	180	265	M12	8
38	MB	200	235	M12	8
38	NA	230	265	M12	8

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
28	FA	80	100	M6	8
28	FB	95	115	M6	8
28	FC	95	115	M8	8
28	GA	55.563	125.73	M6	8
28	GB	63.5	127	M6	8
28	GC	95	130	M8	8
28	GD	110	130	M8	8
28	GE	110	130	M10	8
28	GF	110	130	8.8	8
28	GG	110	135	M8	8
28	HA	110	145	M8	8
28	HB	110	145	M8	18
28	HC	110	145	10.5	8
28	HD	114.3	149.23	10.5	8
28	JA	110	165	M8	8
28	JB	110	165	M10	8
28	JC	130	165	M10	8
28	KA	114.3	200	M12	8
28	KB	130	215	M10	8
28	LA	180	215	M12	8
28	MA	200	235	M12	8



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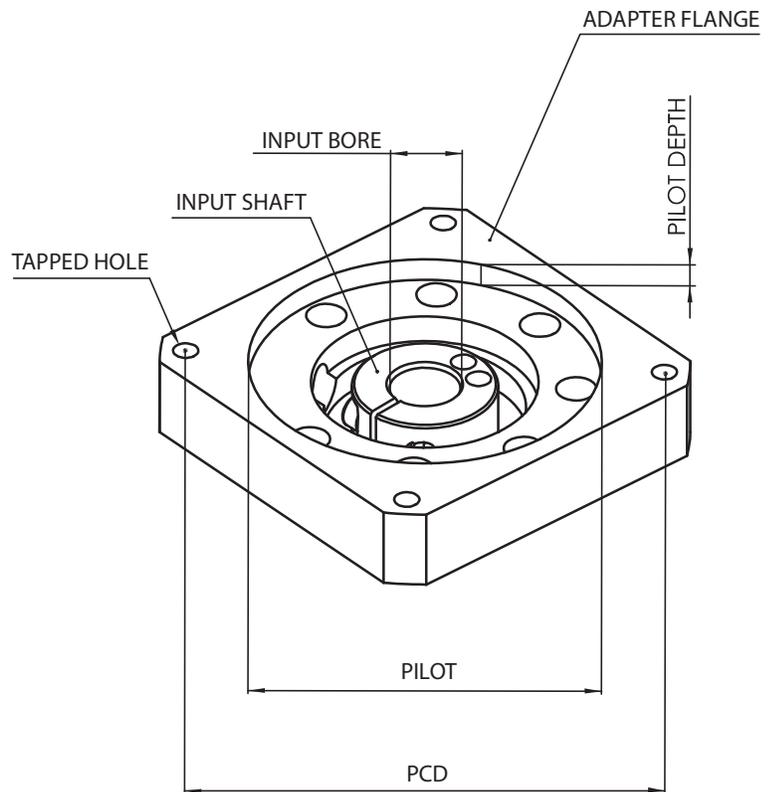
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Adapter Flange Codes

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
19	DA	60	90	M5	6
19	DB	70	90	M5	6
19	DC	70	90	M6	6
19	DD	70	90	M6	16
19	DE	70	90	M5	11
19	EA	73.025	98.43	M5	11
19	EB	80	100	M6	6
19	EC	80	100	M6	16
19	FA	95	115	M8	6
19	FB	95	115	M8	16
19	GA	55.563	125.73	M6	11
19	GB	95	130	M8	6
19	GC	110	130	M8	11
19	GD	110	130	8.8	6
19	HA	110	145	M8	6
19	HB	110	145	M8	21
19	HC	110	145	10.5	11
19	HD	114.3	149.23	M8	11
19	HE	114.3	149.23	10.5	11

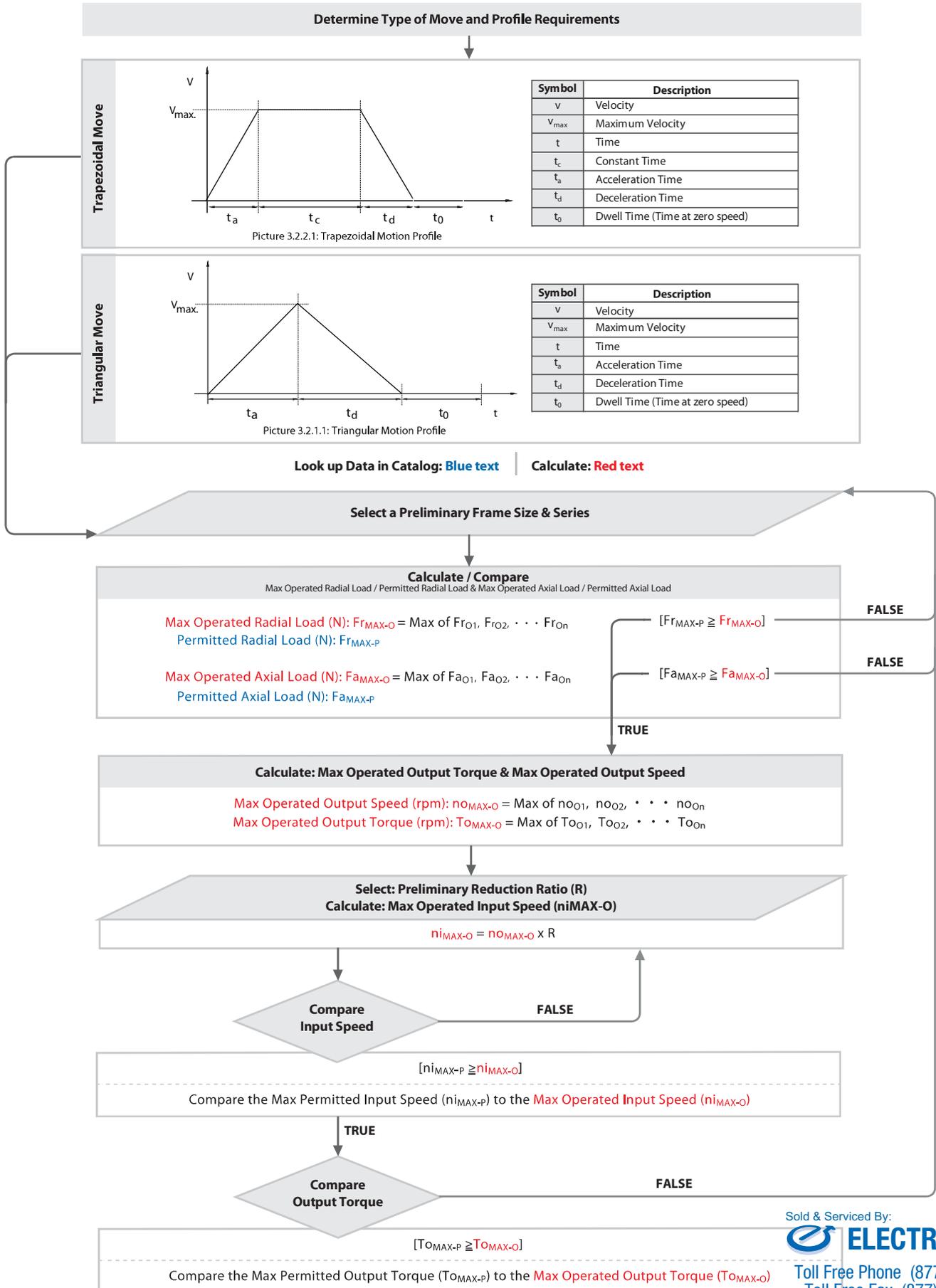
Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
8	AA	20.02	46.69	M3	5
8	AB	22	43.82	4.7	10
8	AC	22	48	M3	5
8	AD	22.22	50.8	M3	5
8	AE	25.4	38.89	4	10
8	AF	30	45	M3	5
8	AG	30	46	M4	5
8	AH	30	46	M4	10
8	AJ	30	46	3.5	10
8	AK	34	48	M3	10
8	BA	38.1	66.68	M4	5
8	BB	38.1	66.68	M5	5
8	BC	50	60	M4	10
8	BD	50	70	M4	5
8	BE	50	70	M5	5
8	BF	50	70	M5	10
8	CA	50	80	M4	10

Input Bore (mm)	Part # Code	Pilot	PCD	Tapped Hole	Pilot Depth
14	BA	38.1	66.68	M4	5
14	BB	38.1	66.68	M5	5
14	BC	38.1	66.68	M5	10
14	BD	40	63	M4	5
14	BE	40	63	M5	5
14	BF	40	65	M5	5
14	BG	40	70	M4	5
14	BH	50	60	M4	10
14	BJ	50	70	M4	5
14	BK	50	70	M5	5
14	BL	50	70	M5	15
14	CA	60	75	M5	5
14	CB	60	75	M6	10
14	DA	50	95	M6	5
14	DB	60	85	M5	5
14	DC	60	90	M5	5
14	DD	70	85	6.5	5
14	DE	70	90	M5	10
14	DF	70	90	M6	5
14	DG	70	90	M6	15
14	DH	70	95	M6	5
14	EA	50	100	M6	5
14	EB	73.025	98.43	M5	5
14	EC	80	100	M6	5
14	ED	80	100	M6	15
14	FA	60	115	M6	5
14	GA	80	139.7	M6	5

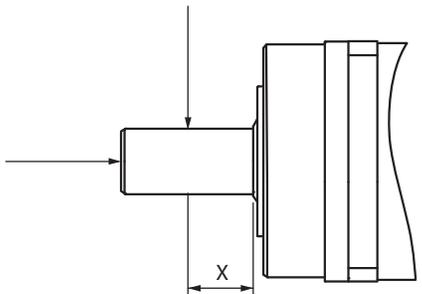


Selection Flow Charts

Procedure for Gear Reducer Selection



Calculate: Average Operated Radial Load & Average Operated Axial Load



Average Operated Radial Load (N):

$$Fr_{AVG-O} = \sqrt[3]{\frac{no_{O1} \cdot t_1 \cdot |Fr_{O1}|^3 + no_{O2} \cdot t_2 \cdot |Fr_{O2}|^3 + \dots + no_{On} \cdot t_n \cdot |Fr_{On}|^3}{no_{O1} \cdot t_1 + no_{O2} \cdot t_2 + \dots + no_{On} \cdot t_n}}$$

Average Operated Axial Load (N):

$$Fa_{AVG-O} = \sqrt[3]{\frac{no_{O1} \cdot t_1 \cdot |Ft_{O1}|^3 + no_{O2} \cdot t_2 \cdot |Ft_{O2}|^3 + \dots + no_{On} \cdot t_n \cdot |Ft_{On}|^3}{no_{O1} \cdot t_1 + no_{O2} \cdot t_2 + \dots + no_{On} \cdot t_n}}$$

Calculate: Average Operated Output Torque & Average Operated Output Speed

Average Operated Output Torque (Nm):

$$To_{AVG-O} = \sqrt[10]{\frac{no_{O1} \cdot t_1 \cdot |To_{O1}|^{10/3} + no_{O2} \cdot t_2 \cdot |To_{O2}|^{10/3} + \dots + no_{On} \cdot t_n \cdot |To_{On}|^{10/3}}{no_{O1} \cdot t_1 + no_{O2} \cdot t_2 + \dots + no_{On} \cdot t_n}}$$

Average Operated Output Speed (rpm):

$$no_{AVG-O} = \frac{no_{O1} \cdot t_1 + no_{O2} \cdot t_2 + \dots + no_{On} \cdot t_n}{t_1 + t_2 + \dots + t_n}$$

Calculate: Life

Bearing Life (Hours): $L_h = 20,000 \cdot \left(\frac{To_{AVG-P}}{To_{AVG-O}}\right)^P \cdot \left(\frac{ni_{AVG-P}}{no_{AVG-O}}\right)$

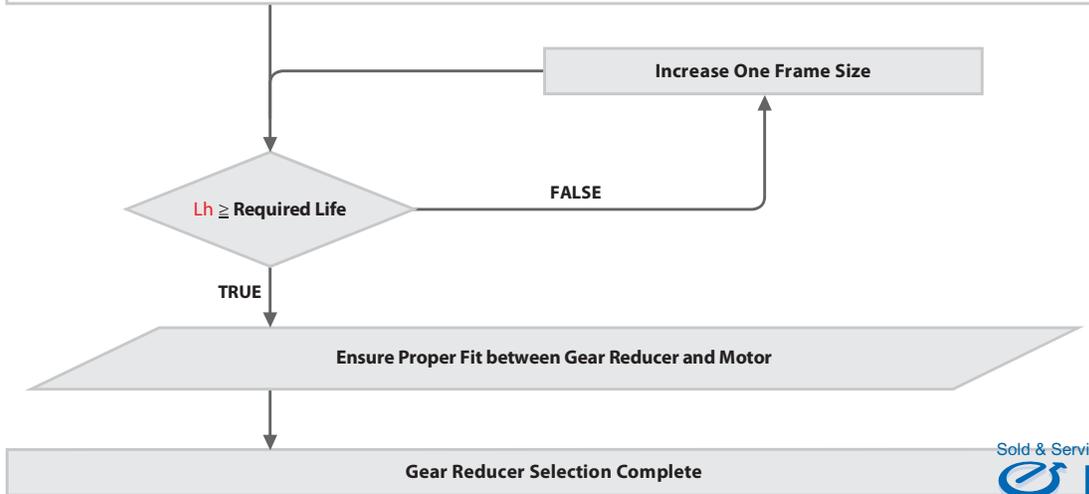
There are 3 Life calculations that should be taken into account:

1. Life of Needle Bearing
2. Life Due to Radial Load
3. Life Due to Thrust Load

Contact Shimpo for calculation details

Legend:

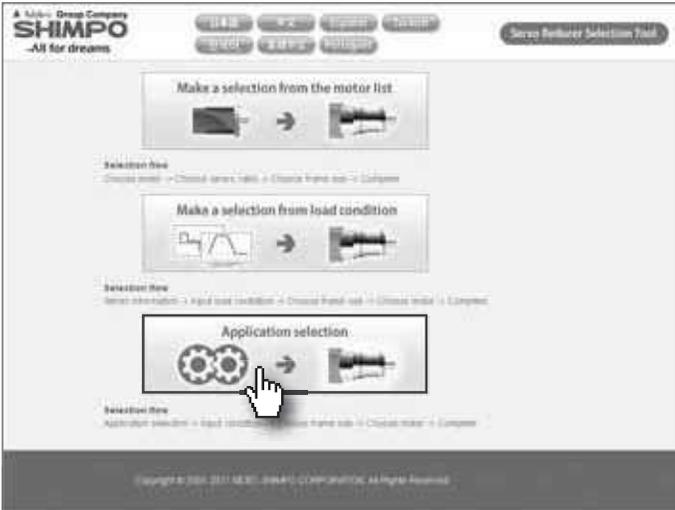
- To_{AVG-P} : Average Permitted Output Torque
- To_{AVG-O} : Average Operated Output Torque
- ni_{AVG-P} : Average Permitted Input Speed
- no_{AVG-O} : Average Operated Output Speed



Online Sizing and Selection Tool

SHIMPO's online Selection Tool offers additional information that exceeds this catalog. The online Selection Tool has an extensive list of Servo Motor Specifications, Requirements and Application Specifications. See the Selection Tool example screens below to guide, support and help you with your application needs.

Selection Tool Screen Example 1



- Selection based on the Servo Motor Specifications
- Selection based on the Servo Motor Movement profile requirements
- Selection based on the Application Specifications includes all the above

Selection Tool Screen Example 3



- Fill in all the information for your application

Load condition		
Delivery weight	Ww	<input type="text" value="10"/> (kg)
Belt weight	Wc	<input type="text" value="1"/> (kg)

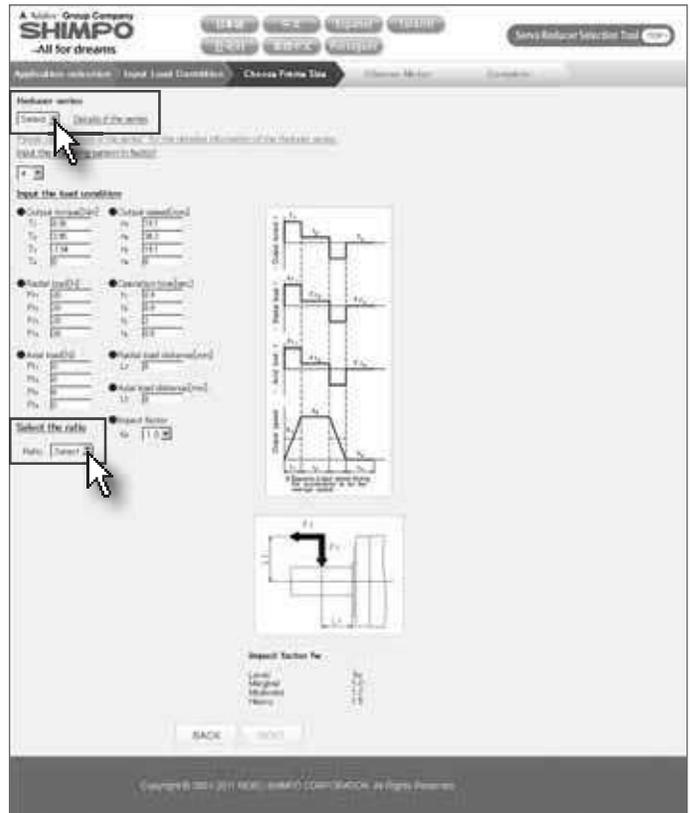
- Including the velocity, forces, mass, and move profile

Selection Tool Screen Example 2



- Select a application template based on your criteria

Selection Tool Screen Example 4



- Select a SHIMPO Reducer Series
- Select a Ratio that would put you near the rpm range for your application

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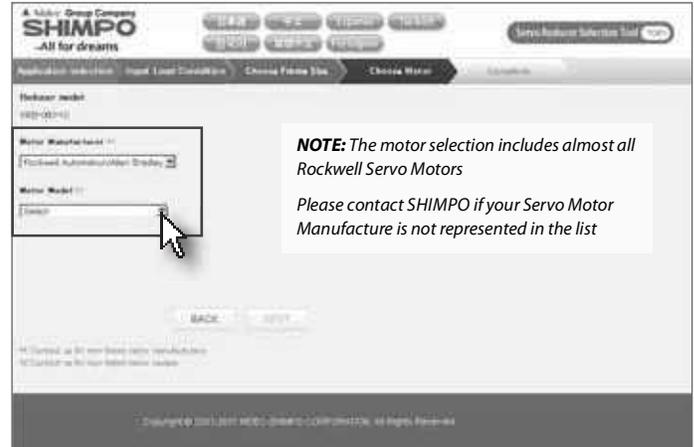
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Selection Tool Screen Example 5



- The proper SHIMPO reducer frame size has been selected based on your application's criteria

Selection Tool Screen Example 6



- Select the Motor Manufacturer for your application from the list
- Select the appropriate motor via the "Motor Model drop down box"
- The manufacture Motor Model list includes new and former servo motors
- The sizing program does not select the servo motor drive

Selection Tool Screen Example 7



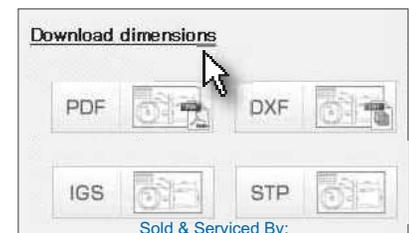
The resulting Load Condition can be helpful for sizing other related machine components

The Load Condition includes:

- Output Torque (Nm) and Output Velocity (rpm) of the Gearmotor

Load condition		
Average output torque	5	Nm
Maximum output torque	8	Nm
Average output speed	21	rpm
Maximum output speed	38	rpm
Average radial load	20	N
Maximum radial load	20	N
Average axial load	30	N
Maximum axial load	30	N

- These drawing formats can be downloaded: PDF, DXF, IGS, STP



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Customer Service and Support

Distinction in Service and Support

NIDEC-SHIMPO has invested heavily in the past few years in building a global customer service and application support network that will meet the evolving needs of our customers. By leveraging our global infrastructure, our OEM customers maintain their competitiveness and profitability at home while able to expand into emerging markets abroad without any drop-off of service and support.

NIDEC-SHIMPO pledges that we will continue to expand our service and support network footprint globally, and continuously strive for perfection as a dependable partner to our customers. In this section you will learn about our service and support capabilities that we will leverage in order to provide you peace of mind.

Online and Phone Support

Resolve your technical issues quickly and accurately, without disrupting your business. With the NIDEC-SHIMPO OEM Partner Service Program, your company and your customers have immediate access to our global network of support centers and resources. Whether you need help designing, installing, and maintaining equipment or diagnosing an operating issue, NIDEC-SHIMPO will deliver the tools and information that you need in order to insure that your equipment is running to perfection.

Contact your local sales office for immediate support either over the phone or in the field. A list of locations can be found on the back cover of this catalog. All OEM accounts in North America have a dedicated Technical Support Engineer, knowledgeable about your business, on-standby ready to support you and your customers. If you do not know who to contact, please call our 1-800 number in order to get properly directed to the right person for help.

For online support, please visit our website in order to download any drawings, instruction manuals, or technical performance specifications that you require. All catalogs and brochures will also be easily downloadable on the website. If you prefer to inquire about an issue or for more information, please do not hesitate to submit your request online or start a dialogue with our Info address.

Training Services

Investing our time in you, so together we build better, more competitive product for your customer. As the industrial world becomes increasingly competitive, new technologies are introduced every year requiring manufacturers to constantly rationalize and update existing designs. As a result, successful manufacturers realize the absolute need for product training.

NIDEC-SHIMPO has a network of engineers that are factory trained and authorized to provide your workforce solid training on our products and basic power transmission concepts. The main objective of our standard program and materials is to better empower your workforce to size and select gear reducers and motors for any motion control applications. We provide this service at no cost to our customers, because we see the value in building a more knowledgeable customer and helping them more quickly react to equipment design revisions when needed.

Some other gear reducer manufacturers are not as forthcoming with sharing information with their customers, an attempt to hide their higher manufacturing costs or to use unreleased performance data as a "product differentiator". NIDEC-SHIMPO views their customers as a long-term partnership, and we train and share information with our customers freely based on that vision.

Training classes can be conducted online, at any of our sales branches or offices, or at key distributor branches when requested. NIDEC-SHIMPO can also bring the training session to your facility in order to make better use of your time and costs. A thorough hands-on training seminar can be provided at our Itasca, IL build facility, where customers can get the opportunity to completely assemble and test one of our Able units.

The NIDEC-SHIMPO training program options provide support for any budget. Our training programs improve your employees' skill and knowledge competencies in the areas of power transmission and motion control while addressing any location, time, travel and productivity constraints. Contact your local sales office today in order to get a power transmission refresher on your calendar.



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Toll-free: (800) 842-1479

Email: info@shimpodrives.com

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The Able Series 5-Year Warranty

1. **STANDARD WARRANTY.** With the exception of shaft seals, which is a normal wear item, Seller warrants that the products manufactured by the Seller to be free from defects in materials and workmanship under normal use and proper maintenance for:

RXC sizes 02 – 90 (excluding electrical products)	2-years
RXC sizes 91 – 98 (excluding electrical products)	1-year
Circulute® Reducers.....	2-years
Electrical Products	1-year
Able Reducers	5-years

- a. If within such period any product shall be proved to the Seller's reasonable satisfaction to be defective, such product shall be repaired or replaced at our option. The Seller's obligation and Buyer's exclusive remedy will be limited to such repair or replacement and shall be conditioned upon the Seller receiving written notice of any alleged defect no later than thirty (30) days after its discovery within the warranty period.
- b. Shipping terms for any repaired or replaced product will be FOB shipping point unless negotiated otherwise. If necessary, Seller reserves the right to inspect the product claimed to be defective at Buyer's location or place of installation. Travel time and expenses for any Seller service personnel provided to Buyer's premises to affect such repair or replacement will be at the Buyer's expense. Seller reserves the right to satisfy our warranty obligation in full by reimbursing the Buyer for all payments made to Seller and Buyer shall thereupon return the product to Seller.
- c. These warranties shall not be effective if the product has been subject to overload, misuse, negligence, or accident, or if the product has been repaired or altered outside of Seller's factory or authorized control in any respect which, in our judgment, adversely affects its condition or operation. Buyer shall establish, to our satisfaction, that the product has at all times, been properly assembled, installed, serviced, maintained, tested, operated and used in accordance with the current maintenance and operating instructions of Seller and has not been altered or modified in any manner without our prior written consent.
- d. The Seller's warranty obligation shall not be effective for components or products hereunder where the product 1) is consumed by normal wear and tear, 2) is consumed by an application that was above the rated capacity, and 3) has a normal life that is fundamentally shorter in the length of time than the standard warranty as outlined, hereunder.
- e. No extended warranty will be offered on wear items unless otherwise agreed to in writing by NIDEC-SHIMPO management at the time of the sale.
- f. Descriptions or representations of the products provided by the Seller's employees, sales representatives, and distributors, regardless written or verbal, should not be construed as an expressed or implied warranty that would supersede any element of this standard warranty. Expressed or implied warranties are acceptable but only on a case-by-case basis as determined necessary by the Seller. A separate expressed or implied warranty must be provided in writing and confirmed by NIDEC-SHIMPO management in order to be valid at the time of sale.
- g. THE STANDARD WARRANTY AS DESCRIBED HEREIN SHALL BE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED RELATED TO THE SELLER'S PRODUCTS, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, AND SHALL BE IN LIEU OF ANY OBLIGATIONS OR LIABILITY ON THE SELLER'S BEHALF.



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Standard Terms and Conditions

STANDARD TERMS AND CONDITIONS

- 1. SHIPPING AND PAYMENT TERMS.** Unless otherwise specified, shipping terms are FOB shipping point, and payment terms are net 30 days. All payments are to be made in United States funds.
- 2. TAXES AND SECURITY INTEREST.** Unless otherwise specified, the prices stated do not include any taxes which may now or hereafter be applicable to the products or performance of any services by Seller. Buyer agrees to pay or reimburse Seller for any such required taxes and all connected penalties and interests, or in lieu thereof, Buyer shall provide Seller with tax exemption documents acceptable to the taxing authorities involved. Buyer, by acceptance of the goods ordered, represents and warrants that Buyer is solvent and able to pay for the goods in accordance with the terms of sale. As security for payment of the purchase price for the products and all other amounts due from the Buyer under these Terms, Buyer hereby grants Seller a security interest in the products and agrees to execute and permit Seller to file and record all documents which may be requested by Seller in order to create, perfect, evidence and establish the foregoing security interest. If Buyer fails to pay any amount when due, or, prior to payment of all amounts due, removes all or any part of the products from Buyer's premises, we shall exercise any or all of the rights and remedies given to secured parties under the UCC of the State of Illinois, and under similar laws of any other state, if applicable.
- 3. RETURN GOODS.** No product will be accepted for return unless authorized with appropriate returned goods number assigned. In all cases, freight charges must be prepaid. Buyer will be responsible for any damages incurred in transit to goods being returned. Title shall pass to Seller upon Seller's acceptance of return goods.
- 4. CANCELLATION.** Terms, once accepted and approved by Seller, shall not be canceled or altered by Buyer, and Buyer shall not otherwise cause the work or shipment to be delayed, except with the consent of and upon the terms and conditions approved by Seller in writing. Orders canceled or suspended with our consent are subject to cancellation and/ or other charges as determined by Seller.
- 5. DELAY IN DELIVERIES.** In no event shall Seller be liable for nondelivery or delays in delivery of products, or in the performance of any other obligations, arising directly or indirectly from acts of God, acts (including delay or failure to act) of any governmental authority (de jure or de facto), war (declared or undeclared), riot, fires, floods, weather, labor disputes, sabotage, epidemics, factory shutdowns or alterations, embargoes, delays, shortages or inability to procure transportation, labor, manufacturing facilities or materials, failure to obtain timely instructions or information from Buyer, or inability due to causes of any other kind beyond our control. The foregoing provisions shall apply even though such cause may occur after performance of our obligations has been delayed for other causes.
- 6. INDEMNIFICATION.** Buyer shall notify Seller promptly in writing and in all events within ten (10) days after its occurrence, of any accident or malfunction involving the products which results in injury to or death of any persons, property damage or economic loss of any kind, and Buyer shall cooperate fully with Seller in investigating and determining the cause of any such accident or malfunction. Buyer further agrees to indemnify and hold Seller harmless from and against all claims and damages imposed upon Seller or incurred arising, directly or indirectly, from Buyer's failure to perform or satisfy any of the Terms described herein.
- 7. GENERAL PROVISIONS.** These Terms shall be governed, construed and enforced in accordance with the laws of the State of Illinois, and shall be binding upon and inure to the benefit of any successors, assigns, and legal Distributors of Seller and Buyer. The Terms are not assignable without Seller's prior written approval. A judicial or administrative declaration in any jurisdiction of the invalidity of any one or more of the provisions of the Terms in any jurisdiction, nor shall such declaration have any effect on the validity of interpretation of the Terms outside that jurisdiction.

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8. **MINIMUM ORDER CHARGE.** The minimum charge on an order will be \$60.00.
9. **BOXING ORDER CHARGE.** No charge is made for standard boxing or crating required by transportation companies for domestic shipments. Cost of special boxing, export boxing, cartage to steamer or transfer expenses will be added to the invoice unless charges are shown to be included in the prices.

Any and all Terms are subject to change prior to Buyer's acceptance of these Terms.

PROPERTY AND PATENT RIGHTS

1. Seller retains for itself any and all property rights, including but not limited to all patent, copyright, and trade secret rights, to any software materials and to all designs, engineering details, documentation, and other data pertaining to any product designed in connection herewith and to all right of discovery, invention or patent rights arising out of the work done in connection herewith. Buyer expressly agrees that it will not assert any property rights herein, except the right for itself and subsequent owners to use the product.
2. Buyer acknowledges that any software materials constitute valuable trade secrets of Seller and are unpublished works on which Seller holds the sole and exclusive copyright. Buyer agrees to maintain and protect the confidentiality of these trade secrets and agrees not to disclose them or use them for any purpose not contemplated by this Agreement. Buyer agrees to formulate and adopt appropriate safeguards in light of its own operating activities, to insure protection of the confidentiality of these trade secrets. Buyer shall immediately notify Seller of any information which comes to its attention which indicates that there has been any loss of confidentiality of Seller trade secret information.

SUBMISSION AND ACCEPTANCE OF ORDERS

1. All orders and contracts are subject to acceptance or rejection by an officer of Seller or any individual authorized by Seller in writing, at the main offices of Seller, which approval or rejection shall in all cases be in writing to the Buyer, and no order or contract shall be binding until so accepted. Seller reserves the right to refuse any business originating in the Territory of the Buyer, for any reason which in the considered judgment of Seller is sufficient grounds for refusal.
2. On orders and contracts of a deferred-payment nature, all such payment and credit extensions are subject to final review and approval by Seller. Seller may accept such orders or contracts, withhold shipment after initial acceptance if for any reason the Buyer's credit has become impaired.

SHIPMENTS AND SHIPPING INFORMATION

1. All shipments, from whatever source, shall be contingent upon prior approval of the order or contract by Seller, and after such prior approval, upon the effect of strikes, accidents, embargoes, priorities, or any cause natural or otherwise, beyond the control of this Seller. Seller, in effect, assumes no liability hereunder for its failure to make shipment on any order or contract.
2. All Products are prepared by Seller for North American land shipment only under this Agreement. Any special preparations, for water shipment or foreign trade outside of the North Americas, must be arranged for as a special consideration.

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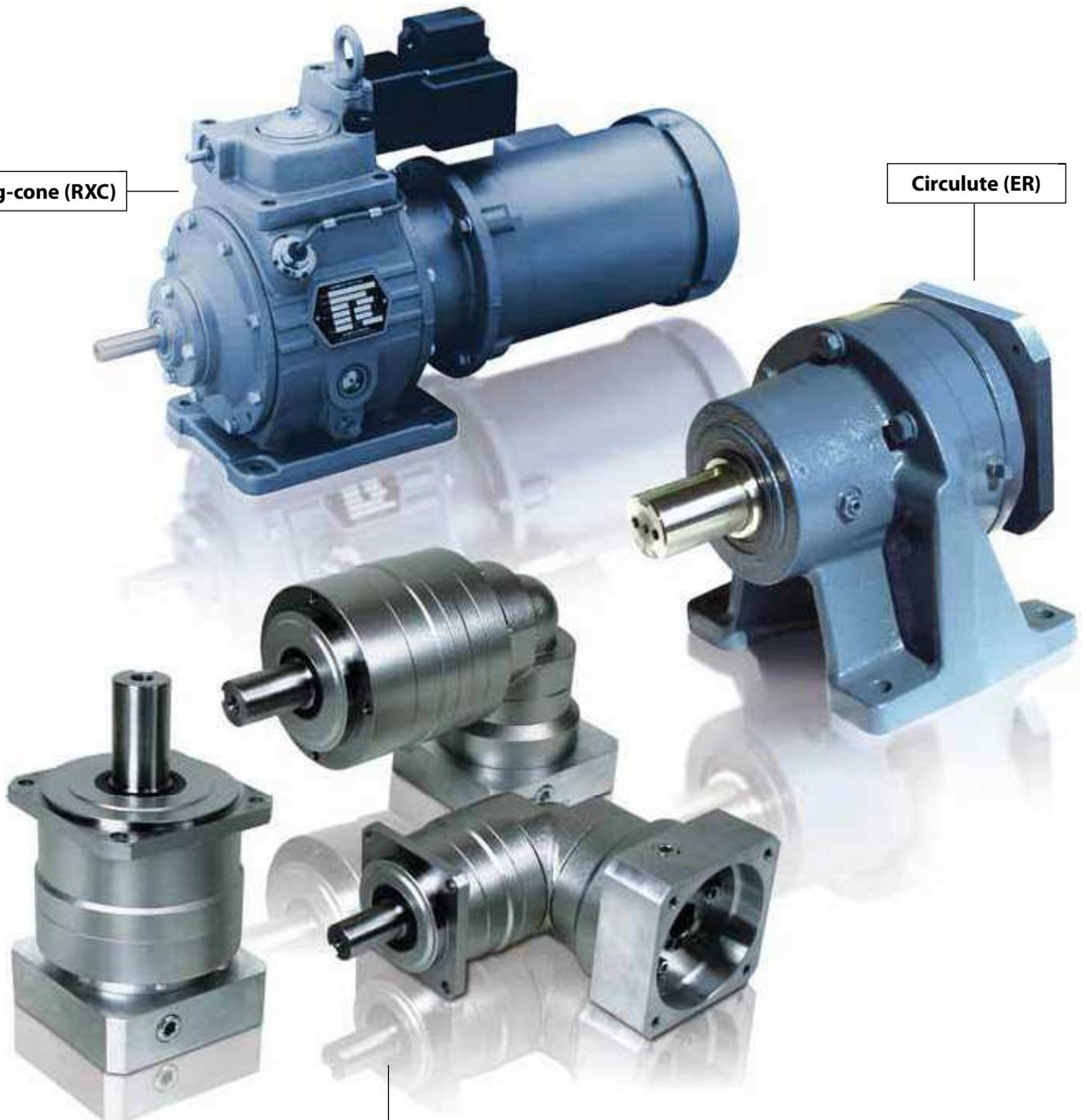
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Product Categories

NIDEC-SHIMPO has segmented our products into three separate product categories in order to better align our product development, sales efforts, and marketing activities with the needs of our customers. Our high-precision ABLE gear reducers have a separate sales and distribution channel from our traditional power transmission product categories such as our Circulate (ER) and Ring-Cone (RXC) series. This catalog focuses mainly on our high-precision products, and not as much on our traditional power transmission products more often applied in heavy industrial applications. The next few pages will provide a general overview of these traditional power transmission products that are also very dependable and valuable solutions for our customers.

Ring-cone (RXC)

Circulate (ER)



High Precision Gear Reducers

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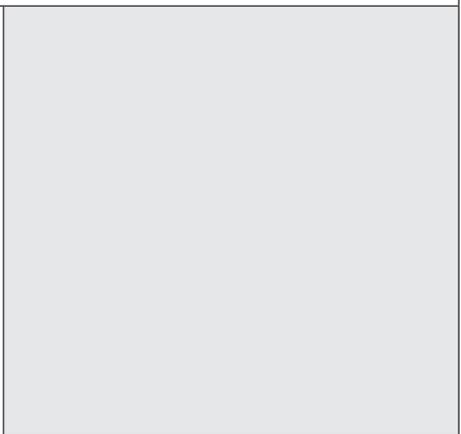
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High Precision Gear Reducers

		
<p>ABLE Inline Series</p>	<p>ABLE Right Angle Series</p>	<p>ABLE with Rotary Stage</p>

Traditional Power Transmission

Mechanical Adjustable Speed Drives

		
<p>Standard Ring-cone</p>	<p>Ring-cone Motor Assembly</p>	

Industrial Duty Speed Reducers

		
<p>Circulute Cycloidal Reducer</p>	<p>Circulute with Servo Input</p>	<p>Circulute Pulley Style</p>

Please contact NIDEC-SHIMPO for more detailed information about any of our products that are not adequately covered within this catalog.

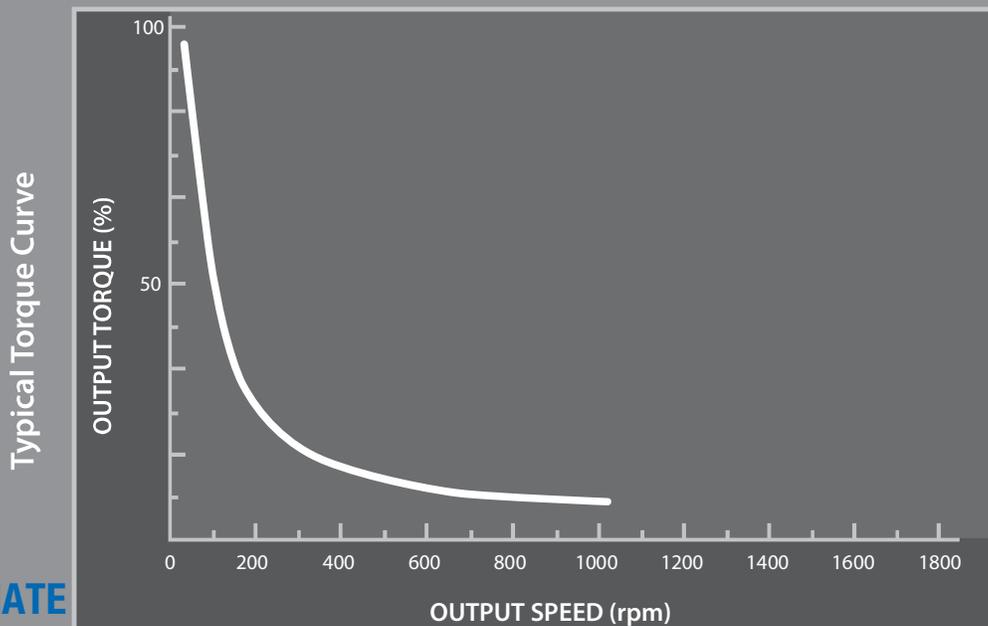
Mechanical Adjustable Speed Drives

RXC Traction Drives, Mechanical Advantage

The SHIMPO RXC drive has a strong advantage over a common electronic variable speed drive. With an electronic drive, the output torque remains constant from base speed down to the lower limit, whatever it may be. As shown in the graph below, an RXC drive's output torque increases as the speed drops. This allows the user to set a low speed that can help the drive push through difficult areas.



Featuring an all metal power train and optional advanced electronic control capabilities...



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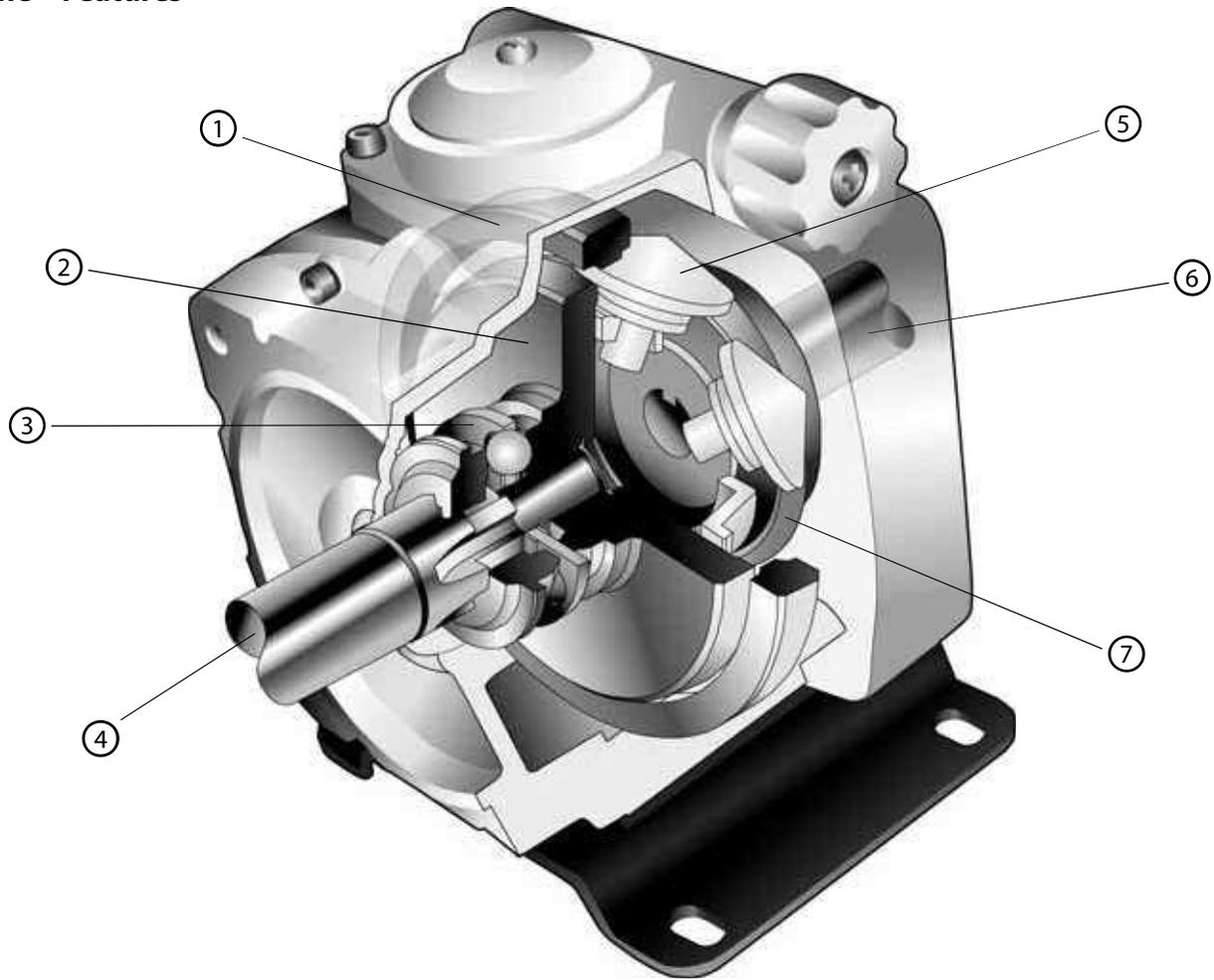
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Ring-cone – Features



- ① Control ring
- ② Cam disc
- ③ Pressure control cam
- ④ Output shaft
- ⑤ Planetary cone
- ⑥ Input shaft
- ⑦ Input disc

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Industrial Duty Speed Reducers

Circulate 3000, Precision Backlash

The Circulate 3000 Speed Reducer delivers the features today's industry needs. High reduction ratios, without sacrificing efficiency. Compact designs, without requiring special motors. Exceptional shock load capacity, without having to oversize. Greater overhung load capacities, without using expensive special components. A precision backlash option, without resorting to special gearing. All of this, while requiring minimal maintenance.



The ideal reducer for both induction and servo motor applications...

Optional Mounting Base Matches Industry-Standard Dimensions...

High Efficiency Cycloidal Reducer Design

- Single stage reduction ratios up to 71:1 saves space
- Rolling motion minimizes friction and wear, reducing heat, and results in a 95% efficiency rating, per stage
- 500% shock load capability as there are primarily compressive forces rather than shear forces on the tooth
- Low speed of cycloidal wheel results in minimal reflected inertia, less wear, and extremely long service life
- Due to the large overall "tooth / pin" contact area, select a Circulate Reducer using smaller mechanical service factors

Two Backlash Ratings

- Standard backlash offers the highest available torque rating at an economical price
- Low backlash results in tighter positional tolerances

Multiple Inputs: NEMA C-Face, Servo Square Flange, Shaft Input, Shovel Base, Top Mount

- Versatility to fit whatever prime mover is needed for the application
- NEMA and Servo input flanges are compact "quill-style" hollow-bore configuration, eliminating input couplings and guards
- Quill-style input features an input support bearing to control fretting corrosion between motor shaft and reducer hub, and permit tighter internal tolerances
- NEMA input flange includes threaded back-off holes for easy motor removal

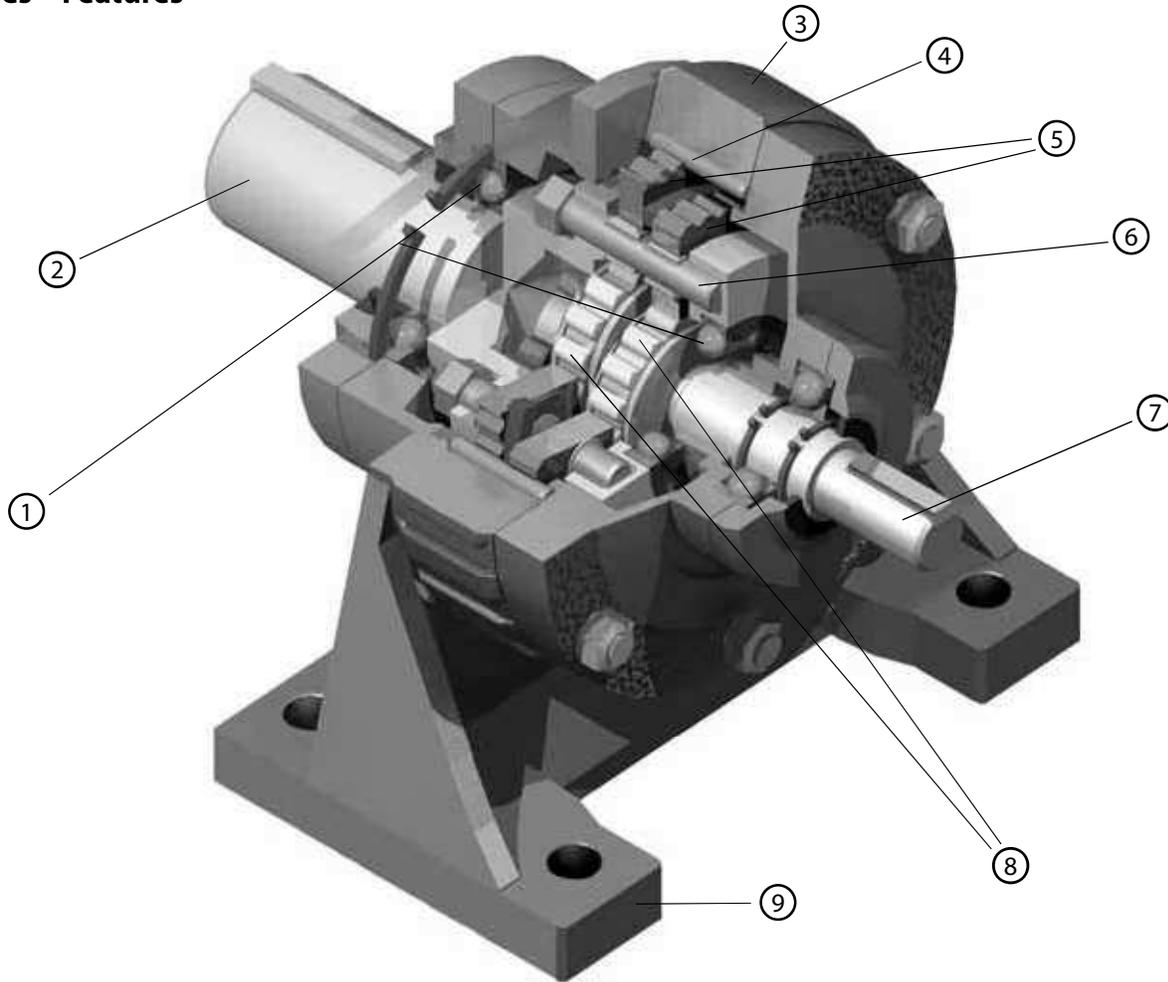
Straddle Mount Output Shaft Bearings sizes D, E, F)

- Supports output shaft and drive pins to provide exceptional overhung and thrust load capability, without the need for special bearings or housings

Multiple Mounting Options: Foot, Flange, Ring

- Versatility to fit anywhere on your machine
- Ring style allows output bearing to extend well within the machine for greatest overhung load rating

ER-Series – Features



- ① Output shaft bearings
- ② Output shaft
- ③ Internal pin housing
- ④ Internal pin
- ⑤ Wheels
- ⑥ Carrier pins
- ⑦ Input shaft
- ⑧ Eccentric roller bearings
- ⑨ Mounting housing

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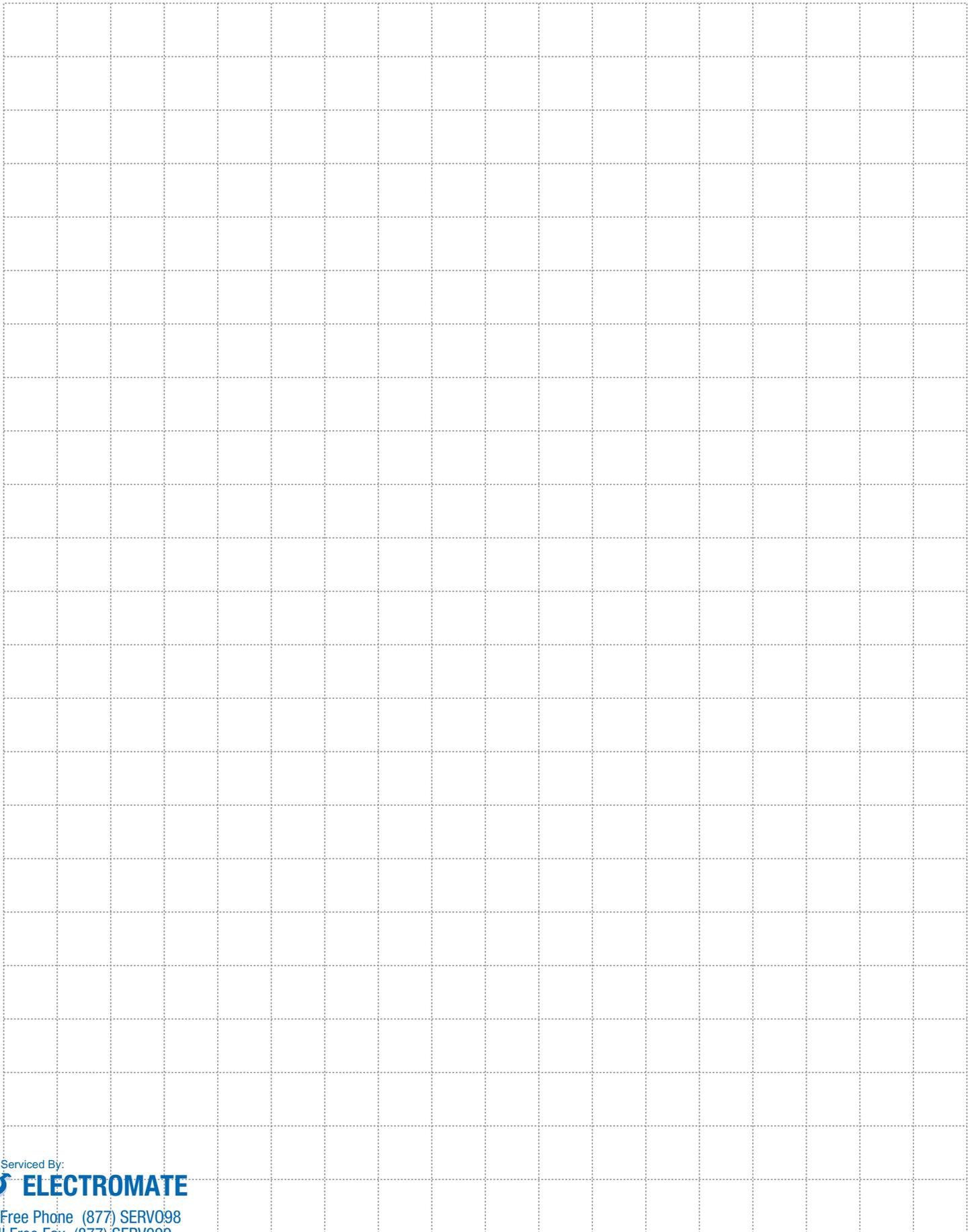
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Graph Template



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