



TRUE Planetary™ Gearheads

MICRON



Linear Motion. Optimized.™

Thomson -
Linear Motion. Optimized.

Often the ideal design solution is not about finding the fastest, sturdiest, most accurate or even the least expensive option. Rather, the ideal solution is the optimal balance of performance, life and cost.

Thomson is best positioned to help you most quickly configure the optimal linear motion solution for your application.

- Thomson invented anti-friction linear bearing technology. We own the broadest standard product offering of mechanical motion technologies in the industry.
- Modified versions of standard product are routine. White sheet design solutions available across our entire portfolio.
- Choose Thomson and gain access to over 70 years of global application experience in diverse industries including packaging, factory automation, material handling, medical, clean energy, printing, automotive, machine tool, aerospace and defense.
- As part of Danaher Motion, we are financially strong and unique in our ability to bring together control, drive, motor, power transmission and precision linear motion technologies.

Thomson is the name you can trust for quality, innovation, on-time delivery, controlled costs, and reduced risk.

In addition to the information contained in this document, a wealth of product and application information is available online at www.thomsonlinear.com. Also online are downloadable 3D models, software tools, our distributor locator and global contact information for Thomson. For immediate assistance in North America contact us at 1-540-633-3549 or email us at Thomson@danahermotion.com.

Talk to us early in the design process to see how Thomson can help identify the optimal balance of performance, life and cost for your next application. And, call us or any of our 2000+ distribution partners around the world for fast delivery of replacement parts.

The Danaher Business System - Building sustainable competitive advantage into your business

The Danaher Business System (DBS) was established to increase the value we bring to customers. It is a mature and successful set of tools we use daily to continually improve manufacturing operations and product development processes. DBS is based on the principles of Kaizen which continuously and aggressively eliminate waste in every aspect of our business. DBS focuses the entire organization on achieving breakthrough results that create competitive advantages in quality, delivery and performance – advantages that are passed on to you. Through these advantages Thomson is able to provide you faster times to market as well as unsurpassed product selection, service, reliability and productivity.

Local Support Around the Globe

Application Centers Global Manufacturing Operations Global Design & Engineering Centers



| | |
|---|----|
| Product Overview | 4 |
| True Planetary Gearheads | 6 |
| Helical Crowned True Planetary Gearheads..... | 7 |
| PowerTRUE™ Right Angle Gearheads..... | 8 |
| RediMount™ Motor Mounting System..... | 9 |
| Gearhead Selection..... | 10 |
| Micron MOTIONEERING®..... | 11 |

| | |
|--|-----------|
| AquaTRUE™ True Planetary Gearheads..... | 13 |
| AquaTRUE™ Introduction..... | 14 |
| AquaTRUE™ Dimensions | 15 |
| AquaTRUE™ Specifications | 16 |
| Radial and Axial Load Ratings..... | 17 |

| | |
|--|-----------|
| XTRUE™ True Planetary Gearheads | 18 |
| XTRUE™ Introduction | 19 |
| XTRUE™ Dimensions..... | 20 |
| XTRUE™ Specifications | 21 |
| Radial and Axial Load Ratings..... | 23 |

| | |
|---|-----------|
| NemaTRUE™ True Planetary Gearheads | 24 |
| NemaTRUE™ Size 17..... | 25 |
| NemaTRUE™ Size 23/60 | 26 |
| NemaTRUE™ Size 34/90..... | 27 |
| NemaTRUE™ Size 42/115..... | 28 |
| Radial and Axial Load Ratings..... | 29 |

| | |
|---|-----------|
| NemaTRUE 90™ Right Angle Gearheads | 30 |
| NemaTRUE 90™ Size 23 | 31 |
| NemaTRUE 90™ Size 34 | 32 |
| NemaTRUE 90™ Size 42 | 33 |
| Radial and Axial Load Ratings..... | 34 |

| | |
|---|-----------|
| DuraTRUE™ True Planetary Gearheads | 36 |
| DuraTRUE™ Size 60 | 37 |
| DuraTRUE™ Size 90 | 38 |
| DuraTRUE™ Size 115 | 39 |
| DuraTRUE™ Size 142 | 40 |
| Radial and Axial Load Ratings..... | 41 |

| | |
|---|-----------|
| DuraTRUE 90™ Right Angle Gearheads | 42 |
| DuraTRUE 90™ Size 60 | 43 |
| DuraTRUE 90™ Size 60S (Slim Line)..... | 44 |
| DuraTRUE 90™ Size 90 | 45 |
| DuraTRUE 90™ Size 90S (Slim Line)..... | 46 |
| DuraTRUE 90™ Size 115 | 47 |
| DuraTRUE 90™ Size 115S (Slim Line)..... | 48 |
| DuraTRUE 90™ Size 142 | 49 |
| DuraTRUE 90™ Size 142S (Slim Line)..... | 50 |
| Radial and Axial Load Ratings..... | 51 |

| | |
|------------------------------------|-----------|
| DuraTRUE 90™ (Hollow Shaft) | |
| Right Angle Gearheads | 54 |
| DuraTRUE 90™ Size 90H..... | 55 |
| DuraTRUE 90™ Size 115H..... | 56 |
| DuraTRUE 90™ Size 142H..... | 57 |
| Radial and Axial Load Ratings..... | 58 |

| | |
|---|-----------|
| DuraTRUE 90™ (Dual Shaft) Right Angle Gearheads... | 60 |
| DuraTRUE 90™ Size 60D..... | 61 |
| DuraTRUE 90™ Size 90D..... | 62 |
| DuraTRUE 90™ Size 115D..... | 63 |
| DuraTRUE 90™ Size 142D..... | 64 |
| Radial and Axial Load Ratings..... | 65 |

| | |
|--|-----------|
| ValueTRUE™ True Planetary Gearheads | 67 |
| ValueTRUE Inline Dimensions | 68 |
| ValueTRUE Right Angle Dimensions..... | 69 |
| Inline Specifications: VT006-VT010..... | 70 |
| Inline Specifications: VT115-VT022..... | 71 |
| Right Angle Specifications: VTR006-VTR075..... | 72 |
| Right Angle Specifications: VTR090-VTR010..... | 73 |
| Right Angle Specifications: VTR115-VTR018..... | 74 |
| Radial and Axial Load Ratings..... | 75 |

| | |
|---|-----------|
| UltraTRUE™ Helical True Planetary Gearheads..... | 78 |
| UltraTRUE™ Size 60..... | 79 |
| UltraTRUE™ Size 75 | 80 |
| UltraTRUE™ Size 90 | 81 |
| UltraTRUE™ Size 10 | 82 |
| UltraTRUE™ Size 115 | 83 |
| UltraTRUE™ Size 14 | 84 |
| UltraTRUE™ Size 18 | 85 |
| UltraTRUE™ Size 22 | 86 |
| Radial and Axial Load Ratings..... | 87 |

| | |
|---|-----------|
| UltraTRUE 90™ Helical Right Angle Gearheads..... | 90 |
| UltraTRUE 90™ Size 60 | 91 |
| UltraTRUE 90™ Size 75 | 92 |
| UltraTRUE 90™ Size 90 | 93 |
| UltraTRUE 90™ Size 10 | 94 |
| UltraTRUE 90™ Size 115 | 95 |
| UltraTRUE 90™ Size 14 | 96 |
| UltraTRUE 90™ Size 18 | 97 |
| Radial and Axial Load Ratings..... | 98 |

| | |
|---|------------|
| EverTRUE™ True Planetary Gearheads | 100 |
| EverTRUE™ Size 10 | 101 |
| EverTRUE™ Size 14 | 102 |
| EverTRUE™ Size 18 | 103 |
| Radial and Axial Load Ratings..... | 104 |

| | |
|---|-----|
| Gearhead Application Analysis Form..... | 106 |
| Gearhead Ordering Information | 107 |

**Micron True Planetary™ Gearheads
shipped within 24 hours!**



**Need it fast? Go to the back cover
of the catalog for details.**

AquaTRUE™

Features

- Precision: 13 arc-minutes
- Frame Sizes: 60mm, 80mm, 120mm and 160mm
- Torque Capacity: up to 876 Nm

- Ratio Availability: 3:1 thru 10:1
- Radial Load Capacity: up to 3730 N



XTRUE™

Features

- Precision: 13 arc-minutes
- Frame Sizes: 40mm, 60mm, 80mm, 120mm and 160mm
- Torque Capacity: up to 876 Nm

- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 3730 N



NemaTRUE™

Features

- Precision: 13 arc-minutes
- Frame Sizes: 60mm, 90mm and 115mm
- Torque Capacity: up to 180 Nm

- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 3730 N



NemaTRUE 90™ Right Angle

Features

- Precision: 13 arc-minutes
- Frame Sizes: 23mm, 34mm and 42mm
- Torque Capacity: up to 255 Nm

- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 2900 N



DuraTRUE™

Features

- Precision: 8 arc-minutes
- Frame Sizes: 60mm, 90mm, 115mm and 142mm
- Torque Capacity: up to 834 Nm

- Ratio Availability: 3:1 thru 100:1
- Radial Load Capacity: up to 11150 N



DuraTRUE 90™ Right Angle

Features

- Precision: 8 arc-minutes
- Frame Sizes: 60mm, 90mm, 115mm and 142mm
- Torque Capacity: up to 842 Nm

- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 11150 N



DuraTRUE 90™ Hollow Shaft

Features

- Precision: 8 arc-minutes
- Frame Sizes: 90mm, 115mm and 142mm
- Torque Capacity: up to 865 Nm

- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 11150 N



DuraTRUE 90™ Dual Shaft

Features

- Precision: 8 arc-minutes
- Frame Sizes: 60mm, 90mm, 115mm and 142mm
- Torque Capacity: up to 865 Nm
- Ratio Availability: 1:1 thru 500:1
- Radial Load Capacity: up to 11150 N



ValueTRUE™

Features

- Precision: 4 arc-minutes
- Frame Sizes: 60, 75, 90, 100, 115, 140, 180 and 220mm
- Torque Capacity: up to 2969 Nm
- Ratio Availability: 4:1 thru 100:1
- Radial Load Capacity: up to 37910 N



ValueTRUE 90™ Right Angle

Features

- Precision: 4 arc-minutes
- Frame Sizes: 60, 75, 90, 100, 115, 140 and 180mm
- Torque Capacity: up to 2800 Nm
- Ratio Availability: 1:1 thru 50:1
- Radial Load Capacity: up to 37910 N



UltraTRUE™

Features

- Precision: 4 arc-minutes
- Frame Sizes: 60mm, 75mm, 90mm, 100mm, 115mm, 140mm, 180mm and 220mm
- Torque Capacity: up to 3300 Nm
- Ratio Availability: 4:1 thru 100:1
- Radial Load Capacity: up to 37910 N



UltraTRUE 90™ Right Angle

Features

- Precision: 4 arc-minutes
- Frame Sizes: 60mm, 75mm, 90mm, 100mm, 115mm, 140mm and 180mm
- Torque Capacity: up to 3111 Nm
- Ratio Availability: 1:1 thru 50:1
- Radial Load Capacity: up to 37910 N



EverTRUE™ Continuous Duty

Features

- Precision: 4 arc-minutes
- Frame Sizes: 100, 140 and 180mm
- Torque Capacity: up to 1010 Nm
- Ratio Availability: 4:1 thru 100:1
- Radial Load Capacity: up to 44600 N

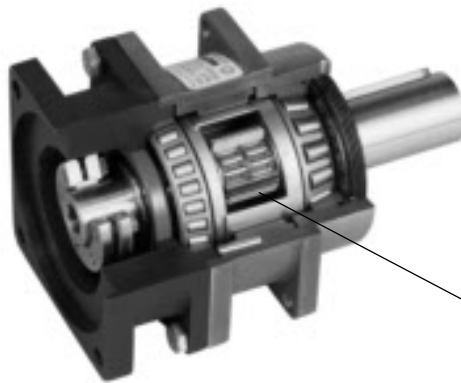


True Planetary™ Gearheads offer...

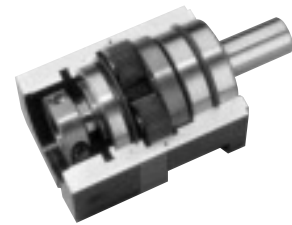
- High Torque to Size Ratio - allows compact design
- Low Backlash - eliminates positioning errors due to lost motion
- Inertia Matching - keeps servo system stable and in control
- High Rigidity - optimizes system response
- Self Re-lubrication - eliminates costly maintenance and downtime
- High Radial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



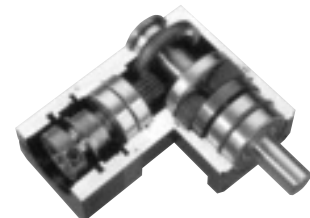
UltraTRUE™ output cage assembly



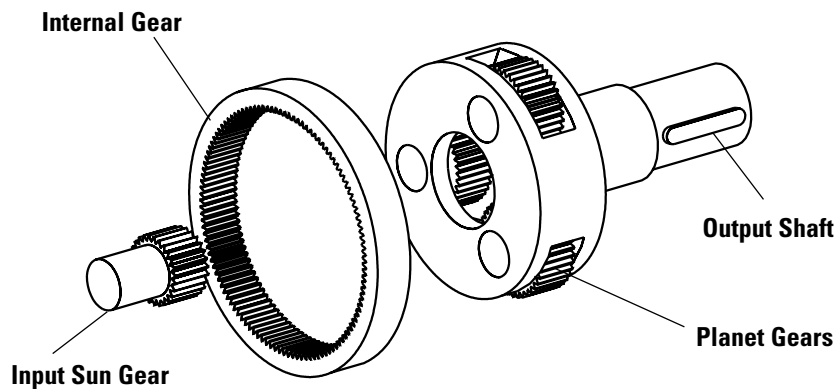
Planetary Gearing



DuraTRUE™ in-line planetary gearhead



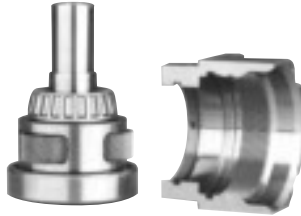
DuraTRUE 90™ right angle planetary gearhead



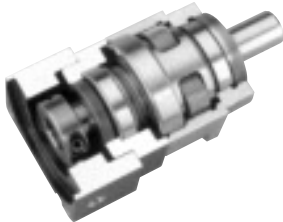
| Gearhead | True Planetary gearing |
|---------------|------------------------|
| AquaTRUE™ | • |
| XTRUE™ | • |
| NemaTRUE™ | • |
| NemaTRUE 90™ | • |
| DuraTRUE™ | • |
| DuraTRUE 90™ | • |
| UltraTRUE™ | • |
| UltraTRUE 90™ | • |
| ValueTRUE™ | • |
| ValueTRUE 90™ | • |
| EverTRUE™ | |

Helical Crowned True Planetary™ Gearing offers...

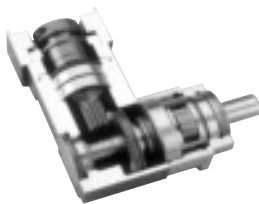
- High Torque Capacity
- Low Backlash
- Smooth Operation
- Greater Load Sharing
- Whisper Quiet



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



UltraTRUE™ in-line planetary gearhead



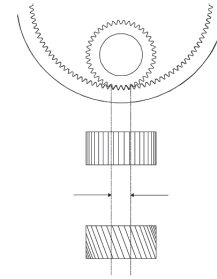
UltraTRUE 90™ right angle planetary gearhead

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.

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

Thomson 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.

Spur vs. Helical Gearing

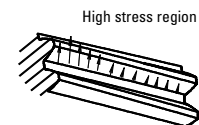


Typical contact ratio is 1.5 for spur gearing.

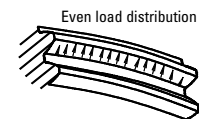
Contact ratio for equivalent helical gear is 3.3...more than double the contact ratio.

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



Non-Crowned



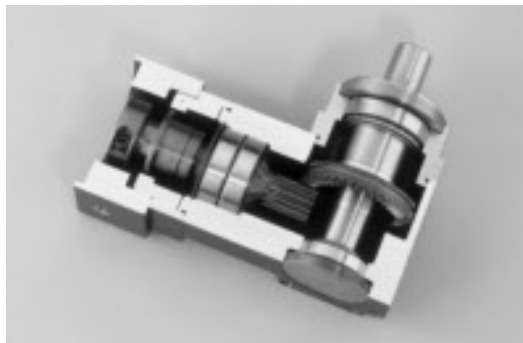
Crowned

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.

| Gearhead | Helical Crowned True Planetary gearing |
|---------------|--|
| AquaTRUE™ | |
| XTRUE™ | |
| NemaTRUE™ | |
| NemaTRUE 90™ | |
| DuraTRUE™ | |
| DuraTRUE 90™ | |
| UltraTRUE™ | • |
| UltraTRUE 90™ | • |
| ValueTRUE™ | • |
| ValueTRUE 90™ | • |
| EverTRUE™ | • |

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



PowerTRUE™ Gear



Computerized mapping of gear tooth profile



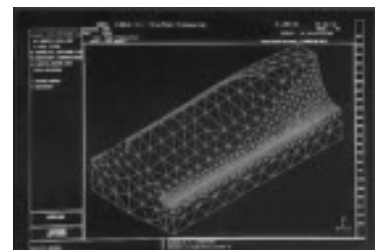
CNC Machining of a PowerTRUE™ right angle gear

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

| Gearhead | PowerTRUE gearing |
|---------------|-------------------|
| AquaTRUE™ | |
| XTRUE™ | |
| NemaTRUE™ | |
| NemaTRUE 90™ | • |
| DuraTRUE™ | |
| DuraTRUE 90™ | • |
| UltraTRUE™ | |
| UltraTRUE 90™ | • |
| ValueTRUE™ | |
| ValueTRUE 90™ | • |
| EverTRUE™ | |

RediMount™ Motor Mounting System

Mounting Instructions

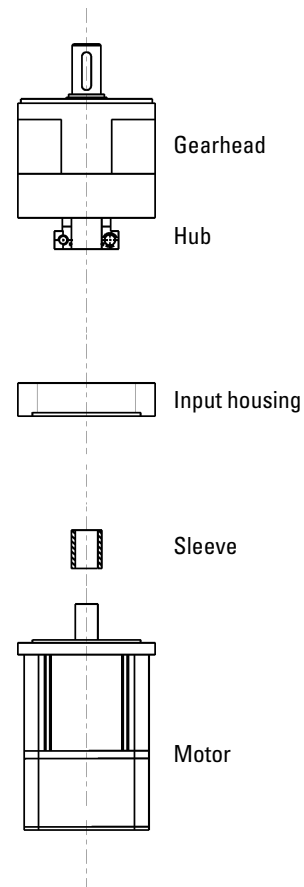
1. Slide the provided sleeve into the hub and align the slot in the bushing with the slot in the hub.
2. Set the motor on a work surface or hold fixture with the output shaft facing straight up. If there is a key on the motor, remove it and align the keyway with the slot in the hub. Slide the gearhead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



Hub Bolt Tightening Torques

| Gearhead Model | Gearhead Frame Size | Pre-Tightening Torque | | Final Tightening Torque | |
|--|---------------------|-----------------------|------|-------------------------|-------|
| | | in-lb | [Nm] | in-lb | [Nm] |
| XTRUE™ | 60 | 2 | 0.2 | 39 | 4.4 |
| | 80 | 4 | 0.4 | 76 | 8.5 |
| | 120 | 16 | 1.8 | 316 | 36.0 |
| | 160 | 32 | 3.6 | 636 | 72.0 |
| NemaTRUE™ NemaTRUE 90™ | 23/60 | 2 | 0.2 | 39 | 4.4 |
| | 34/90 | 4 | 0.4 | 76 | 8.5 |
| | 42/115 | 16 | 1.8 | 316 | 36.0 |
| DuraTRUE™ DuraTRUE 90™ | 60 | 2 | 0.2 | 39 | 4.4 |
| | 90 | 4 | 0.4 | 76 | 8.5 |
| | 115 | 16 | 1.8 | 316 | 36.0 |
| | 142 | 32 | 3.6 | 636 | 72.0 |
| UltraTRUE™ UltraTRUE 90™ ValueTRUE™ ValueTRUE90™ EverTRUE™ | 60 | 2 | 0.2 | 39 | 4.4 |
| | 75/90 | 4 | 0.4 | 76 | 8.5 |
| | 100/115 | 16 | 1.8 | 316 | 36.0 |
| | 140 | 32 | 3.6 | 636 | 72.0 |
| | 180 | 55 | 6.3 | 1104 | 125.0 |

Gearhead must be mounted in vertical orientation.

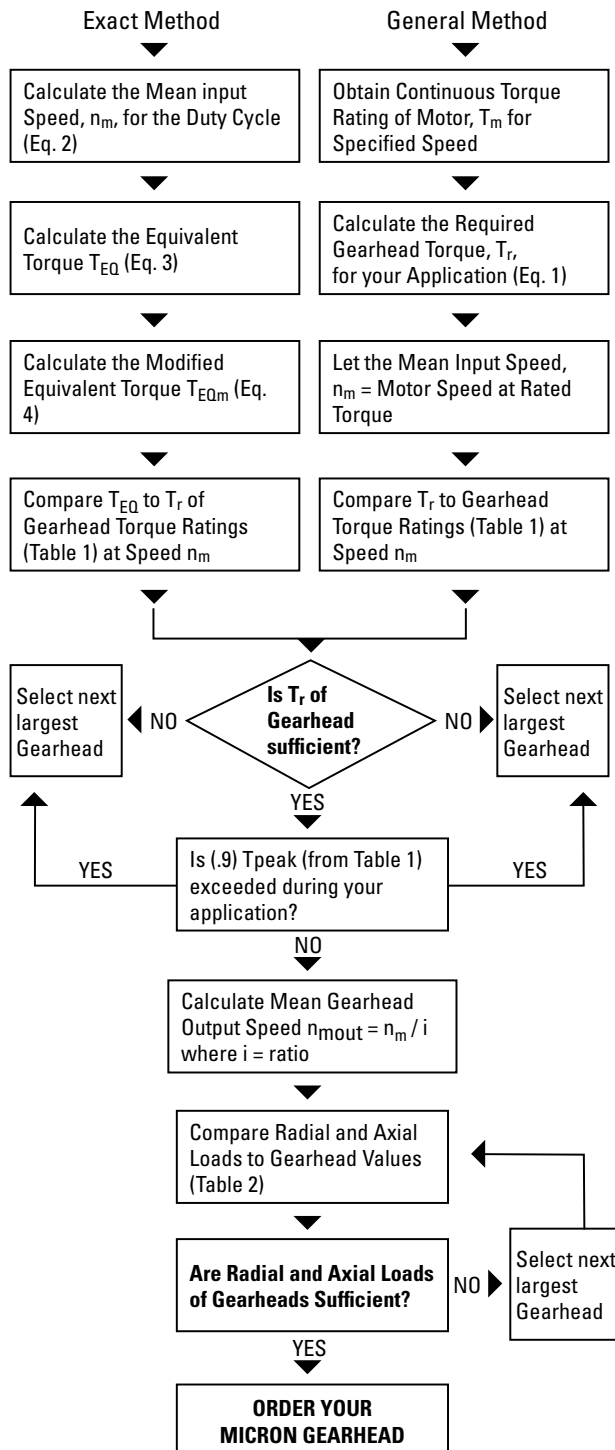


Selection

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)

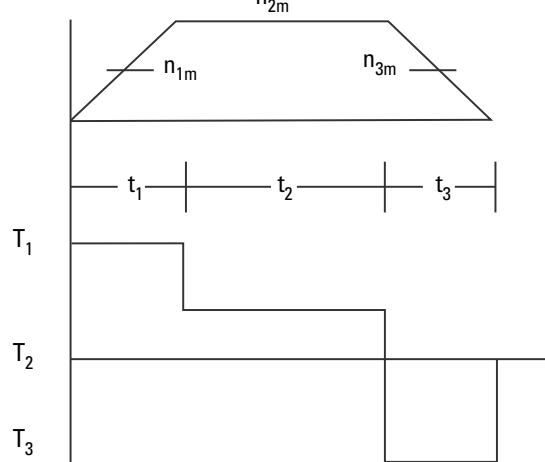
$$(1) T_r = T_M * i * e$$

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)

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

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

Equivalent torque (T_{EQ})

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

Modified equivalent torque (T_{EQm})

$$(4) T_{EQm} = (T_{EQ})/Q$$

where Q is:

| Q | # of cycles/hr |
|-----|----------------|
| 1,0 | >0 |
| 0,9 | >1000 |
| 0,7 | >2500 |
| 0,5 | >5000 |

For applications > 10,000 cycles/hour or for continuous duty operation, please contact application engineering.

Micron MOTIONEERING®

The new web based sizing tool for Micron TRUE Planetary® Gearheads

Have Micron MOTIONEERING® do the application engineering work for you!

A new way to optimize your machine design, save time and, ultimately, help you build a better machine, faster. Easy to use and it's free at www.MicronMOTIONEERING.com

Micron MOTIONEERING has two different modes of functionality:

1. Sizing and Selection

Enter your application requirements in just a few easy steps to find the right gearhead for your application in the “Sizing and Selection” section.

2. Select Gearheads by Model Number

Search by product line, model number and ratio in the “Select Gearheads by Model Number” section. The tool quickly provides an orderable part number, pricing and delivery information.



Choose the selection mode that works best for you - “Select by Model Number” or “Sizing and Selection.”

Select Gearheads by Model Number

If you know which gearhead you want, simply select the gearhead product line, frame size, ratio and RediMount*. Micron MOTIONEERING will provide the complete part number, pricing and delivery. Also available immediately are 3D models and a wealth of related catalog specifications.

- Don't know your RediMount? Choose from hundreds of the most popular motors on the market today or enter in your motor dimensions manually.
- Not sure if your motor fits on a specific gearhead? The tool will let you know if you have chosen a combination that is outside of the standard guidelines.



“Select Gearheads by Model Number” is quick and easy when you are familiar with Micron Gearheads and know what you're looking for.

Need a Gearhead in 24 hours? Use Gearhead Express!

The Micron MOTIONEERING tool lists all of the size and ratio combinations available to ship in 24 hours with the Gearhead Express Program.

*All Micron gearheads use the innovative RediMount™ system, the most flexible mounting system available today. This mounting system allows easy and error free mounting to any motor on the market in just three easy steps - simply align, mount and tighten.

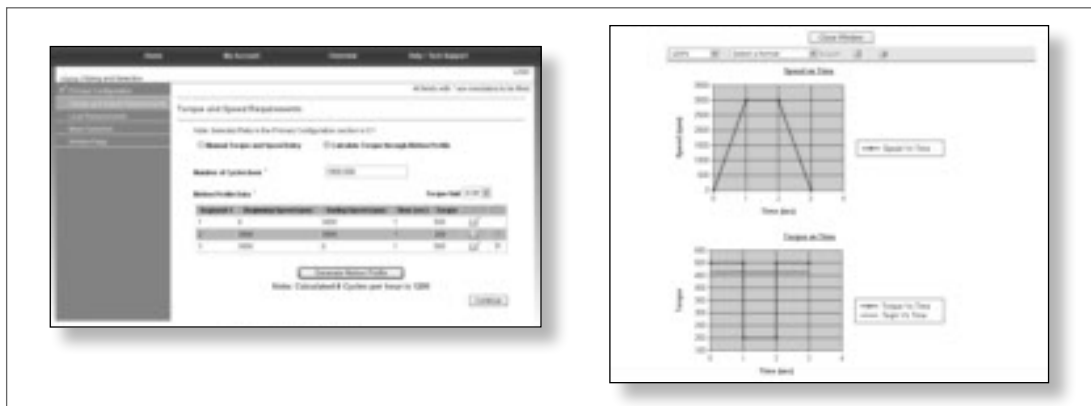
Micron MOTIONEERING®

Web-based sizing and selection tool for Micron TRUE Planetary® Gearheads

Gearhead Sizing and Selection

Follow these easy steps for sizing and selection:

- Select orientation (in-line or right angle).
- Select backlash requirement.
- Select from all of the ratios available for that combination.
- If needed, you may account for radial and axial loads on the output shaft.
- Select a specific torque and speed requirement or build an entire motion profile.
- The tool will calculate your T_{eq} (equivalent torque) and display only solutions that will work in your application.
- If you do not know your RediMount, you can choose from a list of the most popular motors on the market today or enter your motor dimensions manually.
- Double check your configuration on the “Review Page.” Click any parameter to quickly edit if needed then submit to reveal a list available solutions, sorted by price.
- The torque safety factor will also be listed for each solution to help maximize the gearhead life.
- The final output delivers pricing, a printable summary of the design solution, and the ability to save it for future use.
- Also available are 3D models of your unique solution in neutral file formats or native CAD files for all major software packages (25+ formats available).



Use the Micron MOTIONEERING tool to help you build your motion profile.

Get started with Micron MOTIONEERING today!

- The Micron MOTIONEERING tool is very easy to use and is the fastest way to accurately size and select your next gearhead.
- Save money by seeing all the possible choices.
- Automatic calculations ensure the correct solution to fit your requirements.
- It does all of the work for you and gives you the correct solution to fit your requirements.



AquaTRUE™

True Planetary™ Gearheads

| Ready for Immediate Delivery | |
|------------------------------|-----------------------------|
| Precision | 13 arc-minutes |
| Frame Sizes | 60mm, 80mm, 120mm and 160mm |
| Torque Capacity | up to 876 Nm |
| Ratio Availability | 3:1 thru 10:1 |
| Radial load capacity | up to 3730 N |
| Mounting System | RediMount™ |

① Silicone Gasket to seal motor-gearhead interface

② Round and Square Motor Mounts

③ 1pc Housing - No External Seams

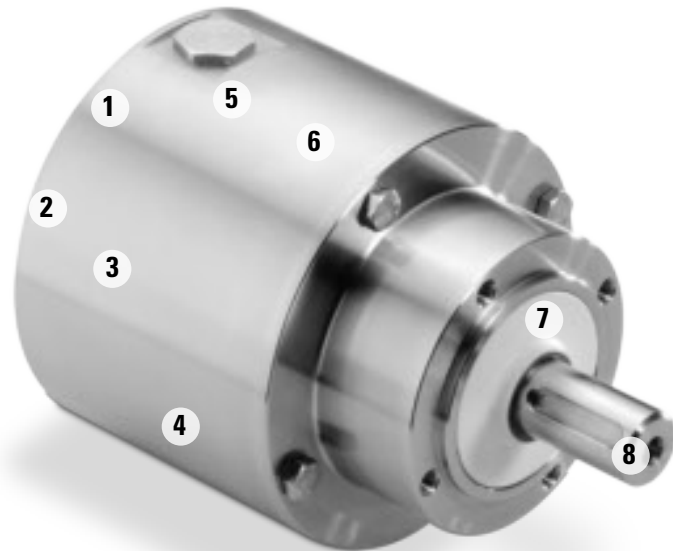
④ Permanent Product Label
(Laser Etched)

⑤ Tested for IP66, IP67 and IP69K Protection
Throughout

⑥ 300 Series Stainless Steel Housing

⑦ Non-Contact Labyrinth Seal for
Minimal wear and Maximum Protection

⑧ Stainless Steel Output Shaft



AquaTRUE™

A revolutionary, corrosion resistant and watertight gearhead for the most demanding applications.

Introduction

Micron's new AquaTRUE gearhead combines the high performance and torque capacity of Micron's True Planetary gearheads with features specifically designed to meet the strict requirements of applications such as food and beverage handling, packaging and dispensing. The AquaTRUE's IP66/IP67 and IP69K protection is able to handle caustic cleaning chemicals as well as high pressure washdown. Until now, manufacturers have been unable to use gearheads in many applications involving harsh environments because there was not a product available that met those needs. The AquaTRUE is engineered to be placed anywhere in the application's design, regardless of environmental factors. This eliminates the cost of additional components such as enclosers, shielding or mechanical transmissions.

The gearhead's 304 stainless steel housing eliminates the concern for rust or any type of corrosion. The AquaTRUE has a laser etched permanent product label and a smooth, round external housing that is designed without any external seams or corners for bacteria to collect. This makes the AquaTRUE very easy to clean and a perfect fit in any washdown environment.

- Frame Sizes: 60mm, 80mm, 120mm, 160mm
- Precision: 13 arc-min max
- Torque Capacity: up to 876 Nm
- Ratio Availability: 3:1 to 10:1 (single stage)

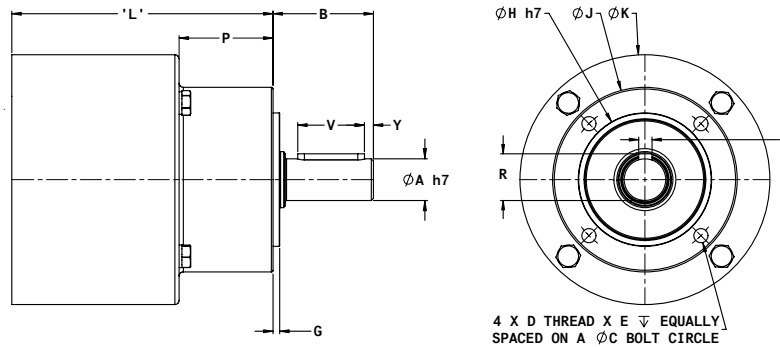
Features and Benefits

- Round Housing
- No External Seams
- 300 Series Stainless Steel
- IP66/IP67 and IP69K Protection on both the input and output
- NSF/ANSI 169 Certification
- No corners or areas for bacteria to collect
- No areas of ingress
- Corrosion Resistance
- Can handle high pressure washdown



AquaTRUE™

True Planetary™ Gearheads



* 'L' Dimension will change depending on motor being used.

Note: Mounting adapters available for both round and square motors.

Dimensions

| Part Number | A Output Shaft Diameter mm [in] | B Output Shaft Length mm [in] | Y Shaft End Distance mm [in] | V Keyway Length mm [in] | R Keyway Height mm [in] | I Key Width mm [in] | H Pilot Diameter mm [in] | J Body Diameter mm [in] |
|-------------|---------------------------------------|-------------------------------------|------------------------------------|-------------------------------|-------------------------------|---------------------------|--------------------------------|-------------------------------|
| AQT060 | 14 [0.55] | 38 [1.51] | 2.5 [0.10] | 25 [0.98] | 16 [0.63] | 5 [0.20] | 43 [1.69] | 60 [2.36] |
| AQT080 | 20 [0.79] | 42.4 [1.67] | 4.0 [0.16] | 28 [1.10] | 22.5 [0.89] | 6 [0.24] | 60 [2.36] | 80 [3.15] |
| AQT120 | 25 [0.98] | 59.5 [2.34] | 5 [0.20] | 40 [1.57] | 28 [1.10] | 8 [0.31] | 80 [3.15] | 110.5 [4.36] |
| AQT160 | 40 [1.57] | 90.5 [3.57] | 8.0 [0.32] | 65 [2.55] | 43 [1.69] | 12 [0.47] | 105 [4.13] | 140 [5.50] |

Dimensions

| Part Number | G Pilot Length mm [in] | D Output Housing Thread | Q Thread Depth mm [in] | K Input Body Diameter mm [in] | * L Standard Length mm [in] | C Bolt Circle mm [in] | P Output Body Length mm [in] |
|-------------|------------------------------|----------------------------|------------------------------|-------------------------------------|-----------------------------------|-----------------------------|------------------------------------|
| AQT060 | 6.9 [0.27] | M5x0.8-6H | 12 [0.47] | 92 [3.62] | 91.6 [3.61] | 52 [2.05] | 38.5 [1.51] |
| AQT080 | 6.3 [0.25] | M6x1.0-6H | 16 [0.63] | 114.5 [4.51] | 125.7 [4.95] | 70 [2.76] | 31.8 [1.25] |
| AQT120 | 7.3 [0.29] | M10x1.5-6H | 22 [0.87] | 150 [5.9] | 149 [5.87] | 95 [3.74] | 56.9 [2.24] |
| AQT160 | 8.3 [0.33] | M12x1.75-6H | 36 [1.42] | 188.7 [7.43] | 196.6 [7.74] | 122.4 [4.82] | 76.6 [3.02] |

Specifications

| Part Number | Stages | Backlash (arc-min) | Efficiency | Weight | | Ratio Availability |
|-------------|--------|-----------------------|------------|--------|-------|-------------------------------|
| | | | | kg | [lbs] | |
| AQT060 | 1 | 13 | 93% | 2.4 | 5.4 | 3:1, 4:1, 5:1, 7:1, 10:1 |
| AQT080 | 1 | 13 | 93% | 5.7 | 12.7 | 3:1, 4:1, 5:1, 7:1, 8:1, 10:1 |
| AQT120 | 1 | 13 | 93% | 12.0 | 26.5 | 3:1, 4:1, 5:1, 7:1, 10:1 |
| AQT160 | 1 | 13 | 93% | 24.8 | 53.8 | 3:1, 4:1, 5:1, 7:1, 10:1 |

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

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

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

Specifications subject to change without notice.

AquaTRUE™

True Planetary™ Gearheads

Performance Specifications

| Part Number | | Ratio | 20,000 Hour Life | | | | T Peak Nm [in-lb] | J kg-cm2 [in-lb sec2*10-4] | Torsional Stiffness Nm/arc-min [in-lb/ arc-min] | |
|-------------|------------|-------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------|----------------------------------|--|--------|
| | | | Tr (1000 rpm) Nm [in-lb] | Tr (2000 rpm) Nm [in-lb] | Tr (3000 rpm) Nm [in-lb] | Tr (4000 rpm) Nm [in-lb] | | | | |
| AQT060 | AQT060-003 | 3:1 | 16 [139] | 13 [112] | 12 [102] | 11 [93] | 55 [483] | 0.57 [5.1] | 1.4 | [12.6] |
| | AQT060-004 | 4:1 | 20 [177] | 17 [149] | 15 [130] | 14 [121] | 46 [409] | 0.48 [4.0] | 1.4 | [12.1] |
| | AQT060-005 | 5:1 | 18 [158] | 15 [130] | 13 [112] | 12 [102] | 48 [427] | 0.41 [3.6] | 1.3 | [11.8] |
| | AQT060-007 | 7:1 | 17 [149] | 14 [121] | 12 [102] | 11 [93] | 43 [381] | 0.37 [3.2] | 1.2 | [11.0] |
| | AQT060-010 | 10:1 | 16 [139] | 15 [130] | 14 [121] | 13 [112] | 47 [418] | 0.35 [3.1] | 1.1 | [10.1] |
| AQT080 | AQT080-003 | 3:1 | 59 [520] | 48 [427] | 43 [381] | 39 [344] | 165 [1459] | 2.4 [21.5] | 5.8 | [51.7] |
| | AQT080-004 | 4:1 | 70 [623] | 58 [511] | 53 [465] | 48 [427] | 165 [1459] | 1.9 [17.1] | 5.7 | [50.5] |
| | AQT080-005 | 5:1 | 65 [576] | 53 [465] | 47 [418] | 43 [381] | 165 [1459] | 1.7 [14.9] | 5.5 | [49.1] |
| | AQT080-007 | 7:1 | 63 [558] | 50 [446] | 45 [400] | 40 [353] | 165 [1459] | 1.5 [13.0] | 4.9 | [43.0] |
| | AQT080-008 | 8:1 | 62 [549] | 49 [434] | 45 [398] | 42 [372] | 165 [1460] | 1.4 [12.6] | 4.6 | [41.0] |
| AQT120 | AQT080-010 | 10:1 | 54 [474] | 48 [427] | 45 [400] | 43 [381] | 165 [1459] | 1.4 [12.3] | 4.9 | [43.2] |
| | AQT120-003 | 3:1 | 90 [799] | 74 [650] | 65 [576] | 59 [520] | 298 [2639] | 9.0 [80] | 12.1 | [107] |
| | AQT120-004 | 4:1 | 107 [948] | 89 [790] | 79 [697] | 74 [650] | 298 [2639] | 7.3 [65] | 11.7 | [103] |
| | AQT120-005 | 5:1 | 99 [873] | 81 [716] | 71 [632] | 65 [576] | 298 [2639] | 6.5 [57] | 11.3 | [100] |
| | AQT120-007 | 7:1 | 97 [855] | 79 [697] | 68 [604] | 63 [558] | 298 [2639] | 5.7 [51] | 10.6 | [94] |
| AQT160 | AQT120-010 | 10:1 | 87 [771] | 79 [697] | 74 [650] | 69 [613] | 298 [2639] | 5.4 [48] | 9.8 | [87] |
| | AQT160-003 | 3:1 | 317 [2806] | 257 [2277] | 228 [2016] | 209 [1849] | 876 [7750] | 37 [327] | 42.4 | [375] |
| | AQT160-004 | 4:1 | 371 [3280] | 305 [2695] | 272 [2407] | 251 [2221] | 876 [7750] | 27 [239] | 39.7 | [351] |
| | AQT160-005 | 5:1 | 350 [3094] | 284 [2509] | 251 [2221] | 230 [2035] | 876 [7750] | 22 [195] | 37.6 | [333] |
| | AQT160-007 | 7:1 | 344 [3048] | 278 [2463] | 246 [2174] | 225 [1989] | 876 [7750] | 19 [168] | 34.6 | [306] |
| AQT160 | AQT160-010 | 10:1 | 222 [1961] | 198 [1756] | 185 [1635] | 175 [1552] | 876 [7750] | 17 [150] | 31.2 | [276] |

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

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

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

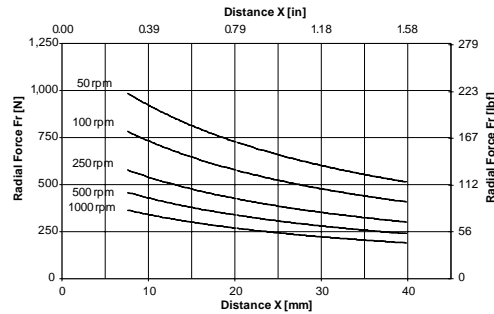
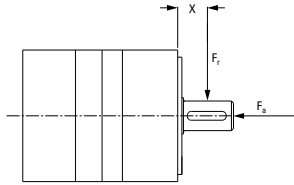
Specifications subject to change without notice.

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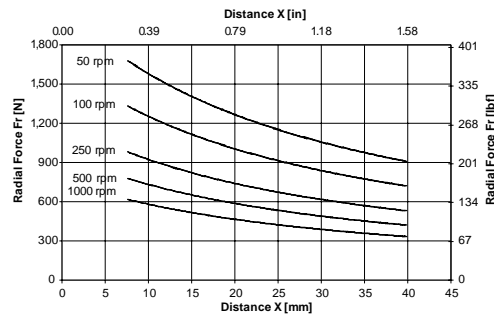
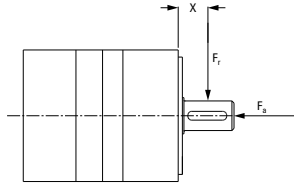
Radial and Axial Load Ratings

AQT060



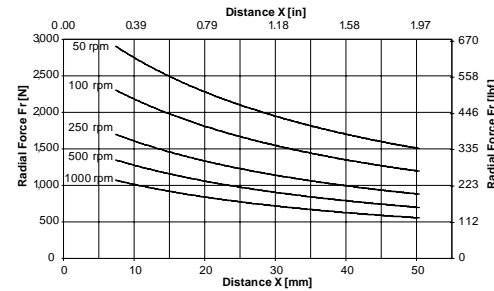
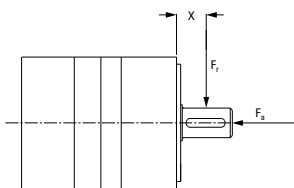
| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 2542 [571] |
| 100 | 2017 [454] |
| 250 | 1486 [334] |
| 500 | 1180 [265] |
| 1000 | 936 [211] |

AQT080



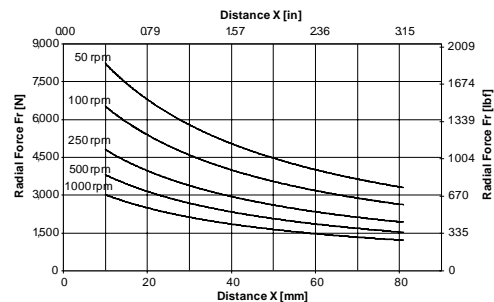
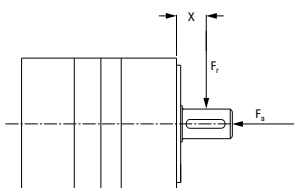
| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 3780 [850] |
| 100 | 3000 [675] |
| 250 | 2211 [497] |
| 500 | 1755 [394] |
| 1000 | 1393 [313] |

AQT120



| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 6894 [1550] |
| 100 | 5471 [1230] |
| 250 | 4034 [907] |
| 500 | 3203 [720] |
| 1000 | 2540 [571] |

AQT160



| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 14,122 [3175] |
| 100 | 11,209 [2520] |
| 250 | 8260 [1857] |
| 500 | 6556 [1474] |
| 1000 | 5204 [1170] |

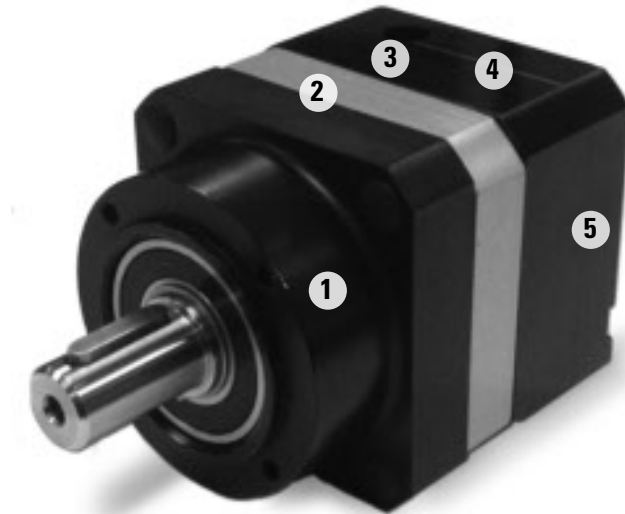
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 20,000 hours for the mean output speed.



XTRUE™**True Planetary™ Gearheads**

| Ready for Immediate Delivery | |
|------------------------------|-----------------------------------|
| Precision | 13 arc-minutes |
| Frame Sizes | 40mm, 60mm, 80mm, 120mm and 160mm |
| Torque Capacity | up to 876 Nm |
| Ratio Availability | 3:1 thru 100:1 |
| Radial load capacity | up to 3730 N |
| Mounting System | RediMount™ |

- ① **Sealed deep groove ball bearings**
provide high radial load carrying capability
- ② **HRC 55-60 steel gears**
provide superior wear resistance
and increased backlash integrity
- ③ **Sealed deep groove ball bearing**
provides precision alignment of sun gear
- ④ **RediMount™ system**
provides error-free motor installation
- ⑤ **Anodized aluminum housing**
reduces weight and prevents corrosion



XTRUE™

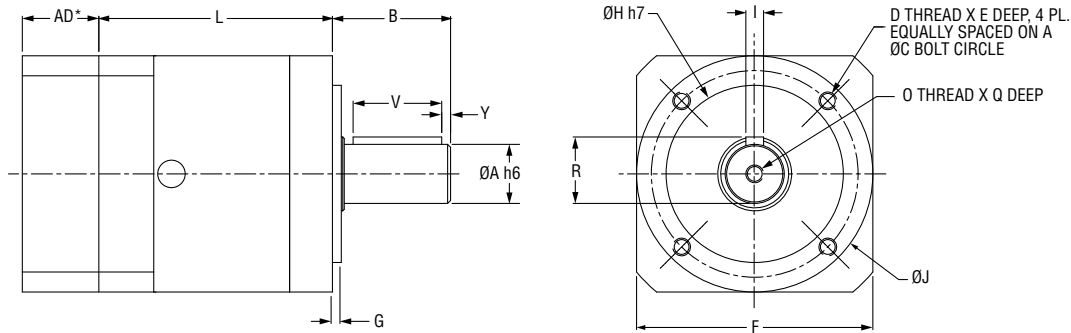
True Planetary™ Gearheads

Introduction

The XTRUE Series is a new precision gearhead that complements our True Planetary™ Gearhead line, already the largest selection of planetary gearheads in the world.

Features and Benefits

- Frame sizes (5): 40mm, 60mm, 80mm, 120mm, 160mm
- Precision: 13 arc-mins
- Torque capacity: up to 876 Nm
- Ratio availability: 3:1 thru 100:1
- Move a larger load more easily and quietly with True planetary gearing through improved load capacity, lower backlash and quieter operation.
- Experience less downtime with the flexible mounting system: RediMount™ system mounts to any motor in 3 easy steps; align, mount and tighten.
- Simplify replacement with the tapped face output which enables easy drop-in replacement.
- Go green on your machine when the assembly and all components meet EU Directive 2002/95/EC (RoHS)

XTRUE™**True Planetary™ Gearheads**

*AD = Adapter Length

Adapter Length will vary depending on motor. Consult customer service for details.

Dimensions

| Part Number | A Output Shaft Diameter mm [in] | B Output Shaft Length mm [in] | Y Shaft End Distance mm [in] | V Keyway Length mm [in] | R Keyway Height mm [in] | I Key Width mm [in] | H Pilot Diameter mm [in] | J Body Diameter mm [in] | G Pilot Length mm [in] |
|-------------|---------------------------------------|-------------------------------------|------------------------------------|-------------------------------|-------------------------------|---------------------------|--------------------------------|-------------------------------|------------------------------|
| XT040 | 10 [0.39] | 26 [1.02] | 2.5 [0.10] | 18 [0.71] | 11.2 [0.44] | 3 [0.12] | 26 [1.02] | 40 [1.57] | 2 [0.08] |
| XT060 | 14 [0.55] | 35 [1.37] | 2.5 [0.10] | 25 [0.98] | 16 [0.63] | 5 [0.20] | 40 [1.57] | 60 [2.36] | 3 [0.12] |
| XT080 | 20 [0.79] | 40 [1.57] | 4.0 [0.16] | 28 [1.10] | 22.5 [0.89] | 6 [0.24] | 60 [2.36] | 80 [3.15] | 3 [0.12] |
| XT120 | 25 [0.98] | 55 [2.16] | 5.0 [0.20] | 40 [1.57] | 28 [1.10] | 8 [0.31] | 80 [3.15] | 115 [4.53] | 4 [0.16] |
| XT160 | 40 [1.57] | 87 [3.42] | 8.0 [0.32] | 65 [2.55] | 43 [1.69] | 12 [0.47] | 130 [5.12] | 160 [6.30] | 5 [0.20] |

Dimensions

| Part Number | D Thread | E Thread Depth mm [in] | O Output Shaft Thread | Q Thread Depth mm [in] | F Flange Square mm [in] | L Length mm [in] | | C Bolt Circle mm [in] |
|-------------|-------------|------------------------------|--------------------------|------------------------------|-------------------------------|---------------------|--------------|-----------------------------|
| | | | | | | 3:1 - 10:1 | 15:1 - 100:1 | |
| XT040 | M4 | 6 [0.24] | M3 | 9 [0.35] | 42 [1.65] | 36.5 [1.43] | 49.5 [1.94] | 34 [1.34] |
| XT060 | M5 | 8 [0.31] | M5 | 12 [0.47] | 61 [2.40] | 51 [2.00] | 68 [2.67] | 52 [2.05] |
| XT080 | M6 | 10 [0.39] | M6 | 16 [0.63] | 90 [3.54] | 67 [2.64] | 90 [3.54] | 70 [2.76] |
| XT120 | M10 | 16 [0.63] | M10 | 22 [0.87] | 119 [4.53] | 87.3 [3.44] | 179 [4.67] | 100 [3.94] |
| XT160 | M12 | 20 [0.79] | M16 | 36 [1.42] | 142 [5.59] | 119.6 [4.71] | 168.9 [6.65] | 145 [5.71] |

Specifications

| Part Number | Stages | Backlash (arc-min) | Efficiency | Weight | | Ratio Availability |
|-------------|--------|-----------------------|------------|--------|--------|---|
| | | | | kg | [lbs] | |
| XT040 | 1 | 13 | 93% | 0.45 | [1.0] | 3:1, 5:1, 10:1 |
| | 2 | 15 | 88% | 0.5 | [1.1] | 15:1; 25:1, 30:1, 50:1, 100:1 |
| XT060 | 1 | 13 | 93% | 1.0 | [2.2] | 3:1, 4:1, 5:1, 7:1; 10:1 |
| | 2 | 15 | 88% | 1.2 | [2.6] | 15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1 |
| XT080 | 1 | 13 | 93% | 3.0 | [6.6] | 3:1, 4:1, 5:1, 7:1; 8:1; 10:1 |
| | 2 | 15 | 88% | 3.7 | [8.1] | 15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 80:1; 100:1 |
| XT120 | 1 | 13 | 93% | 5.7 | [12.5] | 3:1, 4:1, 5:1, 7:1; 10:1 |
| | 2 | 15 | 88% | 7.3 | [16.1] | 15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1 |
| XT160 | 1 | 13 | 93% | 12.8 | [28.2] | 3:1, 4:1, 5:1, 7:1; 10:1 |
| | 2 | 15 | 88% | 17.2 | [37.8] | 15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1 |

Specifications subject to change without notice.

Performance Specifications

| | Part Number | Ratio | 20000 Hour Life | | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec ² *10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------|-------------|-------|------------------------------|------------------------------|------------------------------|------------------------------|---------------------|--|--|
| | | | T _r (1000 rpm) | T _r (2000 rpm) | T _r (3000 rpm) | T _r (4000 rpm) | | | |
| | | | Nm [in-lb] | Nm [in-lb] | Nm [in-lb] | Nm [in-lb] | | | |
| XT040 | XT040-003 | 3:1 | 5.2 [46] | 4.2 [37] | 3.7 [33] | 3.4 [30] | 15.6 [138] | 0.013 [0.12] | 0.7 [6.2] |
| | XT040-005 | 5:1 | 6.1 [54] | 5.3 [47] | 3.6 [32] | 4.3 [38] | 18.3 [162] | 0.005 [0.04] | 0.7 [6.2] |
| | XT040-010 | 10:1 | 5.8 [51] | 4.6 [41] | 4.1 [36] | 3.7 [33] | 17.2 [152] | 0.003 [0.03] | 0.7 [6.2] |
| | XT040-015 | 15:1 | 8.4 [74] | 6.8 [60] | 6.0 [53] | 5.5 [49] | 25.2 [223] | 0.004 [0.04] | 0.7 [6.2] |
| | XT040-025 | 25:1 | 9.3 [82] | 7.6 [67] | 6.7 [59] | 6.1 [54] | 27.8 [246] | 0.004 [0.04] | 0.7 [6.2] |
| | XT040-030 | 30:1 | 9.5 [84] | 8.4 [74] | 7.5 [66] | 6.8 [60] | 28.6 [253] | 0.003 [0.03] | 0.7 [6.2] |
| | XT040-050 | 50:1 | 11.3 [100] | 9.3 [82] | 8.2 [73] | 7.6 [67] | 33.8 [299] | 0.003 [0.03] | 0.7 [6.2] |
| | XT040-100 | 100:1 | 8.1 [72] | 7.5 [66] | 7.1 [63] | 6.9 [61] | 24.4 [216] | 0.003 [0.03] | 0.7 [6.2] |
| XT060 | XT060-003 | 3:1 | 16 [139] | 13 [112] | 12 [102] | 11 [93] | 55 [483] | 0.52 [4.6] | 1.8 [15.9] |
| | XT060-004 | 4:1 | 20 [177] | 17 [149] | 15 [130] | 14 [121] | 46 [409] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-005 | 5:1 | 18 [158] | 15 [130] | 13 [112] | 12 [102] | 48 [427] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-007 | 7:1 | 17 [149] | 14 [121] | 12 [102] | 11 [93] | 43 [381] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-010 | 10:1 | 16 [139] | 15 [130] | 14 [121] | 13 [112] | 47 [418] | 0.44 [3.9] | 1.8 [15.9] |
| | XT060-015 | 15:1 | 26 [232] | 21 [186] | 19 [167] | 17 [149] | 55 [483] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-020 | 20:1 | 27 [242] | 25 [223] | 22 [195] | 21 [186] | 48 [427] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-025 | 25:1 | 25 [223] | 23 [204] | 20 [177] | 19 [167] | 55 [483] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-030 | 30:1 | 29 [260] | 26 [232] | 23 [204] | 21 [186] | 55 [483] | 0.46 [4.1] | 1.8 [15.9] |
| | XT060-040 | 40:1 | 28 [251] | 27 [242] | 27 [242] | 25 [223] | 48 [427] | 0.44 [3.9] | 1.8 [15.9] |
| | XT060-050 | 50:1 | 26 [232] | 25 [223] | 25 [223] | 23 [204] | 55 [483] | 0.44 [3.9] | 1.8 [15.9] |
| | XT060-070 | 70:1 | 25 [223] | 24 [214] | 24 [214] | 22 [195] | 48 [427] | 0.44 [3.9] | 1.8 [15.9] |
| | XT060-100 | 100:1 | 21 [186] | 20 [177] | 19 [167] | 18 [158] | 43 [381] | 0.44 [3.9] | 1.8 [15.9] |
| XT080 | XT080-003 | 3:1 | 59 [520] | 48 [427] | 43 [381] | 39 [344] | 165 [1459] | 2.2 [19.5] | 5.4 [47.8] |
| | XT080-004 | 4:1 | 70 [623] | 58 [511] | 53 [465] | 48 [427] | 165 [1459] | 1.8 [15.9] | 5.4 [47.8] |
| | XT080-005 | 5:1 | 65 [576] | 53 [465] | 47 [418] | 43 [381] | 165 [1459] | 1.8 [15.9] | 5.4 [47.8] |
| | XT080-007 | 7:1 | 63 [558] | 50 [446] | 45 [400] | 40 [353] | 165 [1459] | 1.7 [15.0] | 5.4 [47.8] |
| | XT080-008 | 8:1 | 62 [549] | 49 [434] | 45 [398] | 42 [372] | 165 [1460] | 1.6 [14.2] | 5.4 [47.8] |
| | XT080-010 | 10:1 | 54 [474] | 48 [427] | 45 [400] | 43 [381] | 165 [1459] | 1.8 [15.9] | 5.4 [47.8] |
| | XT080-015 | 15:1 | 90 [799] | 78 [688] | 69 [613] | 63 [558] | 175 [1552] | 1.8 [15.9] | 5.4 [47.8] |
| | XT080-020 | 20:1 | 92 [818] | 88 [781] | 81 [716] | 75 [660] | 175 [1552] | 1.5 [13.3] | 5.4 [47.8] |
| | XT080-025 | 25:1 | 87 [771] | 83 [734] | 76 [669] | 69 [613] | 175 [1552] | 1.7 [15.0] | 5.4 [47.8] |
| | XT080-030 | 30:1 | 100 [883] | 90 [799] | 85 [753] | 78 [688] | 175 [1552] | 1.7 [15.0] | 5.4 [47.8] |
| | XT080-040 | 40:1 | 96 [846] | 92 [818] | 90 [799] | 88 [781] | 175 [1552] | 1.6 [14.2] | 5.4 [47.8] |
| | XT080-050 | 50:1 | 90 [799] | 87 [771] | 85 [753] | 83 [734] | 175 [1552] | 1.6 [14.2] | 5.4 [47.8] |
| | XT080-070 | 70:1 | 88 [781] | 85 [753] | 83 [734] | 82 [725] | 175 [1552] | 1.6 [14.2] | 5.4 [47.8] |
| | XT080-080 | 80:1 | 84 [743] | 80 [708] | 78 [690] | 74 [655] | 175 [1549] | 1.6 [14.2] | 5.4 [47.8] |
| | XT080-100 | 100:1 | 72 [641] | 67 [595] | 63 [558] | 61 [539] | 175 [1552] | 1.6 [14.2] | 5.4 [47.8] |

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

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

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

Specifications subject to change without notice.

XTRUE™**True Planetary™ Gearheads****Performance Specifications**

| | Part Number | Ratio | 20000 Hour Life | | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec ² *10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-----------|-------------|------------|------------------------------|------------------------------|------------------------------|------------------------------|---------------------|--|--|
| | | | T _r (1000 rpm) | T _r (2000 rpm) | T _r (3000 rpm) | T _r (4000 rpm) | | | |
| | | | Nm [in-lb] | Nm [in-lb] | Nm [in-lb] | Nm [in-lb] | | | |
| XT120 | XT120-003 | 3:1 | 90 [799] | 74 [650] | 65 [576] | 59 [520] | 298 [2639] | 4.4 [39] | 17.4 [154.0] |
| | XT120-004 | 4:1 | 107 [948] | 89 [790] | 79 [697] | 74 [650] | 298 [2639] | 3 [27] | 17.4 [154.0] |
| | XT120-005 | 5:1 | 99 [873] | 81 [716] | 71 [632] | 65 [576] | 298 [2639] | 2.9 [26] | 17.4 [154.0] |
| | XT120-007 | 7:1 | 97 [855] | 79 [697] | 68 [604] | 63 [558] | 298 [2639] | 2.8 [25] | 17.4 [154.0] |
| | XT120-010 | 10:1 | 87 [771] | 79 [697] | 74 [650] | 69 [613] | 298 [2639] | 2.5 [22] | 17.4 [154.0] |
| | XT120-015 | 15:1 | 146 [1292] | 119 [1050] | 105 [929] | 96 [846] | 298 [2639] | 2.9 [26] | 17.4 [154.0] |
| | XT120-020 | 20:1 | 169 [1496] | 139 [1227] | 124 [1097] | 114 [1013] | 298 [2639] | 2.9 [26] | 17.4 [154.0] |
| | XT120-025 | 25:1 | 161 [1422] | 130 [1152] | 116 [1022] | 106 [939] | 298 [2639] | 2.9 [26] | 17.4 [154.0] |
| | XT120-030 | 30:1 | 180 [1589] | 146 [1292] | 129 [1143] | 119 [1050] | 298 [2639] | 2.5 [22] | 17.4 [154.0] |
| | XT120-040 | 40:1 | 187 [1654] | 169 [1496] | 150 [1329] | 139 [1227] | 298 [2639] | 2.5 [22] | 17.4 [154.0] |
| | XT120-050 | 50:1 | 179 [1580] | 161 [1422] | 142 [1254] | 130 [1152] | 298 [2639] | 2.5 [22] | 17.4 [154.0] |
| | XT120-070 | 70:1 | 176 [1561] | 159 [1403] | 140 [1236] | 128 [1134] | 298 [2639] | 2.5 [22] | 17.4 [154.0] |
| XT120-100 | 100:1 | 120 [1059] | 109 [966] | 104 [920] | 100 [883] | 298 [2639] | 2.5 [22] | 17.4 [154.0] | |
| XT160 | XT160-003 | 3:1 | 317 [2806] | 257 [2277] | 228 [2016] | 209 [1849] | 876 [7750] | 23 [204] | 50.5 [446.9] |
| | XT160-004 | 4:1 | 371 [3280] | 305 [2695] | 272 [2407] | 251 [2221] | 876 [7750] | 15 [133] | 50.5 [446.9] |
| | XT160-005 | 5:1 | 350 [3094] | 284 [2509] | 251 [2221] | 230 [2035] | 876 [7750] | 14 [124] | 50.5 [446.9] |
| | XT160-007 | 7:1 | 344 [3048] | 278 [2463] | 246 [2174] | 225 [1989] | 876 [7750] | 15 [133] | 50.5 [446.9] |
| | XT160-010 | 10:1 | 222 [1961] | 198 [1756] | 185 [1635] | 175 [1552] | 876 [7750] | 12 [106] | 50.5 [446.9] |
| | XT160-015 | 15:1 | 508 [4498] | 417 [3689] | 370 [3271] | 339 [3001] | 876 [7750] | 15 [133] | 50.5 [446.9] |
| | XT160-020 | 20:1 | 513 [4544] | 481 [4256] | 428 [3791] | 395 [3494] | 876 [7750] | 15 [133] | 50.5 [446.9] |
| | XT160-025 | 25:1 | 492 [4358] | 460 [4070] | 407 [3605] | 374 [3308] | 876 [7750] | 15 [133] | 50.5 [446.9] |
| | XT160-030 | 30:1 | 562 [4971] | 508 [4498] | 455 [4024] | 417 [3689] | 876 [7750] | 12 [106] | 50.5 [446.9] |
| | XT160-040 | 40:1 | 536 [4739] | 513 [4544] | 500 [4423] | 481 [4256] | 876 [7750] | 13 [115] | 50.5 [446.9] |
| | XT160-050 | 50:1 | 515 [4553] | 492 [4358] | 479 [4237] | 460 [4070] | 876 [7750] | 12 [106] | 50.5 [446.9] |
| | XT160-070 | 70:1 | 509 [4507] | 487 [4312] | 474 [4191] | 455 [4024] | 876 [7750] | 12 [106] | 50.5 [446.9] |
| XT160-100 | 100:1 | 306 [2704] | 279 [2472] | 265 [2342] | 254 [2249] | 876 [7750] | 12 [106] | 50.5 [446.9] | |

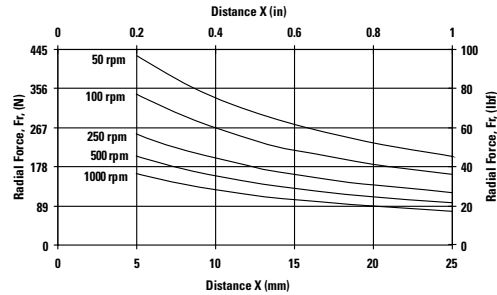
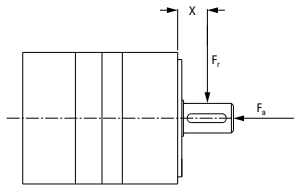
T_r = Rated output torque at rated speed for specific hours of life.T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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

Specifications subject to change without notice.

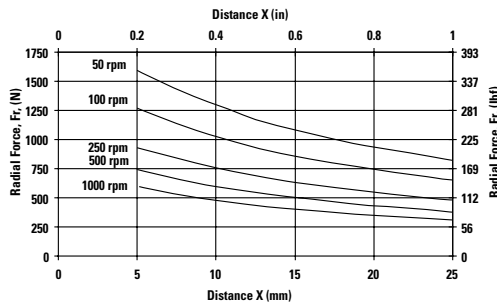
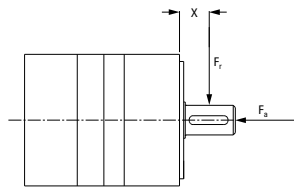
Radial and Axial Load Ratings

XT040



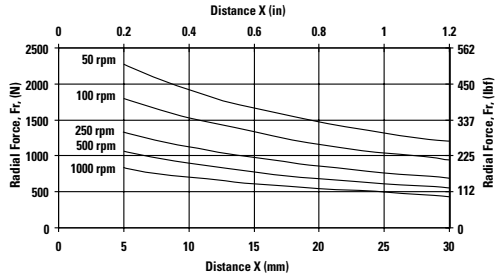
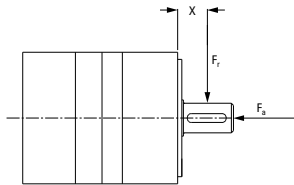
| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 737 [166] |
| 100 | 585 [132] |
| 250 | 431 [97] |
| 500 | 342 [77] |
| 1000 | 272 [61] |

XT060



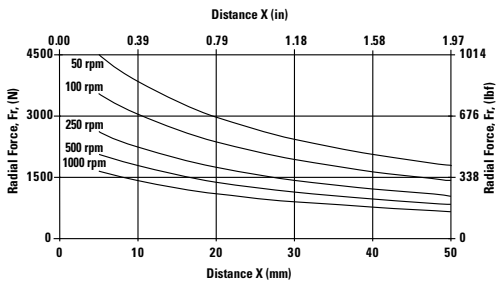
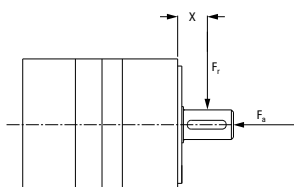
| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 2542 [571] |
| 100 | 2017 [454] |
| 250 | 1486 [334] |
| 500 | 1180 [265] |
| 1000 | 936 [211] |

XT080



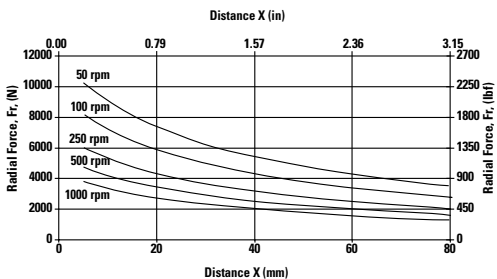
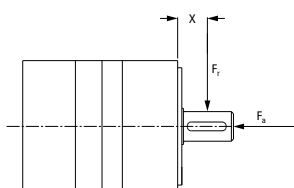
| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 3780 [850] |
| 100 | 3000 [675] |
| 250 | 2211 [497] |
| 500 | 1755 [394] |
| 1000 | 1393 [313] |

XT120



| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 6894 [1550] |
| 100 | 5471 [1230] |
| 250 | 4034 [907] |
| 500 | 3203 [720] |
| 1000 | 2540 [571] |

XT160



| Speed rpm | Axial Load, F_a N [lbf] |
|--------------|------------------------------|
| 50 | 14,122 [3175] |
| 100 | 11,209 [2520] |
| 250 | 8260 [1857] |
| 500 | 6556 [1474] |
| 1000 | 5204 [1170] |

These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 20,000 hours for the mean output speed.

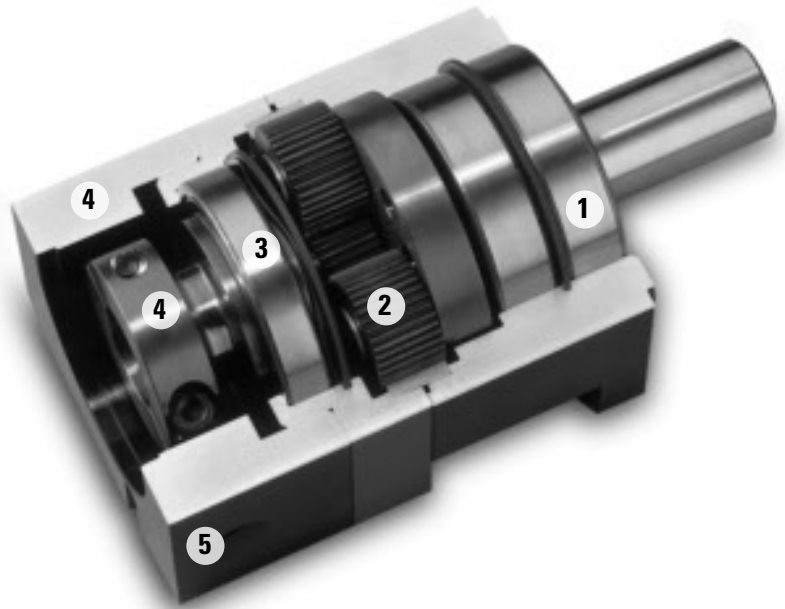
NemaTRUE™

True Planetary™ Gearheads

Ready for Immediate Delivery

| | |
|-----------------------------|-----------------------------------|
| Precision | 13 arc-minutes |
| Frame Sizes | 17, 23/60mm, 34/90mm and 42/115mm |
| Torque Capacity | up to 180 Nm |
| Ratio Availability | 3:1 thru 100:1 |
| Radial load capacity | up to 3730 N |
| Mounting System | RediMount™ |

- ① **Sealed deep groove ball bearings**
provide high radial load carrying capability
- ② **HRC 55-60 steel gears**
provide superior wear resistance
and increased backlash integrity
- ③ **Sealed deep groove ball bearing**
provides precision alignment of sun gear
- ④ **RediMount™ system**
provides error-free motor installation
- ⑤ **Anodized aluminum housing**
reduces weight and prevents corrosion



Micron True Planetary™ Gearheads
shipped within 24 hours!

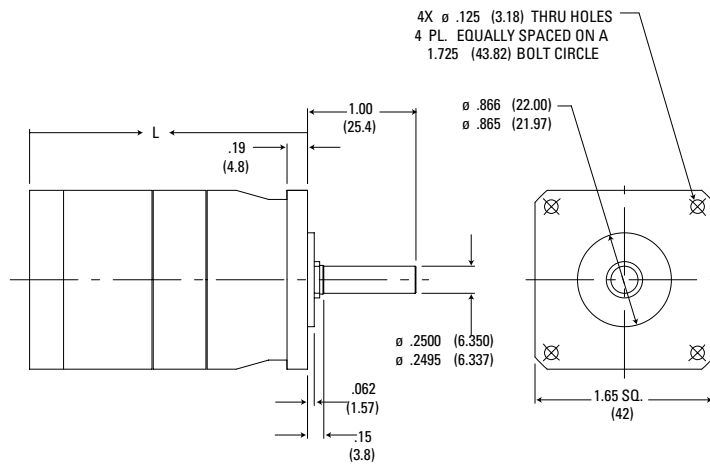


*Need it fast? Go to the back cover
of the catalog for details.*

NemaTRUE™ Size 17

True Planetary™ Gearheads

English



| Ratio ¹ | Dimension 'L' in [mm] | Backlash [arc-min] | Weight lb [kg] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 3:1 to 10:1 | 2.28 [58] | 13 max | .75 [0,34] | 93% |
| 15:1 to 100:1 | 2.77 [71] | 15 max | .95 [0,43] | 88% |

Dimensions are inch (mm)

Efficiency is calculated at 100% of the rated torque.

Total length may change depending on motor being used.

Performance Specifications

| Part Number | Ratio ¹ | 20000 Hour Life | | | | T _{peak} in-lb [Nm] | J in-lb-sec ² ×10 ⁻⁴ [kg-cm ²] | Torsional Stiffness in-lb/arc-min [Nm/arc-min] |
|-------------|--------------------|--|--|--|--|---------------------------------|--|--|
| | | 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] | | | |
| 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 and other custom options are also available, consult factory.

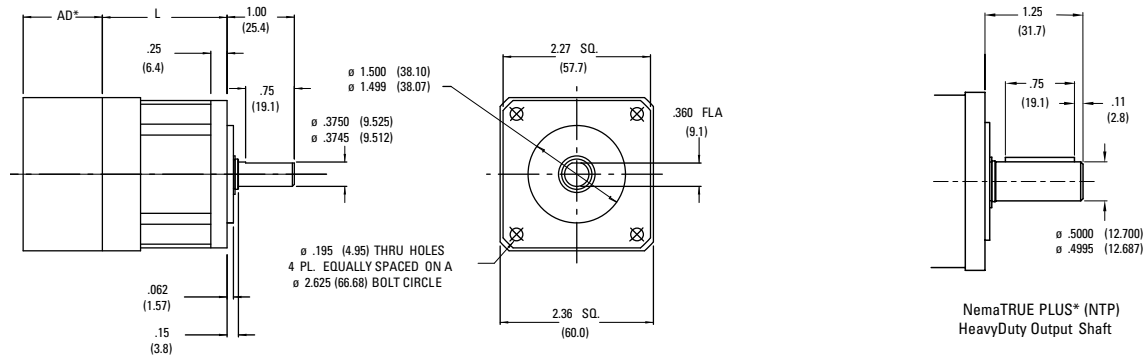
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

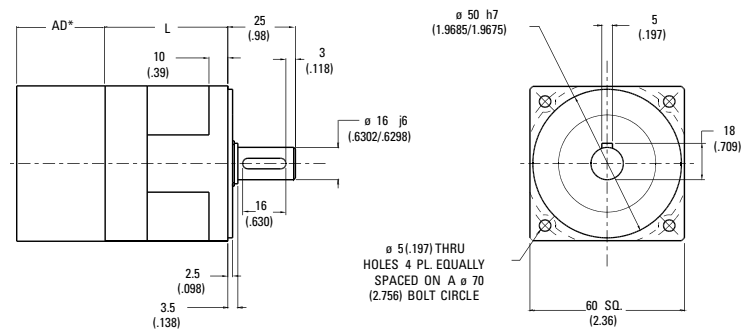
NemaTRUE™ Size 23/60

English

English - Dimensions are in (mm)



Metric - Dimensions are mm (in)



| Ratio ¹ | NT23 | NT60 | Backlash | | Weight lb [kg] | Efficiency |
|--------------------|--------------------------|--------------------------|-----------|----------------|-------------------|------------|
| | Dimension 'L' in [mm] | Dimension 'L' in [mm] | Precision | High Precision | | |
| 3:1 to 10:1 | 1.92 [48,8] | 2.07 [52,6] | 13 max | 8 max | 1.5 [0,7] | 93% |
| 15:1 to 100:1 | 2.61 [66,3] | 2.76 [70,1] | 15 max | 9 max | 1.9 [0,9] | 88% |

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | | Ratio ¹ | 20000 Hour Life | | | | Tpeak in-lb [Nm] | J in-lb-sec ² x10 ⁻⁴ [kg-cm ²] | 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/arc-min [Nm/arc-min] | 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] | |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

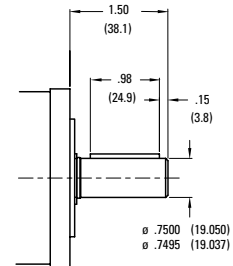
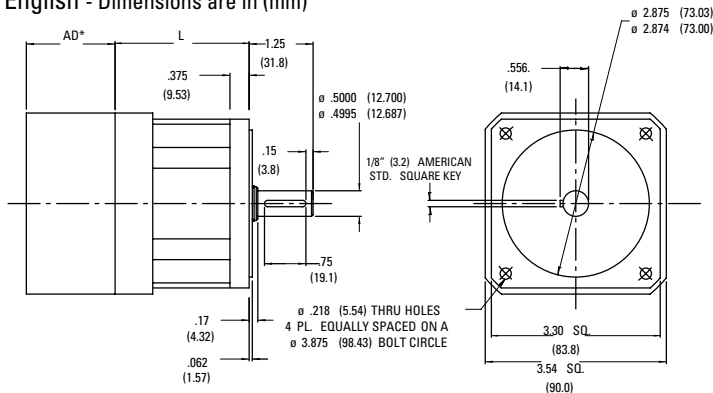
¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.T_r = Rated output torque at rated speed for specific hours of life.T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft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

NemaTRUE™ Size 34/90

True Planetary™ Gearheads

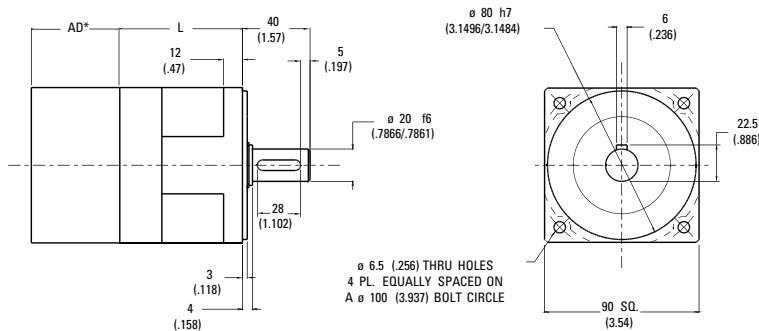
English

English - Dimensions are in (mm)



NemaTRUE PLUS* (NTP)
HeavyDuty Output Shaft

Metric - Dimensions are mm (in)



| Ratio¹ | NT34 Dimension 'L' in [mm] | 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] | 93% |
| 15:1 to 100:1 | 3.53 [89,6] | 3.53 [89,7] | 15 max | 9 max | 5.6 [2,5] | 88% |

AD** = Adapter length
Adapter length will vary depending on motor.
Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | | Ratio ¹ | 20000 Hour Life | | | | T _{peak} in-lb [Nm] | J in-lb·sec ² ×10 ⁻⁴ [kg·cm ²] | 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/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] | |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

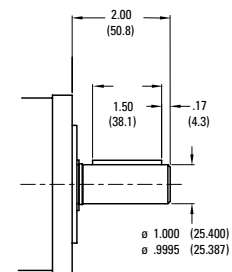
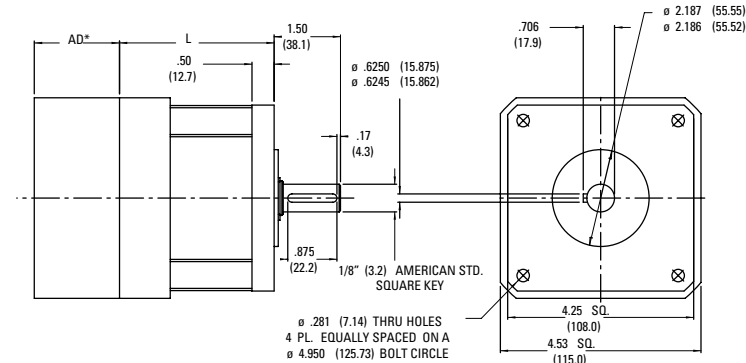
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

NemaTRUE™ Size 42/115

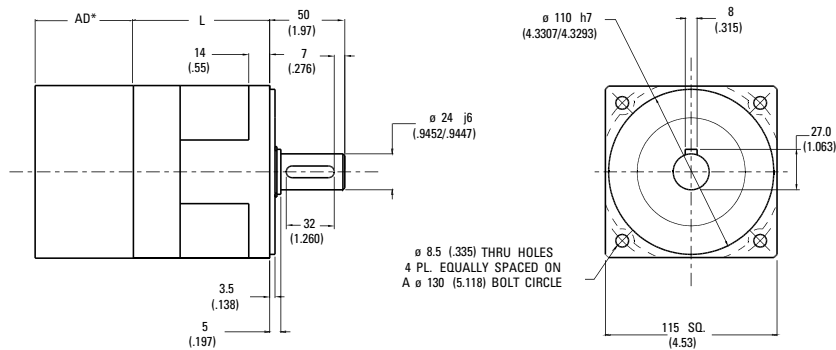
True Planetary™ Gearheads

English - Dimensions are in (mm)



NemaTRUE PLUS* (NTP)
HeavyDuty Output Shaft

Metric - Dimensions are mm (in)



| Ratio ¹ | NT42 | NT115 | Backlash | | Weight lb [kg] | Efficiency |
|--------------------|--------------------------|--------------------------|-----------|----------------|-------------------|------------|
| | Dimension 'L' in [mm] | Dimension 'L' in [mm] | Precision | High Precision | | |
| 3:1 to 10:1 | 3.49 [88.6] | 3.46 [87.9] | 13 max | 8 max | 8.9 [4.0] | 93% |
| 15:1 to 100:1 | 4.72 [119.9] | 4.69 [119.1] | 15 max | 9 max | 11.7 [5.3] | 88% |

AD** = Adapter length
Adapter length will vary depending on motor.
Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | | Ratio ¹ | 20000 Hour Life | | | | Tpeak in-lb [Nm] | J in-lb·sec²x10 ⁴ [kg·cm²] | 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/arc-min [Nm/arc-min] | NT | NTP |
| | | | | | | | | | | | |
| 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] | |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

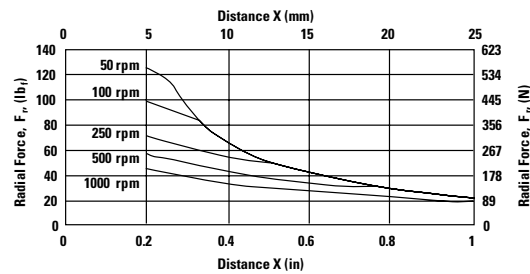
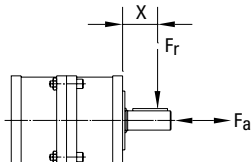
¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

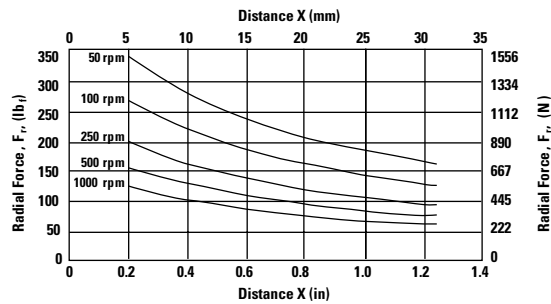
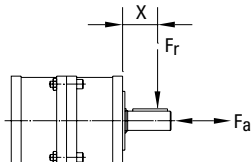
Radial and Axial Load Ratings

NT17



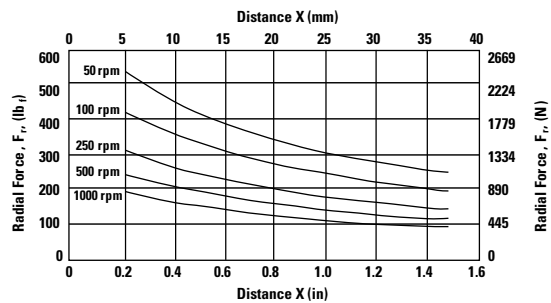
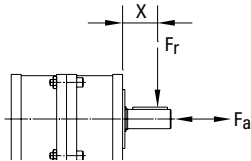
| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 250 | 138 [614] |

NT23, NTP23, NT60



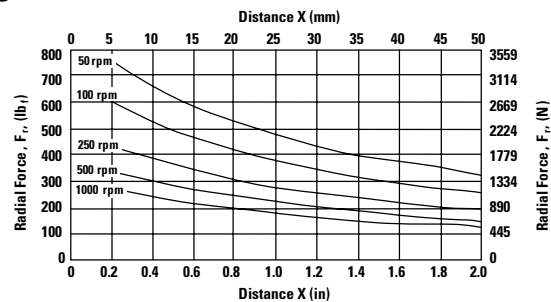
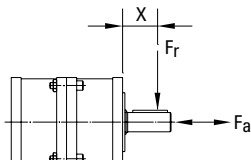
| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 250 | 310 [1379] |

NT34, NTP34, NT90



| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 250 | 510 [2269] |

NT42, NTP42, NT115



| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 250 | 760 [3380] |

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_{mount} , as described on page 10,

NemaTRUE™ 90

Right Angle Gearheads

| Ready for Immediate Delivery | |
|------------------------------|-----------------|
| Precision | 13 arc-minutes |
| Frame Sizes | NEMA 23, 34, 42 |
| Torque Capacity | up to 255 Nm |
| Ratio Availability | 1:1 thru 500:1 |
| Radial load capacity | up to 2900 N |
| Mounting System | RediMount™ |

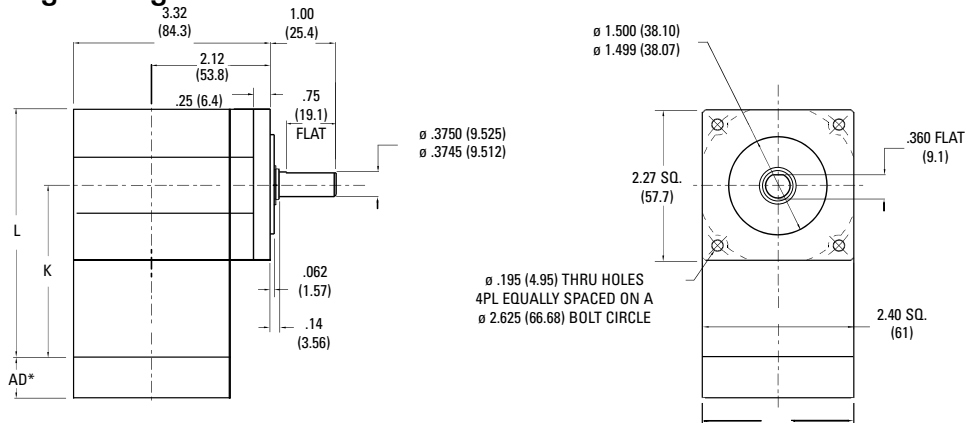
- 1 Tapered Roller bearings**
 provide high radial and axial load capacity
- 2 Innovative PowerTRUE* gearing**
 delivers smooth, quiet geared reduction
- 3 Tapered roller bearings**
 provide high axial load carrying capabilities
- 4 HRC 55-60 steel gears**
 provide superior wear resistance and increased backlash integrity
- 5 RediMount system**
 provides error-free motor installation



NemaTRUE™ 90 Size 23

Right Angle Gearheads

English



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 3.79 [96] | 4.99 [127] | 15 max | 3.4 [1,5] | 93% |
| 60:1 to 500:1 | 4.48 [114] | 5.68 [144] | 15 max | 3.8 [1,6] | 88% |

Dimensions are inch (mm)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} in-lb [Nm] | 20000 Hour Life | | | J in-lb-sec ² x10 ⁻⁴ [kg-cm ²] | Torsional Stiffness in-lb/arc-min [Nm/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|---|
| | | T _r (1000 rpm) in-lb [Nm] | T _r (3000 rpm) in-lb [Nm] | T _r (5000 rpm) in-lb [Nm] | | T _r (1000 rpm) in-lb [Nm] | T _r (3000 rpm) in-lb [Nm] | T _r (5000 rpm) in-lb [Nm] | | |
| NTR23-001 | 1:1 | 59 [7] | 54 [6] | 49 [6] | 195 [22] | 54 [6] | 50 [6] | 45 [5] | 7.01 [0,79] | 5.6 [0,6] |
| NTR23-002 | 2:1 | 130 [15] | 118 [13] | 107 [12] | 360 [41] | 120 [14] | 109 [12] | 99 [11] | 3.59 [0,41] | 8.5 [1,0] |
| NTR23-003 | 3:1 | 83 [9] | 75 [9] | 68 [8] | 270 [31] | 76 [9] | 70 [8] | 63 [7] | 3.09 [0,35] | 9.6 [1,1] |
| NTR23-004 | 4:1 | 61 [7] | 56 [6] | 50 [6] | 238 [27] | 56 [6] | 51 [6] | 46 [5] | 2.87 [0,32] | 10.1 [1,1] |
| NTR23-005P | 5:1P | 50 [6] | 46 [5] | 41 [5] | 180 [20] | 46 [5] | 42 [5] | 38 [4] | 2.81 [0,32] | 10.3 [1,2] |
| NTR23-005T | 5:1T | 179 [20] | 153 [17] | 138 [16] | 366 [41] | 175 [20] | 132 [15] | 112 [13] | 3.69 [0,42] | 10.3 [1,2] |
| NTR23-006 | 6:1 | 153 [17] | 130 [15] | 126 [14] | 366 [41] | 149 [17] | 120 [14] | 116 [13] | 3.67 [0,41] | 6.7 [0,8] |
| NTR23-009 | 9:1 | 97 [11] | 83 [9] | 80 [9] | 289 [33] | 95 [11] | 76 [9] | 74 [8] | 3.08 [0,35] | 8.5 [1,0] |
| NTR23-010 | 10:1 | 157 [18] | 144 [16] | 130 [15] | 366 [41] | 155 [18] | 138 [16] | 120 [14] | 3.48 [0,39] | 6.6 [0,7] |
| NTR23-012 | 12:1 | 72 [8] | 61 [7] | 59 [7] | 252 [28] | 70 [8] | 56 [6] | 55 [6] | 2.95 [0,33] | 9.3 [1,1] |
| NTR23-015 | 15:1 | 100 [11] | 91 [10] | 83 [9] | 297 [34] | 99 [11] | 88 [10] | 76 [9] | 2.89 [0,33] | 9.8 [1,1] |
| NTR23-020 | 20:1 | 74 [8] | 67 [8] | 61 [7] | 366 [41] | 73 [8] | 64 [7] | 56 [6] | 2.76 [0,31] | 9.3 [1,0] |
| NTR23-025 | 25:1 | 60 [7] | 55 [6] | 50 [6] | 198 [22] | 60 [7] | 53 [6] | 46 [5] | 2.71 [0,31] | 9.8 [1,1] |
| NTR23-030 | 30:1 | 102 [12] | 98 [11] | 94 [11] | 305 [34] | 102 [11] | 96 [11] | 90 [10] | 2.83 [0,32] | 8.0 [0,9] |
| NTR23-040 | 40:1 | 75 [9] | 72 [8] | 69 [8] | 263 [30] | 75 [8] | 71 [8] | 67 [8] | 2.69 [0,30] | 9.0 [1,0] |
| NTR23-050 | 50:1 | 62 [7] | 59 [7] | 57 [6] | 203 [23] | 61 [7] | 58 [7] | 55 [6] | 2.64 [0,30] | 9.6 [1,1] |
| NTR23-060 | 60:1 | 163 [18] | 161 [18] | 158 [18] | 366 [41] | 163 [18] | 160 [18] | 157 [18] | 3.68 [0,42] | 6.5 [0,7] |
| NTR23-075 | 75:1 | 104 [12] | 102 [12] | 100 [11] | 311 [35] | 103 [12] | 101 [11] | 99 [11] | 2.95 [0,33] | 8.4 [0,9] |
| NTR23-090 | 90:1 | 104 [12] | 102 [12] | 101 [11] | 313 [35] | 103 [12] | 102 [11] | 100 [11] | 3.09 [0,35] | 8.3 [0,9] |
| NTR23-100 | 100:1 | 163 [18] | 162 [18] | 161 [18] | 366 [41] | 163 [18] | 161 [18] | 160 [18] | 3.50 [0,40] | 6.5 [0,7] |
| NTR23-120 | 120:1 | 76 [9] | 75 [9] | 74 [8] | 270 [31] | 76 [9] | 75 [8] | 73 [8] | 2.96 [0,33] | 9.2 [1,0] |
| NTR23-125 | 125:1 | 63 [7] | 62 [7] | 60 [7] | 207 [23] | 62 [7] | 61 [7] | 60 [7] | 2.76 [0,31] | 9.7 [1,1] |
| NTR23-150 | 150:1 | 104 [12] | 103 [12] | 102 [12] | 316 [36] | 104 [12] | 103 [12] | 102 [11] | 2.91 [0,33] | 8.4 [0,9] |
| NTR23-200 | 200:1 | 164 [19] | 163 [18] | 162 [18] | 366 [41] | 164 [18] | 163 [18] | 162 [18] | 3.43 [0,39] | 6.1 [0,7] |
| NTR23-250 | 250:1 | 63 [7] | 62 [7] | 62 [7] | 207 [23] | 63 [7] | 62 [7] | 61 [7] | 2.72 [0,31] | 9.7 [1,1] |
| NTR23-300 | 300:1 | 104 [12] | 104 [12] | 103 [12] | 319 [36] | 104 [12] | 104 [12] | 103 [12] | 2.84 [0,32] | 8.0 [0,9] |
| NTR23-400 | 400:1 | 77 [9] | 76 [9] | 76 [9] | 274 [31] | 77 [9] | 76 [9] | 76 [9] | 2.71 [0,31] | 9.0 [1,0] |
| NTR23-500 | 500:1 | 63 [7] | 63 [7] | 62 [7] | 207 [23] | 63 [7] | 63 [7] | 62 [7] | 2.66 [0,30] | 9.6 [1,1] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

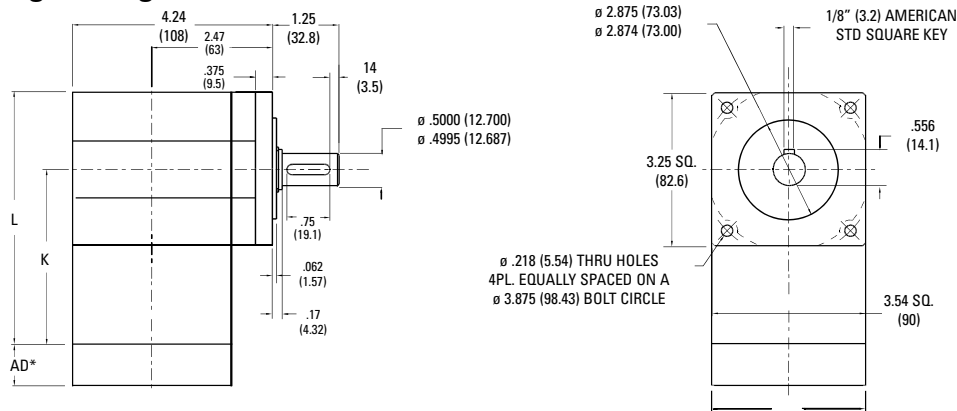
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

NemaTRUE™ 90 Size 34

Right Angle Gearheads

English



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 4.89 [124] | 6.66 [169] | 15 max | 7.4 [3,4] | 93% |
| 60:1 to 500:1 | 5.79 [147] | 7.56 [192] | 15 max | 8.8 [4,0] | 88% |

Dimensions are inch (mm)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} in-lb [Nm] | 20000 Hour Life | | | J in-lb-sec ² x 10 ⁻⁴ [kg-cm ²] | Torsional Stiffness in-lb/arc-min [Nm/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|---|--|
| | | T _r (1000 rpm) in-lb [Nm] | T _r (3000 rpm) in-lb [Nm] | T _r (5000 rpm) in-lb [Nm] | | T _r (1000 rpm) in-lb [Nm] | T _r (3000 rpm) in-lb [Nm] | T _r (5000 rpm) in-lb [Nm] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.T_r = Rated output torque at rated speed for specific hours of life.

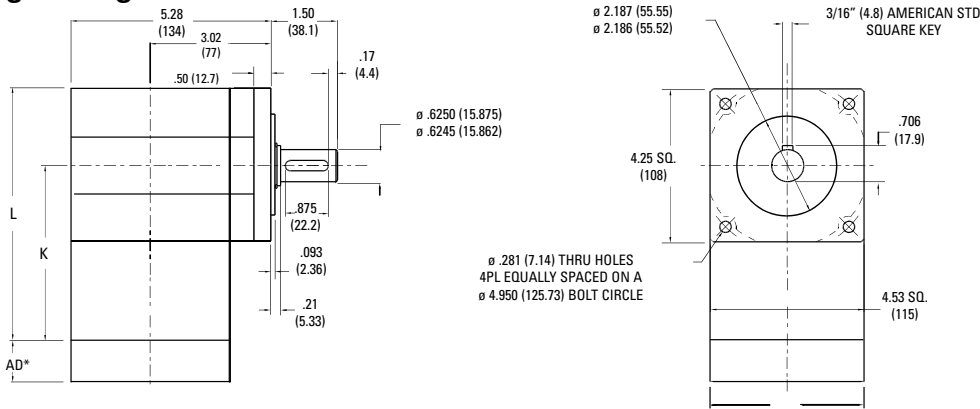
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

NemaTRUE™ 90 Size 42

Right Angle Gearheads

English



| Ratio¹ | 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] | 98% |
| 5:1T to 50:1 | 6.63 [168,4] | 8.90 [226] | 15 max | 14.8 [6,7] | 93% |
| 60:1 to 500:1 | 7.87 [200] | 10.13 [257] | 15 max | 17.6 [8,0] | 88% |

Dimensions are inch (mm)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10000 Hour Life | | | T _{peak} in-lb [Nm] | 20000 Hour Life | | | J in-lb-sec²x10⁻⁴ [kg-cm²] | Torsional Stiffness in-lb/arc-min [Nm/arc-min] |
|-------------|--------|------------------------------|------------------------------|------------------------------|---------------------------------|------------------------------|------------------------------|------------------------------|----------------------------------|---|
| | | T _r (1000 rpm) | T _r (3000 rpm) | T _r (5000 rpm) | | T _r (1000 rpm) | T _r (3000 rpm) | T _r (5000 rpm) | | |
| | | in-lb [Nm] | in-lb [Nm] | in-lb [Nm] | | in-lb [Nm] | in-lb [Nm] | in-lb [Nm] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

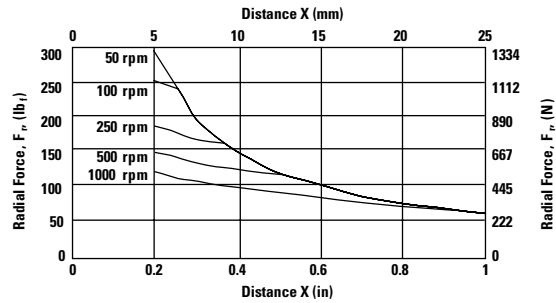
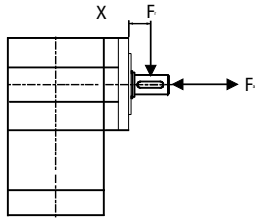
T_r = Rated output torque at rated speed for specific hours of life.

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.

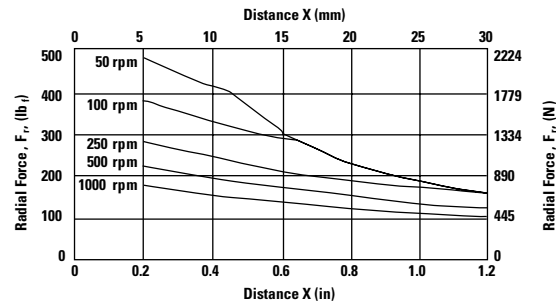
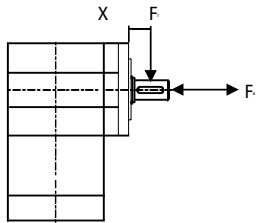
Radial and Axial Load Ratings

NTR23



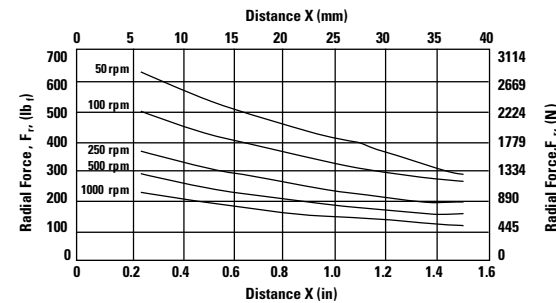
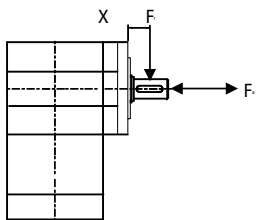
| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 50 | 250 [1110] |
| 100 | 200 [890] |
| 250 | 150 [670] |
| 500 | 120 [530] |
| 1000 | 90 [400] |

NTR34



| 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



| Speed rpm | Axial Load, F_a lb _f [N] |
|--------------|--|
| 50 | 460 [2050] |
| 100 | 370 [1650] |
| 250 | 270 [1200] |
| 500 | 210 [930] |
| 1000 | 170 [760] |

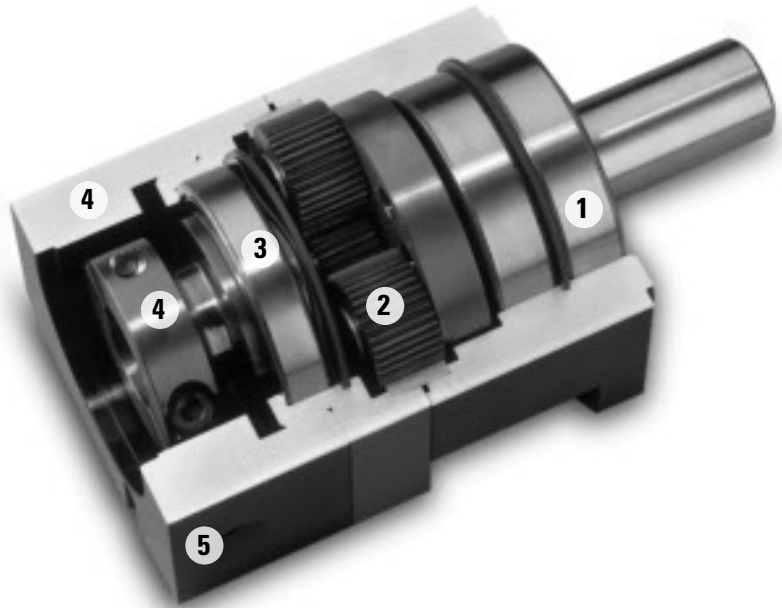
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout} , as described on page 10,



DuraTRUE™**True Planetary™ Gearheads****Ready for Immediate Delivery**

| | |
|-----------------------------|-----------------------------|
| Precision | 8 arc-minutes |
| Frame Sizes | 60mm, 90mm, 115mm and 142mm |
| Torque Capacity | up to 834 Nm |
| Ratio Availability | 3:1 thru 100:1 |
| Radial load capacity | up to 11150 N |
| Mounting System | RediMount™ |

- ① **Sealed deep groove ball bearings**
provide high radial load carrying capability
- ② **HRC 55-60 steel gears**
provide superior wear resistance
and increased backlash integrity
- ③ **Sealed deep groove ball bearing**
provides precision alignment of sun gear
- ④ **RediMount™ system**
provides error-free motor installation
- ⑤ **Anodized aluminum housing**
reduces weight and prevents corrosion



Micron True Planetary™ Gearheads
shipped within 24 hours!

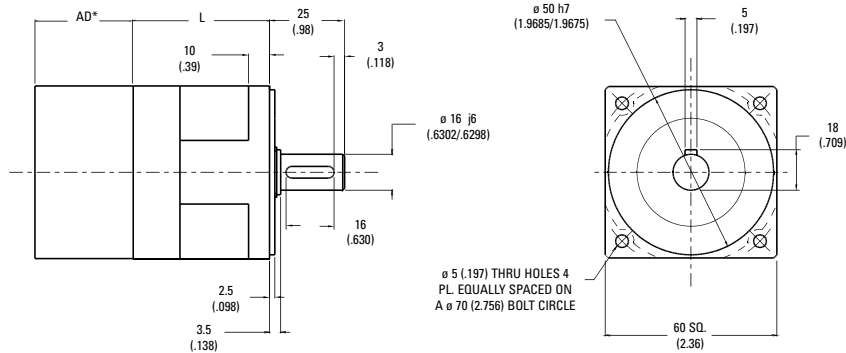


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of the catalog for details.*

DuraTRUE™ Size 60

True Planetary™ Gearheads

Metric



| Ratio¹ | 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] | 93% |
| 15:1 to 100:1 | 70 [2.76] | 9 max | 1,2 [2.7] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10000 Hour Life | | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | | J kg-cm² [in-lb-sec²x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------|--|--|--|--|---------------------------------|--|--|--|--|---|--|
| | | 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] | | 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] | | |
| DT60-003 | 3:1 | 15 [134] | 12 [109] | 11 [97] | 89 [10] | 52 [460] | 12 [109] | 10 [89] | 9 [79] | 8 [72] | 0,52 [4.6] | 0,9 [8.1] |
| DT60-004 | 4:1 | 19 [168] | 16 [142] | 14 [124] | 115 [13] | 44 [385] | 16 [142] | 13 [115] | 12 [106] | 11 [97] | 0,46 [4.1] | 0,9 [7.9] |
| DT60-005 | 5:1 | 17 [148] | 14 [120] | 12 [106] | 98 [11] | 46 [410] | 14 [120] | 11 [98] | 10 [86] | 9 [79] | 0,46 [4.1] | 0,9 [7.9] |
| DT60-007 | 7:1 | 16 [142] | 13 [115] | 11 [97] | 89 [10] | 41 [363] | 13 [115] | 10 [89] | 9 [80] | 8 [71] | 0,46 [4.1] | 0,9 [7.9] |
| DT60-010 | 10:1 | 15 [134] | 14 [121] | 13 [114] | 108 [12] | 45 [400] | 14 [124] | 13 [112] | 11 [100] | 10 [92] | 0,44 [3.9] | 0,8 [6.8] |
| DT60-015 | 15:1 | 25 [218] | 20 [177] | 18 [157] | 144 [16] | 52 [460] | 20 [177] | 16 [144] | 14 [127] | 13 [117] | 0,46 [4.1] | 0,9 [8.2] |
| DT60-020 | 20:1 | 26 [230] | 24 [212] | 21 [186] | 177 [20] | 46 [407] | 24 [212] | 20 [177] | 18 [159] | 17 [150] | 0,46 [4.1] | 0,9 [7.9] |
| DT60-025 | 25:1 | 24 [214] | 22 [195] | 19 [172] | 158 [18] | 52 [456] | 22 [195] | 18 [158] | 16 [140] | 15 [128] | 0,46 [4.1] | 0,9 [8.3] |
| DT60-030 | 30:1 | 28 [246] | 25 [218] | 22 [193] | 177 [20] | 52 [460] | 25 [218] | 20 [177] | 18 [157] | 16 [144] | 0,44 [3.9] | 1,0 [8.7] |
| DT60-040 | 40:1 | 27 [239] | 26 [230] | 26 [230] | 212 [24] | 46 [407] | 27 [239] | 24 [212] | 21 [186] | 20 [177] | 0,44 [3.9] | 0,9 [8.3] |
| DT60-050 | 50:1 | 25 [222] | 24 [214] | 24 [209] | 195 [22] | 52 [460] | 25 [217] | 22 [195] | 19 [172] | 18 [158] | 0,44 [3.9] | 0,9 [8.2] |
| DT60-070 | 70:1 | 24 [212] | 23 [204] | 23 [204] | 186 [21] | 46 [407] | 24 [212] | 21 [186] | 18 [159] | 17 [150] | 0,44 [3.9] | 0,9 [8.3] |
| DT60-100 | 100:1 | 20 [180] | 19 [165] | 18 [157] | 151 [17] | 51 [447] | 19 [167] | 17 [153] | 16 [145] | 16 [140] | 0,44 [3.9] | 0,9 [7.8] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

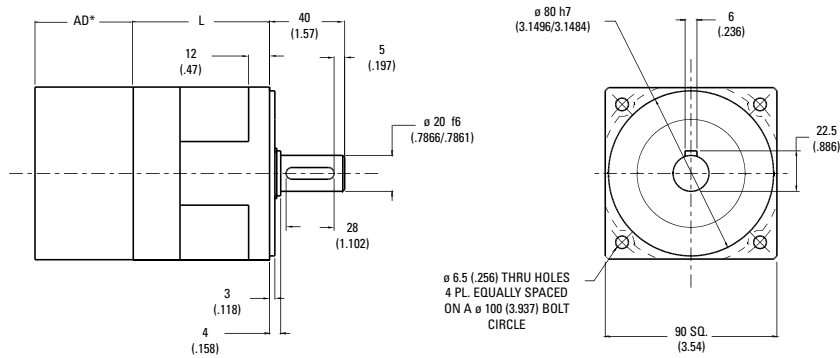
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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

DuraTRUE™ Size 90

True Planetary™ Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 15:1 to 100:1 | 90 [3.53] | 9 max | 3,7 [8.1] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|--|---------------------------------|--|--|--|--|--|--|
| | | 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] | | 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] | | |
| 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

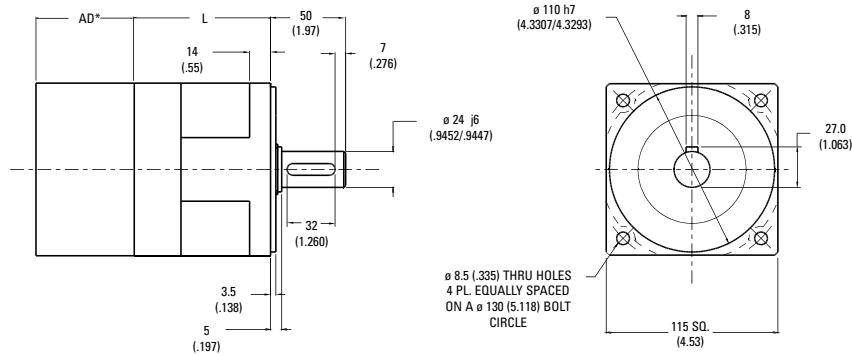
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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

DuraTRUE™ Size 115

True Planetary™ Gearheads

Metric



| Ratio¹ | 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] | 93% |
| 15:1 to 100:1 | 119 [4.69] | 9 max | 7,3 [16.2] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10000 Hour Life | | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | | J kg-cm² [in-lb-sec²x10⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------|--|--|--|--|---------------------------------|--|--|--|--|----------------------------------|--|
| | | 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] | | 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] | | |
| 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 [1513] | 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

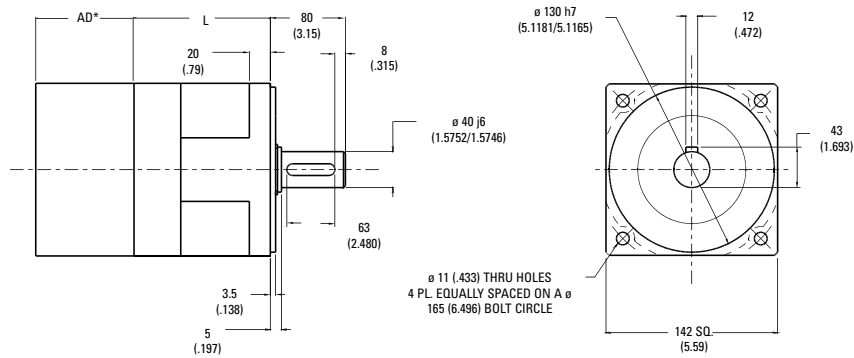
T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.

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

DuraTRUE™ Size 142

True Planetary™ Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 15:1 to 100:1 | 170 [6.71] | 9 max | 17,2 [38.0] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|--|---------------------------------|--|--|--|--|--|--|
| | | 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] | | 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] | | |
| 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

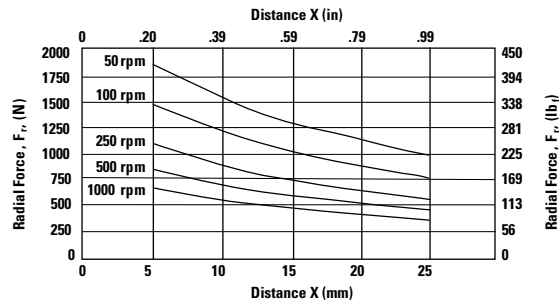
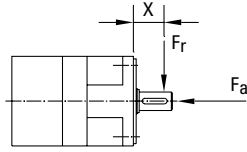
T_r = Rated output torque at rated speed for specific hours of life.

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

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

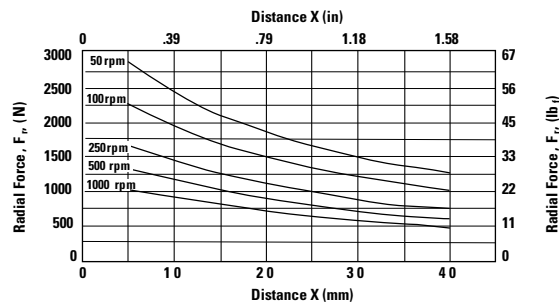
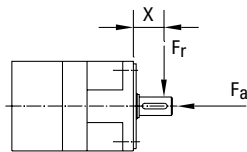
Radial and Axial Load Ratings

DT60



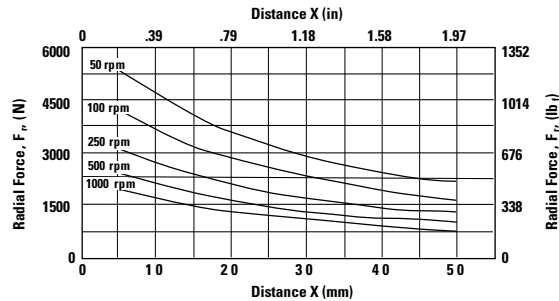
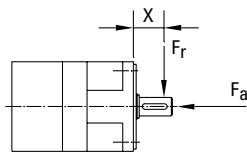
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 3075 [692] |
| 100 | 2441 [549] |
| 250 | 1798 [405] |
| 500 | 1427 [321] |
| 1000 | 1133 [255] |

DT90



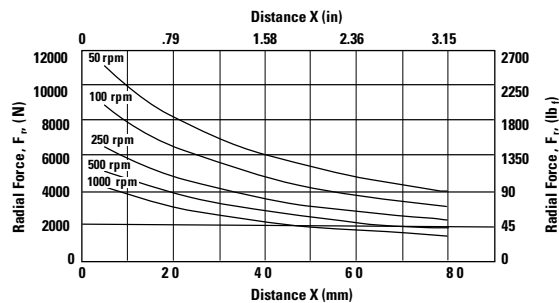
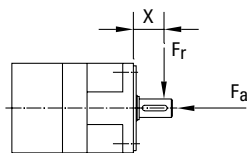
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 4506 [1014] |
| 100 | 3576 [805] |
| 250 | 2635 [593] |
| 500 | 2091 [471] |
| 1000 | 1660 [373] |

DT115



| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 8196 [1844] |
| 100 | 6505 [1464] |
| 250 | 4793 [1078] |
| 500 | 3804 [856] |
| 1000 | 3019 [679] |

DT142



| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 17023 [3830] |
| 100 | 13511 [3040] |
| 250 | 9956 [2240] |
| 500 | 7902 [1778] |
| 1000 | 6271 [1411] |

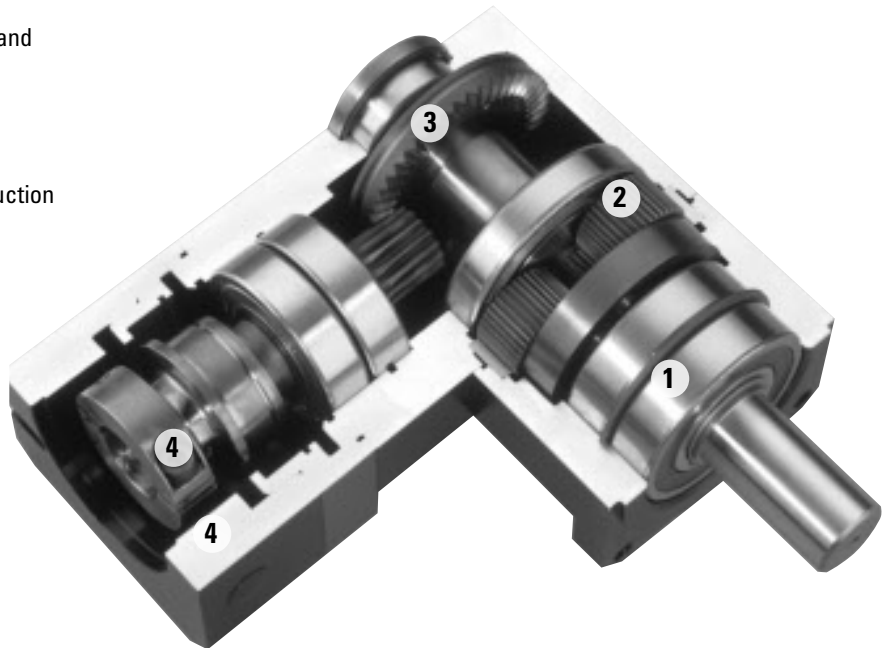
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{out} , as described on page 10,

DuraTRUE 90™

Right Angle Gearheads

| Ready for Immediate Delivery | |
|------------------------------|-----------------------------|
| Precision | 8 arc-minutes |
| Frame Sizes | 60mm, 90mm, 115mm and 142mm |
| Torque Capacity | up to 865 Nm |
| Ratio Availability | 1:1 thru 500:1 |
| Radial load capacity | up to 11150 N |
| Mounting System | RediMount™ |

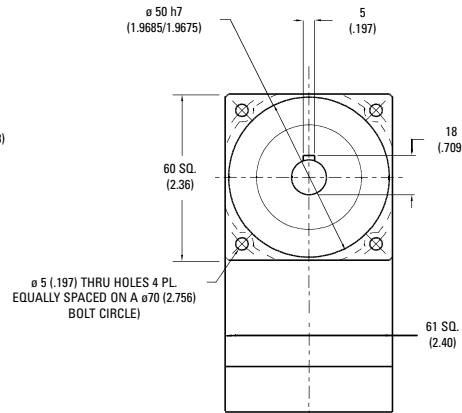
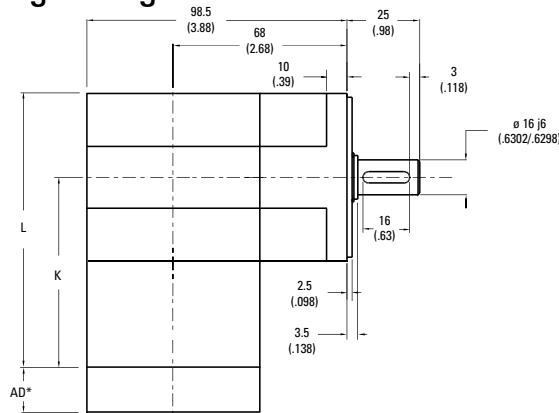
- ① **Deep Groove Ball bearings**
provide high radial load carrying capabilities
- ② **HRC 55-60 steel gears**
provide superior wear resistance and increased backlash integrity
- ③ **Innovative PowerTRUE™ gearing**
delivers smooth, quiet geared reduction
- ④ **RediMount™ system**
provides error-free installation



DuraTRUE 90™ Size 60

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 60:1 to 500:1 | 96 [3.79] | 127 [4.99] | 9 max | 2,7 [6] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| DTR60-005 | 5:1 | 18 [157] | 13 [113] | 11 [97] | 52 [460] | 14 [127] | 10 [92] | 9 [79] | 0,42 [3.7] | 2,3 [20.1] |
| DTR60-006 | 6:1 | 19 [166] | 13 [119] | 12 [102] | 52 [460] | 15 [134] | 11 [97] | 9 [83] | 0,42 [3.7] | 2,3 [20.3] |
| DTR60-009 | 9:1 | 21 [187] | 15 [134] | 13 [115] | 52 [460] | 17 [152] | 12 [109] | 11 [94] | 0,36 [3.1] | 2,3 [20.2] |
| DTR60-010 | 10:1 | 21 [182] | 15 [131] | 13 [112] | 49 [435] | 17 [148] | 12 [106] | 10 [91] | 0,41 [3.5] | 2,3 [20.2] |
| DTR60-012 | 12:1 | 18 [161] | 17 [147] | 14 [126] | 45 [402] | 18 [161] | 13 [119] | 12 [102] | 0,33 [3.0] | 2,3 [20.4] |
| DTR60-015 | 15:1 | 23 [206] | 17 [148] | 14 [127] | 50 [445] | 19 [167] | 14 [120] | 12 [103] | 0,32 [2.9] | 2,3 [20.4] |
| DTR60-020 | 20:1 | 24 [211] | 18 [161] | 16 [138] | 51 [450] | 21 [182] | 15 [131] | 13 [112] | 0,33 [2.8] | 2,3 [20.3] |
| DTR60-025 | 25:1 | 24 [214] | 19 [172] | 17 [148] | 51 [455] | 22 [195] | 16 [140] | 14 [120] | 0,32 [2.7] | 2,3 [20.3] |
| DTR60-030 | 30:1 | 18 [155] | 15 [134] | 14 [124] | 49 [430] | 16 [143] | 14 [124] | 13 [115] | 0,35 [2.8] | 1,7 [14.8] |
| DTR60-040 | 40:1 | 18 [161] | 16 [139] | 15 [130] | 49 [430] | 17 [149] | 15 [129] | 14 [120] | 0,33 [2.7] | 1,7 [14.8] |
| DTR60-050 | 50:1 | 19 [165] | 16 [143] | 15 [134] | 49 [430] | 17 [153] | 15 [133] | 14 [124] | 0,32 [2.6] | 1,7 [14.8] |
| DTR60-060 | 60:1 | 28 [244] | 18 [155] | 15 [133] | 52 [460] | 20 [175] | 14 [126] | 12 [108] | 0,42 [3.7] | 2,3 [20.2] |
| DTR60-075 | 75:1 | 28 [248] | 20 [178] | 17 [153] | 50 [445] | 23 [201] | 16 [144] | 14 [124] | 0,35 [3.0] | 2,3 [20.2] |
| DTR60-090 | 90:1 | 28 [244] | 20 [175] | 17 [150] | 52 [460] | 22 [198] | 16 [142] | 14 [122] | 0,36 [3.1] | 2,3 [20.0] |
| DTR60-100 | 100:1 | 27 [237] | 19 [171] | 16 [146] | 49 [435] | 22 [193] | 16 [138] | 13 [119] | 0,41 [3.5] | 2,2 [19.9] |
| DTR60-120 | 120:1 | 24 [210] | 22 [192] | 19 [164] | 45 [402] | 24 [210] | 18 [155] | 15 [133] | 0,33 [3.0] | 2,3 [20.2] |
| DTR60-125 | 125:1 | 29 [257] | 23 [207] | 20 [178] | 51 [455] | 27 [235] | 19 [168] | 16 [144] | 0,32 [2.8] | 2,4 [21.5] |
| DTR60-150 | 150:1 | 30 [268] | 22 [193] | 19 [165] | 50 [445] | 22 [198] | 18 [156] | 15 [134] | 0,35 [2.9] | 2,3 [20.1] |
| DTR60-200 | 200:1 | 31 [275] | 24 [210] | 20 [180] | 51 [450] | 27 [237] | 19 [171] | 16 [146] | 0,41 [3.4] | 2,3 [20.2] |
| DTR60-250 | 250:1 | 32 [279] | 25 [224] | 22 [193] | 51 [455] | 29 [254] | 21 [182] | 18 [156] | 0,32 [2.7] | 2,4 [21.5] |
| DTR60-300 | 300:1 | 23 [202] | 20 [175] | 18 [162] | 49 [430] | 21 [186] | 18 [162] | 17 [150] | 0,35 [2.8] | 1,7 [14.8] |
| DTR60-400 | 400:1 | 24 [210] | 20 [181] | 19 [169] | 49 [430] | 22 [194] | 19 [168] | 18 [156] | 0,33 [2.7] | 1,7 [14.8] |
| DTR60-500 | 500:1 | 24 [215] | 21 [186] | 20 [175] | 49 [430] | 23 [199] | 20 [173] | 18 [162] | 0,30 [2.7] | 1,7 [14.8] |

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

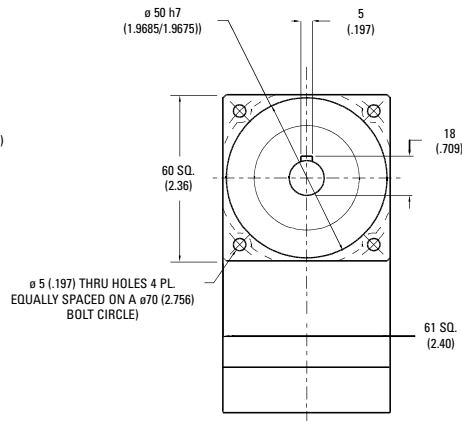
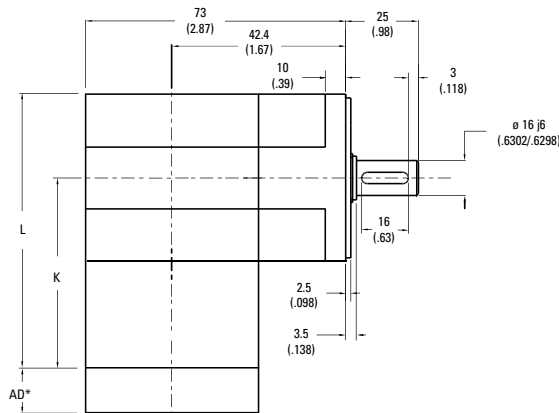
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

DuraTRUE 90™ Size 60S (Slim Line)

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 96 [3.79] | 127 [4.99] | 9 max | 2,5 [5.5] | 93% |
| 60:1 to 500:1 | 114 [4.48] | 144 [5.68] | 9 max | 2,7 [6] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| DTR60S-001 | 1:1 | 7 [66] | 7 [60] | 6 [54] | 25 [217] | 7 [61] | 6 [56] | 6 [50] | 0,79 [7.0] | 1,8 [15.8] |
| DTR60S-002 | 2:1 | 16 [145] | 15 [132] | 14 [120] | 45 [400] | 15 [134] | 14 [122] | 12 [111] | 0,41 [3.6] | 2,7 [23.8] |
| DTR60S-003 | 3:1 | 10 [92] | 10 [84] | 9 [76] | 34 [300] | 10 [85] | 9 [78] | 8 [70] | 0,35 [3.1] | 3,0 [26.9] |
| DTR60S-004 | 4:1 | 8 [68] | 7 [62] | 6 [56] | 30 [264] | 7 [63] | 6 [57] | 6 [52] | 0,32 [2.9] | 3,2 [28.2] |
| DTR60S-005P | 5:1P | 6 [56] | 6 [51] | 5 [46] | 23 [200] | 6 [52] | 5 [47] | 5 [43] | 0,32 [2.8] | 3,3 [28.8] |
| DTR60S-005T | 5:1T | 23 [200] | 18 [162] | 16 [138] | 46 [407] | 21 [182] | 15 [132] | 13 [112] | 0,42 [3.7] | 3,3 [28.8] |
| DTR60S-006 | 6:1 | 19 [171] | 16 [145] | 16 [141] | 46 [407] | 19 [167] | 15 [134] | 15 [130] | 0,41 [3.7] | 2,1 [18.8] |
| DTR60S-009 | 9:1 | 12 [109] | 10 [92] | 10 [90] | 36 [321] | 12 [106] | 10 [85] | 9 [83] | 0,35 [3.1] | 2,7 [23.7] |
| DTR60S-010 | 10:1 | 20 [176] | 18 [160] | 16 [145] | 46 [407] | 20 [174] | 17 [154] | 15 [134] | 0,39 [3.5] | 2,1 [18.5] |
| DTR60S-012 | 12:1 | 9 [80] | 8 [68] | 7 [66] | 32 [280] | 9 [78] | 7 [63] | 7 [61] | 0,33 [3.0] | 3,0 [26.1] |
| DTR60S-015 | 15:1 | 13 [112] | 12 [102] | 10 [92] | 37 [330] | 12 [110] | 11 [98] | 10 [85] | 0,33 [2.9] | 3,1 [27.4] |
| DTR60S-020 | 20:1 | 9 [82] | 8 [75] | 8 [68] | 46 [407] | 9 [81] | 8 [72] | 7 [63] | 0,31 [2.8] | 2,9 [26.0] |
| DTR60S-025 | 25:1 | 8 [68] | 7 [62] | 6 [56] | 25 [220] | 8 [67] | 7 [59] | 6 [52] | 0,31 [2.7] | 3,1 [27.3] |
| DTR60S-030 | 30:1 | 13 [114] | 12 [109] | 12 [105] | 38 [339] | 13 [114] | 12 [107] | 11 [101] | 0,32 [2.8] | 2,5 [22.4] |
| DTR60S-040 | 40:1 | 10 [84] | 9 [81] | 9 [77] | 33 [292] | 9 [84] | 9 [79] | 8 [74] | 0,30 [2.7] | 2,8 [25.2] |
| DTR60S-050 | 50:1 | 8 [69] | 7 [66] | 7 [63] | 25 [225] | 8 [69] | 7 [65] | 7 [61] | 0,30 [2.6] | 3,0 [26.8] |
| DTR60S-060 | 60:1 | 21 [182] | 20 [180] | 20 [177] | 46 [407] | 21 [182] | 20 [178] | 20 [175] | 0,42 [3.7] | 2,0 [18.1] |
| DTR60S-075 | 75:1 | 13 [116] | 13 [114] | 13 [112] | 39 [345] | 13 [115] | 13 [113] | 12 [110] | 0,33 [3.0] | 2,6 [23.4] |
| DTR60S-090 | 90:1 | 13 [116] | 13 [114] | 13 [113] | 39 [348] | 13 [116] | 13 [114] | 13 [111] | 0,35 [3.1] | 2,6 [23.3] |
| DTR60S-100 | 100:1 | 21 [183] | 20 [181] | 20 [180] | 46 [407] | 21 [182] | 20 [180] | 20 [178] | 0,40 [3.5] | 2,1 [18.3] |
| DTR60S-120 | 120:1 | 10 [85] | 10 [84] | 9 [83] | 34 [300] | 10 [85] | 9 [84] | 9 [82] | 0,33 [3.0] | 2,9 [25.8] |
| DTR60S-125 | 125:1 | 8 [70] | 8 [69] | 8 [68] | 26 [230] | 8 [70] | 8 [68] | 8 [67] | 0,31 [2.8] | 3,1 [27.3] |
| DTR60S-150 | 150:1 | 13 [116] | 13 [115] | 13 [114] | 40 [351] | 13 [116] | 13 [115] | 13 [114] | 0,33 [2.9] | 2,6 [23.4] |
| DTR60S-200 | 200:1 | 21 [183] | 21 [182] | 21 [181] | 46 [407] | 21 [183] | 21 [182] | 20 [181] | 0,39 [3.4] | 1,9 [17.0] |
| DTR60S-250 | 250:1 | 8 [70] | 8 [70] | 8 [69] | 26 [230] | 8 [70] | 8 [69] | 8 [69] | 0,31 [2.7] | 3,1 [27.3] |
| DTR60S-300 | 300:1 | 13 [116] | 13 [116] | 13 [115] | 40 [354] | 13 [116] | 13 [116] | 13 [115] | 0,32 [2.8] | 2,5 [22.4] |
| DTR60S-400 | 400:1 | 10 [86] | 10 [85] | 10 [85] | 34 [304] | 10 [86] | 10 [85] | 10 [85] | 0,31 [2.7] | 2,8 [25.2] |
| DTR60S-500 | 500:1 | 8 [70] | 8 [70] | 8 [70] | 26 [230] | 8 [70] | 8 [70] | 8 [70] | 0,30 [2.7] | 3,0 [26.8] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

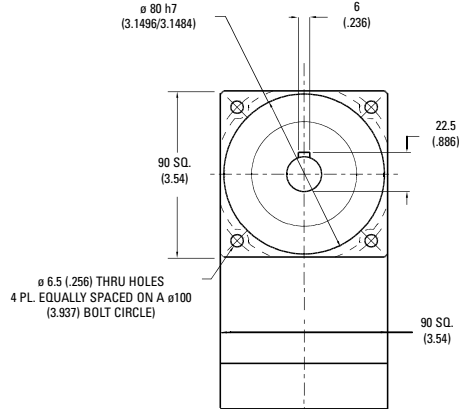
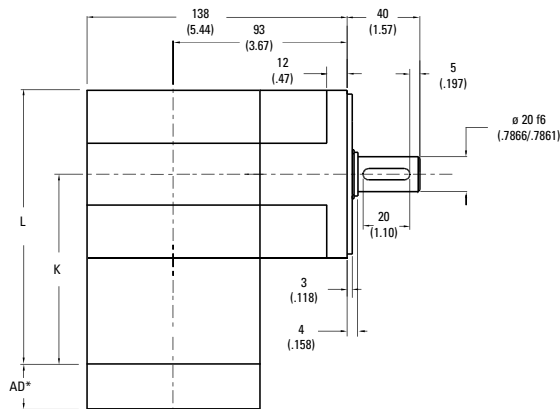
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

DuraTRUE 90™ Size 90

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 60:1 to 500:1 | 124 [4.89] | 169 [6.66] | 9 max | 5,5 [12] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² x 10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|---|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] | 108 [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 and other custom options are also available, consult factory.

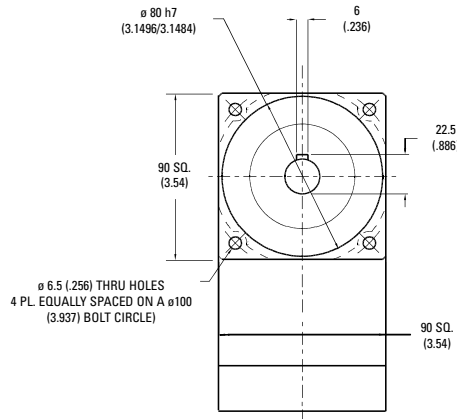
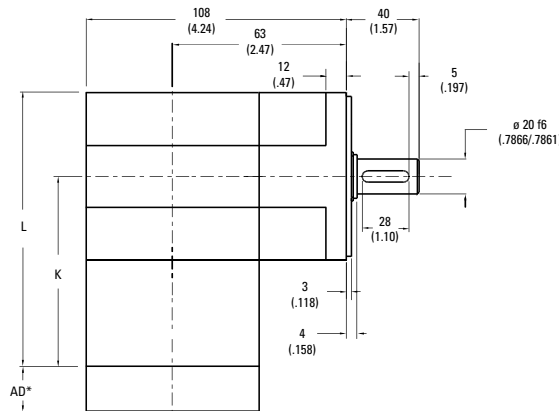
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

DuraTRUE 90™ Size 90S (Slim Line)

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 124 [4.89] | 169 [6.66] | 9 max | 4,8 [10] | 93% |
| 60:1 to 500:1 | 114 [5.79] | 192 [7.56] | 9 max | 5,5 [12] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

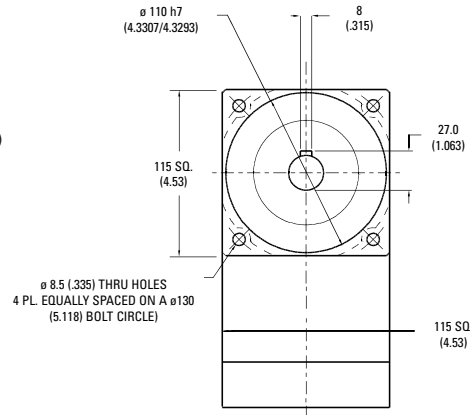
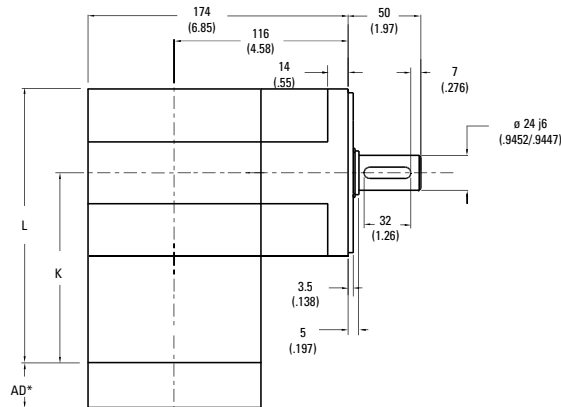
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

DuraTRUE 90™ Size 115

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 60:1 to 500:1 | 168,4 [6.63] | 226 [8.90] | 9 max | 12 [27] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor. Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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 and other custom options are also available, consult factory.

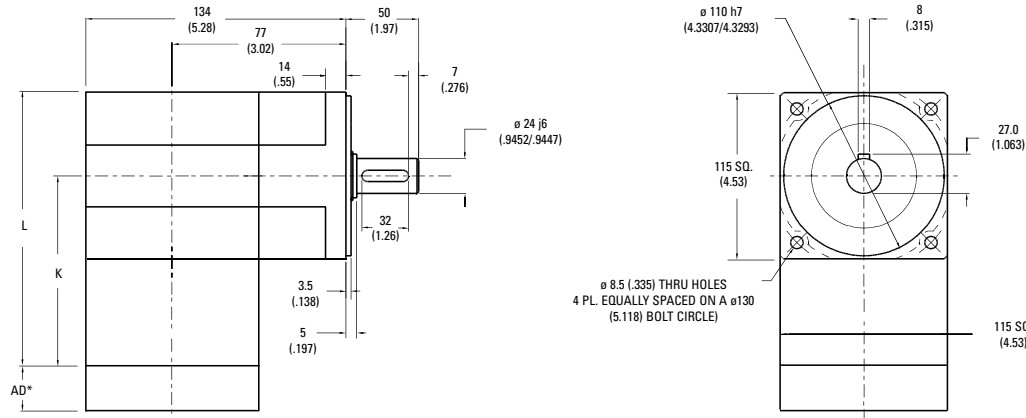
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

DuraTRUE 90™ Size 115S (Slim Line)

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 168.4 [6.63] | 226 [8.90] | 9 max | 11 [24] | 93% |
| 60:1 to 500:1 | 200 [7.87] | 257 [10.13] | 9 max | 12 [27] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor. Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|--------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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 [473] | 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

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

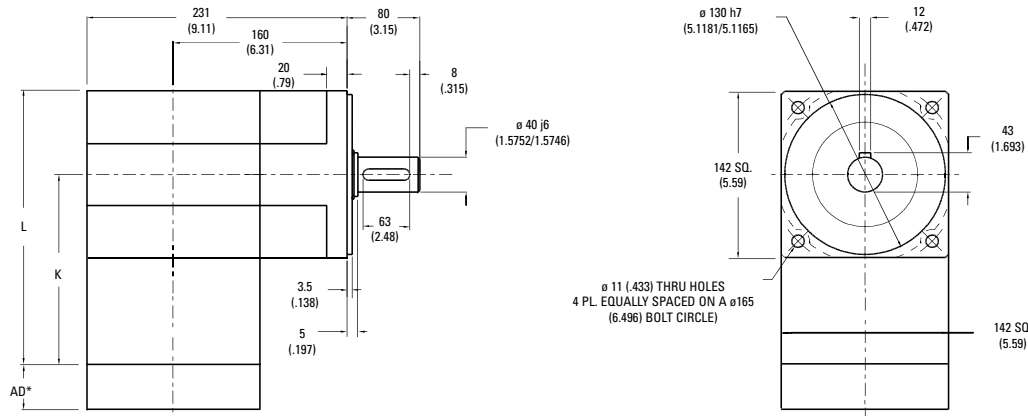
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

DuraTRUE 90™ Size 142

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 93% |
| 60:1 to 500:1 | 209 [8.23] | 280 [11.03] | 9 max | 28 [62] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor. Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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 and other custom options are also available, consult factory.

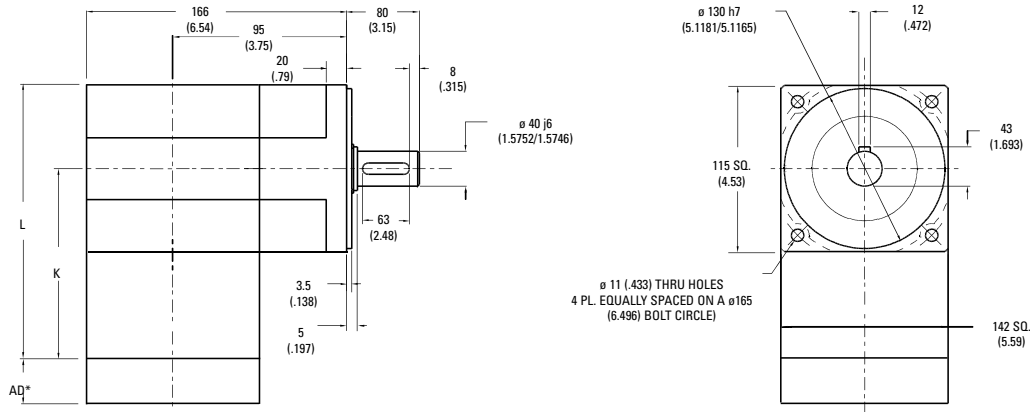
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

DuraTRUE 90™ Size 142S (Slim Line)

Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 209 [8.23] | 280 [11.03] | 9 max | 24 [53] | 93% |
| 60:1 to 500:1 | 259 [10.18] | 329 [12.97] | 9 max | 28 [62] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10000 Hour Life | | | T _{peak} Nm [in-lb] | 20000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|--------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

¹ Ratios are exact, higher ratios and other custom options are also available, consult factory.

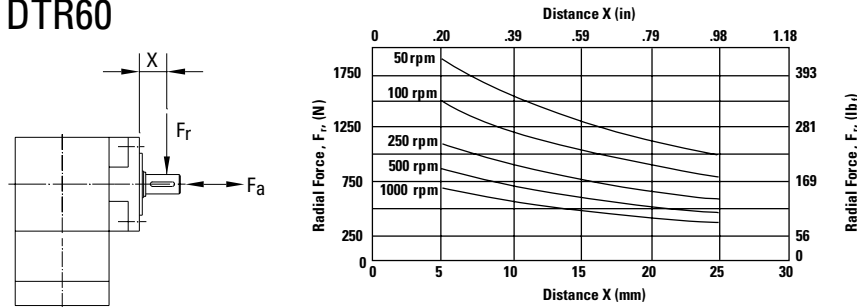
Tr = Rated output torque at rated speed for specific hours of life.

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.

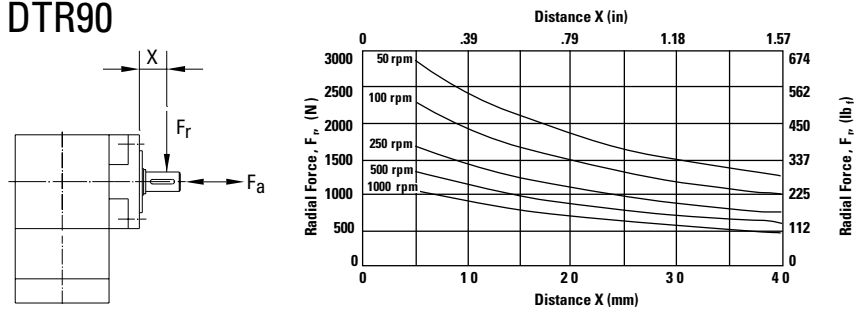
Radial and Axial Load Ratings

DTR60



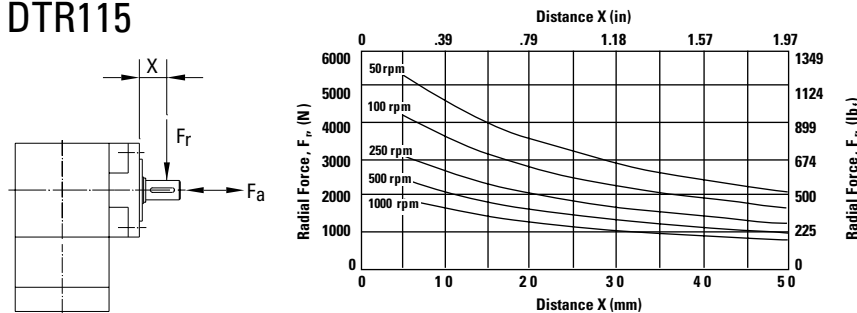
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 3075 [692] |
| 100 | 2441 [549] |
| 250 | 1798 [405] |
| 500 | 1427 [321] |
| 1000 | 1133 [255] |

DTR90



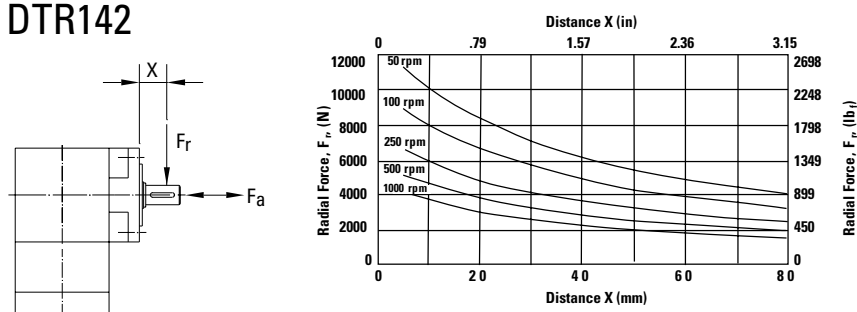
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 4506 [1014] |
| 100 | 3576 [805] |
| 250 | 2635 [593] |
| 500 | 2091 [471] |
| 1000 | 1660 [373] |

DTR115



| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 8196 [1844] |
| 100 | 6505 [1464] |
| 250 | 4793 [1078] |
| 500 | 3804 [856] |
| 1000 | 3019 [679] |

DTR142

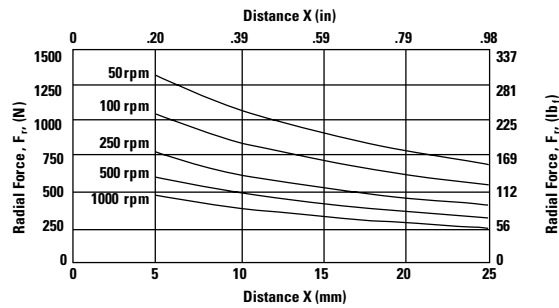
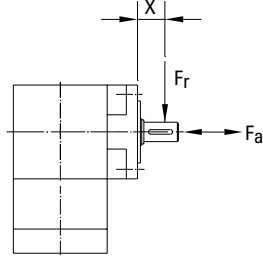


| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 17023 [3830] |
| 100 | 13511 [3040] |
| 250 | 9956 [2240] |
| 500 | 7902 [1778] |
| 1000 | 6271 [1411] |

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_{mount} , as described on page 10,

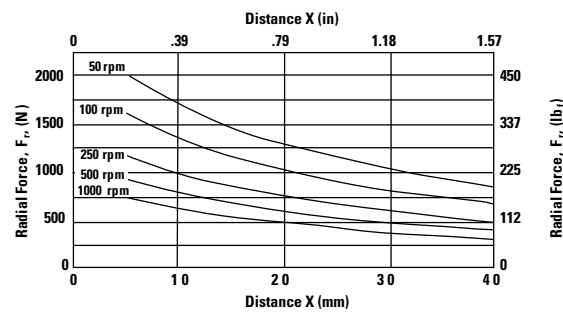
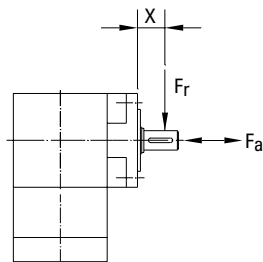
Radial and Axial Load Ratings

DTR60S



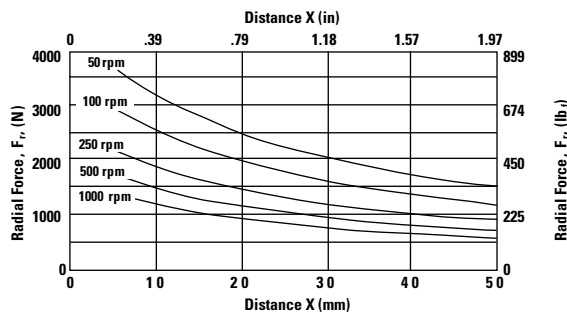
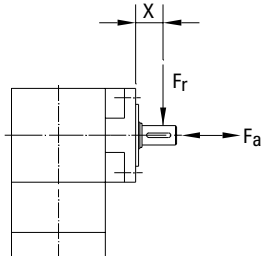
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 2155 [484] |
| 100 | 1710 [384] |
| 250 | 1260 [283] |
| 500 | 1000 [225] |
| 1000 | 794 [178] |

DTR90S



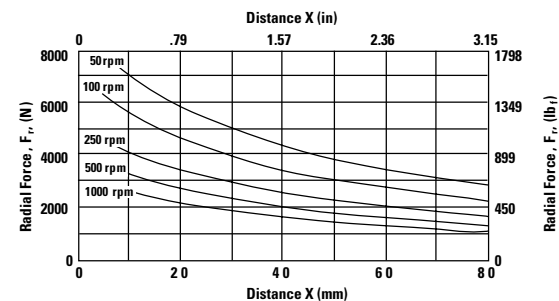
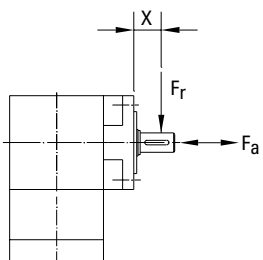
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 3157 [710] |
| 100 | 2506 [563] |
| 250 | 1846 [415] |
| 500 | 1465 [329] |
| 1000 | 1163 [261] |

DTR115S



| 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



| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 11925 [2681] |
| 100 | 9465 [2128] |
| 250 | 6974 [1568] |
| 500 | 5535 [1244] |
| 1000 | 4393 [988] |

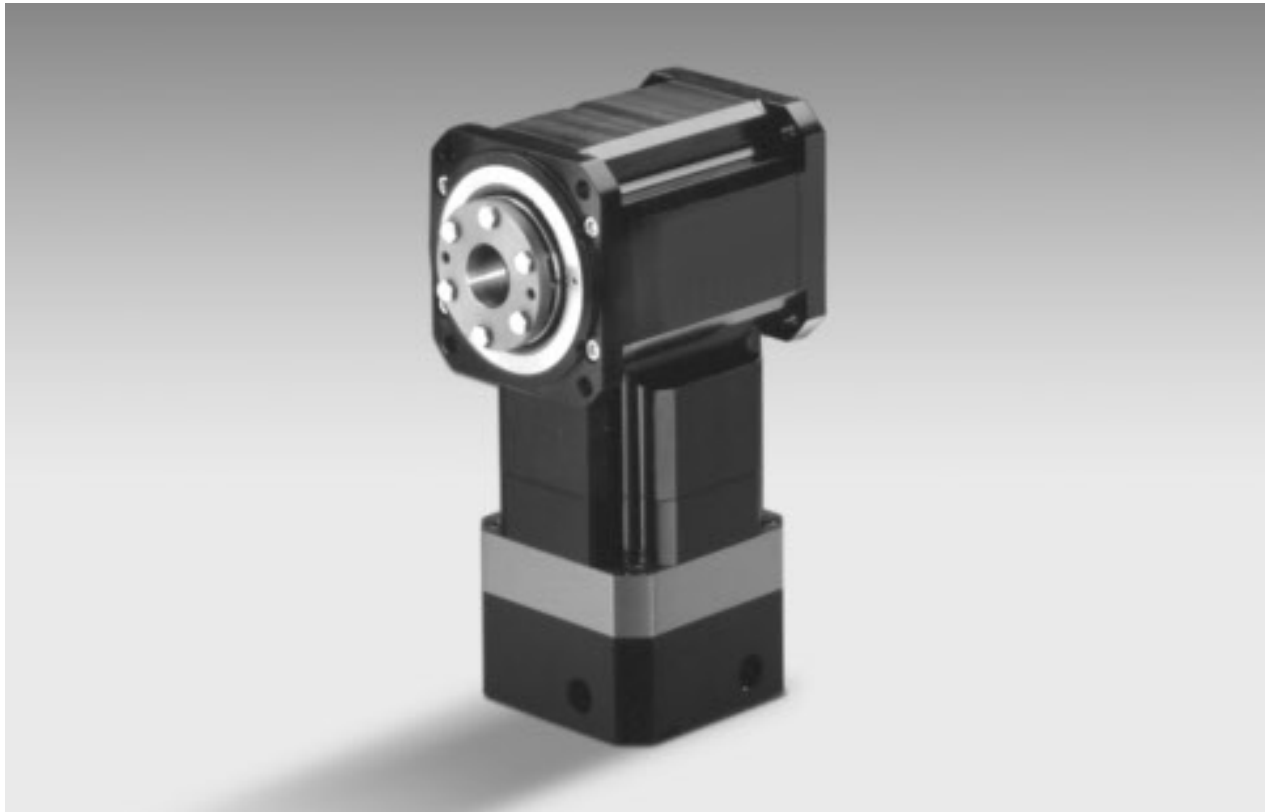
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{out} , as described on page 10,



DuraTRUE 90™ Hollow Shaft

Right Angle Gearheads

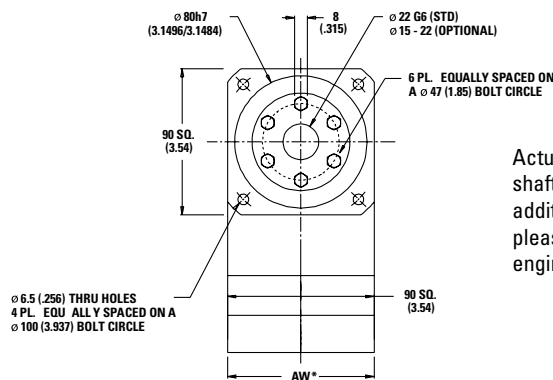
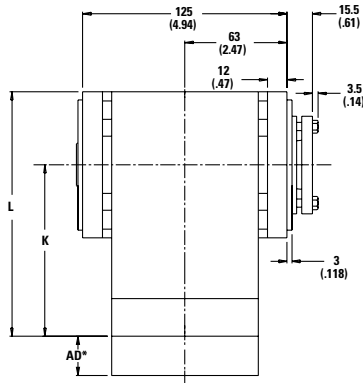
| Ready for Immediate Delivery | |
|------------------------------|-----------------------|
| Precision | 8 arc-minutes |
| Frame Sizes | 90mm, 115mm and 142mm |
| Torque Capacity | up to 865 Nm |
| Ratio Availability | 1:1 thru 500:1 |
| Radial load capacity | up to 11150 N |
| Mounting System | RediMount™ |



DuraTRUE 90™ Size 90H (Hollow Shaft)

Right Angle Gearheads

Metric



Actual thru bore of output shaft is larger than shown. For additional thru bore information, please contact application engineering.

| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 124 [4.89] | 169 [6.66] | 9 max | 4.8 [10] | 93% |
| 60:1 to 500:1 | 147 [5.79] | 192 [7.56] | 9 max | 5.5 [12] | 88% |

All dimensions are: mm (inch)

AW* = Adapter width

AD* = Adapter length

Both will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

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

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

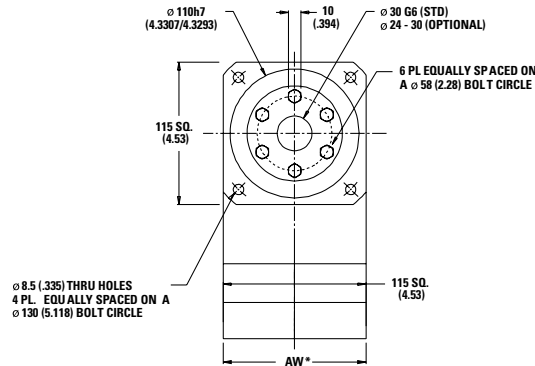
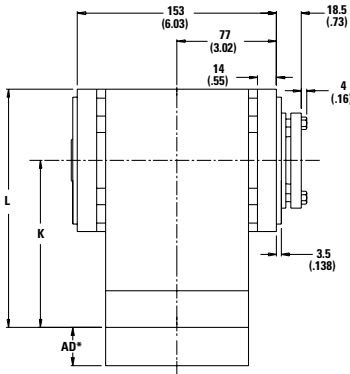
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

DuraTRUE 90™ Size 115H (Hollow Shaft)

Right Angle Gearheads

Metric



Actual thru bore of output shaft is larger than shown. For additional thru bore information, please contact application engineering.

| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 169 [6.64] | 226 [8.90] | 9 max | 11 [24] | 93% |
| 60:1 to 500:1 | 200 [7.87] | 257 [10.13] | 9 max | 12 [27] | 88% |

All dimensions are: mm (inch)
 AW* = Adapter width
 AD* = Adapter length
 Both will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|--------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

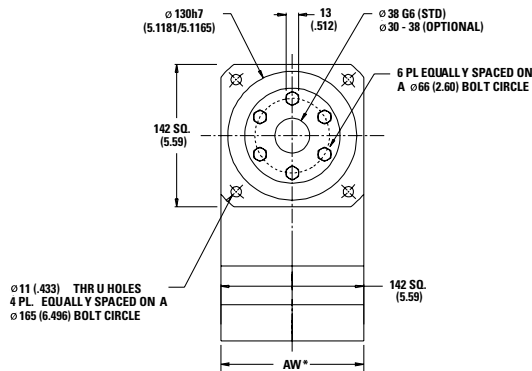
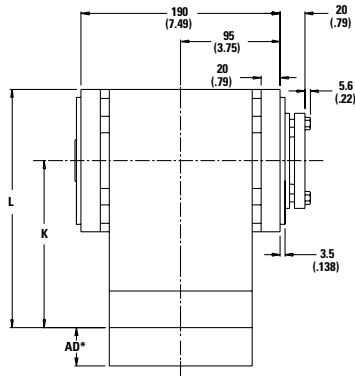
Ratio 5P is designed using only PowerTRUE face gearing technology.
 Ratio 5T adds a True Planetary gearing stage for increased torque capacity.
¹ Ratios are exact, higher ratios are also available, consult factory.

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 142H (Hollow Shaft)

Right Angle Gearheads

Metric



Actual thru bore of output shaft is larger than shown. For additional thru bore information, please contact application engineering.

| Ratio ¹ | 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] | 98% |
| 5:1T to 50:1 | 233 [9.17] | 304 [11.96] | 9 max | 24 [53] | 93% |
| 60:1 to 500:1 | 262 [10.3] | 332 [13.10] | 9 max | 28 [62] | 88% |

All dimensions are: mm (inch)
 AW* = Adapter width
 AD* = Adapter length
 Both will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

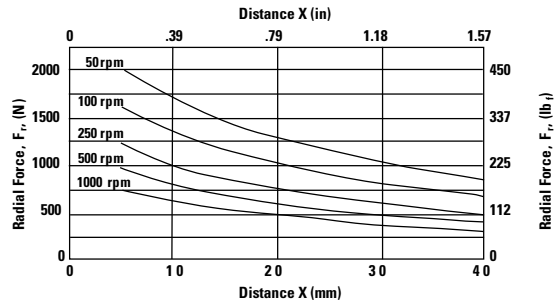
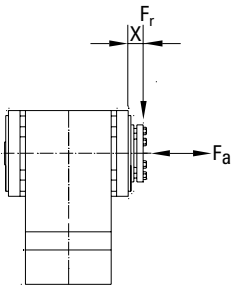
| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|--------------|--------------------|--|--|--|----------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.
 Ratio 5T adds a True Planetary gearing stage for increased torque capacity.
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.

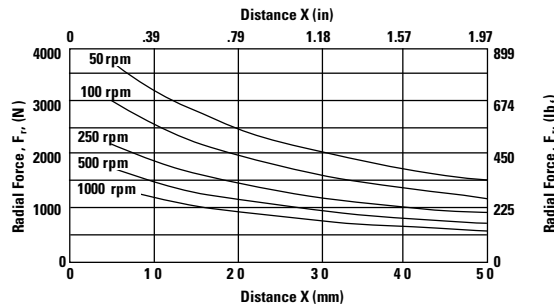
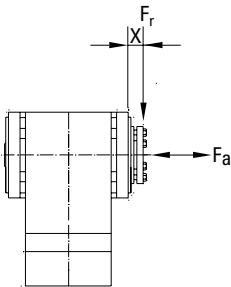
Radial and Axial Load Ratings

DTR90H



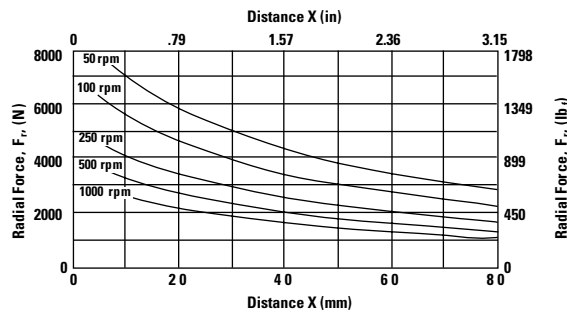
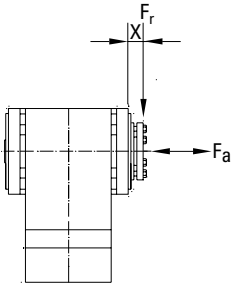
| Speed rpm | Axial Load, F_a N [lb_f] |
|--------------|-----------------------------------|
| 50 | 3157 [710] |
| 100 | 2506 [563] |
| 250 | 1846 [415] |
| 500 | 1465 [329] |
| 1000 | 1163 [261] |

DTR115H



| 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



| Speed rpm | Axial Load, F_a N [lb_f] |
|--------------|-----------------------------------|
| 50 | 11925 [2681] |
| 100 | 9465 [2128] |
| 250 | 6974 [1568] |
| 500 | 5535 [1244] |
| 1000 | 4393 [988] |

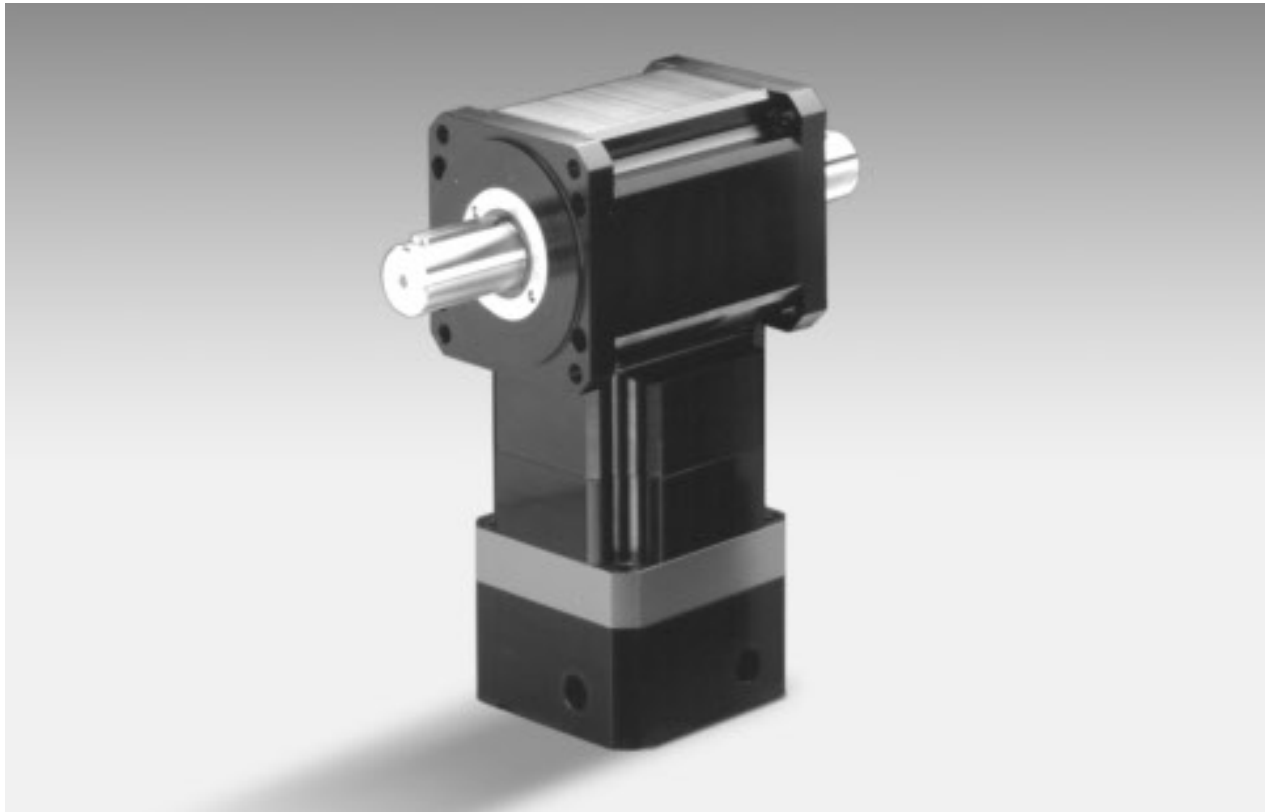
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 10,000 hours for the mean output speed n_{mout} , as described on page 10.



DuraTRUE 90™ Dual Shaft

Right Angle Gearheads

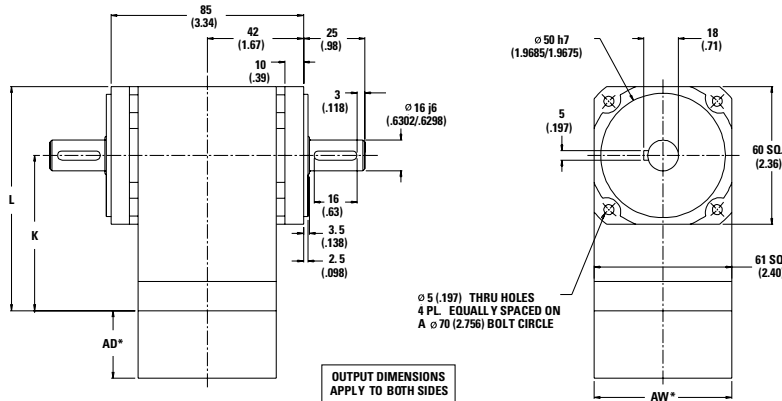
| Ready for Immediate Delivery | |
|------------------------------|-----------------------------|
| Precision | 8 arc-minutes |
| Frame Sizes | 60mm, 90mm, 115mm and 142mm |
| Torque Capacity | up to 865 Nm |
| Ratio Availability | 1:1 thru 500:1 |
| Radial load capacity | up to 11150 N |
| Mounting System | RediMount™ |



DuraTRUE 90™ Size 60D (Dual Shaft)

Right Angle Gearheads

Metric



| Ratio¹ | 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] | 98% |
| 5:1T to 50:1 | 97 [3.83] | 127 [5.01] | 9 max | 2,5 [5.5] | 93% |
| 60:1 to 500:1 | 115 [4.52] | 145 [5.70] | 9 max | 2,7 [6] | 88% |

All dimensions are: mm (inch)

AW* = Adapter width

AD* = Adapter length

Both will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm² [in-lb-sec²x10⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------|--|--|--|----------------------|--|--|--|----------------------------------|---|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

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

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

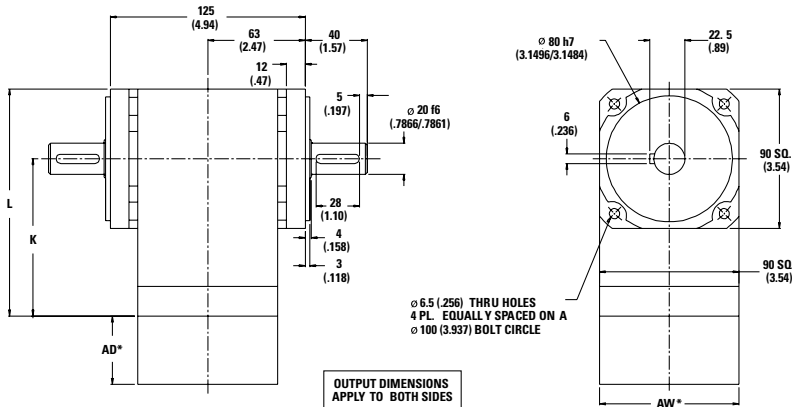
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

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

DuraTRUE 90™ Size 90D (Dual Shaft)

Right Angle Gearheads

Metric



| Ratio¹ | 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] | 98% |
| 5:1T to 50:1 | 124 [4.89] | 169 [6.66] | 9 max | 4,8 [10] | 93% |
| 60:1 to 500:1 | 147 [5.79] | 192 [7.56] | 9 max | 5,5 [12] | 88% |

All dimensions are: mm (inch)

AW* = Adapter width

AD* = Adapter length

Both will vary depending on motor.

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm² [in-lb-sec²x10⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------|--|--|--|----------------------|--|--|--|----------------------------------|---|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

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

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

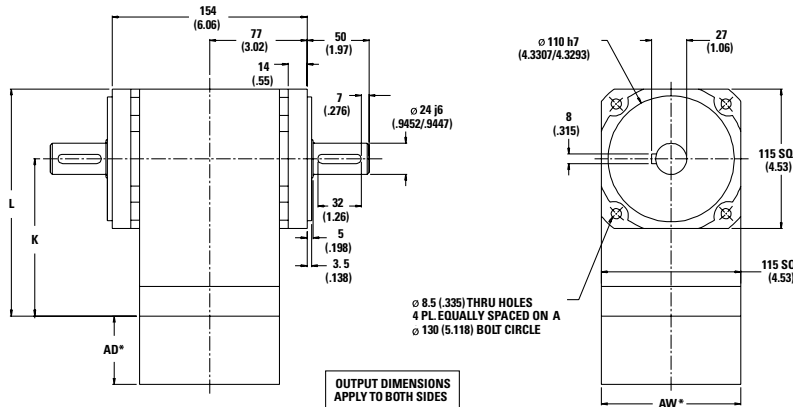
J = Mass moment of inertia reflected to the input shaft (including pinion assembly)

Tpeak = Allowable momentary peak torque for emergency stop or heavy shock loading.

DuraTRUE 90™ Size 115D (Dual Shaft)

Right Angle Gearheads

Metric



| Ratio ¹ | Dimension 'K' mm [in] | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|--------------------------|-----------------------|-------------------|------------|
| 1:1 to 5:1P | 137 [5.41] | 195 [7.76] | 8 max | 9 [20] | 98% |
| 5:1T to 50:1 | 169 [6.64] | 226 [8.90] | 9 max | 11 [24] | 93% |
| 60:1 to 500:1 | 200 [7.87] | 257 [10.13] | 9 max | 12 [27] | 88% |

All dimensions are: mm (inch)
 AW* = Adapter width
 AD* = Adapter length
 Both will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness [arc-min/Nm] |
|--------------|--------------------|--|--|--|----------------------|--|--|--|--|-------------------------------------|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

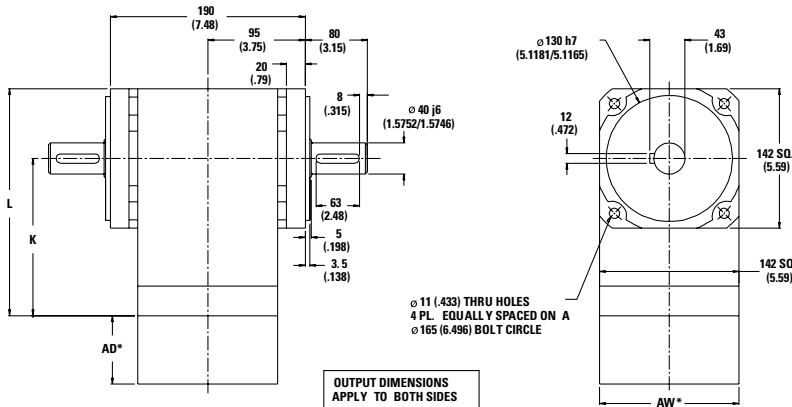
Ratio 5P is designed using only PowerTRUE face gearing technology.
 Ratio 5T adds a True Planetary gearing stage for increased torque capacity.
¹ Ratios are exact, higher ratios are also available, consult factory.

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 ¹ | 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] | 98% |
| 5:1T to 50:1 | 233 [9.17] | 304 [11.96] | 9 max | 24 [53] | 93% |
| 60:1 to 500:1 | 262 [10.3] | 332 [13.10] | 9 max | 28 [62] | 88% |

All dimensions are: mm (inch)
 AW* = Adapter width
 AD* = Adapter length
 Both will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|--------------|--------------------|--|--|--|----------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

Ratio 5P is designed using only PowerTRUE face gearing technology.

Ratio 5T adds a True Planetary gearing stage for increased torque capacity.

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

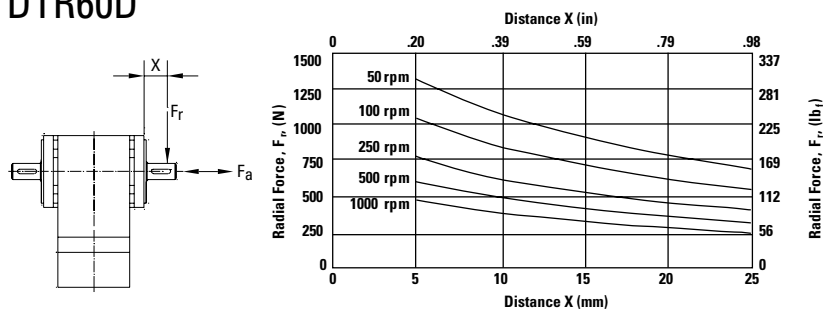
T_r = Rated output torque at rated speed for specific hours of life.

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.

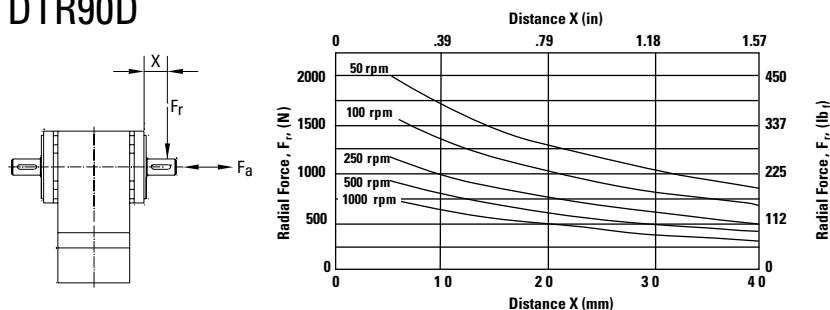
Radial and Axial Load Ratings

DTR60D



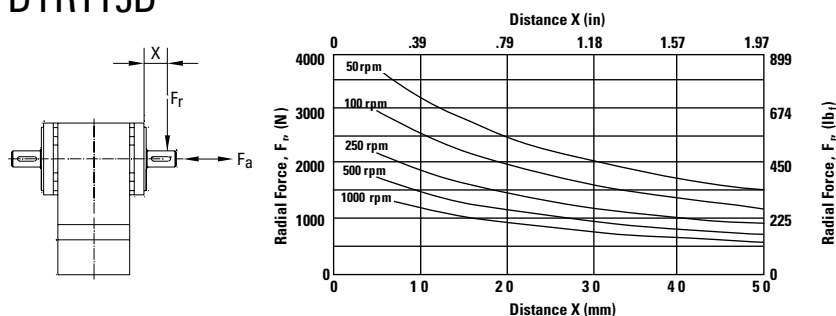
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 2155 [484] |
| 100 | 1710 [384] |
| 250 | 1260 [283] |
| 500 | 1000 [225] |
| 1000 | 794 [178] |

DTR90D



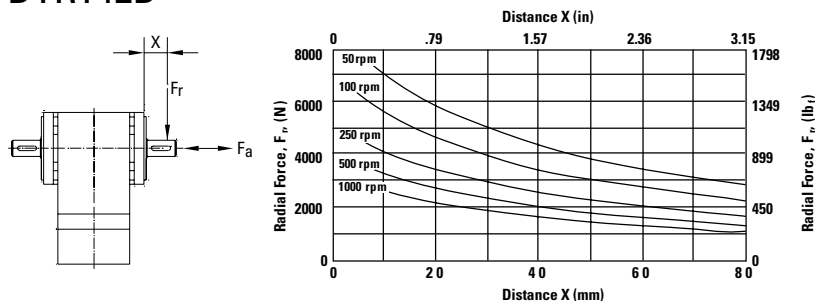
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 3157 [710] |
| 100 | 2506 [563] |
| 250 | 1846 [415] |
| 500 | 1465 [329] |
| 1000 | 1163 [261] |

DTR115D



| 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



| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 11925 [2681] |
| 100 | 9465 [2128] |
| 250 | 6974 [1568] |
| 500 | 5535 [1244] |
| 1000 | 4393 [988] |

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.

ValueTRUE™

True Planetary Gearheads

| Ready for Immediate Delivery | |
|---|--|
| Precision | 4 arc-minutes |
| Frame Sizes | 60mm, 75mm, 90mm, 100mm, 115mm, 140mm, 180mm and 220mm |
| Torque Capacity | up to 2970 Nm |
| Ratio Availability | 4:1 thru 100:1 |
| Mounting System | RediMount™ |
| Both in-line and right angles available | |

- ValueTRUE is a new high performance price competitive Gearhead line of Micron True Planetary Gearheads
- Low Cost– 30% less than typical market pricing
- Helical Crowned True Planetary Gearing improved load capacity, lower backlash and smoother & quieter operation compared to non-helical gearheads
- Ultra Precision – 4 arc-mins of backlash
- Drop-In, low cost replacement for most common helical gearheads
- Stainless Steel Output Housing provides rock solid durability, suitable for environmentally sensitive applications



ValueTRUE™

Helical True Planetary™ Gearheads

| Part Number | Stages | Backlash (arc-min) | Efficiency | Weight kg [lbs] | Ratio Availability |
|-------------|--------|--------------------|------------|-----------------|---|
| VT006 | 1 | 4 | 95% | 2 [4.4] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 2.5 [5.5] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT075 | 1 | 4 | 95% | 2.5 [5.5] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 3.0 [6.6] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT090 | 1 | 4 | 95% | 2.5 [5.5] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 3.0 [6.6] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT010 | 1 | 4 | 95% | 6 [13] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 8 [18] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT115 | 1 | 4 | 95% | 6 [13] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 8 [18] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT014 | 1 | 4 | 95% | 14 [31] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 18 [40] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT018 | 1 | 4 | 95% | 40 [88] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 45 [99] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VT022 | 1 | 4 | 95% | 74 [162] | 4:1, 5:1, 7:1, 10:1 |
| | 2 | 5 | 90% | 95 [209] | 16:1, 20:1, 25:1, 28:1, 35:1, 40:1, 50:1, 70:1, 100:1 |
| VTR006 | 1 | 5 | 93% | 3 [6.6] | 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR075 | 1 | 5 | 93% | 5.3 [11.1] | 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR090 | 1 | 5 | 93% | 5.3 [11.1] | 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR010 | 1 | 5 | 93% | 12 [26.2] | 4:1, 5:1, 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR115 | 1 | 5 | 93% | 12 [26.2] | 4:1, 5:1, 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR014 | 1 | 5 | 93% | 29 [64] | 4:1, 5:1, 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |
| VTR018 | 1 | 5 | 93% | 48 [106] | 4:1, 5:1, 8:1, 10:1, 12:1, 14:1, 15:1, 16:1, 20:1, 25:1, 28:1, 30:1, 35:1, 40:1, 50:1 |

All ratios in frame size 60, 75, 100 and 140 are available to ship in 24 hours through the Gearhead Express Program.

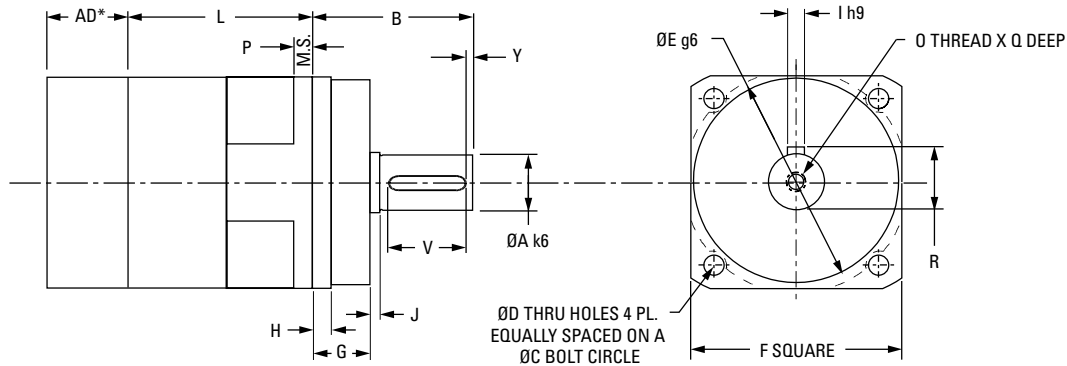
* Efficiency measured at 100% rated torque

* Backlash is maximum for the life of the gearhead

* For other ratios, please contact factory

ValueTRUE™

Helical True Planetary™ Gearheads



Inline Dimensions

| Part Number | F Flange Square mm [in] | A Output Shaft Diameter mm [in] | B Output Shaft Length mm [in] | Y Shaft End Distance mm [in] | V Keyway Length mm [in] | R Keyway Height mm [in] | I Key Square mm [in] | J Shoulder Length mm [in] | E Pilot Diameter mm [in] |
|-------------|-------------------------------|--|--|---------------------------------------|----------------------------------|----------------------------------|-------------------------------|------------------------------------|-----------------------------------|
| VT006 | 61 [2.40] | 16 [0.63] | 48 [1.89] | 1 [0.04] | 25 [0.98] | 18 [0.71] | 5 [0.20] | 1 [0.04] | 60 [2.36] |
| VT075 | 75 [2.95] | 22 [0.86] | 56 [2.20] | 1,5 [0.06] | 32 [1.26] | 24,5 [0.97] | 6 [0.24] | 1 [0.04] | 70 [2.75] |
| VT090 | 90 [3.54] | 22 [0.86] | 48 [1.89] | 1,5 [0.06] | 32 [1.26] | 24,5 [0.97] | 6 [0.24] | 1 [0.04] | 80 [1.48] |
| VT010 | 101 [3.98] | 32 [1.26] | 88 [3.46] | 3 [0.12] | 50 [1.97] | 35 [1.38] | 10 [0.39] | 2 [0.08] | 90 [3.54] |
| VT115* | 115 [4.53] | 32 [1.26] | 72 [2.83] | 3 [0.12] | 50 [1.97] | 35 [1.38] | 10 [0.39] | 2 [0.08] | 110 [4.33] |
| VT014 | 141 [5.55] | 40 [1.57] | 112 [4.41] | 5 [0.20] | 70 [2.76] | 43 [1.69] | 12 [0.47] | 3 [0.12] | 130 [5.11] |
| VT018 | 182 [7.17] | 55 [2.17] | 112 [4.41] | 6 [0.24] | 70 [2.76] | 59 [2.32] | 16 [0.63] | 3 [0.12] | 180 [6.29] |
| VT022 | 220 [8.66] | 75 [2.95] | 143 [5.63] | 7 [0.28] | 90 [3.54] | 79,5 [0.71] | 20 [0.78] | 3 [0.12] | 180 [6.29] |

Inline Dimensions (continued)

| Part Number | G Pilot Length mm [in] | P Flange Thickness mm [in] | H Effective Pilot Length mm [in] | L Length mm [in] | | C Bolt Circle mm [in] | D Bolt Hole mm [in] | O Output Shaft Thread mm [in] | Q Thread Depth mm [in] |
|-------------|---------------------------------|-------------------------------------|---|---------------------|--------------|-----------------------------|---------------------------|--|---------------------------------|
| | | | | 4:1 - 10:1 | 16:1 - 100:1 | | | | |
| VT006 | 18 [0.71] | 7 [0.28] | 7 [0.28] | 57 [2.24] | 105,4 [4.15] | 68 [2.68] | 5,6 [0.22] | M5 | 19 [0.75] |
| VT075 | 20 [0.79] | 8 [0.31] | 7 [0.28] | 60 [2.36] | 117 [4.60] | 85 [3.35] | 7 [0.28] | M8 | 19 [0.75] |
| VT090 | 12 [0.47] | 10 [0.39] | 12 [0.47] | 68 [2.67] | 125 [4.92] | 100 [3.94] | 6,6 [0.26] | M8 | 19 [0.75] |
| VT010 | 28 [1.10] | 10 [0.39] | 12 [0.47] | 78 [3.07] | 146 [5.74] | 120 [4.72] | 9 [0.35] | M12 | 20 [0.80] |
| VT115* | 12 [0.47] | 12 [0.47] | 12 [0.47] | 94 [3.70] | 162 [6.37] | 130 [5.118] | 9 [0.35] | M12 | 20 [0.80] |
| VT014 | 27 [1.06] | 13 [0.51] | 14 [0.55] | 110,5 [4.35] | 195 [7.67] | 165 [6.50] | 11 [0.43] | M12 | 20 [0.80] |
| VT018 | 27 [1.06] | 15 [0.59] | 13 [0.51] | 136 [5.35] | 244 [9.60] | 215 [8.46] | 13,5 [0.53] | M20 | 42 [1.65] |
| VT022 | 35 [1.38] | 17 [0.67] | 18 [0.71] | 131 [5.15] | 232 [9.13] | 250 [9.84] | 17 [0.67] | M20 | 42 [1.65] |

All ratios in frame size 60, 75, 100 and 140 are available to ship in 24 hours through the Gearhead Express Program.

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

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

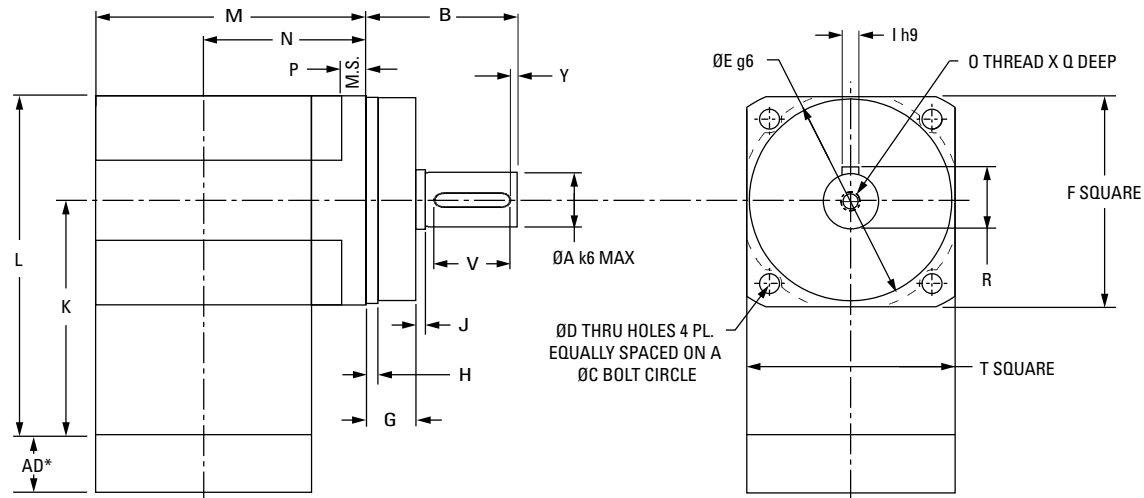
* Drawing not exactly as shown for VT115

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

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

ValueTRUE 90™

Helical Right Angle Gearheads



Right Angle Dimensions

| Part Number | F Output Flange Square mm [in] | A Output Shaft Diameter mm [in] | B Output Shaft Length mm [in] | Y Shaft End Distance mm [in] | V Keyway Length mm [in] | R Keyway Height mm [in] | I Key Square mm [in] | J Shoulder Length mm [in] | O Output Shaft Thread mm [in] | Q Thread Depth mm [in] | E Pilot Diameter mm [in] | G Pilot Length mm [in] |
|-------------|--------------------------------------|---------------------------------------|-------------------------------------|------------------------------------|-------------------------------|-------------------------------|----------------------------|---------------------------------|-------------------------------------|------------------------------|--------------------------------|------------------------------|
| VTR006 | 61 [2.40] | 16 [0.63] | 48 [1.89] | 1 [0.04] | 25 [0.98] | 18 [0.71] | 5 [0.20] | 1 [0.04] | M5 | 19 [0.75] | 60 [2.36] | 18 [0.71] |
| VTR075 | 75 [2.95] | 22 [0.86] | 56 [2.20] | 1,5 [0.06] | 32 [1.26] | 24,5 [0.97] | 6 [0.24] | 1 [0.04] | M8 | 19 [0.75] | 70 [2.75] | 20 [0.79] |
| VTR090 | 90 [3.54] | 22 [0.86] | 48 [1.89] | 1,5 [0.06] | 32 [1.26] | 24,5 [0.97] | 6 [0.24] | 1 [0.04] | M8 | 19 [0.75] | 80 [1.48] | 12 [0.47] |
| VTR010 | 101 [3.98] | 32 [1.26] | 88 [3.46] | 3 [0.12] | 50 [1.97] | 35 [1.38] | 10 [0.39] | 2 [0.08] | M12 | 20 [0.80] | 90 [3.54] | 28 [1.10] |
| VTR115* | 115 [4.53] | 32 [1.26] | 72 [2.83] | 3 [0.12] | 50 [1.97] | 35 [1.38] | 10 [0.39] | 2 [0.08] | M12 | 20 [0.80] | 110 [4.33] | 24 [0.94] |
| VTR014 | 141 [5.55] | 40 [1.57] | 112 [4.41] | 5 [0.20] | 70 [2.76] | 43 [1.69] | 12 [0.47] | 3 [0.12] | M12 | 20 [0.80] | 130 [5.11] | 27 [1.06] |
| VTR018 | 182 [7.17] | 55 [2.17] | 112 [4.41] | 6 [0.24] | 70 [2.76] | 59 [2.32] | 16 [0.63] | 3 [0.12] | M20 | 42 [1.65] | 180 [6.29] | 27 [1.06] |

Right Angle Dimensions (continued)

| Part Number | P Flange Thickness mm [in] | H Effective Pilot Length mm [in] | L Length mm [in] | K Distance to Output CL mm [in] | C Bolt Circle mm [in] | D Bolt Hole mm [in] | M Housing Width mm [in] | | N Distance to Input CL mm [in] | | T Input Flange Square mm [in] |
|-------------|----------------------------------|--|------------------------|---------------------------------------|-----------------------------|---------------------------|-------------------------------|----------------|--------------------------------------|----------------|-------------------------------------|
| | | | | | | | All other ratios | 4:1 & 5:1 only | All other ratios | 4:1 & 5:1 only | |
| VTR006 | 7 [0.28] | 7 [0.28] | 109,5 [4.31] | 79 [3.11] | 68 [2.68] | 5,6 [0.22] | 95 [3.75] | 95 [3.75] | 65 [2.55] | 65 [2.55] | 61 [2.40] |
| VTR075 | 8 [0.31] | 7 [0.28] | 141 [5.55] | 103 [4.05] | 85 [3.35] | 7 [0.28] | 114,5 [4.51] | 114,5 [4.51] | 77 [3.04] | 77 [3.04] | 75 [2.95] |
| VTR090 | 10 [0.39] | 12 [0.47] | 141 [5.55] | 103 [4.05] | 100 [3.94] | 6,6 [0.26] | 122,5 [4.82] | 122,5 [4.82] | 85 [3.35] | 85 [3.35] | 75 [2.95] |
| VTR010 | 10 [0.39] | 12 [0.47] | 193 [7.60] | 142,5 [5.61] | 120 [4.72] | 9 [0.35] | 149 [5.88] | 158 [6.19] | 99 [3.89] | 107 [4.20] | 101 [3.98] |
| VTR115* | 12 [0.47] | 12 [0.47] | 193 [7.60] | 142,5 [5.61] | 130 [5.118] | 9 [0.35] | 165 [6.51] | 174 [6.82] | 114,8 [4.52] | 123 [4.83] | 101 [3.98] |
| VTR014 | 13 [0.51] | 14 [0.55] | 231 [9.09] | 160 [6.23] | 165 [6.50] | 11 [0.43] | 222 [8.74] | 222 [8.74] | 151 [5.95] | 151 [5.95] | 142 [5.59] |
| VTR018 | 15 [0.59] | 13 [0.51] | 319 [12.60] | 228 [8.97] | 215 [8.46] | 13,5 [0.53] | 273 [10.76] | 301 [11.83] | 182 [7.18] | 210 [8.25] | 182 [7.17] |

* Drawing not exactly as shown for VTR115

ValueTRUE™ Helical True Planetary Gearheads

Inline Torque: VT006 - VT010

Performance Specifications

| Part Number | | Ratio | 20000 Hour Life | | | Tpeak Nm [in.-lb] | J kg-cm ² [in.-lb-sec²x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in.-lb/arc-min] |
|-------------|-----------|------------|---------------------------|---------------------------|---------------------------|----------------------|--|---|
| | | | T _r | T _r | T _r | | | |
| | | | (1000 rpm) Nm [in.-lb] | (3000 rpm) Nm [in.-lb] | (5000 rpm) Nm [in.-lb] | | | |
| VT006 | VT006-004 | 4:1 | 42 [375] | 32 [290] | 28 [248] | 91 [802] | 0.20 [1.80] | 2.36 [20.9] |
| | VT006-005 | 5:1 | 41 [364] | 34 [302] | 30 [259] | 88 [779] | 0.13 [1.16] | 2.30 [20.4] |
| | VT006-007 | 7:1 | 40 [347] | 36 [319] | 32 [276] | 84 [743] | 0.11 [0.96] | 2.18 [19.4] |
| | VT006-010 | 10:1 | 22 [194] | 19 [167] | 17 [156] | 79 [703] | 0.10 [0.85] | 1.74 [15.4] |
| | VT006-016 | 16:1 | 47 [410] | 43 [383] | 41 [369] | 99 [878] | 0.16 [1.44] | 2.40 [21.3] |
| | VT006-020 | 20:1 | 47 [416] | 44 [42] | 42 [375] | 100 [887] | 0.16 [1.44] | 2.36 [20.9] |
| | VT006-025 | 25:1 | 45 [401] | 42 [376] | 41 [364] | 96 [853] | 0.16 [1.44] | 2.32 [20.5] |
| | VT006-028 | 28:1 | 48 [423] | 45 [398] | 43 [384] | 102 [899] | 0.16 [1.44] | 2.21 [19.6] |
| | VT006-035 | 35:1 | 46 [408] | 43 [384] | 42 [127] | 97 [864] | 0.10 [0.85] | 2.29 [20.3] |
| | VT006-040 | 40:1 | 49 [430] | 46 [406] | 44 [394] | 103 [910] | 0.10 [0.85] | 2.40 [21.3] |
| | VT006-050 | 50:1 | 47 [415] | 44 [392] | 43 [381] | 99 [874] | 0.10 [0.85] | 2.36 [20.9] |
| | VT006-070 | 70:1 | 44 [662] | 42 [373] | 41 [362] | 93 [822] | 0.10 [0.85] | 2.21 [19.6] |
| VT006-100 | 100:1 | 29 [256] | 25 [224] | 23 [211] | 86 [766] | 0.10 [0.85] | 1.83 [16.1] | |
| VT075 | VT075-004 | 4:1 | 76 [671] | 67 [587] | 57 [503] | 161 [1423] | 0.46 [4.10] | 6.30 [55.7] |
| | VT075-005 | 5:1 | 74 [651] | 67 [591] | 59 [525] | 157 [1383] | 0.38 [3.40] | 6.17 [54.6] |
| | VT075-007 | 7:1 | 70 [621] | 64 [569] | 61 [541] | 149 [1322] | 0.31 [2.80] | 5.46 [48.3] |
| | VT075-010 | 10:1 | 40 [348] | 34 [300] | 32 [279] | 141 [1254] | 0.27 [2.40] | 4.01 [35.6] |
| | VT075-016 | 16:1 | 84 [738] | 77 [686] | 75 [659] | 177 [1569] | 0.31 [2.80] | 6.62 [58.6] |
| | VT075-020 | 20:1 | 85 [747] | 79 [698] | 76 [671] | 179 [1586] | 0.31 [2.80] | 6.48 [57.3] |
| | VT075-025 | 25:1 | 82 [721] | 77 [675] | 74 [651] | 173 [1528] | 0.31 [2.80] | 6.36 [56.3] |
| | VT075-028 | 28:1 | 86 [761] | 81 [714] | 77 [689] | 182 [1610] | 0.28 [2.50] | 5.81 [51.4] |
| | VT075-035 | 35:1 | 83 [734] | 78 [690] | 76 [667] | 175 [1549] | 0.16 [1.40] | 6.01 [53.2] |
| | VT075-040 | 40:1 | 87 [775] | 83 [730] | 80 [707] | 185 [1632] | 0.16 [1.40] | 6.63 [58.7] |
| | VT075-050 | 50:1 | 85 [747] | 80 [706] | 77 [683] | 177 [1569] | 0.16 [1.40] | 6.50 [57.5] |
| | VT075-070 | 70:1 | 80 [706] | 76 [669] | 74 [650] | 167 [1475] | 0.16 [1.40] | 5.83 [51.6] |
| VT075-100 | 100:1 | 52 [462] | 46 [405] | 43 [380] | 156 [1376] | 0.15 [1.30] | 4.05 [35.8] | |
| VT090 | VT090-004 | 4:1 | 76 [671] | 67 [587] | 57 [503] | 161 [1423] | 0.46 [4.10] | 6.30 [55.7] |
| | VT090-005 | 5:1 | 74 [651] | 67 [591] | 59 [525] | 157 [1383] | 0.38 [3.40] | 6.17 [54.6] |
| | VT090-007 | 7:1 | 70 [621] | 64 [569] | 61 [541] | 149 [1322] | 0.31 [2.80] | 5.46 [48.3] |
| | VT090-010 | 10:1 | 40 [348] | 34 [300] | 32 [279] | 141 [1254] | 0.27 [2.40] | 4.01 [35.6] |
| | VT090-016 | 16:1 | 84 [738] | 77 [686] | 75 [659] | 177 [1569] | 0.31 [2.80] | 6.62 [58.6] |
| | VT090-020 | 20:1 | 85 [747] | 79 [698] | 76 [671] | 179 [1586] | 0.31 [2.80] | 6.48 [57.3] |
| | VT090-025 | 25:1 | 82 [721] | 77 [675] | 74 [651] | 173 [1528] | 0.31 [2.80] | 6.36 [56.3] |
| | VT090-028 | 28:1 | 86 [761] | 81 [714] | 77 [689] | 182 [1610] | 0.28 [2.50] | 5.81 [51.4] |
| | VT090-035 | 35:1 | 83 [734] | 78 [690] | 76 [667] | 175 [1549] | 0.16 [1.40] | 6.01 [53.2] |
| | VT090-040 | 40:1 | 87 [775] | 83 [730] | 80 [707] | 185 [1632] | 0.16 [1.40] | 6.63 [58.7] |
| | VT090-050 | 50:1 | 85 [747] | 80 [706] | 77 [683] | 177 [1569] | 0.16 [1.40] | 6.50 [57.5] |
| | VT090-070 | 70:1 | 80 [706] | 76 [669] | 74 [650] | 167 [1475] | 0.16 [1.40] | 5.83 [51.6] |
| VT090-100 | 100:1 | 52 [462] | 46 [405] | 43 [380] | 156 [1376] | 0.15 [1.30] | 4.05 [35.8] | |
| VT010 | VT010-004 | 4:1 | 221 [1954] | 158 [1405] | 136 [1206] | 463 [4093] | 1.58 [14.00] | 23.1 [204] |
| | VT010-005 | 5:1 | 216 [1908] | 166 [1465] | 142 [1257] | 451 [3991] | 1.36 [12.00] | 20.5 [182] |
| | VT010-007 | 7:1 | 206 [1825] | 176 [1562] | 151 [1340] | 433 [3830] | 0.97 [8.60] | 19.0 [168] |
| | VT010-010 | 10:1 | 115 [1016] | 99 [872] | 92 [808] | 411 [3640] | 0.90 [8.00] | 13.0 [115] |
| | VT010-016 | 16:1 | 246 [2174] | 227 [2010] | 206 [1827] | 518 [4577] | 1.10 [9.70] | 24.6 [218] |
| | VT010-020 | 20:1 | 249 [2205] | 231 [2046] | 221 [1954] | 524 [4637] | 1.10 [9.70] | 21.9 [194] |
| | VT010-025 | 25:1 | 241 [2131] | 224 [1985] | 216 [1908] | 506 [4477] | 1.10 [9.70] | 21.9 [194] |
| | VT010-028 | 28:1 | 254 [2248] | 237 [2098] | 228 [2018] | 533 [4718] | 0.94 [8.30] | 19.0 [168] |
| | VT010-035 | 35:1 | 246 [2172] | 230 [2033] | 221 [1959] | 514 [4549] | 0.79 [7.00] | 18.8 [167] |
| | VT010-040 | 40:1 | 259 [2291] | 243 [2149] | 234 [2075] | 542 [4794] | 0.79 [7.00] | 24.7 [219] |
| | VT010-050 | 50:1 | 250 [2212] | 235 [2081] | 228 [2012] | 521 [4615] | 0.78 [6.90] | 21.7 [192] |
| | VT010-070 | 70:1 | 237 [2094] | 223 [1977] | 217 [1916] | 491 [4349] | 0.78 [6.90] | 19.0 [168] |
| VT010-100 | 100:1 | 153 [1354] | 134 [1185] | 126 [1112] | 459 [4059] | 0.78 [6.90] | 15.5 [137] | |

All ratios in frame size 60, 75, 100 and 140 are available to ship in 24 hours through the Gearhead Express Program.
www.thomsonlinear.com

ValueTRUE™ Helical True Planetary Gearheads

Inline Torque: VT115 - VT022

Performance Specifications

| Part Number | | Ratio | 20000 Hour Life | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec²x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|-----------|--------------|--|--|--|---------------------|---|--|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| VT115 | VT115-004 | 4:1 | 221 [1954] | 158 [1405] | 136 [1206] | 463 [4093] | 1.58 [14.00] | 23.1 [204] |
| | VT115-005 | 5:1 | 216 [1908] | 166 [1465] | 142 [1257] | 451 [3991] | 1.36 [12.00] | 20.5 [182] |
| | VT115-007 | 7:1 | 206 [1825] | 176 [1562] | 151 [1340] | 433 [3830] | 0.97 [8.60] | 19.0 [168] |
| | VT115-010 | 10:1 | 115 [1016] | 99 [872] | 92 [808] | 411 [3640] | 0.90 [8.00] | 13.0 [115] |
| | VT115-016 | 16:1 | 246 [2174] | 227 [2010] | 206 [1827] | 518 [4577] | 1.10 [9.70] | 24.6 [218] |
| | VT115-020 | 20:1 | 249 [2205] | 231 [2046] | 221 [1954] | 524 [4637] | 1.10 [9.70] | 21.9 [194] |
| | VT115-025 | 25:1 | 241 [2131] | 224 [1985] | 216 [1908] | 506 [4477] | 1.10 [9.70] | 21.9 [194] |
| | VT115-028 | 28:1 | 254 [2248] | 237 [2098] | 228 [2018] | 533 [4718] | 0.94 [8.30] | 19.0 [168] |
| | VT115-035 | 35:1 | 246 [2172] | 230 [2033] | 221 [1959] | 514 [4549] | 0.79 [7.00] | 18.8 [167] |
| | VT115-040 | 40:1 | 259 [2291] | 243 [2149] | 234 [2075] | 542 [4794] | 0.79 [7.00] | 24.7 [219] |
| VT014 | VT115-050 | 50:1 | 250 [2212] | 235 [2081] | 228 [2012] | 521 [4615] | 0.78 [6.90] | 21.7 [192] |
| | VT115-070 | 70:1 | 237 [2094] | 223 [1977] | 217 [1916] | 491 [4349] | 0.78 [6.90] | 19.0 [168] |
| | VT115-100 | 100:1 | 153 [1354] | 134 [1185] | 126 [1112] | 459 [4059] | 0.78 [6.90] | 15.5 [137] |
| | VT014-004 | 4:1 | 518 [4583] | 387 [3427] | 332 [2940] | 1066 [9431] | 6.51 [57.60] | 49.5 [438] |
| | VT014-005 | 5:1 | 504 [4459] | 403 [3571] | 347 [3064] | 1040 [9206] | 5.02 [44.40] | 45.9 [407] |
| | VT014-007 | 7:1 | 483 [4274] | 430 [3809] | 369 [3268] | 1002 [8866] | 3.80 [33.60] | 42.3 [378] |
| | VT014-010 | 10:1 | 275 [2426] | 235 [2075] | 217 [1919] | 956 [8459] | 3.39 [30.00] | 31.5 [280] |
| | VT014-016 | 16:1 | 579 [5119] | 532 [4704] | 503 [4456] | 1206 [10674] | 4.21 [37.20] | 52.2 [463] |
| | VT014-020 | 20:1 | 587 [5195] | 542 [4795] | 518 [4583] | 1224 [10832] | 4.07 [36.00] | 48.6 [431] |
| | VT014-025 | 25:1 | 567 [5021] | 526 [4654] | 504 [4459] | 1183 [10463] | 4.07 [36.00] | 48.6 [431] |
| VT018 | VT014-028 | 28:1 | 599 [5303] | 556 [4926] | 534 [4725] | 1248 [11047] | 3.53 [31.20] | 42.3 [375] |
| | VT014-035 | 35:1 | 579 [5122] | 539 [4774] | 518 [4589] | 1204 [10653] | 2.99 [26.40] | 39.6 [352] |
| | VT014-040 | 40:1 | 612 [5413] | 572 [5055] | 550 [4867] | 1271 [11248] | 2.99 [26.40] | 52.2 [461] |
| | VT014-050 | 50:1 | 509 [5223] | 553 [4893] | 534 [4720] | 1224 [10831] | 2.85 [25.20] | 48.6 [431] |
| | VT014-070 | 70:1 | 559 [4949] | 527 [4657] | 509 [4504] | 1155 [10223] | 2.85 [25.20] | 44.1 [392] |
| | VT014-100 | 100:1 | 367 [3246] | 320 [2838] | 301 [2659] | 1081 [9564] | 2.85 [25.20] | 31.5 [281] |
| | VT018-004 | 4:1 | 1203 [10649] | 866 [7658] | 743 [6570] | 2242 [21609] | 25.90 [229.00] | 137.7 [1222] |
| | VT018-005 | 5:1 | 1174 [10385] | 902 [7981] | 774 [6847] | 2389 [21143] | 20.00 [177.00] | 135 [1197] |
| | VT018-007 | 7:1 | 1128 [9878] | 962 [8512] | 825 [7303] | 2309 [20429] | 14.60 [129.00] | 120.6 [1067] |
| | VT018-010 | 10:1 | 645 [5710] | 550 [4864] | 507 [4486] | 2210 [19561] | 13.00 [115.00] | 90.9 [804] |
| VT022 | VT018-016 | 16:1 | 1356 [12005] | 1238 [10963] | 1125 [9959] | 2800 [24779] | 16.10 [142.00] | 144.9 [1286] |
| | VT018-020 | 20:1 | 1378 [12194] | 1265 [11191] | 1203 [10649] | 2846 [25187] | 15.60 [138.00] | 140.4 [1244] |
| | VT018-025 | 25:1 | 1333 [11799] | 1229 [10877] | 1174 [10385] | 2754 [24370] | 15.60 [138.00] | 117.9 [1044] |
| | VT018-028 | 28:1 | 1409 [12466] | 1301 [11518] | 1245 [11013] | 2910 [25751] | 13.50 [119.00] | 124.2 [1103] |
| | VT018-035 | 35:1 | 1362 [120490] | 1263 [11178] | 1211 [10714] | 2810 [24870] | 11.40 [101.00] | 111.6 [988] |
| | VT018-040 | 40:1 | 1439 [12739] | 1338 [11846] | 1285 [11371] | 2970 [2611] | 11.40 [101.00] | 144.9 [1286] |
| | VT018-050 | 50:1 | 1390 [12301] | 1297 [11479] | 1247 [11042] | 2863 [25338] | 10.90 [96.00] | 140.4 [1244] |
| | VT018-070 | 70:1 | 1319 [11667] | 1236 [10339] | 1193 [10555] | 2707 [23959] | 10.90 [96.00] | 124.2 [1103] |
| | VT018-100 | 100:1 | 868 [7676] | 757 [6698] | 708 [6269] | 2537 [22454] | 10.90 [96.00] | 92.7 [817] |
| | VT022-004 | 4:1 | 1815 [16065] | 1306 [11554] | 1121 [9913] | 4180 [36986] | 87.00 [7.70] | 386 [3414] |
| VT022-005 | 5:1 | 1892 [16740] | 1360 [12038] | 1167 [10328] | 4093 [36225] | 73.40 [6.50] | 372 [3295] | |
| VT022-007 | 7:1 | 1838 [16268] | 1452 [12844] | 1245 [11019] | 3933 [34804] | 62.60 [5.55] | 326 [2891] | |
| VT022-010 | 10:1 | 1050 [9293] | 893 [8097] | 823 [7277] | 3871 [34254] | 56.90 [5.04] | 227 [2012] | |
| VT022-016 | 16:1 | 2218 [19625] | 1979 [17513] | 1697 [15025] | 4722 [41793] | 87.30 [7.73] | 392 [3472] | |
| VT022-020 | 20:1 | 2254 [19948] | 2062 [18246] | 1815 [16065] | 4791 [42396] | 73.60 [6.52] | 392 [3470] | |
| VT022-025 | 25:1 | 2184 [19332] | 2009 [17781] | 1892 [16745] | 4636 [41025] | 73.10 [6.47] | 376 [3329] | |
| VT022-028 | 28:1 | 2304 [20394] | 2125 [18803] | 2008 [17528] | 4884 [43224] | 62.70 [5.55] | 391 [3469] | |
| VT022-035 | 35:1 | 2233 [19765] | 2067 [18294] | 1976 [17494] | 4719 [41757] | 62.50 [5.53] | 376 [3328] | |
| VT022-040 | 40:1 | 2357 [20864] | 2188 [19359] | 2095 [18542] | 4972 [43999] | 57.20 [5.06] | 391 [3466] | |
| VT022-050 | 50:1 | 2282 [20199] | 2125 [18808] | 2040 [18056] | 4795 [42440] | 57.10 [5.05] | 376 [3326] | |
| VT022-070 | 70:1 | 2165 [19159] | 2026 [17930] | 1951 [17270] | 4523 [40023] | 57.00 [5.04] | 329 [2903] | |
| VT022-100 | 100:1 | 1414 [12512] | 1232 [10904] | 1155 [10220] | 4367 [38647] | 56.90 [5.04] | 228 [2014] | |

All ratios in frame size 60, 75, 100 and 140 are available to ship in 24 hours through the Gearhead Express Program.

ValueTRUE™ Helical Right Angle Gearheads

Right Angle Torque: VTR006 - VTR075

Performance Specifications

| Part Number | | Ratio | 20000 Hour Life | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec²x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|------------|----------|--|--|--|---------------------|---|--|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| VTR006 | VTR006-008 | 8:1 | 44 [390] | 41 [358] | 34 [303] | 95 [844] | 0.50 [4.43] | 1.89 [16.7] |
| | VTR006-010 | 10:1 | 43 [382] | 40 [350] | 36 [319] | 92 [812] | 0.49 [4.34] | 1.62 [14.3] |
| | VTR006-012 | 12:1 | 41 [358] | 37 [327] | 33 [295] | 98 [868] | 0.39 [3.45] | 1.80 [15.9] |
| | VTR006-014 | 14:1 | 41 [358] | 38 [335] | 37 [327] | 87 [773] | 0.49 [4.34] | 2.16 [19.1] |
| | VTR006-015 | 15:1 | 44 [390] | 41 [366] | 40 [350] | 95 [836] | 0.39 [3.45] | 2.16 [19.1] |
| | VTR006-016 | 16:1 | 30 [263] | 27 [239] | 24 [215] | 99 [876] | 0.39 [3.45] | 2.16 [19.1] |
| | VTR006-020 | 20:1 | 37 [327] | 34 [303] | 31 [271] | 95 [844] | 0.39 [3.45] | 2.16 [19.1] |
| | VTR006-025 | 25:1 | 31 [271] | 28 [247] | 25 [223] | 96 [852] | 0.38 [3.36] | 2.07 [18.3] |
| | VTR006-028 | 28:1 | 42 [374] | 40 [350] | 39 [342] | 90 [797] | 0.39 [3.45] | 1.98 [18.3] |
| | VTR006-030 | 30:1 | 25 [223] | 22 [191] | 21 [183] | 84 [741] | 0.42 [3.72] | 2.07 [18.3] |
| | VTR006-035 | 35:1 | 43 [382] | 40 [350] | 35 [311] | 91 [804] | 0.38 [3.36] | 2.07 [18.3] |
| | VTR006-040 | 40:1 | 26 [231] | 23 [199] | 22 [191] | 85 [749] | 0.39 [3.45] | 2.16 [19.1] |
| VTR006-050 | 50:1 | 27 [239] | 23 [207] | 22 [191] | 85 [749] | 0.38 [3.36] | 2.16 [19.1] | |
| VTR075 | VTR075-008 | 8:1 | 80 [709] | 73 [645] | 70 [621] | 170 [1505] | 1.90 [16.81] | 4.23 [37.4] |
| | VTR075-010 | 10:1 | 77 [685] | 71 [629] | 68 [605] | 165 [1458] | 1.90 [16.81] | 3.69 [32.7] |
| | VTR075-012 | 12:1 | 82 [725] | 76 [669] | 73 [645] | 175 [1545] | 1.50 [13.28] | 4.14 [36.6] |
| | VTR075-014 | 14:1 | 74 [653] | 68 [605] | 66 [581] | 157 [1386] | 1.90 [16.81] | 5.94 [52.6] |
| | VTR075-015 | 15:1 | 79 [701] | 74 [653] | 70 [621] | 168 [1489] | 1.50 [13.28] | 6.03 [53.4] |
| | VTR075-016 | 16:1 | 84 [741] | 77 [685] | 75 [661] | 177 [1569] | 1.50 [13.28] | 6.03 [53.4] |
| | VTR075-020 | 20:1 | 80 [709] | 75 [661] | 72 [637] | 171 [1513] | 1.50 [13.28] | 5.85 [51.8] |
| | VTR075-025 | 25:1 | 82 [725] | 77 [677] | 72 [637] | 173 [1529] | 1.50 [13.28] | 5.76 [51.0] |
| | VTR075-028 | 28:1 | 77 [677] | 72 [637] | 69 [613] | 161 [1426] | 1.50 [13.28] | 5.31 [47.0] |
| | VTR075-030 | 30:1 | 45 [398] | 40 [350] | 37 [327] | 149 [1322] | 1.60 [14.16] | 5.67 [47.0] |
| | VTR075-035 | 35:1 | 77 [685] | 73 [645] | 70 [621] | 163 [1442] | 1.50 [13.28] | 5.67 [50.2] |
| | VTR075-040 | 40:1 | 47 [414] | 41 [358] | 38 [335] | 151 [1338] | 1.50 [13.28] | 6.03 [53.4] |
| | VTR075-050 | 50:1 | 48 [422] | 42 [374] | 40 [350] | 153 [1354] | 1.50 [13.28] | 5.94 [52.6] |

¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

ValueTRUE™ Helical Right Angle Gearheads

Right Angle Torque: VTR090 - VTR010

Performance Specifications

| Part Number | Ratio | 20000 Hour Life | | | T _{peak} Nm [in-lb] | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|-----------------|--|--|--|---------------------------------|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| VTR090 | VTR090-008 8:1 | 80 [709] | 73 [345] | 70 [621] | 170 [1505] | 1.90 [16.81] | 4.23 [37.4] |
| | VTR090-010 10:1 | 77 [685] | 71 [629] | 68 [605] | 165 [1458] | 1.90 [16.81] | 3.69 [32.7] |
| | VTR090-012 12:1 | 82 [725] | 76 [669] | 73 [645] | 175 [1545] | 1.50 [13.28] | 4.14 [36.6] |
| | VTR090-014 14:1 | 74 [653] | 68 [605] | 66 [581] | 157 [1386] | 1.90 [16.81] | 5.94 [52.6] |
| | VTR090-015 15:1 | 79 [701] | 74 [653] | 70 [621] | 168 [1489] | 1.50 [13.28] | 6.03 [53.4] |
| | VTR090-016 16:1 | 84 [741] | 77 [685] | 75 [661] | 177 [1569] | 1.50 [13.28] | 6.03 [53.4] |
| | VTR090-020 20:1 | 80 [709] | 75 [661] | 72 [637] | 171 [1513] | 1.50 [13.28] | 5.85 [51.8] |
| | VTR090-025 25:1 | 82 [725] | 77 [677] | 72 [637] | 173 [1529] | 1.50 [13.28] | 5.76 [51.0] |
| | VTR090-028 28:1 | 77 [677] | 72 [637] | 69 [613] | 161 [1426] | 1.50 [13.28] | 5.31 [47.0] |
| | VTR090-030 30:1 | 45 [398] | 40 [350] | 37 [327] | 149 [1322] | 1.60 [14.16] | 5.67 [50.2] |
| | VTR090-035 35:1 | 77 [685] | 73 [645] | 70 [621] | 163 [1442] | 1.50 [13.28] | 5.67 [50.2] |
| | VTR090-040 40:1 | 47 [414] | 41 [358] | 38 [335] | 151 [1338] | 1.50 [13.28] | 6.03 [53.4] |
| VTR010 | VTR090-050 50:1 | 48 [422] | 42 [374] | 40 [350] | 153 [1354] | 1.50 [13.28] | 5.94 [52.6] |
| | VTR010-004 4:1 | 234 [2071] | 195 [1728] | 167 [1673] | 492 [4357] | 3.30 [29.20] | 14.94 [132.2] |
| | VTR010-005 5:1 | 228 [2015] | 203 [1800] | 175 [1649] | 478 [4229] | 3.30 [29.20] | 11.79 [104.3] |
| | VTR010-008 8:1 | 234 [2071] | 195 [1728] | 167 [1673] | 492 [4357] | 3.30 [29.20] | 14.94 [132.2] |
| | VTR010-010 10:1 | 228 [2015] | 203 [1800] | 175 [1649] | 478 [4229] | 3.30 [29.20] | 11.79 [104.3] |
| | VTR010-012 12:1 | 243 [2151] | 221 [1951] | 189 [1744] | 508 [4492] | 2.60 [23.01] | 16.92 [149.7] |
| | VTR010-014 14:1 | 217 [1920] | 200 [1768] | 186 [1649] | 455 [4030] | 3.30 [29.20] | 20.79 [184.0] |
| | VTR010-015 15:1 | 233 [2063] | 216 [1912] | 197 [1744] | 491 [4349] | 2.50 [22.12] | 21.87 [193.5] |
| | VTR010-016 16:1 | 225 [1991] | 205 [1816] | 185 [1641] | 518 [4580] | 2.60 [23.01] | 22.32 [197.5] |
| | VTR010-020 20:1 | 238 [2103] | 221 [1951] | 212 [1872] | 500 [4421] | 2.60 [23.01] | 19.89 [176.0] |
| | VTR010-025 25:1 | 211 [1864] | 193 [1705] | 174 [1532] | 506 [4476] | 2.50 [22.12] | 19.89 [176.0] |
| | VTR010-028 28:1 | 226 [1999] | 211 [1854] | 203 [1792] | 473 [4190] | 2.60 [23.01] | 17.28 [152.9] |
| | VTR010-030 30:1 | 132 [1171] | 115 [1020] | 107 [948] | 439 [3887] | 2.80 [24.78] | 17.19 [152.9] |
| | VTR010-035 35:1 | 229 [2023] | 214 [1896] | 206 [1824] | 479 [4237] | 2.50 [22.12] | 17.10 [152.1] |
| | VTR010-040 40:1 | 137 [1211] | 119 [1051] | 112 [988] | 445 [3935] | 2.60 [23.01] | 22.41 [198.3] |
| | VTR010-050 50:1 | 140 [1243] | 122 [1083] | 115 [1020] | 448 [3967] | 2.50 [22.12] | 19.71 [174.4] |

¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

ValueTRUE™ Helical Right Angle Gearheads

Right Angle Torque: VTR115, VTR014, VTR018

Performance Specifications

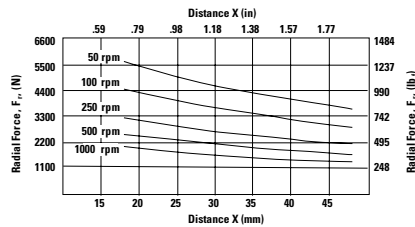
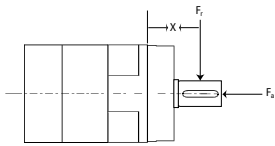
| Part Number | | Ratio | 20000 Hour Life | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|------------|-------|--|--|--|---------------------|--|--|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| VTR115 | VTR115-004 | 4:1 | 234 [2071] | 195 [1728] | 167 [1481] | 492 [4357] | 3.30 [29.20] | 14.94 [132.2] |
| | VTR115-005 | 5:1 | 228 [2015] | 203 [1800] | 175 [1545] | 478 [4229] | 3.30 [29.20] | 11.79 [104.3] |
| | VTR115-008 | 8:1 | 234 [2071] | 195 [1728] | 167 [1481] | 492 [4357] | 3.30 [29.20] | 14.94 [132.2] |
| | VTR115-010 | 10:1 | 228 [2015] | 203 [1800] | 175 [1545] | 478 [4229] | 3.30 [29.20] | 11.79 [104.3] |
| | VTR115-012 | 12:1 | 243 [2151] | 221 [1951] | 189 [1673] | 508 [4492] | 2.60 [23.01] | 16.92 [149.7] |
| | VTR115-014 | 14:1 | 217 [1920] | 200 [1768] | 186 [1649] | 455 [4030] | 3.30 [29.20] | 20.79 [184.0] |
| | VTR115-015 | 15:1 | 233 [2063] | 216 [1912] | 197 [1744] | 491 [4349] | 2.50 [22.12] | 21.87 [193.5] |
| | VTR115-016 | 16:1 | 225 [1991] | 205 [1816] | 185 [1641] | 518 [4580] | 2.60 [23.01] | 22.32 [197.3] |
| | VTR115-020 | 20:1 | 238 [2103] | 221 [1951] | 212 [1872] | 500 [4421] | 2.60 [23.01] | 19.89 [176.0] |
| | VTR115-025 | 25:1 | 211 [1864] | 193 [1705] | 174 [1537] | 506 [4476] | 2.50 [22.12] | 19.89 [176.0] |
| | VTR115-028 | 28:1 | 226 [1999] | 211 [1864] | 203 [1792] | 473 [4190] | 2.60 [23.01] | 17.28 [152.9] |
| | VTR115-030 | 30:1 | 132 [1171] | 115 [1020] | 107 [948] | 439 [3887] | 2.80 [24.78] | 17.19 [152.1] |
| | VTR115-035 | 35:1 | 229 [2023] | 214 [1896] | 203 [1824] | 479 [4237] | 2.50 [22.12] | 17.10 [151.3] |
| | VTR115-040 | 40:1 | 137 [1211] | 119 [1051] | 112 [988] | 445 [3935] | 2.60 [23.01] | 22.41 [198.3] |
| | VTR115-050 | 50:1 | 140 [1243] | 122 [1083] | 115 [1020] | 448 [3967] | 2.50 [22.12] | 19.71 [174.4] |
| VTR014 | VTR014-004 | 4:1 | 550 [4867] | 477 [4221] | 409 [3616] | 1142 [10108] | 16.00 [141.60] | 33.03 [292.0] |
| | VTR014-005 | 5:1 | 534 [4723] | 485 [4293] | 427 [3775] | 1110 [9821] | 16.00 [141.60] | 28.71 [254.0] |
| | VTR014-008 | 8:1 | 550 [4867] | 477 [4221] | 409 [3616] | 1142 [10108] | 16.00 [141.60] | 33.03 [292.0] |
| | VTR014-010 | 10:1 | 534 [4723] | 485 [4293] | 427 [3775] | 1110 [9821] | 16.00 [141.60] | 28.71 [254.0] |
| | VTR014-012 | 12:1 | 567 [5018] | 518 [4580] | 462 [4086] | 1182 [10458] | 13.00 [115.05] | 19.89 [176.0] |
| | VTR014-014 | 14:1 | 509 [4500] | 466 [4126] | 444 [3927] | 1061 [9391] | 16.00 [141.60] | 46.44 [411.0] |
| | VTR014-015 | 15:1 | 549 [4859] | 504 [4460] | 480 [4245] | 1145 [10131] | 12.00 [106.20] | 46.53 [412.0] |
| | VTR014-016 | 16:1 | 525 [4644] | 479 [4237] | 433 [3831] | 1206 [10673] | 13.00 [115.05] | 47.52 [421.0] |
| | VTR014-020 | 20:1 | 560 [4954] | 517 [4572] | 493 [4365] | 1166 [10323] | 13.00 [115.05] | 44.28 [392.0] |
| | VTR014-025 | 25:1 | 532 [4707] | 494 [4373] | 474 [4198] | 1183 [10466] | 13.00 [115.05] | 38.52 [341.0] |
| | VTR014-028 | 28:1 | 532 [4707] | 494 [4373] | 474 [4198] | 1108 [9805] | 13.00 [115.05] | 38.52 [341.0] |
| | VTR014-030 | 30:1 | 317 [2804] | 275 [2429] | 256 [2262] | 1029 [9104] | 14.00 [123.90] | 40.23 [356.0] |
| | VTR014-035 | 35:1 | 539 [4771] | 502 [4444] | 483 [4277] | 1121 [9924] | 12.00 [106.20] | 36.18 [320.0] |
| | VTR014-040 | 40:1 | 328 [2899] | 285 [2525] | 266 [2350] | 1043 [9231] | 13.00 [115.05] | 47.34 [419.0] |
| | VTR014-050 | 50:1 | 338 [2987] | 293 [2597] | 275 [2429] | 1054 [9327] | 12.00 [106.20] | 44.28 [392.0] |
| VTR018 | VTR018-004 | 4:1 | 1285 [11374] | 1066 [9431] | 914 [8092] | 2636 [23329] | 45 [398] | 102 [900] |
| | VTR018-005 | 5:1 | 1247 [11039] | 1111 [9829] | 952 [8427] | 2566 [22708] | 45 [398] | 83 [733] |
| | VTR018-008 | 8:1 | 1285 [11374] | 1066 [9431] | 914 [8092] | 2636 [23329] | 45 [398] | 102 [900] |
| | VTR018-010 | 10:1 | 1247 [11039] | 1111 [9829] | 952 [8427] | 2566 [22708] | 45 [398] | 83 [733] |
| | VTR018-012 | 12:1 | 1328 [11748] | 1203 [10649] | 1032 [9136] | 2736 [24214] | 36 [319] | 57 [502] |
| | VTR018-014 | 14:1 | 1193 [10554] | 1085 [9606] | 1016 [8992] | 2460 [21768] | 45 [398] | 100 [884] |
| | VTR018-015 | 15:1 | 1287 [11390] | 1174 [10386] | 1076 [9518] | 2655 [23497] | 35 [310] | 130 [1147] |
| | VTR018-016 | 16:1 | 1199 [10609] | 1094 [9685] | 989 [8754] | 2800 [24779] | 36 [319] | 132 [1171] |
| | VTR018-020 | 20:1 | 1314 [11629] | 1205 [10665] | 1148 [10155] | 2713 [24007] | 36 [319] | 128 [1131] |
| | VTR018-025 | 25:1 | 1054 [9327] | 962 [8515] | 870 [7702] | 2754 [24373] | 35 [310] | 107 [948] |
| | VTR018-028 | 28:1 | 1251 [11071] | 1156 [10227] | 1105 [9781] | 2583 [22860] | 36 [319] | 113 [1004] |
| | VTR018-030 | 30:1 | 747 [6611] | 645 [5711] | 600 [5313] | 2399 [21227] | 38 [336] | 102 [900] |
| | VTR018-035 | 35:1 | 1268 [11223] | 1176 [10410] | 1128 [9980] | 2617 [23162] | 35 [310] | 102 [900] |
| | VTR018-040 | 40:1 | 775 [6858] | 671 [5942] | 626 [5536] | 2437 [21569] | 36 [319] | 132 [1171] |
| | VTR018-050 | 50:1 | 338 [2987] | 691 [6117] | 645 [5711] | 2465 [21816] | 35 [310] | 128 [1131] |

¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

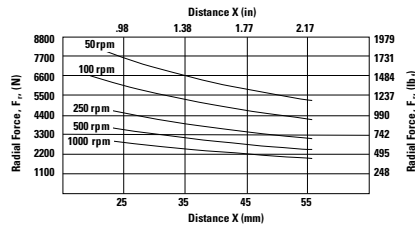
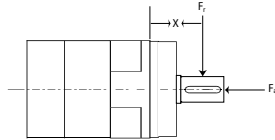
Radial and Axial Load Ratings

VT006



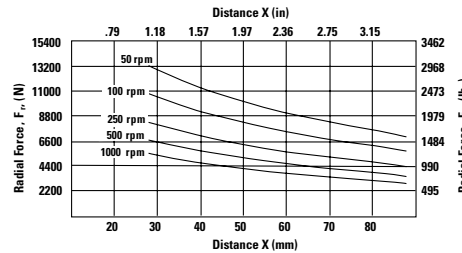
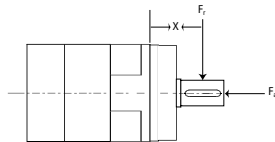
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 7198 [1618] |
| 100 | 5710 [1284] |
| 250 | 4208 [946] |
| 500 | 3342 [751] |
| 1000 | 2652 [596] |

VT075 and VT090



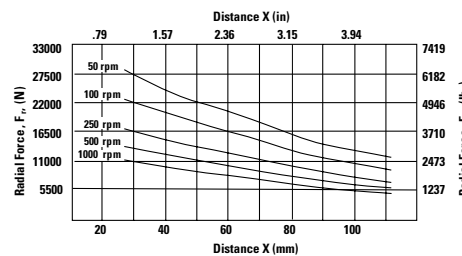
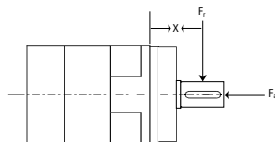
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9903 [2227] |
| 100 | 7863 [1768] |
| 250 | 5793 [1303] |
| 500 | 4599 [1034] |
| 1000 | 3650 [821] |

VT010 and VT115



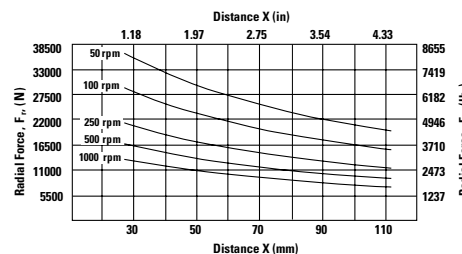
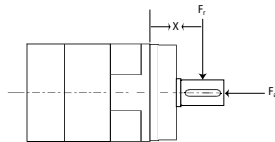
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 13,675 [3075] |
| 100 | 11,107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

VT014



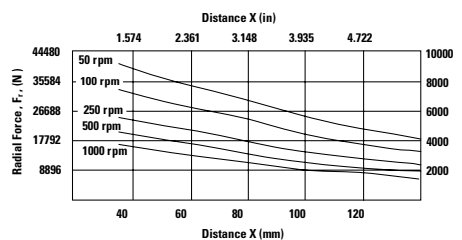
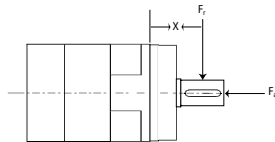
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 25,374 [5705] |
| 100 | 20,609 [4633] |
| 250 | 15,657 [3520] |
| 500 | 12,716 [2859] |
| 1000 | 10,329 [2322] |

VT018



| 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] |

VT022

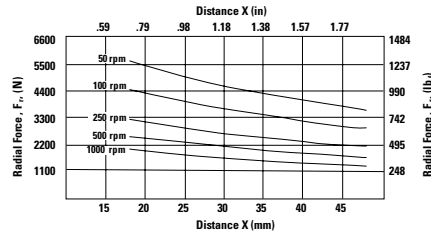
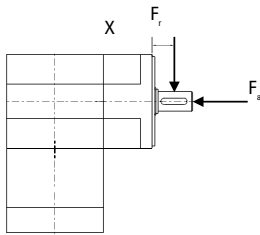


| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 32,351 [3655] |
| 100 | 26,277 [2969] |
| 250 | 19,962 [2256] |
| 500 | 16,214 [1832] |

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_{mount} , as described on page 10,

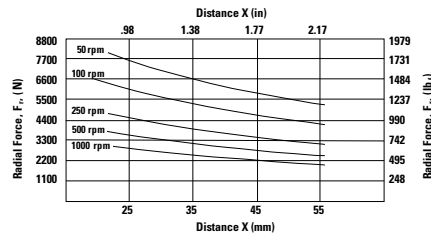
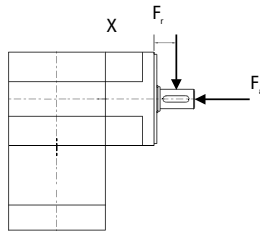
Radial and Axial Load Ratings

VTR006



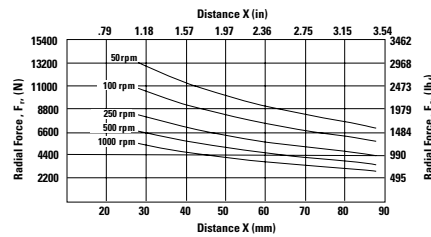
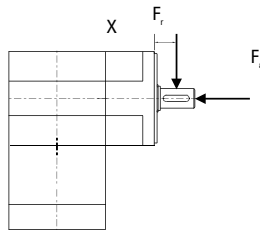
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 7198 [1618] |
| 100 | 5710 [1284] |
| 250 | 4208 [946] |
| 500 | 3342 [751] |
| 1000 | 2652 [596] |

VTR075 and VTR090



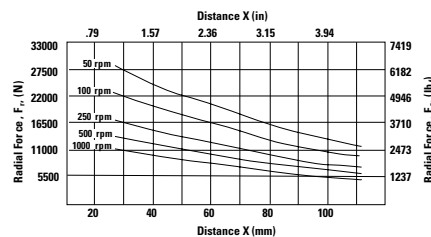
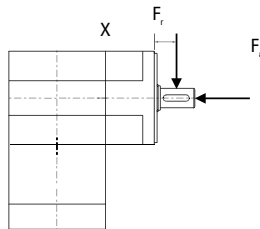
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9903 [2227] |
| 100 | 7863 [1768] |
| 250 | 5793 [1303] |
| 500 | 4599 [1034] |
| 1000 | 3650 [821] |

VTR010 and VTR115



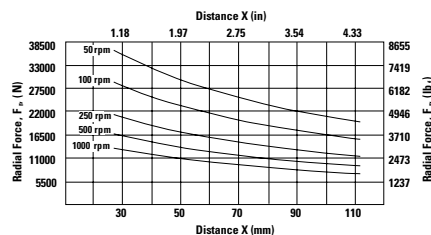
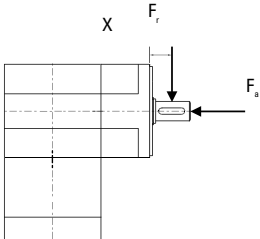
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 13,675 [3075] |
| 100 | 11,107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

VTR014



| 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] |

VTR018



| 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] |

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_{mount} , as described on page 10,

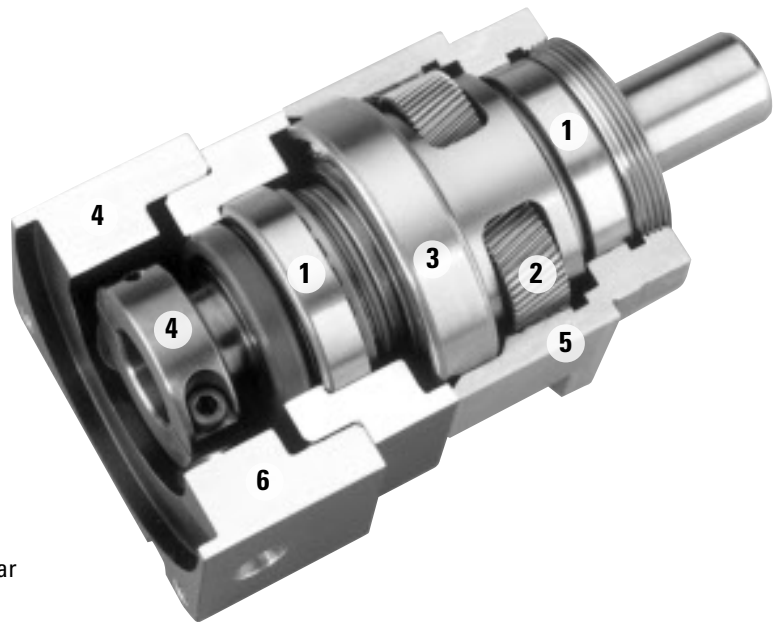


UltraTRUE™

Helical True Planetary™ Gearheads

| Ready for Immediate Delivery | |
|------------------------------|--|
| Precision | 4 arc-minutes |
| Frame Sizes | 60mm, 75mm, 90mm, 100mm, 115mm, 140mm, 180mm and 220mm |
| Torque Capacity | up to 3300 Nm |
| Ratio Availability | 4:1 thru 100:1 |
| Radial load capacity | up to 37910 N |
| Mounting System | RediMount™ |

- ① **Tapered roller bearings**
provide high axial and radial load carrying capacity
- ② **Helical crowned**
HRC 55-60 steel gears
provide higher torque capacity and smoother operation
- ③ **Sealed deep groove ball bearing**
provides high radial load carrying capability
- ④ **RediMount™ system**
provides error-free motor installation
- ⑤ **Single piece output**
integrated output housing and internal gear
- ⑥ **Anodized aluminum housing**
reduces weight and prevents corrosion



Micron True Planetary™ Gearheads
shipped within 24 hours!

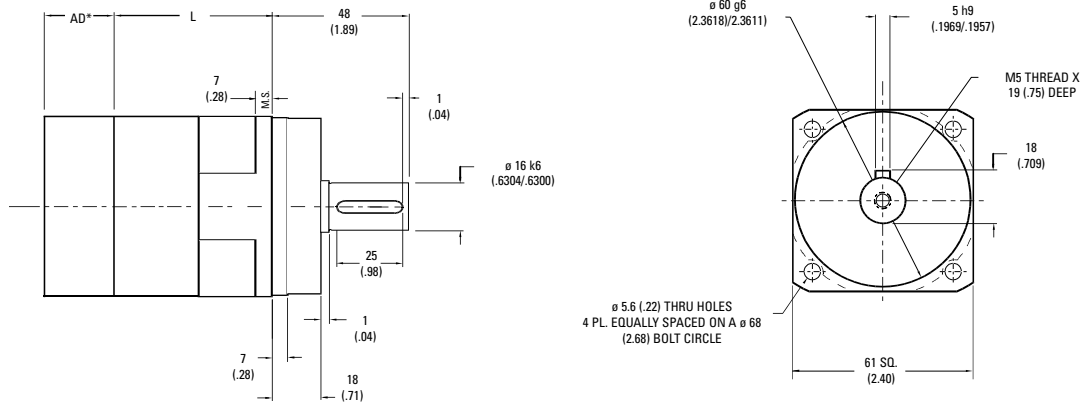


Need it fast? Go to the back cover
of the catalog for details.

UltraTRUE™ Size 60

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 57 [2.25] | 4 max | 2 [4.4] | 95% |
| 16:1 to 100:1 | 105,4 [4.15] | 5 max | 2.5 [5.5] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

M.S. = Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

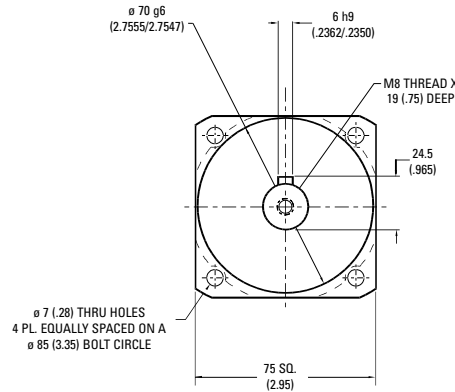
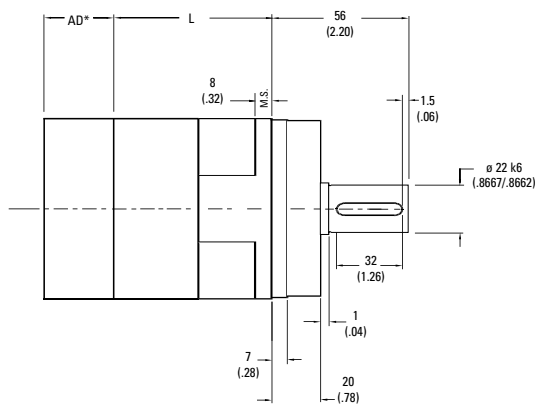
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 75

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | 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] | 95% |
| 16:1 to 100:1 | 117 [4.60] | 5 max | 3.0 [6.6] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

M.S. = Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

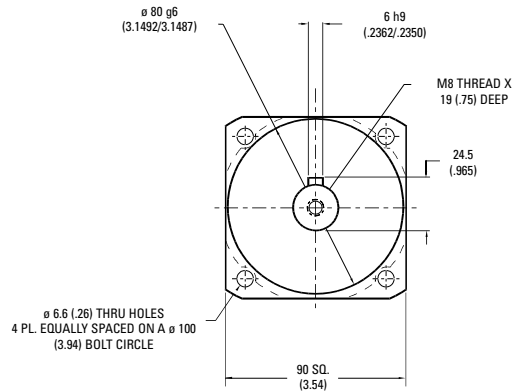
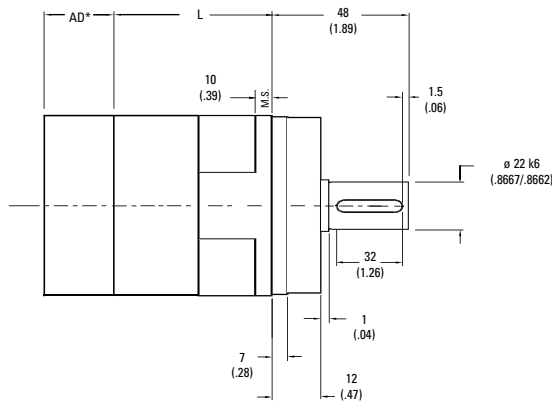
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 90

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | 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] | 95% |
| 16:1 to 100:1 | 125 [4.91] | 5 max | 3,0 [6.6] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length and width will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

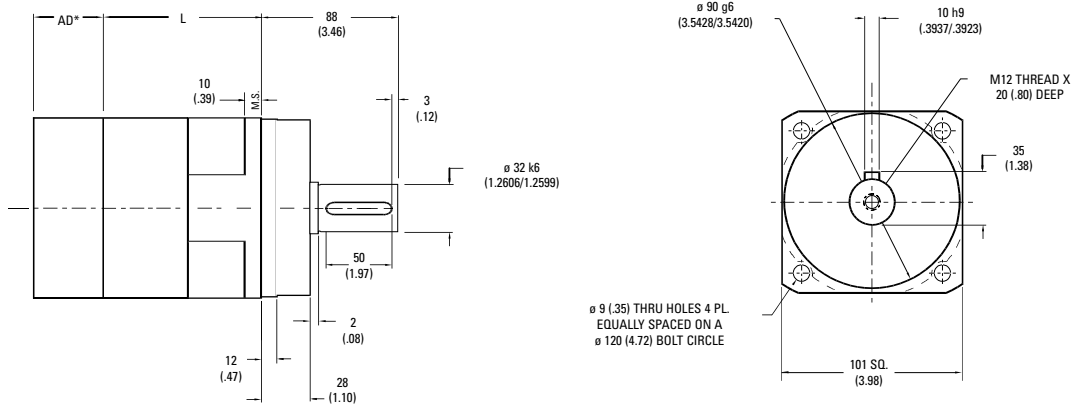
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 10

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 78 [3.07] | 4 max | 6 [13] | 95% |
| 16:1 to 100:1 | 146 [5.75] | 5 max | 8 [18] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length and width will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

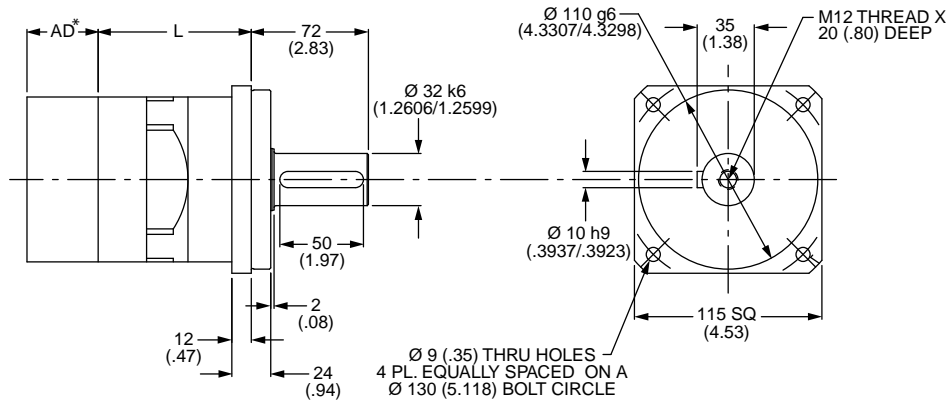
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 115

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 94 [3.70] | 4 max | 6 [13] | 95% |
| 16:1 to 100:1 | 162 [6.38] | 5 max | 6 [18] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length and width will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio¹ | 10,000 Hour Life | | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm² [in-lb-sec²x10⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------|--|--|--|--|----------------------|--|--|-------------|----------------------------------|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | T _r (1000 rpm) Nm [in-lb] | | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| 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] | |

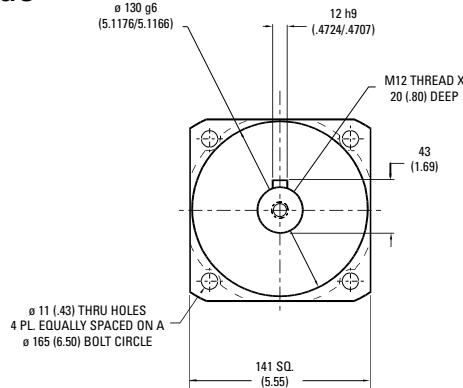
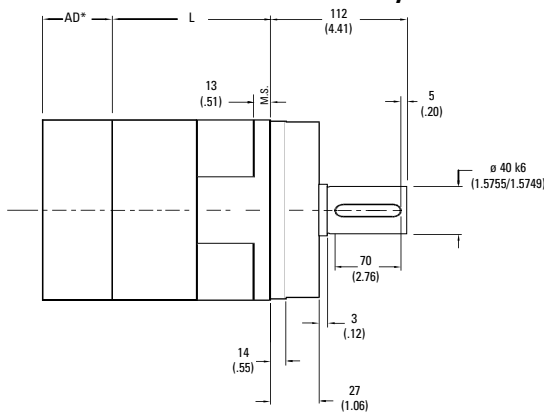
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 14

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 110.5 [4.35] | 4 max | 14 [31] | 95% |
| 16:1 to 100:1 | 195 [7.69] | 5 max | 18 [40] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length and width will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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 [11,860] | 643 [5688] | 591 [5227] | 559 [4951] | 4,21 [37.2] | 58 [514] |
| UT014-020 | 20:1 | 667 [5902] | 616 [5449] | 588 [5207] | 1360 [12,035] | 652 [5772] | 602 [5328] | 575 [5092] | 4,07 [36.0] | 54 [479] |
| UT014-025 | 25:1 | 645 [5706] | 598 [5288] | 572 [5066] | 1314 [11,625] | 630 [5579] | 584 [5171] | 560 [4954] | 4,07 [36.0] | 54 [479] |
| UT014-028 | 28:1 | 681 [6026] | 632 [5597] | 607 [5369] | 1387 [12,274] | 666 [5892] | 618 [5473] | 593 [5250] | 3,53 [31.2] | 47 [417] |
| UT014-035 | 35:1 | 658 [5820] | 613 [5424] | 589 [5215] | 1338 [11,837] | 643 [5691] | 599 [5304] | 576 [5099] | 2,99 [26.4] | 44 [391] |
| UT014-040 | 40:1 | 695 [6150] | 649 [5745] | 625 [5530] | 1412 [12,498] | 680 [6014] | 635 [5617] | 611 [5408] | 2,99 [26.4] | 58 [512] |
| UT014-050 | 50:1 | 671 [5935] | 628 [5560] | 606 [5363] | 1360 [12,034] | 656 [5803] | 614 [5437] | 593 [5244] | 2,85 [25.2] | 54 [479] |
| UT014-070 | 70:1 | 635 [5623] | 598 [5291] | 578 [5118] | 1283 [11,359] | 621 [5499] | 585 [5174] | 565 [5004] | 2,85 [25.2] | 49 [435] |
| UT014-100 | 100:1 | 441 [3898] | 385 [3407] | 361 [3193] | 1201 [10,627] | 408 [3607] | 356 [3153] | 334 [2954] | 2,85 [25.2] | 35 [312] |

All ratios are available to ship in 24 hours through the Gearhead Express Program.

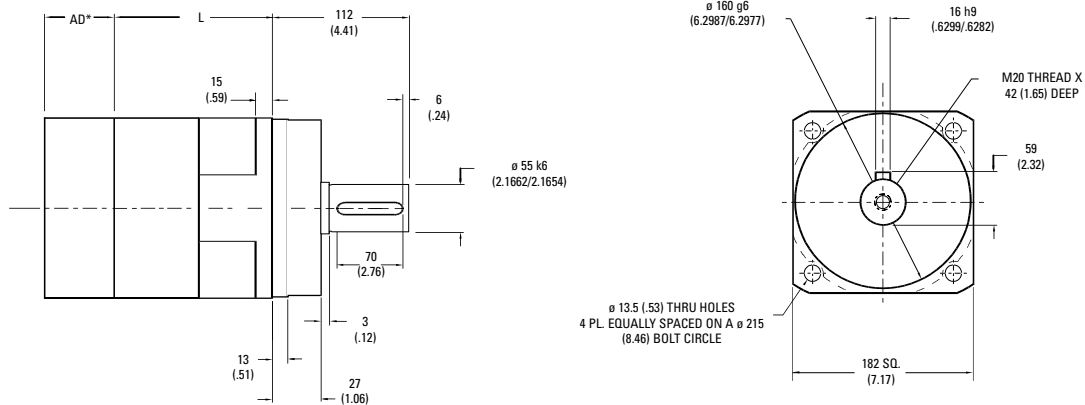
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 18

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' in [mm] | Backlash [arc-min] | Weight lb [kg] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 136 [5.35] | 4 max | 40 [88] | 95% |
| 16:1 to 100:1 | 244 [9.59] | 5 max | 45 [99] | 90% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length and width will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

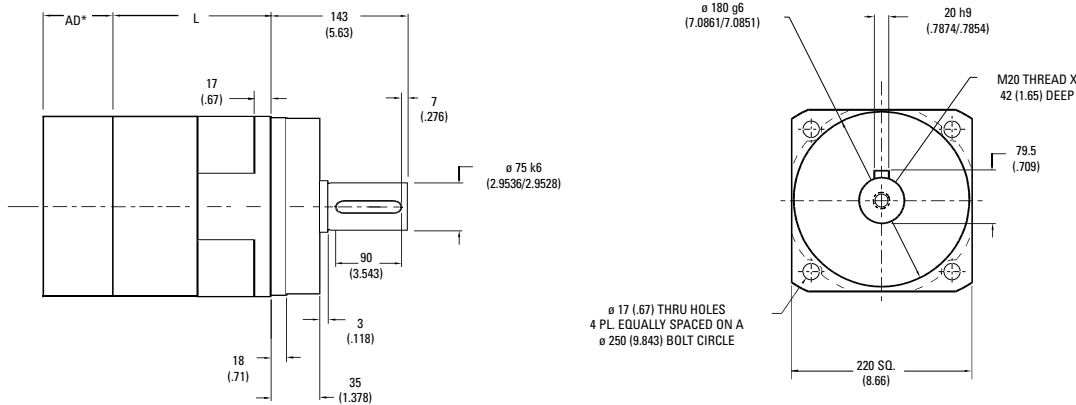
¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE™ Size 22

Helical True Planetary™ Gearheads

Metric



| Ratio ¹ | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 131 [5.15] | 4 max | 74 [162] | 93% |
| 16:1 to 100:1 | 232 [9.13] | 5 max | 95 [209] | 88% |

All dimensions are: mm (inch)

AD** = Adapter length

Adapter length will vary depending on motor.

M.S.= Mounting Surface

Efficiency is calculated at 100% of the rated torque.

Performance Specifications

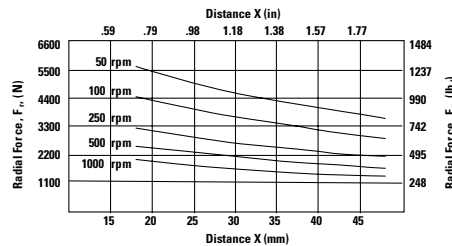
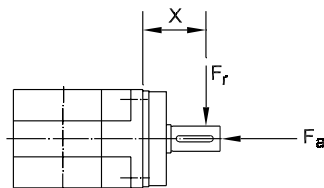
| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|----------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

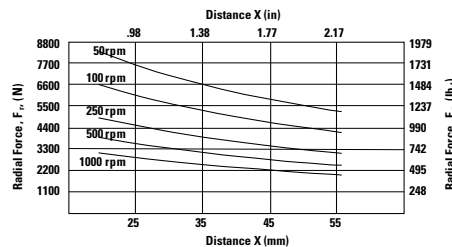
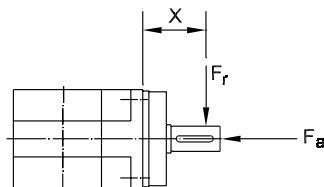
Radial and Axial Load Ratings

UT006



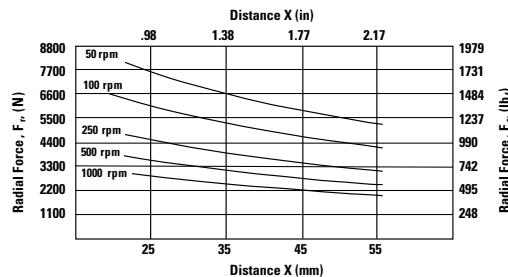
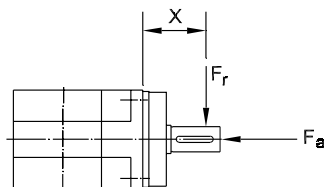
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 7198 [1618] |
| 100 | 5710 [1284] |
| 250 | 4208 [946] |
| 500 | 3342 [751] |
| 1000 | 2652 [596] |

UT075



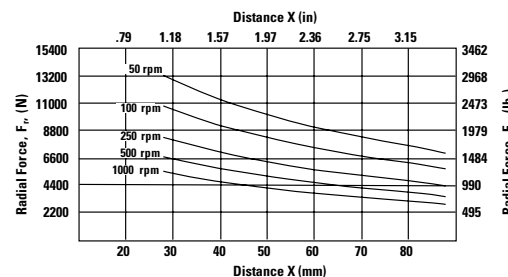
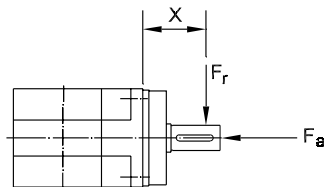
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9903 [2227] |
| 100 | 7863 [1768] |
| 250 | 5793 [1303] |
| 500 | 4599 [1034] |
| 1000 | 3650 [821] |

UT090



| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9903 [2227] |
| 100 | 7863 [1768] |
| 250 | 5793 [1303] |
| 500 | 4599 [1034] |
| 1000 | 3650 [821] |

UT010

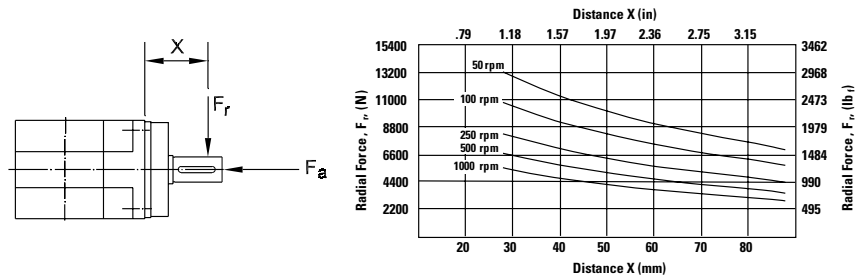


| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 13,675 [3075] |
| 100 | 11,107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

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_{mount} , as described on page 10.

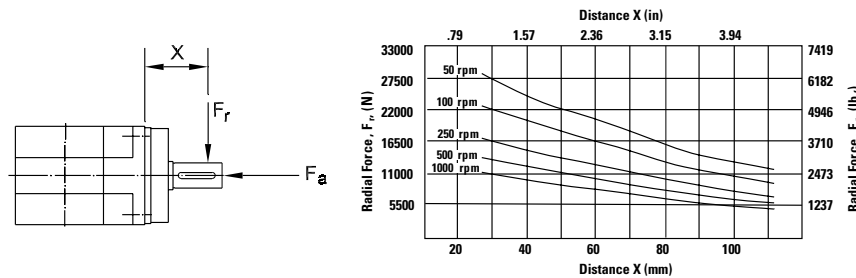
Radial and Axial Load Ratings

UT115



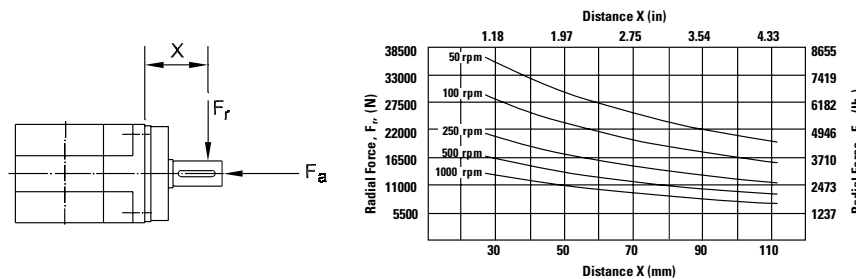
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 13,675 [3075] |
| 100 | 11,107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

UT014



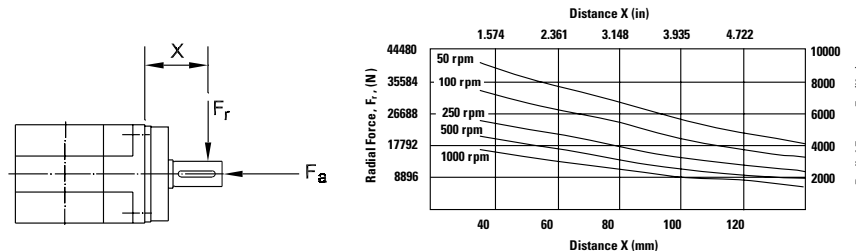
| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 25,374 [5705] |
| 100 | 20,609 [4633] |
| 250 | 15,657 [3520] |
| 500 | 12,716 [2859] |
| 1000 | 10,329 [2322] |

UT018



| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 34,538 [7765] |
| 100 | 27,414 [6163] |
| 250 | 20,197 [4541] |
| 500 | 16,034 [3605] |
| 1000 | 12,726 [2861] |

UT022



| Speed rpm | Axial Load, F_a N [lb.] |
|--------------|------------------------------|
| 50 | 32,351 [3655] |
| 100 | 26,277 [2969] |
| 250 | 19,962 [2256] |
| 500 | 16,214 [1832] |

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.



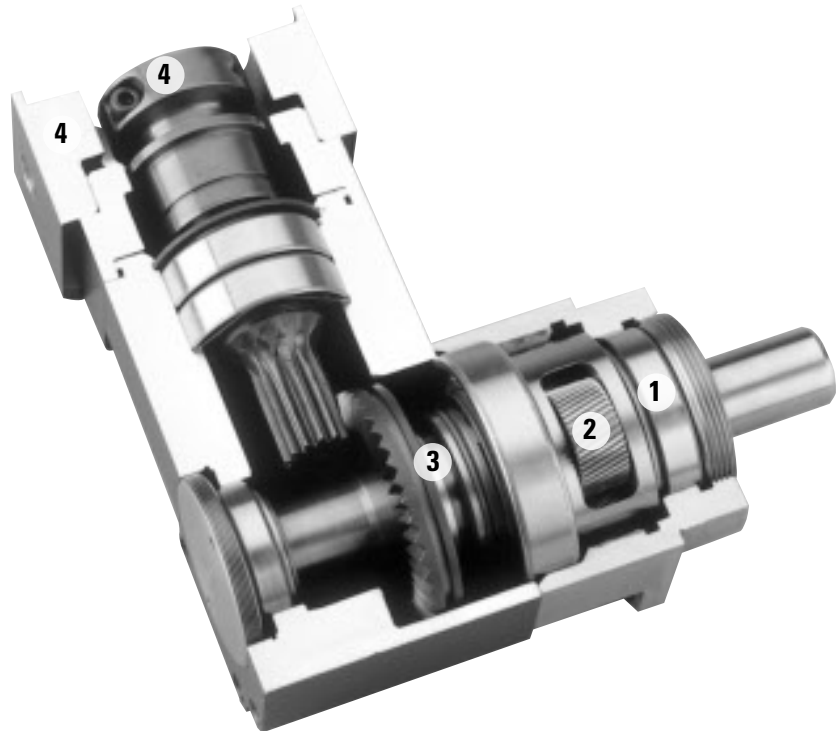
UltraTRUE 90™

Helical Right Angle Gearheads

Ready for Immediate Delivery

| | |
|-----------------------------|---|
| Precision | 4 arc-minutes |
| Frame Sizes | 60mm, 75mm, 90mm, 100mm, 115mm, 142mm and 180mm |
| Torque Capacity | up to 3111 Nm |
| Ratio Availability | 1:1 thru 50:1 |
| Radial load capacity | up to 37910 N |
| Mounting System | RediMount™ |

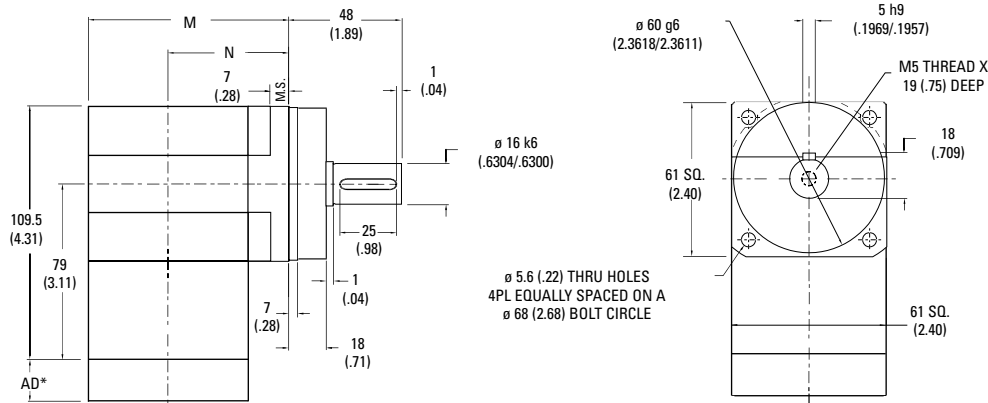
- ① **Tapered roller bearings**
provide high axial and radial load carrying capacity
- ② **Helical crowned**
HRC 55-60 steel gears
provide higher torque capacity and smoother operation
- ③ **PowerTRUE™ gear technology**
provides high torque capacity in a compact package
- ④ **RediMount™ system**
provides error-free motor installation



UltraTRUE 90™ Size 60

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 95 [3.75] | 65 [2.55] | 5 max | 3 [6.6] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S. = Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

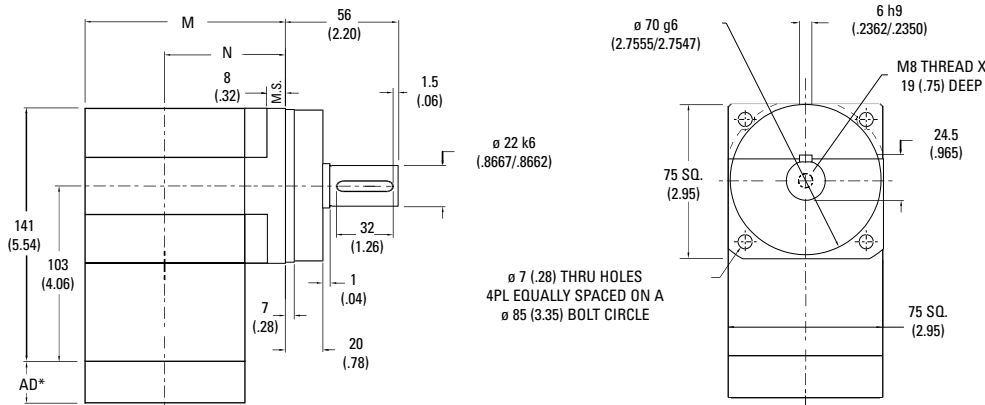
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 75

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 114.5 [4.51] | 77 [3.04] | 5 max | 5.3 [11.1] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S.= Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

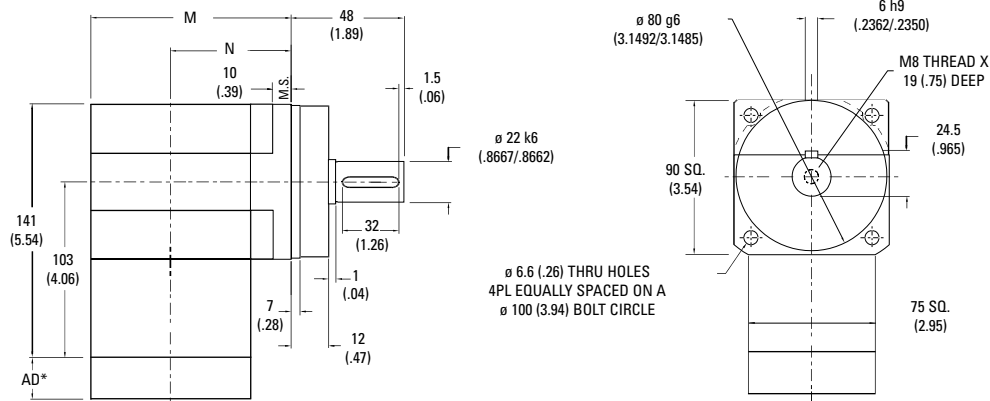
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 90

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 122.5 [4.82] | 85 [3.35] | 5 max | 5.3 [11.1] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S.= Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

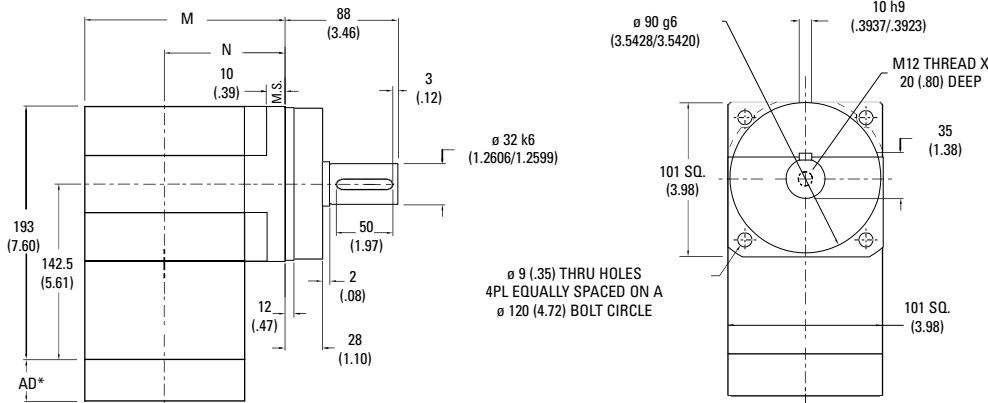
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 10

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 149 [5.88] | 99 [3.89] | 5 max | 12 [26.2] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S. = Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

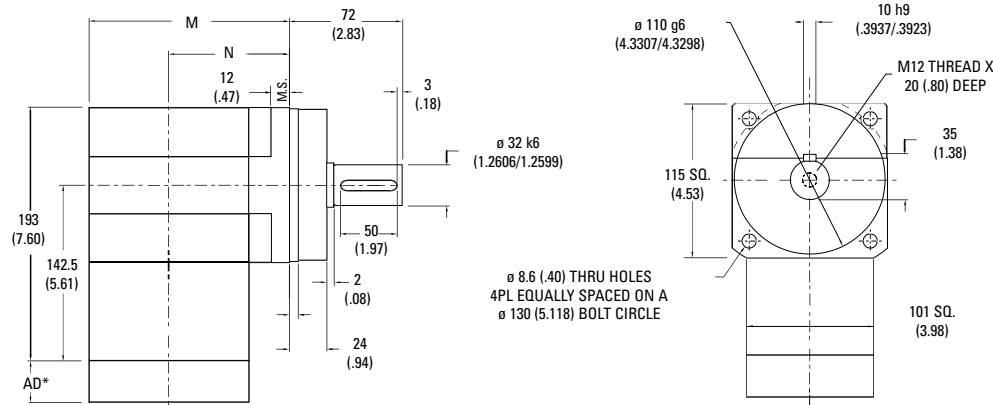
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 115

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 165 [6.51] | 114,8 [4.52] | 5 max | 12 [26.2] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S. = Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T _{peak} Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|---------------------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

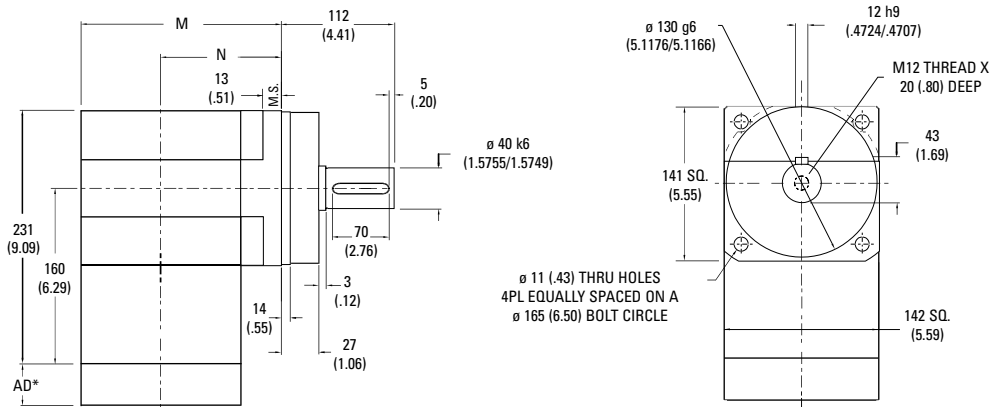
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 14

Helical Right Angle Gearheads

Metric



| Ratio ¹ | Dimension 'M' mm [in] | Dimension 'N' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------------------------|--------------------------|-----------------------|-------------------|------------|
| 1:1 to 5:1 P | 166 [6.54] | 95 [3.74] | 4 max | 24 [53] | 98% |
| 8:1 to 50:1 | 222 [8.74] | 151 [5.95] | 5 max | 29 [64] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S. = Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|----------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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 [11,233] | 611 [5408] | 530 [4688] | 454 [4022] | 16 [146] | 36,7 [325] |
| UTR014-010 | 10:1 | 606 [5364] | 551 [4876] | 522 [4617] | 1233 [10,911] | 593 [5245] | 539 [4768] | 474 [4192] | 16 [145] | 31,9 [282] |
| UTR014-012 | 12:1 | 644 [5702] | 588 [5207] | 559 [4944] | 1313 [11,616] | 630 [5576] | 575 [5092] | 513 [4542] | 13 [116] | 22,1 [195] |
| UTR014-014 | 14:1 | 578 [5118] | 530 [4690] | 504 [4461] | 1179 [10,430] | 565 [5005] | 518 [4586] | 493 [4363] | 16 [145] | 51,6 [457] |
| UTR014-015 | 15:1 | 624 [5522] | 572 [5067] | 545 [4824] | 1272 [11,253] | 610 [5399] | 560 [4955] | 533 [4717] | 12 [113] | 51,7 [457] |
| UTR014-016 | 16:1 | 631 [5587] | 576 [5099] | 521 [4610] | 1340 [11,860] | 583 [5160] | 532 [4708] | 481 [4257] | 13 [115] | 52,8 [467] |
| UTR014-020 | 20:1 | 636 [5627] | 587 [5194] | 561 [4963] | 1296 [11,471] | 622 [5503] | 574 [5079] | 548 [4854] | 13 [115] | 49,2 [435] |
| UTR014-025 | 25:1 | 592 [5240] | 540 [4782] | 488 [4324] | 1314 [11,625] | 547 [4839] | 499 [4415] | 451 [3992] | 12 [113] | 49,2 [435] |
| UTR014-028 | 28:1 | 605 [5350] | 561 [4969] | 539 [4767] | 1231 [10,896] | 591 [5232] | 549 [4859] | 527 [4661] | 13 [115] | 42,8 [379] |
| UTR014-030 | 30:1 | 380 [3363] | 329 [2914] | 307 [2715] | 1143 [10,111] | 352 [3112] | 305 [2696] | 284 [2512] | 14 [124] | 44,7 [396] |
| UTR014-035 | 35:1 | 612 [5420] | 571 [5052] | 549 [4857] | 1246 [11,024] | 599 [5300] | 558 [4941] | 537 [4750] | 12 [113] | 40,2 [356] |
| UTR014-040 | 40:1 | 394 [3486] | 342 [3028] | 319 [2826] | 1159 [10,257] | 364 [3226] | 317 [2802] | 295 [2615] | 13 [115] | 52,6 [466] |
| UTR014-050 | 50:1 | 405 [3584] | 352 [3118] | 329 [2914] | 1171 [10,360] | 375 [3316] | 326 [2886] | 305 [2696] | 12 [112] | 49,2 [435] |

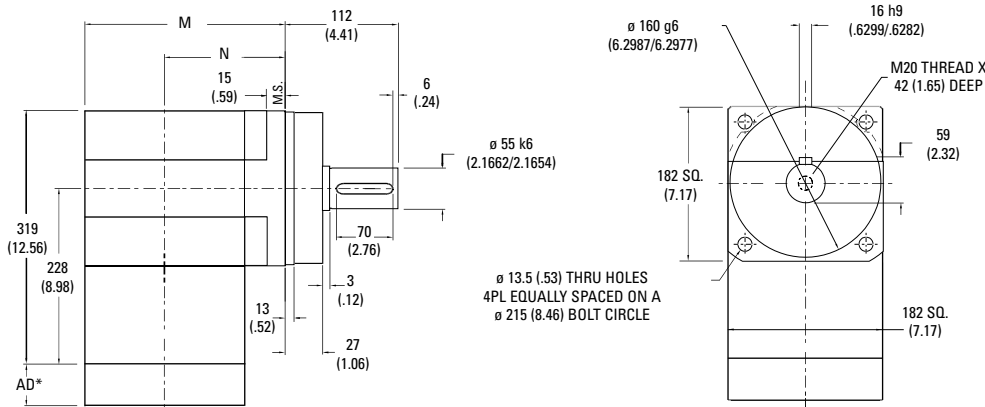
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

UltraTRUE 90™ Size 18

Helical Right Angle Gearheads

Metric



| Ratio ¹ | 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] | 98% |
| 8:1 to 50:1 | 273 [10.76] | 182 [7.18] | 5 max | 48 [106] | 93% |

All dimensions are: mm (inch)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 M.S. = Mounting Surface
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

| Part Number | Ratio ¹ | 10,000 Hour Life | | | T peak Nm [in-lb] | 20,000 Hour Life | | | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|--|--|--|----------------------|--|--|--|--|--|
| | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | |
| 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] |

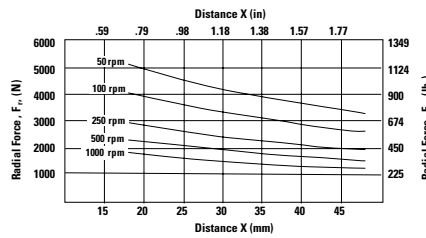
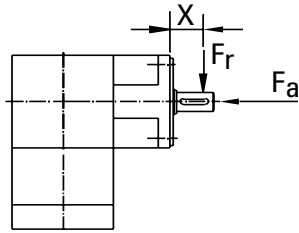
¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

Radial and Axial Load Ratings

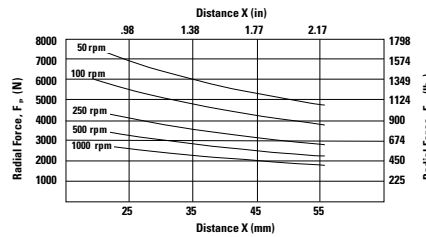
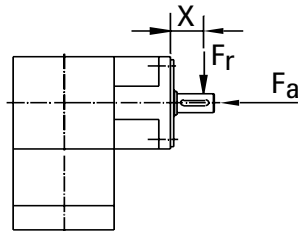
Ratios 1:1 thru 5:1 only

UTR006



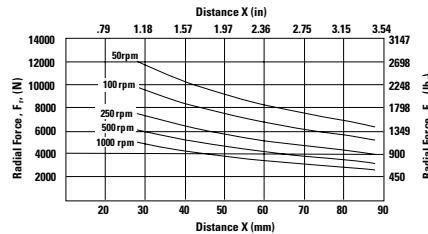
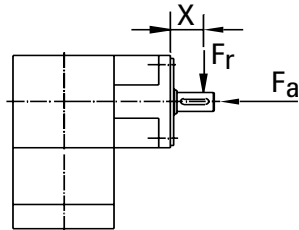
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 6543 [1471] |
| 100 | 5191 [1167] |
| 250 | 3825 [860] |
| 500 | 3038 [683] |
| 1000 | 2411 [542] |

UTR075 and UTR090



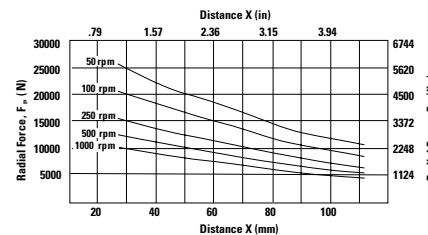
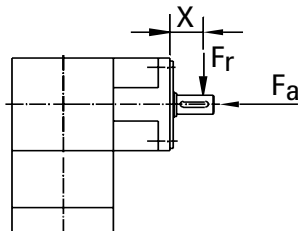
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9003 [2024] |
| 100 | 7148 [1607] |
| 250 | 5266 [1184] |
| 500 | 4181 [940] |
| 1000 | 3318 [746] |

UTR010 and UTR115



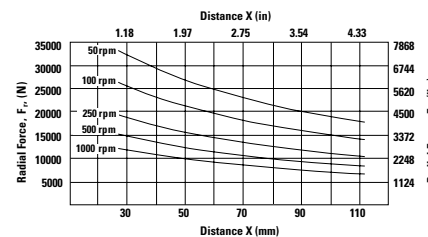
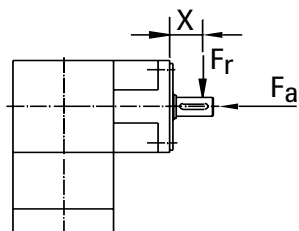
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 12,432 [2795] |
| 100 | 10,097 [2270] |
| 250 | 7668 [1724] |
| 500 | 6232 [1401] |
| 1000 | 5062 [1138] |

UTR014



| 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

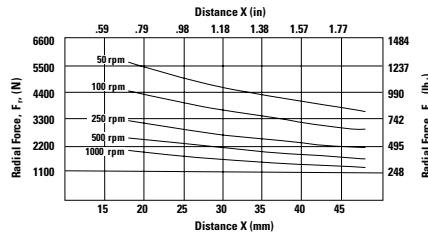
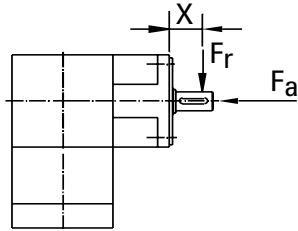


| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 31,398 [7059] |
| 100 | 24,922 [5603] |
| 250 | 18,361 [4128] |
| 500 | 14,576 [3277] |
| 1000 | 11,569 [2601] |

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.

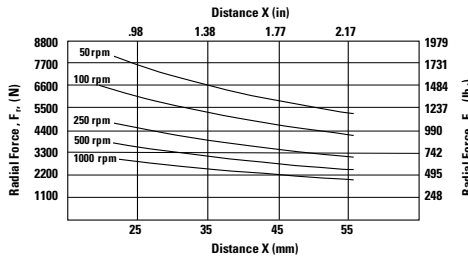
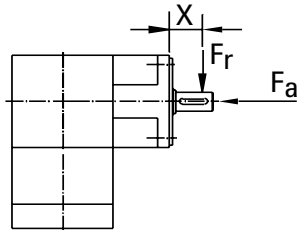
Radial and Axial Load Ratings

Ratios 8:1 thru 50:1 only
UTR006



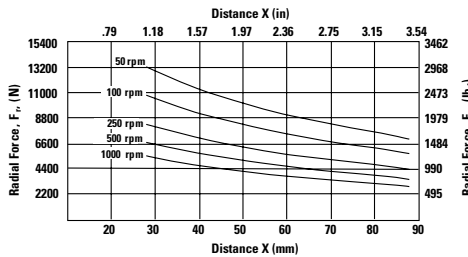
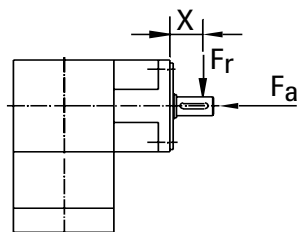
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 7198 [1618] |
| 100 | 5710 [1284] |
| 250 | 4208 [946] |
| 500 | 3342 [751] |
| 1000 | 2652 [596] |

UTR075 and UTR090



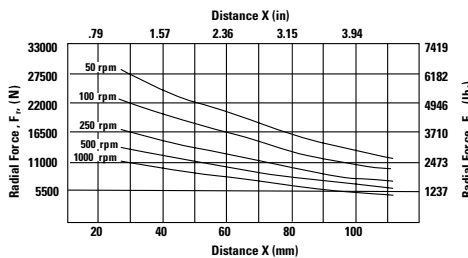
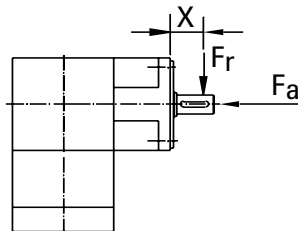
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 9903 [2227] |
| 100 | 7863 [1768] |
| 250 | 5793 [1303] |
| 500 | 4599 [1034] |
| 1000 | 3650 [821] |

UTR010 and UTR115



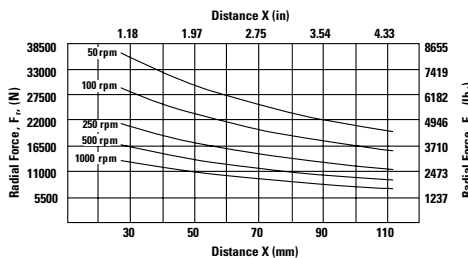
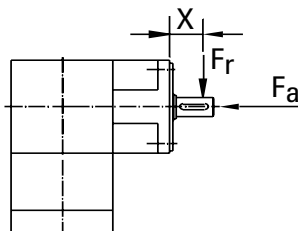
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 13,675 [3075] |
| 100 | 11,107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

UTR014



| 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



| 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] |

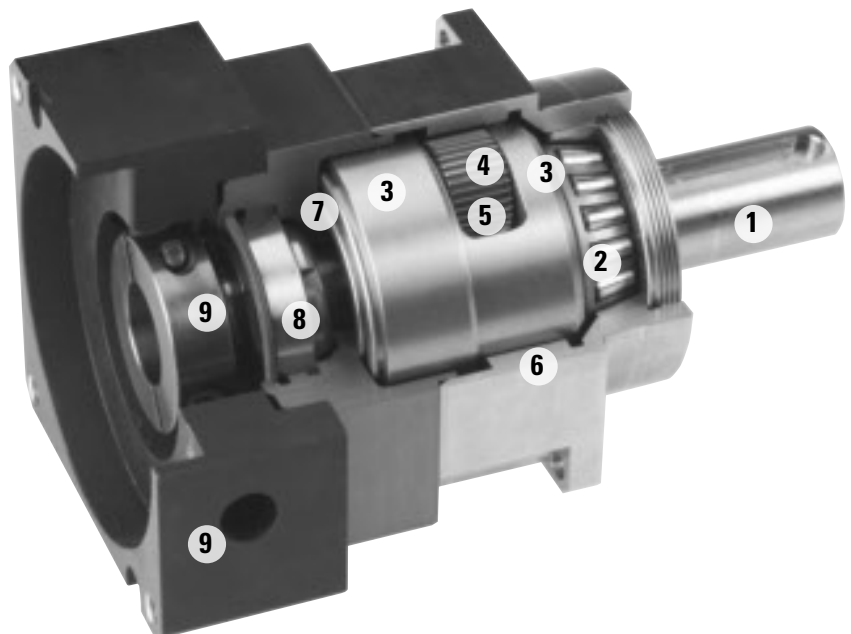
These graphs display the allowable radial load at a given distance (X) from the mounting surface based on an L₁₀ life of 10,000 hours for the mean output speed n_{mount} , as described on page 10.

EverTRUE™ Continuous Duty

True Planetary™ Gearheads

| Ready for Immediate Delivery | |
|------------------------------|------------------------|
| Precision | 4 arc-minutes |
| Frame Sizes | 100mm, 140mm and 180mm |
| Torque Capacity | up to 1017 Nm |
| Ratio Availability | 4:1 thru 100:1 |
| Radial load capacity | up to 44600 N |
| Mounting System | RediMount™ |

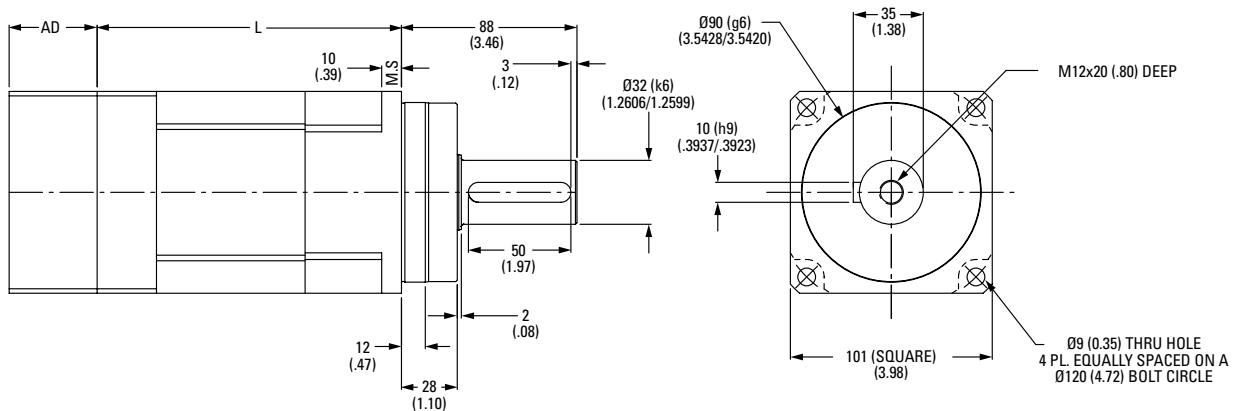
- ① **Single piece output shaft with**
straddle mount bearing for
increased stiffness
- ② **High capacity tapered roller bearings**
- ③ **Double full complement needle**
bearings for continuous operation
- ④ **Gears lubricated with**
continuous duty grease
- ⑤ **True Planetary Gearing**
optimized for continuous duty
- ⑥ **Single piece output**
housing with integral internal gear
- ⑦ **Angular contact bearing**
- ⑧ **Input bearing with thermal**
compensation feature
- ⑨ **RediMount™ system**
provides error-free installation



Stainless steel output housing

EverTRUE™ Size 10 Continuous Duty

True Planetary™ Gearheads



| Ratio ¹ | Stages | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 1 | 78 [3.07] | 4 max | 6 [13] | 95% |
| 16:1 to 100:1 | 2 | 146 [5.75] | 5 max | 8 [18] | 90% |

All dimensions are in mm (in)
AD** = Adapter length
Adapter length will vary depending on motor.
Efficiency is calculated at 100% of the rated torque.

Performance Specifications

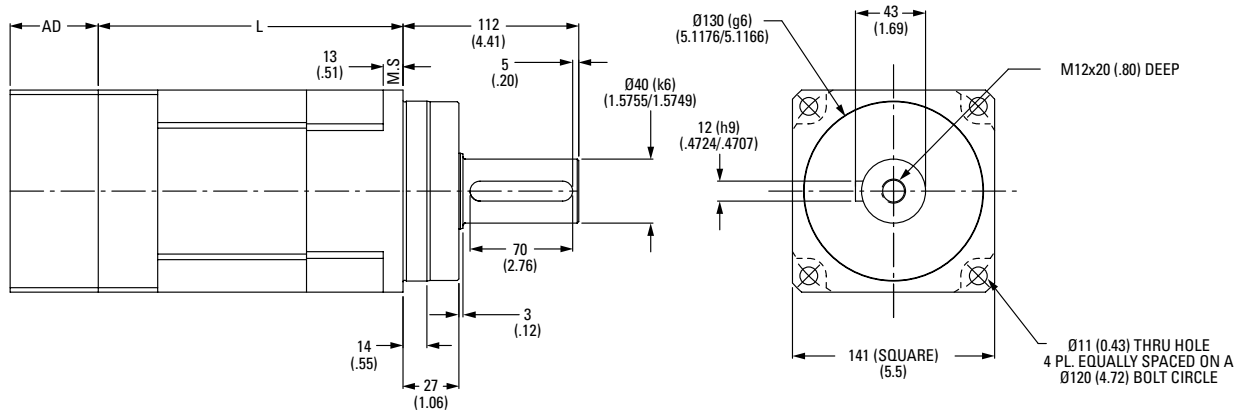
| Part Number | Ratio ¹ | Intermittent (Trc) Nm [in-lb] | 30000 Hour Life | | | Tpeak Nm [in-lb] | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|-------------------------------------|--|--|--|---------------------|--|---|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| ET010-004 | 4:1 | 171 [1514] | 147 [1303] | 106 [937] | 91 [804] | 463 [4093] | 1,50 [13.3] | 28,27 [250] |
| ET010-005 | 5:1 | 178 [1579] | 144 [1272] | 110 [977] | 95 [838] | 451 [3991] | 1,29 [11.5] | 25,08 [222] |
| ET010-007 | 7:1 | 190 [1684] | 137 [1217] | 118 [1042] | 101 [893] | 433 [3830] | 0,92 [8.1] | 23,21 [205] |
| ET010-010 | 10:1 | 106 [940] | 77 [677] | 66 [581] | 61 [539] | 411 [3640] | 0,86 [7.6] | 15,84 [140] |
| ET010-016 | 16:1 | 245 [2166] | 164 [1450] | 151 [1340] | 138 [1218] | 517 [4577] | 1,05 [9.2] | 30,03 [267] |
| ET010-020 | 20:1 | 249 [2205] | 166 [1470] | 154 [1364] | 147 [1303] | 524 [4637] | 1,05 [9.2] | 26,73 [237] |
| ET010-025 | 25:1 | 242 [2140] | 161 [1421] | 150 [1324] | 14 [127] | 506 [4477] | 1,05 [9.2] | 26,73 [237] |
| ET010-028 | 28:1 | 255 [2261] | 169 [1499] | 158 [1399] | 152 [1345] | 533 [4718] | 0,89 [7.9] | 23,21 [205] |
| ET010-035 | 35:1 | 248 [2191] | 164 [1448] | 153 [1355] | 148 [1306] | 514 [4549] | 0,75 [6.7] | 22,99 [204] |
| ET010-040 | 40:1 | 262 [2316] | 173 [1528] | 162 [1433] | 156 [1383] | 542 [4794] | 0,75 [6.7] | 30,14 [267] |
| ET010-050 | 50:1 | 253 [2243] | 167 [1475] | 157 [1387] | 152 [1341] | 521 [4615] | 0,74 [6.6] | 26,51 [235] |
| ET010-070 | 70:1 | 241 [2131] | 158 [1396] | 149 [1318] | 144 [1277] | 491 [4349] | 0,74 [6.6] | 23,21 [205] |
| ET010-100 | 100:1 | 144 [1277] | 102 [902] | 89 [790] | 84 [741] | 459 [4059] | 0,74 [6.6] | 18,92 [168] |

¹ Ratios are exact, higher ratios are also available, consult factory.
T_r = Rated output torque at rated speed for specific hours of life.
T_{rc} = Rated output torque for intermittent operation at 3,000 RPM
(20,000 hr life - for catalog comparison)

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

EverTRUE™ Size 14 Continuous Duty

True Planetary™ Gearheads



| Ratio ¹ | Stages | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 1 | 110,5 [4.35] | 4 max | 14 [31] | 95% |
| 16:1 to 100:1 | 2 | 195 [7.69] | 5 max | 18 [40] | 90% |

All dimensions are in mm (in)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

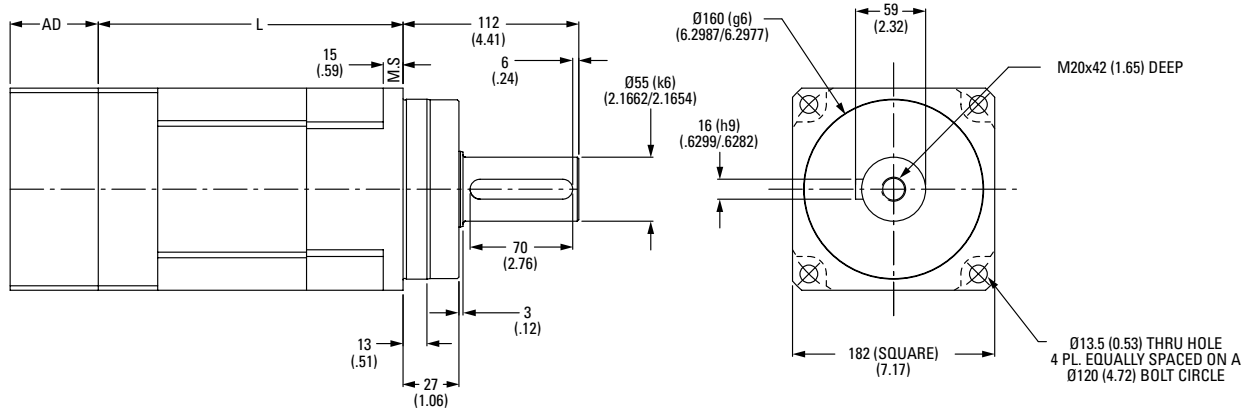
| Part Number | Ratio ¹ | Intermittent (Trc) Nm [in-lb] | 30000 Hour Life | | | T _{peak} Nm [in-lb] | J kg-cm ² [in-lb-sec ² x10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|-------------------------------------|--|--|--|---------------------------------|--|---|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| ET014-004 | 4:1 | 417 [3694] | 345 [3055] | 258 [2285] | 221 [1960] | 1066 [9431] | 6,18 [55] | 60,50 [536] |
| ET014-005 | 5:1 | 435 [3849] | 336 [2972] | 269 [2381] | 231 [2042] | 1040 [9206] | 4,77 [42] | 56,10 [497] |
| ET014-007 | 7:1 | 464 [4105] | 322 [2849] | 287 [2539] | 246 [2179] | 1002 [8866] | 3,61 [32] | 51,70 [458] |
| ET014-010 | 10:1 | 253 [2237] | 183 [1618] | 156 [1384] | 145 [1279] | 956 [8459] | 3,22 [29] | 38,50 [341] |
| ET014-016 | 16:1 | 573 [5070] | 386 [3413] | 354 [3136] | 336 [2971] | 1206 [10674] | 4,00 [35] | 63,80 [565] |
| ET014-020 | 20:1 | 584 [5168] | 391 [3463] | 361 [3197] | 345 [3055] | 1224 [10832] | 3,87 [34] | 59,40 [526] |
| ET014-025 | 25:1 | 567 [5016] | 378 [3347] | 351 [3103] | 336 [2972] | 1182 [10463] | 3,87 [34] | 59,40 [526] |
| ET014-028 | 28:1 | 600 [5309] | 399 [3535] | 371 [3284] | 356 [3150] | 1248 [11047] | 3,35 [30] | 51,70 [458] |
| ET014-035 | 35:1 | 581 [5145] | 386 [3415] | 360 [3182] | 346 [3059] | 1204 [10653] | 2,84 [25] | 48,40 [428] |
| ET014-040 | 40:1 | 616 [5448] | 408 [3608] | 381 [3370] | 367 [3245] | 1271 [11248] | 2,84 [25] | 63,80 [565] |
| ET014-050 | 50:1 | 596 [5274] | 393 [3482] | 369 [3262] | 356 [3146] | 1224 [10831] | 2,71 [24] | 59,40 [526] |
| ET014-070 | 70:1 | 567 [5019] | 373 [3299] | 351 [3104] | 339 [3002] | 1155 [10223] | 2,71 [24] | 53,90 [478] |
| ET014-100 | 100:1 | 346 [3058] | 245 [2164] | 214 [1892] | 200 [1772] | 1081 [9564] | 2,71 [24] | 38,50 [341] |

¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.
 T_{rc} = Rated output torque for intermittent operation at 3,000 RPM
 (20,000 hr life - for catalog comparison)

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

EverTRUE™ Size 18 Continuous Duty

True Planetary™ Gearheads



| Ratio ¹ | Stages | Dimension 'L' mm [in] | Backlash [arc-min] | Weight kg [lb] | Efficiency |
|--------------------|--------|--------------------------|-----------------------|-------------------|------------|
| 4:1 to 10:1 | 1 | 136 [5.35] | 4 max | 40 [88] | 95% |
| 16:1 to 100:1 | 2 | 244 [9.59] | 5 max | 45 [99] | 90% |

All dimensions are in mm (in)
 AD** = Adapter length
 Adapter length will vary depending on motor.
 Efficiency is calculated at 100% of the rated torque.

Performance Specifications

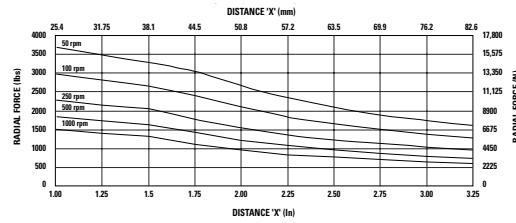
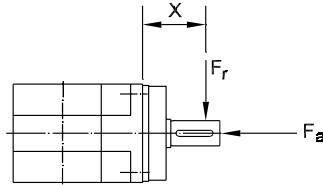
| Part Number | Ratio ¹ | Intermittent (Trc) Nm [in-lb] | 30000 Hour Life | | | T _{peak} Nm [in-lb] | J kg-cm ² [in-lb-sec ² ×10 ⁻⁴] | Torsional Stiffness Nm/arc-min [in-lb/arc-min] |
|-------------|--------------------|-------------------------------------|--|--|--|---------------------------------|--|---|
| | | | T _r (1000 rpm) Nm [in-lb] | T _r (3000 rpm) Nm [in-lb] | T _r (5000 rpm) Nm [in-lb] | | | |
| ET018-004 | 4:1 | 933 [8254] | 802 [7099] | 577 [5105] | 495 [4380] | 2442 [21609] | 24,61 [218] | 168,30 [1461] |
| ET018-005 | 5:1 | 972 [8602] | 782 [6923] | 601 [5321] | 516 [4565] | 2389 [21143] | 19,00 [168] | 165,00 [1461] |
| ET018-007 | 7:1 | 1037 [9174] | 752 [6652] | 641 [5675] | 550 [4868] | 2308 [20429] | 13,87 [123] | 147,40 [1306] |
| ET018-010 | 10:1 | 592 [5242] | 430 [3806] | 366 [3242] | 338 [2990] | 2210 [19561] | 12,35 [109] | 111,10 [984] |
| ET018-016 | 16:1 | 1335 [11816] | 904 [8003] | 826 [7309] | 750 [6639] | 2800 [24779] | 15,30 [136] | 177,10 [1569] |
| ET018-020 | 20:1 | 1363 [12061] | 919 [8129] | 843 [7460] | 802 [7099] | 2846 [25187] | 14,82 [131] | 171,60 [1520] |
| ET018-025 | 25:1 | 1325 [11722] | 889 [7866] | 819 [7251] | 782 [6923] | 2754 [24370] | 14,82 [131] | 144,10 [1277] |
| ET018-028 | 28:1 | 1403 [12414] | 939 [8311] | 868 [7679] | 830 [7342] | 2910 [25751] | 12,83 [114] | 151,80 [1345] |
| ET018-035 | 35:1 | 1361 [12047] | 908 [8033] | 842 [7452] | 807 [7142] | 2810 [24870] | 10,83 [96] | 136,40 [1209] |
| ET018-040 | 40:1 | 1443 [12767] | 960 [8492] | 892 [7897] | 857 [7580] | 2970 [26281] | 10,83 [96] | 177,10 [1569] |
| ET018-050 | 50:1 | 1398 [12371] | 927 [8201] | 865 [7652] | 832 [7361] | 2863 [25338] | 10,36 [92] | 171,60 [1520] |
| ET018-070 | 70:1 | 1332 [11789] | 879 [7778] | 824 [7292] | 795 [7037] | 2707 [23959] | 10,36 [92] | 151,80 [1345] |
| ET018-100 | 100:1 | 816 [7219] | 578 [5117] | 505 [4465] | 472 [4180] | 2537 [22454] | 10,36 [92] | 113,30 [1004] |

¹ Ratios are exact, higher ratios are also available, consult factory.
 T_r = Rated output torque at rated speed for specific hours of life.
 T_{rc} = Rated output torque for intermittent operation at 3,000 RPM
 (20,000 hr life - for catalog comparison)

T_{peak} = Allowable momentary peak torque for emergency stop or heavy shock loading.
 J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

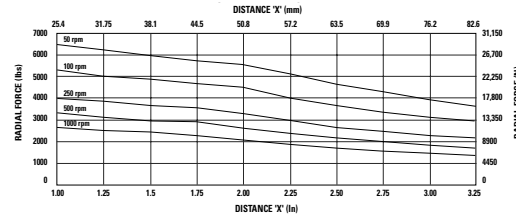
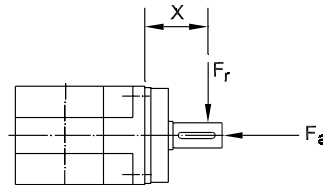
Radial and Axial Load Ratings

ET010



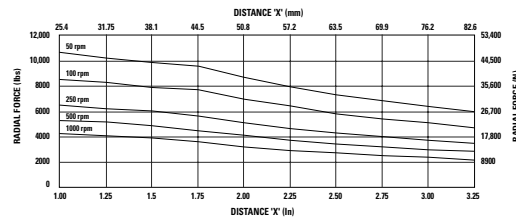
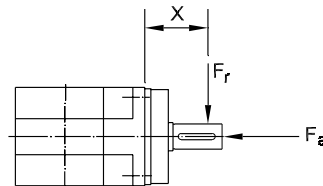
| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 13675 [3075] |
| 100 | 11107 [2497] |
| 250 | 8435 [1897] |
| 500 | 6855 [1542] |
| 1000 | 5568 [1252] |

ET014



| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 25074 [5705] |
| 100 | 20609 [4633] |
| 250 | 15657 [3520] |
| 500 | 12716 [2859] |
| 1000 | 10329 [2322] |

ET018



| Speed rpm | Axial Load, F_a N [lb _f] |
|--------------|---|
| 50 | 34538 [7765] |
| 100 | 27414 [6163] |
| 250 | 20197 [4541] |
| 500 | 16034 [3605] |
| 1000 | 12726 [2861] |

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.



Gearhead Application Analysis Form

General Information

Customer Name: _____ Fax: _____ Order Date: _____

Buyer Contact: _____ Phone: _____ Required Date: _____

Technical Contact: _____

Bill to Address: _____ Town/County: _____ State/Zip: _____

Ship to Address: _____ Town/County: _____ State/Zip: _____

E-mail: _____ Website: _____

Motor Information

Motor Manufacturer: _____ Motor Model #: _____

Continuous Torque (Nm) _____ Peak Torque (Nm) _____

Maximum Speed (rpm) _____

Application Information

Brief description of your application: _____

Acceleration time (sec) _____ Acceleration torque (Nm) _____ Max speed (rpm) _____

Dwell time (sec) _____ Dwell torque (Nm) _____ Dwell speed (rpm) _____

Deceleration time (sec) _____ Deceleration torque (Nm) _____ Min speed (rpm) _____

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

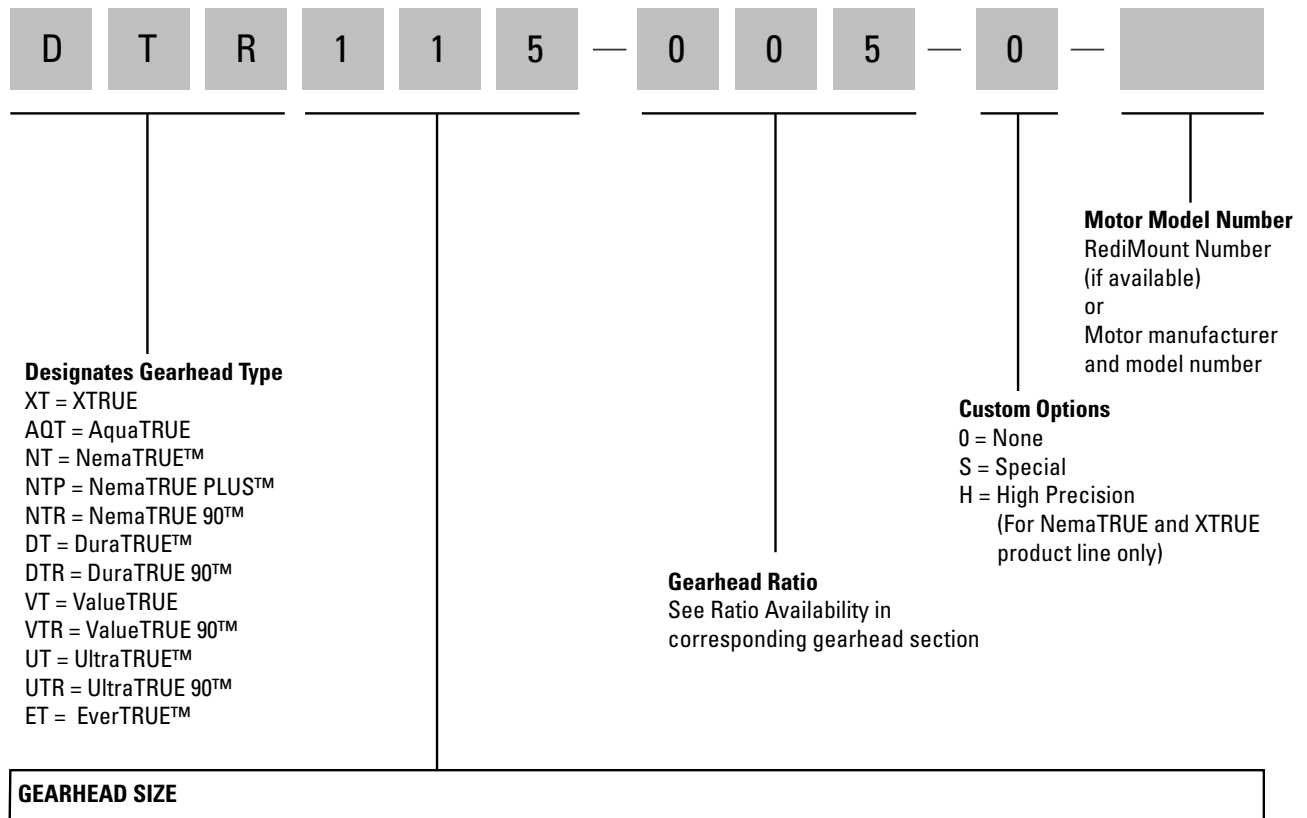
External load inertia (Nm-sec²) _____ Maximum speed of motor (rpm) _____

Ordering Information

| Part Number | Quantity | Price | Delivery |
|-------------|----------|-------|----------|
| _____ | _____ | _____ | _____ |

Gearhead Ordering Information

Visit www.micronmotioneering.com to get your complete RediMount part number using your motor manufacturer and model number information.

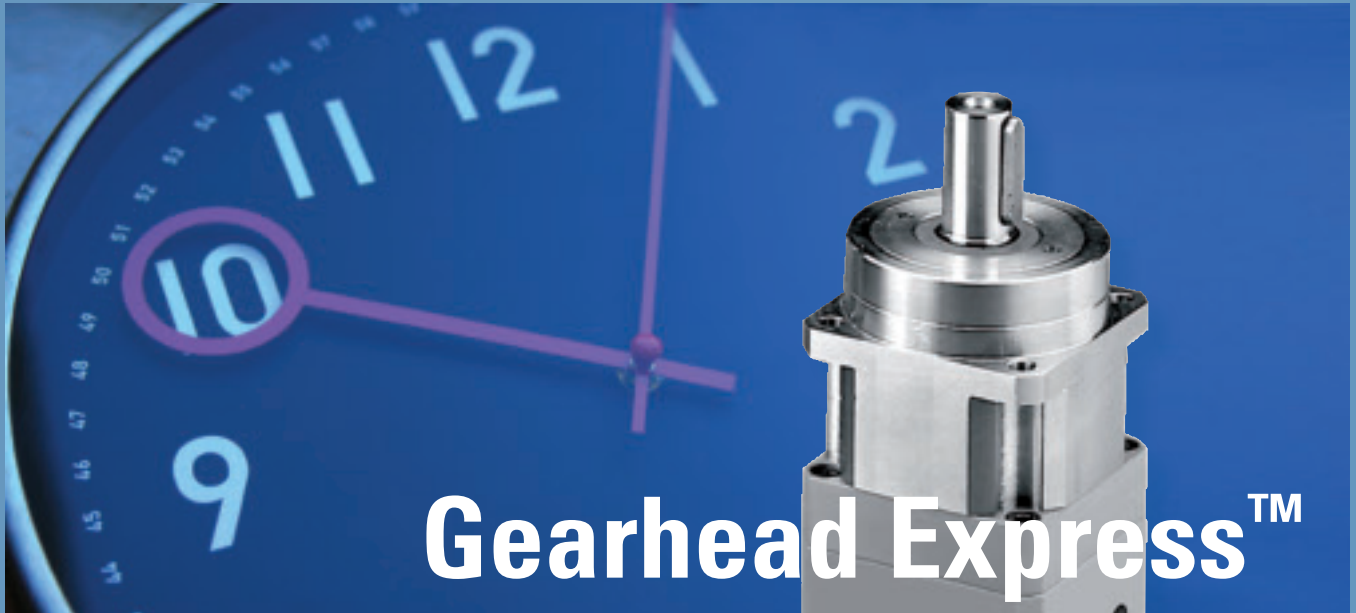


| GEARHEAD SIZE | | | | | |
|---------------------|---|---|---------------------------------|--------------|-----------------------------|
| XTRUE™ AquaTRUE™ | NemaTRUE™ NemaTRUE PLUS™ NemaTRUE 90™ | DuraTRUE™ DuraTRUE 90™ DuraTRUE™ (Hollow Shaft) DuraTRUE™ (Dual Shaft) | UltraTRUE™ UltraTRUE 90™ | EverTRUE™ | ValueTRUE™ ValueTRUE 90™ |
| 40 = 40mm | 17 = Size 17 | 60 = Size 60 | 006 = Size 60 | 10 = Size 10 | 006 = Size 60 |
| 60 = 60mm | 23 = Size 23 | 90 = Size 90 | 075 = Size 75 | 14 = Size 14 | 075 = Size 75 |
| 80 = 80mm | 34 = Size 34 | 115 = Size 115 | 090 = Size 90 | 18 = Size 18 | 090 = Size 90 |
| 120 = 120mm | 42 = Size 42 | 142 = Size 142 | 010 = Size 10 | | 010 = Size 10 |
| 160 = 160mm | 60 = Size 60 | | 115 = Size 115 | | 115 = Size 115 |
| | 90 = Size 90 | | 014 = Size 14 | | 014 = Size 14 |
| | 115 = Size 115 | | 018 = Size 18 | | 018 = Size 18 |
| | | | 022 = Size 22 (UltraTRUE™ only) | | 022 = Size 22 |





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Ratios: 3, 4, 5, 7, 10, 15, 20, 30, 40, 50, 70 and 100:1
- **DuraTRUE**
Frame sizes 60, 90, 115 and 142
Ratios: 3, 4, 5, 7, 10, 15, 20, 25, 30, 40, 50, 70 and 100:1
- **UltraTRUE**
Frame sizes 6, 7.5, 10 and 14
Ratios: 4, 5, 7, 10, 16, 20, 25, 28, 35, 40, 50, 70 and 100:1
- **ValueTRUE**
Frame sizes 6, 7.5, 10 and 14
Ratios: 4, 5, 7, 10, 16, 20, 25, 28, 35, 40, 50, 70 and 100:1

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