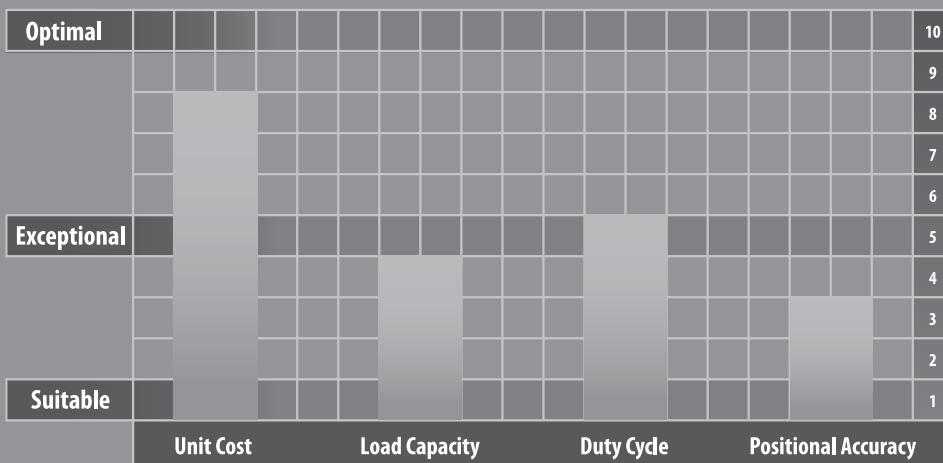


NEV-SERIES

The NEV right-angle series is the ideal gearbox for simpler one-directional servo motor applications where space and cost take precedence. The performance and efficiency of the NEV outperforms worm or helical gear options, so many machine builders strongly consider this series, instead of settling for their old default right-angle gearbox. Many times, our OEM customers are upgrading from an induction motor and a helical or worm assembly because their customer is requiring increased throughput and control. In this type of sensitive situation, the NEV is a very price competitive option to help keep the OEMs equipment costs in check and meet the improved functionality required.

The NEV has a lightweight aluminum frame with either a hollow or solid shaft configuration at the output. The series can handle motors ranging between 50w to 3.5 kW, and it achieves nominal output torque ratings ranging between 6 Nm to 90 Nm. The different NEV frame sizes are available in ratios between 5:1 and 105:1, and the gearbox can be provided in special coatings, lubrication, and materials of construction that make it ideal for applications in direct food-grade exposure or heavy washdown intensive environments.





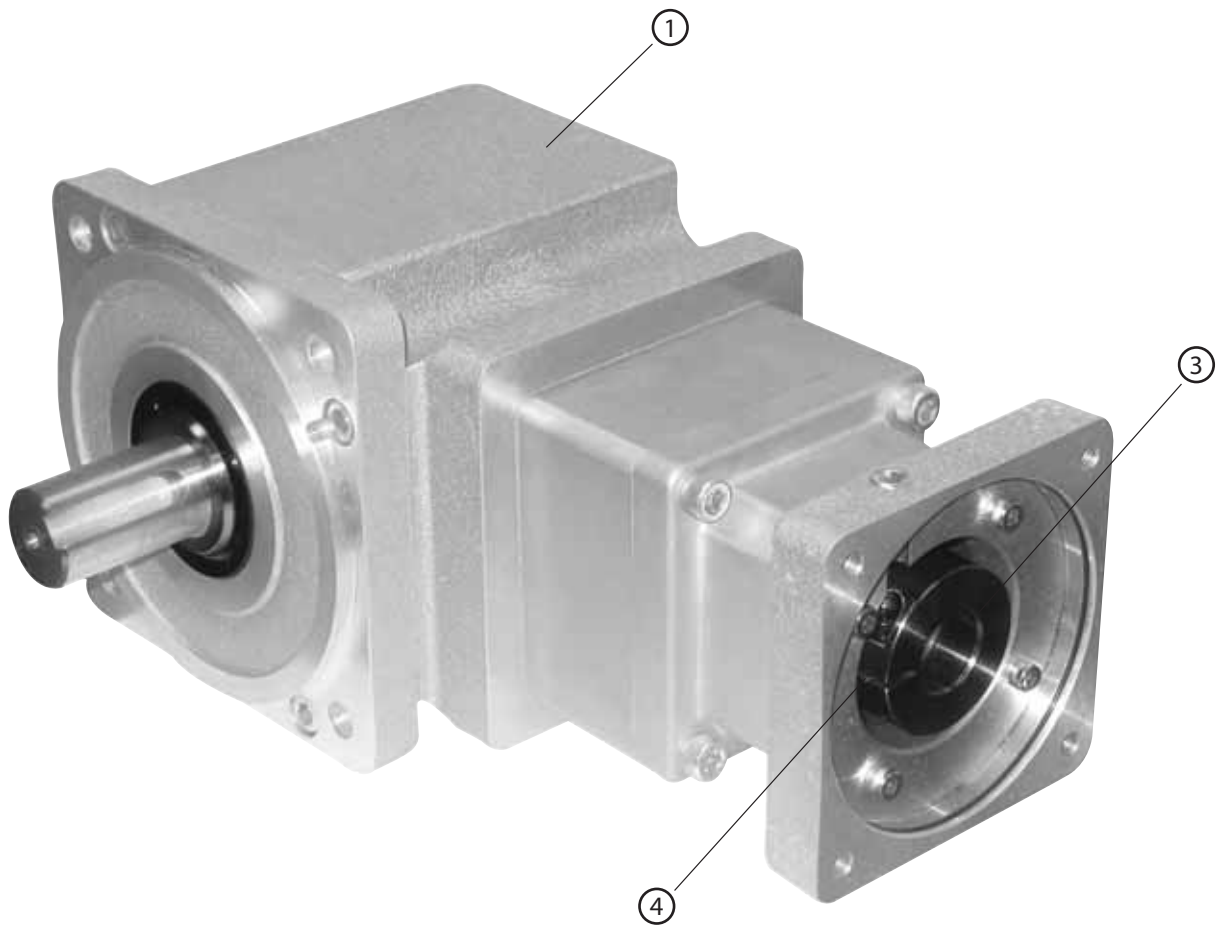
NEW

NEV-SERIES

- Hollow bore output option, provides a very compact footprint and cost-effective right-angle solution
- Quiet operation: Helical cut gears contribute to reduced vibration and noise
- High rigidity & torque: Rigidity and torque capacity are achieved by using uncaged needle roller bearings
- Extremely light weight aluminum body to reduce excess weight from your equipment
- Maintenance-free: No need to replace the grease for the life of the unit. The gearbox can be positioned in any orientation

NEV-SERIES Right-angle shaft

NEV-Series – Features



- ① This space saving Right-angle gearbox 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 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; and the high viscosity, anti-separation grease does not liquefy or migrate away from the gears

NEV-Series – Model Code

NEV		F																		
Model	Input		Frame	Ratio	Motor Attachment	Bushings			Modifications											
									1	2	3	(See Notes Below)								

Model

Ordering Code

NEV	Right Angle
-----	-------------

Input

Ordering Code

A	Adaptor Flange
S	Dedicated w/ clamp hub

Frame Size

Ordering Code

B	B Frame
C	C Frame
D	D Frame
E	E Frame

Ordering Code

NEVAF/NEVSF

05	Double Reduction	5:1
09		9:1
15		15:1
27		27:1
45	Triple Reduction	45:1
75		75:1
1H		105:1

Motor Attachment

(Bolt Circle of motor in mm)

Ordering Code

044	43.80 (NEMA 17)
045	45
046	46
060	60
063	63
067	66.68 (NEMA 23)
070	70
075	75
090	90
095	95
098	98.43 (NEMA 34)
100	100
115	115
126	125.73 (NEMA 42)
130	130
145	145
149	149.23 (NEMA 56)
165	165
200	200

Bushing

Ordering Code

0000	No Bushing Required OD (mm) ID (mm)	
00__	Non-catalog edicated bore in mm- specify	
0801	8	6
0802	8	6.350
0803	8	5
1401	14	6
1402	14	8
1403	14	11
1404	14	6.350
1405	14	9.525
1406	14	12.700
1407	14	12
1408	14	10
1409	14	9
1410	14	5
1901	19	11
1902	19	14
1903	19	16
1904	19	9.525
1905	19	12.700
1906	19	15.875
1907	19	12
1908	19	10
1909	19	9
1910	19	8
2401	24	14
2402	24	16
2403	24	19
2404	24	12.700
2405	24	15.875
2406	24	22
2407	24	19.050
2408	24	11

Modifications/Motor

Attachment Threaded Hole

Ordering Code

000	Standard
5	Keyless output shaft
6	NEVAF - solid output shaft
7	NEVAF - hollow output shaft
I	IP65 - no paint - standard grease
F	Food grade grease - no paint - IP65
G	Food grade grease - Steel-It paint - IP65
S	Steel-It paint - standard grease - IP65
W	White epoxy paint - standard grease - IP65
X	Food grade grease - white epoxy paint - IP65
T	Re-tap motor attachment flange one size larger
H	Through hole on motor attachment flange
L	Larger through hole on motor attachment flange
B	Pilot diameter reduced
R	Deeper motor attachment flange/add spacer plate
A_	Specify

Adaptor Flange

Re-Threaded Hole

(with T Code)

Standard	T
M3	M4
M4	M5
M5	M6
M6	M8
M8	M10
M10	M12

Options & Modifications Available

- Custom motor attachment dimensions
- Food grade grease (needed when unit is placed above a food line)
- Stainless steel output shaft
- Custom ratios
- Custom outputs
- Output shaft drilled and tapped

Notes on "Modifications" Section of Code:

- 1) Feature 5, 6, or 7 would be entered in Box1 of the section of code.
- 2) Feature B or R would be entered in Box3 of the code.
- 3) Enter additional features in Box1, 2, 3 if available, organize in either numeric or alphabetical order.
- 4) If Box that is not utilized, enter a 0 fill the Boxes within the Modifications section.

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NEW

NEV B-Frame – 2-Stage Specifications

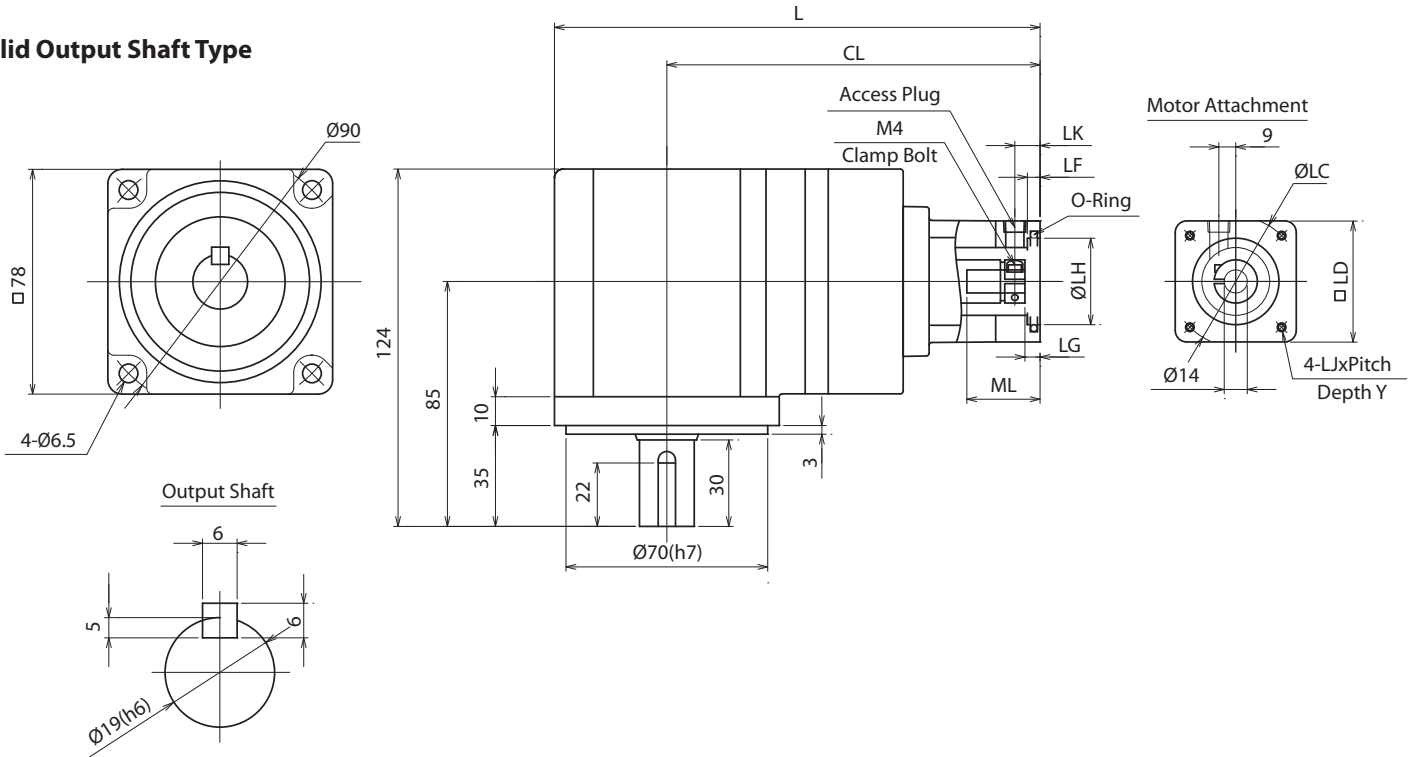
Frame Size	B (78mm)					
Stage	2-Stage					
Ratio	Units	Note	5	9	15	27
Nominal Output Torque	[Nm]	--	6	6	10	10
Maximum Acceleration Torque	[Nm]	--	20	20	30	30
Emergency Stop Torque	[Nm]	--	35	40	50	50
Nominal Input Speed	[rpm]	--	3000			
Maximum Input Speed	[rpm]	--	6000			
No Load Running Torque	[Nm]	--	0.18			
Permitted Radial Load	[N]	--	1000	1200	1500	1800
Permitted Axial Load	[N]	--	500	600	750	900
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	--	--	--	--
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.275	0.110	0.059	0.146
Efficiency	[%]	--	85			
Torsional Rigidity	[Nm/arcmin]	--	0.4			
Maximum Torsional Backlash	[Arc-min]	--	≤ 30			
Noise Level	[dB]	--	≤ 73			
Protection Class	--	--	IP65			
Ambient Temperature	[°C]	--	0-40			
Permitted Housing Temperature	[°C]	--	90			
Weight (Solid Output Shaft)	[kg]	--	3.8			
Weight (Hollow Output Shaft)	[kg]	--	3.6			

NEV B-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

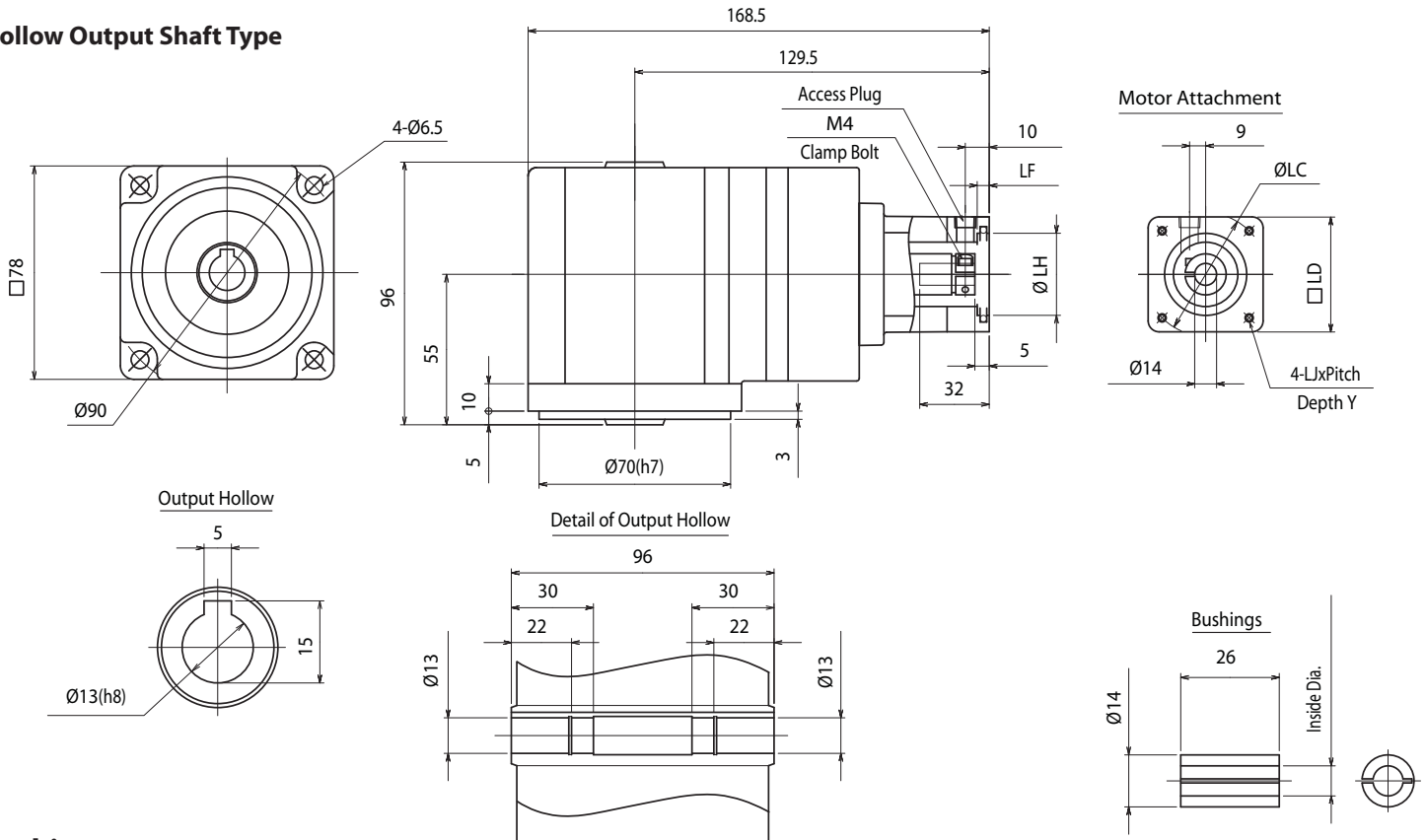
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
B1	mm	45	30	42	M3x0.5	8	168.5	129.5	10	6	5	32
	in	1.772	1.181	1.65	--	0.31	6.634	5.098	0.39	0.24	0.20	1.26
B2	mm	46	30	42	M4X0.7	10	168.5	129.5	10	6	5	32
	in	1.811	1.181	1.65	--	0.39	6.634	5.098	0.39	0.24	0.20	1.26
B8	mm	46	30	42	M4X0.7	10	171.5	132.5	13	6	8	35
	in	1.811	1.181	1.65	--	0.39	6.752	5.217	0.51	0.24	0.31	1.38
B4	mm	60	50	60	M4X0.7	10	168.5	129.5	10	4	5	32
	in	2.362	1.969	2.36	--	0.39	6.634	5.098	0.39	0.16	0.20	1.26
B4	mm	70	50	60	M4X0.7	10	168.5	129.5	10	4	5	32
	in	2.756	1.969	2.36	--	0.39	6.634	5.098	0.39	0.16	0.20	1.26
B9	mm	70	50	60	M5X0.8	20	173.5	134.5	15	9	10	37
	in	2.756	1.969	2.36	--	0.79	6.831	5.295	0.59	0.35	0.39	1.46
B5	mm	66.68	38.100	58	M4X0.7	10	168.5	129.5	10	4	5	32
(NEMA23)	in	2.625	1.500	2.28	--	0.39	6.634	5.098	0.39	0.16	0.20	1.26
B5+Spacer	mm	66.68	38.100	60	M5X0.8	--	176.5	137.5	18	3	13	40
(NEMA23)	in	2.625	1.500	2.36	--	--	6.949	5.413	0.71	0.12	0.51	1.57
B6	mm	90	70	80	M5X0.8	12	168.5	129.5	10	4	5	32
	in	3.543	2.756	3.15	--	0.47	6.634	5.098	0.39	0.16	0.20	1.26
B7	mm	43.80	22	42	2-3.3 dia.	--	170.5	131.5	12	4	7	34
(NEMA17)	in	1.724	0.866	1.65	2-0.13 dia.	--	6.713	5.177	0.47	0.16	0.28	1.34
B10	mm	63	40	58	M4X0.7	10	168.5	129.5	10	4	5	32
	in	2.480	1.575	2.28	--	0.39	6.634	5.098	0.39	0.16	0.20	1.26

NEV B-Frame (78mm) 2-Stage Dimensions – Ratios: 5:1, 9:1, 15:1, 27:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410
Inside	6	8	11	6.350	9.525	12.700	12	10	9	9
Diameter	0.236	0.315	0.433	0.250	0.375	0.500	0.472	0.394	0.354	0.197

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NEW

NEV B-Frame – 3-Stage Specifications

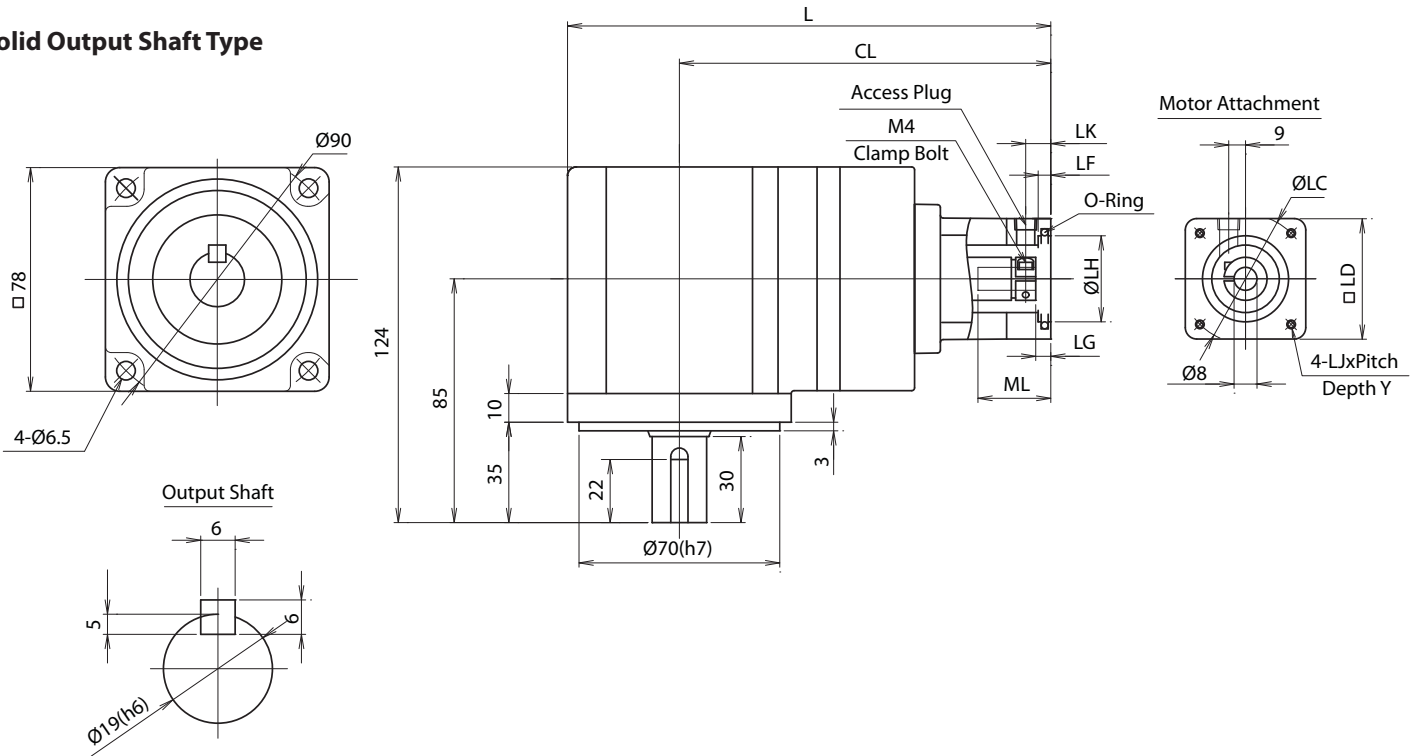
Frame Size	B (78mm)				
Stage	3-Stage				
Ratio	Units	Note	45	75	105
Nominal Output Torque	[Nm]	--	10	15	15
Maximum Acceleration Torque	[Nm]	--	30	30	30
Emergency Stop Torque	[Nm]	--	50	50	50
Nominal Input Speed	[rpm]	--	3000		
Maximum Input Speed	[rpm]	--	6000		
No Load Running Torque	[Nm]	--	0.109		
Permitted Radial Load	[N]	--	1800	1800	1800
Permitted Axial Load	[N]	--	900	900	900
Moment of Inertia ($\leq \emptyset 8$)	[kgcm ²]	--	0.091	0.083	0.078
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	--	--	--
Efficiency	[%]	--	80		
Torsional Rigidity	[Nm/arcmin]	--	0.4		
Maximum Torsional Backlash	[Arc-min]	--	≤ 30		
Noise Level	[dB]	--	≤ 63		
Protection Class	--	--	IP65		
Ambient Temperature	[°C]	--	0-40		
Permitted Housing Temperature	[°C]	--	90		
Weight (Solid Output Shaft)	[kg]	--	3.9		
Weight (Hollow Output Shaft)	[kg]	--	3.7		

NEV B-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

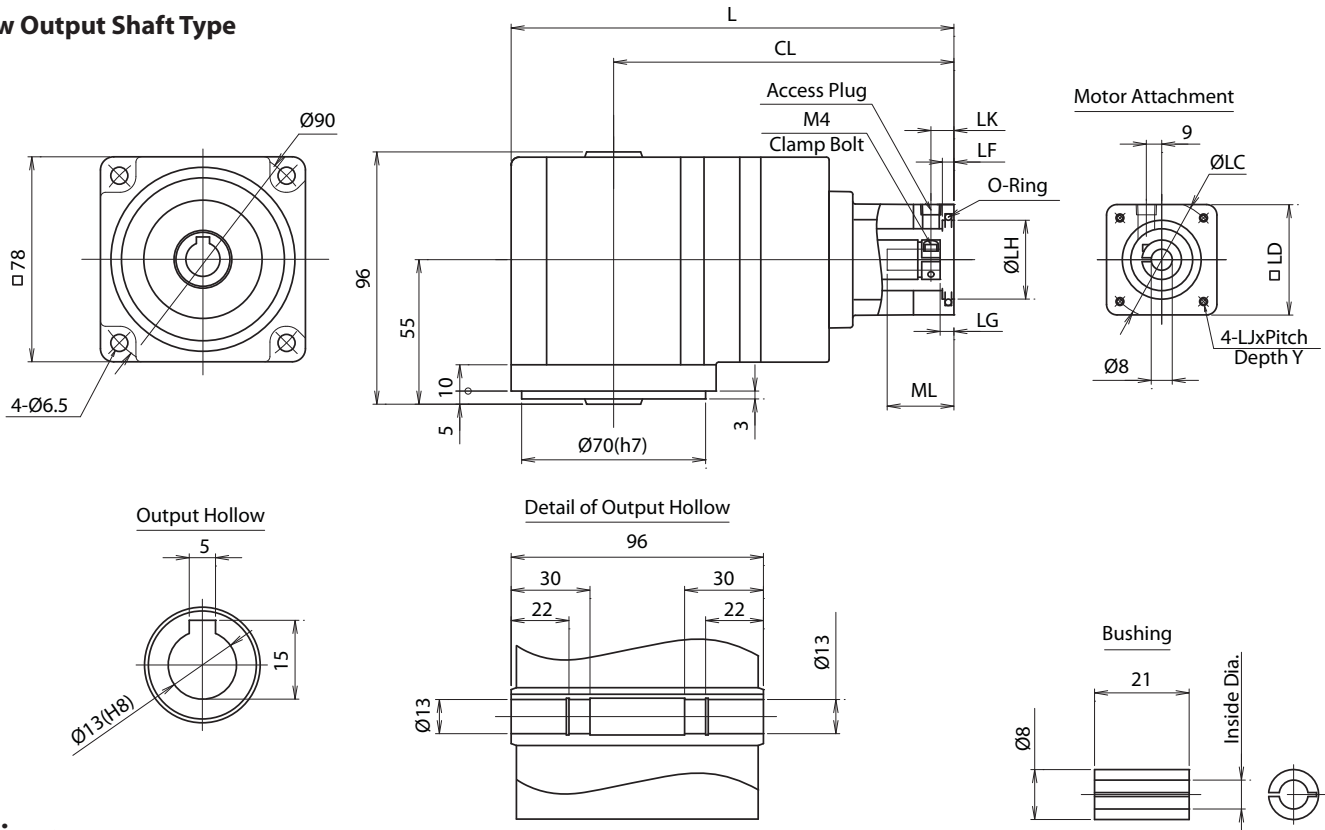
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
B1	mm	45	30	42	M3x0.5	8	174	135	10	6	5	32
	in	1.772	1.181	1.65	--	0.31	6.850	5.315	0.39	0.24	0.20	1.26
B2	mm	46	30	42	M4X0.7	10	174	135	10	6	5	32
	in	1.811	1.181	1.65	--	0.39	6.850	5.315	0.39	0.24	0.20	1.26
B8	mm	46	30	42	M4X0.7	10	177	138	13	6	8	35
	in	1.811	1.181	1.65	--	0.39	6.969	5.433	0.51	0.24	0.31	1.38
B4	mm	60	50	60	M4X0.7	10	174	135	10	4	5	32
	in	2.362	1.969	2.36	--	0.39	6.850	5.315	0.39	0.16	0.20	1.26
B4	mm	70	50	60	M4X0.7	10	174	135	10	4	5	32
	in	2.756	1.969	2.36	--	0.39	6.850	5.315	0.39	0.16	0.20	1.26
B9	mm	70	50	60	M5X0.8	20	179	140	15	9	10	37
	in	2.756	1.969	2.36	--	0.79	7.047	5.512	0.59	0.35	0.39	1.46
B5	mm	66.68	38.100	58	M4X0.7	10	174	135	10	4	5	32
(NEMA23)	in	2.625	1.500	2.28	--	0.39	6.850	5.315	0.39	0.16	0.20	1.26
B5+Spacer	mm	66.68	38.100	60	M5X0.8	12	182	143	18	3	13	40
(NEMA23)	in	2.625	1.500	2.36	--	0.47	7.165	5.630	0.71	0.12	0.51	1.57
B6	mm	90	70	80	M5X0.8	12	174	135	10	4	5	32
	in	3.543	2.756	3.15	--	0.47	6.850	5.315	0.39	0.16	0.20	1.26
B7	mm	43.80	22	42	2-3.3 dia.	--	176	137	12	4	7	34
(NEMA17)	in	1.724	0.866	1.65	2-0.13 dia.	--	6.929	5.394	0.47	0.16	0.28	1.34
B10	mm	63	40	58	M4X0.7	10	174	135	10	4	5	32
	in	2.480	1.575	2.28	--	0.39	6.850	5.315	0.39	0.16	0.20	1.26

NEV B-Frame (78mm) 3-Stage Dimensions – Ratios: 45:1, 75:1, 105:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	0801	0802	0803
Inside	6	6.350	5
Diameter	0.236	0.250	0.197

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NEV C-Frame – 2-Stage Specifications

Frame Size	C (90mm)					
Stage	2-Stage					
Ratio	Units	Note	5	9	15	27
Nominal Output Torque	[Nm]	--	15	20	20	30
Maximum Acceleration Torque	[Nm]	--	30	35	40	40
Emergency Stop Torque	[Nm]	--	50	50	60	75
Nominal Input Speed	[rpm]	--	3000			
Maximum Input Speed	[rpm]	--	6000			
No Load Running Torque	[Nm]	--	0.3			
Permitted Radial Load	[N]	--	1000	1500	1800	1800
Permitted Axial Load	[N]	--	500	750	900	900
Moment of Inertia (≤Ø14)	[kgcm ²]	--	--	--	--	--
Moment of Inertia (≤Ø19)	[kgcm ²]	--	0.806	0.744	0.415	0.585
Efficiency	[%]	--	85			
Torsional Rigidity	[Nm/arcmin]	--	1.0			
Maximum Torsional Backlash	[Arc-min]	--	≤ 30			
Noise Level	[dB]	--	≤ 73			
Protection Class	--	--	IP65			
Ambient Temperature	[°C]	--	0-40			
Permitted Housing Temperature	[°C]	--	90			
Weight (Solid Output Shaft)	[kg]	--	4.1			
Weight (Hollow Output Shaft)	[kg]	--	4.0			

NEV C-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

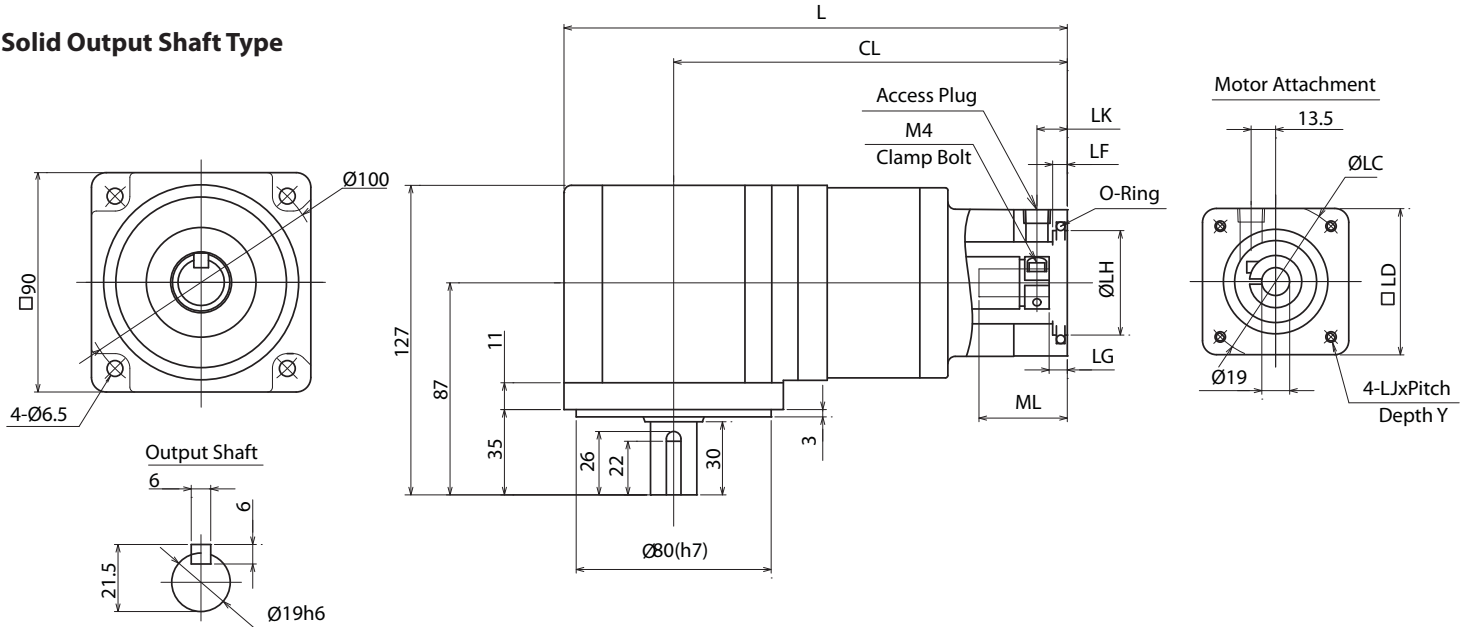
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
C1	mm	60	50	60	M4x0.7	10	206.5	161.5	11	4	5	42
	in	2.362	1.969	2.36	--	0.39	8.130	6.358	0.43	0.16	0.20	1.65
C1	mm	70	50	60	M4x0.7	10	206.5	161.5	11	4	5	42
	in	2.756	1.969	2.36	--	0.39	8.130	6.358	0.43	0.16	0.20	1.65
C7	mm	70	50	60	M5x0.8	12	210.5	165.5	15	6	9	46
	in	2.756	1.969	2.36	--	0.47	8.287	6.516	0.59	0.24	0.35	1.81
C2	mm	90	70	80	M5X0.8	12	206.5	161.5	11	4	5	42
	in	3.543	2.756	3.15	--	0.47	8.130	6.358	0.43	0.16	0.20	1.65
C8	mm	90	70	80	M6X1.0	21	211.5	166.5	16	9	10	47
	in	3.543	2.756	3.15	--	0.83	8.327	6.555	0.63	0.35	0.39	1.85
C3	mm	100	80	86	M6X1.0	16	206.5	161.5	11	4	5	42
	in	3.937	3.150	3.39	--	0.63	8.130	6.358	0.43	0.16	0.20	1.65
C4	mm	98.43	73.025	83	M5X0.8	12	206.5	161.5	11	4	5	42
(NEMA34)	in	3.875	2.875	3.27	--	0.47	8.130	6.358	0.43	0.16	0.20	1.65
C4+Spacer	mm	98.43	73.025	83	M5X0.8	12	214.5	169.5	19	3	13	50
(NEMA34)	in	3.875	2.875	3.27	--	0.47	8.445	6.673	0.75	0.12	0.51	1.97
C5	mm	75	60	67	M5X0.8	12	206.5	161.5	11	4	5	42
	in	2.953	2.362	2.64	--	0.47	8.130	6.358	0.43	0.16	0.20	1.65
C6	mm	115	95	100	M6X1.0	16	206.5	161.5	11	4	5	42
	in	4.528	3.740	3.94	--	0.63	8.130	6.358	0.43	0.16	0.20	1.65
C9	mm	66.68	38.100	60	M4x0.7	10	206.5	161.5	11	4	5	42
(NEMA23)	in	2.625	1.500	2.36	--	0.39	8.130	6.358	0.43	0.16	0.20	1.65
C14	mm	66.68	38.100	60	M5x0.8	--	214.5	169.5	18	11	13	50
	in	2.625	1.500	2.36	--	--	8.445	6.673	0.71	0.43	0.51	1.97

NEV C-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

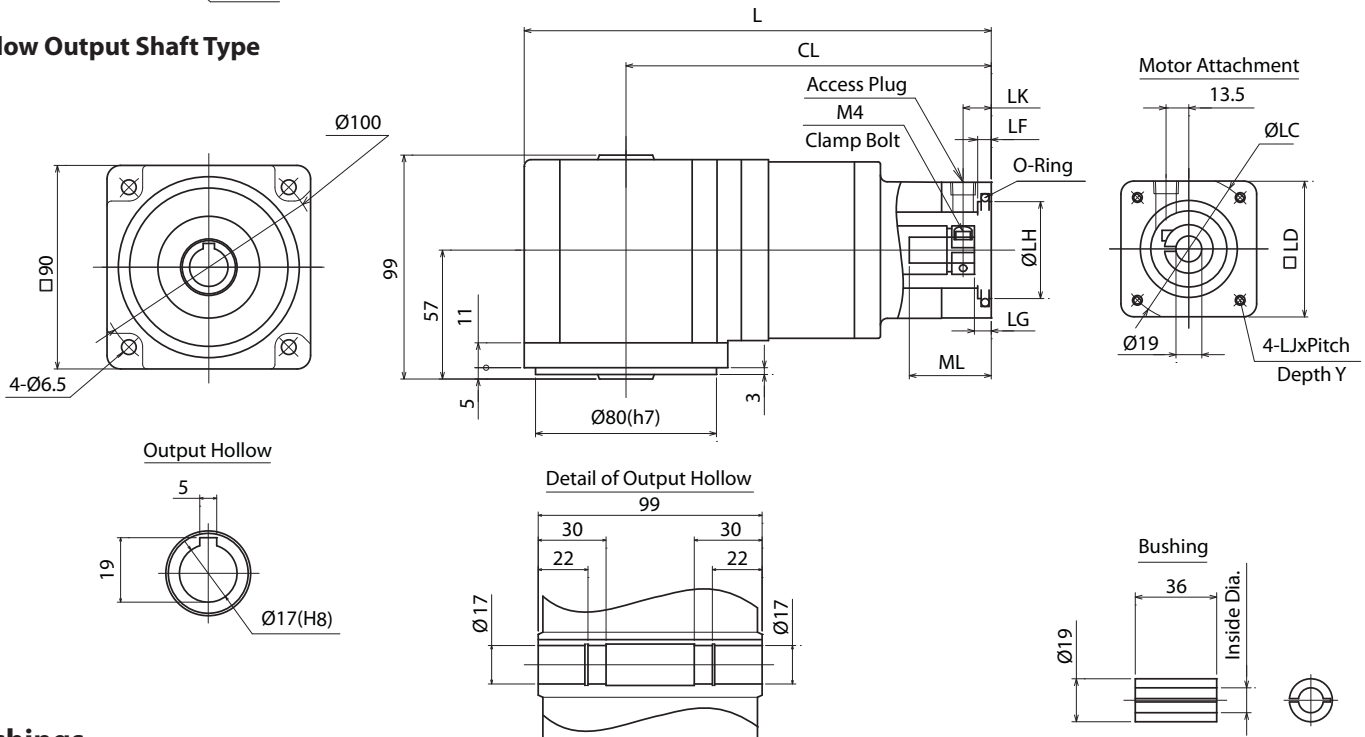
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
C10	mm	63	40	60	M4x0.7	10	206.5	161.5	11	4	5	42
	in	2.480	1.575	2.36	--	0.39	8.130	6.358	0.43	0.16	0.20	1.65
C11	mm	95	80	86	M6x1.0	--	206.5	161.5	11	4	5	42
	in	3.740	3.150	3.39	--	--	8.130	6.358	0.43	0.16	0.20	1.65

NEV C-Frame (90mm) 2-Stage Dimensions – Ratios: 5:1, 9:1, 15:1, 27:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1901	1902	1903	1904	1905	1906	1907	1908	1909
Inside	11	14	16	9.525	12.700	15.875	12	10	9
Diameter	0.433	0.551	0.630	0.375	0.500	0.625	0.472	0.394	0.354

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NEW

NEV C-Frame – 3-Stage Specifications

Frame Size	C (90mm)				
Stage	3-Stage				
Ratio	Units	Note	45	75	105
Nominal Output Torque	[Nm]	--	30	30	30
Maximum Acceleration Torque	[Nm]	--	40	40	40
Emergency Stop Torque	[Nm]	--	75	75	75
Nominal Input Speed	[rpm]	--	3000		
Maximum Input Speed	[rpm]	--	6000		
No Load Running Torque	[Nm]	--	0.205		
Permitted Radial Load	[N]	--	1800	1800	1800
Permitted Axial Load	[N]	--	900	900	900
Moment of Inertia (≤Ø14)	[kgcm ²]	--	0.794	0.690	0.590
Moment of Inertia (≤ Ø19)	[kgcm ²]	--	--	--	--
Efficiency	[%]	--	80		
Torsional Rigidity	[Nm/arcmin]	--	1.0		
Maximum Torsional Backlash	[Arc-min]	--	≤ 30		
Noise Level	[dB]	--	≤ 63		
Protection Class	--	--	IP65		
Ambient Temperature	[°C]	--	0-40		
Permitted Housing Temperature	[°C]	--	90		
Weight (Solid Output Shaft)	[kg]	--	4.3		
Weight (Hollow Output Shaft)	[kg]	--	4.2		

NEV C-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

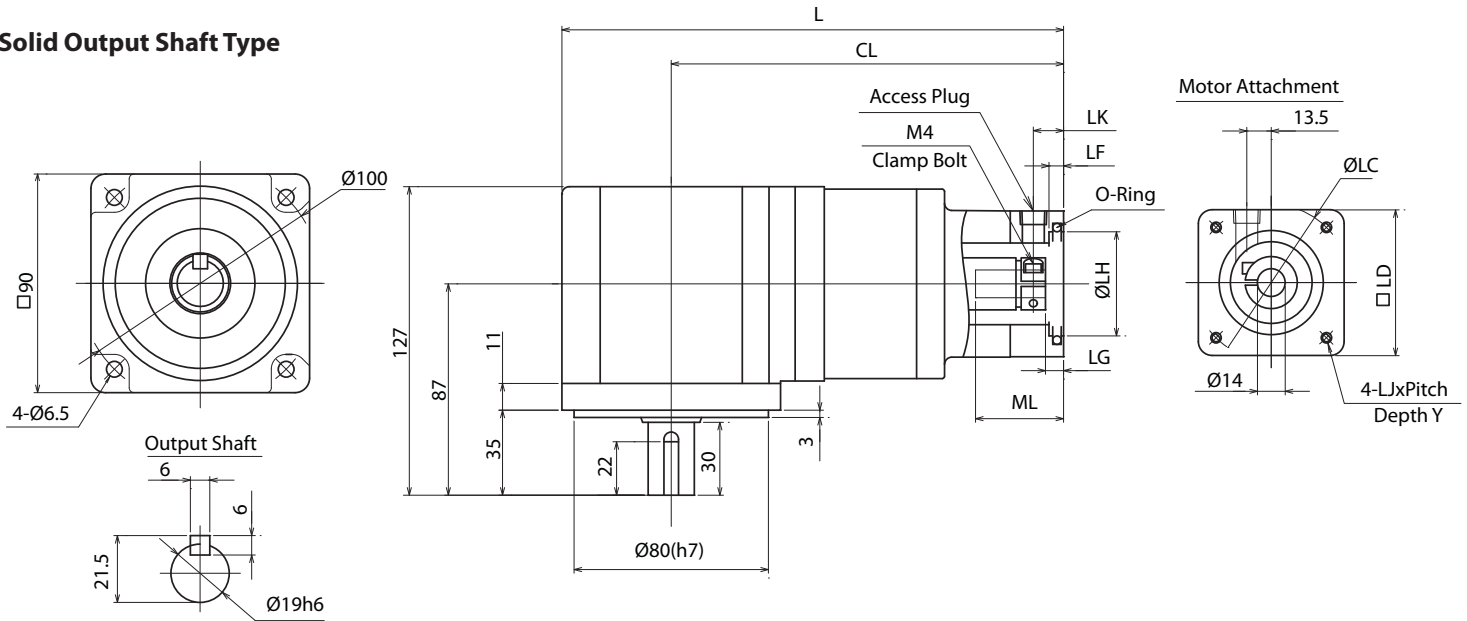
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
C1	mm	60	50	60	M4x0.7	10	209	164	11	4	5	42
	in	2.362	1.969	2.36	--	0.39	8.228	6.457	0.43	0.16	0.20	1.65
C1	mm	70	50	60	M4x0.7	10	209	164	11	4	5	42
	in	2.756	1.969	2.36	--	0.39	8.228	6.457	0.43	0.16	0.20	1.65
C7	mm	70	50	60	M5x0.8	12	213	168	15	6	9	46
	in	2.756	1.969	2.36	--	0.47	8.386	6.614	0.59	0.24	0.35	1.81
C2	mm	90	70	80	M5X0.8	12	209	164	11	4	5	42
	in	3.543	2.756	3.15	--	0.47	8.228	6.457	0.43	0.16	0.20	1.65
C8	mm	90	70	80	M6X1.0	21	214	169	16	9	10	47
	in	3.543	2.756	3.15	--	0.83	8.425	6.654	0.63	0.35	0.39	1.85
C3	mm	100	80	86	M6X1.0	16	209	164	11	4	5	42
	in	3.937	3.150	3.39	--	0.63	8.228	6.457	0.43	0.16	0.20	1.65
C4	mm	98.43	73.025	83	M5X0.8	12	209	164	11	4	5	42
(NEMA34)	in	3.875	2.875	3.27	--	0.47	8.228	6.457	0.43	0.16	0.20	1.65
C4+Spacer	mm	98.43	73.025	83	M5X0.8	12	217	172	19	3	13	50
(NEMA34)	in	3.875	2.875	3.27	--	0.47	8.543	6.772	0.75	0.12	0.51	1.97
C5	mm	75	60	67	M5X0.8	12	209	164	11	4	5	42
	in	2.953	2.362	2.64	--	0.47	8.228	6.457	0.43	0.16	0.20	1.65
C6	mm	115	95	100	M6X1.0	16	209	164	11	4	5	42
	in	4.528	3.740	3.94	--	0.63	8.228	6.457	0.43	0.16	0.20	1.65
C9	mm	66.68	38.100	60	M4x0.7	10	209	164	11	4	5	42
(NEMA23)	in	2.625	1.500	2.36	--	0.39	8.228	6.457	0.43	0.16	0.20	1.65
C14	mm	66.68	38.100	60	M5x0.8	12	217	172	18	11	13	50
	in	2.625	1.500	2.36	--	0.47	8.543	6.772	0.71	0.43	0.51	1.97

NEV C-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

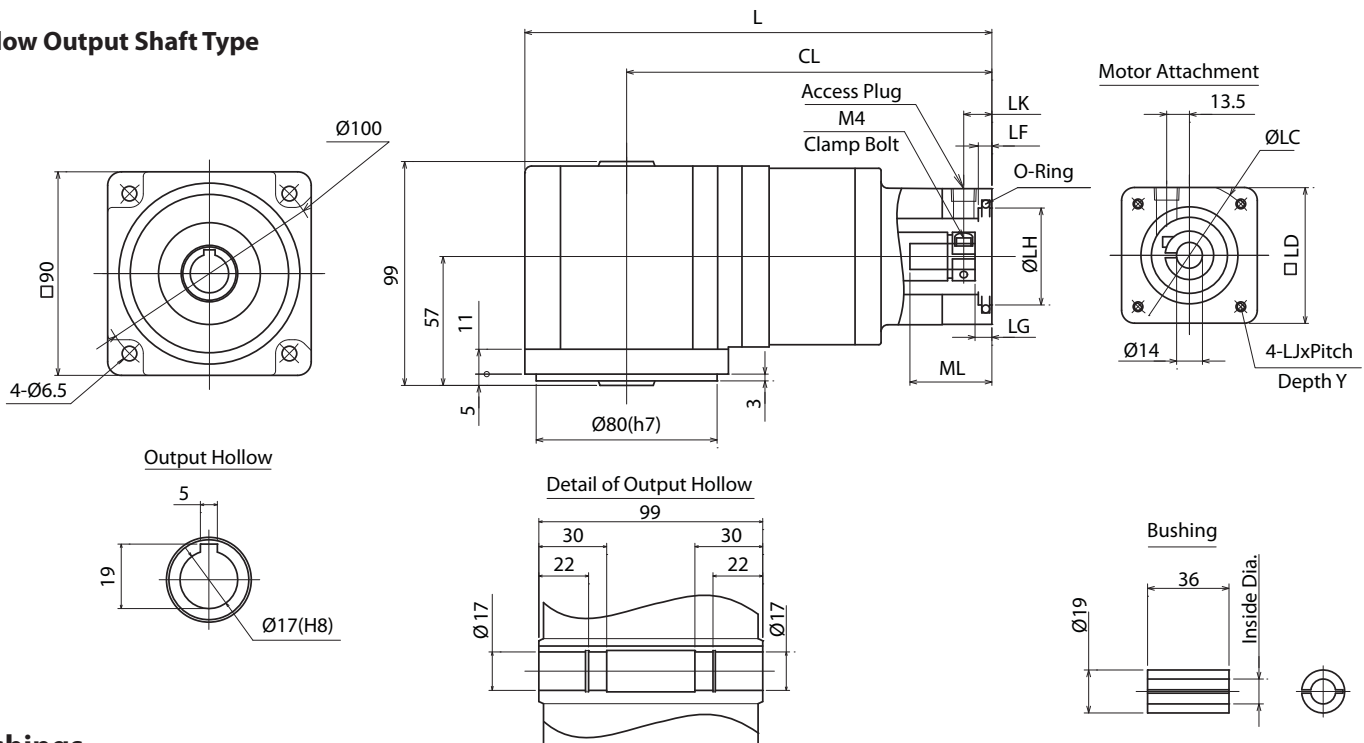
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
C10	mm	63	40	60	M4x0.7	10	209	164	11	4	5	42
	in	2.480	1.575	2.36	--	0.39	8.228	6.457	0.43	0.16	0.20	1.65
C11	mm	95	80	86	M6x1.0	-	209	164	11	4	5	42
	in	3.740	3.150	3.39	--	-	8.228	6.457	0.43	0.16	0.20	1.65

NEV C-Frame (90mm) 3-Stage Dimensions – Ratios: 45:1, 75:1, 105:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410
Inside	6	8	11	6.350	9.525	12.700	12	10	9	5
Diameter	0.236	0.315	0.433	0.250	0.375	0.500	0.472	0.394	0.354	0.254

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NEV D-Frame – 2-Stage Specifications

Frame Size	D (115mm)					
Stage	2-Stage					
Ratio	Units	Note	5	9	15	27
Nominal Output Torque	[Nm]	--	25	25	25	40
Maximum Acceleration Torque	[Nm]	--	55	75	75	80
Emergency Stop Torque	[Nm]	--	100	140	140	180
Nominal Input Speed	[rpm]	--	3000			
Maximum Input Speed	[rpm]	--	6000			
No Load Running Torque	[Nm]	--	0.45			
Permitted Radial Load	[N]	--	2200	2200	2600	2600
Permitted Axial Load	[N]	--	1100	1100	1300	1300
Moment of Inertia (≤Ø14)	[kgcm ²]	--	--	--	--	--
Moment of Inertia (≤ Ø19)	[kgcm ²]	--	1.502	1.254	0.464	0.720
Efficiency	[%]	--	85			
Torsional Rigidity	[Nm/arcmin]	--	1.2	1.5	1.5	1.5
Maximum Torsional Backlash	[Arc-min]	--	≤ 30			
Noise Level	[dB]	--	≤ 73			
Protection Class	--	--	IP65			
Ambient Temperature	[°C]	--	0-40			
Permitted Housing Temperature	[°C]	--	90			
Weight (Solid Output Shaft)	[kg]	--	7.1			
Weight (Hollow Output Shaft)	[kg]	--	6.7			

NEV D-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

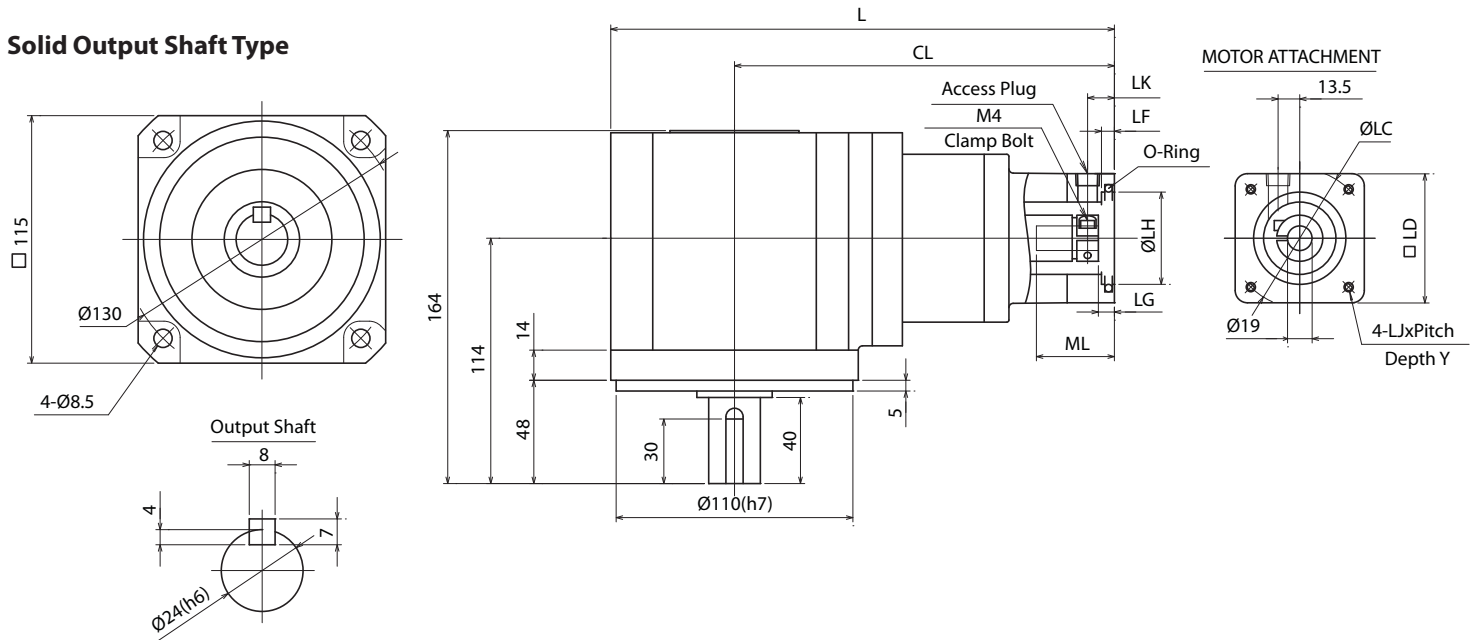
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
D1	mm	60	50	60	M4x0.7	10	234	176.5	11	4	5	42
	in	2.362	1.969	2.36	--	0.39	9.213	6.949	0.43	0.16	0.20	1.65
D1	mm	70	50	60	M4x0.7	10	234	176.5	11	4	5	42
	in	2.756	1.969	2.36	--	0.39	9.213	6.949	0.43	0.16	0.20	1.65
D7	mm	70	50	60	M5x0.8	12	238	180.5	15	6	9	46
	in	2.756	1.969	2.36	--	0.47	9.370	7.106	0.59	0.24	0.35	1.81
D2	mm	90	70	80	M5X0.8	12	234	176.5	11	4	5	42
	in	3.543	2.756	3.15	--	0.47	9.213	6.949	0.43	0.16	0.20	1.65
D8	mm	90	70	80	M6X1.0	21	239	181.5	16	9	10	47
	in	3.543	2.756	3.15	--	0.83	9.409	7.146	0.63	0.35	0.39	1.85
D3	mm	100	80	86	M6X1.0	16	234	176.5	11	4	5	42
	in	3.937	3.150	3.39	--	0.63	9.213	6.949	0.43	0.16	0.20	1.65
D4	mm	98.43	73.025	83	M5X0.8	12	234	176.5	11	4	5	42
(NEMA34)	in	3.875	2.875	3.27	--	0.47	9.213	6.949	0.43	0.16	0.20	1.65
D4+Spacer	mm	98.43	73.025	83	M5X0.8	12	242	184.5	19	3	13	50
(NEMA34)	in	3.875	2.875	3.27	--	0.47	9.528	7.264	0.75	0.12	0.51	1.97
D5	mm	75	60	67	M5X0.8	12	234	176.5	11	4	5	42
	in	2.953	2.362	2.64	--	0.47	9.213	6.949	0.43	0.16	0.20	1.65
D6	mm	115	95	100	M6X1.0	16	234	176.5	11	4	5	42
	in	4.528	3.740	3.94	--	0.63	9.213	6.949	0.43	0.16	0.20	1.65
D9	mm	66.68	38.100	60	M4X0.7	10	234	176.5	11	4	5	42
(NEMA23)	in	2.625	1.500	2.36	--	0.39	9.213	6.949	0.43	0.16	0.20	1.65
D14	mm	66.68	38.100	60	M5X0.8	-	242	184.5	18	11	13	50
	in	2.625	1.500	2.36	--	-	9.528	7.264	0.71	0.43	0.51	1.97

NEV D-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

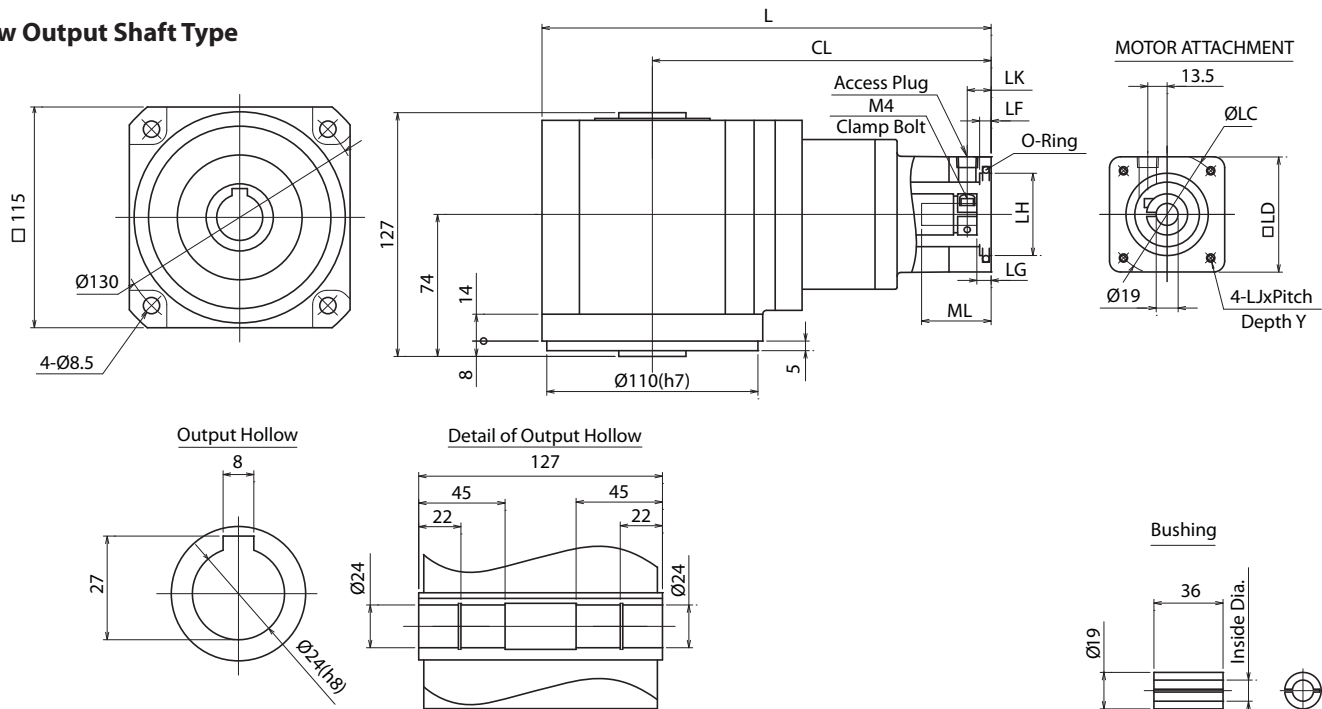
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
D10	mm	63	40	60	M4x0.7	10	234	176.5	11	4	5	42
	in	2.480	1.575	2.36	--	0.39	9.213	6.949	0.43	0.16	0.20	1.65
D11	mm	95	80	86	M6x1.0	16	234	176.5	11	4	5	42
	in	3.740	3.150	3.39	--	0.63	9.213	6.949	0.43	0.16	0.20	1.65

NEV D-Frame (115mm) 2-Stage Dimensions – Ratios: 5:1, 9:1, 15:1, 27:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1901	1902	1903	1904	1905	1906	1907	1908	1909
Inside	11	14	16	9.525	12.700	15.875	12	10	9
Diameter	0.433	0.551	0.630	0.375	0.500	0.625	0.472	0.394	0.354

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NEV D-Frame – 3-Stage Specifications

Frame Size	D (115mm)				
Stage	3-Stage				
Ratio	Units	Note	45	75	105
Nominal Output Torque	[Nm]	--	45	50	50
Maximum Acceleration Torque	[Nm]	--	80	80	80
Emergency Stop Torque	[Nm]	--	180	180	180
Nominal Input Speed	[rpm]	--	3000		
Maximum Input Speed	[rpm]	--	6000		
No Load Running Torque	[Nm]	--	0.355		
Permitted Radial Load	[N]	--	2600	2600	2600
Permitted Axial Load	[N]	--	1300	1300	1300
Moment of Inertia ($\leq \emptyset 14$)	[kgcm ²]	--	0.806	0.694	0.648
Moment of Inertia ($\leq \emptyset 19$)	[kgcm ²]	--	--	--	--
Efficiency	[%]	--	80		
Torsional Rigidity	[Nm/arcmin]	--	1.5		
Maximum Torsional Backlash	[Arc-min]	--	≤ 30		
Noise Level	[dB]	--	≤ 67		
Protection Class	--	--	IP65		
Ambient Temperature	[°C]	--	0-40		
Permitted Housing Temperature	[°C]	--	90		
Weight (Solid Output Shaft)	[kg]	--	7.3		
Weight (Hollow Output Shaft)	[kg]	--	6.9		

NEV D-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

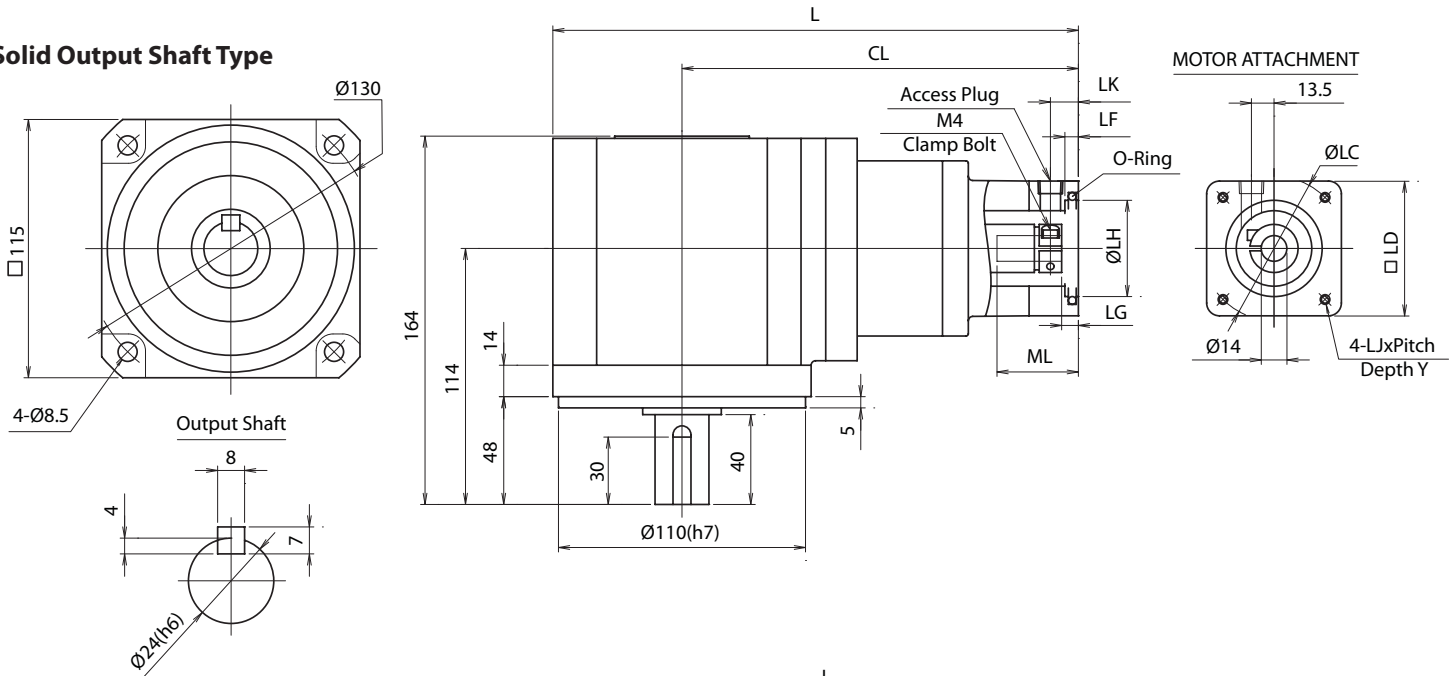
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
D1	mm	60	50	60	M4x0.7	10	236.5	179	11	4	5	42
	in	2.362	1.969	2.36	--	0.39	9.311	7.047	0.43	0.16	0.20	1.65
D1	mm	70	50	60	M4x0.7	10	236.5	179	11	4	5	42
	in	2.756	1.969	2.36	--	0.39	9.311	7.047	0.43	0.16	0.20	1.65
D7	mm	70	50	60	M5x0.8	12	240.5	183	15	6	9	46
	in	2.756	1.969	2.36	--	0.47	9.469	7.205	0.59	0.24	0.35	1.81
D2	mm	90	70	80	M5X0.8	12	236.5	179	11	4	5	42
	in	3.543	2.756	3.15	--	0.47	9.311	7.047	0.43	0.16	0.20	1.65
D8	mm	90	70	80	M6X1.0	21	241.5	184	16	9	10	47
	in	3.543	2.756	3.15	--	0.83	9.508	7.244	0.63	0.35	0.39	1.85
D3	mm	100	80	86	M6X1.0	16	236.5	179	11	4	5	42
	in	3.937	3.150	3.39	--	0.63	9.311	7.047	0.43	0.16	0.20	1.65
D4	mm	98.43	73.025	83	M5X0.8	12	236.5	179	11	4	5	42
(NEMA34)	in	3.875	2.875	3.27	--	0.47	9.311	7.047	0.43	0.16	0.20	1.65
D4+Spacer	mm	98.43	73.025	83	M5X0.8	12	244.5	187	19	3	13	50
(NEMA34)	in	3.875	2.875	3.27	--	0.47	9.626	7.362	0.75	0.12	0.51	1.97
D5	mm	75	60	67	M5X0.8	12	236.5	179	11	4	5	42
	in	2.953	2.362	2.64	--	0.47	9.311	7.047	0.43	0.16	0.20	1.65
D6	mm	115	95	100	M6X1.0	16	236.5	179	11	4	5	42
	in	4.528	3.740	3.94	--	0.63	9.311	7.047	0.43	0.16	0.20	1.65
D9	mm	66.68	38.100	60	M4X0.7	10	236.5	179	11	4	5	42
(NEMA23)	in	2.625	1.500	2.36	--	0.39	9.311	7.047	0.43	0.16	0.20	1.65
D14	mm	66.68	38.100	60	M5X0.8	12	244.5	187	18	11	13	50
	in	2.625	1.500	2.36	--	0.47	9.626	7.362	0.71	0.43	0.51	1.97

NEV D-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

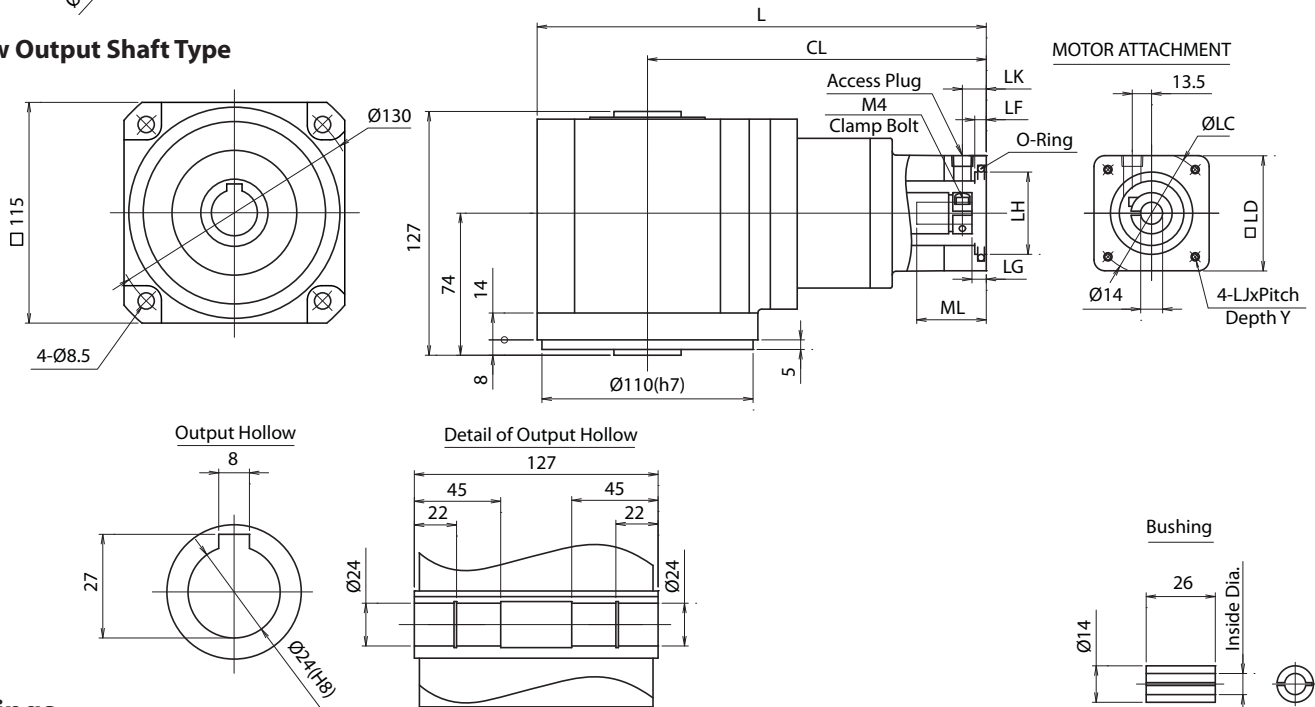
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
D10	mm	63	40	60	M4x0.7	10	236.5	179	11	4	5	42
	in	2.480	1.575	2.36	--	0.39	9.311	7.047	0.43	0.16	0.20	1.65
D11	mm	95	80	86	M6x1.0	16	236.5	179	11	4	5	42
	in	3.740	3.150	3.39	--	0.63	9.311	7.047	0.43	0.16	0.20	1.65

NEV D-Frame (115mm) 3-Stage Dimensions – Ratios: 45:1, 75:1, 105:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1401	1402	1403	1404	1405	1406	1407	1408
Inside	6	8	11	6.350	9.525	12.700	12	10
Diameter	0.236	0.315	0.433	0.250	0.375	0.500	0.472	0.394

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NEV E-Frame – 2-Stage Specifications

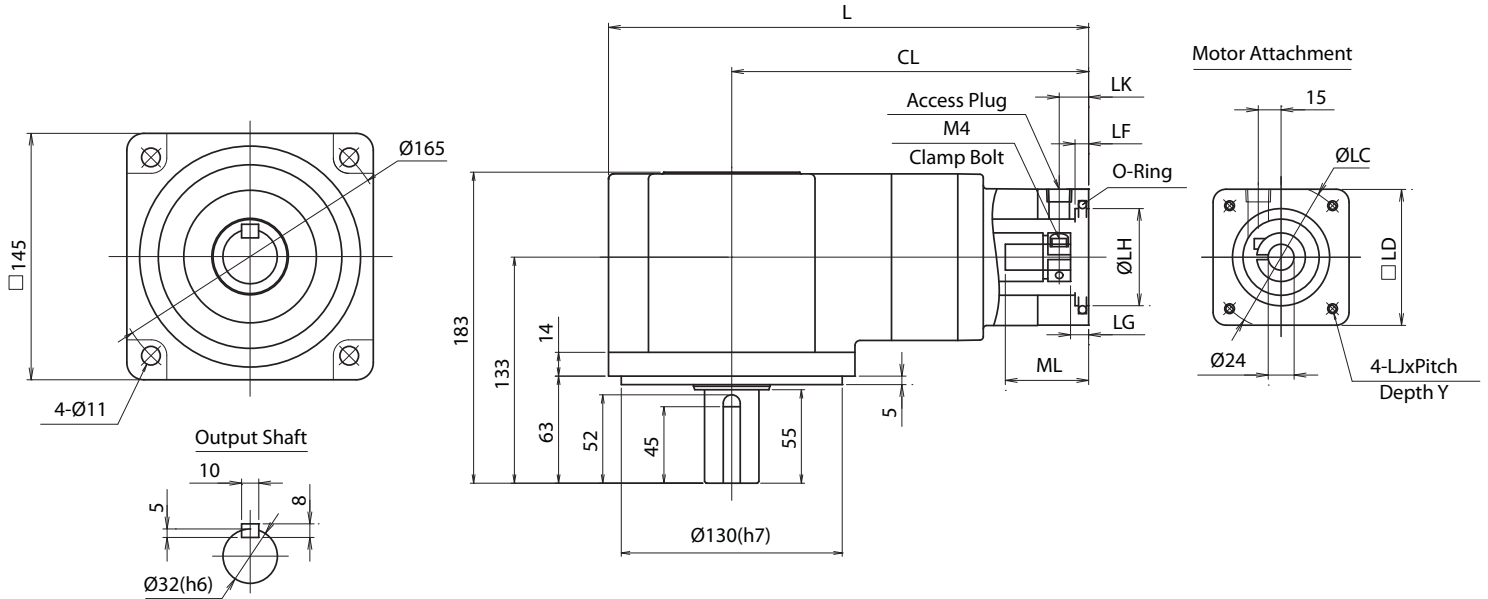
Frame Size	E (145mm)					
Stage	2-Stage					
Ratio	Units	Note	5	9	15	27
Nominal Output Torque	[Nm]	--	50	50	55	60
Maximum Acceleration Torque	[Nm]	--	100	140	140	180
Emergency Stop Torque	[Nm]	--	250	250	250	300
Nominal Input Speed	[rpm]	--	3000			
Maximum Input Speed	[rpm]	--	6000			
No Load Running Torque	[Nm]	--	1.21			
Permitted Radial Load	[N]	--	3000	3000	3000	4000
Permitted Axial Load	[N]	--	1500	1500	1500	2000
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	--	--	--	--
Moment of Inertia ($\leq \varnothing 24$)	[kgcm ²]	--	3.559	2.940	1.193	2.044
Efficiency	[%]	--	85			
Torsional Rigidity	[Nm/arcmin]	--	3.2	4.0	4.0	4.0
Maximum Torsional Backlash	[Arc-min]	--	≤ 30			
Noise Level	[dB]	--	≤ 74			
Protection Class	--	--	IP65			
Ambient Temperature	[°C]	--	0-40			
Permitted Housing Temperature	[°C]	--	90			
Weight (Solid Output Shaft)	[kg]	--	11.0			
Weight (Hollow Output Shaft)	[kg]	--	10.0			

NEV E-Frame, 2-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 5:1, 9:1, 15:1, 27:1

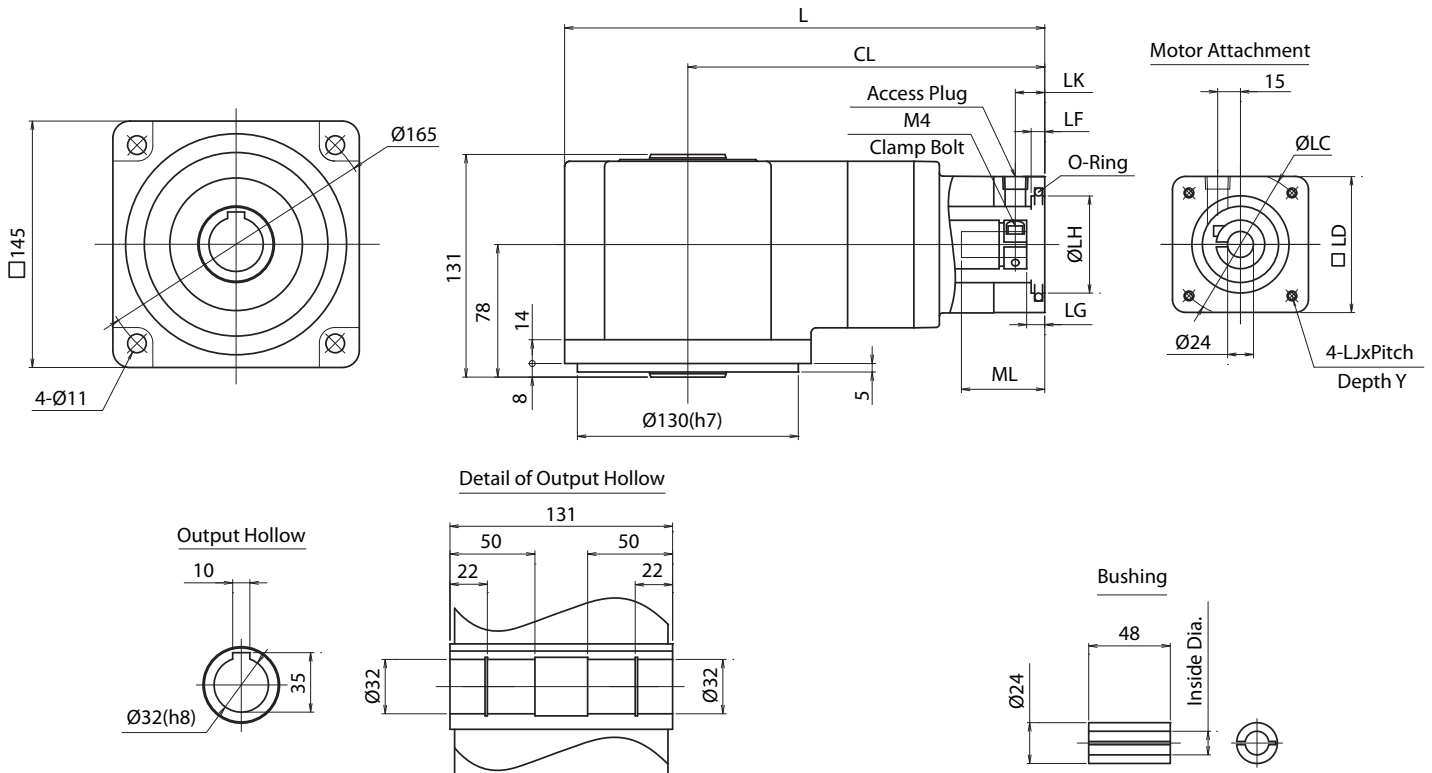
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
E1	mm	115	95	100	M6x1.0	15	282.5	210	15	4	7	57
	in	4.528	3.740	3.94	--	0.59	11.122	8.268	0.59	0.16	0.28	2.24
E2	mm	90	70	80	M5x0.8	12	282.5	210	14	4	7	57
	in	3.543	2.756	3.15	--	0.47	11.122	8.268	0.55	0.16	0.28	2.24
E7	mm	90	70	80	M6x1.0	15	285.5	213	17	6	10	60
	in	3.543	2.756	3.15	--	0.59	11.240	8.386	0.67	0.24	0.39	2.36
E3	mm	100	80	90	M6x1.0	15	282.5	210	14	4	7	57
	in	3.937	3.150	3.54	--	0.59	11.122	8.268	0.55	0.16	0.28	2.24
E4	mm	125.73	55.563	108	M6x1.0	15	282.5	210	15	5	7	57
(NEMA42)	in	4.950	2.188	4.25	--	0.59	11.122	8.268	0.59	0.20	0.28	2.24
E5	mm	145	110	130	M8x1.25	16	285.5	213	18	6	10	60
	in	5.709	4.331	5.12	--	0.63	11.240	8.386	0.71	0.24	0.39	2.36
E6	mm	130	110	115	M8x1.25	16	282.5	210	15	6	7	60
	in	5.118	4.331	4.53	--	0.63	11.122	8.268	0.59	0.24	0.28	2.36
E11	mm	98.43	73.025	90	M5x0.8	12	282.5	210	14	4	7	57
(NEMA34)	in	3.875	2.875	3.54	--	0.47	11.122	8.268	0.55	0.16	0.28	2.24
E12	mm	149.22	114.300	130	--	-	285.5	213	18	6	10	60
(NEMA56)	in	5.875	4.500	5.12	3/8UNC-16	-	11.240	8.386	0.71	0.24	0.39	2.36
E13	mm	66.7	38.1	80	M4x0.7	10	282.5	210	14	4	7	57
	in	2.626	1.500	3.15	--	0.39	11.122	8.268	0.55	0.16	0.28	2.24
E14	mm	70	50	80	M4x0.7	10	282.5	210	14	4	7	57
	in	2.756	1.969	3.15	--	0.39	11.122	8.268	0.55	0.16	0.28	2.24
E15	mm	75	60	80	M5x0.8	12	282.5	210	14	4	7	57
	in	2.953	2.362	3.15	--	0.47	11.122	8.268	0.55	0.16	0.28	2.24

NEV E-Frame (145mm) 2-Stage Dimensions – Ratios: 5:1, 9:1, 15:1, 27:1

Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	2401	2402	2403	2404	2405	2406	2407	2408
Inside	14	16	19	12.700	15.875	22	19.050	11
Diameter	0.551	0.630	0.748	0.500	0.625	0.866	0.750	0.433

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NEV E-Frame – 3-Stage Specifications

Frame Size	E (145mm)				
Stage	3-Stage				
Ratio	Units	Note	45	75	105
Nominal Output Torque	[Nm]	--	80	90	90
Maximum Acceleration Torque	[Nm]	--	180	180	180
Emergency Stop Torque	[Nm]	--	300	300	300
Nominal Input Speed	[rpm]	--	3000		
Maximum Input Speed	[rpm]	--	6000		
No Load Running Torque	[Nm]	--	0.961		
Permitted Radial Load	[N]	--	4000	4000	4000
Permitted Axial Load	[N]	--	2000	2000	2000
Moment of Inertia (≤Ø19)	[kgcm ²]	--	1.878	1.303	1.184
Moment of Inertia (≤ Ø24)	[kgcm ²]	--	--	--	--
Efficiency	[%]	--	80		
Torsional Rigidity	[Nm/arcmin]	--	4.0		
Maximum Torsional Backlash	[Arc-min]	--	≤ 30		
Noise Level	[dB]	--	≤ 69		
Protection Class	--	--	IP65		
Ambient Temperature	[°C]	--	0-40		
Permitted Housing Temperature	[°C]	--	90		
Weight (Solid Output Shaft)	[kg]	--	11.4		
Weight (Hollow Output Shaft)	[kg]	--	10.4		

NEV E-Frame, 3-Stage Dimensions, Solid / Hollow Output Shaft Type – Ratios: 45:1, 75:1, 105:1

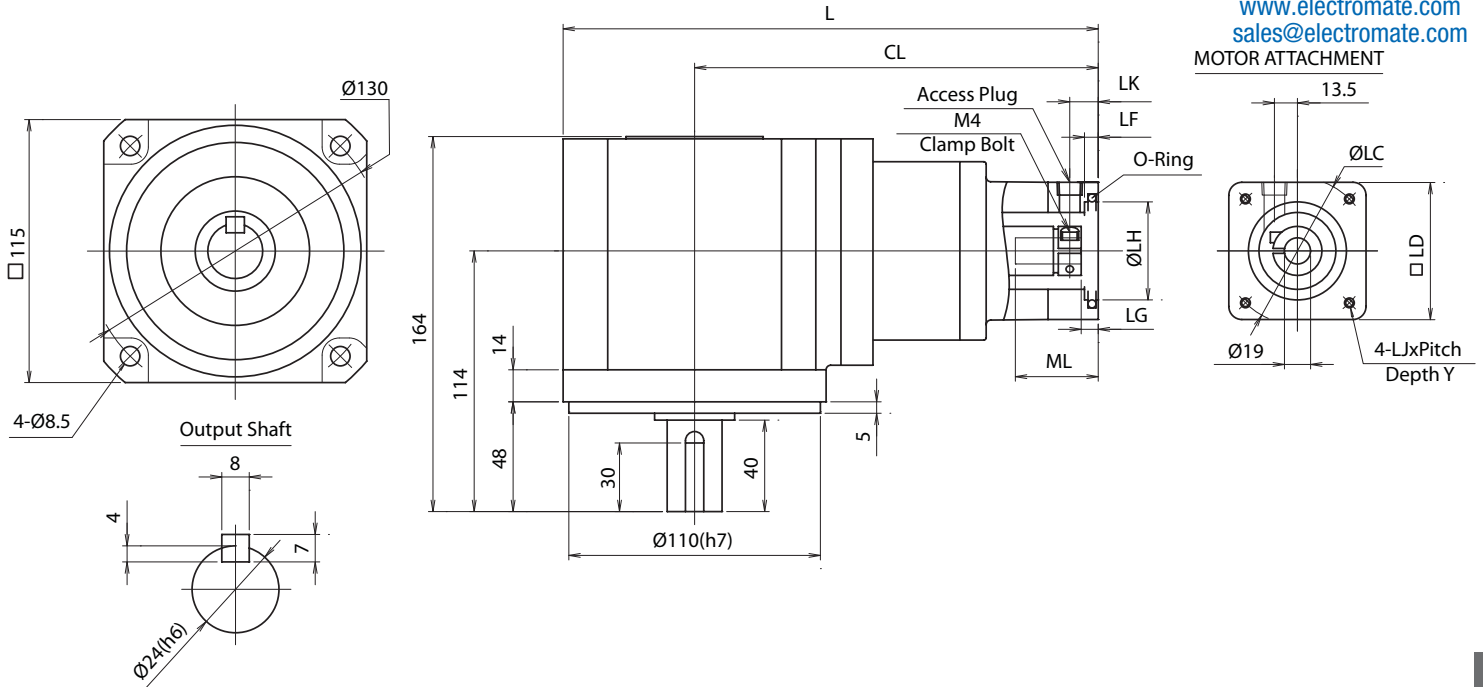
Adapter	Unit	Bolt Circle LC	Pilot LH	Square LD	Tapping Bolt LJ	Depth Y	Length		Plug LK	Flange Depth		
							L	CL		LF	LG	ML
E1	mm	115	95	100	M6x1.0	15	283.5	211	15	4	7	57
	in	4.528	3.740	3.94	-	0.59	11.161	8.307	0.59	0.16	0.28	2.24
E2	mm	90	70	80	M5x0.8	12	283.5	211	14	4	7	57
	in	3.543	2.756	3.15	-	0.47	11.161	8.307	0.55	0.16	0.28	2.24
E7	mm	90	70	80	M6x1.0	15	286.5	214	17	6	10	60
	in	3.543	2.756	3.15	-	0.59	11.280	8.425	0.67	0.24	0.39	2.36
E3	mm	100	80	90	M6x1.0	15	283.5	211	14	4	7	57
	in	3.937	3.150	3.54	-	0.59	11.161	8.307	0.55	0.16	0.28	2.24
E4	mm	125.73	55.563	108	M6x1.0	15	283.5	211	15	5	7	57
(NEMA42)	in	4.950	2.188	4.25	-	0.59	11.161	8.307	0.59	0.20	0.28	2.24
E5	mm	145	110	130	M8x1.25	16	286.5	214	18	6	10	60
	in	5.709	4.331	5.12	-	0.63	11.280	8.425	0.71	0.24	0.39	2.36
E6	mm	130	110	115	M8x1.25	16	283.5	211	15	6	7	60
	in	5.118	4.331	4.53	-	0.63	11.161	8.307	0.59	0.24	0.28	2.36
E11	mm	98.43	73.025	90	M5x0.8	12	283.5	211	14	4	7	57
(NEMA34)	in	3.875	2.875	3.54	-	0.47	11.161	8.307	0.55	0.16	0.28	2.24
E12	mm	149.22	114.300	130	-	-	286.5	214	18	6	10	60
(NEMA56)	in	5.875	4.500	5.12	3/8UNC-16	-	11.280	8.425	0.71	0.24	0.39	2.36
E13	mm	66.7	38.1	80	M4x0.7	10	283.5	211	14	4	7	57
	in	2.626	1.500	3.15	-	0.39	11.161	8.307	0.55	0.16	0.28	2.24
E14	mm	70	50	80	M4x0.7	10	283.5	211	14	4	7	57
	in	2.756	1.969	3.15	-	0.39	11.161	8.307	0.55	0.16	0.28	2.24
E15	mm	75	60	80	M5x0.8	12	283.5	211	14	4	7	57
	in	2.953	2.362	3.15	-	0.47	11.161	8.307	0.55	0.16	0.28	2.24

NEV E-Frame (145mm) 3-Stage Dimensions – Ratios: 45:1, 75:1, 105:1

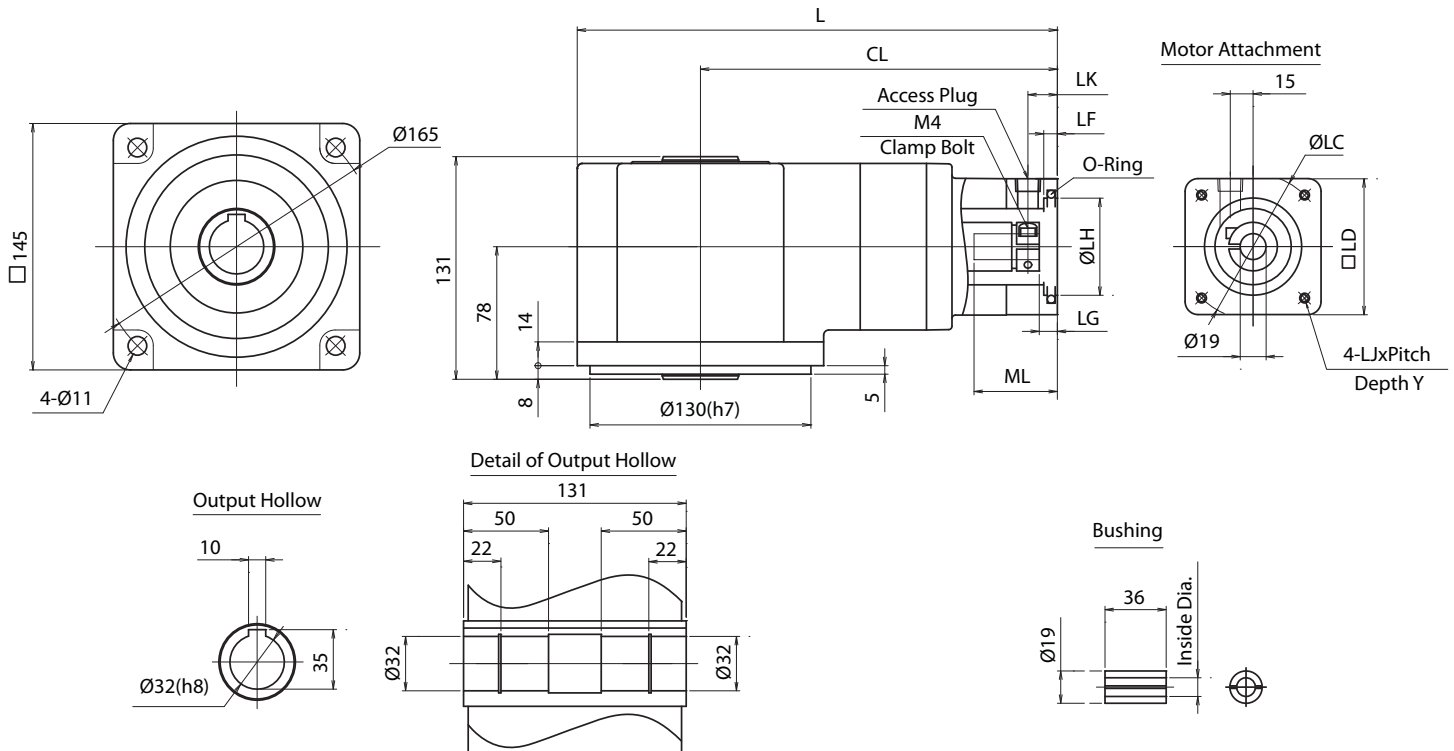
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Solid Output Shaft Type



Hollow Output Shaft Type



Bushings

Bushing	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Inside	11	14	16	9.525	12.700	15.875	12	10	9	8	6.350
Diameter	0.433	0.551	0.630	0.375	0.500	0.625	0.472	0.394	0.354	0.315	0.250

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