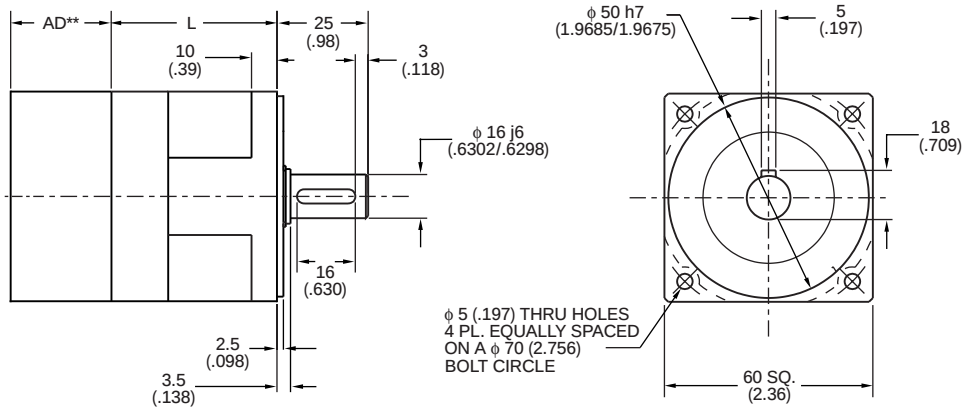
TRUE PLANETARY™ GEARHEADS

SHIPPED WITHIN 24 HOURS!

HIGH PRECISION • LOW BACKLASH • EASY TO MOUNT

Best of the Best
GM SUPPLIER OF THE YEAR
THOMSON First in Linear Motion Technology

DuraTRUE*Size 60
TRUE PLANETARY* Gearhead



Ratio	Dimension 'L' mm *(in)*	Backlash (arc-min)	Weight kg *(lb)*	Efficiency
3:1 to 10:1	53 *(2.07)*	8 max	1.0 *(2.2)*	90%
15:1 to 30:1	70 *(2.76)*	9 max	1.2 *(2.7)*	85%

** AD = Adapter length.
Adapter length will vary depending on motor.

All dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number	Ratio[1]	5,000 HOUR LIFE				T_{peak}	10,000 HOUR LIFE				J	Torsional Stiffness
		T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	Nm *(in-lb)*	T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	kg-cm² *(in-lb-sec²x10⁴)*	Nm/arc-min *(in-lb/arc-min)*
XDT60-003	3:1	15 *(134)*	12 *(109)*	11 *(97)*	10 *(89)*	52 *(460)*	12 *(109)*	10 *(89)*	9 *(79)*	8 *(72)*	.52 *(4.6)*	0.9 *(8.1)*
XDT60-005	5:1	17 *(148)*	14 *(120)*	12 *(106)*	11 *(98)*	46 *(410)*	14 *(120)*	11 *(98)*	10 *(86)*	9 *(79)*	.46 *(4.1)*	0.9 *(7.9)*
XDT60-010	10:1	15 *(134)*	14 *(121)*	13 *(114)*	12 *(108)*	45 *(400)*	14 *(124)*	13 *(112)*	11 *(100)*	10 *(92)*	.44 *(3.9)*	0.8 *(6.8)*
XDT60-015	15:1	25 *(218)*	20 *(177)*	18 *(157)*	16 *(144)*	52 *(460)*	20 *(177)*	16 *(144)*	14 *(127)*	13 *(117)*	.46 *(4.1)*	0.9 *(8.2)*
XDT60-030	30:1	28 *(246)*	25 *(218)*	22 *(193)*	20 *(177)*	52 *(460)*	25 *(218)*	20 *(177)*	18 *(157)*	16 *(144)*	.44 *(3.9)*	1.0 *(8.7)*

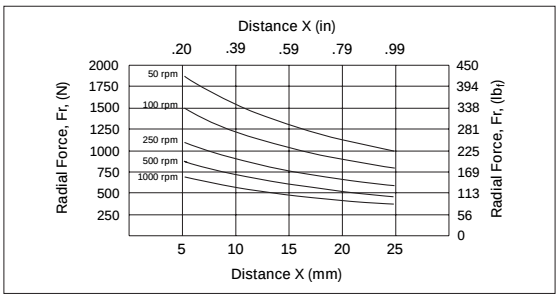
[1] Ratios are exact, other ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specified hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

For ordering information see page 14.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

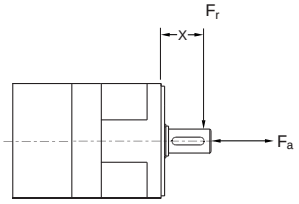
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed, n_{mout}, as described on page 3.

XDT60 Radial Loadings

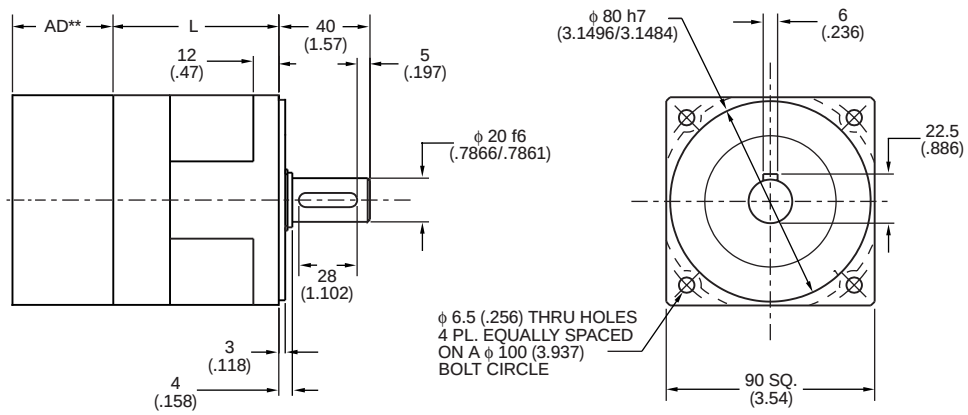


XDT60 Axial Loadings

Speed (rpm)	Axial Load, F_a N	(lb_f)
50	3075	*(692)*
100	2441	*(549)*
250	1798	*(405)*
500	1427	*(321)*
1000	1133	*(255)*



DuraTRUE*Size 90
TRUE PLANETARY* Gearhead



Ratio	Dimension 'L' mm *(in)*	Backlash (arc-min)	Weight kg *(lb)*	Efficiency
3:1 to 10:1	67 *(2.63)*	8 max	3.0 *(6.6)*	90%
15:1 to 30:1	90 *(3.53)*	9 max	3.7 *(8.1)*	85%

** AD = Adapter length.
Adapter length will vary depending on motor.

All dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number	Ratio[1]	5,000 HOUR LIFE				T_{peak}	10,000 HOUR LIFE				J	Torsional Stiffness
		T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	Nm *(in-lb)*	T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	kg-cm² *(in-lb-sec²x10⁴)*	Nm/arc-min *(in-lb/arc-min)*
XDT90-003	3:1	69 *(614)*	56 *(499)*	50 *(442)*	46 *(405)*	167 *(1476)*	56 *(499)*	46 *(405)*	41 *(359)*	37 *(329)*	2.22 *(1.97)*	4.9 *(43.3)*
XDT90-005	5:1	75 *(664)*	62 *(549)*	55 *(486)*	50 *(446)*	157 *(1385)*	62 *(549)*	50 *(446)*	45 *(395)*	41 *(362)*	1.76 *(1.56)*	4.8 *(42.9)*
XDT90-010	10:1	55 *(488)*	50 *(439)*	46 *(411)*	44 *(392)*	157 *(1390)*	51 *(452)*	46 *(407)*	43 *(381)*	41 *(363)*	1.63 *(1.44)*	4.0 *(35.6)*
XDT90-015	15:1	93 *(826)*	84 *(747)*	79 *(702)*	74 *(657)*	167 *(1479)*	86 *(764)*	74 *(657)*	66 *(582)*	60 *(534)*	1.78 *(1.58)*	4.9 *(43.7)*
XDT90-030	30:1	103 *(908)*	93 *(826)*	88 *(780)*	84 *(747)*	167 *(1479)*	95 *(840)*	86 *(764)*	81 *(716)*	74 *(657)*	1.64 *(1.45)*	4.9 *(43.4)*

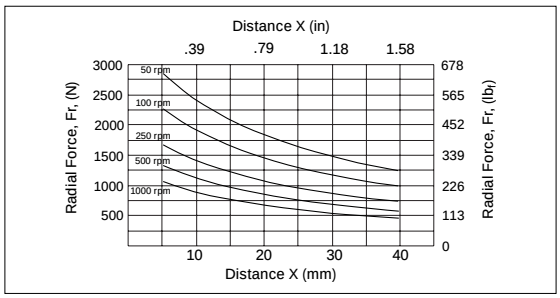
[1] Ratios are exact, other ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specified hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

For ordering information see page 14.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

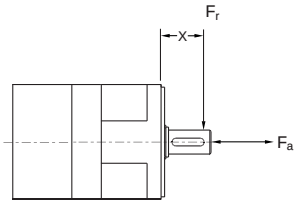
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed, n_{mout}, as described on page 3.

XDT90 Radial Loadings



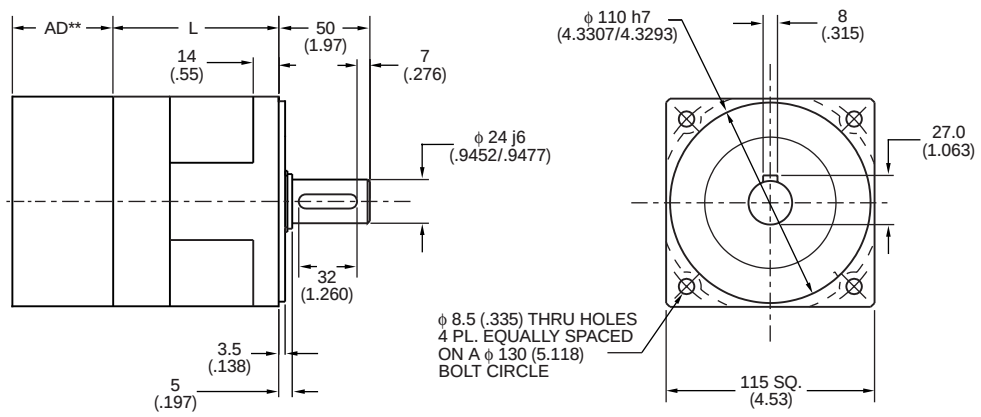
XDT90 Axial Loadings

Speed (rpm)	Axial Load, F_a N	(lb_f)
50	4506	*(1014)*
100	3576	*(805)*
250	2635	*(593)*
500	2091	*(471)*
1000	1660	*(373)*



DuraTRUE*Size 115

TRUE PLANETARY* Gearhead



Ratio	Dimension 'L' mm *(in)*	Backlash (arc-min)	Weight kg *(lb)*	Efficiency
3:1 to 10:1	88 *(3.46)*	8 max	5.7 *(12.7)*	90%
15:1 to 30:1	119 *(4.69)*	9 max	7.3 *(16.2)*	85%

** AD = Adapter length.
Adapter length will vary depending on motor.

All dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number	Ratio[1]	5,000 HOUR LIFE				T_{peak}	10,000 HOUR LIFE				J	Torsional Stiffness
		T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	Nm *(in-lb)*	T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	kg-cm² *(in-lb-sec²x10⁴)*	Nm/arc-min *(in-lb/arc-min)*
XDT115-003	3:1	105 *(932)*	86 *(757)*	76 *(670)*	70 *(615)*	284 *(2511)*	86 *(757)*	70 *(615)*	62 *(544)*	56 *(499)*	4.39 *(3.88)*	13.9 *(123.4)*
XDT115-005	5:1	116 *(1025)*	91 *(803)*	83 *(738)*	77 *(677)*	284 *(2511)*	94 *(833)*	77 *(677)*	68 *(599)*	62 *(550)*	2.88 *(2.55)*	13.6 *(120.8)*
XDT115-010	10:1	90 *(796)*	81 *(715)*	76 *(668)*	72 *(635)*	284 *(2511)*	83 *(737)*	75 *(661)*	70 *(618)*	66 *(588)*	2.47 *(2.18)*	11.6 *(102.4)*
XDT115-015	15:1	171 *(1510)*	139 *(1226)*	123 *(1086)*	113 *(996)*	284 *(2511)*	139 *(1226)*	113 *(996)*	100 *(882)*	91 *(809)*	2.95 *(2.61)*	12.9 *(114.1)*
XDT115-030	30:1	203 *(1794)*	171 *(1510)*	151 *(1337)*	139 *(1226)*	284 *(2511)*	171 *(1510)*	139 *(1226)*	123 *(1086)*	113 *(996)*	2.48 *(2.20)*	14.1 *(124.4)*

[1] Ratios are exact, other ratios are also available, consult factory.

T_r = Rated output torque at rated speed for specified hours of life.

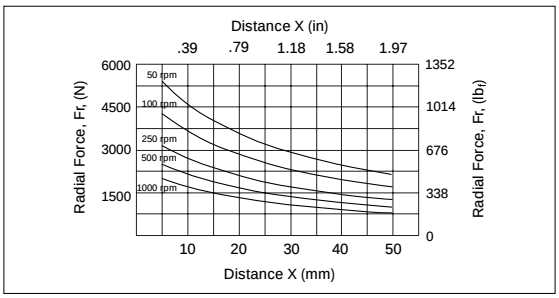
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

For ordering information see page 14.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

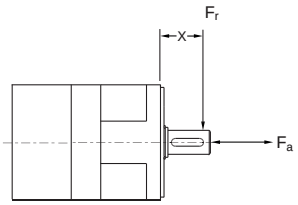
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed, n_{mout}, as described on page 3.

XDT115 Radial Loadings



XDT115 Axial Loadings

Speed (rpm)	Axial Load, F_a N	(lbf)
50	8196	*(1844)*
100	6505	*(1464)*
250	4793	*(1078)*
500	3804	*(856)*
1000	3019	*(679)*



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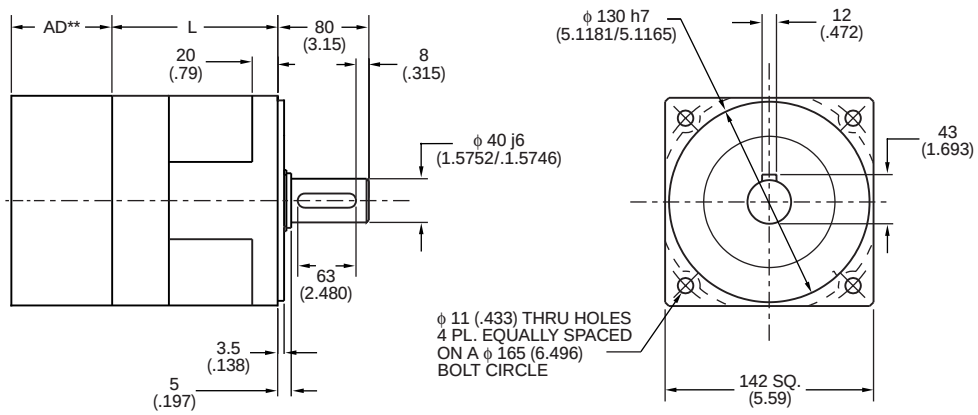
DuraTRUE*Size 142

TRUE PLANETARY* Gearhead



Ratio	Dimension 'L' mm *(in)*	Backlash (arc-min)	Weight kg *(lb)*	Efficiency
3:1 to 10:1	121 *(4.77)*	8 max	12.8 *(28.3)*	90%
15:1 to 30:1	170 *(6.71)*	9 max	17.2 *(38.0)*	85%

** AD = Adapter length.
Adapter length will vary depending on motor.

All dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number	Ratio[1]	5,000 HOUR LIFE				T_{peak}	10,000 HOUR LIFE				J	Torsional Stiffness
		T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	Nm *(in-lb)*	T_r (1000rpm) Nm *(in-lb)*	T_r (2000rpm) Nm *(in-lb)*	T_r (3000rpm) Nm *(in-lb)*	T_r (4000rpm) Nm *(in-lb)*	kg-cm² *(in-lb-sec²x10⁴)*	Nm/arc-min *(in-lb/arc-min)*
XDT142-003	3:1	372 *(3289)*	302 *(2671)*	267 *(2365)*	245 *(2170)*	834 *(7377)*	302 *(2671)*	245 *(2170)*	*217 (1921)*	*199 (1762)*	23.2 *(2.05)*	51.8 *(458.7)*
XDT142-005	5:1	410 *(3625)*	333 *(2944)*	295 *(2607)*	270 *(2391)*	834 *(7377)*	333 *(2944)*	270 *(2391)*	239 *(2118)*	*219 (1942)*	14.7 *(1.30)*	52.6 *(465.1)*
XDT142-010	10:1	229 *(2022)*	204 *(1808)*	190 *(1685)*	181 *(1598)*	834 *(7377)*	211 *(1871)*	189 *(1673)*	176 *(1559)*	167 *(1479)*	12.1 *(1.07)*	41.3 *(365.1)*
XDT142-015	15:1	524 *(4634)*	471 *(4167)*	433 *(3833)*	397 *(3516)*	834 *(7377)*	484 *(4287)*	397 *(3516)*	352 *(3114)*	323 *(2856)*	15.1 *(1.34)*	59.6 *(527.6)*
XDT142-030	30:1	578 *(5113)*	524 *(4634)*	493 *(4359)*	471 *(4167)*	834 *(7377)*	535 *(4731)*	484 *(4287)*	433 *(3833)*	397 *(3516)*	12.2 *(1.08)*	59.9 *(529.9)*

[1] Ratios are exact, other ratios are also available, consult factory.

T_r = Rated output torque at rated speed for specified hours of life.

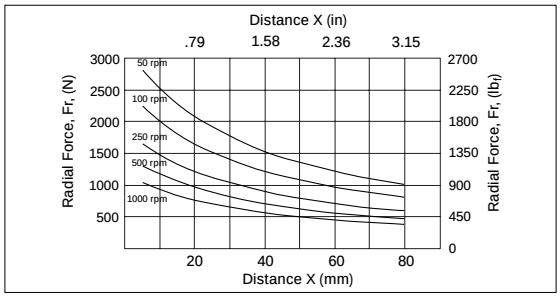
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

For ordering information see page 14.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

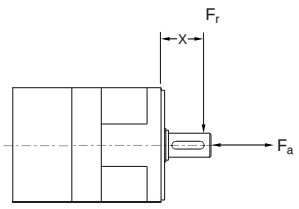
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed, n_{mout}, as described on page 3.

XDT142 Radial Loadings



XDT142 Axial Loadings

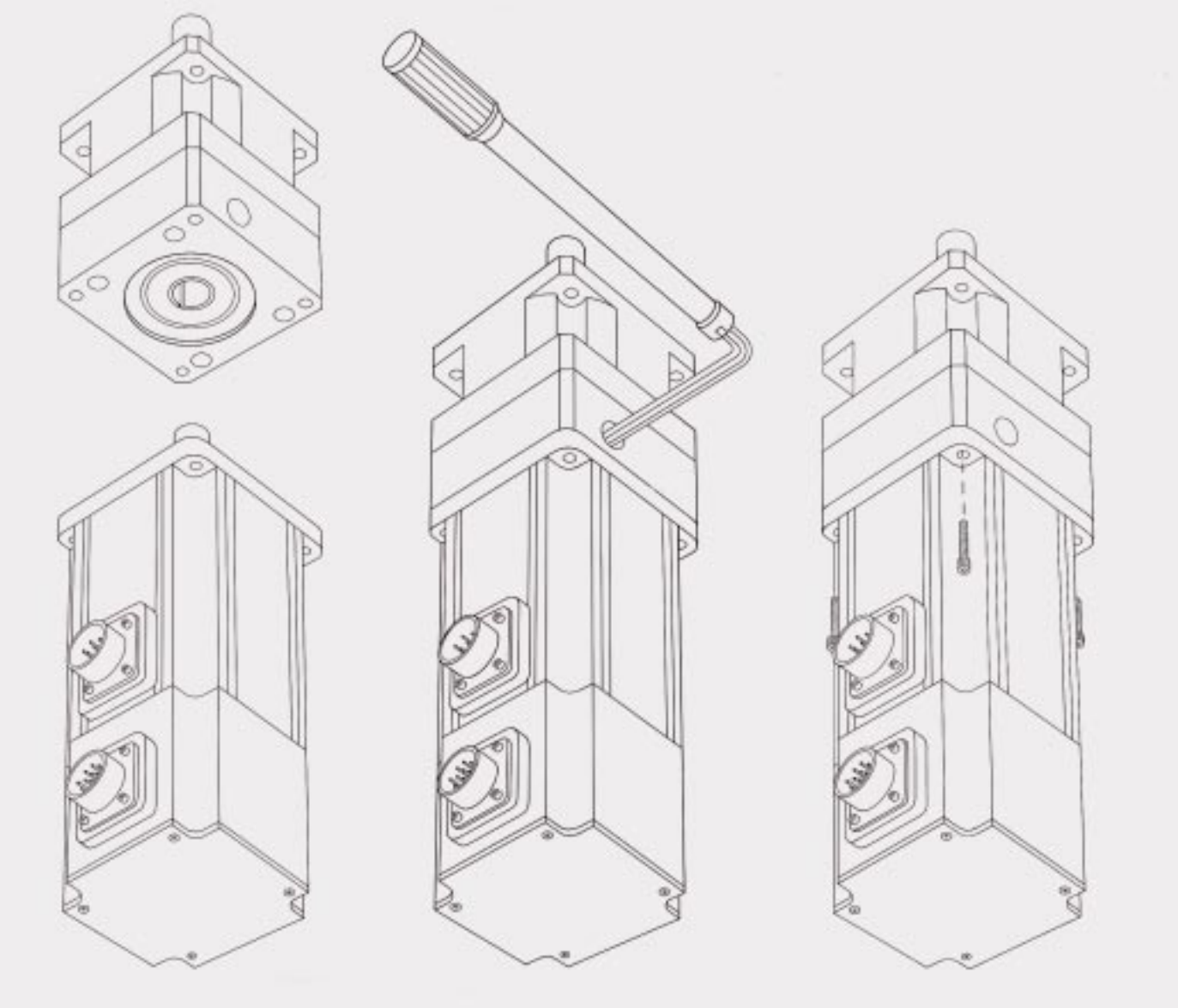
Speed (rpm)	Axial Load, F_a N	(lb_f)
50	17,023	*(3830)*
100	13,511	*(3040)*
250	9956	*(2240)*
500	7902	*(1778)*
1000	6271	*(1411)*



RediMount* Motor Mounting System

Mount in 3 easy steps.

STEP 1 **STEP 2** **STEP 3**



STEP 1

SLIDE GEARHEAD ON MOTOR

STEP 2

TIGHTEN HUB ON MOTOR SHAFT

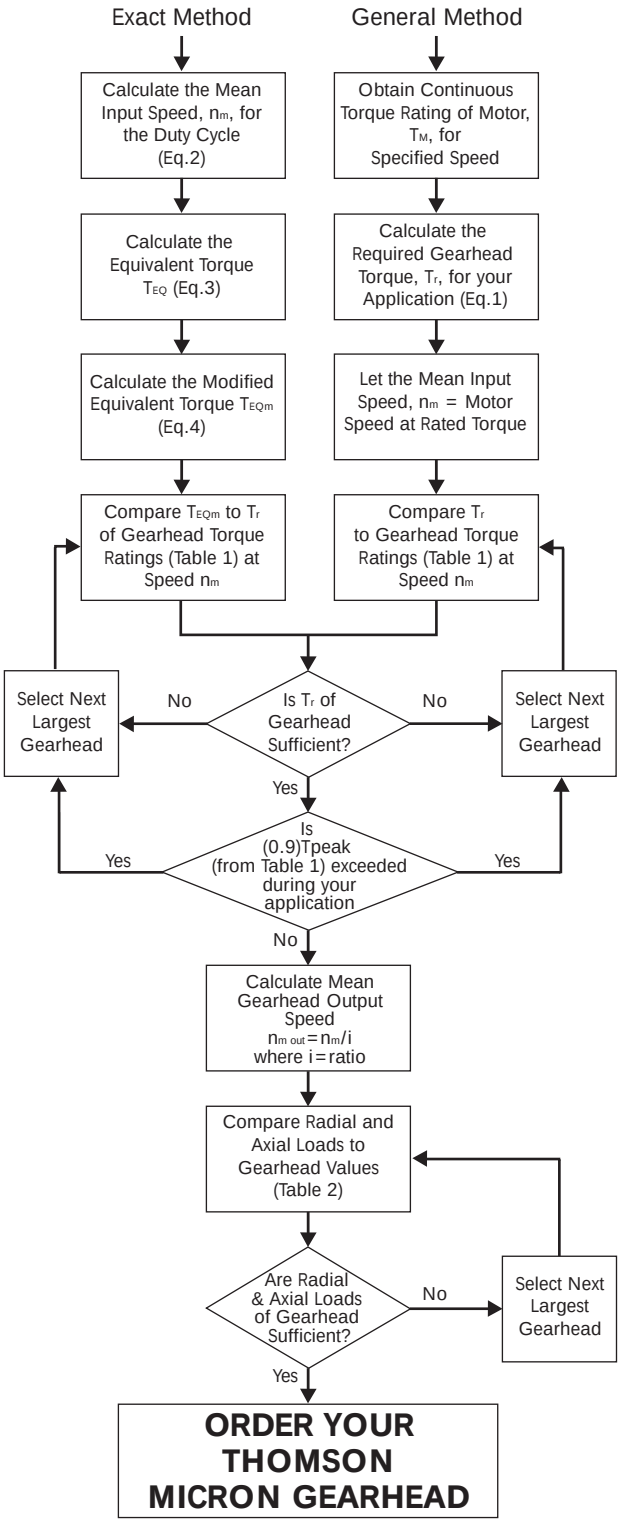
STEP 3

TIGHTEN BOLTS

THOMSON MICRON* Leading in Motion Control Technology

Step 1: Select the required precision class

Step 2: Select the proper gearhead using exact or general method.



General Method:

Required Gearhead Torque (T_r)

Eq.(1) $T_r = T_M^{\ddagger} \times i \times e$

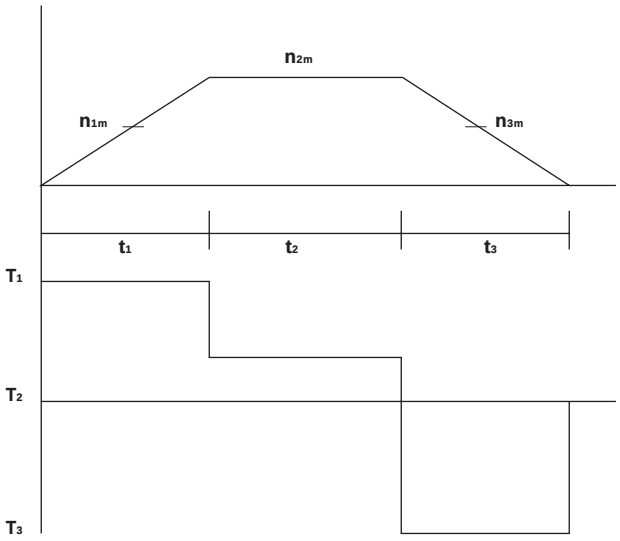
where: $T_M^{\ddagger}$ = continuous torque of motor

i = gearhead ratio

e = efficiency of gearhead

‡ Since many motors are capable of exceeding their continuous torque rating for extended lengths of time, the value of T_m will only provide a starting point for gearhead selection. Only use the general method if the continuous motor rating is not exceeded in the application.

Exact Method:



t_n = time period n

n_{nm} = mean speed during time period t_n

T_n = torque during time period t_n

Mean Input speed (n_m)

Eq.(2) $$n_m = \frac{n_{1m}t_1 + n_{2m}t_2 + n_{3m}t_3 + \ldots + n_{nm}t_n}{t_t}$$

where $t_t = t_1 + t_2 + t_3 + \ldots + t_n$

Equivalent torque (T_{EQ})

Eq.(3) $$T_{EQ} = \sqrt[8.7]{T_1^{8.7}\frac{n_{1m}t_1}{n_m t_t} + T_2^{8.7}\frac{n_{2m}t_2}{n_m t_t} + T_3^{8.7}\frac{n_{3m}t_3}{n_m t_t} + \ldots + T_n^{8.7}\frac{n_{nm}t_n}{n_m t_t}}$$

Modified equivalent torque (T_{EQm})

Eq.(4) $$T_{EQm} = \frac{T_{EQ}}{Q}$$

where Q is:

Q	# Cycles/hr
1.0	>0
0.9	>1000
0.7	>2500
0.5	>5000