TRUE PLANETARY GEARHEADS

MICRON

1-800-554-8466
www.microngearheads.com

Solutions by DANAHER MOTION

Mechanical and Electro-Mechanical Product Solutions by Danaher Motion

Danaher Motion engineers, manufactures and markets a select combination of the world's top brands of mechanical and electro-mechanical products. Our principle brands and products include:

- **THOMSON** industrial, precision and rodless actuators, linear slide tables and systems, ball and lead screws, linear bearings and guides, precision balls, molded products, shafting and integrated solutions
- **THOMSON BSA** lead screws and precision miniature ball screws
- **MICRON** gearheads
- **DELTRAN PT** electromagnetic friction and wrap spring clutches and brakes
- **SUPERIOR ELECTRIC** stepper and servo motors and controls
- **SECO** AC and DC variable speed drives

Designed to help increase productivity and improve performance, our products are incorporated into new equipment designs as well as machines already in service. From semiconductor assembly, packaging, robotics and industrial automation to medical, fitness and mobile off-highway equipment, our mechanical and electro-mechanical products bring flexibility, precision, efficiency, and reliability to a wide variety of industries.

Beyond our world-class product designs, one of our greatest strengths is our commitment to the Danaher Business System (DBS), which is comprised of a unique set of robust, repeatable processes that help us constantly improve the operational efficiency of our factories. Based upon the time-tested methods of Kaizen, the DBS is a team-based mindset that continuously and aggressively eliminates waste in every facet of our business operations. Furthermore, the DBS focuses the entire organization on breakthrough objectives that culminate in maintainable, results-oriented business processes, which, in turn, create advantages for our customers in the areas of quality, delivery and performance.

At Danaher Motion, we bring together best-in-class products, unsurpassed customization expertise, and innovative solutions to significantly improve and revolutionize the way things move. We are the experts in motion control. In short, Danaher Motion offers more choices, more application expertise and more integrated solutions than anyone else in the market.

Website: www.DanaherLinear.com

THOMSON

THOMSON BSA

MICRON

Deltran PT

Superior Electric

Seco AC/DC Drives

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NemaTRUE* In-Line

The NemaTRUE is now available in three new metric sizes (60, 90 and 115mm) and has been upgraded with Micron's innovative RediMount system. Micron now brings you a True Planetary, RediMount compliant gearhead that is an economical solution for your application. The NemaTRUE also has many ratios in stock for immediate delivery through the Micron Gearhead Express program.

Features
- Precision: 13 arc-minutes
- Frame Sizes: 17, 23, 34 and 42mm (60, 90 and 115mm)
- Torque Capacity: up to 1600 in-lb
- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 840 lb.
- Mounting System: RediMount*

NemaTRUE 90* Right Angle

The NemaTRUE right angle combines Micron's True Planetary gearing with PowerTRUE face gear technology to provide a low cost, highly efficient right angle gearhead that can fit into a small envelope.

Features
- Precision: 13 arc-minutes
- Frame Sizes: 23, 34, and 42
- Torque Capacity: up to 2255 in-lb
- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 650 lb.
- Mounting System: RediMount*

DuraTRUE* In-Line

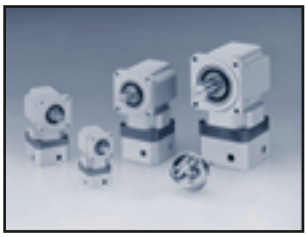
The DuraTRUE is a high precision, True Planetary gearhead that utilizes the Micron RediMount system. The DuraTRUE also has many ratios in stock for immediate delivery through the Micron Gearhead Express program.

Features
- Precision: 8 arc-minutes
- Frame Sizes: 60, 90, 115 and 142mm
- Torque Capacity: up to 7377 in-lb
- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 2500 lb.
- Mounting System: RediMount*

DuraTRUE 90*Right Angle

The DuraTRUE right angle combines the Micron True Planetary gearing with PowerTRUE face gear technology. The DuraTRUE has standard ratios available up to 500:1 and has a high precision specification of 8 arc-min max.

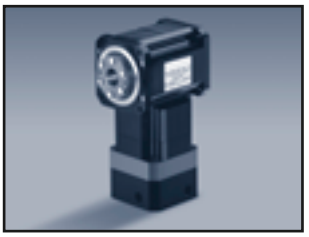
Features
- Precision: 8 arc-minutes
- Frame Sizes: 60, 90, 115 and 142mm
- Torque Capacity: up to 7450 in-lb
- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 2500 lb.
- Mounting System: RediMount*



DuraTRUE 90* (Hollow Shaft)

The DuraTRUE Hollow Shaft allows you to design your system in the smallest envelope possible. It eliminates the need for a coupling, which will save space and cost and increase precision and system reliability.

Features
- Precision: 8 arc-minutes
- Frame Sizes: 90, 115 and 142mm
- Torque Capacity: up to 7659 in-lb
- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 2500 lb.
- Mounting System: RediMount*



DuraTRUE 90* (Dual Shaft)

The DuraTRUE Dual Shaft has a duplicate flange and output shaft on the back side of the gearhead. This "T" design will allow you to run two axes with one motor.

Features
- Precision: 8 arc-minutes
- Frame Sizes: 60, 90, 115 and 142mm
- Torque Capacity: up to 7659 in-lb
- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 2500 lb.
- Mounting System: RediMount*

UltraTRUE* In-Line

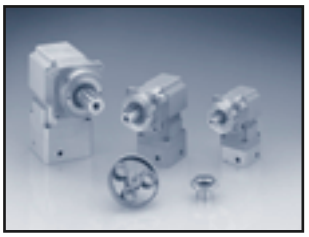
The UltraTRUE is a helical crowned True Planetary gearhead. The internal gear is cut directly into the stainless steel housing to increase torque capacity and avoid slippage. The Helical cut of the gears provides higher torque capacity, precision and stiffness when compared to straight cut gears. The UltraTRUE has many ratios in stock and available for immediate delivery though the Micron Gearhead Express program.

Features
- Precision: 4 arc-minutes
- Frame Sizes: 60, 75, 90, 100, 115, 140, 180, and 220mm
- Torque Capacity: up to 29,201 in-lb
- Ratio Availability: 4:1 thru 100:1
- Radial Load Capacity: up to 8500 lb.
- Mounting System: RediMount*

UltraTRUE 90* Right Angle

The UltraTRUE right angle combines Micron's PowerTRUE face gear technology with the helical crowned True Planetary gearing used in the UltraTRUE. The result is an ultra precise, high torque, highly efficient gearhead which is the quietest and smoothest right angle on the market.

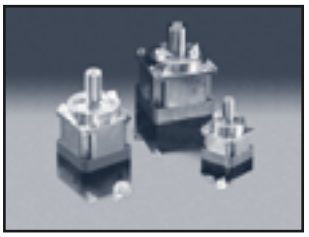
Features
- Precision: 4 arc-minutes
- Frame Sizes: 60, 75, 90, 100, 115, 140, and 180mm
- Torque Capacity: up to 27,532 in-lb
- Ratio Availability: 1:1 thru 50:1
- Radial Load Capacity: up to 8500 lb.
- Mounting System: RediMount*



EverTRUE (Continuous Duty)

The EverTRUE is a True Planetary, RediMount compliant gearhead that is designed to run in a continuous duty cycle. This Continuous Duty gearhead is lubricated for life and rated to last a minimum of 30,000 hours in a 24 hour/day, 7 day/week application.

Features
- Precision: 4 arc-minutes
- Frame Sizes: 100, 140 and 180mm
- Torque Capacity: up to 9,000 in-lb
- Ratio Availability: 4:1 thru 100:1
- Radial Load Capacity: up to 10,000 lb.
- Mounting System: RediMount*



EQ Series

The Micron EQ series uses patented "Swing Link" technology that lets the gears mesh smoothly and reduces noise, vibration and cyclic loading of the gears. The EQ series is available in Nema, C-Face and metric front face mounting options.

Features
- Precision: 18 arc-minutes
- Frame Sizes: 23, 60mm
- Torque Capacity: up to 260 in-lb
- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 340 lb.
- Mounting System: RediMount*

AccuLOCK* Coupling

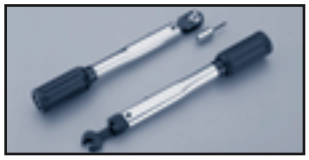
The AccuLOCK is a steel bellows, zero backlash coupling whose lightweight, compact design meets the low intertia requirements of high performance motion control applications.

Features
Flexible Steel Bellows Coupling
- Bore Range: 9 thru 50mm
- Torque Capacity: up to 5310 in-lb
- Available in 6 sizes for immediate delivery

Torque Wrenches

To ensure that the proper torque is applied when mounting all of the Micron True Planetary gearheads, a complete line of easy to use torque wrenches is offered.

Features
Ensure Proper Clamping force from pinion to motor shaft
- Available for RediMount* motor mounting systems



Custom Engineered Products

Although Danaher Motion offers the largest breadth of Micron True Planetary gearheads in the world, they also have a complete line of custom engineered products. The engineering team at Danaher Motion is available to offer "white sheet of paper" designs no matter what your gearing need.

Features
Complete Engineered Solutions
- Servo Actuated Solutions
- High Volume, Low Cost
- State-of-the-art low noise gear manufacturing

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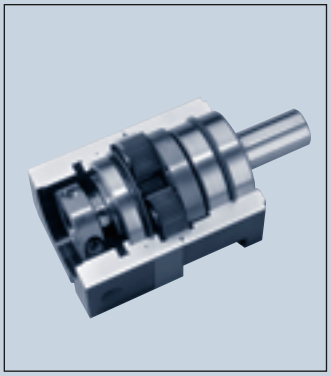
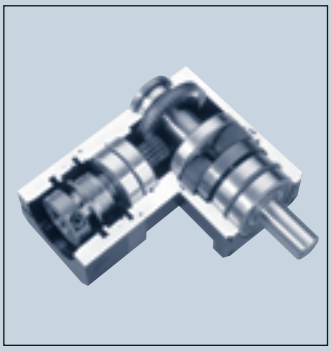
UltraTRUE output cage assembly*



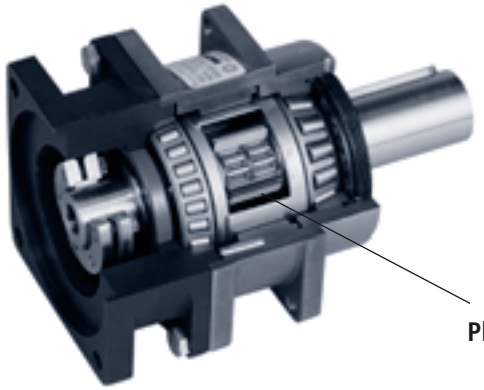
DuraTRUE in-line planetary gearhead*

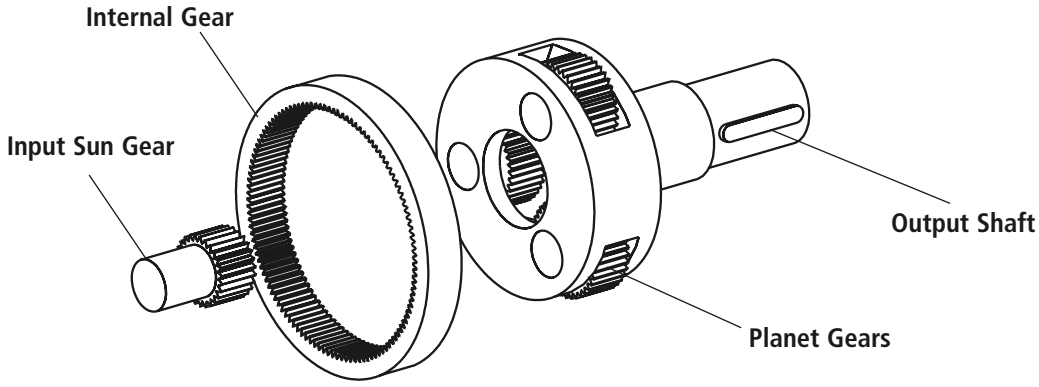


DuraTRUE 90 right angle planetary gearhead*

True Planetary* Gearheads offer. . .

- **High Torque to Size Ratio** - allows compact design
- **Low Backlash** - eliminates positioning errors due to lost motion
- **Inertia Matching** - keeps servo system stable and in control
- **High Rigidity** - optimizes system response
- **Self Re-lubrication** - eliminates costly maintenance and downtime
- **High Radial Load Capacity** - mount pulleys and pinions directly on the output shaft



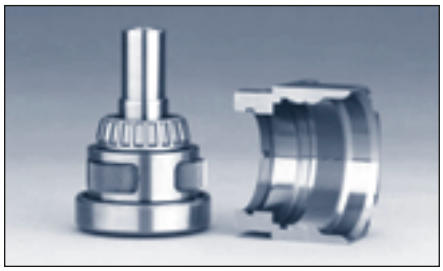


Product Feature	Gearhead						
	NemaTRUE*	NemaTRUE 90*	DuraTRUE*	DuraTRUE 90*	UltraTRUE*	UltraTRUE 90*	EverTRUE*
True Planetary gearing	●	●	●	●	●	●	●

MICRON

Helical Crowned True Planetary* Gearing offers.....

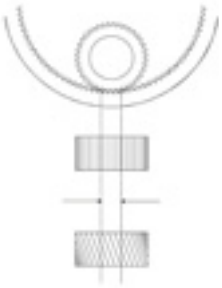
- High Torque Capacity
- Low Backlash
- Smooth Operation
- Greater Load Sharing
- Whisper Quiet



Output housing and helical internal gear are machined from a single piece of high strength steel

Helical gears are known for their quiet and smooth operation along with their ability to transmit higher loads than spur gears. Both of these features of helical gearing result from the improved contact ratio (effective teeth in mesh) over spur gears. Crowning is a modification to the gear tooth profile which optimizes gear mesh alignment. It also enhances distribution of loading on the tooth flank, thereby reducing high stress regions which can result in surface pitting.

Spur vs. Helical Gearing

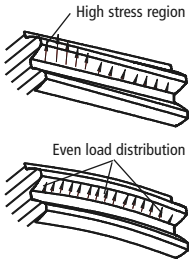


Typical contact ratio is 1.5 for spur gearing.

Contact ratio for equivalent helical gear is 3.3... **more than double the contact ratio.**

The Contact ratio is defined as the number of teeth in mesh at any given time. The higher the contact ratio, the higher the torque rating of the gearing. **Helical gearing has more than 2X the contact ratio of spur gearing.**

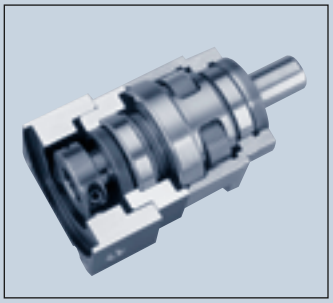
Crowned vs. Non-crowned



Crowning optimizes the gear mesh alignment within a gear train to increase the torque capacity and reduce noise. It also enhances load distribution on the tooth flank to reduce high stress regions.

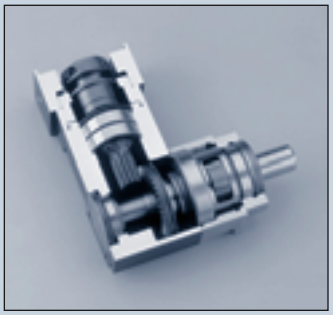
Product Feature	Gearhead						
	NemaTRUE*	NemaTRUE 90*	DuraTRUE*	DuraTRUE 90*	UltraTRUE*	UltraTRUE 90*	EverTRUE*
Helical crowned True Planetary gearing					●	●	

UltraTRUE in-line planetary gearhead*



Planetary gearheads are often selected for high precision motion control applications which require a high torque to volume ratio, high torsonial stiffness and low backlash. Until now, these attributes have been sufficient to meet the requirements of the market. Danaher Motion has designed a high torque, whisper quiet helical gearhead to meet the recent improvements in servo motor technology.

Danaher Motion engineers accomplished this by combining the positive attributes of gear crowning and helical gearing with the planetary construction to create the smoothest operating gearhead on the market.



UltraTRUE 90 right angle planetary gearhead*

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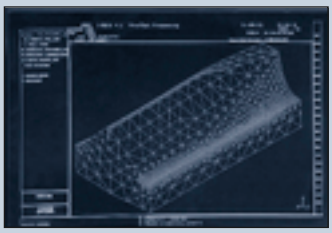
Website: www.microngearheads.com

PowerTRUE right angle gearset*

Right angle gear meshes are typically limited to ratios from 1:1 to 3:1 when using standard bevel gears. Compared to these designs, the PowerTRUE 90 gear increases the ratio range to 5:1.

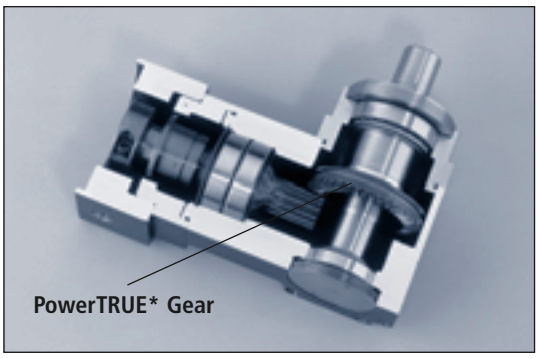
The key to higher torque density is a unique tooth design, created by complex machining made practical with advanced CNC equipment and software. In the design,multiple teeth in the face gear simultaneously mesh with a standard involute pinion. The continuous tooth engagement yields a high contact ratio between the gear and the pinion, boosting torques to new levels and efficiency to 98%.



Advanced software enables stress analysis of PowerTRUE tooth profile

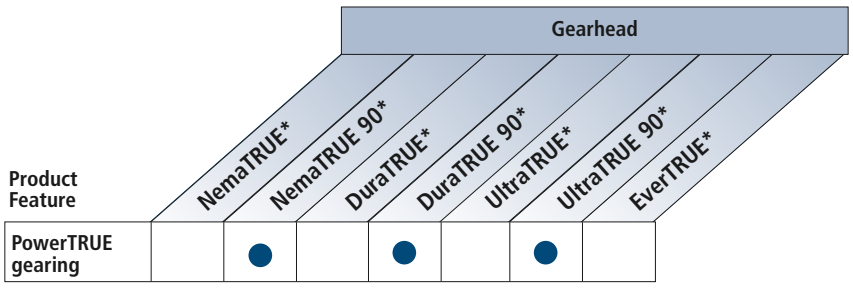
PowerTRUE* Right Angle Gearheads offer.....

- **Lower backlash accomplished through single axis mesh adjustment**
- **A compact right angle design utilizing a high-tech face gear**
- **Whisper quiet operation due to high contact ratio**
- **Mesh ratios from 1:1 to 5:1**
- **98% efficiency**



CNC Machining of a PowerTRUE* right angle gear

Computerized mapping of gear tooth profile



MICRON

RediMount* Motor Mounting System

- **Self-aligning hub** - Maintains concentricity between motor shaft and gearhead
- **Pre-installed pinion** - Eliminates pinion setting procedure
- **Modular design** - Allows gearhead and input housing to be stocked separately
- **Flexibility** - Allows easy changeover to alternate motors
- **Interchangeability** - Same RediMount system is used throughout 7 product lines

Exploded view of RediMount mounting system

Mounting Instructions

1- Slide the provided sleeve into the hub and align the slot in the bushing with the slot in the hub.

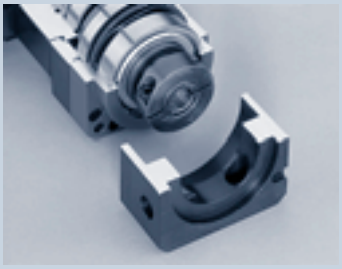
2- Set the motor on a work surface or hold fixture with the output shaft facing straight up. If there is a key on the motor, remove it and align the keyway with the slot in the hub. Slide the gearhead down onto the motor shaft.

3- Rotate the hub to align the input housing access holes with the hub clamping bolts.

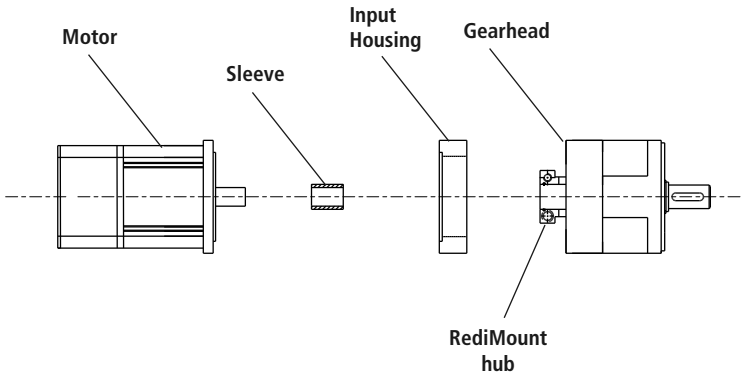
4 - Using a torque wrench tighten the hub bolts to the pre-torque value indicated in the table.

5 - Bolt the motor to the gearhead with the bolts provided.

6 - Gradually tighten the hub bolts in three steps, increasing the torque each time until reaching the final tightening torque in the table.

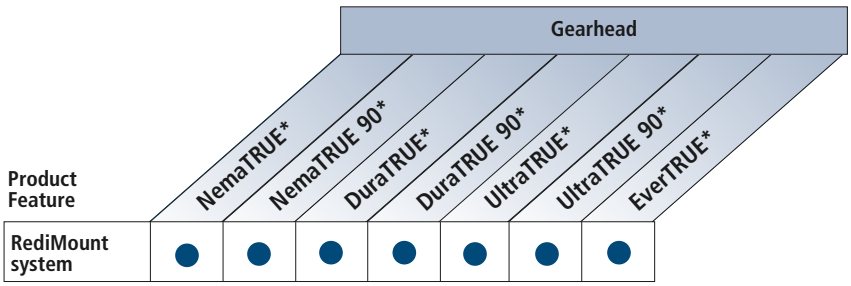


Close-up view of the bearing system and hub sleeve which accommodates various motor shaft diameters.



Hub Bolt Tightening Torques

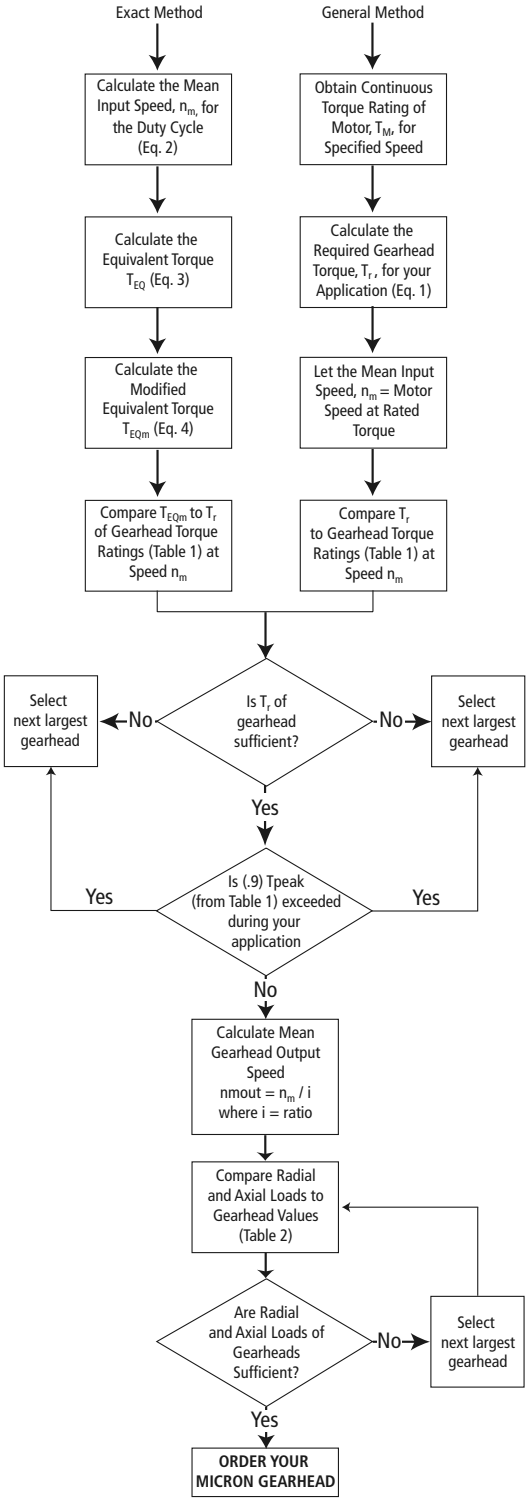
Gearhead Model	Gearhead Frame Size	Pre-Tightening Torque in-lb	Pre-Tightening Torque Nm	Final Tightening Torque in-lb	Final Tightening Torque Nm
NemaTRUE*	23	2	.2	39	4.4
NemaTRUE 90*	34	4	.4	76	8.5
	42	16	1.8	316	36.0
DuraTRUE*	60	2	.2	39	4.4
DuraTRUE 90*	90	4	.4	76	8.5
	115	16	1.8	316	36.0
	142	32	3.6	636	72.0
UltraTRUE*	60	2	.2	39	4.4
UltraTRUE 90*	75/90	4	.4	76	8.5
	10/115	16	1.8	316	36.0
	140	32	3.6	636	72.0
	180	55	6.3	1104	125.0



Step 1: Select the required precision class and gearhead configuration (in-line or right angle).

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

For continuous duty applications, please contact Applications Engineering.



General Method:

Required Gearhead Torque (T_r)

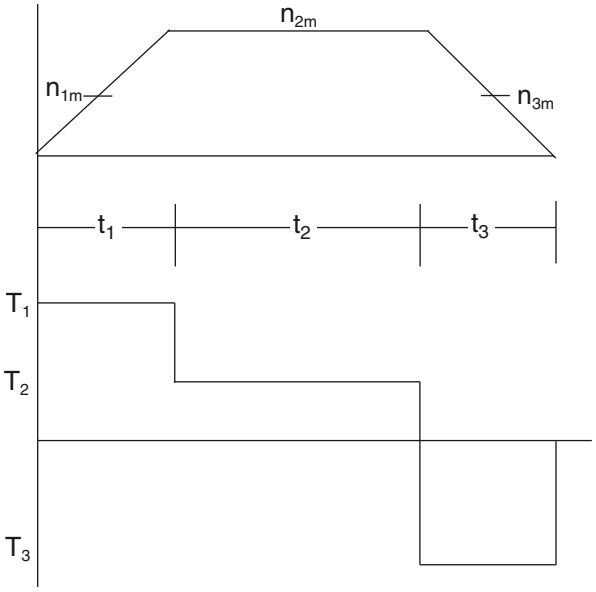
(1) $T_r = T_{M^*} \times i \times e$

where: T_{M^*} = 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 for 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

Motion Profile



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)

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

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

Equivalent torque (T_{EQ})

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

Modified equivalent torque (T_{EQm})

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

where Q is:

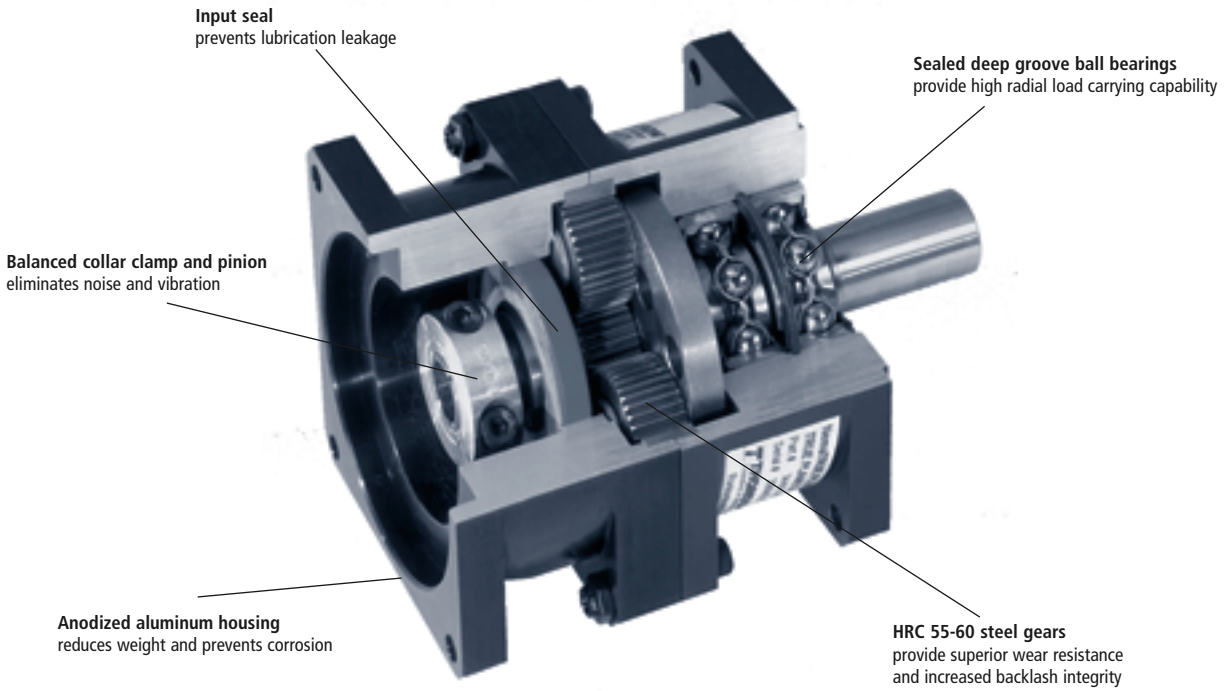
Q	# of cycles/hr
1	>0
.9	>1000
.7	>2500
.5	>5000

NemaTRUE*

True Planetary* Gearheads

Ready for Immediate Delivery

Precision:	13 arc-minutes	**Ratio Availability:**	3:1 thru 100:1
Frame Sizes:	17, 23/60mm, 34/90mm, and 42/115mm	**Radial load capacity:**	up to 840 lb
Torque Capacity:	up to 1600 in-lb	**Mounting System:**	RediMount*



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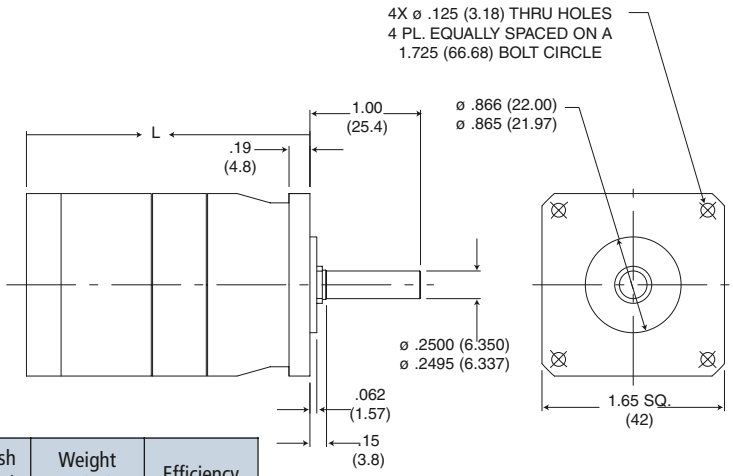
True Planetary* Gearheads

English



Ratio	Dimension 'L' in (mm)	Backlash (arc-min)	Weight lb (kg)	Efficiency
3:1 to 10:1	1.75 (44)	13 max	.75 (0.34)	90%
15:1 to 100:1	2.25 (57)	15 max	.95 (0.43)	85%

(TABLE 1) PERFORMANCE SPECIFICATIONS

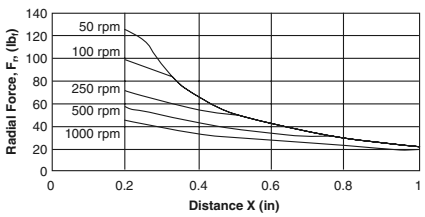
Part Number	Ratio[1]	10,000 HOUR LIFE				T_{peak}	J	Torsonial Stiffness
		T_r (1000 rpm) in-lb (Nm)	T_r (2000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (4000 rpm) in-lb (Nm)	in-lb (Nm)	in-lb-sec^{2}x10^{-4} (kg-cm^2)	in-lb/arc-min (Nm/arc-min)
NT17-003	3:1	41 (4.7)	34 (3.8)	29 (3.3)	27 (3.1)	170 (19.2)	0.115 (0.013)	2.36 (0.268)
NT17-005	5:1	44 (5.0)	37 (4.2)	33 (3.7)	30 (3.4)	170 (19.2)	0.040 (0.005)	2.36 (0.268)
NT17-010	10:1	30 (3.4)	28 (3.1)	25 (2.8)	23 (2.6)	170 (19.2)	0.030 (0.003)	2.36 (0.268)
NT17-015	15:1	47 (5.3)	47 (5.3)	47 (5.3)	42 (4.7)	170 (19.2)	0.037 (0.004)	2.36 (0.268)
NT17-025	25:1	78 (8.8)	58 (6.6)	53 (6.0)	48 (5.5)	170 (19.2)	0.037 (0.004)	2.36 (0.268)
NT17-030	30:1	57 (6.4)	52 (5.9)	48 (5.4)	46 (5.2)	170 (19.2)	0.026 (0.003)	2.36 (0.268)
NT17-050	50:1	91 (10.3)	78 (8.8)	65 (7.4)	60 (6.7)	170 (19.2)	0.026 (0.003)	2.36 (0.268)
NT17-100	100:1	40 (4.5)	38 (4.3)	35 (4.0)	33 (3.8)	170 (19.2)	0.026 (0.003)	2.36 (0.268)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
See page 10 for gearhead selection criteria

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

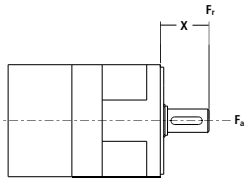
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L10 life of 10,000 hours for the mean output speed n_{mout} , as described on page 10.

NT17 Radial Loadings



NT17 Axial Loadings

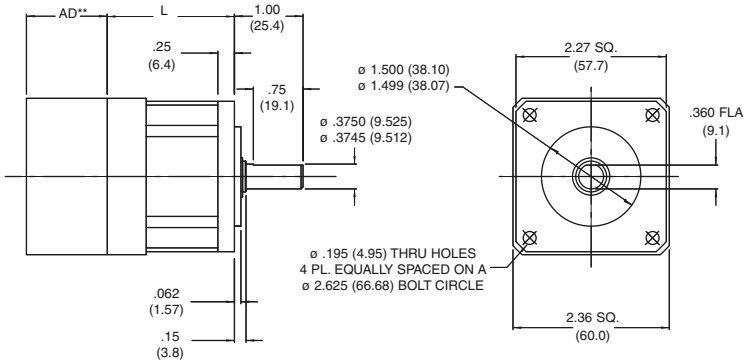
Speed (rpm)	Axial Load, F_a (lbf)	N
50	237	(1054)
100	188	(836)
250	138	(614)
500	110	(489)
1000	87	(387)

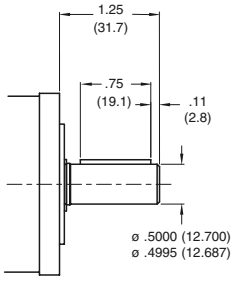


NemaTRUE* Size 23/60mm

True Planetary* Gearheads

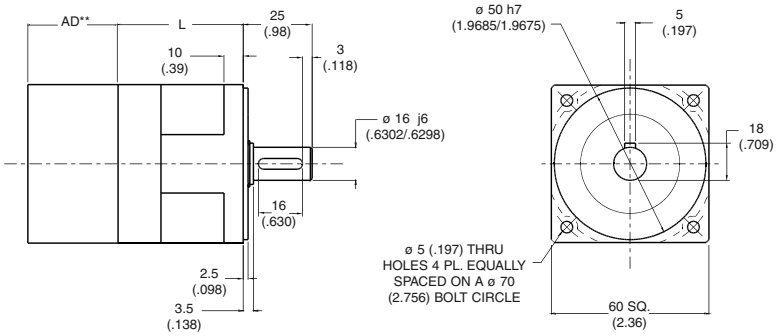
NemaTRUE* English





NemaTRUE PLUS* (NTP)
Heavy Duty Output Shaft

NemaTRUE* Metric



Ratio	NT23 Dimension 'L' in (in)	NT60 Dimension 'L' in (mm)	Backlash (arc-min)		Weight lb (Kg)	Efficiency
			Precision	High Precision		
3:1 to 10:1	1.92 (48.8)	2.07 (52.6)	13 max	8 max	1.5 (0.7)	90%
15:1 to 100:1	2.61 (66.3)	2.76 (70.1)	15 max	9 max	1.9 (0.9)	85%

All dimensions are: mm (inches)

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

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number		Ratio[1]	10,000 HOUR LIFE				T_{peak}	J	Torsional Stiffness in-lb/arc-min (Nm/arc-min)	
English	Metric		T_r (1000 rpm) in-lb (Nm)	T_r (2000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (4000 rpm) in-lb (Nm)	in-lb (Nm)	in-lb-sec^{2}x10^{-4} (kg-cm^2)	NT	NTP
NT23-003	**NT60-003**	3:1	98 (11.1)	80 (9.0)	70 (7.9)	65 (7.3)	150 (16.9)	0.67 (0.076)	6.3 (0.71)	15.8 (1.8)
NT23-004	**NT60-004**	4:1	107 (12.1)	90 (10.2)	80 (9.0)	73 (8.2)	250 (28.3)	0.22 (0.024)	6.3 (0.71)	15.8 (1.8)
NT23-005	**NT60-005**	5:1	105 (11.9)	88 (9.9)	78 (8.8)	71 (8.0)	250 (28.2)	0.22 (0.025)	6.3 (0.71)	15.8 (1.8)
NT23-007	**NT60-007**	7:1	100 (11.3)	83 (9.4)	74 (8.4)	66 (7.5)	250 (28.3)	0.22 (0.024)	6.3 (0.71)	15.8 (1.8)
NT23-010	**NT60-010**	10:1	163 (7.1)	58 (6.6)	54 (6.1)	52 (5.9)	250 (28.2)	0.14 (0.016)	6.3 (0.71)	15.8 (1.8)
NT23-015	**NT60-015**	15:1	124 (14.0)	110 (12.4)	105 (11.9)	100 (11.3)	250 (28.3)	0.21 (0.024)	6.3 (0.71)	15.8 (1.8)
NT23-020	**NT60-020**	20:1	180 (20.3)	147 (16.6)	130 (14.7)	120 (13.6)	275 (31.1)	0.21 (0.024)	6.3 (0.71)	15.8 (1.8)
NT23-025	**NT60-025**	25:1	175 (9.8)	142 (16.0)	125 (14.1)	115 (13.0)	250 (28.3)	0.21 (0.024)	6.3 (0.71)	15.8 (1.8)
NT23-030	**NT60-030**	30:1	207 (23.4)	182 (20.6)	157 (17.7)	147 (16.6)	275 (31.1)	0.13 (0.015)	6.3 (0.71)	15.8 (1.8)
NT23-040	**NT60-040**	40:1	207 (23.4)	182 (20.6)	157 (17.7)	147 (16.6)	275 (31.1)	0.13 (0.015)	6.3 (0.71)	15.8 (1.8)
NT23-050	**NT60-050**	50:1	202 (22.8)	175 (19.8)	152 (17.2)	142 (16.0)	275 (31.1)	0.13 (0.015)	6.3 (0.71)	15.8 (1.8)
NT23-070	**NT60-070**	70:1	197 (22.3)	172 (19.4)	147 (16.6)	137 (15.5)	275 (31.1)	0.13 (0.015)	6.3 (0.71)	15.8 (1.8)
NT23-100	**NT60-100**	100:1	85 (9.6)	79 (8.9)	74 (8.9)	73 (8.2)	275 (31.1)	0.13 (0.015)	6.3 (0.71)	15.8 (1.8)

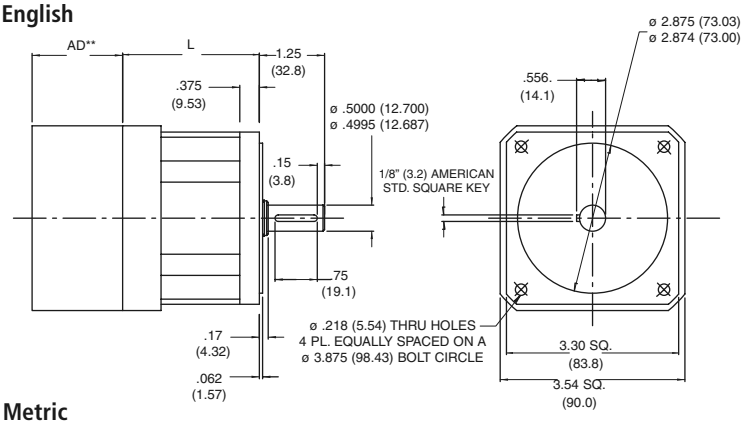
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
See page 10 for gearhead selection criteria

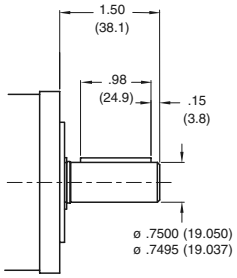
Available in 24 hours through the Micron Gearhead Express program

NemaTRUE* Size 34/90mm

True Planetary* Gearheads

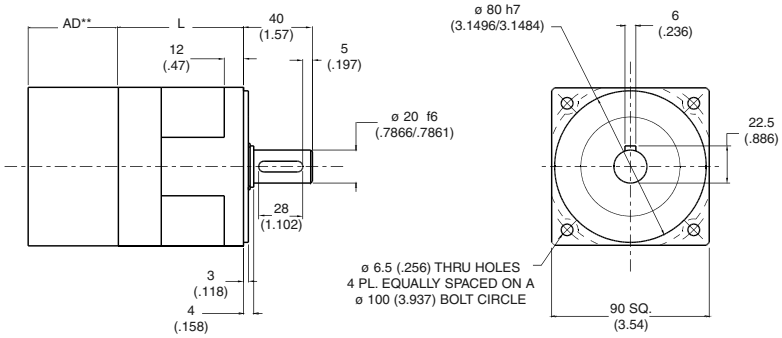
NemaTRUE* English





NemaTRUE PLUS* (NTP)
Heavy Duty Output Shaft

NemaTRUE* Metric



Ratio	NT34 Dimension 'L' in (in)	NT90 Dimension 'L' in (mm)	Backlash (arc-min)		Weight lb (Kg)	Efficiency
			Precision	High Precision		
3:1 to 10:1	2.68 (68.0)	2.63 (66.8)	13 max	8 max	4.2 (1.9)	90%
15:1 to 100:1	3.53 (89.6)	3.53 (89.7)	15 max	9 max	5.6 (2.5)	85%

All dimensions are: mm (inches)
AD** = Adapter length.
Adapter length will vary depending on motor.

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number		Ratio[1]	10,000 HOUR LIFE				T_{peak}	J	Torsional Stiffness	
English	Metric		T_r (1000 rpm) in-lb (Nm)	T_r (2000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (4000 rpm) in-lb (Nm)	in-lb (Nm)	in-lb-sec^{2}x10^{-4} (kg-cm^2)	in-lb/arc-min (Nm/arc-min) NT	NTP
NT34-003	**NT90-003**	3:1	360 (40.7)	320 (36.2)	295 (33.3)	270 (30.5)	510 (57.6)	3.9 (0.44)	16.8 (1.9)	48 (5.4)
NT34-004	**NT90-004**	4:1	515 (58.2)	425 (48.0)	380 (42.9)	350 (39.6)	700 (79.1)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-005	**NT90-005**	5:1	490 (55.4)	400 (45.2)	355 (40.1)	325 (36.7)	700 (79.1)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-007	**NT90-007**	7:1	470 (53.1)	380 (42.9)	335 (37.9)	305 (34.5)	700 (79.1)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-010	**NT90-010**	10:1	238 (26.9)	212 (24.0)	200 (22.6)	192 (21.7)	700 (79.1)	0.66 (0.075)	16.8 (1.9)	48 (5.4)
NT34-015	**NT90-015**	15:1	454 (51.3)	416 (47.0)	391 (44.2)	373 (42.1)	850 (96.0)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-020	**NT90-020**	20:1	677 (76.5)	620 (70.1)	587 (66.3)	551 (62.3)	850 (96.1)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-025	**NT90-025**	25:1	652 (73.7)	595 (67.2)	562 (63.5)	526 (59.4)	850 (96.0)	1.20 (0.140)	16.8 (1.9)	48 (5.4)
NT34-030	**NT90-030**	30:1	500 (56.5)	454 (51.3)	432 (48.8)	416 (47.0)	850 (96.0)	0.66 (0.075)	16.8 (1.9)	48 (5.4)
NT34-040	**NT90-040**	40:1	770 (87.0)	702 (79.3)	668 (75.5)	620 (70.1)	850 (96.1)	0.65 (0.074)	16.8 (1.9)	48 (5.4)
NT34-050	**NT90-050**	50:1	720 (81.4)	652 (73.7)	618 (69.8)	595 (67.2)	850 (96.0)	0.65 (0.074)	16.8 (1.9)	48 (5.4)
NT34-070	**NT90-070**	70:1	770 (87.0)	702 (79.3)	668 (75.5)	620 (70.1)	850 (96.1)	0.65 (0.074)	16.8 (1.9)	48 (5.4)
NT34-100	**NT90-100**	100:1	325 (36.7)	295 (33.3)	280 (31.6)	270 (30.5)	700 (79.1)	0.65 (0.074)	16.8 (1.9)	48 (5.4)

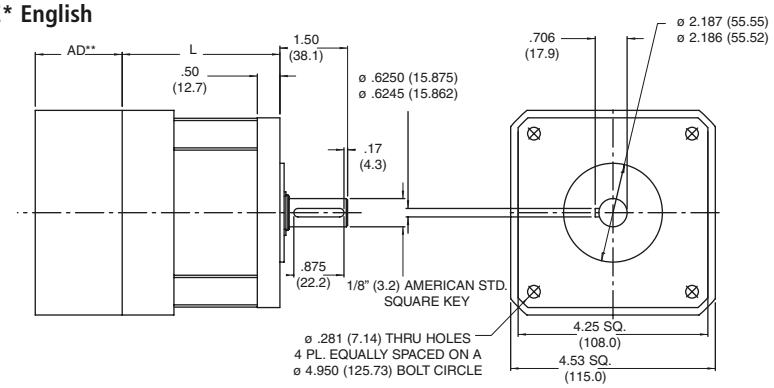
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
See page 10 for gearhead selection criteria

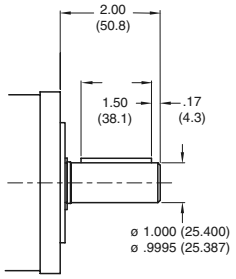
Available in 24 hours through the Micron Gearhead Express program

NemaTRUE* Size 42/115mm

True Planetary* Gearheads

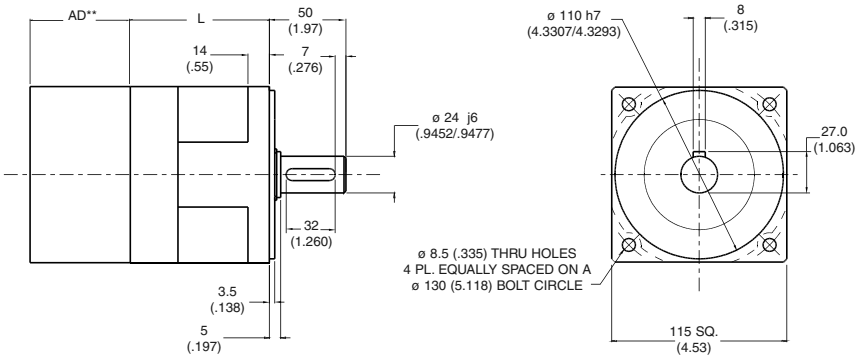
NemaTRUE* English





NemaTRUE PLUS* (NTP)
Heavy Duty Output Shaft

NemaTRUE* Metric



Ratio	NT42 Dimension 'L' in (in)	NT115 Dimension 'L' in (mm)	Backlash (arc-min)		Weight lb (Kg)	Efficiency
			Precision	High Precision		
3:1 to 10:1	3.49 (88.6)	3.46 (87.9)	13 max	8 max	8.9 (4.0)	90%
15:1 to 100:1	4.72 (119.9)	4.69 (119.1)	15 max	9 max	11.7 (5.3)	85%

All dimensions are: mm (inches)
AD** = Adapter length.
Adapter length will vary depending on motor.

(TABLE 1) PERFORMANCE SPECIFICATIONS

Part Number		Ratio[1]	10,000 HOUR LIFE				T_{peak}	J	Torsional Stiffness	
English	Metric		T_r (1000 rpm) in-lb (Nm)	T_r (2000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (4000 rpm) in-lb (Nm)	in-lb (Nm)	in-lb-sec^{2}x10^{-4} (kg-cm^2)	in-lb/arc-min (Nm/arc-min)	
NT42-003	**NT115-003**	3:1	690 (78.0)	594 (67.1)	530 (59.9)	485 (54.8)	1000 (113.0)	14 (1.6)	31 (3.5)	154 (17.4)
NT42-004	**NT115-004**	4:1	850 (96.1)	698 (78.9)	622 (70.3)	570 (64.4)	1000 (113.0)	3.80 (0.43)	31 (3.5)	154 (17.4)
NT42-005	**NT115-005**	5:1	810 (55.4)	400 (45.2)	355 (40.1)	325 (36.7)	1000 (113.0)	3.80 (0.43)	31 (3.5)	154 (17.4)
NT42-007	**NT115-007**	7:1	790 (89.3)	638 (72.1)	562 (63.5)	510 (57.6)	1000 (113.0)	3.80 (0.43)	31 (3.5)	154 (17.4)
NT42-010	**NT115-010**	10:1	460 (52.0)	412 (46.6)	388 (43.8)	370 (41.8)	1000 (113.0)	1.9 (0.21)	31 (3.5)	154 (17.4)
NT42-015	**NT115-015**	15:1	454 (51.3)	416 (47.0)	391 (44.2)	373 (42.1)	1600 (180.8)	3.9 (0.44)	31 (3.5)	154 (17.4)
NT42-020	**NT115-020**	20:1	1290 (145.8)	1090 (123.2)	985 (111.3)	905 (102.3)	1600 (180.8)	3.70 (0.42)	31 (3.5)	154 (17.4)
NT42-025	**NT115-025**	25:1	1250 (141.2)	1050 (118.6)	945 (106.8)	865 (97.7)	1600 (180.8)	3.70 (0.42)	31 (3.5)	154 (17.4)
NT42-030	**NT115-030**	30:1	972 (109.8)	878 (99.2)	842 (95.1)	805 (91.0)	1600 (180.8)	1.9 (0.21)	31 (3.5)	154 (17.4)
NT42-040	**NT115-040**	40:1	1435 (162.2)	1290 (145.8)	1190 (134.5)	1090 (123.2)	1600 (180.8)	1.80 (0.20)	31 (3.5)	154 (17.4)
NT42-050	**NT115-050**	50:1	1395 (157.6)	1250 (141.2)	1150 (118.6)	1050 (118.6)	1600 (180.8)	1.80 (0.20)	31 (3.5)	154 (17.4)
NT42-070	**NT115-070**	70:1	1375 (155.4)	1230 (139.0)	1130 (127.7)	1030 (116.4)	1600 (180.8)	1.80 (0.20)	31 (3.5)	154 (17.4)
NT42-100	**NT115-100**	100:1	630 (71.2)	575 (65.0)	540 (61.0)	522 (59.0)	1200 (135.6)	1.80 (0.20)	31 (3.5)	154 (17.4)

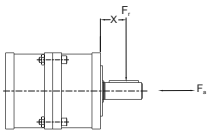
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
See page 10 for gearhead selection criteria

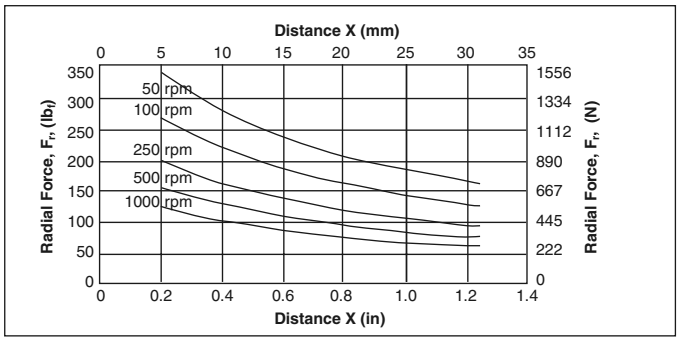
Available in 24 hours through the Micron Gearhead Express program

MICRON

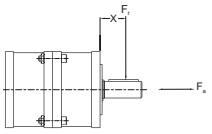
Radial and Axial Load Ratings

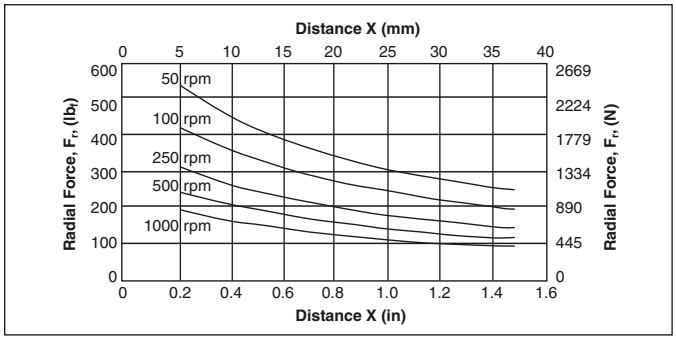
NT23, NTP23 and NT60
Allowable axial load F_a = 310 lb_f (1379N) at 250 rpm



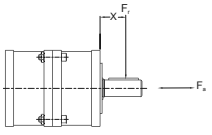


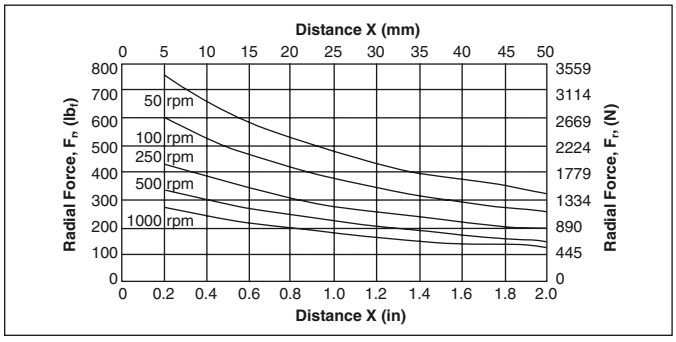
NT34, NTP34 and NT90
Allowable axial load F_a = 510 lb_f (2269N) at 250 rpm





NT42, NTP42 and NT115
Allowable axial load F_a = 760 lb_f (3380N) at 250 rpm



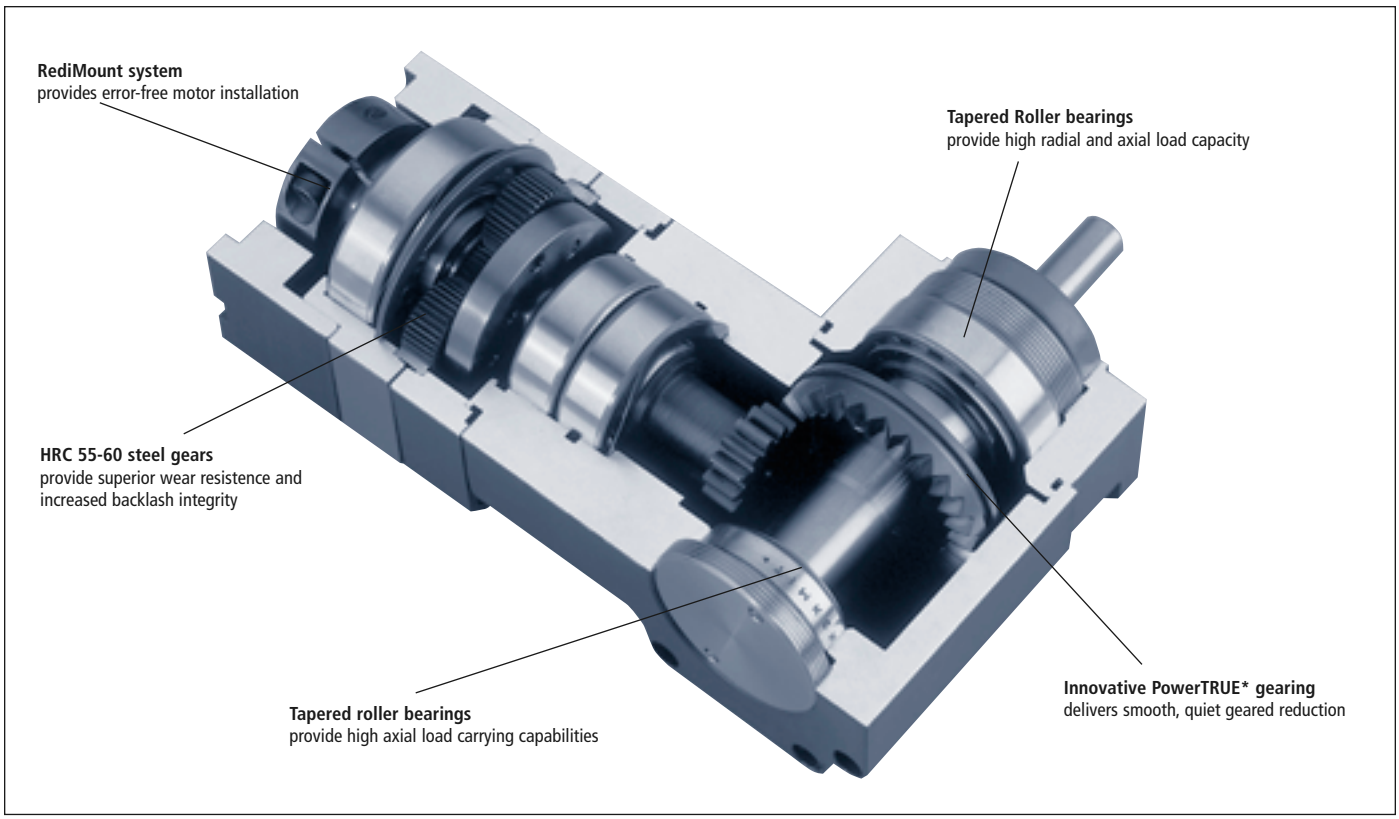


These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout}, as described on page 10.

NemaTRUE 90*
Right Angle Gearheads

Ready for Immediate Delivery

Precision:	13 arc-minutes	**Ratio Availability:**	1:1 thru 500:1
Frame Sizes:	23, 34, and 42	**Radial load capacity:**	up to 650 lb
Torque Capacity:	up to 2255 in-lb	**Mounting system:**	RediMount*



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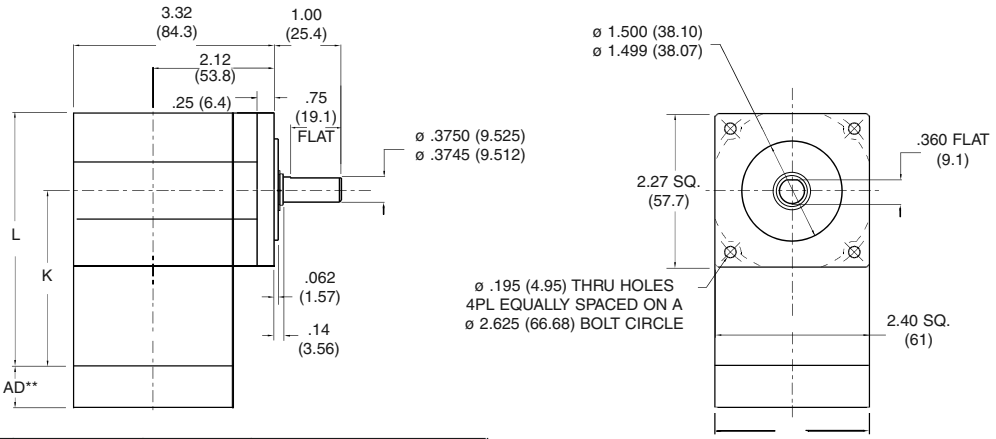
NemaTRUE 90* Size 23

Right Angle Gearhead

English



Ratio	Dimension 'K' in (mm)	Dimension 'L' in (mm)	Backlash (arc-min)	Weight lb (kg)	Efficiency
1:1 to 5:1P	3.11 (79)	4.31 (109.5)	13 max	3.0 (1.4)	95%
5:1T to 50:1	3.79 (96)	4.99 (127)	15 max	3.4 (1.5)	90%
60:1 to 500:1	4.48 (114)	5.68 (144)	15 max	3.8 (1.6)	85%

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

(TABLE 1) PERFORMANCE SPECIFICATIONS

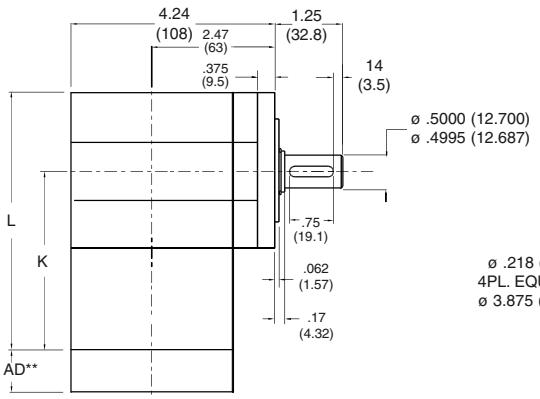
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (5000 rpm) in-lb (Nm)	in-lb (Nm)	T_r (1000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (5000 rpm) in-lb (Nm)	in-lb-sec^2 x 10^{-4} (kg-cm^2)	in-lb/arc-min (Nm/arc-min)
NTR23-001	1:1	59 (7)	54 (6)	49 (6)	195 (22)	54 (6)	50 (6)	45 (5)	7.01 (.79)	5.6 (0.6)
NTR23-002	2:1	130 (15)	118 (13)	107 (12)	360 (41)	120 (14)	109 (12)	99 (11)	3.59 (.41)	8.5 (1.0)
NTR23-003	3:1	83 (9)	75 (9)	68 (8)	270 (31)	76 (9)	70 (8)	63 (7)	3.09 (.35)	9.6 (1.1)
NTR23-004	4:1	61 (7)	56 (6)	50 (6)	238 (27)	56 (6)	51 (6)	46 (5)	2.87 (.32)	10.1 (1.1)
NTR23-005P	5:1P	50 (6)	46 (5)	41 (5)	180 (20)	46 (5)	42 (5)	38 (4)	2.81 (.32)	10.3 (1.2)
NTR23-005T	5:1T	179 (20)	153 (17)	138 (16)	366 (41)	175 (20)	132 (15)	112 (13)	3.69 (.42)	10.3 (1.2)
NTR23-006	6:1	153 (17)	130 (15)	126 (14)	366 (41)	149 (17)	120 (14)	116 (13)	3.67 (.41)	6.7 (0.8)
NTR23-009	9:1	97 (11)	83 (9)	80 (9)	289 (33)	95 (11)	76 (9)	74 (8)	3.08 (.35)	8.5 (1.0)
NTR23-010	10:1	157 (18)	144 (16)	130 (15)	366 (41)	155 (18)	138 (16)	120 (14)	3.48 (.39)	6.6 (0.7)
NTR23-012	12:1	72 (8)	61 (7)	59 (7)	252 (28)	70 (8)	56 (6)	55 (6)	2.95 (.33)	9.3 (1.1)
NTR23-015	15:1	100 (11)	91 (10)	83 (9)	297 (34)	99 (11)	88 (10)	76 (9)	2.89 (.33)	9.8 (1.1)
NTR23-020	20:1	74 (8)	67 (8)	61 (7)	366 (41)	73 (8)	64 (7)	56 (6)	2.76 (.31)	9.3 (1.0)
NTR23-025	25:1	60 (7)	55 (6)	50 (6)	198 (22)	60 (7)	53 (6)	46 (5)	2.71 (.31)	9.8 (1.1)
NTR23-030	30:1	102 (12)	98 (11)	94 (11)	305 (34)	102 (11)	96 (11)	90 (10)	2.83 (.32)	8.0 (0.9)
NTR23-040	40:1	75 (9)	72 (8)	69 (8)	263 (30)	75 (8)	71 (8)	67 (8)	2.69 (.30)	9.0 (1.0)
NTR23-050	50:1	62 (7)	59 (7)	57 (6)	203 (23)	61 (7)	58 (7)	55 (6)	2.64 (.30)	9.6 (1.1)
NTR23-060	60:1	163 (18)	161 (18)	158 (18)	366 (41)	163 (18)	160 (18)	157 (18)	3.68 (.42)	6.5 (0.7)
NTR23-075	75:1	104 (12)	102 (12)	100 (11)	311 (35)	103 (12)	101 (11)	99 (11)	2.95 (.33)	8.4 (0.9)
NTR23-090	90:1	104 (12)	102 (12)	101 (11)	313 (35)	103 (12)	102 (11)	100 (11)	3.09 (.35)	8.3 (0.9)
NTR23-100	100:1	163 (18)	162 (18)	161 (18)	366 (41)	163 (18)	161 (18)	160 (18)	3.50 (.40)	6.5 (0.7)
NTR23-120	120:1	76 (9)	75 (9)	74 (8)	270 (31)	76 (9)	75 (8)	73 (8)	2.96 (.33)	9.2 (1.0)
NTR23-125	125:1	63 (7)	62 (7)	60 (7)	207 (23)	62 (7)	61 (7)	60 (7)	2.76 (.31)	9.7 (1.1)
NTR23-150	150:1	104 (12)	103 (12)	102 (12)	316 (36)	104 (12)	103 (12)	102 (11)	2.91 (.33)	8.4 (0.9)
NTR23-200	200:1	164 (19)	163 (18)	162 (18)	366 (41)	164 (18)	163 (18)	162 (18)	3.43 (.39)	6.1 (0.7)
NTR23-250	250:1	63 (7)	62 (7)	62 (7)	207 (23)	63 (7)	62 (7)	61 (7)	2.72 (.31)	9.7 (1.1)
NTR23-300	300:1	104 (12)	104 (12)	103 (12)	319 (36)	104 (12)	104 (12)	103 (12)	2.84 (.32)	8.0 (0.9)
NTR23-400	400:1	77 (9)	76 (9)	76 (9)	274 (31)	77 (9)	76 (9)	76 (9)	2.71 (.31)	9.0 (1.0)
NTR23-500	500:1	63 (7)	63 (7)	62 (7)	207 (23)	63 (7)	63 (7)	62 (7)	2.66 (.30)	9.6 (1.1)

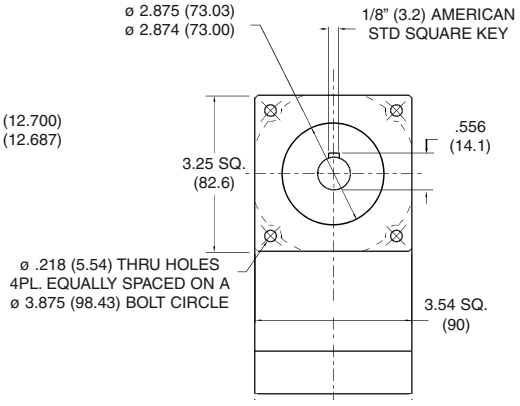
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

NemaTRUE 90* Size 34

Right Angle Gearhead

English





Ratio	Dimension 'K' in (mm)	Dimension 'L' in (mm)	Backlash (arc-min)	Weight lb (kg)	Efficiency
1:1 to 5:1P	3.99 (101)	5.76 (146)	13 max	6.0 (2.7)	95%
5:1T to 50:1	4.89 (124)	6.66 (169)	15 max	7.4 (3.4)	90%
60:1 to 500:1	5.79 (147)	7.56 (192)	15 max	8.8 (4.0)	85%

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

(TABLE 1) PERFORMANCE SPECIFICATIONS

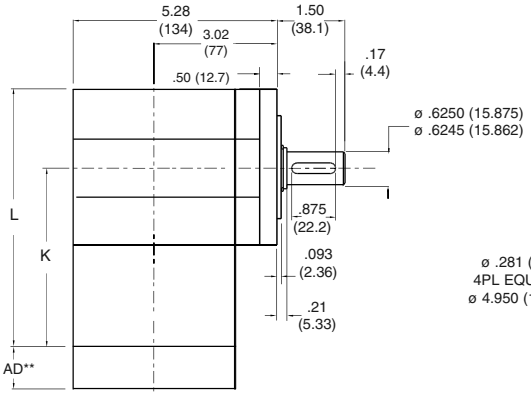
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (5000 rpm) in-lb (Nm)	in-lb (Nm)	T_r (1000 rpm) in-lb (Nm)	T_r (3000 rpm) in-lb (Nm)	T_r (5000 rpm) in-lb (Nm)	in-lb-sec^2 x 10^{-4} (kg-cm^2)	in-lb/arc-min (Nm/arc-min)
NTR34-001	1:1	168 (19)	153 (17)	139 (16)	493 (56)	155 (18)	142 (16)	128 (14)	27.5 (3.11)	12.6 (1.4)
NTR34-002	2:1	381 (43)	348 (39)	315 (36)	1113 (126)	352 (40)	321 (36)	291 (33)	14.1 (1.59)	19.1 (2.2)
NTR34-003	3:1	251 (28)	229 (26)	207 (23)	905 (102)	232 (26)	212 (24)	192 (22)	12.1 (1.37)	21.5 (2.4)
NTR34-004	4:1	192 (22)	176 (20)	159 (18)	695 (79)	178 (20)	162 (18)	147 (17)	11.2 (1.27)	22.6 (2.5)
NTR34-005P	5:1P	142 (16)	129 (15)	117 (13)	581 (66)	131 (15)	119 (13)	108 (12)	11.0 (1.25)	23.1 (2.6)
NTR34-005T	5:1T	508 (57)	432 (49)	420 (47)	1113 (126)	497 (56)	399 (45)	387 (44)	14.5 (1.64)	23.1 (2.6)
NTR34-006	6:1	448 (51)	381 (43)	370 (42)	1113 (126)	439 (50)	352 (40)	342 (39)	14.4 (1.63)	15.0 (1.7)
NTR34-009	9:1	296 (33)	251 (28)	244 (28)	986 (111)	289 (33)	232 (26)	225 (25)	12.1 (1.37)	19.0 (2.1)
NTR34-010	10:1	462 (52)	422 (48)	381 (43)	1113 (126)	456 (52)	404 (46)	352 (40)	13.7 (1.54)	14.8 (1.7)
NTR34-012	12:1	226 (26)	192 (22)	187 (21)	752 (85)	221 (25)	178 (20)	173 (19)	11.6 (1.31)	20.9 (2.4)
NTR34-015	15:1	305 (34)	278 (31)	251 (28)	1018 (115)	301 (34)	266 (30)	232 (26)	11.3 (1.28)	21.9 (2.5)
NTR34-020	20:1	233 (26)	213 (24)	192 (22)	1113 (126)	230 (26)	204 (23)	178 (20)	10.8 (1.22)	20.8 (2.4)
NTR34-025	25:1	172 (19)	157 (18)	142 (16)	635 (72)	169 (19)	150 (17)	131 (15)	10.6 (1.20)	21.9 (2.5)
NTR34-030	30:1	311 (35)	298 (34)	285 (32)	1045 (118)	309 (35)	292 (33)	275 (31)	11.1 (1.25)	17.9 (2.0)
NTR34-040	40:1	238 (27)	228 (26)	218 (25)	792 (89)	237 (27)	224 (25)	210 (24)	10.6 (1.19)	20.2 (2.3)
NTR34-050	50:1	175 (20)	168 (19)	160 (18)	653 (74)	174 (20)	165 (19)	155 (18)	10.4 (1.17)	21.4 (2.4)
NTR34-060	60:1	479 (54)	472 (53)	465 (53)	1113 (126)	478 (54)	469 (53)	460 (52)	14.4 (1.63)	14.5 (1.6)
NTR34-075	75:1	315 (36)	310 (35)	305 (34)	1080 (122)	314 (36)	308 (35)	301 (34)	11.6 (1.31)	18.7 (2.1)
NTR34-090	90:1	316 (36)	311 (35)	307 (35)	1085 (123)	315 (36)	309 (35)	304 (34)	12.1 (1.37)	18.6 (2.1)
NTR34-100	100:1	480 (54)	476 (54)	472 (53)	1113 (126)	479 (54)	474 (54)	469 (53)	13.7 (1.55)	14.6 (1.7)
NTR34-120	120:1	242 (27)	238 (27)	235 (27)	817 (92)	241 (27)	237 (27)	232 (26)	11.6 (1.31)	20.7 (2.3)
NTR34-125	125:1	178 (20)	175 (20)	172 (19)	666 (75)	177 (20)	173 (20)	169 (19)	10.8 (1.23)	21.8 (2.5)
NTR34-150	150:1	317 (36)	314 (35)	311 (35)	1096 (124)	316 (36)	313 (35)	309 (35)	11.4 (1.29)	18.7 (2.1)
NTR34-200	200:1	481 (54)	479 (54)	477 (54)	1113 (126)	481 (54)	478 (54)	475 (54)	13.5 (1.52)	13.6 (1.5)
NTR34-250	250:1	178 (20)	177 (20)	175 (20)	675 (76)	178 (20)	176 (20)	174 (20)	10.7 (1.21)	21.8 (2.5)
NTR34-300	300:1	317 (36)	316 (36)	315 (36)	1107 (125)	317 (36)	315 (36)	314 (35)	11.1 (1.26)	17.9 (2.0)
NTR34-400	400:1	243 (27)	242 (27)	241 (27)	832 (94)	243 (27)	241 (27)	240 (27)	10.6 (1.20)	20.2 (2.3)
NTR34-500	500:1	179 (20)	178 (20)	177 (20)	680 (77)	179 (20)	178 (20)	177 (20)	10.4 (1.18)	21.4 (2.4)

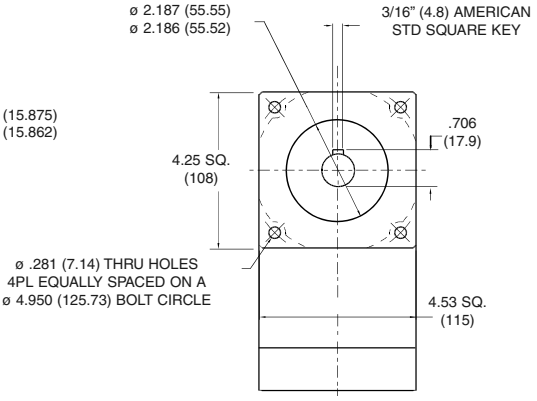
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

NemaTRUE 90* Size 42

Right Angle Gearhead

English





Ratio	Dimension 'K' in (mm)	Dimension 'L' in (mm)	Backlash (arc-min)	Weight lb (kg)	Efficiency
1:1 to 5:1P	5.40 (137)	7.67 (195)	13 max	12 (5.4)	95%
5:1T to 50:1	6.63 (168.4)	8.90 (226)	15 max	14.8 (6.7)	90%
60:1 to 500:1	7.87 (200)	10.13 (257)	15 max	17.6 (8.0)	85%

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

(TABLE 1) PERFORMANCE SPECIFICATIONS

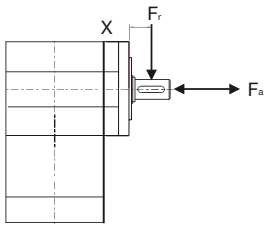
Part Number	Ratio[1]	5,000 HOUR LIFE						T_{peak}		10,000 HOUR LIFE						J		Torsional Stiffness	
		T_r (1000 rpm) in-lb (Nm)		T_r (3000 rpm) in-lb (Nm)		T_r (5000 rpm) in-lb (Nm)		in-lb (Nm)		T_r (1000 rpm) in-lb (Nm)		T_r (3000 rpm) in-lb (Nm)		T_r (5000 rpm) in-lb (Nm)		in-lb-sec^2 x 10^{-4} (kg-cm^2)		in-lb/arc-min (Nm/arc-min)	
NTR42-001	1:1	496	(56)	452	(51)	409	(46)	1620	(183)	458	(52)	418	(47)	378	(43)	46.7	(5.28)	15.0	(1.7)
NTR42-002	2:1	885	(100)	808	(91)	730	(83)	2255	(255)	817	(92)	746	(84)	674	(76)	23.9	(2.71)	24.7	(2.8)
NTR42-003	3:1	687	(78)	627	(71)	567	(64)	2039	(230)	635	(72)	579	(65)	524	(59)	20.6	(2.33)	28.0	(3.2)
NTR42-004	4:1	458	(52)	418	(47)	378	(43)	1584	(179)	423	(48)	386	(44)	349	(39)	19.1	(2.16)	29.4	(3.3)
NTR42-005P	5:1P	343	(39)	313	(35)	283	(32)	1305	(147)	317	(36)	289	(33)	261	(30)	18.8	(2.12)	30.0	(3.4)
NTR42-005T	5:1T	1346	(152)	1117	(126)	958	(108)	2255	(255)	1262	(143)	907	(102)	778	(88)	24.6	(2.78)	30.0	(3.4)
NTR42-006	6:1	1041	(118)	885	(100)	859	(97)	2255	(255)	1018	(115)	817	(92)	794	(90)	24.5	(2.77)	20.1	(2.3)
NTR42-009	9:1	808	(91)	687	(78)	667	(75)	2241	(253)	791	(89)	635	(72)	616	(70)	20.5	(2.32)	25.1	(2.8)
NTR42-010	10:1	1072	(121)	979	(111)	885	(100)	2255	(255)	1059	(120)	938	(106)	817	(92)	23.2	(2.63)	20.1	(2.3)
NTR42-012	12:1	538	(61)	458	(52)	444	(50)	1728	(195)	526	(59)	423	(48)	410	(46)	19.6	(2.22)	27.5	(3.1)
NTR42-015	15:1	832	(94)	760	(86)	687	(78)	2255	(255)	822	(93)	728	(82)	635	(72)	19.3	(2.18)	28.8	(3.3)
NTR42-020	20:1	554	(63)	506	(57)	458	(52)	2255	(255)	547	(62)	485	(55)	423	(48)	18.4	(2.08)	27.5	(3.1)
NTR42-025	25:1	416	(47)	379	(43)	343	(39)	1458	(165)	410	(46)	364	(41)	317	(36)	18.0	(2.04)	28.8	(3.2)
NTR42-030	30:1	851	(96)	814	(92)	778	(88)	2255	(255)	845	(96)	798	(90)	752	(85)	18.9	(2.13)	24.6	(2.8)
NTR42-040	40:1	566	(64)	542	(61)	518	(59)	1836	(207)	563	(64)	532	(60)	500	(57)	18.0	(2.03)	27.2	(3.1)
NTR42-050	50:1	425	(48)	407	(46)	388	(44)	1499	(169)	422	(48)	399	(45)	375	(42)	17.6	(1.99)	28.5	(3.2)
NTR42-060	60:1	1111	(126)	1095	(124)	1080	(122)	2255	(255)	1109	(125)	1089	(123)	1069	(121)	24.6	(2.78)	19.7	(2.2)
NTR42-075	75:1	861	(97)	847	(96)	832	(94)	2255	(255)	859	(97)	841	(95)	822	(93)	19.7	(2.22)	25.0	(2.8)
NTR42-090	90:1	863	(97)	851	(96)	838	(95)	2255	(255)	861	(97)	845	(96)	830	(94)	20.6	(2.33)	24.8	(2.8)
NTR42-100	100:1	1114	(126)	1105	(125)	1095	(124)	2255	(255)	1113	(126)	1101	(124)	1089	(123)	23.3	(2.64)	19.9	(2.2)
NTR42-120	120:1	574	(65)	566	(64)	558	(63)	1897	(214)	573	(65)	563	(64)	552	(62)	19.7	(2.23)	27.3	(3.1)
NTR42-125	125:1	430	(49)	423	(48)	416	(47)	1539	(174)	429	(48)	420	(47)	410	(46)	18.4	(2.08)	28.7	(3.2)
NTR42-150	150:1	865	(98)	858	(97)	851	(96)	2255	(255)	864	(98)	855	(97)	845	(96)	19.4	(2.19)	25.0	(2.8)
NTR42-200	200:1	1116	(126)	1112	(126)	1107	(125)	2255	(255)	1116	(126)	1110	(125)	1104	(125)	22.9	(2.59)	19.4	(2.2)
NTR42-250	250:1	432	(49)	428	(48)	425	(48)	1562	(176)	431	(49)	427	(48)	422	(48)	18.1	(2.05)	28.7	(3.2)
NTR42-300	300:1	867	(98)	863	(98)	860	(97)	2255	(255)	866	(98)	862	(97)	857	(97)	18.9	(2.14)	24.6	(2.8)
NTR42-400	400:1	577	(65)	575	(65)	572	(65)	1944	(220)	577	(65)	574	(65)	571	(64)	18.1	(2.04)	27.1	(3.1)
NTR42-500	500:1	433	(49)	431	(49)	429	(48)	1580	(178)	433	(49)	430	(49)	428	(48)	17.7	(2.00)	28.5	(3.2)

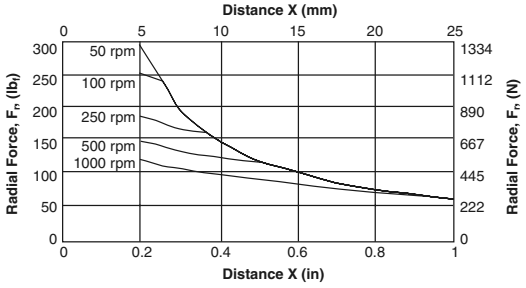
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Radial and Axial Load Ratings (Table 2)

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, $n_{mout} = \frac{n_m}{i}$, as described on page 10.

NTR23 Radial Load Ratings

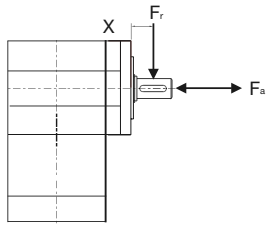


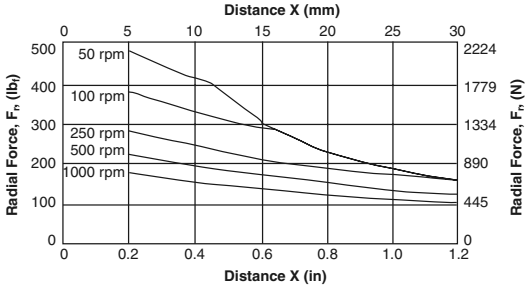


NTR23 Axial Load Ratings

Speed (rpm)	Axial Load, F_a lb_f (N)
50	250 (1110)
100	200 (890)
250	150 (670)
500	120 (530)
1000	90 (400)

NTR34 Radial Load Ratings

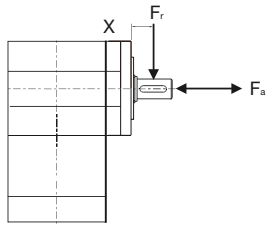


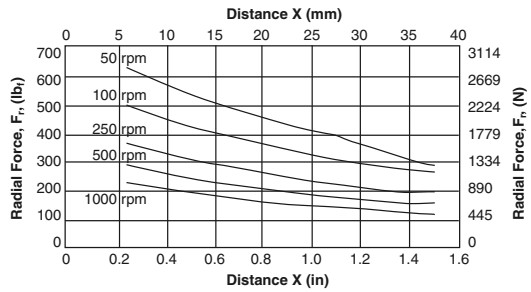


NTR34 Axial Load Ratings

Speed (rpm)	Axial Load, F_a lb_f (N)
50	340 (1510)
100	270 (1200)
250	200 (890)
500	160 (710)
1000	130 (580)

NTR42 Radial Load Ratings





NTR42 Axial Load Ratings

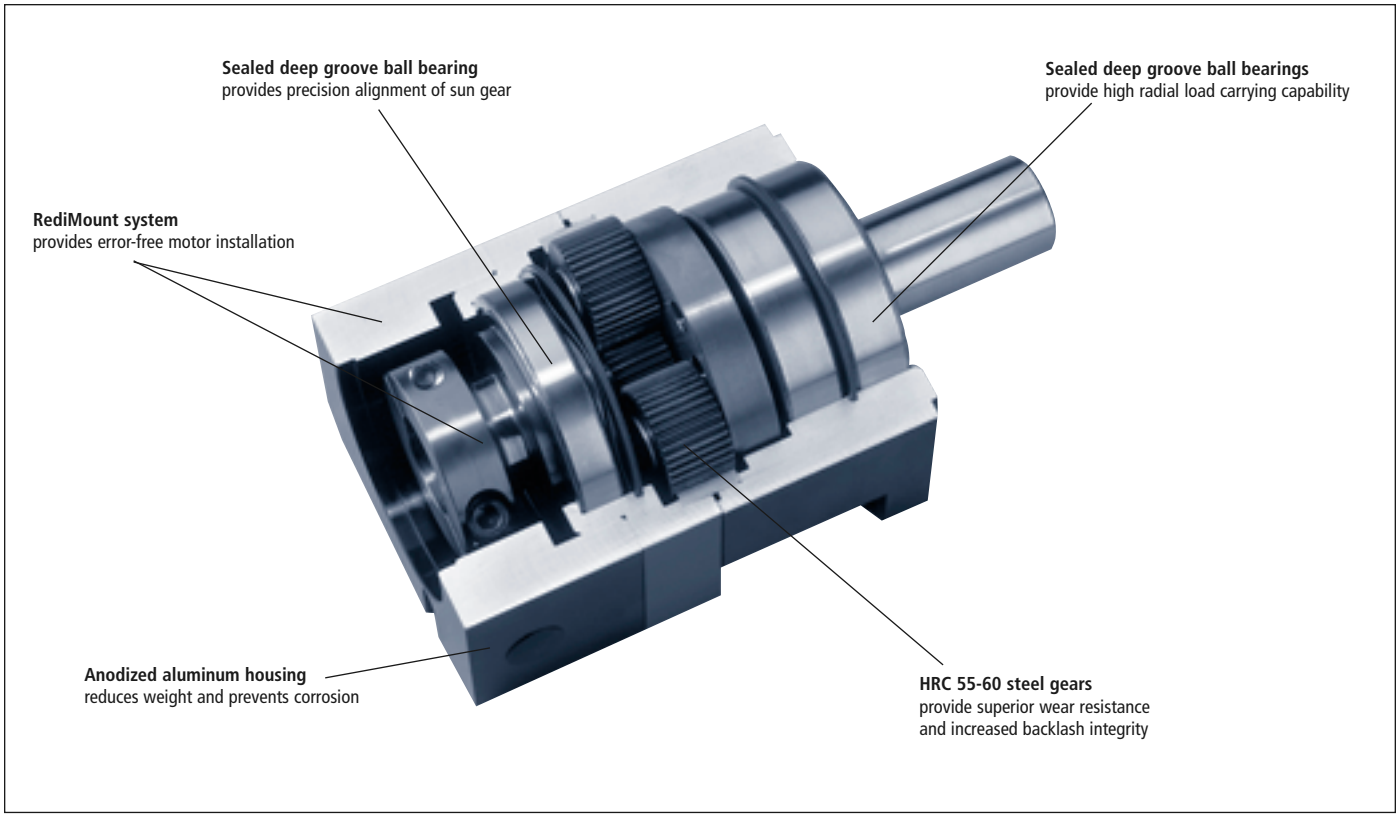
Speed (rpm)	Axial Load, F_a lb_f (N)
50	460 (2050)
100	370 (1650)
250	270 (1200)
500	210 (930)
1000	170 (760)

DuraTRUE*

True Planetary* Gearheads

Ready for Immediate Delivery

Precision:	8 arc-minutes	**Ratio Availability:**	3:1 thru 100:1
Frame Sizes:	60, 90, 115, 142mm	**Radial load capacity:**	up to 2500 lb
Torque Capacity:	up to 7377 in-lb	**Mounting System:**	RediMount*



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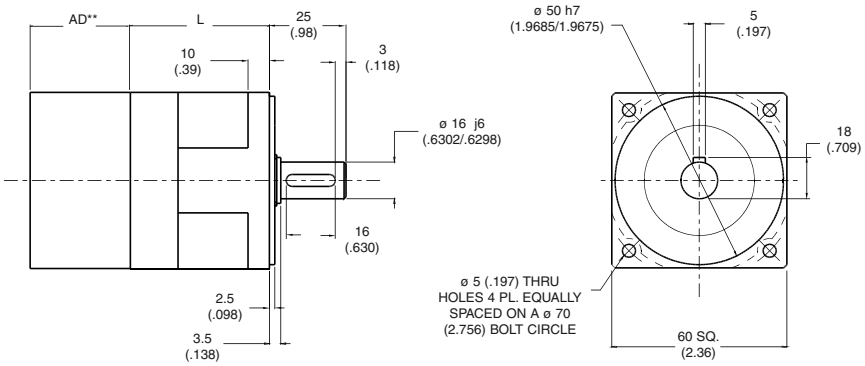
DuraTRUE* Size 60

True Planetary* Gearheads

Metric



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 100:1	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 (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DT60-003	3:1	15 (134)	12 (109)	11 (97)	10 (89)	52 (460)	12 (109)	10 (89)	9 (79)	8 (72)	.52 (4.6)	.9 (8.1)
DT60-004	4:1	19 (168)	16 (142)	14 (124)	13 (115)	435 (3850)	16 (142)	13 (115)	12 (106)	11 (97)	.46 (4.1)	.9 (7.9)
DT60-005	5:1	17 (148)	14 (120)	12 (106)	11 (98)	46 (410)	14 (120)	11 (98)	10 (86)	9 (79)	.46 (4.1)	.9 (7.9)
DT60-007	7:1	16 (142)	13 (115)	11 (97)	10 (89)	410 (3629)	13 (115)	10 (89)	9 (80)	8 (71)	.46 (4.1)	.9 (7.9)
DT60-010	10:1	15 (134)	14 (121)	13 (114)	12 (108)	45 (400)	14 (124)	13 (112)	11 (100)	10 (92)	.44 (3.9)	.8 (6.8)
DT60-015	15:1	25 (218)	20 (177)	18 (157)	16 (144)	52 (460)	20 (177)	16 (144)	14 (127)	13 (117)	.46 (4.1)	.9 (8.2)
DT60-020	20:1	26 (230)	24 (212)	21 (186)	20 (177)	460 (4071)	24 (212)	20 (177)	18 (159)	17 (150)	.46 (4.1)	.9 (7.9)
DT60-025	25:1	24 (214)	22 (195)	19 (172)	18 (158)	52 (456)	22 (195)	18 (158)	16 (140)	15 (128)	.46 (4.1)	.9 (8.3)
DT60-030	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)
DT60-040	40:1	27 (239)	26 (230)	26 (230)	24 (212)	460 (4071)	27 (239)	24 (212)	21 (186)	20 (177)	.44 (3.9)	.9 (8.3)
DT60-050	50:1	25 (222)	24 (214)	24 (209)	22 (195)	52 (460)	25 (217)	22 (195)	19 (172)	18 (158)	.44 (3.9)	.9 (8.2)
DT60-070	70:1	24 (212)	23 (204)	23 (204)	21 (186)	460 (4071)	24 (212)	21 (186)	18 (159)	17 (150)	.44 (3.9)	.9 (8.3)
DT60-100	100:1	20 (180)	19 (165)	18 (157)	17 (151)	51 (447)	19 (167)	17 (153)	16 (145)	16 (140)	.44 (3.9)	.9 (7.8)

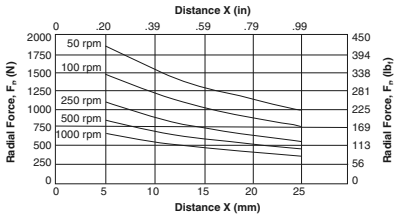
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

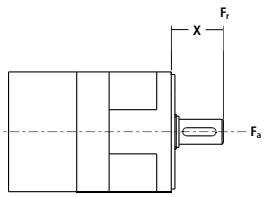
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout}, as described on page 10.

DT60 Radial Loadings



DT60 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)



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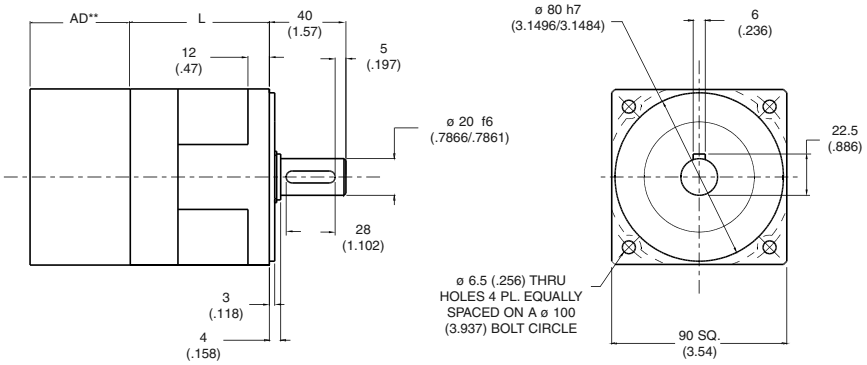
True Planetary* Gearheads

Metric



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 100:1	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†	5,000 HOUR LIFE				T_{peak}	10,000 HOUR LIFE				J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DT90-003	3:1	69 (614)	56 (499)	50 (442)	46 (405)	167 (1479)	56 (499)	46 (405)	41 (359)	37 (329)	2.22 (1.97)	4.9 (43.3)
DT90-004	4:1	80 (708)	67 (593)	60 (531)	55 (487)	157 (1389)	67 (593)	55 (487)	50 (443)	46 (407)	1.84 (1.60)	4.8 (42.4)
DT90-005	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)
DT90-007	7:1	73 (646)	60 (531)	53 (469)	48 (425)	157 (1389)	60 (531)	48 (425)	43 (381)	38 (336)	1.72 (1.50)	4.8 (42.4)
DT90-010	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)
DT90-015	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)
DT90-020	20:1	89 (788)	86 (761)	84 (743)	82 (726)	167 (1478)	88 (779)	84 (743)	77 (681)	71 (628)	1.77 (1.60)	4.8 (42.4)
DT90-025	25:1	84 (747)	81 (714)	78 (693)	77 (677)	167 (1479)	83 (730)	79 (698)	72 (640)	66 (587)	1.77 (1.56)	5.0 (44.5)
DT90-030	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)
DT90-040	40:1	93 (823)	89 (788)	87 (770)	86 (761)	167 (1478)	91 (805)	88 (779)	86 (761)	84 (743)	1.64 (1.40)	5.0 (44.2)
DT90-050	50:1	88 (776)	84 (747)	82 (728)	81 (714)	167 (1479)	86 (759)	83 (730)	81 (712)	79 (698)	1.63 (1.45)	5.0 (44.2)
DT90-070	70:1	86 (761)	82 (726)	80 (708)	79 (699)	167 (1478)	84 (743)	81 (717)	79 (699)	78 (690)	1.63 (1.40)	5.0 (44.2)
DT90-100	100:1	75 (663)	69 (608)	65 (576)	63 (555)	167 (1479)	69 (613)	64 (562)	60 (533)	58 (513)	1.63 (1.45)	4.4 (38.5)

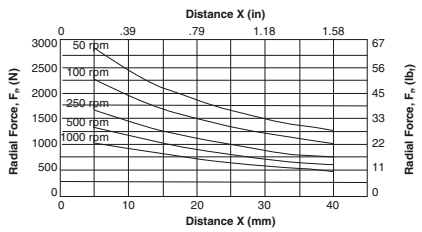
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

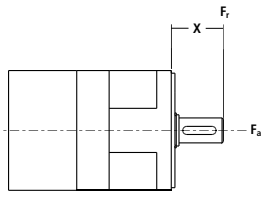
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout} , as described on page 10.

DT90 Radial Loadings



DT90 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)



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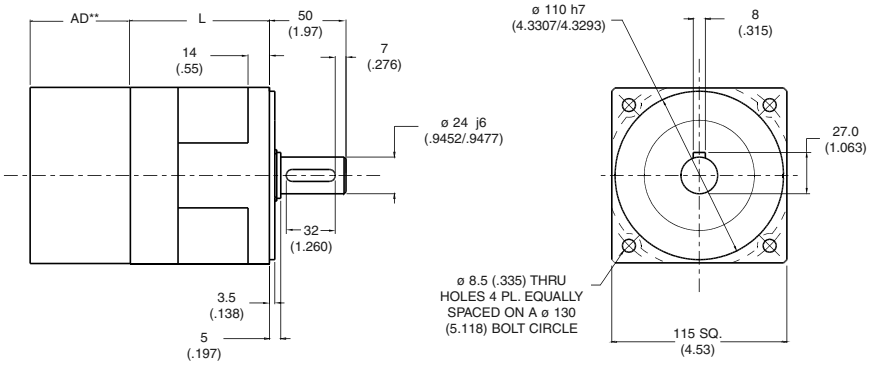
True Planetary* Gearheads

Metric



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 100:1	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 (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DT115-003	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)
DT115-004	4:1	123 (1089)	98 (867)	91 (805)	85 (752)	284 (2513)	102 (903)	85 (752)	75 (664)	70 (620)	3.1 (2.7)	13.9 (122.7)
DT115-005	5:1	116 (1025)	91 (803)	83 (738)	77 (677)	284 (2511)	94 (833)	77 (677)	68 (599)	62 (550)	2.88 (2.55)	11.6 (102.4)
DT115-007	7:1	113 (1000)	88 (779)	81 (717)	75 (664)	284 (2513)	92 (814)	75 (664)	65 (575)	60 (531)	2.81 (2.5)	13.9 (122.7)
DT115-010	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)
DT115-015	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)
DT115-020	20:1	175 (1549)	161 (1425)	143 (1266)	132 (1168)	284 (2513)	161 (1425)	132 (1168)	118 (1044)	109 (965)	2.95 (2.6)	13.9 (122.7)
DT115-025	25:1	167 (1474)	153 (1350)	135 (1195)	124 (1096)	284 (2511)	153 (1350)	124 (1096)	110 (971)	101 (891)	2.90 (2.57)	14.1 (125.0)
DT115-030	30:1	203 (1794)	171 (218)	151 (1337)	139 (1226)	284 (2513)	171 (1510)	139 (1226)	123 (1086)	113 (996)	2.48 (2.20)	14.1 (124.4)
DT115-040	40:1	181 (1602)	175 (1549)	190 (1682)	161 (1425)	284 (2513)	178 (1575)	161 (1425)	143 (1266)	132 (1168)	2.47 (2.2)	14.1 (124.4)
DT115-050	50:1	173 (1535)	167 (1474)	162 (1435)	153 (1350)	284 (2511)	170 (1510)	153 (1350)	135 (1195)	124 (1096)	2.47 (2.19)	14.1 (125.0)
DT115-070	70:1	171 (1513)	165 (1460)	180 (1593)	151 (1336)	284 (2513)	168 (1487)	151 (1336)	133 (1177)	122 (1080)	2.47 (2.2)	14.1 (124.4)
DT115-100	100:1	123 (1087)	112 (995)	107 (943)	103 (907)	284 (2511)	114 (1006)	104 (921)	99 (873)	95 (840)	2.47 (2.19)	11.4 (100.6)

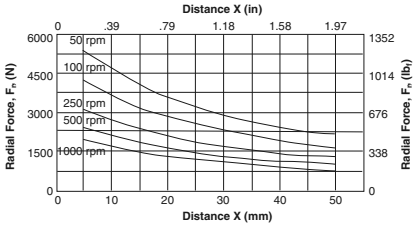
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

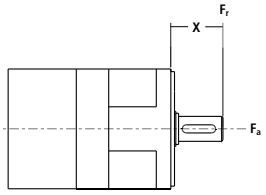
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout} , as described on page 10.

DT115 Radial Loadings



DT115 Axial Loadings

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



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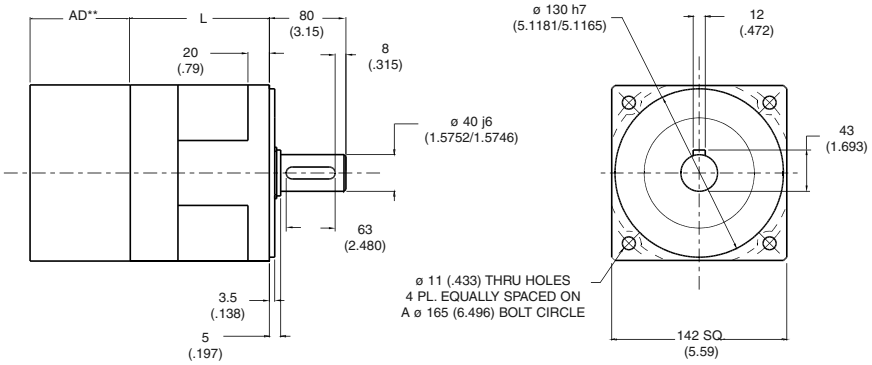
True Planetary* Gearheads

Metric



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 100:1	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 (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (2000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (4000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DT142-003	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)
DT142-004	4:1	430 (3806)	353 (3124)	315 (2788)	290 (2567)	834 (7381)	353 (3124)	290 (2567)	259 (2292)	239 (2115)	15.1 (1.3)	52.9 (467.1)
DT142-005	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)
DT142-007	7:1	405 (3584)	328 (2903)	290 (2597)	265 (2345)	834 (7381)	328 (2903)	265 (2345)	234 (2071)	214 (1894)	14.5 (1.3)	50.5 (445.9)
DT142-010	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)
DT142-015	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)
DT142-020	20:1	500 (4425)	476 (4213)	461 (4080)	450 (3983)	834 (7381)	489 (4328)	458 (4053)	408 (3611)	376 (3328)	14.8 (1.3)	58.5 (516.6)
DT142-025	25:1	480 (4248)	456 (4038)	441 (3903)	430 (3801)	834 (7377)	469 (4154)	438 (3876)	388 (3432)	356 (3148)	14.8 (1.31)	57.7 (510.6)
DT142-030	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)
DT142-040	40:1	521 (4611)	500 (4425)	486 (4301)	476 (4213)	834 (7381)	510 (4514)	489 (4328)	476 (4213)	458 (4053)	12.9 (1.1)	57.5 (507.7)
DT142-050	50:1	501 (4435)	480 (4248)	466 (4128)	456 (4038)	834 (7377)	490 (4336)	469 (4154)	456 (4037)	438 (3876)	12.1 (1.07)	57.8 (511.1)
DT142-070	70:1	496 (4390)	475 (4204)	461 (4080)	451 (3991)	834 (7381)	485 (4292)	464 (4106)	451 (3991)	433 (3882)	12.1 (1.1)	54.4 (480.4)
DT142-100	100:1	314 (2782)	287 (2543)	272 (2408)	262 (2314)	834 (7377)	291 (2574)	266 (2353)	252 (2228)	242 (2141)	12.1 (1.07)	42.9 (379.5)

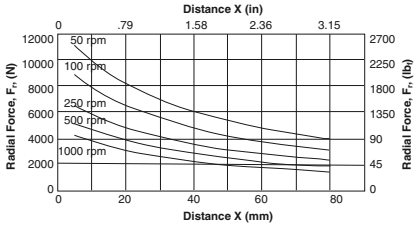
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

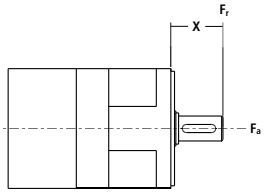
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout}, as described on page 10.

DT142 Radial Loadings



DT142 Axial Loadings

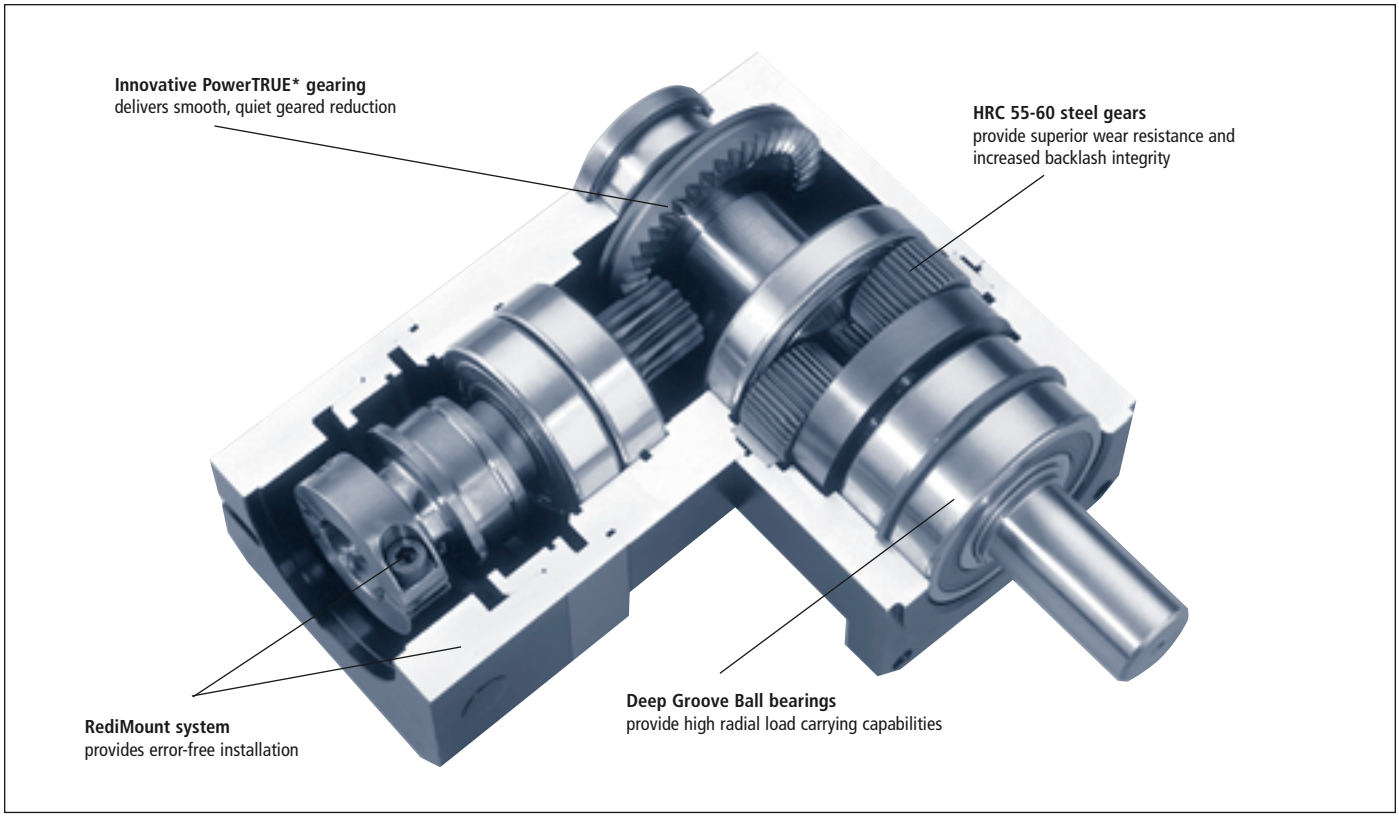
Speed (rpm)	Axial Load, F_a N	(lb_f)
50	17,023	(3830)
100	13,511	(3040)
250	9956	(2240)
500	7902	(1778)
1000	6271	(1411)

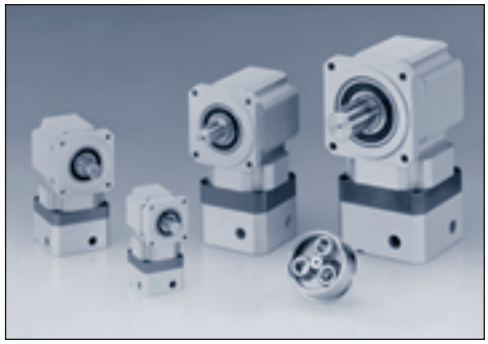


DuraTRUE 90*
Right Angle Gearheads

Ready for Immediate Delivery

Precision:	8 arc-minutes	**Ratio Availability:**	1:1 thru 500:1
Frame Sizes:	60, 90, 115, 142mm	**Radial load capacity:**	up to 2500 lb
Torque Capacity:	up to 7659 in-lb	**Mounting system:**	RediMount*





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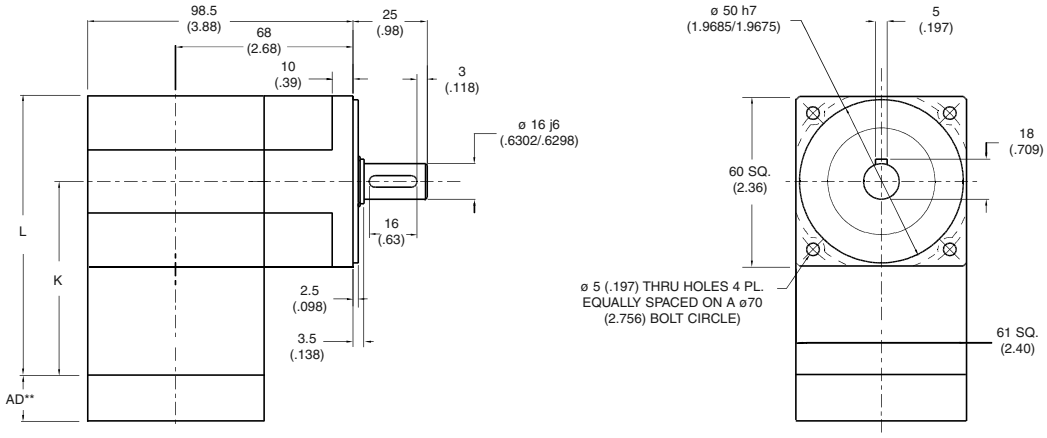
DuraTRUE 90* Size 60

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' (mm) in	Backlash (arc-min)	Weight Kg (lb)	Efficiency
5:1 to 50:1	79 (3.11)	109.5 (4.31)	9 max	2.5 (5.5)	90%
60:1 to 500:1	96 (3.79)	127 (4.99)	9 max	2.7 (6)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

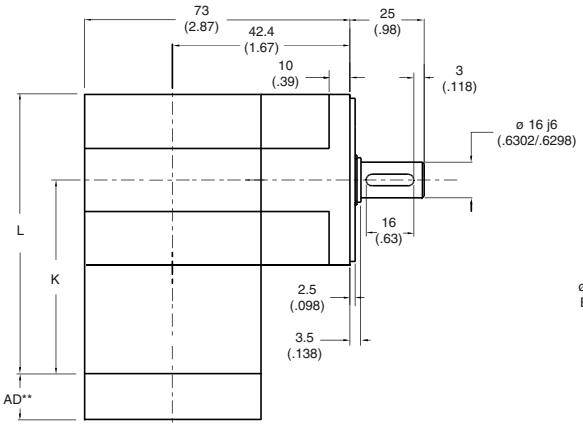
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm^2 (in-lb-sec^2 x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR60-005	5:1	18 (157)	13 (113)	11 (97)	52 (460)	14 (127)	10 (92)	9 (79)	.42 (3.7)	3.3 (20.1)
DTR60-006	6:1	19 (166)	13 (119)	12 (102)	52 (460)	15 (134)	11 (97)	9 (83)	.42 (3.7)	2.3 (20.3)
DTR60-009	9:1	21 (187)	15 (134)	13 (115)	52 (460)	17 (152)	12 (109)	11 (94)	.36 (3.1)	2.3 (20.2)
DTR60-010	10:1	21 (182)	15 (131)	13 (112)	49 (435)	17 (148)	12 (106)	10 (91)	.41 (3.5)	2.3 (20.2)
DTR60-012	12:1	18 (161)	17 (147)	14 (126)	45 (402)	18 (161)	13 (119)	12 (102)	.33 (3.0)	2.3 (20.4)
DTR60-015	15:1	23 (206)	17 (148)	14 (127)	50 (445)	19 (167)	14 (120)	12 (103)	.32 (2.9)	2.3 (20.4)
DTR60-020	20:1	24 (211)	18 (161)	16 (138)	51 (450)	21 (182)	15 (131)	13 (112)	.33 (2.8)	2.3 (20.3)
DTR60-025	25:1	24 (214)	19 (172)	17 (148)	51 (455)	22 (195)	16 (140)	14 (120)	.32 (2.7)	2.3 (20.3)
DTR60-030	30:1	18 (155)	15 (134)	14 (124)	49 (430)	16 (143)	14 (124)	13 (115)	.35 (2.8)	1.7 (14.8)
DTR60-040	40:1	18 (161)	16 (139)	15 (130)	49 (430)	17 (149)	15 (129)	14 (120)	.33 (2.7)	1.7 (14.8)
DTR60-050	50:1	19 (165)	16 (143)	15 (134)	49 (430)	17 (153)	15 (133)	14 (124)	.32 (2.6)	1.7 (14.8)
DTR60-060	60:1	28 (244)	18 (155)	15 (133)	52 (460)	20 (175)	14 (126)	12 (108)	.42 (3.7)	2.3 (20.2)
DTR60-075	75:1	28 (248)	20 (178)	17 (153)	50 (445)	23 (201)	16 (144)	14 (124)	.35 (3.0)	2.3 (20.2)
DTR60-090	90:1	28 (244)	20 (175)	17 (150)	52 (460)	22 (198)	16 (142)	14 (122)	.36 (3.1)	2.3 (20.0)
DTR60-100	100:1	27 (237)	19 (171)	16 (146)	49 (435)	22 (193)	16 (138)	13 (119)	.41 (3.5)	2.2 (19.9)
DTR60-120	120:1	24 (210)	22 (192)	19 (164)	45 (402)	24 (210)	18 (155)	15 (133)	.33 (3.0)	2.3 (20.2)
DTR60-125	125:1	29 (257)	23 (207)	20 (178)	51 (455)	27 (235)	19 (168)	16 (144)	.32 (2.8)	2.4 (21.5)
DTR60-150	150:1	30 (268)	22 (193)	19 (165)	50 (445)	22 (198)	18 (156)	15 (134)	.35 (2.9)	2.3 (20.1)
DTR60-200	200:1	31 (275)	24 (210)	20 (180)	51 (450)	27 (237)	19 (171)	16 (146)	.41 (3.4)	2.3 (20.2)
DTR60-250	250:1	32 (279)	25 (224)	22 (193)	51 (455)	29 (254)	21 (182)	18 (156)	.32 (2.7)	2.4 (21.5)
DTR60-300	300:1	23 (202)	20 (175)	18 (162)	49 (430)	21 (186)	18 (162)	17 (150)	.35 (2.8)	1.7 (14.8)
DTR60-400	400:1	24 (210)	20 (181)	19 (169)	49 (430)	22 (194)	19 (168)	18 (156)	.33 (2.7)	1.7 (14.8)
DTR60-500	500:1	24 (215)	21 (186)	20 (175)	49 (430)	23 (199)	20 (173)	18 (162)	.30 (2.7)	1.7 (14.8)

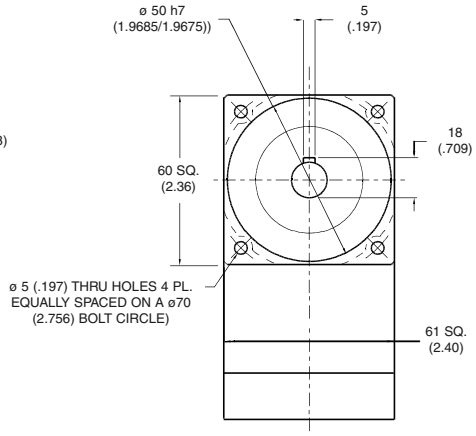
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 60S (Slim Line)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1P	79 (3.11)	109.5 (4.31)	8 max	2.3 (5)	95%
5:1T to 50:1	96 (3.79)	127 (4.99)	9 max	2.5 (5.5)	90%
60:1 to 500:1	114 (4.48)	144 (5.68)	9 max	2.7 (6)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

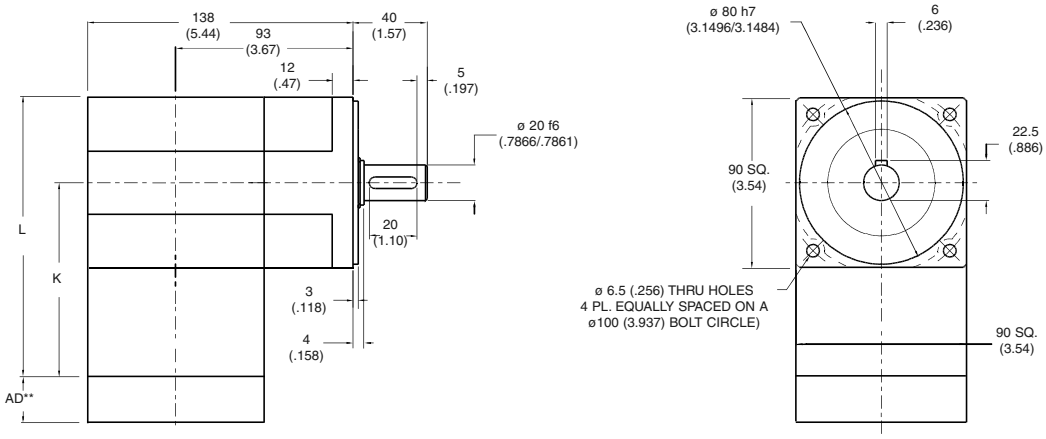
Part Number	Ratio[1]	5,000 HOUR LIFE						T_{peak}		10,000 HOUR LIFE						J		Torsional Stiffness	
		T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	Nm	(in-lb)	T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	kg-cm² (in-lb-sec² x 10^{-4})		Nm/arc-min (in-lb/arc-min)	
DTR60S-001	1:1	7	(66)	7	(60)	6	(54)	25	(217)	7	(61)	6	(56)	6	(50)	.79	(7.0)	1.8	(15.8)
DTR60S-002	2:1	16	(145)	15	(132)	14	(120)	45	(400)	15	(134)	14	(122)	12	(111)	.41	(3.6)	2.7	(23.8)
DTR60S-003	3:1	10	(92)	10	(84)	9	(76)	34	(300)	10	(85)	9	(78)	8	(70)	.35	(3.1)	3.0	(26.9)
DTR60S-004	4:1	8	(68)	7	(62)	6	(56)	30	(264)	7	(63)	6	(57)	6	(52)	.32	(2.9)	3.2	(28.2)
DTR60S-005P	5:1P	6	(56)	6	(51)	5	(46)	23	(200)	6	(52)	5	(47)	5	(43)	.32	(2.8)	3.3	(28.8)
DTR60S-005T	5:1T	23	(200)	18	(162)	16	(138)	46	(407)	21	(182)	15	(132)	13	(112)	.42	(3.7)	3.3	(28.8)
DTR60S-006	6:1	19	(171)	16	(145)	16	(141)	46	(407)	19	(167)	15	(134)	15	(130)	.41	(3.7)	2.1	(18.8)
DTR60S-009	9:1	12	(109)	10	(92)	10	(90)	36	(321)	12	(106)	10	(85)	9	(83)	.35	(3.1)	2.7	(23.7)
DTR60S-010	10:1	20	(176)	18	(160)	16	(145)	46	(407)	20	(174)	17	(154)	15	(134)	.39	(3.5)	2.1	(18.5)
DTR60S-012	12:1	9	(80)	8	(68)	7	(66)	32	(280)	9	(78)	7	(63)	7	(61)	.33	(3.0)	3.0	(26.1)
DTR60S-015	15:1	13	(112)	12	(102)	10	(92)	37	(330)	12	(110)	11	(98)	10	(85)	.33	(2.9)	3.1	(27.4)
DTR60S-020	20:1	9	(82)	8	(75)	8	(68)	46	(407)	9	(81)	8	(72)	7	(63)	.31	(2.8)	2.9	(26.0)
DTR60S-025	25:1	8	(68)	7	(62)	6	(56)	25	(220)	8	(67)	7	(59)	6	(52)	.31	(2.7)	3.1	(27.3)
DTR60S-030	30:1	13	(114)	12	(109)	12	(105)	38	(339)	13	(114)	12	(107)	11	(101)	.32	(2.8)	2.5	(22.4)
DTR60S-040	40:1	10	(84)	9	(81)	9	(77)	33	(292)	9	(84)	9	(79)	8	(74)	.30	(2.7)	2.8	(25.2)
DTR60S-050	50:1	8	(69)	7	(66)	7	(63)	25	(225)	8	(69)	7	(65)	7	(61)	.30	(2.6)	3.0	(26.8)
DTR60S-060	60:1	21	(182)	20	(180)	20	(177)	46	(407)	21	(182)	20	(178)	20	(175)	.42	(3.7)	2.0	(18.1)
DTR60S-075	75:1	13	(116)	13	(114)	13	(112)	39	(345)	13	(115)	13	(113)	12	(110)	.33	(3.0)	2.6	(23.4)
DTR60S-090	90:1	13	(116)	13	(114)	13	(113)	39	(348)	13	(116)	13	(114)	13	(111)	.35	(3.1)	2.6	(23.3)
DTR60S-100	100:1	21	(183)	20	(181)	20	(180)	46	(407)	21	(182)	20	(180)	20	(178)	.40	(3.5)	2.1	(18.3)
DTR60S-120	120:1	10	(85)	10	(84)	9	(83)	34	(300)	10	(85)	9	(84)	9	(82)	.33	(3.0)	2.9	(25.8)
DTR60S-125	125:1	8	(70)	8	(69)	8	(68)	26	(230)	8	(70)	8	(68)	8	(67)	.31	(2.8)	3.1	(27.3)
DTR60S-150	150:1	13	(116)	13	(115)	13	(114)	40	(351)	13	(116)	13	(115)	13	(114)	.33	(2.9)	2.6	(23.4)
DTR60S-200	200:1	21	(183)	21	(182)	21	(181)	46	(407)	21	(183)	21	(182)	20	(181)	.39	(3.4)	1.9	(17.0)
DTR60S-250	250:1	8	(70)	8	(70)	8	(69)	26	(230)	8	(70)	8	(69)	8	(69)	.31	(2.7)	3.1	(27.3)
DTR60S-300	300:1	13	(116)	13	(116)	13	(115)	40	(354)	13	(116)	13	(116)	13	(115)	.32	(2.8)	2.5	(22.4)
DTR60S-400	400:1	10	(86)	10	(85)	10	(85)	34	(304)	10	(86)	10	(85)	10	(85)	.31	(2.7)	2.8	(25.2)
DTR60S-500	500:1	8	(70)	8	(70)	8	(70)	26	(230)	8	(70)	8	(70)	8	(70)	.30	(2.7)	3.0	(26.8)

[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 90

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
5:1 to 50:1	101 (3.99)	146 (5.76)	9 max	4.8 (10)	90%
60:1 to 500:1	124 (4.89)	169 (6.66)	9 max	5.5 (12)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

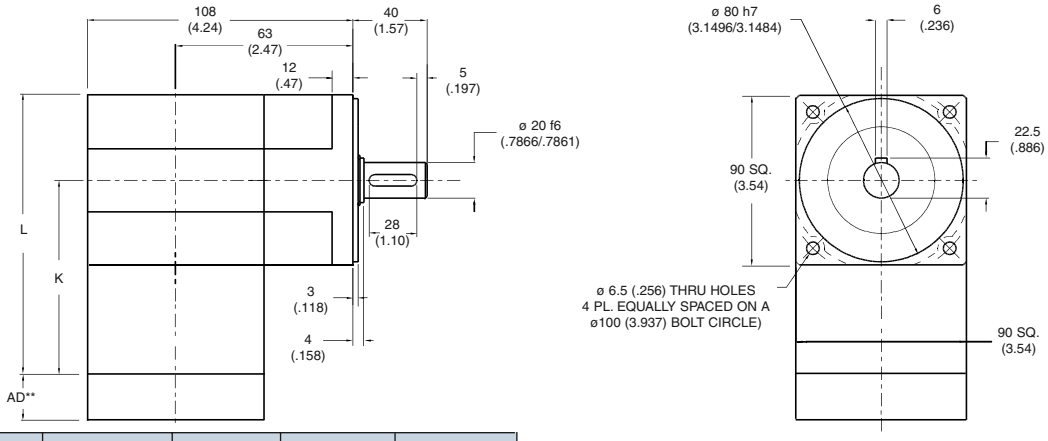
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻³)	Nm/arc-min (in-lb/arc-min)
DTR90-005	5:1	79 (702)	58 (515)	50 (442)	167 (1479)	66 (582)	47 (418)	41 (359)	1.64 (14.5)	7.8 (69.2)
DTR90-006	6:1	82 (722)	61 (544)	53 (467)	167 (1479)	69 (614)	50 (442)	43 (379)	1.63 (14.4)	5.5 (48.2)
DTR90-009	9:1	75 (665)	69 (614)	60 (527)	167 (1479)	75 (665)	56 (499)	48 (428)	1.39 (12.3)	5.5 (48.8)
DTR90-010	10:1	79 (703)	68 (599)	58 (514)	167 (1479)	76 (676)	55 (486)	47 (417)	1.62 (14.3)	5.5 (48.4)
DTR90-012	12:1	57 (509)	57 (509)	57 (509)	144 (1272)	57 (509)	57 (509)	53 (467)	1.29 (11.4)	5.5 (49.0)
DTR90-015	15:1	82 (723)	75 (664)	66 (580)	167 (1479)	80 (707)	62 (549)	53 (471)	1.26 (11.1)	5.5 (49.0)
DTR90-020	20:1	83 (737)	77 (681)	72 (633)	167 (1479)	81 (720)	68 (599)	58 (514)	1.28 (11.3)	5.5 (48.7)
DTR90-025	25:1	71 (624)	71 (624)	71 (624)	167 (1479)	71 (624)	71 (624)	62 (549)	1.26 (11.1)	5.5 (48.7)
DTR90-030	30:1	64 (568)	55 (488)	51 (452)	167 (1479)	59 (526)	51 (452)	47 (418)	1.38 (12.2)	4.0 (35.6)
DTR90-040	40:1	67 (590)	58 (509)	53 (472)	167 (1479)	62 (546)	53 (471)	49 (437)	1.28 (11.3)	4.0 (35.6)
DTR90-050	50:1	69 (608)	59 (525)	55 (488)	167 (1479)	63 (562)	55 (486)	51 (452)	1.25 (11.1)	4.0 (35.6)
DTR90-060	60:1	106 (941)	80 (709)	69 (608)	167 (1479)	90 (800)	65 (576)	56 (494)	1.63 (14.4)	5.5 (48.6)
DTR90-075	75:1	98 (870)	90 (799)	79 (698)	167 (1479)	96 (851)	75 (661)	64 (567)	1.39 (12.3)	5.5 (48.4)
DTR90-090	90:1	98 (866)	90 (800)	78 (687)	167 (1479)	98 (866)	73 (650)	63 (558)	1.39 (12.3)	5.4 (48.0)
DTR90-100	100:1	103 (916)	88 (780)	76 (670)	167 (1479)	100 (881)	72 (633)	61 (543)	1.62 (14.3)	5.4 (47.8)
DTR90-120	120:1	75 (663)	75 (663)	75 (663)	144 (1272)	75 (663)	75 (663)	69 (608)	1.29 (11.4)	5.5 (48.5)
DTR90-125	125:1	85 (751)	85 (751)	85 (751)	167 (1479)	85 (751)	85 (751)	75 (661)	1.26 (11.1)	5.8 (51.6)
DTR90-150	150:1	106 (942)	98 (865)	85 (756)	167 (1479)	98 (866)	81 (715)	69 (614)	1.39 (12.3)	5.5 (48.3)
DTR90-200	200:1	109 (960)	100 (887)	93 (825)	167 (1479)	106 (938)	88 (780)	76 (670)	1.61 (14.2)	5.5 (48.5)
DTR90-250	250:1	92 (813)	92 (813)	92 (813)	167 (1479)	92 (813)	92 (813)	81 (715)	1.26 (11.1)	5.8 (51.5)
DTR90-300	300:1	84 (740)	72 (636)	67 (589)	167 (1479)	77 (685)	67 (589)	62 (545)	1.38 (12.2)	4.0 (35.5)
DTR90-400	400:1	87 (769)	75 (663)	69 (615)	167 (1479)	80 (711)	69 (614)	64 (569)	1.28 (11.3)	4.0 (35.5)
DTR90-500	500:1	90 (792)	77 (684)	72 (636)	167 (1479)	83 (732)	72 (633)	67 (589)	1.20 (10.6)	4.0 (35.6)

[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 90S (Slim Line)

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1P	101 (3.99)	146 (5.76)	8 max	4.1 (9)	95%
5:1T to 50:1	124 (4.89)	169 (6.66)	9 max	4.8 (10)	90%
60:1 to 500:1	114 (5.79)	192 (7.56)	9 max	5.5 (12)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

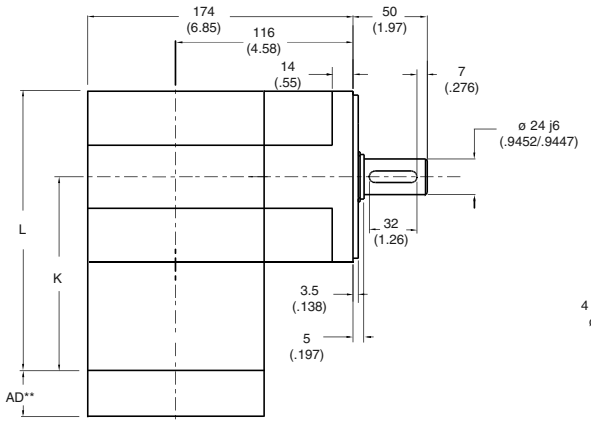
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR90S-001	1:1	21 (188)	19 (171)	17 (155)	62 (548)	20 (173)	18 (158)	16 (143)	3.11 (27.5)	4.3 (37.9)
DTR90S-002	2:1	48 (426)	44 (389)	40 (352)	140 (1237)	44 (394)	41 (359)	37 (325)	1.59 (14.1)	6.5 (57.2)
DTR90S-003	3:1	32 (281)	29 (256)	26 (232)	114 (1005)	29 (260)	27 (237)	24 (214)	1.37 (12.1)	7.3 (64.6)
DTR90S-004	4:1	24 (215)	22 (196)	20 (177)	87 (772)	22 (199)	20 (181)	19 (164)	1.27 (11.2)	7.6 (67.7)
DTR90S-005P	5:1P	18 (158)	16 (144)	15 (131)	73 (645)	17 (146)	15 (133)	14 (121)	1.25 (11.0)	7.8 (69.2)
DTR90S-005T	5:1T	64 (568)	55 (483)	53 (469)	140 (1237)	63 (556)	50 (446)	49 (433)	1.64 (14.5)	5.1 (45.1)
DTR90S-006	6:1	57 (501)	48 (426)	47 (414)	140 (1237)	55 (490)	44 (394)	43 (382)	1.63 (14.4)	5.1 (45.1)
DTR90S-009	9:1	37 (331)	32 (281)	31 (273)	124 (1095)	37 (323)	29 (260)	28 (252)	1.37 (12.1)	6.4 (56.9)
DTR90S-010	10:1	58 (516)	53 (471)	48 (426)	140 (1237)	58 (510)	51 (452)	44 (394)	1.54 (13.7)	5.0 (44.5)
DTR90S-012	12:1	29 (253)	24 (215)	24 (209)	94 (836)	28 (247)	22 (199)	22 (193)	1.31 (11.6)	7.1 (62.7)
DTR90S-015	15:1	38 (340)	35 (311)	32 (281)	128 (1131)	38 (336)	34 (298)	29 (260)	1.28 (11.3)	7.4 (65.8)
DTR90S-020	20:1	29 (261)	27 (238)	24 (215)	140 (1237)	29 (257)	26 (228)	22 (199)	1.22 (10.8)	7.1 (62.4)
DTR90S-025	25:1	22 (192)	20 (175)	18 (158)	80 (705)	21 (189)	19 (168)	17 (146)	1.20 (10.6)	7.4 (65.6)
DTR90S-030	30:1	39 (348)	38 (333)	36 (318)	131 (1161)	39 (346)	37 (327)	35 (307)	1.25 (11.1)	6.1 (53.8)
DTR90S-040	40:1	30 (266)	29 (255)	28 (243)	99 (880)	30 (265)	28 (250)	27 (235)	1.19 (10.6)	6.8 (60.5)
DTR90S-050	50:1	22 (196)	21 (188)	20 (179)	82 (725)	22 (195)	21 (184)	20 (173)	1.17 (10.4)	7.3 (64.2)
DTR90S-060	60:1	60 (535)	60 (527)	59 (520)	140 (1237)	60 (534)	59 (524)	58 (514)	1.63 (14.4)	4.9 (43.5)
DTR90S-075	75:1	40 (352)	39 (346)	38 (340)	136 (1200)	40 (351)	39 (344)	38 (336)	1.31 (11.6)	6.4 (56.2)
DTR90S-090	90:1	40 (353)	39 (348)	39 (343)	136 (1206)	40 (352)	39 (346)	38 (339)	1.37 (12.1)	6.3 (55.8)
DTR90S-100	100:1	61 (536)	60 (532)	60 (527)	140 (1237)	61 (536)	60 (530)	59 (524)	1.55 (13.7)	5.0 (43.9)
DTR90S-120	120:1	31 (270)	30 (266)	30 (262)	103 (908)	30 (269)	30 (265)	29 (260)	1.31 (11.6)	7.0 (62.0)
DTR90S-125	125:1	22 (198)	22 (195)	22 (192)	84 (740)	22 (198)	22 (194)	21 (189)	1.23 (10.8)	7.4 (65.5)
DTR90S-150	150:1	40 (354)	40 (351)	39 (348)	138 (1218)	40 (353)	39 (350)	39 (346)	1.29 (11.4)	6.3 (56.1)
DTR90S-200	200:1	61 (538)	60 (535)	60 (533)	140 (1237)	61 (537)	60 (534)	60 (531)	1.52 (13.5)	4.6 (40.7)
DTR90S-250	250:1	23 (199)	22 (198)	22 (196)	85 (750)	22 (199)	22 (197)	22 (195)	1.21 (10.7)	7.4 (65.4)
DTR90S-300	300:1	40 (355)	40 (353)	40 (352)	139 (1230)	40 (354)	40 (352)	40 (350)	1.26 (11.1)	6.1 (53.7)
DTR90S-400	400:1	31 (271)	31 (270)	30 (269)	104 (924)	31 (271)	30 (270)	30 (268)	1.20 (10.6)	6.8 (60.5)
DTR90S-500	500:1	23 (200)	22 (199)	22 (198)	85 (755)	23 (200)	22 (198)	22 (197)	1.18 (10.4)	7.3 (64.2)

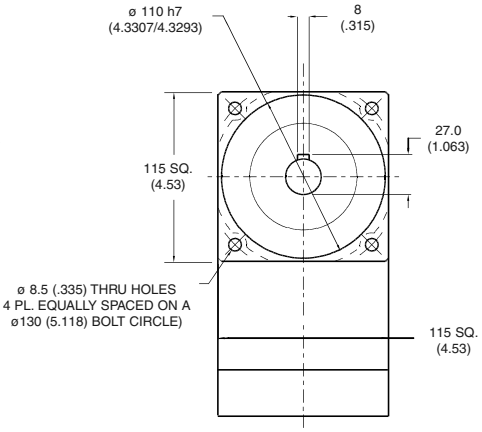
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 115

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
5:1 to 50:1	137 (5.40)	195 (7.67)	8 max	11 (24)	90%
60:1 to 500:1	168.4 (6.63)	226 (8.90)	9 max	12 (27)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

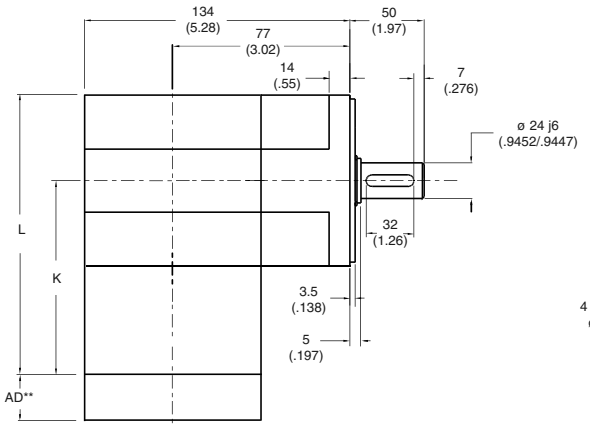
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
DTR115-005	5:1	123 (1086)	88 (781)	76 (670)	284 (2511)	100 (882)	72 (634)	61 (544)	2.79 (24.7)	15.3 (135)
DTR115-006	6:1	130 (1147)	93 (825)	80 (708)	284 (2511)	105 (932)	76 (670)	65 (575)	2.77 (24.5)	12.5 (110)
DTR115-009	9:1	146 (1295)	105 (932)	90 (799)	284 (2511)	119 (1052)	86 (757)	73 (649)	2.37 (21.0)	12.6 (112)
DTR115-010	10:1	143 (1262)	103 (908)	88 (779)	284 (2511)	116 (1025)	83 (738)	72 (633)	2.75 (24.3)	13.1 (116)
DTR115-012	12:1	137 (1210)	115 (1016)	98 (871)	284 (2511)	130 (1147)	93 (825)	80 (708)	2.19 (19.4)	12.7 (112)
DTR115-015	15:1	161 (1425)	116 (1025)	99 (880)	284 (2511)	131 (1158)	94 (833)	81 (715)	2.14 (18.9)	12.7 (112)
DTR115-020	20:1	164 (1453)	126 (1118)	108 (959)	284 (2511)	143 (1262)	103 (908)	88 (779)	2.18 (19.3)	13.2 (117)
DTR115-025	25:1	167 (1474)	135 (1195)	116 (1025)	284 (2511)	153 (1350)	110 (971)	94 (833)	2.14 (18.9)	13.2 (117)
DTR115-030	30:1	105 (930)	90 (796)	83 (736)	284 (2511)	97 (861)	83 (737)	77 (681)	2.34 (20.7)	11.5 (102)
DTR115-040	40:1	109 (967)	94 (831)	87 (770)	284 (2511)	101 (894)	87 (769)	80 (712)	2.17 (19.2)	11.5 (102)
DTR115-050	50:1	112 (995)	97 (858)	90 (796)	284 (2511)	104 (921)	90 (794)	83 (737)	2.13 (18.8)	11.5 (102)
DTR115-060	60:1	169 (1495)	121 (1075)	104 (923)	284 (2511)	137 (1214)	99 (873)	85 (749)	2.77 (24.5)	13.2 (117)
DTR115-075	75:1	194 (1715)	139 (1233)	120 (1059)	284 (2511)	139 (1233)	113 (1002)	97 (860)	2.35 (20.8)	13.1 (116)
DTR115-090	90:1	191 (1687)	137 (1214)	118 (1041)	284 (2511)	155 (1371)	111 (986)	96 (846)	2.37 (21.0)	12.5 (110)
DTR115-100	100:1	186 (1644)	134 (1183)	115 (1015)	284 (2511)	151 (1336)	109 (962)	93 (825)	2.75 (24.3)	13.0 (115)
DTR115-120	120:1	178 (1577)	150 (1324)	128 (1135)	284 (2511)	169 (1495)	121 (1075)	104 (923)	2.19 (19.4)	12.6 (111)
DTR115-125	125:1	200 (1774)	162 (1438)	139 (1233)	284 (2511)	184 (1624)	132 (1168)	113 (1002)	2.14 (18.9)	13.2 (117)
DTR115-150	150:1	210 (1857)	151 (1336)	130 (1147)	284 (2511)	170 (1509)	123 (1085)	105 (932)	2.35 (20.8)	13.1 (116)
DTR115-200	200:1	214 (1893)	165 (1457)	141 (1250)	284 (2511)	186 (1644)	134 (1183)	115 (1015)	2.73 (24.2)	13.2 (116)
DTR115-250	250:1	217 (1921)	176 (1557)	151 (1336)	284 (2511)	199 (1759)	143 (1265)	123 (1085)	2.14 (18.9)	13.2 (117)
DTR115-300	300:1	137 (1212)	117 (1037)	108 (959)	284 (2511)	127 (1122)	109 (960)	100 (887)	2.34 (20.7)	11.5 (102)
DTR115-400	400:1	142 (1260)	122 (1083)	113 (1003)	284 (2511)	132 (1165)	113 (1002)	105 (928)	2.17 (19.2)	11.5 (102)
DTR115-500	500:1	146 (1296)	126 (1118)	117 (1037)	284 (2511)	136 (1200)	117 (1035)	109 (960)	2.03 (18.0)	11.5 (102)

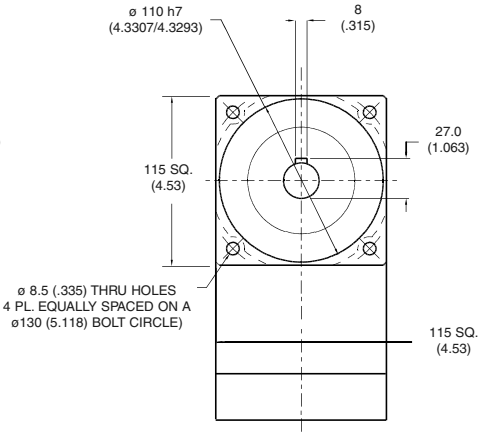
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 115S (Slim Line)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1P	137 (5.40)	195 (7.67)	8 max	9 (20)	95%
5:1T to 50:1	168.4 (6.63)	226 (8.90)	9 max	11 (24)	90%
60:1 to 500:1	200 (7.87)	257 (10.13)	9 max	12 (27)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

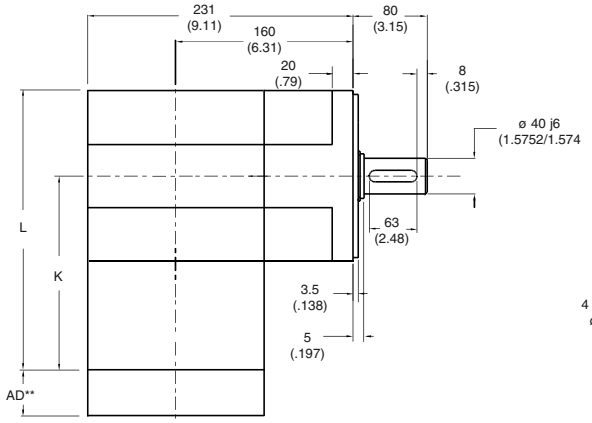
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
DTR115S-001	1:1	63 (554)	57 (506)	52 (457)	203 (1800)	58 (512)	53 (467)	48 (422)	5.28 (46.7)	7.6 (67.6)
DTR115S-002	2:1	112 (989)	102 (903)	92 (816)	283 (2505)	103 (913)	94 (834)	85 (754)	2.71 (23.9)	12.5 (111)
DTR115S-003	3:1	87 (768)	79 (701)	72 (634)	256 (2265)	80 (709)	73 (647)	66 (585)	2.33 (20.6)	14.2 (126)
DTR115S-004	4:1	58 (511)	53 (467)	48 (422)	199 (1760)	53 (472)	49 (431)	44 (390)	2.16 (19.1)	14.9 (132)
DTR115S-005P	5:1P	43 (384)	40 (350)	36 (316)	164 (1450)	40 (354)	37 (323)	33 (292)	2.12 (18.8)	15.3 (135)
DTR115S-005T	5:1T	170 (1505)	126 (1117)	108 (958)	283 (2505)	143 (1262)	102 (907)	88 (778)	2.78 (24.6)	15.3 (135)
DTR115S-006	6:1	131 (1163)	112 (989)	109 (960)	283 (2505)	129 (1138)	103 (913)	100 (887)	2.77 (24.5)	10.2 (90.7)
DTR115S-009	9:1	102 (903)	87 (768)	84 (746)	281 (2490)	100 (884)	80 (709)	78 (689)	2.32 (20.5)	12.8 (113)
DTR115S-010	10:1	135 (1198)	124 (1094)	112 (989)	283 (2505)	134 (1183)	118 (1048)	103 (913)	2.63 (23.2)	10.2 (90.3)
DTR115S-012	12:1	68 (601)	58 (511)	56 (496)	217 (1920)	66 (588)	53 (472)	52 (458)	2.22 (19.6)	14.0 (124)
DTR115S-015	15:1	105 (930)	96 (849)	87 (768)	283 (2505)	104 (919)	92 (814)	80 (709)	2.18 (19.3)	14.6 (130)
DTR115S-020	20:1	70 (619)	64 (565)	58 (511)	283 (2505)	69 (612)	61 (542)	53 (472)	2.08 (18.4)	14.0 (124)
DTR115S-025	25:1	52 (465)	48 (424)	43 (384)	183 (1620)	52 (459)	46 (406)	40 (354)	2.04 (18.0)	14.6 (129)
DTR115S-030	30:1	107 (951)	103 (910)	98 (869)	283 (2505)	107 (945)	101 (892)	95 (840)	2.13 (18.9)	12.5 (111)
DTR115S-040	40:1	72 (633)	68 (606)	65 (579)	231 (2040)	71 (629)	67 (594)	63 (559)	2.03 (18.0)	13.8 (122)
DTR115S-050	50:1	54 (475)	51 (454)	49 (434)	188 (1665)	53 (472)	50 (446)	47 (419)	1.99 (17.6)	14.5 (128)
DTR115S-060	60:1	140 (1242)	138 (1224)	136 (1207)	283 (2505)	140 (1239)	137 (1217)	135 (1194)	2.78 (24.6)	10.0 (88.5)
DTR115S-075	75:1	109 (963)	107 (947)	105 (930)	283 (2505)	109 (960)	106 (939)	104 (919)	2.22 (19.7)	12.7 (112)
DTR115S-090	90:1	109 (964)	107 (951)	106 (937)	283 (2505)	109 (962)	107 (945)	105 (927)	2.33 (20.6)	12.6 (112)
DTR115S-100	100:1	141 (1245)	140 (1235)	138 (1224)	283 (2505)	141 (1244)	139 (1230)	137 (1217)	2.64 (23.3)	10.1 (89.5)
DTR115S-120	120:1	73 (642)	72 (633)	70 (624)	238 (2108)	72 (641)	71 (629)	70 (617)	2.23 (19.7)	13.9 (123)
DTR115S-125	125:1	54 (481)	53 (473)	52 (465)	193 (1710)	54 (480)	53 (469)	52 (459)	2.08 (18.4)	14.6 (129)
DTR115S-150	150:1	109 (967)	108 (959)	107 (951)	283 (2505)	109 (966)	108 (955)	107 (945)	2.19 (19.4)	12.7 (112)
DTR115S-200	200:1	141 (1248)	140 (1243)	140 (1237)	283 (2505)	141 (1247)	140 (1240)	139 (1234)	2.59 (22.9)	9.8 (87.1)
DTR115S-250	250:1	55 (483)	54 (479)	54 (475)	196 (1735)	54 (482)	54 (477)	53 (472)	2.05 (18.1)	14.6 (129)
DTR115S-300	300:1	109 (969)	109 (965)	109 (961)	283 (2505)	109 (968)	109 (963)	108 (958)	2.14 (18.9)	12.5 (111)
DTR115S-400	400:1	73 (645)	73 (642)	72 (640)	244 (2160)	73 (645)	72 (641)	72 (638)	2.04 (18.1)	13.8 (122)
DTR115S-500	500:1	55 (484)	54 (482)	54 (480)	198 (1755)	55 (483)	54 (481)	54 (478)	2.00 (17.7)	14.5 (128)

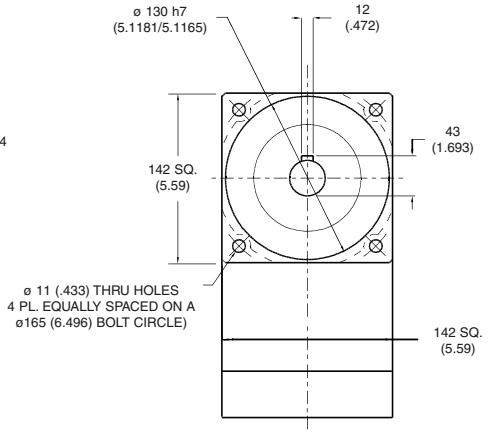
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 142

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
5:1 to 50:1	160 (6.29)	231 (9.09)	9 max	24 (53)	90%
60:1 to 500:1	209 (8.23)	280 (11.03)	9 max	28 (62)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

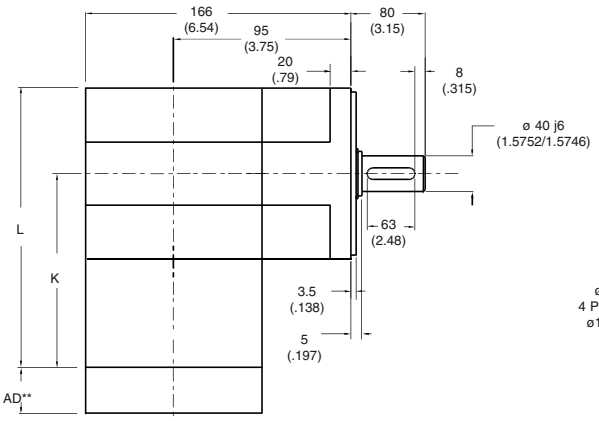
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR142-005	5:1	433 (3833)	311 (2757)	267 (2365)	833 (7377)	352 (3114)	253 (2239)	217 (1921)	13.9 (123)	47.4 (419)
DTR142-006	6:1	454 (4020)	329 (2912)	282 (2498)	833 (7377)	372 (3289)	267 (2365)	229 (2029)	13.8 (122)	38.6 (342)
DTR142-009	9:1	444 (3934)	372 (3289)	319 (2821)	833 (7377)	420 (3714)	302 (2671)	259 (2292)	11.8 (104)	39.1 (346)
DTR142-010	10:1	448 (3965)	363 (3210)	311 (2754)	833 (7377)	410 (3625)	295 (2607)	253 (2237)	13.7 (121)	40.6 (360)
DTR142-012	12:1	319 (2825)	319 (2825)	319 (2825)	798 (7062)	319 (2825)	319 (2825)	282 (2498)	10.9 (96.3)	39.3 (348)
DTR142-015	15:1	463 (4096)	410 (3625)	351 (3110)	833 (7377)	453 (4005)	333 (2944)	285 (2526)	10.7 (94.2)	39.4 (349)
DTR142-020	20:1	473 (4183)	432 (3824)	383 (3390)	833 (7377)	462 (4090)	363 (3210)	311 (2754)	10.8 (95.9)	40.9 (362)
DTR142-025	25:1	399 (3532)	399 (3532)	399 (3532)	833 (7377)	399 (3532)	388 (3432)	333 (2944)	10.6 (94.0)	40.9 (362)
DTR142-030	30:1	268 (2373)	228 (2022)	134 (1185)	833 (7377)	248 (2196)	211 (1871)	195 (1724)	11.7 (103)	35.6 (315)
DTR142-040	40:1	279 (2468)	240 (2122)	221 (1952)	833 (7377)	258 (2284)	221 (1955)	204 (1807)	10.8 (95.5)	35.6 (315)
DTR142-050	50:1	287 (2543)	247 (2183)	228 (2022)	833 (7377)	266 (2353)	228 (2020)	211 (1871)	10.6 (93.7)	35.6 (315)
DTR142-060	60:1	592 (5238)	429 (3794)	368 (3255)	833 (7377)	486 (4297)	348 (3082)	299 (2644)	13.8 (122)	40.8 (361)
DTR142-075	75:1	557 (4928)	493 (4362)	423 (3742)	833 (7377)	544 (4819)	400 (3542)	343 (3039)	11.7 (104)	40.6 (360)
DTR142-090	90:1	579 (5126)	484 (4286)	415 (3676)	833 (7377)	547 (4839)	393 (3480)	337 (2986)	11.8 (104)	38.6 (342)
DTR142-100	100:1	584 (5166)	473 (4183)	405 (3588)	833 (7377)	534 (4723)	384 (3397)	329 (2915)	13.7 (121)	40.2 (356)
DTR142-120	120:1	416 (3681)	416 (3681)	416 (3681)	798 (7062)	416 (3681)	416 (3681)	368 (3255)	10.9 (96.3)	39.0 (345)
DTR142-125	125:1	480 (4250)	480 (4250)	480 (4250)	833 (7377)	480 (4250)	467 (4129)	400 (3542)	10.6 (94.0)	40.9 (362)
DTR142-150	150:1	603 (5337)	534 (4723)	458 (4052)	833 (7377)	590 (5218)	433 (3836)	372 (3291)	11.7 (104)	40.6 (360)
DTR142-200	200:1	616 (5450)	563 (4983)	499 (4417)	833 (7377)	602 (5329)	473 (4183)	405 (3588)	13.6 (120)	40.8 (361)
DTR142-250	250:1	520 (4602)	520 (4602)	520 (4602)	833 (7377)	520 (4602)	505 (4472)	433 (3836)	10.6 (94.0)	40.9 (362)
DTR142-300	300:1	349 (3092)	298 (2635)	174 (1544)	833 (7377)	323 (2861)	275 (2438)	254 (2246)	11.7 (103)	35.6 (315)
DTR142-400	400:1	363 (3216)	312 (2765)	287 (2543)	833 (7377)	336 (2976)	288 (2547)	266 (2355)	10.8 (95.5)	35.6 (315)
DTR142-500	500:1	374 (3314)	321 (2844)	298 (2635)	833 (7377)	346 (3066)	297 (2632)	275 (2438)	10.1 (89.4)	35.6 (315)

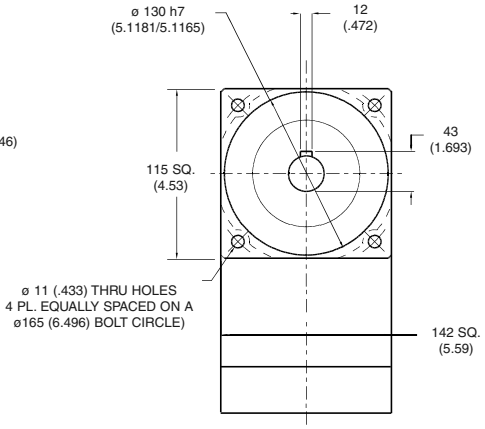
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 142S (Slim Line)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1P	160 (6.29)	231 (9.09)	8 max	19 (43)	95%
5:1T to 50:1	209 (8.23)	280 (11.03)	9 max	24 (53)	90%
60:1 to 500:1	259 (10.18)	329 (12.97)	9 max	28 (62)	85%

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

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

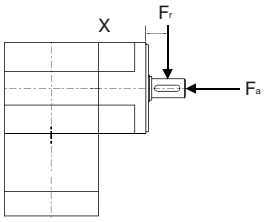
Part Number	Ratio[1]	5,000 HOUR LIFE						T_{peak}		10,000 HOUR LIFE						J		Torsional Stiffness	
		T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	Nm	(in-lb)	T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	kg-cm² (in-lb-sec² x 10^{-4})		Nm/arc-min (in-lb/arc-min)	
DTR142S-001	1:1	135	(1194)	123	(1090)	111	(985)	333	(2950)	125	(1103)	114	(1006)	103	(910)	26.3	(232)	23.7	(210)
DTR142S-002	2:1	279	(2474)	255	(2257)	231	(2041)	621	(5500)	258	(2284)	236	(2084)	213	(1885)	13.5	(119)	38.9	(344)
DTR142S-003	3:1	188	(1663)	171	(1518)	155	(1372)	478	(4230)	174	(1536)	158	(1401)	143	(1267)	11.6	(102)	44.1	(390)
DTR142S-004	4:1	135	(1194)	123	(1090)	111	(985)	414	(3660)	125	(1103)	114	(1006)	103	(910)	10.8	(95.1)	46.3	(410)
DTR142S-005P	5:1P	101	(896)	92	(818)	84	(739)	347	(3075)	93	(827)	85	(755)	77	(683)	10.6	(93.3)	47.4	(419)
DTR142S-005T	5:1T	340	(3009)	289	(2559)	281	(2484)	782	(6917)	333	(2944)	267	(2363)	259	(2294)	13.8	(122)	47.4	(419)
DTR142S-006	6:1	329	(2909)	279	(2474)	271	(2402)	678	(6000)	322	(2846)	258	(2284)	251	(2218)	13.8	(122)	31.8	(281)
DTR142S-009	9:1	221	(1956)	188	(1663)	182	(1614)	532	(4710)	216	(1913)	174	(1536)	168	(1491)	11.6	(102)	39.6	(351)
DTR142S-010	10:1	339	(2996)	309	(2735)	279	(2474)	734	(6500)	334	(2958)	296	(2621)	258	(2284)	13.1	(116)	31.6	(280)
DTR142S-012	12:1	159	(1404)	135	(1194)	131	(1159)	454	(4020)	155	(1374)	125	(1103)	121	(1071)	11.1	(97.7)	43.4	(384)
DTR142S-015	15:1	228	(2014)	208	(1839)	188	(1663)	551	(4875)	225	(1989)	199	(1762)	174	(1536)	10.9	(95.9)	45.4	(402)
DTR142S-020	20:1	163	(1446)	149	(1320)	135	(1194)	768	(6800)	161	(1428)	143	(1265)	125	(1103)	10.4	(91.5)	43.3	(383)
DTR142S-025	25:1	123	(1085)	112	(991)	101	(896)	391	(3460)	121	(1071)	107	(949)	93	(827)	10.2	(89.8)	45.3	(401)
DTR142S-030	30:1	233	(2058)	223	(1970)	213	(1882)	573	(5070)	231	(2045)	218	(1932)	205	(1819)	10.6	(93.8)	38.8	(343)
DTR142S-040	40:1	167	(1478)	160	(1415)	153	(1352)	486	(4300)	166	(1469)	157	(1387)	148	(1306)	10.1	(89.4)	42.8	(379)
DTR142S-050	50:1	125	(1109)	120	(1061)	115	(1014)	404	(3575)	125	(1102)	118	(1041)	111	(980)	9.91	(87.6)	45.0	(398)
DTR142S-060	60:1	351	(3105)	346	(3061)	341	(3018)	814	(7200)	350	(3099)	344	(3042)	337	(2986)	13.8	(122)	31.0	(274)
DTR142S-075	75:1	236	(2084)	232	(2049)	228	(2014)	593	(5250)	235	(2079)	230	(2034)	225	(1989)	11.1	(97.9)	39.4	(348)
DTR142S-090	90:1	236	(2087)	233	(2058)	229	(2029)	597	(5280)	235	(2083)	231	(2045)	227	(2008)	11.6	(103)	39.1	(346)
DTR142S-100	100:1	352	(3114)	349	(3088)	346	(3061)	825	(7300)	351	(3110)	348	(3076)	344	(3042)	13.1	(116)	31.3	(278)
DTR142S-120	120:1	169	(1499)	167	(1478)	165	(1457)	506	(4480)	169	(1496)	166	(1469)	163	(1442)	11.1	(98.2)	43.0	(380)
DTR142S-125	125:1	127	(1123)	125	(1104)	123	(1085)	415	(3675)	127	(1120)	124	(1096)	121	(1071)	10.4	(91.7)	45.3	(401)
DTR142S-150	150:1	237	(2093)	235	(2076)	233	(2058)	607	(5370)	236	(2091)	234	(2068)	231	(2045)	10.9	(96.4)	39.3	(348)
DTR142S-200	200:1	353	(3120)	351	(3107)	350	(3094)	842	(7450)	352	(3118)	350	(3101)	349	(3085)	12.9	(114)	30.5	(270)
DTR142S-250	250:1	127	(1128)	126	(1118)	125	(1109)	421	(3725)	127	(1126)	126	(1114)	125	(1102)	10.2	(90.3)	45.2	(400)
DTR142S-300	300:1	237	(2098)	236	(2089)	235	(2080)	614	(5430)	237	(2096)	236	(2085)	234	(2074)	10.7	(94.3)	38.8	(343)
DTR142S-400	400:1	170	(1506)	169	(1500)	169	(1494)	518	(4580)	170	(1505)	169	(1497)	168	(1489)	10.2	(89.8)	42.8	(379)
DTR142S-500	500:1	128	(1130)	127	(1125)	127	(1121)	427	(3775)	128	(1129)	127	(1123)	126	(1117)	9.96	(88.1)	45.0	(398)

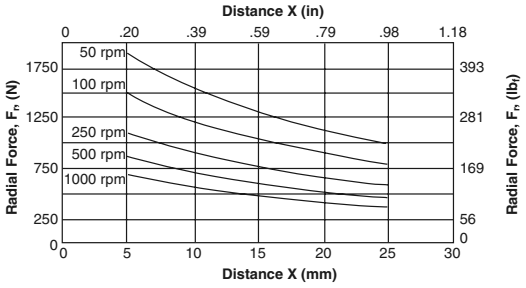
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Radial and Axial Load Ratings (Table 2)

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 10.

DTR60 Radial Load Ratings

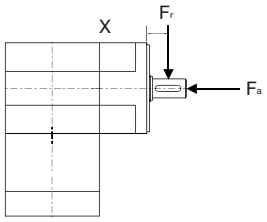


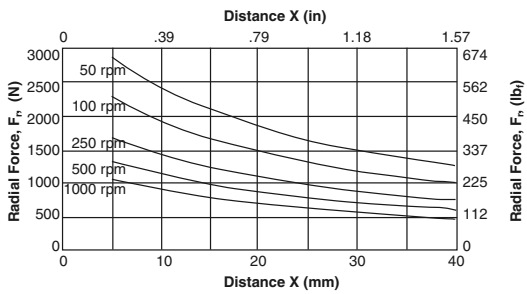


DTR60 Axial Load Ratings

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

DTR90 Radial Load Ratings

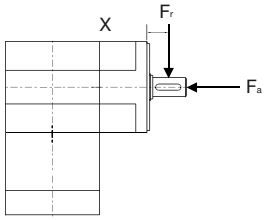


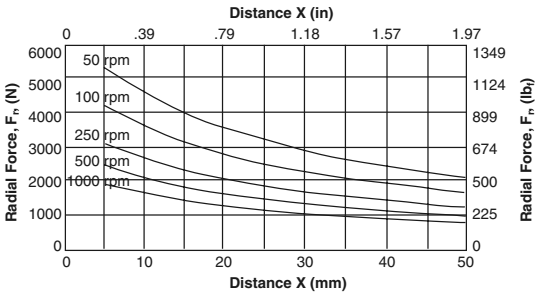


DTR90 Axial Load Ratings

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

DTR115 Radial Load Ratings

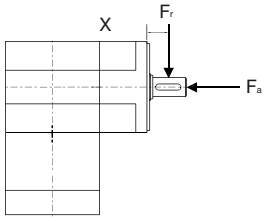


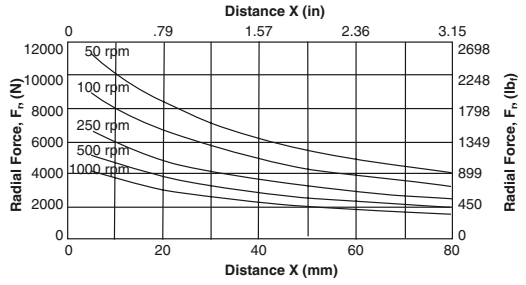


DTR115 Axial Load Ratings

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

DTR142 Radial Load Ratings





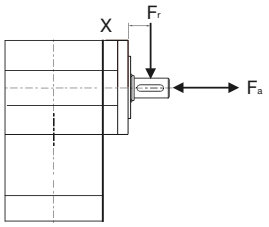
DTR142 Axial Load Ratings

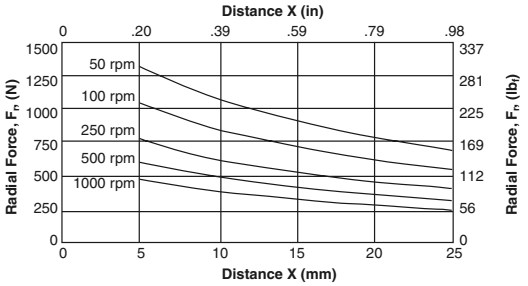
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	17,023	(3830)
100	13,511	(3040)
250	9956	(2240)
500	7902	(1778)
1000	6271	(1411)

Radial and Axial Load Ratings (Table 2)

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 10.

DTR60S Radial Load Ratings

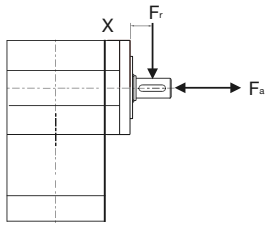


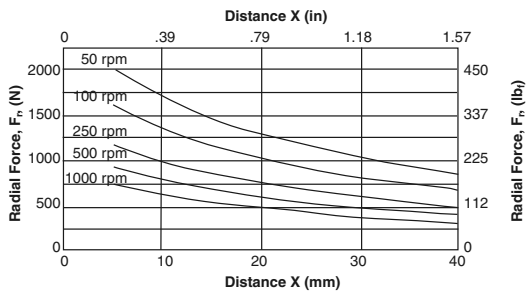


DTR60S Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	2155	(484)
100	1710	(384)
250	1260	(283)
500	1000	(225)
1000	794	(178)

DTR90S Radial Load Ratings

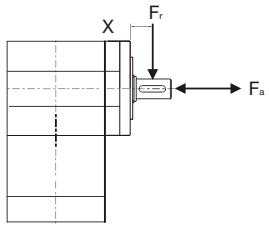


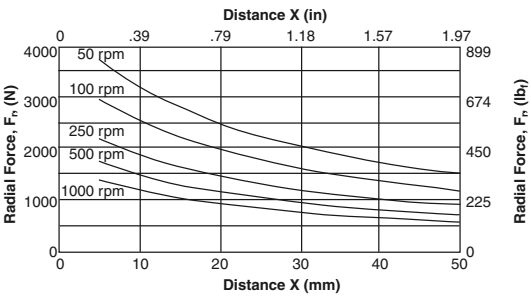


DTR90S Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	3157	(710)
100	2506	(563)
250	1846	(415)
500	1465	(329)
1000	1163	(261)

DTR115S Radial Load Ratings

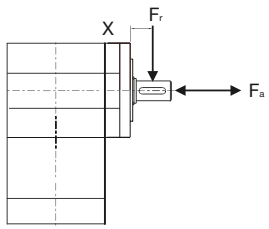


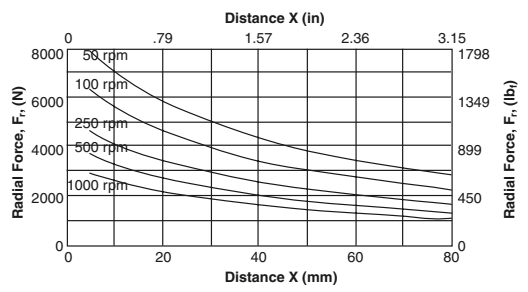


DTR115S Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	5742	(1291)
100	4558	(1025)
250	3358	(755)
500	2665	(599)
1000	2115	(476)

DTR142S Radial Load Ratings





DTR142S Axial Load Ratings

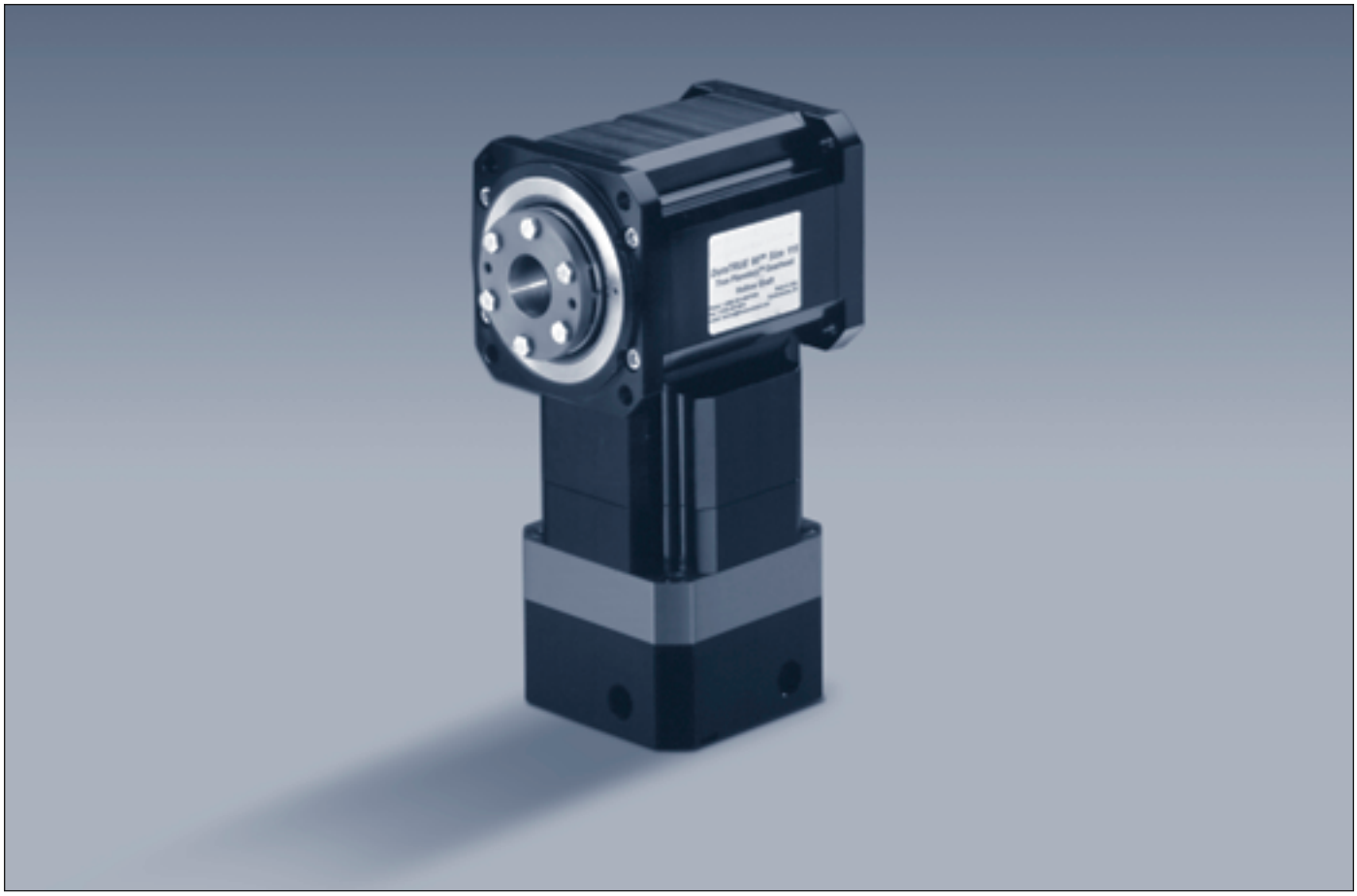
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	11,925	(2681)
100	9465	(2128)
250	6974	(1568)
500	5535	(1244)
1000	4393	(988)

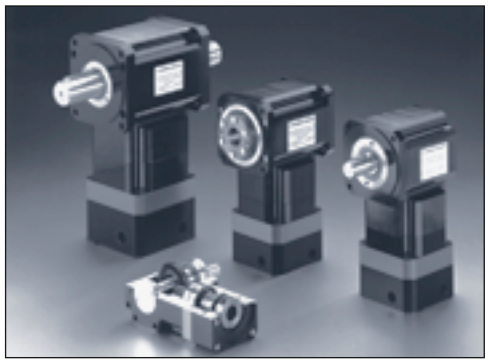
DuraTRUE 90* (Hollow Shaft)

Right Angle Gearheads

Ready for Immediate Delivery

Precision:	8 arc-minutes	**Ratio Availability:**	1:1 thru 500:1
Frame Sizes:	90, 115, and 142mm	**Radial load capacity:**	up to 2500 lb
Torque Capacity:	up to 7659 in-lb	**Mounting System:**	RediMount*





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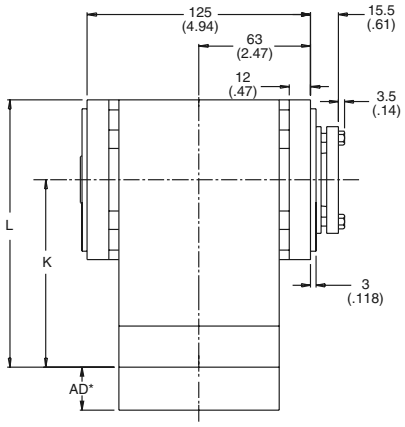
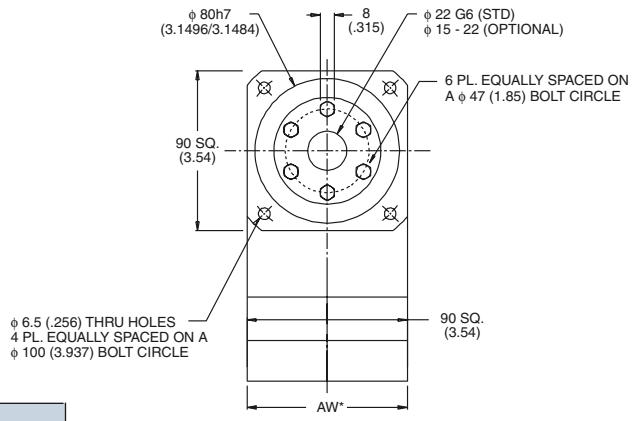
DuraTRUE 90* Size 90H (Hollow Shaft)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	101 (3.99)	146 (5.76)	8 max	4.1 (9)	95%
5:1T to 50:1	124 (4.89)	169 (6.66)	9 max	4.8 (10)	90%
60:1 to 500:1	147 (5.79)	192 (7.56)	9 max	5.5 (12)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

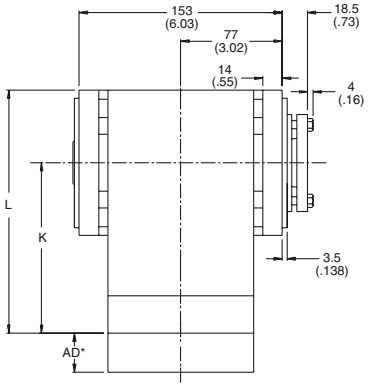
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
DTR90H-001	1:1	21 (188)	19 (171)	17 (155)	140 (1237)	20 (173)	18 (158)	16 (143)	3.11 (27.5)	4.3 (37.9)
DTR90H-002	2:1	48 (426)	44 (389)	40 (352)	140 (1237)	44 (394)	41 (359)	37 (325)	1.59 (14.1)	6.5 (57.2)
DTR90H-003	3:1	32 (281)	29 (256)	26 (232)	140 (1237)	29 (260)	27 (237)	24 (214)	1.37 (12.1)	7.3 (64.6)
DTR90H-004	4:1	24 (215)	22 (196)	20 (177)	140 (1237)	22 (199)	20 (181)	19 (164)	1.27 (11.2)	7.6 (67.7)
DTR90H-005P	5:1P	18 (158)	16 (144)	15 (131)	140 (1237)	17 (146)	15 (133)	14 (121)	1.25 (11.0)	7.8 (69.2)
DTR90H-005T	5:1T	64 (568)	55 (483)	53 (469)	140 (1237)	63 (556)	50 (446)	49 (433)	1.64 (14.5)	5.1 (45.1)
DTR90H-006	6:1	57 (501)	48 (426)	47 (414)	140 (1237)	55 (490)	44 (394)	43 (382)	1.63 (14.4)	5.1 (45.1)
DTR90H-009	9:1	37 (331)	32 (281)	31 (273)	140 (1237)	37 (323)	29 (260)	28 (252)	1.37 (12.1)	6.4 (56.9)
DTR90H-010	10:1	58 (516)	53 (471)	48 (426)	140 (1237)	58 (510)	51 (452)	44 (394)	1.54 (13.7)	5.0 (44.5)
DTR90H-012	12:1	29 (253)	24 (215)	24 (209)	140 (1237)	28 (247)	22 (199)	22 (193)	1.31 (11.6)	7.1 (62.7)
DTR90H-015	15:1	38 (340)	35 (311)	32 (281)	140 (1237)	38 (336)	34 (298)	29 (260)	1.28 (11.3)	7.4 (65.8)
DTR90H-020	20:1	29 (261)	27 (238)	24 (215)	140 (1237)	29 (257)	26 (228)	22 (199)	1.22 (10.8)	7.1 (62.4)
DTR90H-025	25:1	22 (192)	20 (175)	18 (158)	140 (1237)	21 (189)	19 (168)	17 (146)	1.20 (10.6)	7.4 (65.6)
DTR90H-030	30:1	39 (348)	38 (333)	36 (318)	140 (1237)	39 (346)	37 (327)	35 (307)	1.25 (11.1)	6.1 (53.8)
DTR90H-040	40:1	30 (266)	29 (255)	28 (243)	140 (1237)	30 (265)	28 (250)	27 (235)	1.19 (10.6)	6.8 (60.5)
DTR90H-050	50:1	22 (196)	21 (188)	20 (179)	140 (1237)	22 (195)	21 (184)	20 (173)	1.17 (10.4)	7.3 (64.2)
DTR90H-060	60:1	60 (535)	60 (527)	59 (520)	140 (1237)	60 (534)	59 (524)	58 (514)	1.63 (14.4)	4.9 (43.5)
DTR90H-075	75:1	40 (352)	39 (346)	38 (340)	140 (1237)	40 (351)	39 (344)	38 (336)	1.31 (11.6)	6.4 (56.2)
DTR90H-090	90:1	40 (353)	39 (348)	39 (343)	140 (1237)	40 (352)	39 (346)	38 (339)	1.37 (12.1)	6.3 (55.8)
DTR90H-100	100:1	61 (536)	60 (532)	60 (527)	140 (1237)	61 (536)	60 (530)	59 (524)	1.55 (13.7)	5.0 (43.9)
DTR90H-120	120:1	31 (270)	30 (266)	30 (262)	140 (1237)	30 (269)	30 (265)	29 (260)	1.31 (11.6)	7.0 (62.0)
DTR90H-125	125:1	22 (198)	22 (195)	22 (192)	140 (1237)	22 (198)	22 (194)	21 (189)	1.23 (10.8)	7.4 (65.5)
DTR90H-150	150:1	40 (354)	40 (351)	39 (348)	140 (1237)	40 (353)	39 (350)	39 (346)	1.29 (11.4)	6.3 (56.1)
DTR90H-200	200:1	61 (538)	60 (535)	60 (533)	140 (1237)	61 (537)	60 (534)	60 (531)	1.52 (13.5)	4.6 (40.7)
DTR90H-250	250:1	23 (199)	22 (198)	22 (196)	140 (1237)	22 (199)	22 (197)	22 (195)	1.21 (10.7)	7.4 (65.4)
DTR90H-300	300:1	40 (355)	40 (353)	40 (352)	140 (1237)	40 (354)	40 (352)	40 (350)	1.26 (11.1)	6.1 (53.7)
DTR90H-400	400:1	31 (271)	31 (270)	30 (269)	140 (1237)	31 (271)	30 (270)	30 (268)	1.20 (10.6)	6.8 (60.5)
DTR90H-500	500:1	23 (200)	22 (199)	22 (198)	140 (1237)	23 (200)	22 (198)	22 (197)	1.18 (10.4)	7.3 (64.2)

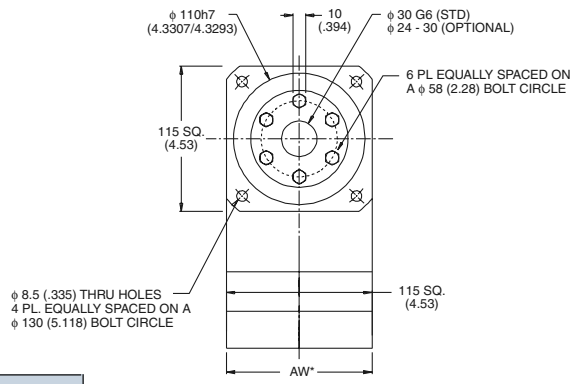
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 115H (Hollow Shaft)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' in (mm)	Dimension 'L' in (mm)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	137 (5.41)	195 (7.67)	8 max	9 (20)	95%
5:1T to 50:1	169 (6.64)	226 (8.90)	9 max	11 (24)	90%
60:1 to 500:1	200 (7.87)	257 (10.13)	9 max	12 (27)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

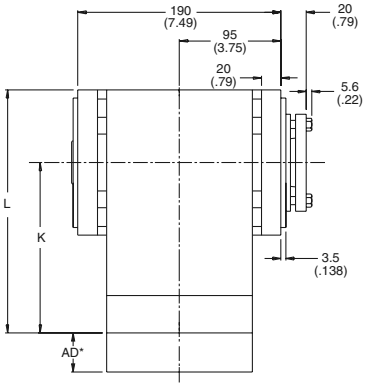
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR115H-001	**1:1**	63 (554)	57 (506)	52 (457)	283 (2505)	58 (512)	53 (467)	48 (422)	5.28 (46.7)	7.6 (67.6)
DTR115H-002	**2:1**	112 (989)	102 (903)	92 (816)	283 (2505)	103 (913)	94 (834)	85 (754)	2.71 (23.9)	12.5 (111)
DTR115H-003	**3:1**	87 (768)	79 (701)	72 (634)	283 (2505)	80 (709)	73 (647)	66 (585)	2.33 (20.6)	14.2 (126)
DTR115H-004	**4:1**	58 (511)	53 (467)	48 (422)	283 (2505)	53 (472)	49 (431)	44 (390)	2.16 (19.1)	14.9 (132)
DTR115H-005P	**5:1P**	43 (384)	40 (350)	36 (316)	283 (2505)	40 (354)	37 (323)	33 (292)	2.12 (18.8)	15.3 (135)
DTR115H-005T	**5:1T**	170 (1505)	126 (1117)	108 (958)	283 (2505)	143 (1262)	102 (907)	88 (778)	2.78 (24.6)	15.3 (135)
DTR115H-006	**6:1**	131 (1163)	112 (989)	109 (960)	283 (2505)	129 (1138)	103 (913)	100 (887)	2.77 (24.5)	10.2 (90.7)
DTR115H-009	**9:1**	102 (903)	87 (768)	84 (746)	283 (2505)	100 (884)	80 (709)	78 (689)	2.32 (20.5)	12.8 (113)
DTR115H-010	**10:1**	135 (1198)	124 (1094)	112 (989)	283 (2505)	134 (1183)	118 (1048)	103 (913)	2.63 (23.2)	10.2 (90.3)
DTR115H-012	**12:1**	68 (601)	58 (511)	56 (496)	283 (2505)	66 (588)	53 (472)	52 (458)	2.22 (19.6)	14.0 (124)
DTR115H-015	**15:1**	105 (930)	96 (849)	87 (768)	283 (2505)	104 (919)	92 (814)	80 (709)	2.18 (19.3)	14.6 (130)
DTR115H-020	**20:1**	70 (619)	64 (565)	58 (511)	283 (2505)	69 (612)	61 (542)	53 (472)	2.08 (18.4)	14.0 (124)
DTR115H-025	**25:1**	52 (465)	48 (424)	43 (384)	283 (2505)	52 (459)	46 (406)	40 (354)	2.04 (18.0)	14.6 (129)
DTR115H-030	**30:1**	107 (951)	103 (910)	98 (869)	283 (2505)	107 (945)	101 (892)	95 (840)	2.13 (18.9)	12.5 (111)
DTR115H-040	**40:1**	72 (633)	68 (606)	65 (579)	283 (2505)	71 (629)	67 (594)	63 (559)	2.03 (18.0)	13.8 (122)
DTR115H-050	**50:1**	54 (475)	51 (454)	49 (434)	283 (2505)	53 (472)	50 (446)	47 (419)	1.99 (17.6)	14.5 (128)
DTR115H-060	**60:1**	140 (1242)	138 (1224)	136 (1207)	283 (2505)	140 (1239)	137 (1217)	135 (1194)	2.78 (24.6)	10.0 (88.5)
DTR115H-075	**75:1**	109 (963)	107 (947)	105 (930)	283 (2505)	109 (960)	106 (939)	104 (919)	2.22 (19.7)	12.7 (112)
DTR115H-090	**90:1**	109 (964)	107 (951)	106 (937)	283 (2505)	109 (962)	107 (945)	105 (927)	2.33 (20.6)	12.6 (112)
DTR115H-100	**100:1**	141 (1245)	140 (1235)	138 (1224)	283 (2505)	141 (1244)	137 (1230)	137 (1217)	2.64 (23.3)	10.1 (89.5)
DTR115H-120	**120:1**	73 (642)	72 (633)	70 (624)	283 (2505)	72 (641)	70 (629)	70 (617)	2.23 (19.7)	13.9 (123)
DTR115H-125	**125:1**	54 (481)	53 (473)	52 (465)	283 (2505)	54 (480)	52 (469)	52 (459)	2.08 (18.4)	14.6 (129)
DTR115H-150	**150:1**	109 (967)	108 (959)	107 (951)	283 (2505)	109 (966)	107 (955)	107 (945)	2.19 (19.4)	12.7 (112)
DTR115H-200	**200:1**	141 (1248)	140 (1243)	140 (1237)	283 (2505)	141 (1247)	139 (1240)	138 (1234)	2.59 (22.9)	9.8 (87.1)
DTR115H-250	**250:1**	55 (483)	54 (479)	54 (475)	283 (2505)	54 (482)	53 (477)	53 (472)	2.05 (18.1)	14.6 (129)
DTR115H-300	**300:1**	109 (969)	109 (965)	109 (961)	283 (2505)	109 (968)	108 (963)	108 (958)	2.14 (18.9)	12.5 (111)
DTR115H-400	**400:1**	73 (645)	73 (642)	72 (640)	283 (2505)	73 (645)	72 (641)	72 (638)	2.04 (18.1)	13.8 (122)
DTR115H-500	**500:1**	55 (484)	54 (482)	54 (480)	283 (2505)	55 (483)	54 (481)	54 (478)	2.00 (17.7)	14.5 (128)

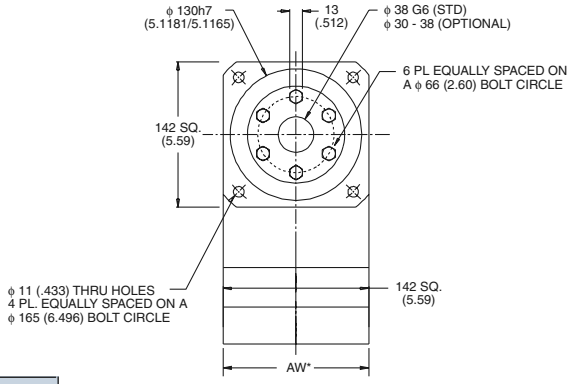
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 142H (Hollow Shaft)

Right Angle Gearheads

Metric





Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	163 (6.43)	234 (9.22)	8 max	19 (43)	95%
5:1T to 50:1	233 (9.17)	304 (11.96)	9 max	24 (53)	90%
60:1 to 500:1	262 (10.3)	332 (13.10)	9 max	28 (62)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

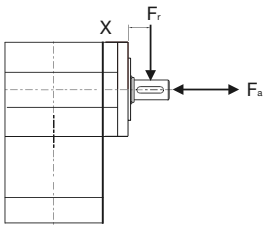
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm^2 (in-lb-sec^2 x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR142H-001	1:1	135 (1194)	123 (1090)	111 (985)	865 (7659)	125 (1103)	114 (1006)	103 (910)	26.3 (232)	23.7 (210)
DTR142H-002	2:1	279 (2474)	255 (2257)	231 (2041)	865 (7659)	258 (2284)	236 (2084)	213 (1885)	13.5 (119)	38.9 (344)
DTR142H-003	3:1	188 (1663)	171 (1518)	155 (1372)	865 (7659)	174 (1536)	158 (1401)	143 (1267)	11.6 (102)	44.1 (390)
DTR142H-004	4:1	135 (1194)	123 (1090)	111 (985)	865 (7659)	125 (1103)	114 (1006)	103 (910)	10.8 (95.1)	46.3 (410)
DTR142H-005P	5:1P	101 (896)	92 (818)	84 (739)	865 (7659)	93 (827)	85 (755)	77 (683)	10.6 (93.3)	47.4 (419)
DTR142H-005T	5:1T	340 (3009)	289 (2559)	281 (2484)	865 (7659)	333 (2944)	267 (2363)	259 (2294)	13.8 (122)	47.4 (419)
DTR142H-006	6:1	329 (2909)	279 (2474)	271 (2402)	865 (7659)	322 (2846)	258 (2284)	251 (2218)	13.8 (122)	31.8 (281)
DTR142H-009	9:1	221 (1956)	188 (1663)	182 (1614)	865 (7659)	216 (1913)	174 (1536)	168 (1491)	11.6 (102)	39.6 (351)
DTR142H-010	10:1	339 (2996)	309 (2735)	279 (2474)	865 (7659)	334 (2958)	296 (2621)	258 (2284)	13.1 (116)	31.6 (280)
DTR142H-012	12:1	159 (1404)	135 (1194)	131 (1159)	865 (7659)	155 (1374)	125 (1103)	121 (1071)	11.1 (97.7)	43.4 (384)
DTR142H-015	15:1	228 (2014)	208 (1839)	188 (1663)	865 (7659)	225 (1989)	199 (1762)	174 (1536)	10.9 (95.9)	45.4 (402)
DTR142H-020	20:1	163 (1446)	149 (1320)	135 (1194)	865 (7659)	161 (1428)	143 (1265)	125 (1103)	10.4 (91.5)	43.3 (383)
DTR142H-025	25:1	123 (1085)	112 (991)	101 (896)	865 (7659)	121 (1071)	107 (949)	93 (827)	10.2 (89.8)	45.3 (401)
DTR142H-030	30:1	233 (2058)	223 (1970)	213 (1882)	865 (7659)	231 (2045)	218 (1932)	205 (1819)	10.6 (93.8)	38.8 (343)
DTR142H-040	40:1	167 (1478)	160 (1415)	153 (1352)	865 (7659)	166 (1469)	157 (1387)	148 (1306)	10.1 (89.4)	42.8 (379)
DTR142H-050	50:1	125 (1109)	120 (1061)	115 (1014)	865 (7659)	125 (1102)	118 (1041)	111 (980)	9.91 (87.6)	45.0 (398)
DTR142H-060	60:1	351 (3105)	346 (3061)	341 (3018)	865 (7659)	350 (3099)	344 (3042)	337 (2986)	13.8 (122)	31.0 (274)
DTR142H-075	75:1	236 (2084)	232 (2049)	228 (2014)	865 (7659)	235 (2079)	230 (2034)	225 (1989)	11.1 (97.9)	39.4 (348)
DTR142H-090	90:1	236 (2087)	233 (2058)	229 (2029)	865 (7659)	235 (2083)	231 (2045)	227 (2008)	11.6 (103)	39.1 (346)
DTR142H-100	100:1	352 (3114)	349 (3088)	346 (3061)	865 (7659)	351 (3110)	348 (3076)	344 (3042)	13.1 (116)	31.3 (278)
DTR142H-120	120:1	169 (1499)	167 (1478)	165 (1457)	865 (7659)	169 (1496)	166 (1469)	163 (1442)	11.1 (98.2)	43.0 (380)
DTR142H-125	125:1	127 (1123)	125 (1104)	123 (1085)	865 (7659)	127 (1120)	124 (1096)	121 (1071)	10.4 (91.7)	45.3 (401)
DTR142H-150	150:1	237 (2093)	235 (2076)	233 (2058)	865 (7659)	236 (2091)	234 (2068)	231 (2045)	10.9 (96.4)	39.3 (348)
DTR142H-200	200:1	353 (3120)	351 (3107)	350 (3094)	865 (7659)	352 (3118)	350 (3101)	349 (3085)	12.9 (114)	30.5 (270)
DTR142H-250	250:1	127 (1128)	126 (1118)	125 (1109)	865 (7659)	127 (1126)	126 (1114)	125 (1102)	10.2 (90.3)	45.2 (400)
DTR142H-300	300:1	237 (2098)	236 (2089)	235 (2080)	865 (7659)	237 (2096)	236 (2085)	234 (2074)	10.7 (94.3)	38.8 (343)
DTR142H-400	400:1	170 (1506)	169 (1500)	169 (1494)	865 (7659)	170 (1505)	169 (1497)	168 (1489)	10.2 (89.8)	42.8 (379)
DTR142H-500	500:1	128 (1130)	127 (1125)	127 (1121)	865 (7659)	128 (1129)	127 (1123)	126 (1117)	9.96 (88.1)	45.0 (398)

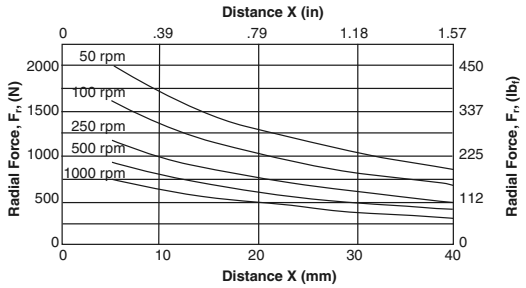
[1] Ratios are exact, higher ratios are also available, consult factory.
Tr = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Radial and Axial Load Ratings (Table 2)

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, $n_{mout} = \frac{n_m}{i}$, as described on page 10.

DTR90H Radial Load Ratings

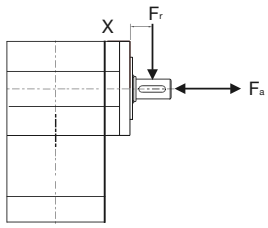


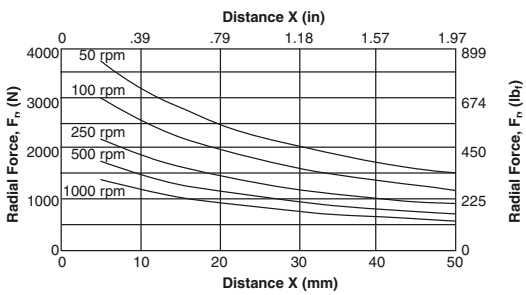


DTR90H Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	3157	(710)
100	2506	(563)
250	1846	(415)
500	1465	(329)
1000	1163	(261)

DTR115H Radial Load Ratings

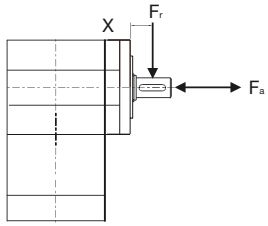


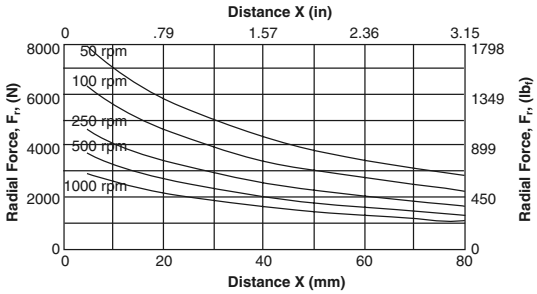


DTR115H Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	5742	(1291)
100	4558	(1025)
250	3358	(755)
500	2665	(599)
1000	2115	(476)

DTR142H Radial Load Ratings





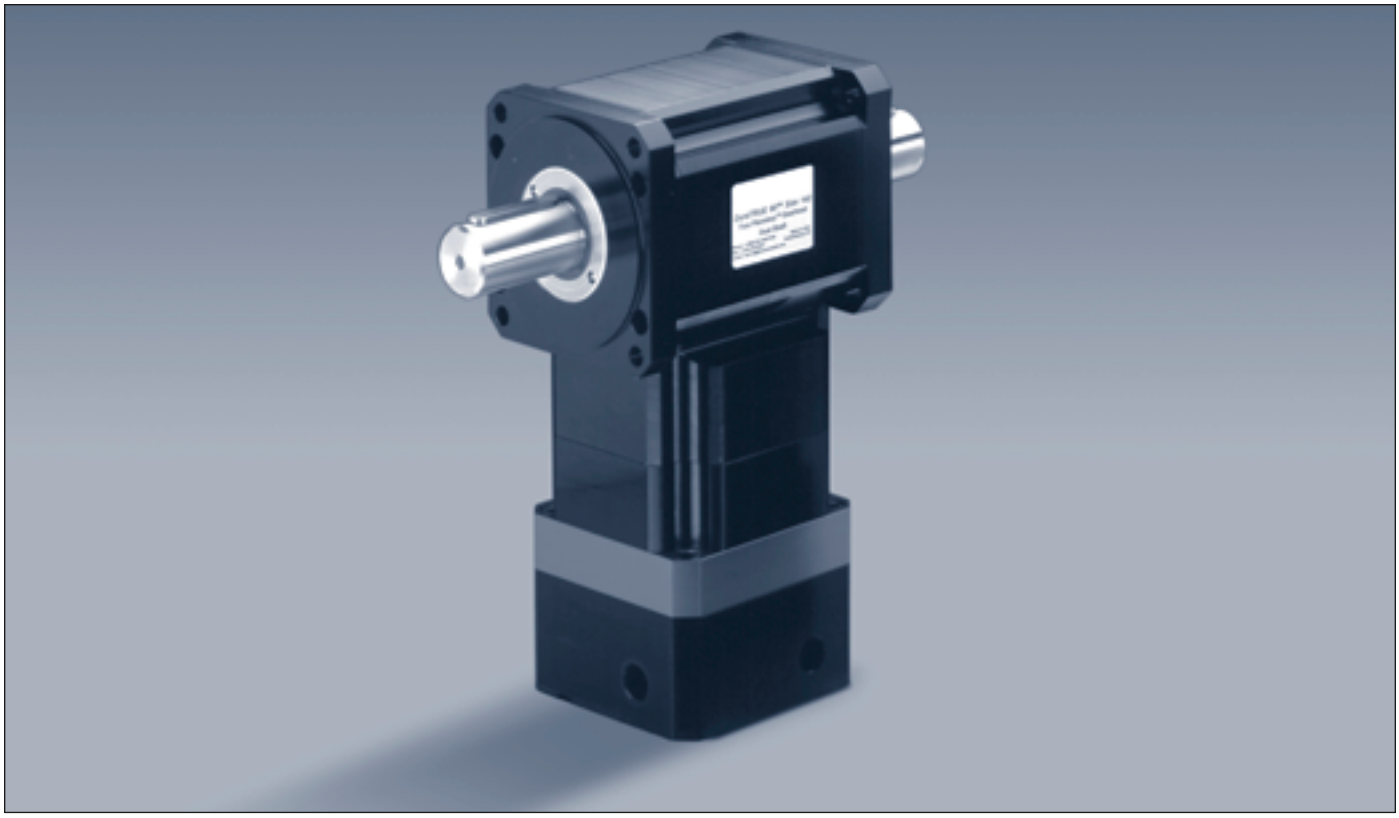
DTR142H Axial Load Ratings

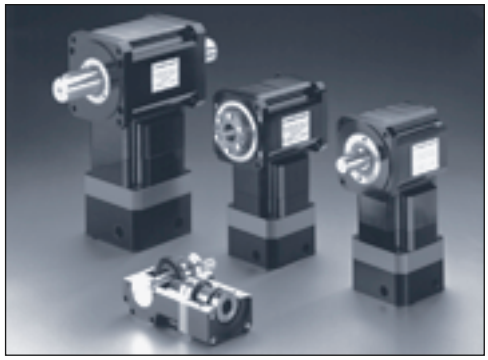
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	11,925	(2681)
100	9465	(2128)
250	6974	(1568)
500	5535	(1244)
1000	4393	(988)

DuraTRUE 90* (Dual Shaft)
Right Angle Gearheads

Ready for Immediate Delivery

Precision:	8 arc-minutes	**Ratio Availability:**	1:1 thru 500:1
Frame Sizes:	60, 90, 115, 142mm	**Radial load capacity:**	up to 2500 lb
Torque Capacity:	up to 7659 in-lb	**Mounting System:**	RediMount*





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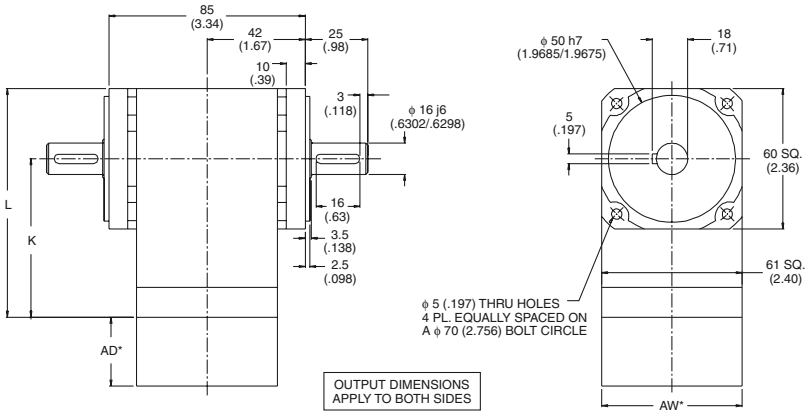
DuraTRUE 90* Size 60D (Dual Shaft)

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	80 (3.15)	110 (4.33)	8 max	2.3 (5)	95%
5:1T to 50:1	97 (3.83)	127 (5.01)	9 max	2.5 (5.5)	90%
60:1 to 500:1	115 (4.52)	145 (5.70)	9 max	2.7 (6)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

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 (1000 rpm) Nm (in-lb)		T_r (3000 rpm) Nm (in-lb)		T_r (5000 rpm) Nm (in-lb)		Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm^2 (in-lb-sec^2 x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR60D-001	1:1	7	(66)	7	(60)	6	(54)	46 (407)	7 (61)	6 (56)	6 (50)	79 (7.0)	1.8 (15.8)
DTR60D-002	2:1	16	(145)	15	(132)	14	(120)	46 (407)	15 (134)	14 (122)	12 (111)	.41 (3.6)	2.7 (23.8)
DTR60D-003	3:1	10	(92)	10	(84)	9	(76)	46 (407)	10 (85)	9 (78)	8 (70)	.35 (3.1)	3.0 (26.9)
DTR60D-004	4:1	8	(68)	7	(62)	6	(56)	46 (407)	7 (63)	6 (57)	6 (52)	.32 (2.9)	3.2 (28.2)
DTR60D-005P	5:1P	6	(56)	6	(51)	5	(46)	46 (407)	6 (52)	5 (47)	5 (43)	.32 (2.8)	3.3 (28.8)
DTR60D-005T	5:1T	23	(200)	18	(162)	16	(138)	46 (407)	21 (182)	15 (132)	13 (112)	.42 (3.7)	3.3 (28.8)
DTR60D-006	6:1	19	(171)	16	(145)	16	(141)	46 (407)	19 (167)	15 (134)	15 (130)	.41 (3.7)	2.1 (18.8)
DTR60D-009	9:1	12	(109)	10	(92)	10	(90)	46 (407)	12 (106)	10 (85)	9 (83)	.35 (3.1)	2.7 (23.7)
DTR60D-010	10:1	20	(176)	18	(160)	16	(145)	46 (407)	20 (174)	17 (154)	15 (134)	.39 (3.5)	2.1 (18.5)
DTR60D-012	12:1	9	(80)	8	(68)	7	(66)	46 (407)	9 (78)	7 (63)	7 (61)	.33 (3.0)	3.0 (26.1)
DTR60D-015	15:1	13	(112)	12	(102)	10	(92)	46 (407)	12 (110)	11 (98)	10 (85)	.33 (2.9)	3.1 (27.4)
DTR60D-020	20:1	9	(82)	8	(75)	8	(68)	46 (407)	9 (81)	8 (72)	7 (63)	.31 (2.8)	2.9 (26.0)
DTR60D-025	25:1	8	(68)	7	(62)	6	(56)	46 (407)	8 (67)	7 (59)	6 (52)	.31 (2.7)	3.1 (27.3)
DTR60D-030	30:1	13	(114)	12	(109)	12	(105)	46 (407)	13 (114)	12 (107)	11 (101)	.32 (2.8)	2.5 (22.4)
DTR60D-040	40:1	10	(84)	9	(81)	9	(77)	46 (407)	9 (84)	9 (79)	8 (74)	.30 (2.7)	2.8 (25.2)
DTR60D-050	50:1	8	(69)	7	(66)	7	(63)	46 (407)	8 (69)	7 (65)	7 (61)	.30 (2.6)	3.0 (26.8)
DTR60D-060	60:1	21	(182)	20	(180)	20	(177)	46 (407)	21 (182)	20 (178)	20 (175)	.42 (3.7)	2.0 (18.1)
DTR60D-075	75:1	13	(116)	13	(114)	13	(112)	46 (407)	13 (115)	13 (113)	12 (110)	.33 (3.0)	2.6 (23.4)
DTR60D-090	90:1	13	(116)	13	(114)	13	(113)	46 (407)	13 (116)	13 (114)	13 (111)	.35 (3.1)	2.6 (23.3)
DTR60D-100	100:1	21	(183)	20	(181)	20	(180)	46 (407)	21 (182)	20 (180)	20 (178)	.40 (3.5)	2.1 (18.3)
DTR60D-120	120:1	10	(85)	10	(84)	9	(83)	46 (407)	10 (85)	9 (84)	9 (82)	.33 (3.0)	2.9 (25.8)
DTR60D-125	125:1	8	(70)	8	(69)	8	(68)	46 (407)	8 (70)	8 (68)	8 (67)	.31 (2.8)	3.1 (27.3)
DTR60D-150	150:1	13	(116)	13	(115)	13	(114)	46 (407)	13 (116)	13 (115)	13 (114)	.33 (2.9)	2.6 (23.4)
DTR60D-200	200:1	21	(183)	21	(182)	21	(181)	46 (407)	21 (183)	21 (182)	20 (181)	.39 (3.4)	1.9 (17.0)
DTR60D-250	250:1	8	(70)	8	(70)	8	(69)	46 (407)	8 (70)	8 (69)	8 (69)	.31 (2.7)	3.1 (27.3)
DTR60D-300	300:1	13	(116)	13	(116)	13	(115)	46 (407)	13 (116)	13 (116)	13 (115)	.32 (2.8)	2.5 (22.4)
DTR60D-400	400:1	10	(86)	10	(85)	10	(85)	46 (407)	10 (86)	10 (85)	10 (85)	.31 (2.7)	2.8 (25.2)
DTR60D-500	500:1	8	(70)	8	(70)	8	(70)	46 (407)	8 (70)	8 (70)	8 (70)	.30 (2.7)	3.0 (26.8)

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

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

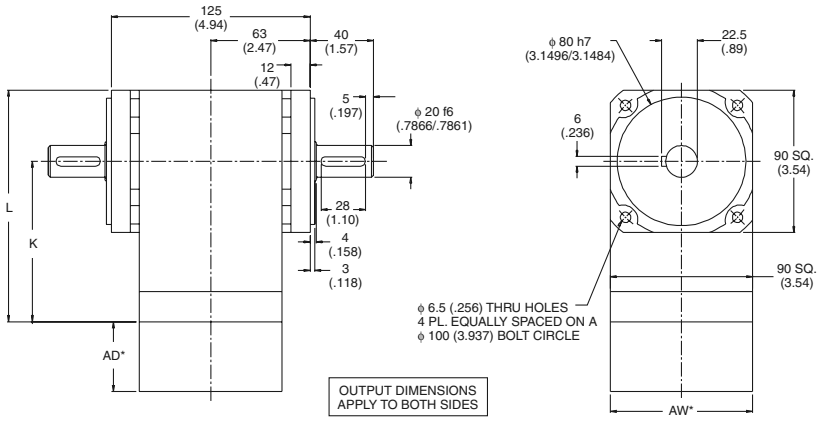
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 90D (Dual Shaft)

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	101 (3.99)	146 (5.76)	8 max	4.1 (9)	95%
5:1T to 50:1	124 (4.89)	169 (6.66)	9 max	4.8 (10)	90%
60:1 to 500:1	147 (5.79)	192 (7.56)	9 max	5.5 (12)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

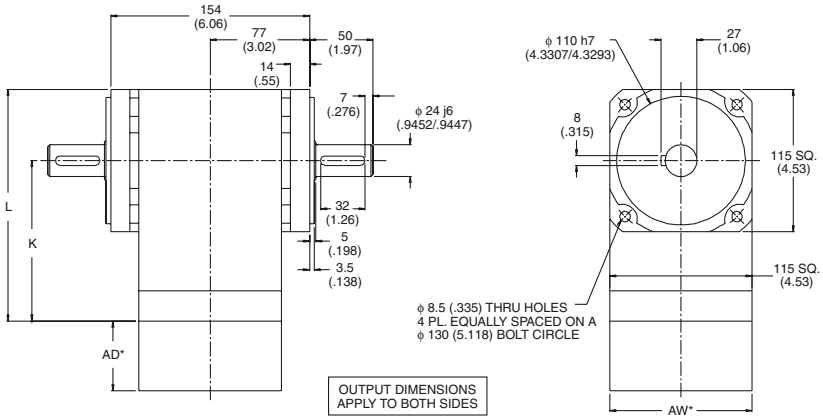
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR90D-001	1:1	21 (188)	19 (171)	17 (155)	140 (1237)	20 (173)	18 (158)	16 (143)	3.11 (27.5)	4.3 (37.9)
DTR90D-002	2:1	48 (426)	44 (389)	40 (352)	140 (1237)	44 (394)	41 (359)	37 (325)	1.59 (14.1)	6.5 (57.2)
DTR90D-003	3:1	32 (281)	29 (256)	26 (232)	140 (1237)	29 (260)	27 (237)	24 (214)	1.37 (12.1)	7.3 (64.6)
DTR90D-004	4:1	24 (215)	22 (196)	20 (177)	140 (1237)	22 (199)	20 (181)	19 (164)	1.27 (11.2)	7.6 (67.7)
DTR90D-005P	5:1P	18 (158)	16 (144)	15 (131)	140 (1237)	17 (146)	15 (133)	14 (121)	1.25 (11.0)	7.8 (69.2)
DTR90D-005T	5:1T	64 (568)	55 (483)	53 (469)	140 (1237)	63 (556)	50 (446)	49 (433)	1.64 (14.5)	5.1 (45.1)
DTR90D-006	6:1	57 (501)	48 (426)	47 (414)	140 (1237)	55 (490)	44 (394)	43 (382)	1.63 (14.4)	5.1 (45.1)
DTR90D-009	9:1	37 (331)	32 (281)	31 (273)	140 (1237)	37 (323)	29 (260)	28 (252)	1.37 (12.1)	6.4 (56.9)
DTR90D-010	10:1	58 (516)	53 (471)	48 (426)	140 (1237)	58 (510)	51 (452)	44 (394)	1.54 (13.7)	5.0 (44.5)
DTR90D-012	12:1	29 (253)	24 (215)	24 (209)	140 (1237)	28 (247)	22 (199)	22 (193)	1.31 (11.6)	7.1 (62.7)
DTR90D-015	15:1	38 (340)	35 (311)	32 (281)	140 (1237)	38 (336)	34 (298)	29 (260)	1.28 (11.3)	7.4 (65.8)
DTR90D-020	20:1	29 (261)	27 (238)	24 (215)	140 (1237)	29 (257)	26 (228)	22 (199)	1.22 (10.8)	7.1 (62.4)
DTR90D-025	25:1	22 (192)	20 (175)	18 (158)	140 (1237)	21 (189)	19 (168)	17 (146)	1.20 (10.6)	7.4 (65.6)
DTR90D-030	30:1	39 (348)	38 (333)	36 (318)	140 (1237)	39 (346)	37 (327)	35 (307)	1.25 (11.1)	6.1 (53.8)
DTR90D-040	40:1	30 (266)	29 (255)	28 (243)	140 (1237)	30 (265)	28 (250)	27 (235)	1.19 (10.6)	6.8 (60.5)
DTR90D-050	50:1	22 (196)	21 (188)	20 (179)	140 (1237)	22 (195)	21 (184)	20 (173)	1.17 (10.4)	7.3 (64.2)
DTR90D-060	60:1	60 (535)	60 (527)	59 (520)	140 (1237)	60 (534)	59 (524)	58 (514)	1.63 (14.4)	4.9 (43.5)
DTR90D-075	75:1	40 (352)	39 (346)	38 (340)	140 (1237)	40 (351)	39 (344)	38 (336)	1.31 (11.6)	6.4 (56.2)
DTR90D-090	90:1	40 (353)	39 (348)	39 (343)	140 (1237)	40 (352)	39 (346)	38 (339)	1.37 (12.1)	6.3 (55.8)
DTR90D-100	100:1	61 (536)	60 (532)	60 (527)	140 (1237)	61 (536)	60 (530)	59 (524)	1.55 (13.7)	5.0 (43.9)
DTR90D-120	120:1	31 (270)	30 (266)	30 (262)	140 (1237)	30 (269)	30 (265)	29 (260)	1.31 (11.6)	7.0 (62.0)
DTR90D-125	125:1	22 (198)	22 (195)	22 (192)	140 (1237)	22 (198)	22 (194)	21 (189)	1.23 (10.8)	7.4 (65.5)
DTR90D-150	150:1	40 (354)	40 (351)	39 (348)	140 (1237)	40 (353)	39 (350)	39 (346)	1.29 (11.4)	6.3 (56.1)
DTR90D-200	200:1	61 (538)	60 (535)	60 (533)	140 (1237)	61 (537)	60 (534)	60 (531)	1.52 (13.5)	4.6 (40.7)
DTR90D-250	250:1	23 (199)	22 (198)	22 (196)	140 (1237)	22 (199)	22 (197)	22 (195)	1.21 (10.7)	7.4 (65.4)
DTR90D-300	300:1	40 (355)	40 (353)	40 (352)	140 (1237)	40 (354)	40 (352)	40 (350)	1.26 (11.1)	6.1 (53.7)
DTR90D-400	400:1	31 (271)	31 (270)	30 (269)	140 (1237)	31 (271)	30 (270)	30 (268)	1.20 (10.6)	6.8 (60.5)
DTR90D-500	500:1	23 (200)	22 (199)	22 (198)	140 (1237)	23 (200)	22 (198)	22 (197)	1.18 (10.4)	7.3 (64.2)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 115D (Dual Shaft)

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	137 (5.41)	195 (7.67)	8 max	9 (20)	95%
5:1T to 50:1	169 (6.64)	226 (8.90)	9 max	11 (24)	90%
60:1 to 500:1	200 (7.87)	257 (10.13)	9 max	12 (27)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

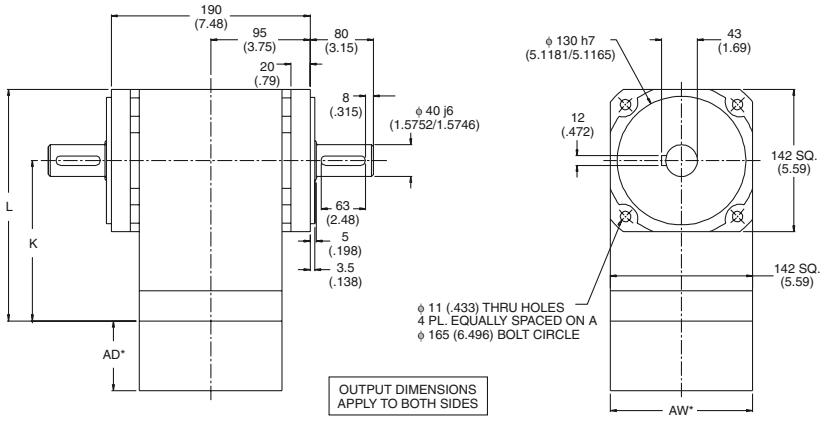
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm^2 (in-lb-sec^2 x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR115D-001	1:1	63 (554)	57 (506)	52 (457)	283 (2505)	58 (512)	53 (467)	48 (422)	5.28 (46.7)	7.6 (67.6)
DTR115D-002	2:1	112 (989)	102 (903)	92 (816)	283 (2505)	103 (913)	94 (834)	85 (754)	2.71 (23.9)	12.5 (111)
DTR115D-003	3:1	87 (768)	79 (701)	72 (634)	283 (2505)	80 (709)	73 (647)	66 (585)	2.33 (20.6)	14.2 (126)
DTR115D-004	4:1	58 (511)	53 (467)	48 (422)	283 (2505)	53 (472)	49 (431)	44 (390)	2.16 (19.1)	14.9 (132)
DTR115D-005P	5:1P	43 (384)	40 (350)	36 (316)	283 (2505)	40 (354)	37 (323)	33 (292)	2.12 (18.8)	15.3 (135)
DTR115D-005T	5:1T	170 (1505)	126 (1117)	108 (958)	283 (2505)	143 (1262)	102 (907)	88 (778)	2.78 (24.6)	15.3 (135)
DTR115D-006	6:1	131 (1163)	112 (989)	109 (960)	283 (2505)	129 (1138)	103 (913)	100 (887)	2.77 (24.5)	10.2 (90.7)
DTR115D-009	9:1	102 (903)	87 (768)	84 (746)	283 (2505)	100 (884)	80 (709)	78 (689)	2.32 (20.5)	12.8 (113)
DTR115D-010	10:1	135 (1198)	124 (1094)	112 (989)	283 (2505)	134 (1183)	118 (1048)	103 (913)	2.63 (23.2)	10.2 (90.3)
DTR115D-012	12:1	68 (601)	58 (511)	56 (496)	283 (2505)	66 (588)	53 (472)	52 (458)	2.22 (19.6)	14.0 (124)
DTR115D-015	15:1	105 (930)	96 (849)	87 (768)	283 (2505)	104 (919)	92 (814)	80 (709)	2.18 (19.3)	14.6 (130)
DTR115D-020	20:1	70 (619)	64 (565)	58 (511)	283 (2505)	69 (612)	61 (542)	53 (472)	2.08 (18.4)	14.0 (124)
DTR115D-025	25:1	52 (465)	48 (424)	43 (384)	283 (2505)	52 (459)	46 (406)	40 (354)	2.04 (18.0)	14.6 (129)
DTR115D-030	30:1	107 (951)	103 (910)	98 (869)	283 (2505)	107 (945)	101 (892)	95 (840)	2.13 (18.9)	12.5 (111)
DTR115D-040	40:1	72 (633)	68 (606)	65 (579)	283 (2505)	71 (629)	67 (594)	63 (559)	2.03 (18.0)	13.8 (122)
DTR115D-050	50:1	54 (475)	51 (454)	49 (434)	283 (2505)	53 (472)	50 (446)	47 (419)	1.99 (17.6)	14.5 (128)
DTR115D-060	60:1	140 (1242)	138 (1224)	136 (1207)	283 (2505)	140 (1239)	137 (1217)	135 (1194)	2.78 (24.6)	10.0 (88.5)
DTR115D-075	75:1	109 (963)	107 (947)	105 (930)	283 (2505)	109 (960)	106 (939)	104 (919)	2.22 (19.7)	12.7 (112)
DTR115D-090	90:1	109 (964)	107 (951)	106 (937)	283 (2505)	109 (962)	107 (945)	105 (927)	2.33 (20.6)	12.6 (112)
DTR115D-100	100:1	141 (1245)	140 (1235)	138 (1224)	283 (2505)	141 (1244)	139 (1230)	137 (1217)	2.64 (23.3)	10.1 (89.5)
DTR115D-120	120:1	73 (642)	72 (633)	70 (624)	283 (2505)	72 (641)	71 (629)	70 (617)	2.23 (19.7)	13.9 (123)
DTR115D-125	125:1	54 (481)	53 (473)	52 (465)	283 (2505)	54 (480)	53 (469)	52 (459)	2.08 (18.4)	14.6 (129)
DTR115D-150	150:1	109 (967)	108 (959)	107 (951)	283 (2505)	109 (966)	108 (955)	107 (945)	2.19 (19.4)	12.7 (112)
DTR115D-200	200:1	141 (1248)	140 (1243)	140 (1237)	283 (2505)	141 (1247)	140 (1240)	139 (1234)	2.59 (22.9)	9.8 (87.1)
DTR115D-250	250:1	55 (483)	54 (479)	54 (475)	283 (2505)	54 (482)	54 (477)	53 (472)	2.05 (18.1)	14.6 (129)
DTR115D-300	300:1	109 (969)	109 (965)	109 (961)	283 (2505)	109 (968)	109 (963)	108 (958)	2.14 (18.9)	12.5 (111)
DTR115D-400	400:1	73 (645)	73 (642)	73 (640)	283 (2505)	73 (645)	72 (641)	72 (638)	2.04 (18.1)	13.8 (122)
DTR115D-500	500:1	55 (484)	54 (482)	54 (480)	283 (2505)	55 (483)	54 (481)	54 (478)	2.00 (17.7)	14.5 (128)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90* Size 142D (Dual Shaft)

Right Angle Gearheads

Metric



Ratio	Dimension 'K' mm (in)	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1P	163 (6.43)	234 (9.22)	8 max	19 (43)	95%
5:1T to 50:1	233 (9.17)	304 (11.96)	9 max	24 (53)	90%
60:1 to 500:1	262 (10.3)	332 (13.10)	9 max	28 (62)	85%

** AD = Adapter length
Adapter length will vary depending on motor. Consult factory for details.

All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

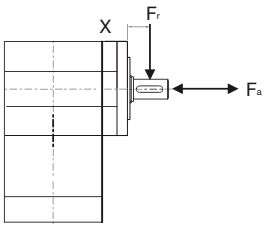
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm2 (in-lb-sec^2 x 10^{-4})	Nm/arc-min (in-lb/arc-min)
DTR142D-001	1:1	135 (1194)	123 (1090)	111 (985)	865 (7659)	125 (1103)	114 (1006)	103 (910)	26.3 (232)	23.7 (210)
DTR142D-002	2:1	279 (2474)	255 (2257)	231 (2041)	865 (7659)	258 (2284)	236 (2084)	213 (1885)	13.5 (119)	38.9 (344)
DTR142D-003	3:1	188 (1663)	171 (1518)	155 (1372)	865 (7659)	174 (1536)	158 (1401)	143 (1267)	11.6 (102)	44.1 (390)
DTR142D-004	4:1	135 (1194)	123 (1090)	111 (985)	865 (7659)	125 (1103)	114 (1006)	103 (910)	10.8 (95.1)	46.3 (410)
DTR142D-005P	5:1P	101 (896)	92 (818)	84 (739)	865 (7659)	93 (827)	85 (755)	77 (683)	10.6 (93.3)	47.4 (419)
DTR142D-005T	5:1T	340 (3009)	289 (2559)	281 (2484)	865 (7659)	333 (2944)	267 (2363)	259 (2294)	13.8 (122)	47.4 (419)
DTR142D-006	6:1	329 (2909)	279 (2474)	271 (2402)	865 (7659)	322 (2846)	258 (2284)	251 (2218)	13.8 (122)	31.8 (281)
DTR142D-009	9:1	221 (1956)	188 (1663)	182 (1614)	865 (7659)	216 (1913)	174 (1536)	168 (1491)	11.6 (102)	39.6 (351)
DTR142D-010	10:1	339 (2996)	309 (2735)	279 (2474)	865 (7659)	334 (2958)	296 (2621)	258 (2284)	13.1 (116)	31.6 (280)
DTR142D-012	12:1	159 (1404)	135 (1194)	131 (1159)	865 (7659)	155 (1374)	125 (1103)	121 (1071)	11.1 (97.7)	43.4 (384)
DTR142D-015	15:1	228 (2014)	208 (1839)	188 (1663)	865 (7659)	225 (1989)	199 (1762)	174 (1536)	10.9 (95.9)	45.4 (402)
DTR142D-020	20:1	163 (1446)	149 (1320)	135 (1194)	865 (7659)	161 (1428)	143 (1265)	125 (1103)	10.4 (91.5)	43.3 (383)
DTR142D-025	25:1	123 (1085)	112 (991)	101 (896)	865 (7659)	121 (1071)	107 (949)	93 (827)	10.2 (89.8)	45.3 (401)
DTR142D-030	30:1	233 (2058)	223 (1970)	213 (1882)	865 (7659)	231 (2045)	218 (1932)	205 (1819)	10.6 (93.8)	38.8 (343)
DTR142D-040	40:1	167 (1478)	160 (1415)	153 (1352)	865 (7659)	166 (1469)	157 (1387)	148 (1306)	10.1 (89.4)	42.8 (379)
DTR142D-050	50:1	125 (1109)	120 (1061)	115 (1014)	865 (7659)	125 (1102)	118 (1041)	111 (980)	9.91 (87.6)	45.0 (398)
DTR142D-060	60:1	351 (3105)	346 (3061)	341 (3018)	865 (7659)	350 (3099)	344 (3042)	337 (2986)	13.8 (122)	31.0 (274)
DTR142D-075	75:1	236 (2084)	232 (2049)	228 (2014)	865 (7659)	235 (2079)	230 (2034)	225 (1989)	11.1 (97.9)	39.4 (348)
DTR142D-090	90:1	236 (2087)	233 (2058)	229 (2029)	865 (7659)	235 (2083)	231 (2045)	227 (2008)	11.6 (103)	39.1 (346)
DTR142D-100	100:1	352 (3114)	349 (3088)	346 (3061)	865 (7659)	351 (3110)	348 (3076)	344 (3042)	13.1 (116)	31.3 (278)
DTR142D-120	120:1	169 (1499)	167 (1478)	165 (1457)	865 (7659)	169 (1496)	166 (1469)	163 (1442)	11.1 (98.2)	43.0 (380)
DTR142D-125	125:1	127 (1123)	125 (1104)	123 (1085)	865 (7659)	127 (1120)	124 (1096)	121 (1071)	10.4 (91.7)	45.3 (401)
DTR142D-150	150:1	237 (2093)	235 (2076)	233 (2058)	865 (7659)	236 (2091)	234 (2068)	231 (2045)	10.9 (96.4)	39.3 (348)
DTR142D-200	200:1	353 (3120)	351 (3107)	350 (3094)	865 (7659)	352 (3118)	350 (3101)	349 (3085)	12.9 (114)	30.5 (270)
DTR142D-250	250:1	127 (1128)	126 (1118)	125 (1109)	865 (7659)	127 (1126)	126 (1114)	125 (1102)	10.2 (90.3)	45.2 (400)
DTR142D-300	300:1	237 (2098)	236 (2089)	235 (2080)	865 (7659)	237 (2096)	236 (2085)	234 (2074)	10.7 (94.3)	38.8 (343)
DTR142D-400	400:1	170 (1506)	169 (1500)	169 (1494)	865 (7659)	170 (1505)	169 (1497)	168 (1489)	10.2 (89.8)	42.8 (379)
DTR142D-500	500:1	128 (1130)	127 (1125)	127 (1121)	865 (7659)	128 (1129)	127 (1123)	126 (1117)	9.96 (88.1)	45.0 (398)

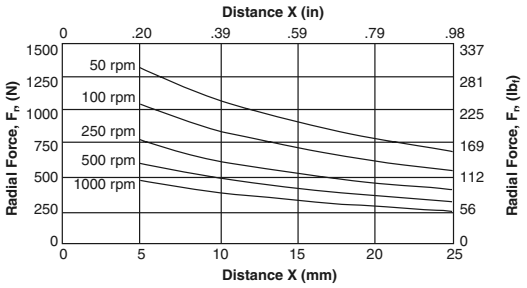
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Radial and Axial Load Ratings (Table 2)

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 10.

DTR60D Radial Load Ratings

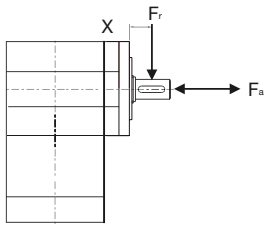


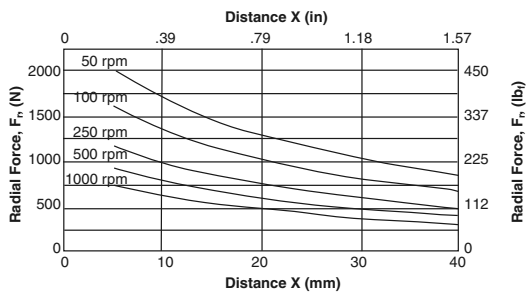


DTR60D Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	2155	(484)
100	1710	(384)
250	1260	(283)
500	1000	(225)
1000	794	(178)

DTR90D Radial Load Ratings

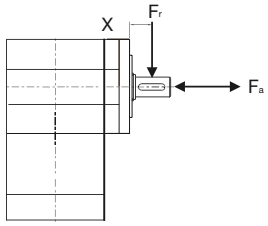


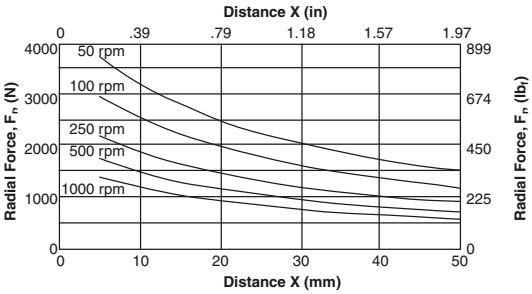


DTR90D Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	3157	(710)
100	2506	(563)
250	1846	(415)
500	1465	(329)
1000	1163	(261)

DTR115D Radial Load Ratings

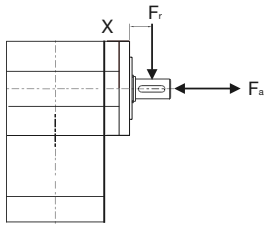


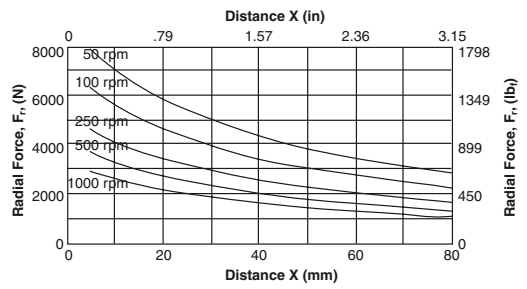


DTR115D Axial Load Ratings

Speed (rpm)	Axial Load, F_a N (lb_f)	
50	5742	(1291)
100	4558	(1025)
250	3358	(755)
500	2665	(599)
1000	2115	(476)

DTR142D Radial Load Ratings





DTR142D Axial Load Ratings

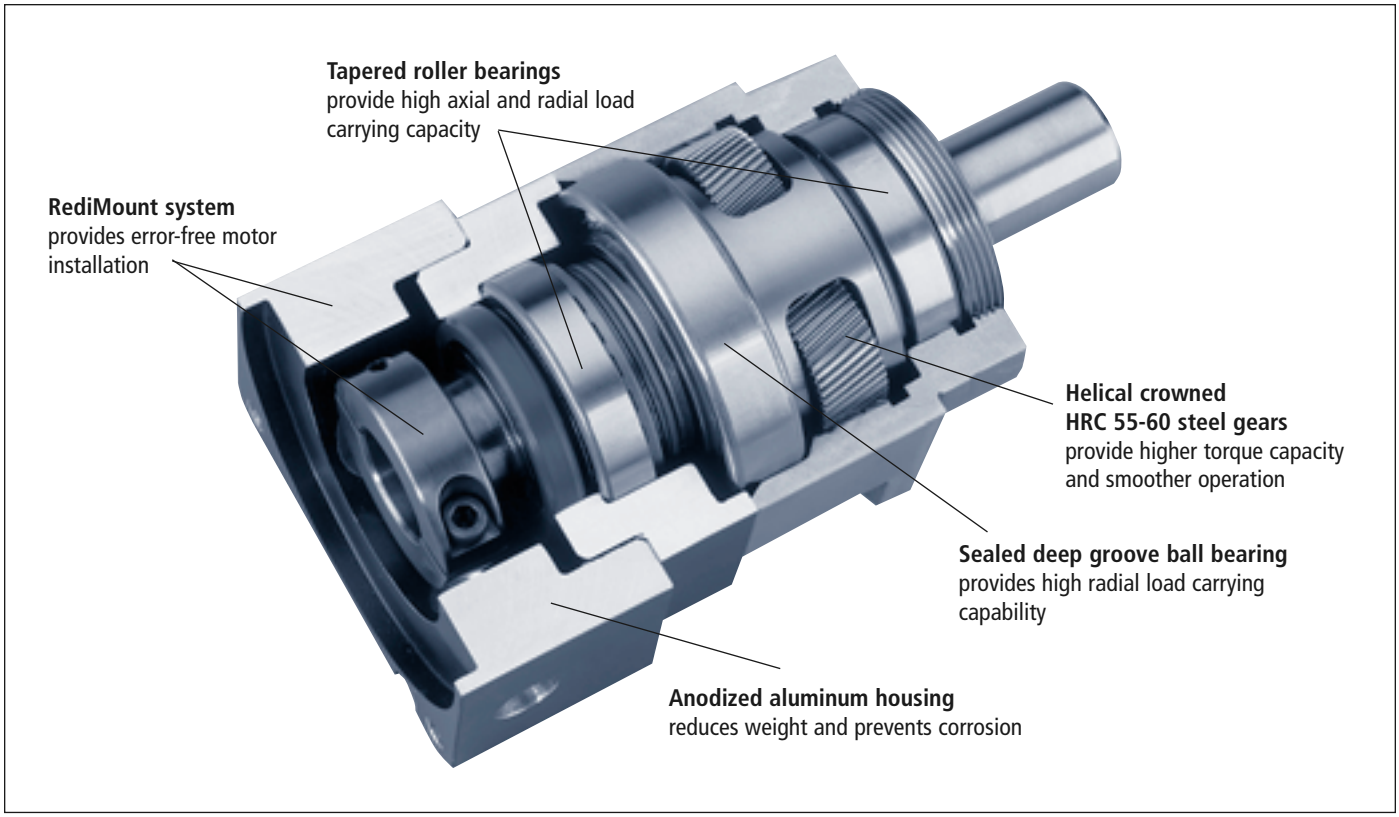
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	11,925	(2681)
100	9465	(2128)
250	6974	(1568)
500	5535	(1244)
1000	4393	(988)

UltraTRUE*

Helical True Planetary* Gearheads

Ready for Immediate Delivery

Precision:	4 arc-minutes	**Ratio Availability:**	4:1 thru 100:1
Frame Sizes:	60, 75, 90, 100, 115, 140, 180, 220mm	**Radial load capacity:**	up to 8500 lb
Torque Capacity:	up to 29,201 in-lb	**Mounting System:**	RediMount*



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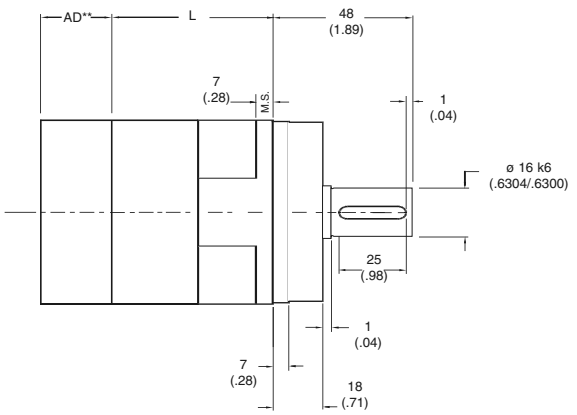
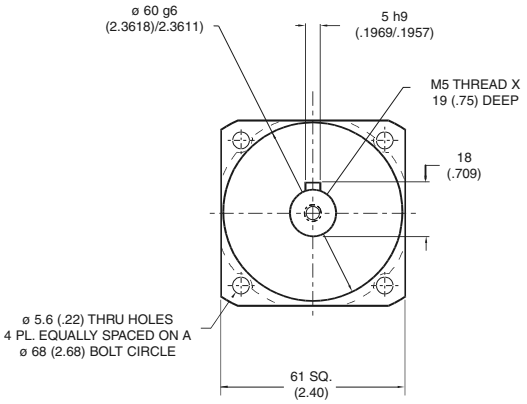




Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	57 (2.25)	4 max	2 (4.4)	92%
16:1 to 100:1	105.4 (4.15)	5 max	2.5 (5.5)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

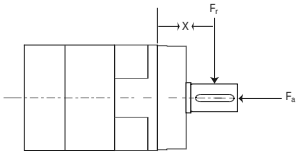
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UT006-004	4:1	48 (426)	44 (387)	38 (340)	101 (891)	47 (417)	36 (322)	31 (276)	.20 (1.80)	2.62 (23.2)
UT006-005	5:1	47 (413)	43 (377)	40 (355)	98 (865)	46 (404)	38 (336)	33 (288)	.13 (1.16)	2.56 (22.7)
UT006-007	7:1	45 (394)	41 (362)	39 (345)	93 (825)	44 (385)	40 (354)	35 (307)	.11 (.96)	2.42 (21.5)
UT006-010	10:1	26 (232)	23 (200)	21 (186)	88 (781)	24 (215)	21 (185)	19 (173)	.10 (.85)	1.93 (17.1)
UT006-016	16:1	53 (467)	49 (435)	47 (419)	110 (975)	52 (456)	48 (426)	46 (410)	.16 (1.44)	2.67 (23.7)
UT006-020	20:1	53 (472)	50 (442)	48 (426)	111 (985)	52 (462)	49 (432)	47 (417)	.16 (1.44)	2.62 (23.2)
UT006-025	25:1	51 (456)	48 (428)	47 (413)	107 (948)	50 (446)	47 (418)	46 (404)	.16 (1.44)	2.58 (22.8)
UT006-028	28:1	54 (481)	51 (452)	49 (437)	113 (999)	53 (470)	50 (442)	48 (427)	.16 (1.44)	2.46 (21.8)
UT006-035	35:1	52 (463)	49 (437)	48 (423)	108 (960)	51 (453)	48 (427)	47 (414)	.10 (.85)	2.54 (22.5)
UT006-040	40:1	55 (489)	52 (462)	51 (447)	114 (1011)	54 (478)	51 (451)	49 (438)	.10 (.85)	2.67 (23.7)
UT006-050	50:1	53 (471)	50 (446)	49 (433)	110 (971)	52 (461)	49 (436)	48 (423)	.10 (.85)	2.62 (23.2)
UT006-070	70:1	50 (445)	48 (423)	46 (411)	103 (913)	49 (435)	47 (414)	45 (402)	.10 (.85)	2.46 (21.8)
UT006-100	100:1	35 (307)	30 (269)	29 (253)	96 (851)	32 (284)	28 (249)	26 (234)	.10 (.85)	2.03 (17.9)

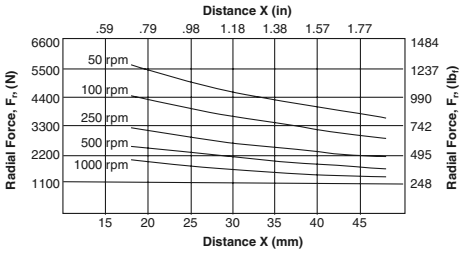
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb_f)	
50	7198	(1618)
100	5710	(1284)
250	4208	(946)
500	3342	(751)
1000	2652	(596)

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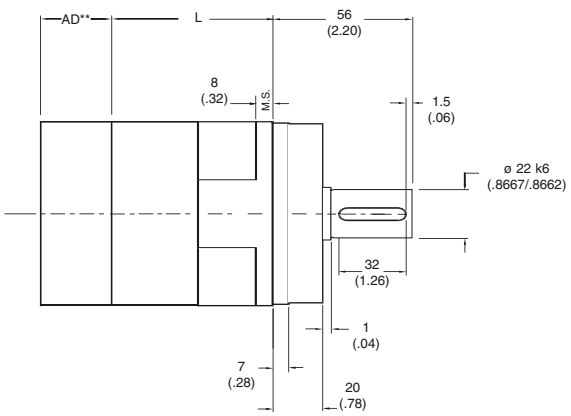
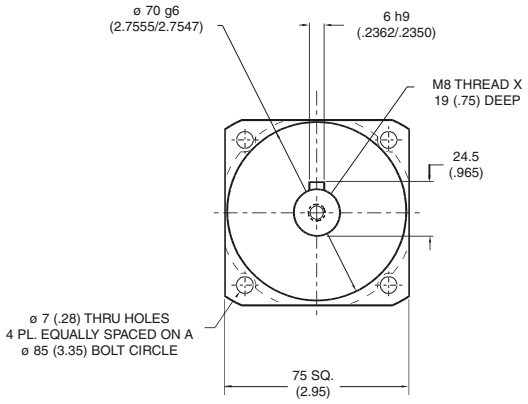




Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
4:1 to 10:1	60 (2.35)	4 max	2.5 (5.5)	92%
16:1 to 100:1	117 (4.60)	5 max	3.0 (6.6)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

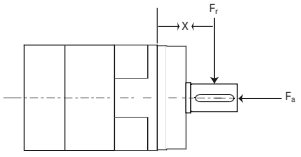
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
UT075-004	4:1	86 (762)	78 (689)	73 (649)	179 (1581)	84 (746)	74 (652)	63 (559)	.46 (4.1)	7.00 (61.9)
UT075-005	5:1	84 (740)	76 (672)	72 (636)	174 (1537)	82 (723)	74 (657)	66 (583)	.38 (3.4)	6.86 (60.7)
UT075-007	7:1	80 (706)	73 (646)	69 (615)	166 (1469)	78 (690)	71 (632)	68 (601)	.31 (2.8)	6.07 (53.7)
UT075-010	10:1	47 (418)	41 (360)	38 (335)	157 (1393)	44 (387)	38 (333)	35 (310)	.27 (2.4)	4.46 (39.5)
UT075-016	16:1	95 (838)	88 (780)	85 (749)	197 (1743)	93 (820)	86 (762)	83 (732)	.31 (2.8)	7.36 (65.1)
UT075-020	20:1	96 (849)	90 (792)	86 (762)	199 (1762)	94 (830)	88 (775)	84 (746)	.31 (2.8)	7.20 (63.7)
UT075-025	25:1	93 (820)	87 (767)	84 (740)	192 (1698)	91 (801)	85 (750)	82 (723)	.31 (2.8)	7.07 (62.6)
UT075-028	28:1	98 (864)	92 (811)	88 (782)	202 (1789)	96 (845)	90 (793)	86 (765)	.28 (2.5)	6.45 (57.1)
UT075-035	35:1	94 (834)	89 (784)	86 (758)	194 (1721)	92 (815)	87 (767)	84 (741)	.16 (1.4)	6.68 (59.1)
UT075-040	40:1	99 (880)	94 (829)	91 (802)	205 (1813)	97 (861)	92 (811)	89 (785)	.16 (1.4)	7.37 (65.2)
UT075-050	50:1	96 (849)	91 (801)	88 (777)	197 (1743)	94 (830)	89 (784)	86 (759)	.16 (1.4)	7.22 (63.9)
UT075-070	70:1	91 (802)	86 (760)	83 (738)	185 (1639)	89 (784)	84 (743)	82 (722)	.16 (1.4)	6.48 (57.3)
UT075-100	100:1	63 (554)	55 (486)	52 (456)	173 (1529)	58 (513)	51 (450)	48 (422)	.15 (1.3)	4.50 (39.8)

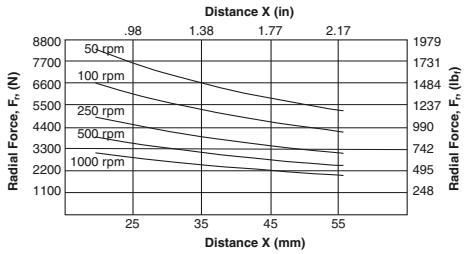
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb$_f$)	
50	9903	(2227)
100	7863	(1768)
250	5793	(1303)
500	4599	(1034)
1000	3650	(821)

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Helical True Planetary* Gearheads

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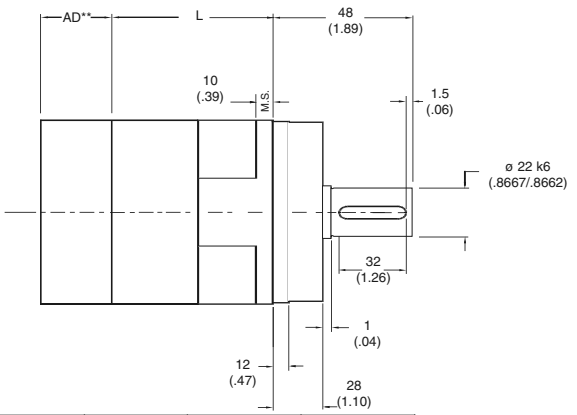
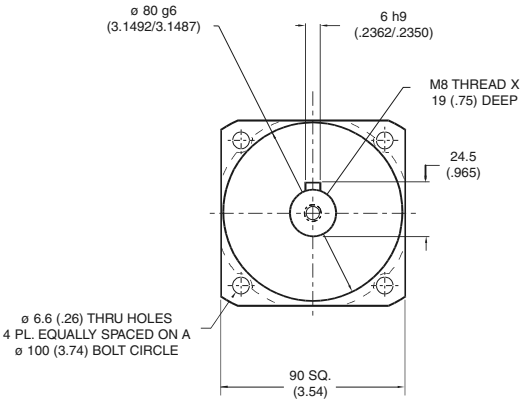




Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
4:1 to 10:1	68 (2.66)	4 max	2.5 (5.5)	92%
16:1 to 100:1	125 (4.91)	5 max	3.0 (6.6)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

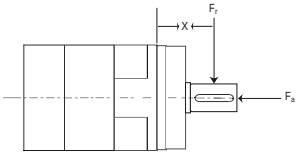
(TABLE 1) PERFORMANCE SPECIFICATIONS

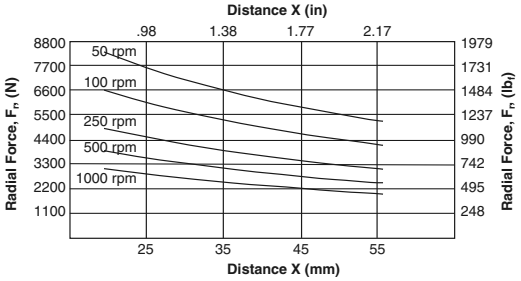
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UT090-004	4:1	86 (762)	78 (689)	73 (649)	179 (1581)	84 (746)	74 (652)	63 (559)	.46 (4.1)	7.00 (61.9)
UT090-005	5:1	84 (740)	76 (672)	72 (636)	174 (1537)	82 (723)	74 (657)	66 (583)	.38 (3.4)	6.86 (60.7)
UT090-007	7:1	80 (706)	73 (646)	69 (615)	166 (1469)	78 (690)	71 (632)	68 (601)	.31 (2.8)	6.07 (53.7)
UT090-010	10:1	47 (418)	41 (360)	38 (335)	157 (1393)	44 (387)	38 (333)	35 (310)	.27 (2.4)	4.46 (39.5)
UT090-016	16:1	95 (838)	88 (780)	85 (749)	197 (1743)	93 (820)	86 (762)	83 (732)	.31 (2.8)	7.36 (65.1)
UT090-020	20:1	96 (849)	90 (792)	86 (762)	199 (1762)	94 (830)	88 (775)	84 (746)	.31 (2.8)	7.20 (63.7)
UT090-025	25:1	93 (820)	87 (767)	84 (740)	192 (1698)	91 (801)	85 (750)	82 (723)	.31 (2.8)	7.07 (62.6)
UT090-028	28:1	98 (864)	92 (811)	88 (782)	202 (1789)	96 (845)	90 (793)	86 (765)	.28 (2.5)	6.45 (57.1)
UT090-035	35:1	94 (834)	89 (784)	86 (758)	194 (1721)	92 (815)	87 (767)	84 (741)	.16 (1.4)	6.68 (59.1)
UT090-040	40:1	99 (880)	94 (829)	91 (802)	205 (1813)	97 (861)	92 (811)	89 (785)	.16 (1.4)	7.37 (65.2)
UT090-050	50:1	96 (849)	91 (801)	88 (777)	197 (1743)	94 (830)	89 (784)	86 (759)	.16 (1.4)	7.22 (63.9)
UT090-070	70:1	91 (802)	86 (760)	83 (738)	185 (1639)	89 (784)	84 (743)	82 (722)	.16 (1.4)	6.48 (57.3)
UT090-100	100:1	63 (554)	55 (486)	52 (456)	173 (1529)	58 (513)	51 (450)	48 (422)	.15 (1.3)	4.50 (39.8)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb_f)	
50	9903	(2227)
100	7863	(1768)
250	5793	(1303)
500	4599	(1034)
1000	3650	(821)

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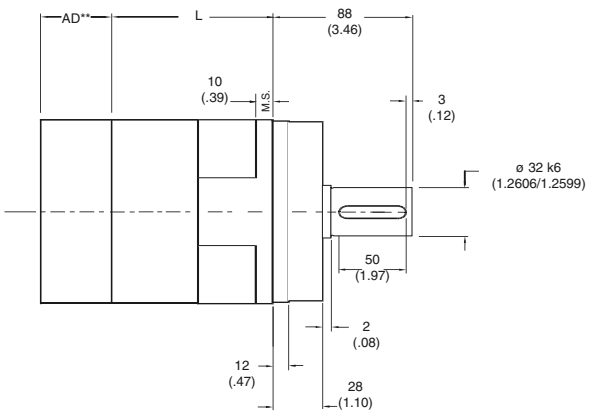
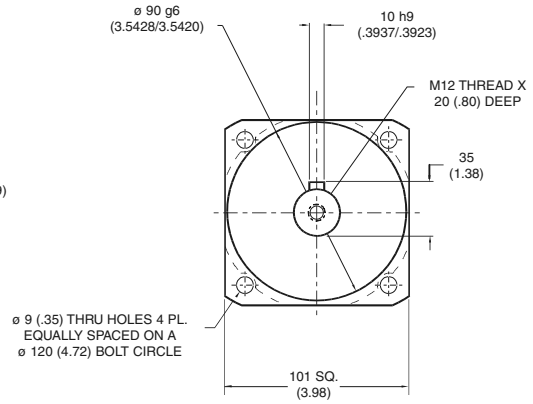




Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	78 (3.07)	4 max	6 (13)	92%
16:1 to 100:1	146 (5.75)	5 max	8 (18)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

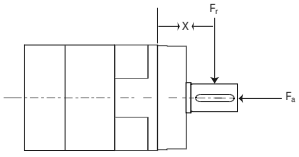
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
UT010-004	4:1	252 (2229)	217 (1922)	186 (1649)	514 (4548)	245 (2171)	176 (1561)	151 (1340)	1.58 (14.0)	25.7 (227)
UT010-005	5:1	245 (2168)	220 (1950)	194 (1720)	501 (4434)	240 (2120)	184 (1628)	158 (1397)	1.36 (12.0)	22.8 (202)
UT010-007	7:1	234 (2074)	213 (1882)	201 (1780)	481 (4256)	229 (2028)	196 (1736)	168 (1489)	.97 (8.6)	21.1 (187)
UT010-010	10:1	138 (1220)	118 (1048)	110 (971)	457 (4044)	128 (1129)	110 (969)	102 (898)	.90 (8.0)	14.4 (128)
UT010-016	16:1	279 (2471)	258 (2284)	247 (2184)	575 (5085)	273 (2416)	252 (2233)	229 (2030)	1.10 (9.7)	27.3 (242)
UT010-020	20:1	283 (2505)	263 (2325)	252 (2229)	582 (5152)	277 (2450)	257 (2273)	245 (2171)	1.10 (9.7)	24.3 (215)
UT010-025	25:1	274 (2422)	255 (2256)	245 (2168)	562 (4974)	268 (2368)	249 (2206)	240 (2120)	1.10 (9.7)	24.3 (215)
UT010-028	28:1	289 (2554)	269 (2384)	259 (2293)	592 (5242)	282 (2498)	263 (2331)	253 (2242)	.94 (8.3)	21.1 (187)
UT010-035	35:1	279 (2468)	261 (2310)	252 (2227)	571 (5054)	273 (2413)	255 (2259)	246 (2177)	.79 (7.0)	20.9 (185)
UT010-040	40:1	294 (2604)	276 (2442)	266 (2357)	602 (5327)	288 (2546)	270 (2388)	260 (2305)	.79 (7.0)	27.4 (243)
UT010-050	50:1	284 (2514)	267 (2364)	258 (2286)	579 (5128)	278 (2458)	261 (2312)	253 (2235)	.78 (6.9)	24.1 (213)
UT010-070	70:1	269 (2380)	254 (2246)	246 (2177)	546 (4832)	263 (2327)	248 (2197)	241 (2129)	.78 (6.9)	21.1 (187)
UT010-100	100:1	184 (1626)	161 (1423)	151 (1335)	510 (4510)	170 (1504)	149 (1317)	140 (1235)	.78 (6.9))	17.2 (152)

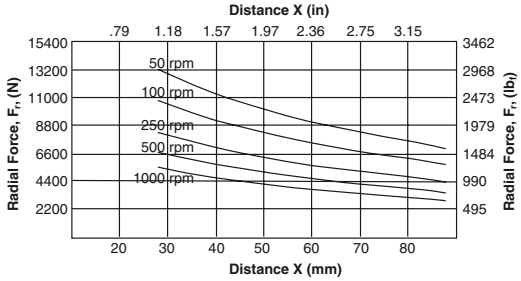
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb_f)
50	13,675 (3075)
100	11,107 (2497)
250	8435 (1897)
500	6855 (1542)
1000	5568 (1252)

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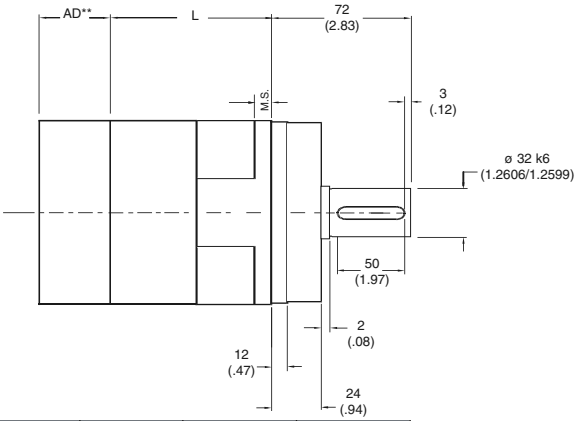
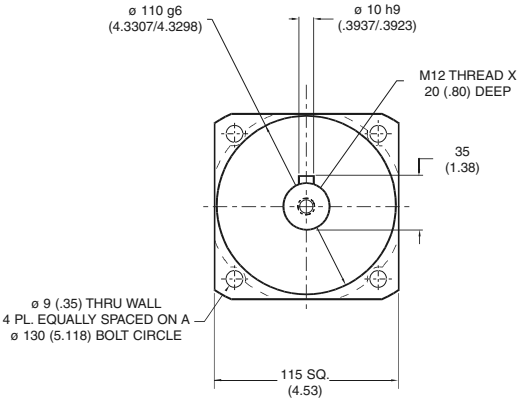




Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	94 (3.70)	4 max	6 (13)	92%
16:1 to 100:1	162 (6.38)	5 max	6 (18)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

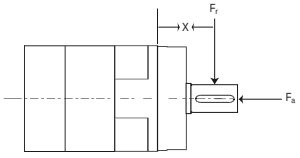
(TABLE 1) PERFORMANCE SPECIFICATIONS

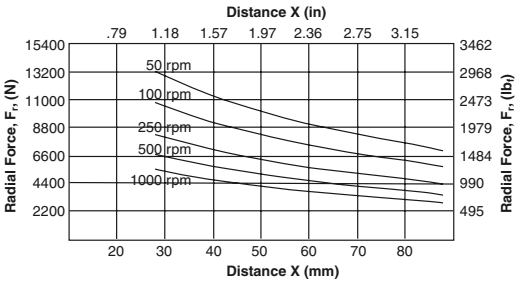
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UT115-004	4:1	252 (2229)	217 (1922)	186 (1649)	514 (4548)	245 (2171)	176 (1561)	151 (1340)	1.58 (14.0)	25.7 (227)
UT115-005	5:1	245 (2168)	220 (1950)	194 (1720)	501 (4434)	240 (2120)	184 (1628)	158 (1397)	1.36 (12.0)	22.8 (202)
UT115-007	7:1	234 (2074)	213 (1882)	201 (1780)	481 (4256)	229 (2028)	196 (1736)	168 (1489)	.97 (8.6)	21.1 (187)
UT115-010	10:1	138 (1220)	118 (1048)	110 (971)	457 (4044)	128 (1129)	110 (969)	102 (898)	.90 (8.0)	14.4 (128)
UT115-016	16:1	279 (2471)	258 (2284)	247 (2184)	575 (5085)	273 (2416)	252 (2233)	229 (2030)	1.10 (9.7)	27.3 (242)
UT115-020	20:1	283 (2505)	263 (2325)	252 (2229)	582 (5152)	277 (2450)	257 (2273)	245 (2171)	1.10 (9.7)	24.3 (215)
UT115-025	25:1	274 (2422)	255 (2256)	245 (2168)	562 (4974)	268 (2368)	249 (2206)	240 (2120)	1.10 (9.7)	24.3 (215)
UT115-028	28:1	289 (2554)	269 (2384)	259 (2293)	592 (5242)	282 (2498)	263 (2331)	253 (2242)	.94 (8.3)	21.1 (187)
UT115-035	35:1	279 (2468)	261 (2310)	252 (2227)	571 (5054)	273 (2413)	255 (2259)	246 (2177)	.79 (7.0)	20.9 (185)
UT115-040	40:1	294 (2604)	276 (2442)	266 (2357)	602 (5327)	288 (2546)	270 (2388)	260 (2305)	.79 (7.0)	27.4 (243)
UT115-050	50:1	284 (2514)	267 (2364)	258 (2286)	579 (5128)	278 (2458)	261 (2312)	253 (2235)	.78 (6.9)	24.1 (213)
UT115-070	70:1	269 (2380)	254 (2246)	246 (2177)	546 (4832)	263 (2327)	248 (2197)	241 (2129)	.78 (6.9)	21.1 (187)
UT115-100	100:1	184 (1626)	161 (1423)	151 (1335)	510 (4510)	170 (1504)	149 (1317)	140 (1235)	.78 (6.9)	17.2 (152)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb_f)
50	13,675 (3075)
100	11,107 (2497)
250	8435 (1897)
500	6855 (1542)
1000	5568 (1252)

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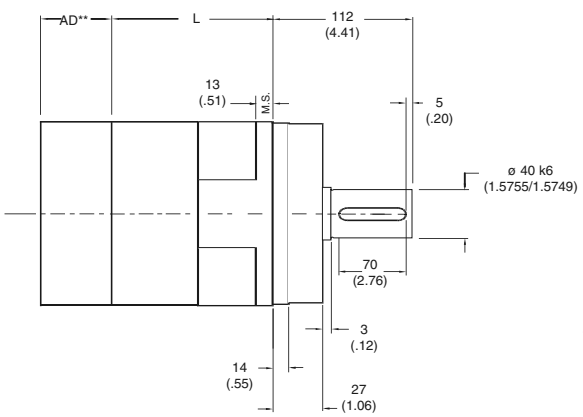
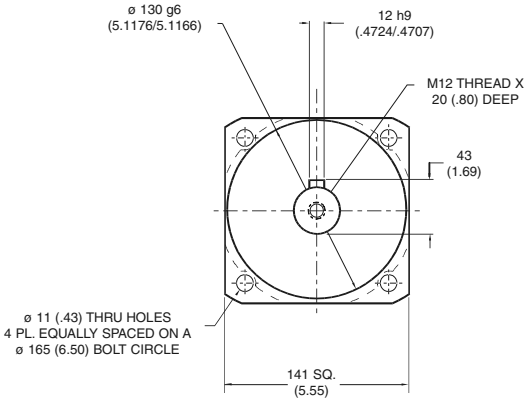
Metric





Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	110.5 (4.35)	4 max	14 (31)	92%
16:1 to 100:1	195 (7.69)	5 max	18 (40)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

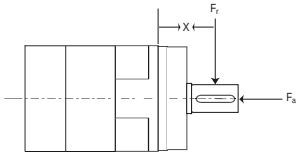
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
UT014-004	4:1	588 (5207)	521 (4613)	454 (4022)	1184 (10,479)	575 (5092)	430 (3808)	369 (3267)	6.51 (57.6)	55 (487)
UT014-005	5:1	572 (5066)	511 (4519)	474 (4191)	1156 (10,229)	560 (4954)	448 (3968)	385 (3404)	5.02 (44.4)	51 (452)
UT014-007	7:1	549 (4857)	494 (4375)	466 (4120)	1113 (9851)	537 (4749)	478 (4232)	410 (3631)	3.80 (33.6)	47 (420)
UT014-010	10:1	329 (2913)	282 (2492)	260 (2304)	1062 (9399)	305 (2696)	261 (2306)	241 (2132)	3.39 (30.0)	35 (311)
UT014-016	16:1	657 (5817)	604 (5346)	576 (5095)	1340 (11860)	643 (5688)	591 (5227)	559 (4951)	4.21 (37.2)	58 (514)
UT014-020	20:1	667 (5902)	616 (5449)	588 (5207)	1360 (12035)	652 (5772)	602 (5328)	575 (5092)	4.07 (36.0)	54 (479)
UT014-025	25:1	645 (5706)	598 (5288)	572 (5066)	1314 (11625)	630 (5579)	584 (5171)	560 (4954)	4.07 (36.0)	54 (479)
UT014-028	28:1	681 (6026)	632 (5597)	607 (5369)	1387 (12274)	666 (5892)	618 (5473)	593 (5250)	3.53 (31.2)	47 (417)
UT014-035	35:1	658 (5820)	613 (5424)	589 (5215)	1338 (11837)	643 (5691)	599 (5304)	576 (5099)	2.99 (26.4)	44 (391)
UT014-040	40:1	695 (6150)	649 (5745)	625 (5530)	1412 (12498)	680 (6014)	635 (5617)	611 (5408)	2.99 (26.4)	58 (512)
UT014-050	50:1	671 (5935)	628 (5560)	606 (5363)	1360 (12034)	656 (5803)	614 (5437)	593 (5244)	2.85 (25.2)	54 (479)
UT014-070	70:1	635 (5623)	598 (5291)	578 (5118)	1283 (11359)	621 (5499)	585 (5174)	565 (5004)	2.85 (25.2)	49 (435)
UT014-100	100:1	441 (3898)	385 (3407)	361 (3193)	1201 (10627)	408 (3607)	356 (3153)	334 (2954)	2.85 (25.2)	35 (312)

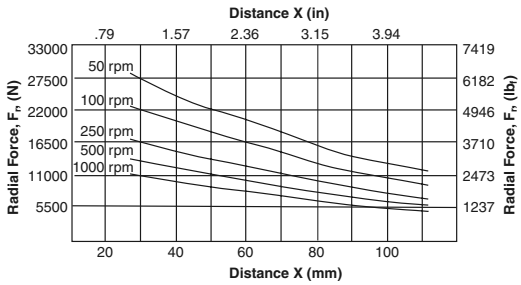
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Available in 24 hours through the Micron Gearhead Express program

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.





Speed (rpm)	Axial Load, F_a N (lb_f)	
50	25,374	(5705)
100	20,609	(4633)
250	15,657	(3520)
500	12,716	(2859)
1000	10,329	(2322)

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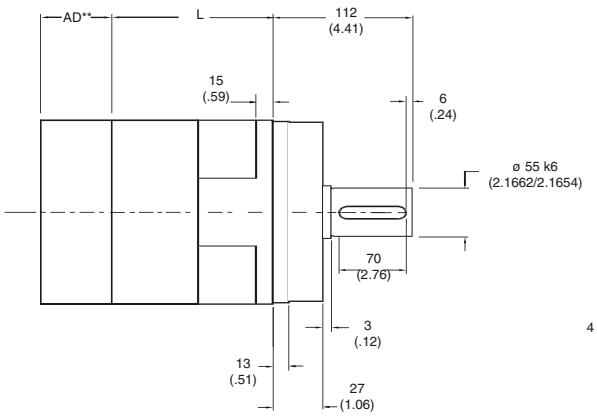
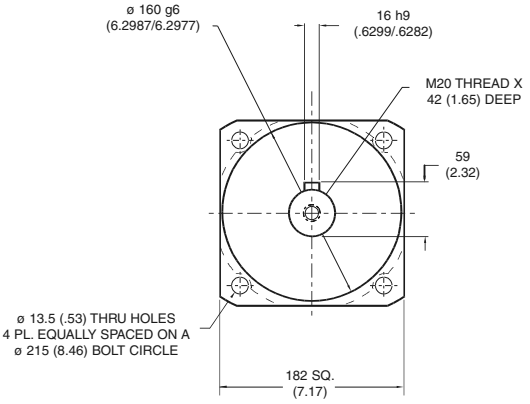
Helical True Planetary* Gearheads

Metric





Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	136 (5.35)	4 max	40 (88)	92%
16:1 to 100:1	244 (9.59)	5 max	45 (99)	87%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

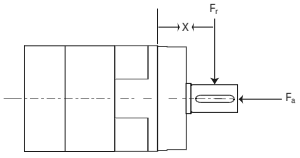
(TABLE 1) PERFORMANCE SPECIFICATIONS

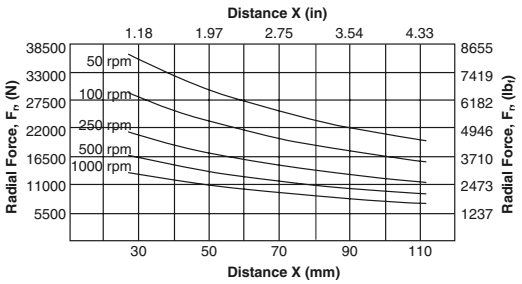
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UT018-004	4:1	1368 (12108)	1184 (10476)	1016 (8988)	2713 (24010)	1337 (11832)	962 (8509)	825 (7300)	25.9 (229)	153 (1358)
UT018-005	5:1	1333 (11800)	1179 (10430)	1058 (9366)	2654 (23492)	1304 (11539)	1002 (8868)	860 (7608)	20.0 (177)	150 (1330)
UT018-007	7:1	1281 (11338)	1144 (10128)	1073 (9494)	2565 (22699)	1253 (11087)	1069 (9458)	917 (8114)	14.6 (129)	134 (1185)
UT018-010	10:1	775 (6856)	660 (5841)	609 (5387)	2456 (21734)	717 (6344)	611 (5404)	563 (4984)	13.0 (115)	101 (893)
UT018-016	16:1	1541 (13641)	1408 (12457)	1336 (11827)	3111 (27532)	1507 (13339)	1376 (12181)	1250 (11065)	16.1 (142)	161 (1429)
UT018-020	20:1	1566 (13855)	1437 (12716)	1368 (12108)	3162 (27986)	1531 (13549)	1405 (12434)	1337 (11832)	15.6 (138)	156 (1382)
UT018-025	25:1	1515 (13407)	1396 (12359)	1333 (11800)	3060 (27078)	1481 (13110)	1366 (12085)	1304 (11539)	15.6 (138)	131 (1160)
UT018-028	28:1	1600 (14164)	1479 (13088)	1414 (12515)	3233 (28612)	1565 (13851)	1446 (12798)	1383 (12237)	13.5 (119)	138 (1225)
UT018-035	35:1	1547 (13691)	1435 (12701)	1376 (12174)	3122 (27633)	1513 (13388)	1403 (12420)	1345 (11904)	11.4 (101)	124 (1098)
UT018-040	40:1	1636 (14475)	1521 (13460)	1460 (12920)	3300 (29201)	1599 (14154)	1487 (13162)	1428 (12634)	11.4 (101)	161 (1429)
UT018-050	50:1	1579 (13978)	1474 (13042)	1418 (12547)	3181 (28153)	1544 (13668)	1441 (12754)	1386 (12269)	10.9 (96)	156 (1382)
UT018-070	70:1	1498 (13256)	1404 (12429)	1355 (11993)	3008 (26621)	1465 (12963)	1373 (12154)	1325 (11728)	10.9 (96)	138 (1225)
UT018-100	100:1	1042 (9218)	909 (8043)	851 (7528)	2819 (24949)	964 (8529)	841 (7442)	787 (6966)	10.9 (96)	103 (908)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.



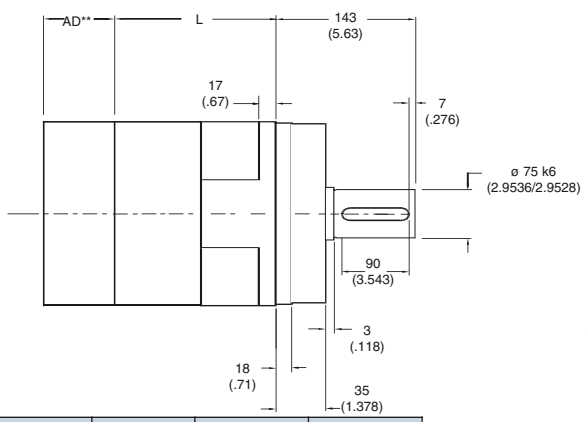


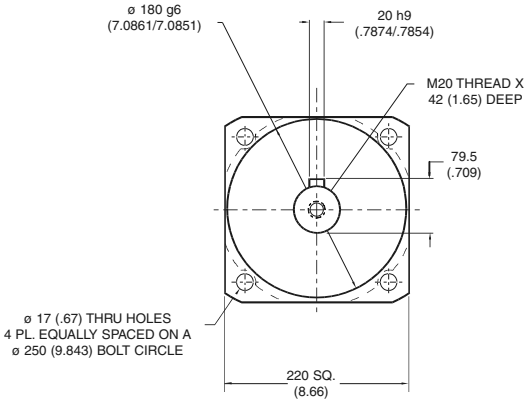
Speed (rpm)	Axial Load, F_a N (lb_f)
50	34,538 (7765)
100	27,414 (6163)
250	20,197 (4541)
500	16,034 (3605)
1000	12,726 (2861)

UltraTRUE* Size 22

Helical True Planetary* Gearheads

Metric





Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
4:1 to 10:1	131 (5.15)	4 max	74 (162)	90%
16:1 to 100:1	232 (9.13)	5 max	95 (209)	85%

** AD = Adapter length
Adapter length and width will vary depending on motor.
Consult factory for details.
M.S. = Mounting Surface
All Dimensions are: mm (inches)

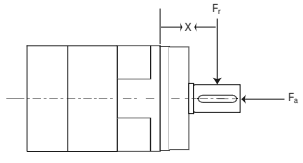
(TABLE 1) PERFORMANCE SPECIFICATIONS

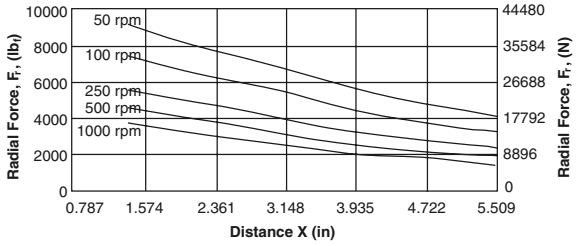
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UT022-004	4:1	2256 (19694)	1786 (15806)	1532 (13560)	4644 (41096)	2017 (17850)	1451 (12838)	1245 (11014)	87.0 (7.70)	429 (3793)
UT022-005	5:1	2181 (19300)	1862 (16475)	1596 (14125)	4548 (40250)	2102 (18600)	1511 (13375)	1297 (11475)	73.4 (6.50)	414 (3661)
UT022-007	7:1	2090 (18496)	1857 (16432)	1703 (15073)	4370 (38671)	2042 (18075)	1613 (14271)	1383 (12243)	62.6 (5.55)	363 (3212)
UT022-010	10:1	1263 (11178)	1072 (9488)	987 (8737)	4301 (38060)	1167 (10325)	992 (8779)	914 (8085)	56.9 (5.04)	253 (2235)
UT022-016	16:1	2521 (20292)	2293 (20292)	2170 (19202)	5247 (46437)	2464 (21805)	2199 (19459)	1886 (16694)	87.3 (7.73)	436 (3858)
UT022-020	20:1	2561 (20732)	2343 (20732)	2224 (19683)	5323 (47107)	2504 (22164)	2291 (20273)	2017 (17850)	73.6 (6.52)	436 (3856)
UT022-025	25:1	2484 (20205)	2283 (20205)	2174 (19239)	5151 (45583)	2427 (21480)	2232 (19757)	2102 (18605)	73.1 (6.47)	418 (3699)
UT022-028	28:1	2620 (21365)	2414 (21365)	2302 (20375)	5427 (48027)	2560 (22660)	2361 (20892)	2231 (19476)	62.7 (5.55)	435 (3854)
UT022-035	35:1	2541 (20788)	2349 (20788)	2246 (19878)	5243 (46397)	2481 (21961)	2297 (20327)	2196 (19438)	62.5 (5.53)	418 (3698)
UT022-040	40:1	2680 (21998)	2486 (21998)	2381 (21069)	5524 (48888)	2619 (23182)	2431 (21510)	2328 (20602)	57.2 (5.06)	435 (3851)
UT022-050	50:1	2595 (21371)	2415 (21371)	2318 (20516)	5328 (47156)	2536 (22443)	2361 (20898)	2267 (20062)	57.1 (5.05)	418 (3696)
UT022-070	70:1	2461 (20373)	2302 (20373)	2217 (19623)	5025 (44470)	2405 (21288)	2251 (19922)	2168 (19189)	57.0 (5.04)	366 (3226)
UT022-100	100:1	1666 (13121)	1483 (13121)	1387 (12273)	4852 (42941)	1571 (13902)	1369 (12116)	1283 (11356)	56.9 (5.04)	253 (2238)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

(TABLE 2) RADIAL AND AXIAL LOAD RATINGS

This graph displays 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 10.



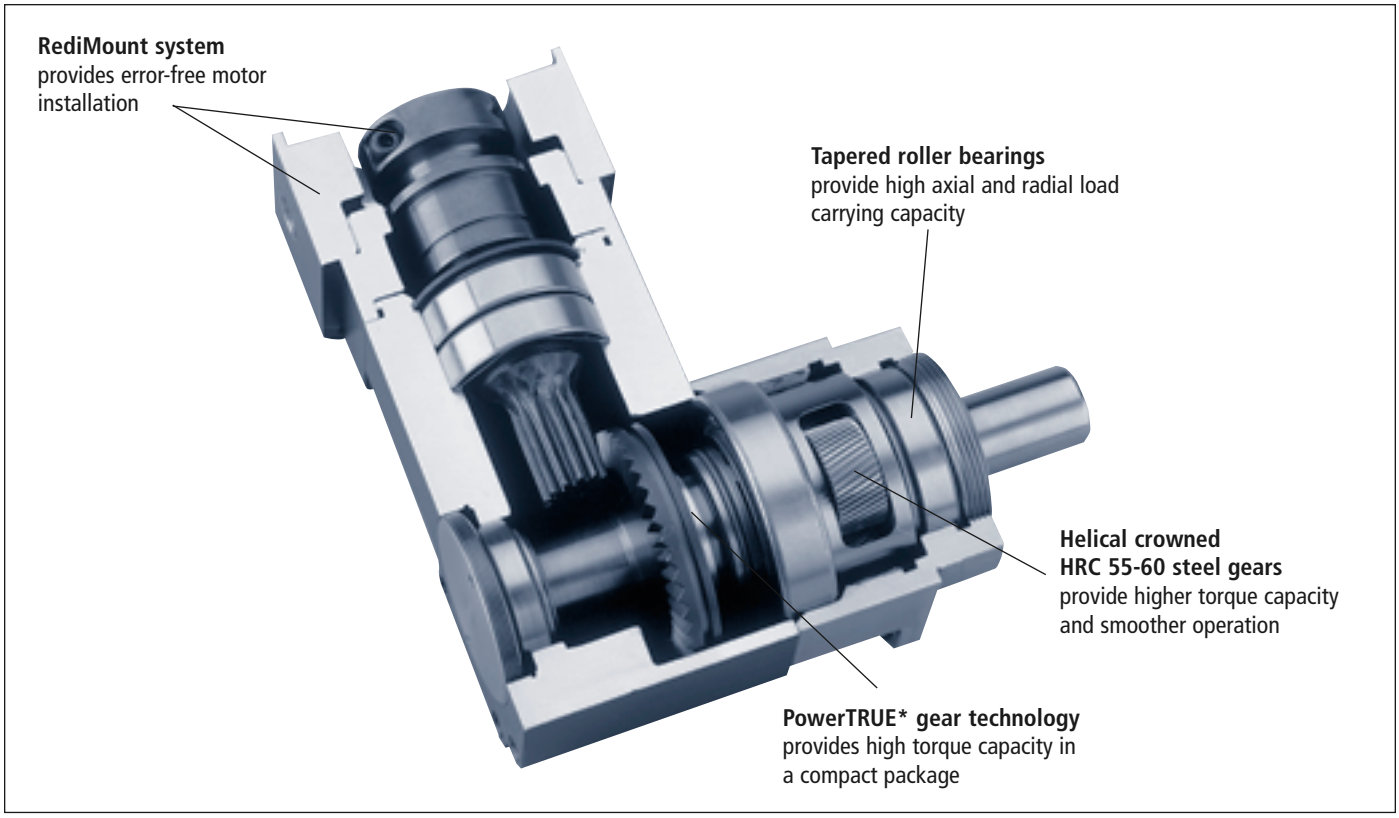


Speed (rpm)	Axial Load, F_a N (lb_f)	
50	32,351	(3655)
100	26,277	(2969)
250	19,962	(2256)
500	16,214	(1832)

UltraTRUE 90*
Helical Right Angle Gearheads

Ready for Immediate Delivery

Precision:	4 arc-minutes	**Ratio Availability:**	1:1 thru 50:1
Frame Sizes:	60, 75, 90, 100, 115, 142, 180mm	**Radial load capacity:**	up to 8500 lb
Torque Capacity:	up to 27,532 in-lb	**Mounting System:**	RediMount*



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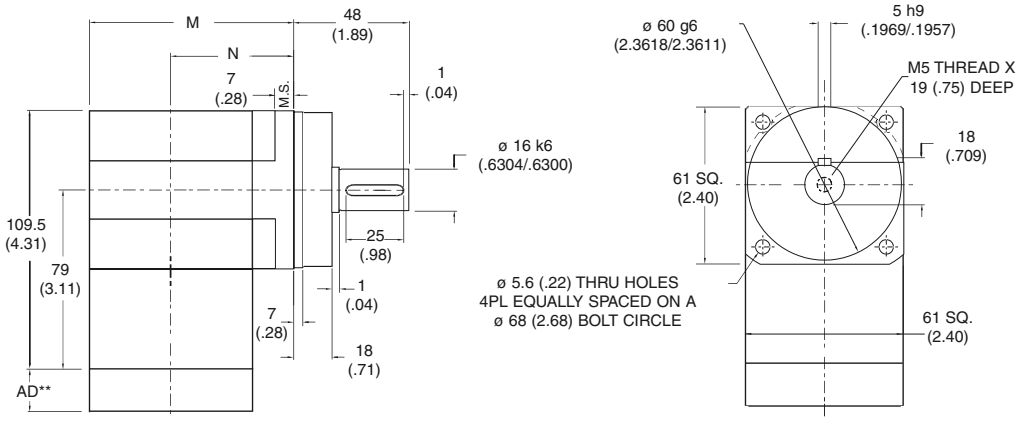
UltraTRUE 90* Size 60

Helical Right Angle Gearheads

Metric



Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1	86 (3.38)	55 (2.18)	4 max	2.5 (5.5)	95%
8:1 to 50:1	95 (3.75)	65 (2.55)	5 max	3 (6.6)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

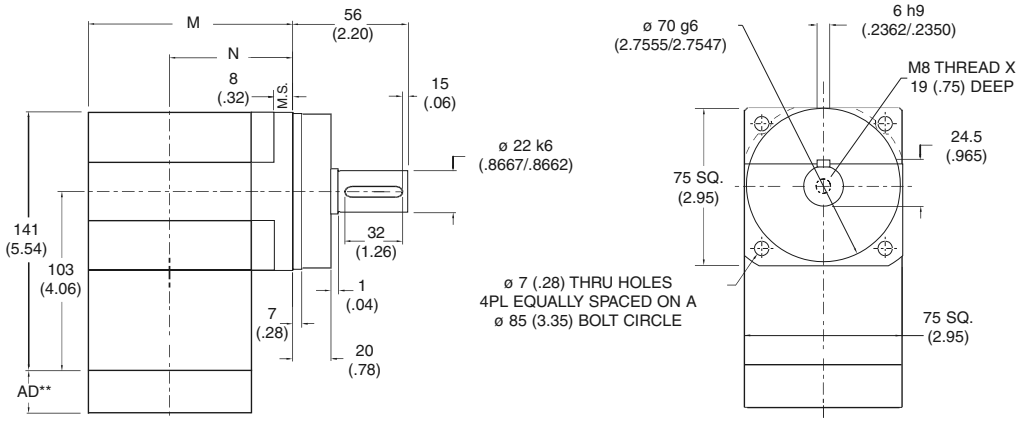
Part Number	Ratio[1]	5,000 HOUR LIFE						T_{peak}		10,000 HOUR LIFE						J kg-cm² (in-lb-sec² x 10⁻⁴)		Torsional Stiffness	
		T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	Nm	(in-lb)	T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)			Nm/arc-min	(in-lb/arc-min)
UTR006-001	1:1	9	(77)	8	(70)	7	(64)	28	(247)	8	(71)	7	(65)	7	(59)	.97	(8.4)	2.1	(19)
UTR006-002	2:1	19	(170)	17	(155)	16	(140)	52	(456)	18	(157)	16	(143)	15	(129)	.50	(4.3)	3.2	(29)
UTR006-003	3:1	12	(108)	11	(99)	10	(89)	39	(342)	11	(100)	10	(91)	9	(82)	.43	(3.7)	3.6	(32)
UTR006-004	4:1	9	(80)	8	(73)	7	(66)	34	(301)	8	(73)	8	(67)	7	(61)	.40	(3.4)	3.8	(34)
UTR006-005	5:1	7	(65)	7	(60)	6	(54)	26	(228)	7	(60)	6	(55)	6	(50)	.39	(3.4)	3.9	(35)
UTR006-008	8:1	51	(447)	47	(413)	45	(394)	106	(938)	49	(438)	45	(397)	38	(340)	.50	(4.4)	2.1	(18)
UTR006-010	10:1	49	(433)	45	(401)	43	(384)	102	(906)	48	(423)	44	(392)	40	(355)	.49	(4.4)	1.8	(16)
UTR006-012	12:1	49	(432)	45	(394)	40	(356)	109	(961)	45	(399)	41	(364)	37	(329)	.39	(3.5)	2.0	(18)
UTR006-014	14:1	46	(411)	43	(383)	42	(368)	97	(860)	45	(402)	42	(374)	41	(360)	.49	(4.4)	2.4	(22)
UTR006-015	15:1	50	(443)	47	(413)	45	(397)	105	(927)	49	(433)	46	(404)	44	(388)	.39	(3.4)	2.4	(21)
UTR006-016	16:1	36	(318)	33	(290)	30	(262)	110	(975)	33	(294)	30	(268)	27	(242)	.39	(3.5)	2.4	(22)
UTR006-020	20:1	45	(398)	41	(363)	37	(328)	106	(939)	41	(367)	38	(335)	34	(303)	.39	(3.5)	2.4	(21)
UTR006-025	25:1	37	(326)	34	(298)	30	(269)	107	(948)	34	(301)	31	(275)	28	(249)	.38	(3.4)	2.3	(21)
UTR006-028	28:1	48	(427)	45	(401)	44	(388)	100	(887)	47	(417)	44	(392)	43	(379)	.39	(3.5)	2.2	(20)
UTR006-030	30:1	30	(266)	26	(232)	25	(217)	93	(822)	28	(246)	24	(215)	23	(201)	.42	(3.7)	2.3	(20)
UTR006-035	35:1	49	(432)	46	(407)	43	(377)	101	(894)	48	(422)	44	(385)	39	(348)	.38	(3.4)	2.3	(20)
UTR006-040	40:1	31	(275)	27	(240)	25	(225)	94	(830)	29	(255)	25	(223)	24	(208)	.39	(3.5)	2.4	(22)
UTR006-050	50:1	32	(283)	28	(247)	26	(232)	94	(836)	30	(262)	26	(229)	24	(215)	.38	(3.4)	2.4	(21)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

UltraTRUE 90* Size 75

Helical Right Angle Gearheads

Metric



Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight Kg (lb)	Efficiency
1:1 to 5:1	89 (3.51)	52 (2.04)	4 max	4.8 (10)	95%
8:1 to 50:1	114.5 (4.51)	77 (3.04)	5 max	5.3 (11.1)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

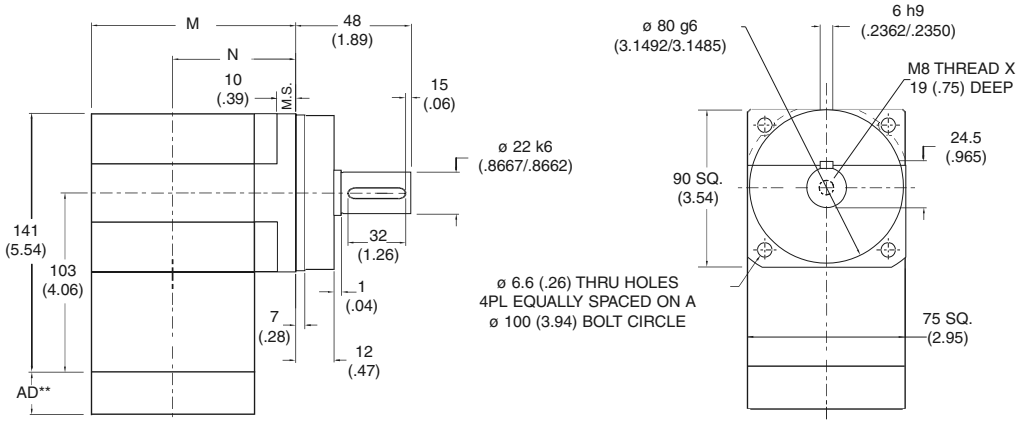
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UTR075-001	1:1	25 (220)	23 (200)	20 (181)	71 (625)	23 (203)	21 (185)	19 (167)	3.7 (33)	5.1 (46)
UTR075-002	2:1	56 (498)	51 (455)	46 (411)	159 (1410)	52 (460)	47 (420)	43 (380)	1.9 (17)	7.7 (69)
UTR075-003	3:1	37 (329)	34 (300)	31 (271)	129 (1146)	34 (304)	31 (277)	28 (250)	1.6 (15)	8.8 (78)
UTR075-004	4:1	28 (252)	26 (230)	23 (208)	99 (880)	26 (232)	24 (212)	22 (192)	1.5 (13)	9.2 (81)
UTR075-005	5:1	21 (185)	19 (169)	17 (153)	83 (735)	19 (171)	18 (156)	16 (141)	1.5 (13)	9.4 (83)
UTR075-008	8:1	91 (802)	83 (737)	79 (702)	189 (1671)	89 (785)	81 (720)	78 (686)	1.9 (17)	4.7 (41)
UTR075-010	10:1	88 (777)	81 (716)	77 (684)	183 (1617)	86 (759)	79 (700)	76 (669)	1.9 (17)	4.1 (36)
UTR075-012	12:1	93 (824)	86 (762)	82 (730)	194 (1715)	91 (805)	84 (746)	81 (714)	1.5 (14)	4.6 (41)
UTR075-014	14:1	83 (738)	77 (685)	74 (657)	174 (1536)	82 (722)	76 (670)	73 (643)	1.9 (17)	6.6 (58)
UTR075-015	15:1	90 (796)	84 (740)	80 (710)	187 (1656)	88 (779)	82 (723)	78 (694)	1.5 (13)	6.7 (59)
UTR075-016	16:1	95 (838)	88 (780)	85 (749)	197 (1743)	93 (820)	86 (762)	83 (732)	1.5 (14)	6.7 (59)
UTR075-020	20:1	91 (810)	85 (756)	82 (727)	190 (1681)	89 (792)	83 (739)	80 (711)	1.5 (14)	6.5 (58)
UTR075-025	25:1	93 (820)	87 (767)	84 (740)	192 (1698)	91 (801)	85 (750)	80 (705)	1.5 (13)	6.4 (57)
UTR075-028	28:1	87 (768)	81 (720)	79 (695)	179 (1589)	85 (751)	80 (704)	77 (679)	1.5 (14)	5.9 (52)
UTR075-030	30:1	54 (480)	47 (418)	44 (391)	166 (1473)	50 (444)	44 (387)	41 (361)	1.6 (15)	6.3 (56)
UTR075-035	35:1	88 (776)	83 (730)	80 (706)	181 (1603)	86 (759)	81 (714)	78 (690)	1.5 (13)	6.3 (56)
UTR075-040	40:1	56 (497)	49 (433)	46 (406)	168 (1489)	52 (460)	45 (401)	42 (375)	1.5 (14)	6.7 (59)
UTR075-050	50:1	58 (510)	50 (446)	47 (418)	170 (1500)	53 (472)	47 (413)	44 (387)	1.5 (13)	6.6 (58)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

UltraTRUE 90* Size 90

Helical Right Angle Gearheads

Metric



Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1	97 (3.82)	60 (2.35)	4 max	4.8 (10)	95%
8:1 to 50:1	122.5 (4.82)	85 (3.35)	5 max	5.3 (11.1)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

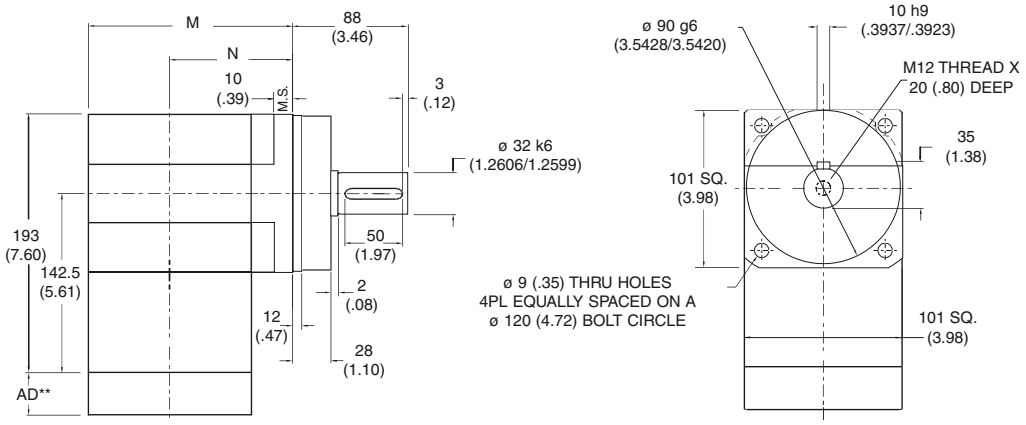
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UTR090-001	1:1	25 (220)	23 (200)	20 (181)	71 (625)	23 (203)	21 (185)	19 (167)	3.7 (33)	5.1 (46)
UTR090-002	2:1	56 (498)	51 (455)	46 (411)	159 (1410)	52 (460)	47 (420)	43 (380)	1.9 (17)	7.7 (69)
UTR090-003	3:1	37 (329)	34 (300)	31 (271)	129 (1146)	34 (304)	31 (277)	28 (250)	1.6 (15)	8.8 (78)
UTR090-004	4:1	28 (252)	26 (230)	23 (208)	99 (880)	26 (232)	24 (212)	22 (192)	1.5 (13)	9.2 (81)
UTR090-005	5:1	21 (185)	19 (169)	17 (153)	83 (735)	19 (171)	18 (156)	16 (141)	1.5 (13)	9.4 (83)
UTR090-008	8:1	91 (802)	83 (737)	79 (702)	189 (1671)	89 (785)	81 (720)	78 (686)	1.9 (17)	4.7 (41)
UTR090-010	10:1	88 (777)	81 (716)	77 (684)	183 (1617)	86 (759)	79 (700)	76 (669)	1.9 (17)	4.1 (36)
UTR090-012	12:1	93 (824)	86 (762)	82 (730)	194 (1715)	91 (805)	84 (746)	81 (714)	1.5 (14)	4.6 (41)
UTR090-014	14:1	83 (738)	77 (685)	74 (657)	174 (1536)	82 (722)	76 (670)	73 (643)	1.9 (17)	6.6 (58)
UTR090-015	15:1	90 (796)	84 (740)	80 (710)	187 (1656)	88 (779)	82 (723)	78 (694)	1.5 (13)	6.7 (59)
UTR090-016	16:1	95 (838)	88 (780)	85 (749)	197 (1743)	93 (820)	86 (762)	83 (732)	1.5 (14)	6.7 (59)
UTR090-020	20:1	91 (810)	85 (756)	82 (727)	190 (1681)	89 (792)	83 (739)	80 (711)	1.5 (14)	6.5 (58)
UTR090-025	25:1	93 (820)	87 (767)	84 (740)	192 (1698)	91 (801)	85 (750)	80 (705)	1.5 (13)	6.4 (57)
UTR090-028	28:1	87 (768)	81 (720)	79 (695)	179 (1589)	85 (751)	80 (704)	77 (679)	1.5 (14)	5.9 (52)
UTR090-030	30:1	54 (480)	47 (418)	44 (391)	166 (1473)	50 (444)	44 (387)	41 (361)	1.6 (15)	6.3 (56)
UTR090-035	35:1	88 (776)	83 (730)	80 (706)	181 (1603)	86 (759)	81 (714)	78 (690)	1.5 (13)	6.3 (56)
UTR090-040	40:1	56 (497)	49 (433)	46 (406)	168 (1489)	52 (460)	45 (401)	42 (375)	1.5 (14)	6.7 (59)
UTR090-050	50:1	58 (510)	50 (446)	47 (418)	170 (1500)	53 (472)	47 (413)	44 (387)	1.5 (13)	6.6 (58)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

UltraTRUE 90* Size 10

Helical Right Angle Gearheads

Metric



Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1	121 (4.75)	70 (2.76)	4 max	11 (24)	95%
8:1 to 50:1	149 (5.88)	99 (3.89)	5 max	12 (26.2)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
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 (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	Nm	(in-lb)	T_r (1000 rpm) Nm	(in-lb)	T_r (3000 rpm) Nm	(in-lb)	T_r (5000 rpm) Nm	(in-lb)	kg-cm² (in-lb-sec² x 10^{-4})		Nm/arc-min (in-lb/arc-min)	
UTR010-001	1:1	73	(648)	67	(591)	60	(535)	232	(2052)	68	(598)	62	(546)	56	(494)	6.3	(56)	9.2	(81)
UTR010-002	2:1	131	(1157)	119	(1056)	108	(955)	323	(2856)	121	(1068)	110	(975)	100	(882)	3.2	(29)	15.0	(133)
UTR010-003	3:1	101	(898)	93	(820)	84	(741)	292	(2582)	94	(830)	86	(757)	77	(684)	2.8	(25)	17.1	(151)
UTR010-004	4:1	68	(598)	62	(546)	56	(494)	227	(2006)	62	(552)	57	(504)	51	(456)	2.6	(23)	17.9	(159)
UTR010-005	5:1	51	(449)	46	(409)	42	(370)	187	(1653)	47	(414)	43	(378)	39	(342)	2.5	(23)	18.3	(162)
UTR010-008	8:1	266	(2358)	243	(2147)	229	(2031)	547	(4844)	260	(2305)	217	(1923)	186	(1650)	3.3	(29)	16.6	(147)
UTR010-010	10:1	258	(2286)	236	(2092)	225	(1989)	531	(4701)	253	(2235)	226	(2005)	194	(1720)	3.3	(29)	13.1	(116)
UTR010-012	12:1	274	(2426)	252	(2229)	240	(2125)	564	(4992)	270	(2389)	245	(2171)	210	(1863)	2.6	(23)	18.8	(167)
UTR010-014	14:1	246	(2178)	227	(2007)	217	(1917)	506	(4481)	241	(2129)	222	(1963)	207	(1834)	3.3	(29)	23.1	(204)
UTR010-015	15:1	265	(2349)	245	(2168)	234	(2072)	546	(4832)	259	(2297)	240	(2120)	219	(1943)	2.5	(23)	24.3	(215)
UTR010-016	16:1	270	(2393)	247	(2184)	223	(1975)	575	(5085)	250	(2210)	228	(2016)	206	(1823)	2.6	(23)	24.8	(220)
UTR010-020	20:1	270	(2391)	251	(2219)	240	(2127)	555	(4916)	264	(2338)	245	(2170)	235	(2080)	2.6	(23)	22.1	(196)
UTR010-025	25:1	253	(2243)	231	(2047)	209	(1851)	562	(4974)	234	(2072)	214	(1890)	193	(1709)	2.5	(23)	22.1	(196)
UTR010-028	28:1	256	(2270)	239	(2119)	230	(2038)	526	(4659)	251	(2220)	234	(2072)	225	(1993)	2.6	(23)	19.2	(170)
UTR010-030	30:1	159	(1405)	138	(1220)	129	(1139)	488	(4317)	147	(1300)	128	(1129)	119	(1054)	2.8	(25)	19.1	(169)
UTR010-035	35:1	260	(2298)	243	(2152)	234	(2074)	532	(4707)	254	(2248)	238	(2104)	229	(2028)	2.5	(23)	19.0	(168)
UTR010-040	40:1	164	(1456)	143	(1267)	134	(1184)	494	(4372)	152	(1347)	132	(1173)	124	(1096)	2.6	(23)	24.9	(221)
UTR010-050	50:1	169	(1496)	147	(1304)	138	(1220)	498	(4410)	156	(1384)	136	(1207)	128	(1129)	2.5	(23)	21.9	(194)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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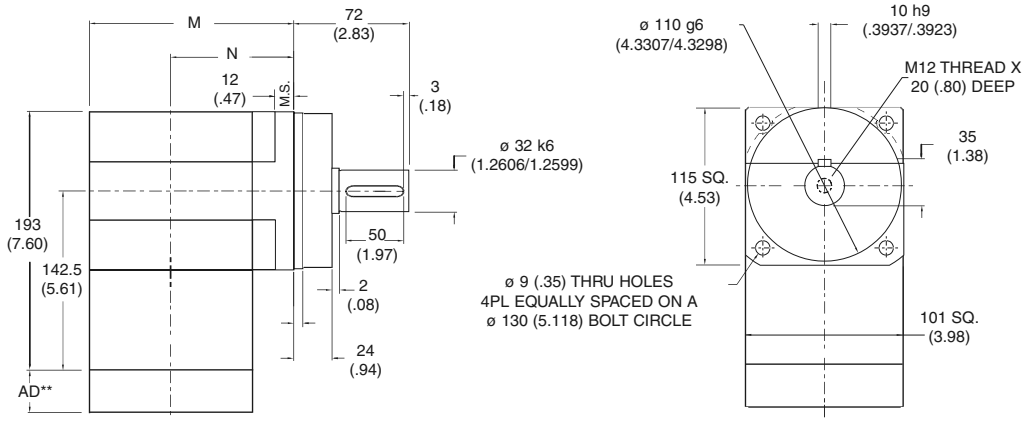
Helical Right Angle Gearheads

Metric



Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1	136.7 (5.38)	86 (3.39)	4 max	11 (24)	95%
8:1 to 50:1	165 (6.51)	114.8 (4.52)	5 max	12 (26.2)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

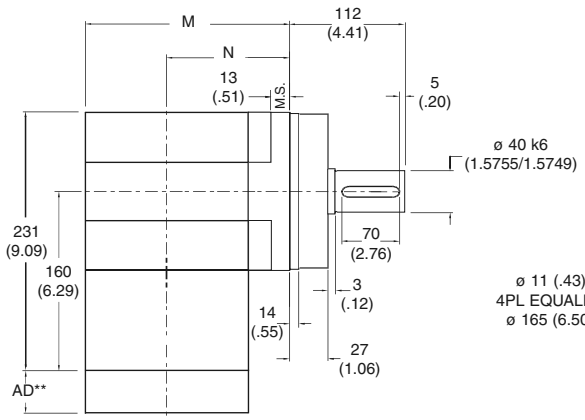
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻⁴)	Nm/arc-min (in-lb/arc-min)
UTR115-001	1:1	73 (648)	67 (591)	60 (535)	232 (2052)	68 (598)	62 (546)	56 (494)	6.3 (56)	9.2 (81)
UTR115-002	2:1	131 (1157)	119 (1056)	108 (955)	323 (2856)	121 (1068)	110 (975)	100 (882)	3.2 (29)	15.0 (133)
UTR115-003	3:1	101 (898)	93 (820)	84 (741)	292 (2582)	94 (830)	86 (757)	77 (684)	2.8 (25)	17.1 (151)
UTR115-004	4:1	68 (598)	62 (546)	56 (494)	227 (2006)	62 (552)	57 (504)	51 (456)	2.6 (23)	17.9 (159)
UTR115-005	5:1	51 (449)	46 (409)	42 (370)	187 (1653)	47 (414)	43 (378)	39 (342)	2.5 (23)	18.3 (162)
UTR115-008	8:1	266 (2358)	243 (2147)	229 (2031)	547 (4844)	260 (2305)	217 (1923)	186 (1650)	3.3 (29)	16.6 (147)
UTR115-010	10:1	258 (2286)	236 (2092)	225 (1989)	531 (4701)	253 (2235)	226 (2005)	194 (1720)	3.3 (29)	13.1 (116)
UTR115-012	12:1	274 (2426)	252 (2229)	240 (2125)	564 (4992)	270 (2389)	245 (2171)	210 (1863)	2.6 (23)	18.8 (167)
UTR115-014	14:1	246 (2178)	227 (2007)	217 (1917)	506 (4481)	241 (2129)	222 (1963)	207 (1834)	3.3 (29)	23.1 (204)
UTR115-015	15:1	265 (2349)	245 (2168)	234 (2072)	546 (4832)	259 (2297)	240 (2120)	219 (1943)	2.5 (23)	24.3 (215)
UTR115-016	16:1	270 (2393)	247 (2184)	223 (1975)	575 (5085)	250 (2210)	228 (2016)	206 (1823)	2.6 (23)	24.8 (220)
UTR115-020	20:1	270 (2391)	251 (2219)	240 (2127)	555 (4916)	264 (2338)	245 (2170)	235 (2080)	2.6 (23)	22.1 (196)
UTR115-025	25:1	253 (2243)	231 (2047)	209 (1851)	562 (4974)	234 (2072)	214 (1890)	193 (1709)	2.5 (23)	22.1 (196)
UTR115-028	28:1	256 (2270)	239 (2119)	230 (2038)	526 (4659)	251 (2220)	234 (2072)	225 (1993)	2.6 (23)	19.2 (170)
UTR115-030	30:1	159 (1405)	138 (1220)	129 (1139)	488 (4317)	147 (1300)	128 (1129)	119 (1054)	2.8 (25)	19.1 (169)
UTR115-035	35:1	260 (2298)	243 (2152)	234 (2074)	532 (4707)	254 (2248)	238 (2104)	229 (2028)	2.5 (23)	19.0 (168)
UTR115-040	40:1	164 (1456)	143 (1267)	134 (1184)	494 (4372)	152 (1347)	132 (1173)	124 (1096)	2.6 (23)	24.9 (221)
UTR115-050	50:1	169 (1496)	147 (1304)	138 (1220)	498 (4410)	156 (1384)	136 (1207)	128 (1129)	2.5 (23)	21.9 (194)

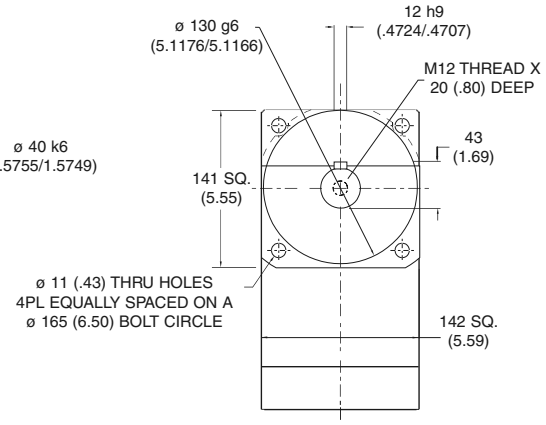
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

UltraTRUE 90* Size 14

Helical Right Angle Gearheads

Metric





Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1	166 (6.54)	95 (3.74)	4 max	24 (53)	95%
8:1 to 50:1	222 (8.74)	151 (5.95)	5 max	29 (64)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
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 (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10^{-4})	Nm/arc-min (in-lb/arc-min)
UTR014-001	1:1	158 (1396)	144 (1274)	130 (1152)	380 (3363)	146 (1289)	133 (1177)	120 (1064)	32 (279)	28.4 (252)
UTR014-002	2:1	327 (2893)	298 (2640)	270 (2387)	708 (6270)	302 (2671)	275 (2438)	249 (2204)	16 (143)	46.6 (413)
UTR014-003	3:1	220 (1944)	201 (1774)	181 (1604)	545 (4822)	203 (1796)	185 (1639)	167 (1481)	14 (123)	52.9 (468)
UTR014-004	4:1	158 (1396)	144 (1274)	130 (1152)	471 (4172)	146 (1289)	133 (1177)	120 (1064)	13 (114)	55.5 (491)
UTR014-005	5:1	118 (1047)	108 (956)	98 (864)	396 (3506)	109 (967)	100 (883)	90 (798)	13 (112)	56.8 (503)
UTR014-008	8:1	625 (5531)	565 (5000)	533 (4719)	1269 (11233)	611 (5408)	530 (4688)	454 (4022)	16 (146)	36.7 (325)
UTR014-010	10:1	606 (5364)	551 (4876)	522 (4617)	1233 (10911)	593 (5245)	539 (4768)	474 (4192)	16 (145)	31.9 (282)
UTR014-012	12:1	644 (5702)	588 (5207)	559 (4944)	1313 (11616)	630 (5576)	575 (5092)	513 (4542)	13 (116)	22.1 (195)
UTR014-014	14:1	578 (5118)	530 (4690)	504 (4461)	1179 (10430)	565 (5005)	518 (4586)	493 (4363)	16 (145)	51.6 (457)
UTR014-015	15:1	624 (5522)	572 (5067)	545 (4824)	1272 (11253)	610 (5399)	560 (4955)	533 (4717)	12 (113)	51.7 (457)
UTR014-016	16:1	631 (5587)	576 (5099)	521 (4610)	1340 (11860)	583 (5160)	532 (4708)	481 (4257)	13 (115)	52.8 (467)
UTR014-020	20:1	636 (5627)	587 (5194)	561 (4963)	1296 (11471)	622 (5503)	574 (5079)	548 (4854)	13 (115)	49.2 (435)
UTR014-025	25:1	592 (5240)	540 (4782)	488 (4324)	1314 (11625)	547 (4839)	499 (4415)	451 (3992)	12 (113)	49.2 (435)
UTR014-028	28:1	605 (5350)	561 (4969)	539 (4767)	1231 (10896)	591 (5232)	549 (4859)	527 (4661)	13 (115)	42.8 (379)
UTR014-030	30:1	380 (3363)	329 (2914)	307 (2715)	1143 (10111)	352 (3112)	305 (2696)	284 (2512)	14 (124)	44.7 (396)
UTR014-035	35:1	612 (5420)	571 (5052)	549 (4857)	1246 (11024)	599 (5300)	558 (4941)	537 (4750)	12 (113)	40.2 (356)
UTR014-040	40:1	394 (3486)	342 (3028)	319 (2826)	1159 (10257)	364 (3226)	317 (2802)	295 (2615)	13 (115)	52.6 (466)
UTR014-050	50:1	405 (3584)	352 (3118)	329 (2914)	1171 (10360)	375 (3316)	326 (2886)	305 (2696)	12 (112)	49.2 (435)

[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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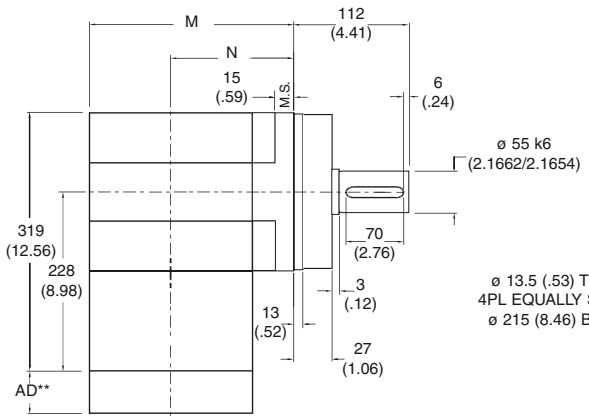
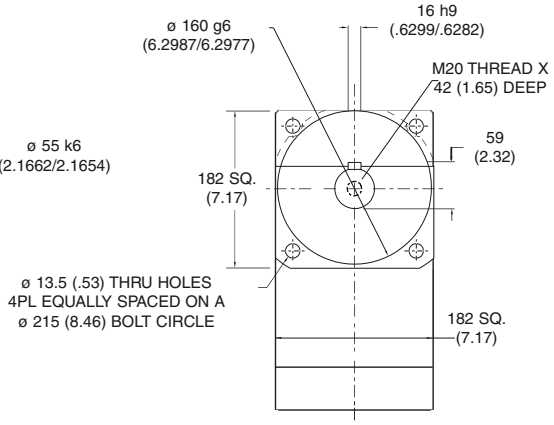
Metric





Ratio	Dimension 'M' mm (in)	Dimension 'N' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
1:1 to 5:1	219 (8.64)	128 (5.05)	4 max	43 (96)	95%
8:1 to 50:1	273 (10.76)	182 (7.18)	5 max	48 (106)	90%

** AD = Adapter length
Adapter length and width will vary depending on motor.
M.S. = Mounting surface
All Dimensions are: mm (inches)

(TABLE 1) PERFORMANCE SPECIFICATIONS

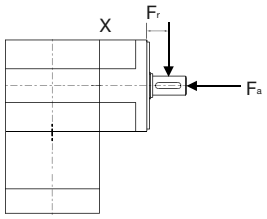
Part Number	Ratio[1]	5,000 HOUR LIFE			T_{peak}	10,000 HOUR LIFE			J	Torsional Stiffness
		T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	Nm (in-lb)	T_r (1000 rpm) Nm (in-lb)	T_r (3000 rpm) Nm (in-lb)	T_r (5000 rpm) Nm (in-lb)	kg-cm² (in-lb-sec² x 10⁻³)	Nm/arc-min (in-lb/arc-min)
UTR018-001	1:1	248 (2195)	226 (2003)	205 (1811)	819 (7246)	229 (2027)	209 (1850)	189 (1672)	111 (985)	50 (440)
UTR018-002	2:1	654 (5786)	597 (5280)	539 (4774)	1911 (16914)	604 (5343)	551 (4876)	498 (4408)	57 (505)	82 (722)
UTR018-003	3:1	507 (4489)	463 (4096)	419 (3704)	1674 (14817)	468 (4145)	427 (3783)	386 (3420)	49 (434)	93 (820)
UTR018-004	4:1	361 (3192)	329 (2913)	298 (2633)	1190 (10536)	333 (2947)	304 (2690)	275 (2432)	46 (403)	97 (860)
UTR018-005	5:1	254 (2245)	231 (2048)	209 (1852)	837 (7410)	234 (2073)	214 (1892)	193 (1710)	45 (396)	99 (880)
UTR018-008	8:1	1460 (12920)	1309 (11589)	1230 (10888)	2929 (25920)	1428 (12634)	1184 (10476)	1016 (8988)	45 (401)	113 (998)
UTR018-010	10:1	1418 (12547)	1279 (11322)	1206 (10673)	2851 (25228)	1386 (12269)	1234 (10918)	1058 (9366)	45 (398)	92 (812)
UTR018-012	12:1	1509 (13352)	1368 (12108)	1294 (11448)	3040 (26900)	1475 (13057)	1337 (11832)	1147 (10150)	36 (317)	63 (560)
UTR018-014	14:1	1355 (11993)	1234 (10917)	1169 (10344)	2733 (24185)	1325 (11728)	1206 (10675)	1129 (9989)	45 (398)	111 (986)
UTR018-015	15:1	1463 (12944)	1333 (11800)	1265 (11192)	2950 (26109)	1430 (12657)	1304 (11539)	1195 (10578)	35 (310)	144 (1272)
UTR018-016	16:1	1443 (12769)	1317 (11652)	1191 (10536)	3111 (27532)	1332 (11791)	1216 (10760)	1099 (9729)	36 (316)	147 (1299)
UTR018-020	20:1	1493 (13209)	1370 (12121)	1304 (11541)	3014 (26674)	1460 (12917)	1339 (11853)	1275 (11285)	36 (316)	142 (1257)
UTR018-025	25:1	1268 (11226)	1158 (10245)	1047 (9263)	3060 (27078)	1171 (10366)	1069 (9460)	967 (8554)	35 (309)	119 (1055)
UTR018-028	28:1	1421 (12576)	1313 (11620)	1255 (11110)	2870 (25400)	1390 (12298)	1284 (11362)	1228 (10864)	36 (316)	126 (1113)
UTR018-030	30:1	897 (7935)	775 (6856)	721 (6377)	2665 (23583)	830 (7342)	717 (6344)	667 (5900)	38 (339)	113 (997)
UTR018-035	35:1	1441 (12750)	1337 (11828)	1281 (11338)	2908 (25736)	1409 (12468)	1307 (11567)	1253 (11087)	35 (309)	113 (998)
UTR018-040	40:1	930 (8231)	806 (7131)	751 (6645)	2708 (23967)	861 (7616)	746 (6599)	695 (6149)	36 (314)	147 (1299)
UTR018-050	50:1	956 (8465)	830 (7348)	775 (6856)	2739 (24239)	885 (7832)	768 (6799)	717 (6344)	35 (308)	142 (1257)

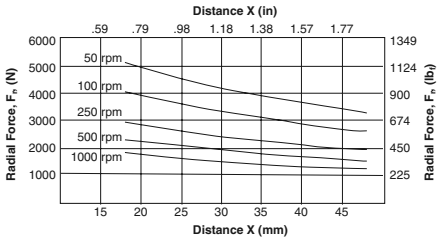
[1] Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

Radial and Axial Load Ratings (Table 2)

This graph displays 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 10.

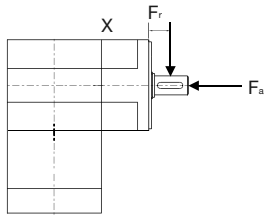
UTR006 Radial and Axial Load Ratings
Ratios 1:1 thru 5:1 Only

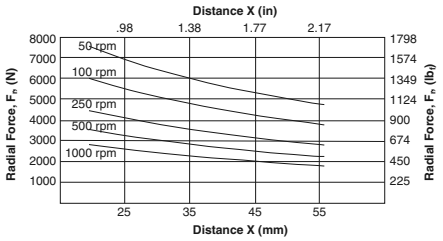




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	6543	(1471)
100	5191	(1167)
250	3825	(860)
500	3038	(683)
1000	2411	(542)

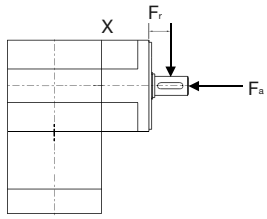
UTR075 and UTR090 Radial and Axial Load Ratings
Ratios 1:1 thru 5:1 Only

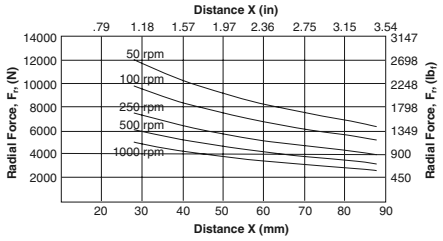




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	9003	(2024)
100	7148	(1607)
250	5266	(1184)
500	4181	(940)
1000	3318	(746)

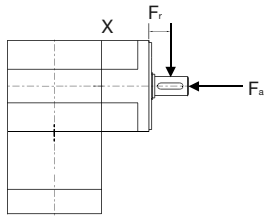
UTR010 and UTR115 Radial and Axial Load Ratings
Ratios 1:1 thru 5:1 Only

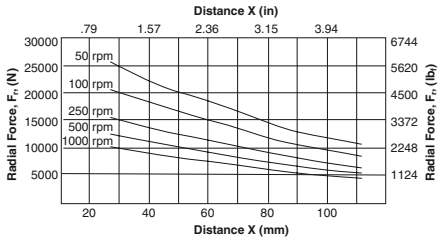




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	12,432	(2795)
100	10,097	(2270)
250	7668	(1724)
500	6232	(1401)
1000	5062	(1138)

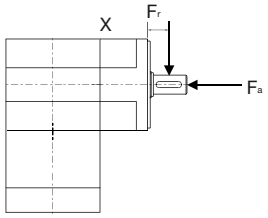
UTR014 Radial and Axial Load Ratings
Ratios 1:1 thru 5:1 Only

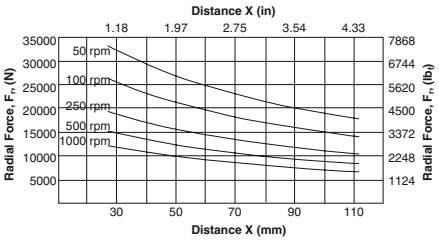




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	23,067	(5186)
100	18,735	(4212)
250	14,234	(3200)
500	11,560	(2599)
1000	9390	(2111)

UTR018 Radial and Axial Load Ratings
Ratios 1:1 thru 5:1 Only



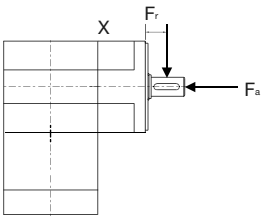


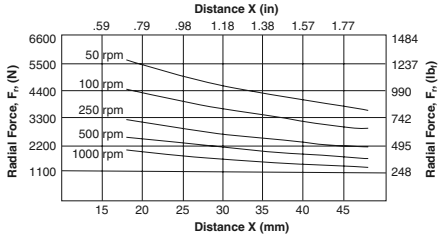
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	31,398	(7059)
100	24,922	(5603)
250	18,361	(4128)
500	14,576	(3277)
1000	11,569	(2601)

Radial and Axial Load Ratings (Table 2)

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 10.

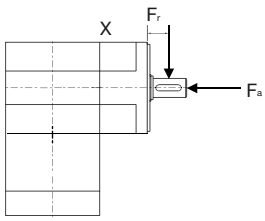
UTR006 Radial and Axial Load Ratings
Ratios 8:1 thru 50:1 Only

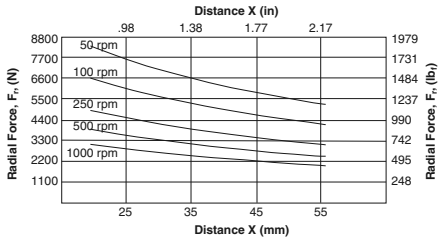




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	7198	(1618)
100	5710	(1284)
250	4208	(946)
500	3342	(751)
1000	2652	(596)

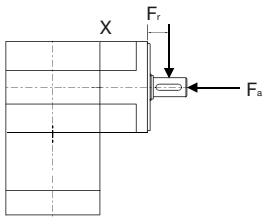
UTR075 and UTR090 Radial and Axial Load Ratings
Ratios 8:1 thru 50:1 Only

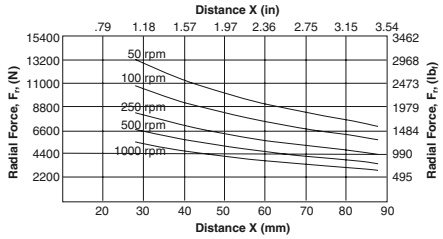




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	9903	(2227)
100	7863	(1768)
250	5793	(1303)
500	4599	(1034)
1000	3650	(821)

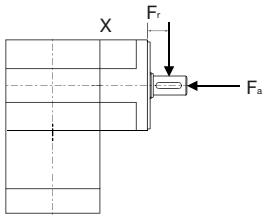
UTR010 and UTR115 Radial and Axial Load Ratings
Ratios 8:1 thru 50:1 Only

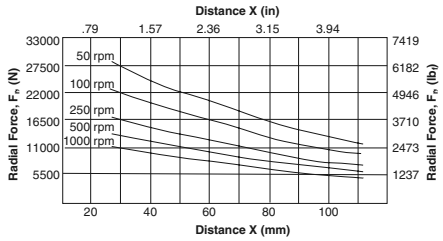




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	13,675	(3075)
100	11,107	(2497)
250	8435	(1897)
500	6855	(1542)
1000	5568	(1252)

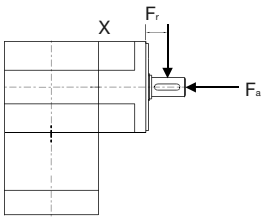
UTR014 Radial and Axial Load Ratings
Ratios 8:1 thru 50:1 Only

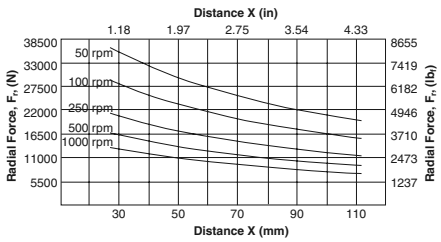




Speed (rpm)	Axial Load, F_a N (lb_f)	
50	25,374	(5705)
100	20,609	(4633)
250	15,657	(3520)
500	12,716	(2859)
1000	10,329	(2322)

UTR018 Radial and Axial Load Ratings
Ratios 8:1 thru 50:1 Only



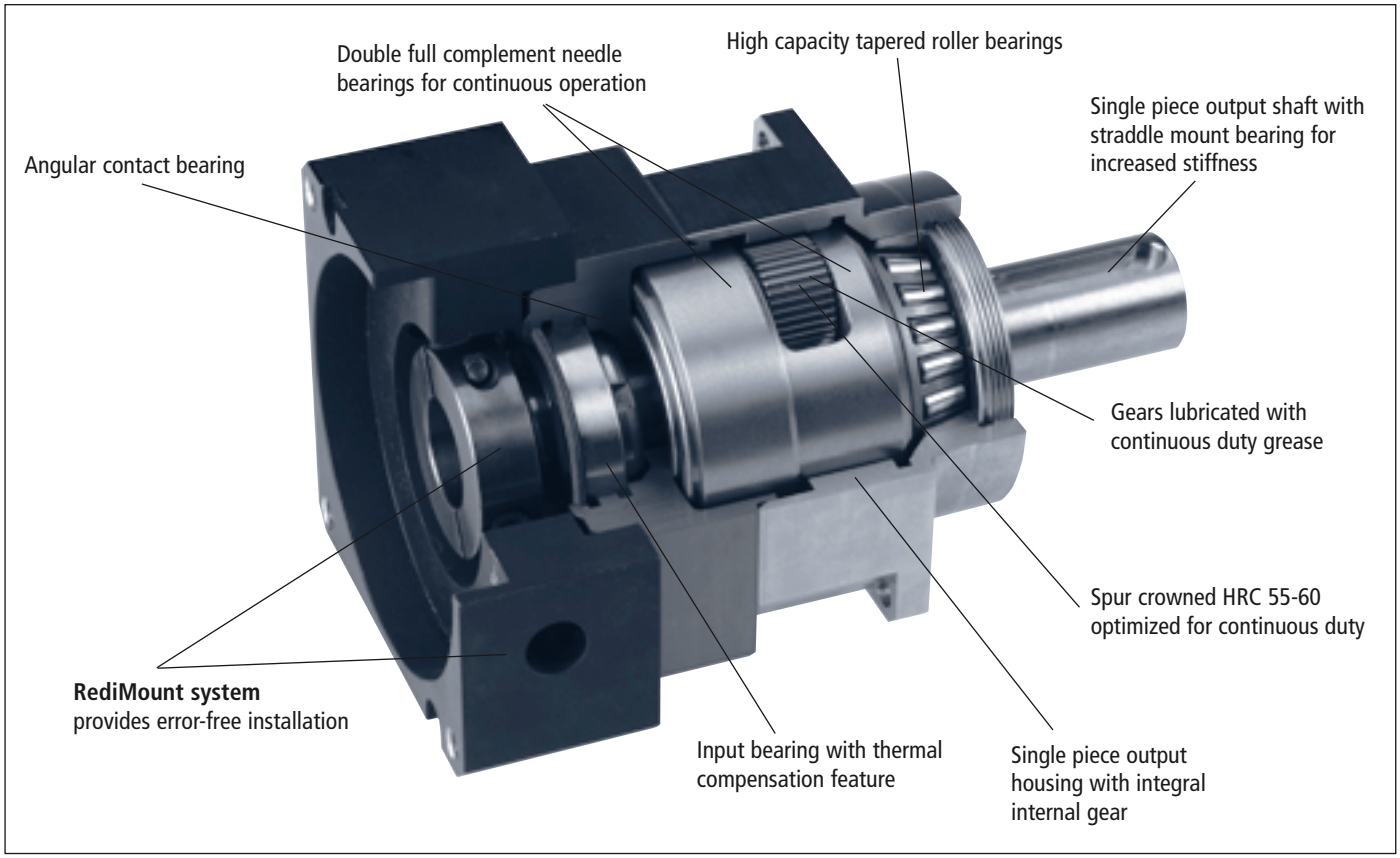


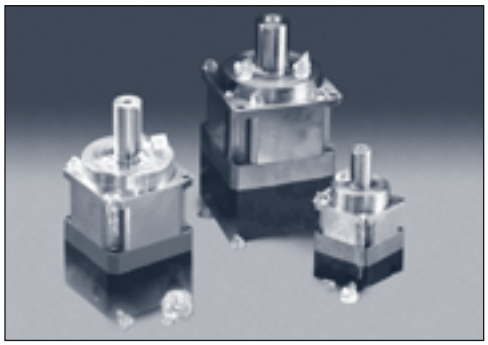
Speed (rpm)	Axial Load, F_a N (lb_f)	
50	34,538	(7765)
100	27,414	(6163)
250	20,197	(4541)
500	16,034	(3605)
1000	12,726	(2861)

EverTRUE (Continuous Duty)
Planetary Gearhead

Ready for Immediate Delivery

Precision:	4 arc-minutes	**Ratio Availability:**	4:1 thru 100:1
Frame Sizes:	100, 140 and 180mm	**Radial load capacity:**	up to 10,000 lb
Torque Capacity:	up to 9000 in-lb	**Mounting System:**	RediMount*





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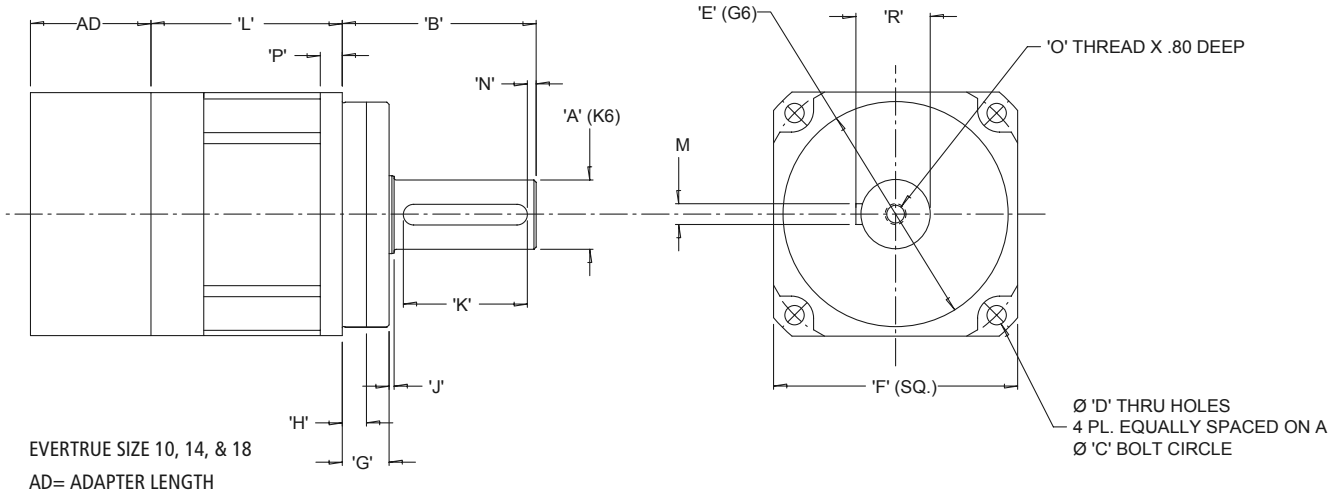
EverTRUE (Continuous Duty)

Planetary Gearhead



EVERTRUE SIZE 10, 14, & 18

AD= ADAPTER LENGTH

ADAPTER LENGTH WILL VARY DEPENDING ON MOTOR

Part Number	F Flange Square		A Output Shaft Diameter		B Output Shaft Length		N Shaft End Distance		K Keyway Length		O Keyway Height		M Key Square		J Shoulder Length		E Pilot Diameter	
	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
ET010	101	(3.98)	32	(1.2606)	88	(3.46)	3	(.12)	50	(1.97)	35	(1.38)	10	(.3937)	2	(.08)	90	(3.5428)
ET014	141	(5.5)	40	(1.5755)	112	(4.41)	5	(.20)	70	(2.76)	43	(1.69)	12	(.4724)	3	(.12)	130	(5.1180)
ET018	182	(7.17)	55	(2.1662)	112	(4.41)	6	(.24)	70	(2.76)	59	(2.32)	16	(.6299)	3	(.12)	160	(6.2987)

Part Number	G Pilot Length		P Flange Thickness		H Effective Pilot Length		L Length				C Bolt Circle		D Bolt Hole		R Output Shaft Thread	
							10:1 or Less		16:1 - 100:1							
	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)	mm	(in)
ET010	28	(1.10)	10	(.39)	12	(.47)	78	(3.07)	146	(5.75)	120	(4.72)	9	(.35)	M12 x 20 (.80) Deep	
ET014	27	(1.06)	13	(.51)	14	(.55)	110.5	(4.35)	195	(7.69)	165	(6.50)	11	(.43)	M12 x 20 (.80) Deep	
ET018	27	(1.06)	15	(.59)	13	(.51)	136	(5.35)	244	(9.59)	215	(8.46)	13.5	(.53)	M20 x 42 (1.65) Deep	

Part Number	Stages	Backlash (arc-min)	Weight kg (lb)	Ratio Availabilty
ET010	1	4	6 (13)	4:1, 5:1, 7:1, 10:1
	2	5	8 (18)	16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1
ET014	1	4	14 (31)	4:1, 5:1, 7:1, 10:1
	2	5	18 (40)	16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1
ET018	1	4	40 (88)	4:1, 5:1, 7:1, 10:1
	2	5	45 (99)	16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1

EverTRUE (Continuous Duty)
Planetary Gearhead

PERFORMANCE SPECIFICATIONS																	
Part Number	Ratio	Tr (1000 rpm) in-lbs	(Nm)	Tr (3000 rpm) in-lbs	(Nm)	Tr (5000 rpm) in-lbs	(Nm)	Tpeak in-lbs	(Nm)	J kg-cm² in-lbs -sec2x10-4		Torsional Stiffness Nm/arc-min (in-l/arc-min)	
ET010-004	4:1	1,303	(147)	937	(106)	804	(91)	4,093	(463)	1.50	(13.3)	28.27	(250)
ET010-005	5:1	1,272	(144)	977	(110)	838	(95)	3,991	(451)	1.29	(11.5)	25.08	(222)
ET010-007	7:1	1,217	(137)	1,042	(118)	893	(101)	3,830	(433)	0.92	(8.1)	23.21	(205)
ET010-010	10:1	677	(77)	581	(66)	539	(61)	3,640	(411)	0.86	(7.6)	15.84	(140)
ET010-016	16:1	1,450	(164)	1,340	(151)	1,218	(138)	4,577	(517)	1.05	(9.2)	30.03	(267)
ET010-020	20:1	1,470	(166)	1,364	(154)	1,303	(147)	4,637	(524)	1.05	(9.2	26.73	(237)
ET010-025	25:1	1,421	(161)	1,324	(150)	127	(14)	4,477	(506)	1.05	(9.2)	26.73	(237)
ET010-028	28:1	1,499	(169)	1,399	(158)	1,345	(152)	4,718	(533)	0.89	(7.9)	23.21	(205)
ET010-035	35:1	1,448	(164)	1,355	(153)	1,306	(148)	4,549	(514)	0.75	(6.7)	22.99	(204)
ET010-040	40:1	1,528	(173)	1,433	(162)	1,383	(156)	4,794	(542)	0.75	(6.7)	30.14	(267)
ET010-050	50:1	1,475	(167)	1,387	(157)	1,341	(152)	4,615	(521)	0.74	(6.6)	26.51	(235)
ET010-070	70:1	1,396	(158)	1,318	(149)	1,277	(144)	4,349	(491)	0.74	(6.6)	23.21	(205)
ET010-100	100:1	902	(102)	790	(89)	741	(84)	4,059	(459)	0.74	(6.6)	18.92	(168)

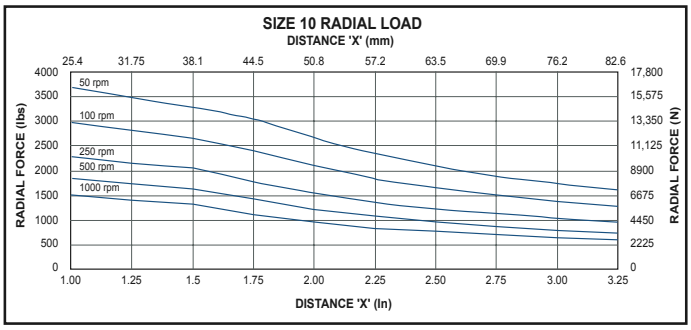
PERFORMANCE SPECIFICATIONS																	
Part Number	Ratio	Tr 1000 rpm in-lbs	(Nm)	Tr (3000 rpm) in-lbs	(Nm)	Tr (5000 rpm) in-lbs	(Nm)	Tpeak in-lbs	(Nm)	J kg-cm² in-lbs -sec2x10-4		Torsional Stiffness Nm/arc-min (in-l/arc-min)	
ET014-004	4:1	3,055	(345)	2,285	(258)	1,960	(221)	9,431	(1,066)	6.18	(55)	60.50	(536)
ET014-005	5:1	2,972	(336)	2,381	(269)	2,042	(231)	9,206	(1,040)	4.77	(42)	56.10	(497)
ET014-007	7:1	2,849	(322)	2,539	(287)	2,179	(246)	8,866	(1,002)	3.61	(32)	51.70	(458)
ET014-010	10:1	1,618	(183)	1,384	(156)	1,279	(145)	8,459	(956)	3.22	(29)	38.50	(341)
ET014-016	16:1	3,413	(386)	3,136	(354)	2,971	(336)	10,674	(1,206)	4.00	(35)	63.80	(565)
ET014-020	20:1	3,463	(391)	3,197	(361)	3,055	(345)	10,832	(1,224)	3.87	(34)	59.40	(526)
ET014-025	25:1	3,347	(378)	3,103	(351)	2,972	(336)	10,463	(1,182)	3.87	(34)	59.40	(526)
ET014-028	28:1	3,535	(399)	3,284	(371)	3,150	(356)	11,047	(1,248)	3.35	(30)	51.70	(458)
ET014-035	35:1	3,415	(386)	3,182	(360)	3,059	(346)	10,653	(1,204)	2.84	(25)	48.40	(428)
ET014-040	40:1	3,608	(408)	3,370	(381)	3,245	(367)	11,248	(1,271)	2.84	(25)	63.80	(565)
ET014-050	50:1	3,482	(393)	3,262	(369)	3,146	(356)	10,831	(1,224)	2.71	(24)	59.40	(526)
ET014-070	70:1	3,299	(373)	3,104	(351)	3,002	(339)	10,223	(1,155)	2.71	(24)	53.90	(478)
ET014-100	100:1	2,164	(245)	1,892	(214)	1,772	(200)	9,564	(1,081)	2.71	(24)	38.50	(341)

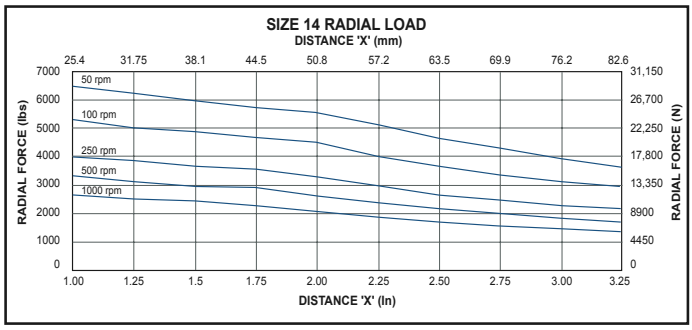
PERFORMANCE SPECIFICATIONS																	
Part Number	Ratio	Tr (1000 rpm) in-lbs	(Nm)	Tr (3000 rpm) in-lbs	(Nm)	Tr (5000 rpm) in-lbs	(Nm)	Tpeak in-lbs	(Nm)	J kg-cm² in-lbs -sec² x 10-4		Torsional Stiffness Nm/arc-min (in-lb/arc-min)	
ET018-004	4:1	7,099	(802)	5,105	(577)	4,380	(495)	21,609	(2442)	24.61	(218)	168.30	(1461)
ET018-005	5:1	6,923	(782)	5,321	(601)	4,565	(516)	21,143	(2389)	19.00	(168)	165.00	(1461)
ET018-007	7:1	6,652	(752)	5,675	(641)	4,868	(550)	20,429	(2308)	13.87	(123)	147.40	(1306)
ET018-010	10:1	3,806	(430)	3,242	(366)	2,990	(338)	19,561	(2210)	12.35	(109)	111.10	(984)
ET018-016	16:1	8,003	(904)	7,309	(826)	6,639	(750)	24,779	(2800)	15.30	(136)	177.10	(1569)
ET018-020	20:1	8,129	(919)	7,460	(843)	7,099	(802)	25,187	(2846)	14.82	(131)	171.60	(1520)
ET018-025	25:1	7,866	(889)	7,251	(819)	6,923	(782)	24,370	(2754)	14.82	(131)	144.10	(1277)
ET018-028	28:1	8,311	(939)	7,679	(868)	7,342	(830)	25,751	(2910)	12.83	(114)	151.80	(1345)
ET018-035	35:1	8,033	(908)	7,452	(842)	7,142	(807)	24,870	(2810)	10.83	(96)	136.40	(1209)
ET018-040	40:1	8,492	(960)	7,897	(892)	7,580	(857)	26,281	(2970)	10.83	(96)	177.10	(1569)
ET018-050	50:1	8,201	(927)	7,652	(865)	7,361	(832)	25,338	(2863)	10.36	(92)	171.60	(1520)
ET018-070	70:1	7,778	(879)	7,292	(824)	7,037	(795)	23,959	(2707)	10.36	(92)	151.80	(1345)
ET018-100	100:1	5,117	(578)	4,465	(505)	4,180	(472)	22,454	(2537)	10.36	(92)	113.30	(1004)

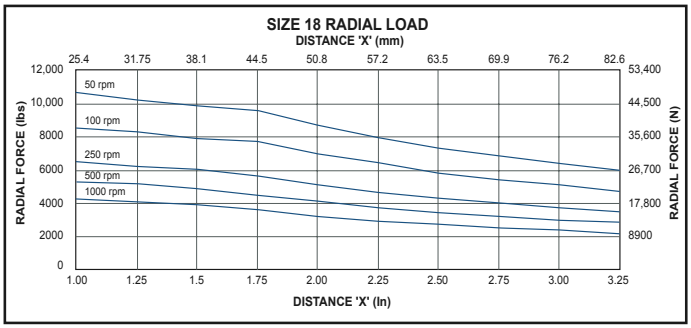
Tr = Rated output torque for continuous running at rated speed for 30,000 hour life
Tpeak = Allowable momentary peak torque for emergency stop or shock loading
J = Mass Moment of inertia reflected back to the motor

Phone: 1-800-554-8466
Website: www.microngearheads.com

Radial and Axial Load Ratings







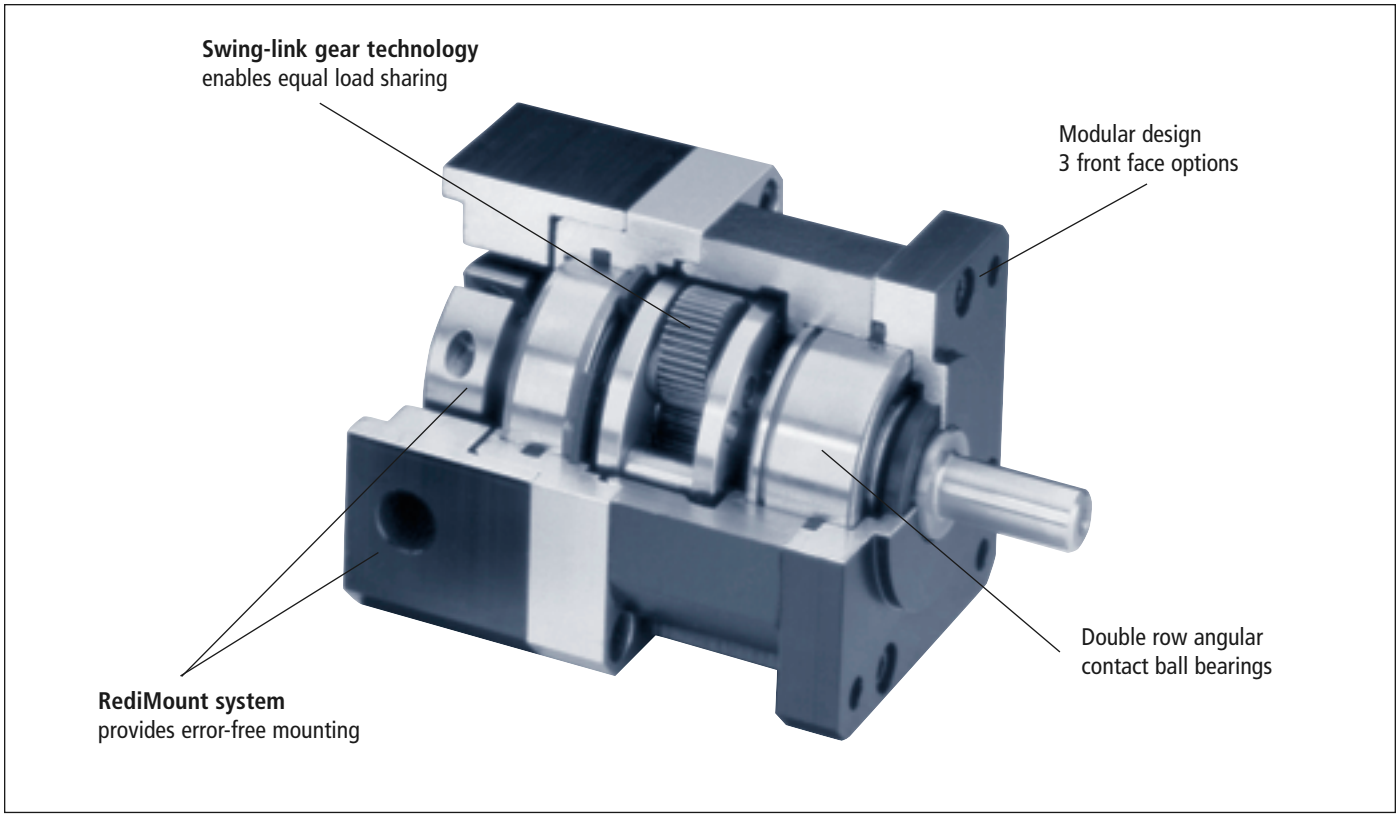
Speed (rpm)		Axial load	
	N (lbf) ET010	N (lbf) ET014	N (lbf) ET018
50	13,675, (3075)	25,074 (5705)	34,538 (7765)
100	11,107 (2497)	20,609 (4633)	27,414 (6163)
250	8,435 (1897)	15,657 (3520)	20,197 (4541)
500	6,855 (1542)	12,716 (2859)	16,034 (3605)
1000	5,568 (1252)	10,329 (2322)	12,726 (2861)

EQ Series*

True Planetary* Gearheads

Ready for Immediate Delivery

Precision:	18 arc-minutes	**Ratio Availability:**	3:1 thru 100:1
Frame Sizes:	23, 60mm	**Radial load capacity:**	up to 340 lb
Torque Capacity:	up to 260 in-lb	**Mounting system:**	RediMount*



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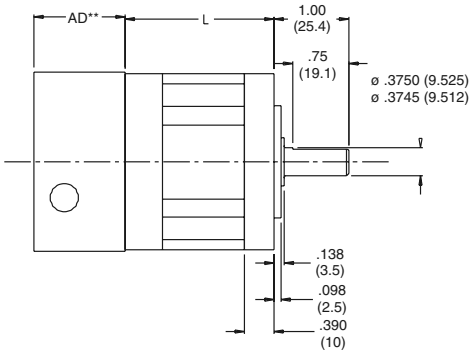
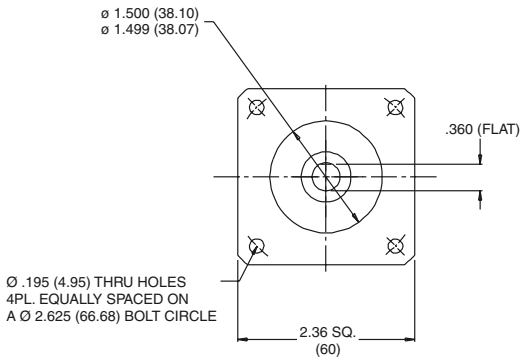
EQ* Nema 23 / Size 60mm

True Planetary* Gearheads

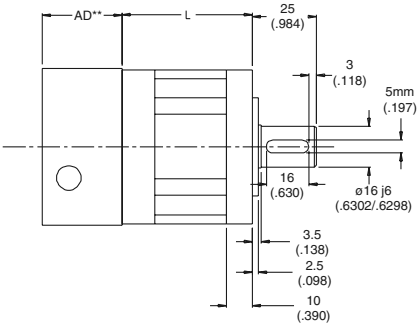
ENGLISH FRAME SIZE



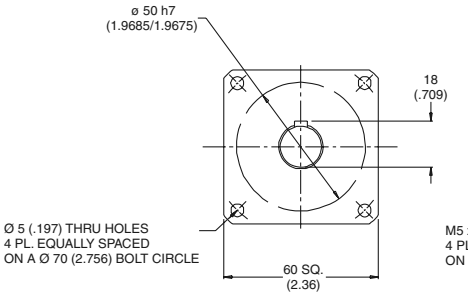
23 Frame



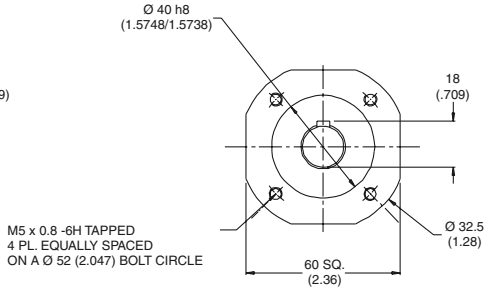
METRIC FRAME SIZES



60mm Frame



60mm C-Face



Ratio	Dimension 'L' mm (in)	Backlash (arc-min)	Weight kg (lb)	Efficiency
3:1 to 10:1	51 (1.99)	18 max	1.0 (2.2)	94%
15:1 to 100:1	70 (2.77)	22 max	1.2 (2.7)	90%

All dimensions are: mm (inches)

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

PERFORMANCE SPECIFICATIONS

Part Number	Ratio[1]	10,000 HOUR LIFE T_r (1000rpm) in-lb (Nm)	T_r (3000rpm) in-lb (Nm)	T_r (5000rpm) in-lb (Nm)	T_{peak} in-lb (Nm)	J kg-cm² (in-lb-sec²x10⁻⁴)	Torsional Stiffness Nm/arc-min (in-lb/arc-min) EQ60	EQ23
EQ60/23-003	3:1	93 (10.5)	67 (7.6)	62 (7.0)	141 (15.9)	.20 (1.80)	15.8 (1.8)	6.3 (.71)
EQ60/23-005	5:1	100 (11.3)	74 (8.4)	67 (7.6)	235 (26.6)	.13 (1.16)	15.8 (1.8)	6.3 (.71)
EQ60/23-010	10:1	60 (6.8)	51 (5.8)	49 (5.5)	235 (26.6)	.11 (.96)	15.8 (1.8)	6.3 (.71)
EQ60/23-015	15:1	118 (13.3)	100 (11.3)	95 (10.7)	260 (29.4)	.10 (.85)	15.8 (1.8)	6.3 (.71)
EQ60/23-025	25:1	160 (18.1)	119 (13.5)	100 (11.3)	260 (29.4)	.16 (1.44)	15.8 (1.8)	6.3 (.71)
EQ60/23-030	30:1	128 (14.5)	109 (12.3)	105 (11.9)	260 (29.4)	.16 (1.44)	15.8 (1.8)	6.3 (.71)
EQ60/23-050	50:1	192 (21.7)	144 (16.3)	135 (15.3)	260 (29.4)	.16 (1.44)	15.8 (1.8)	6.3 (.71)
EQ60/23-100	100:1	81 (92)	70 (7.9)	67 (7.6)	235 (26.6)	.16 (1.44)	15.8 (1.8)	6.3 (.71)

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

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

J = Mass moment of inertia reflected back to the input.

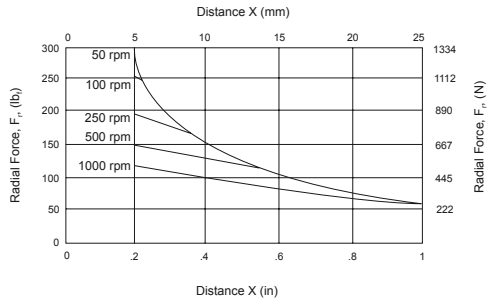
T_r = Rated output torque at rated speed for specific hours of life.

Radial and Axial Load Ratings

EQ23 RADIAL AND AXIAL LOAD RATINGS

The graph below displays the allowable radial load at a given distance (X) from the mounting surface based on on an L_{10} life of 10,000 hours for the mean output speed, $\frac{n_m}{i}$

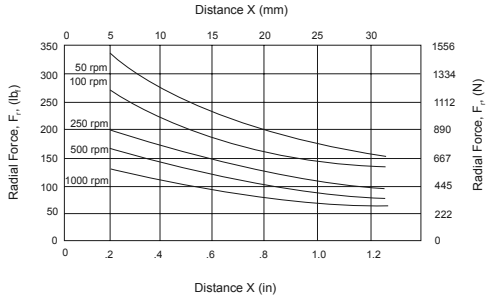
Allowable axial load, F_a=145 lb_f (645N) at 250 rpm



EQ60 RADIAL AND AXIAL LOAD RATINGS

The graph below displays the allowable radial load at a given distance (X) from the mounting surface based on on an L_{10} life of 10,000 hours for the mean output speed, $\frac{n_m}{i}$

Allowable axial load, F_a=310 lb_f (1379N) at 250 rpm



Nm = MEAN MOTOR SPEED i = RATIO

NOTES:

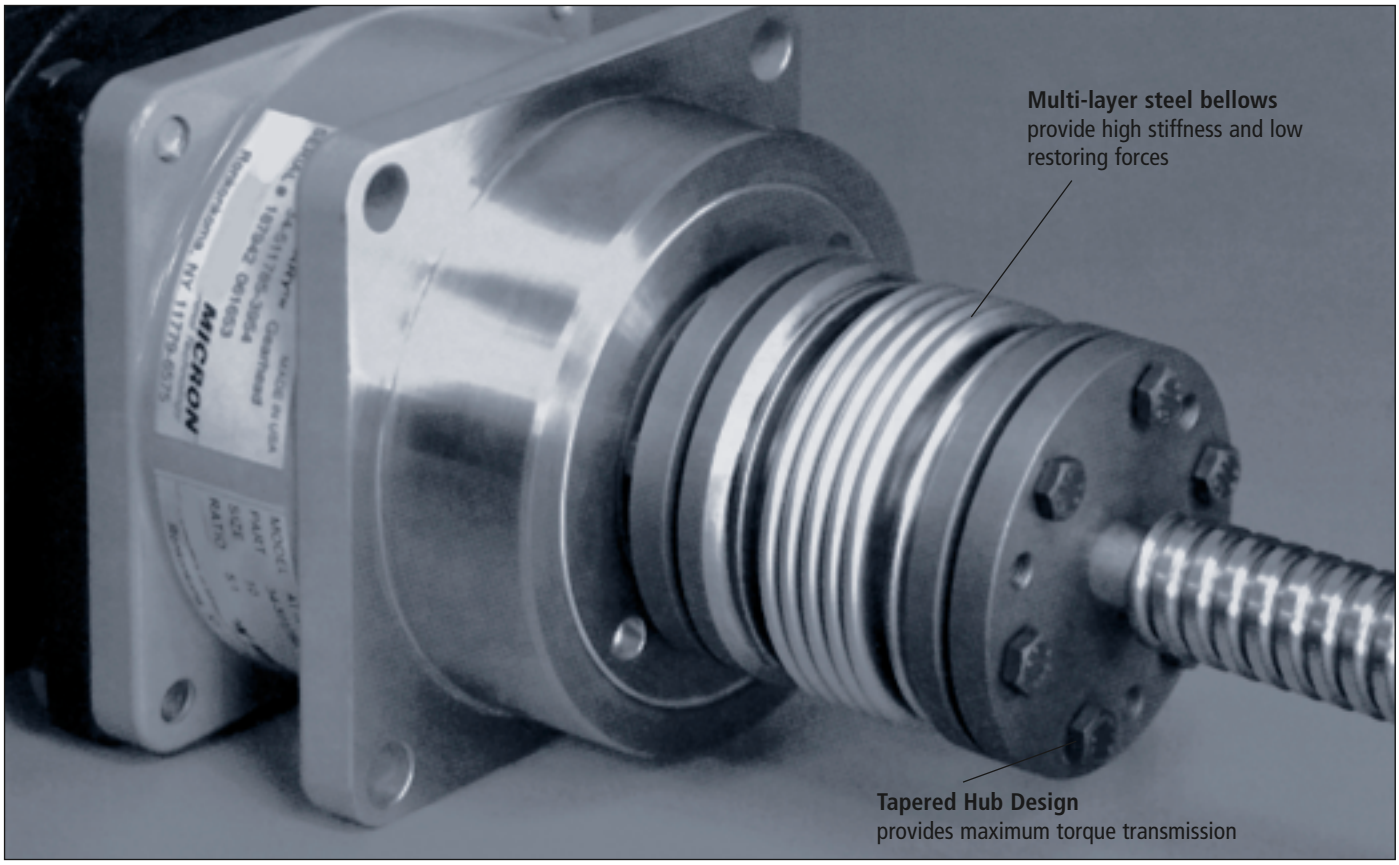
AccuLOCK* - Zero Backlash

Flexible Steel Bellows Coupling

Ready for Immediate Delivery

Bore Range: 9mm thru 50mm
Torque Capacity: up to 5310 in-lb
Available in 6 sizes for immediate delivery

- **Lightweight compact design -** meets the low inertia requirement of high performance motion control applications.
- **High torsional stiffness -** provides high stiffness as well as low restoring forces.



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AccuLOCK* - Zero Backlash

Flexible Steel Bellows Coupling

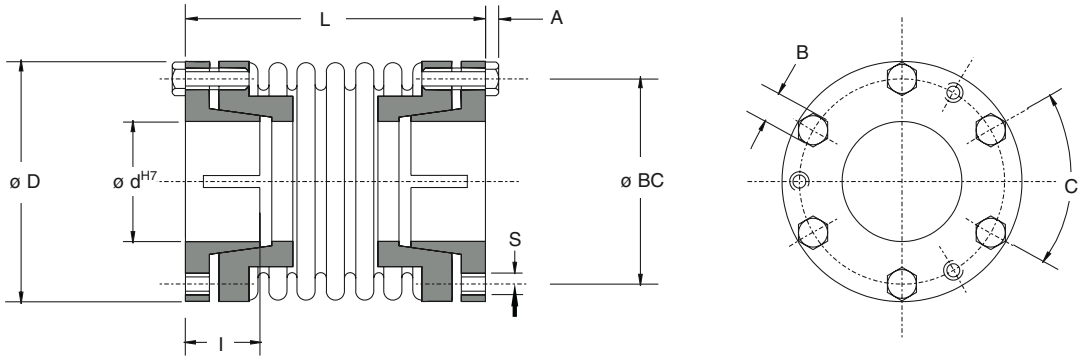


TABLE OF DIMENSIONS

Size	Bore		D	L(1)	A	l(1)	s	BC	B	C
	d_{min} mm (in.)	d_{max} mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)		mm (in.)	mm	
AL030	9 (.35)	16 (.63)	41 (1.61)	46 (1.81)	2.8 (.11)	21.5 (.85)	2 x M4	30.5 (1.2)	7	4 x 90°
AL060	12 (.47)	20 (.79)	50 (1.97)	54 (2.12)	2.8 (.11)	25 (.98)	3 x M4	38 (1.50)	7	6 x 60°
AL100	15 (.59)	25 (.98)	60 (2.36)	63 (2.48)	3.5 (.14)	29 (1.14)	3 x M5	47 (1.85)	8	6 x 60°
AL200	24 (.94)	35 (1.38)	71 (2.80)	72 (2.83)	4.0 (.16)	33 (1.30)	3 x M6	58 (2.28)	10	6 x 60°
AL350	30 (1.18)	42 (1.65)	82 (3.23)	81 (3.19)	5.5 (.22)	37 (1.46)	3 x M8	66 (2.60)	13	6 x 60°
AL600	35 (1.38)	50 (1.97)	98 (3.86)	98 (3.86)	5.5 (.22)	45 (1.77)	4 x M8	80 (3.15)	13	8 x 45°

(1) Dimensions in untensioned condition

TECHNICAL DATA

Size	Tn Nm (in-lb)	n_{max} (rpm)	Torsional Stiffness Nm / arc-min (in-lb/arc-min)	Axial Stiffness N/mm (lb_f / in)	Tightening Torque Nm (in-lb)	J Kg-cm² (in-lb-sec²)	Weight Kg (lb)
AL030	30 (266)	13,000	4.3 (18)	125 (714)	2.9 (26)	.48 ($4.1x10^{-4}$)	.26 (.57)
AL060	60 (531)	11,000	5.5 (49)	110 (628)	2.9 (26)	1.29 ($1.14x10^{-3}$)	.44 (.97)
AL100	100 (885)	9,500	11.1 (98)	135 (771)	5.5 (49)	3.62 ($3.19x10^{-3}$)	.78 (1.72)
AL200	200 (1,770)	9,000	16.3 (144)	200 (1142)	9.5 (84)	7.52 ($6.62x10^{-3}$)	1.12 (2.47)
AL350	350 (3,097)	7,500	37.8 (335)	175 (999)	23 (204)	14.6 ($12.8x10^{-3}$)	1.62 (3.57)
AL600	600 (5,310)	6,300	49.5 (438)	135 (771)	23 (204)	37.5 ($33.0x10^{-3}$)	2.90 (6.39)

T_n = coupling nominal torque

n_{max} = maximum coupling speed

J = mass moment of inertia

Permissible Shaft Misalignments

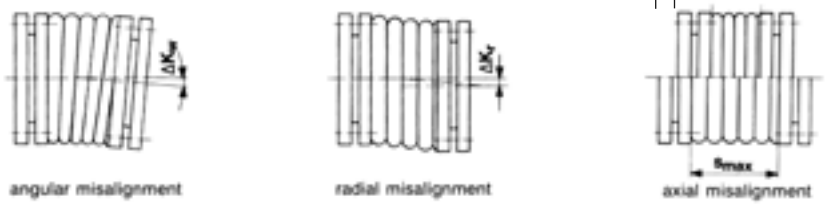


Figure 2

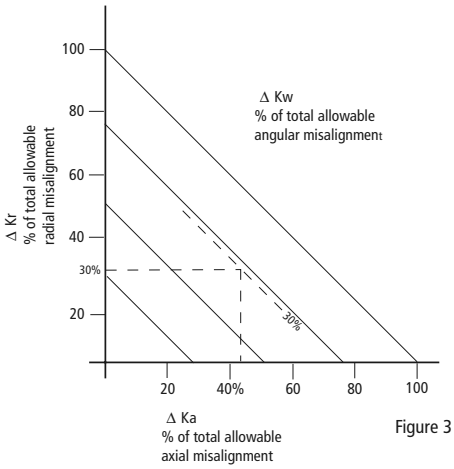


Figure 3

Allowable Shaft Misalignment

The Micron AccuLOCK* Flexible Steel Bellows Coupling compensates radial, axial, and angular shaft misalignment (Figure 2). The maximum permissible* shaft alignments from this table must not be achieved simultaneously or exceed the maximum value. If there are several different misalignment simultaneously, they will influence each other as shown in Figure 3.

Size	Allowable Misalignment		
	Axial mm (in)+/-	Radial mm (in)	Angular degrees
AL030	.38 (.015)	.10 (.004)	2
AL060	.48 (.019)	.10 (.004)	2
AL100	.58 (.023)	.15 (.006)	2
AL200	.79 (.031)	.20 (.008)	2
AL350	.99 (.039)	.20 (.008)	2
AL600	1.19 (.047)	.30 (.012)	2

Ordering

A L 0 6 0 - 0 6 0 - .500

Specify Mating Shaft Diameter d [2]
(Where $d_{min} < d < d_{max}$)

Specify Shaft Diameter d [2]
(Where $d_{min} < d < d_{max}$)

Coupling Size
030 = 30 Nm (266 in-lbs)
060 = 60 Nm (531 in-lbs)
100 = 100 Nm (885 in-lbs)
200 = 200 Nm (1770 in-lbs)
350 = 350 Nm (3097 in-lbs)
600 = 600 Nm (5310 in-lbs)

Designates AccuLOCK Coupling

[2] **When specifying shaft diameter also include units and tolerances when ordering**

Phone: 1-800-554-8466
Website: www.microngearheads.com

Mounting Tools

Micrometer Adjustable Torque Wrench Series

Torque Wrench Ordering Information

To ensure that the proper torque is applied to the gearhead pinion assembly, Danaher Motion offers a complete line of easy to use torque wrenches.
To order a torque wrench, ask for the corresponding part number along with your gearhead order.

T W - 0 1

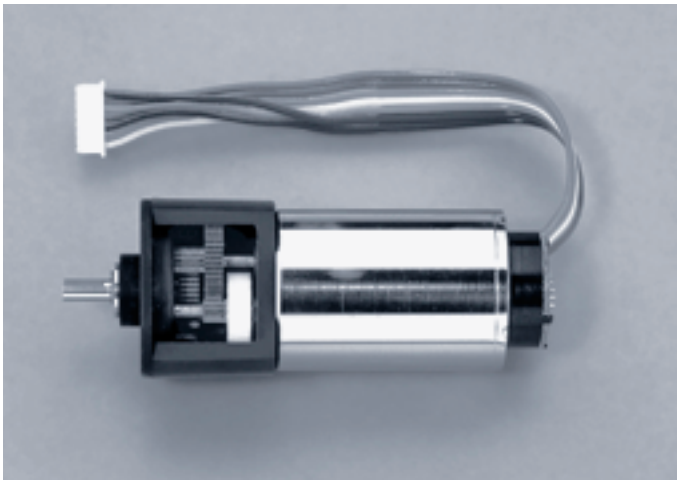
See Chart

Designates Torque Wrench

Gearhead Model	Gearhead Frame Size	Torque Wrench Part Number
NemaTRUE*	23 / 60	TW-060
	34 / 90	TW-090
	42 / 115	TW-115
NemaTRUE 90*	23	TW-060
	34	TW-090
	42	TW-115
DuraTRUE* DuraTRUE 90*	60	TW-060
	90	TW-090
	115	TW-115
	142	TW-142
UltraTRUE* UltraTRUE 90*	60	TW-006
	75	TW-075
	90	TW-075
	100	TW-010
	115	TW010
	140	TW-014
	180	TW-018
EverTRUE*	100	TW-010
	140	TW-014
	180	TW-018
EQ*	23 / 60	TW-060

Custom Engineered Solutions

- Concept to prototype within weeks
- Compact integrated servo-actuator solutions
- Precision gearing to AGMA 14 standards
- State-of-the-art CNC gear cutting capabilities
- ISO 9001 certified with in-house product testing and fully accredited metallurgical lab



Integral In-line Gearmotors

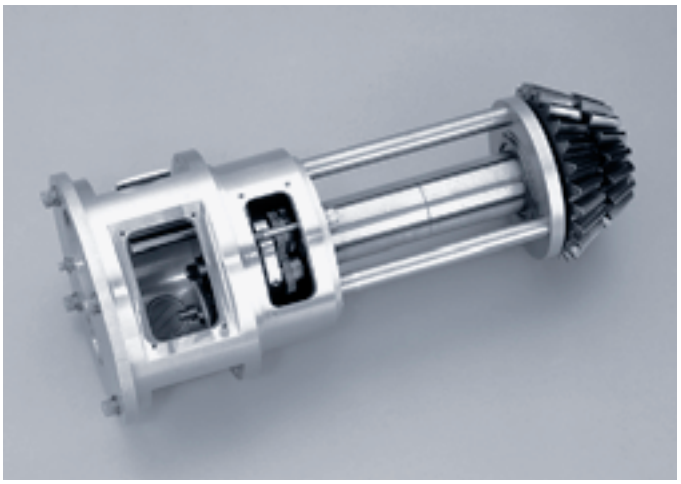
A precision low noise, highly efficient gearhead is coupled together with an encoder and brush type permanent magnet DC motor to create a complete drive solution. The innovative material selection of the gearing greatly extends life, increases gearhead efficiency, and eliminates noise.

Thin Profile Gearbox

A parallel shaft spur and helical gearbox which is fully compatible with commonly available "pancake" style disc armature motors. The lightweight aluminum alloy housing encases the 150:1 ratio low noise gearing.

Spur Gear Differentials

Combining differential gearing technology with a position feedback sensor results in this highly sensitive assembly used on windpowered devices to adjust the pitch of the driving and wind vanes.



Integral Planetary Gearmotors

A more compact, higher torque drive assembly can be created by integrating a pinion gear directly on the motor shaft.

Gearhead Application Analysis Form

Fax back this form to 631-467-9814 to receive your quote today!

General Information

Customer Name: _____ Fax: _____ Order Date: _____

Buyer Contact: _____ Phone: _____ Required Date: _____

Technical Contact: _____

Bill to Address: _____ City: _____ State: _____ Zip: _____

Ship to Address: _____ City: _____ State: _____ Zip: _____

E-mail: _____ Website: _____

Motor Information

Motor Manufacturer: _____ Motor Model #: _____

Continuous Torque (in-lb) _____ Peak Torque (in-lb) _____

Maximum Speed (rpm) _____

Application Information

Brief description of your application: _____

_____

Acceleration time (sec) _____ Acceleration torque (in-lb) _____ Max speed (rpm) _____

Dwell time (sec) _____ Dwell torque (in-lb) _____ Dwell speed (rpm) _____

Deceleration time (sec) _____ Deceleration torque (in-lb) _____ Min speed (rpm) _____

Radial Load (lbs) _____ Axial Load (lbs) _____ Target inertia match _____

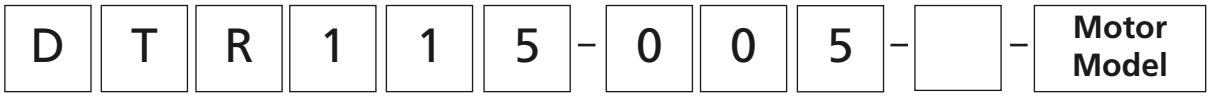
External load inertia (in-lb-sec^2) _____ Maximun speed of motor (rpm) _____

Ordering Information

Part Number	Quantity	Price	Delivery

Quantity	Conventional		SI Unit	Conversion Factors	
	Inch Unit	Metric Unit			
Length	Inch Inch	Meter m	Metre m	1 inch 1mm 1m 1 ft	= 25.4 mm = 0.03937 inch = 3.2808 ft = 0.3048 m
Area	Square Inch $Inch^2$	Square Centimeter cm^2	Square Metre m^2	1 $inch^2$ 1cm^2 1m^2 1 ft^2	= 6.4516 cm^2 = 0.155 $inch^2$ =10.764 ft^2 = 0.092903 m^2
Mass	Pound Mass lb	Kilogram Mass kg	Kilogram Mass kg	1 lb 1 kg	= 0.45359237 kg = 2.2046 lb
Force	Pound Force lbf	Kilogram Force kgf	Newton N	1 lbf 1 lbf 1 kgf 1 kgf 1 N 1 N	= 0.45359237 kgf = 4.44822 N = 2.2046 lbf = 9.80665 N = 0.1019716 kgf = 0.224809 lbf
Stress Pressure	Pounds per square inch $lb/inch^2$	Kilogram per square centimeter kgf/cm^2	Pascal N/m^2 (Pa)	1 MPa 1 kPa 1 $lbf/inch^2$ 1 $lbf/inch^2$ 1 $lbf/inch^2$ 1 kgf/cm^2 1 kgf/cm^2	=10^6 N/m^2 = N/mm^2 =10^3 N/m^2 = 0.070307 kgf/cm^2 = 7.0307x10^{-4} kgf/mm^2 = 6.8947x10^{-3} N/mm^2 (MPa) = 14.2233 $lbf/inch^2$ = 9.80665x10^{-2} N/mm^2 (MPa)
Torque Work	Inch-Pounds lbf-inch	Kilogram- Meters kgf-m	Newton- Metres Nm	1 lbf-inch 1 kgf-cm 1 lbf-in 1 kgf-m 1 kgf-cm 1 Nm 1 Nm	=1.1521 kgf-cm = 0.8679 lbf-inch = 0.1129848 Nm = 9.80665 Nm = 9.80665x10^{-2} Nm = 8.85 lbf-inch = 10.19716 kgf-cm
Power	lbf-ft/min	kgf-m/s	Nm/s	1 kW 1 kW 1 kW 1 kW 1 hp 1 hp 1 hp 1 hp	= 1000 Nm/s = 60,000 Nm/min = 44,220 lbf-ft/min = 1.34 hp = 75 kgf-m/s = 44,741 Nm/min = 33,000 lbf-ft/min = 0.7457 kW
Velocity	Feet per Second ft/sec	Meters per Second m/sec	Metres per Second m/s	1 ft/sec 1 inch/sec 1 ft/min 1 mile/hr 1 km/hr 1 mile/hr	= 0.3048 m/sec = 2.54 cm/sec = 0.00508 m/sec = 0.44704 m/sec = 0.27777 m/sec = 1.609344 km/hr
Acceleration	Feet per Second squared ft/sec^2	Meters per Second squared m/sec^2	Metres per Second squared m/sec^2	1 ft/sec^2	= 0.3048 m/sec^2

Gearhead Ordering Information



Designates Gearhead Type
NT = NemaTRUE*
NTP = NemaTRUE PLUS*
NTR = NemaTRUE 90*
DT = DuraTRUE*
DTR = DuraTRUE 90*
UT = UltraTRUE*
UTR = UltraTRUE 90*
ET = EverTRUE
EQ = EQ Series

Gearhead Ratio
See Ratio Availability in corresponding gearhead section

Custom Options
Special = S
None = 0

Motor Model Number

GEARHEAD SIZE

NemaTRUE NemaTRUE PLUS NemaTRUE 90	DuraTRUE DuraTRUE 90 DuraTRUE Hollow Shaft DuraTRUE Dual Shaft	UltraTRUE UltraTRUE 90		EverTRUE	EQ
17 = Size 17	60 = Size 60	006 = Size 60	014 - Size 14	10 = Size 10	23 / 60 = Size 23 / 60mm
23 = Size 23	90 = Size 90	075 = Size 75	018 - Size 18	14 = Size 14	
34 = Size 34	115 = Size 115	090 = Size 90	018t - Size 18t	18 = Size 18	
42 = Size 42	142 = Size 142	010 = Size 10	022 = Size 22		
60 = Size 60		115 = Size 115	(UltraTRUE ONLY)		
90 = Size 90					
115 = Size 115					

NOTES:

NOTES:

Danaher Motion
Linear Motion Systems

As part of the Danaher Motion family, our mechanical and electro-mechanical product offerings include standard and custom linear bearings, shafting, linear guides, ball and lead screws, gearheads, linear actuators, slide tables and systems, precision balls, molded products, resolvers, brakes and clutches, AC and DC adjustable speed drives, stepper and servo motors. Our products are applied worldwide throughout a variety of motion applications in the machine tool, medical, automotive, robotics, industrial, aerospace, office equipment and mobile off-highway markets. Our highly recognized brand names include: Thomson™, Thomson BSA™, Micron™, Deltran PT™, Superior Electric™ and SECO™.

MICRON

Solutions by DANAHER MOTION

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Fax: 1-800-445-0329
E-mail: linear@danahermotion.com
Literature: litrequest@danahermotion.com

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