

Micron TRUE Planetary® Gearheads

AquaTRUE™

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

Introduction

Micron's 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 enclosures, 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.

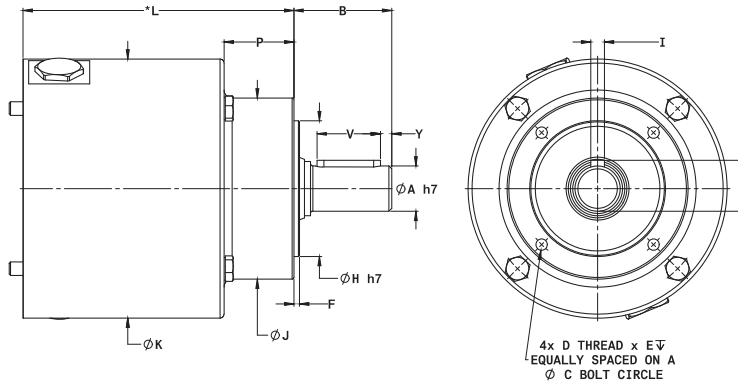
- Frame Sizes: 60, 80, 120 and 160 mm
- Precision: 13 arc-min max
- Torque Capacity: up to 876 Nm
- Ratio Availability: 3:1 to 10:1 (single stage), 15:1 to 100:1 (double stage)

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



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]	36.8 [1.45]	2.5 [0.10]	25 [0.98]	16 [0.63]	5 [0.20]	43 [1.69]	60 [2.36]
AQT080	20 [0.79]	43.2 [1.70]	4.0 [0.16]	28 [1.10]	22.5 [0.89]	6 [0.24]	60 [2.36]	80 [3.15]
AQT120	25 [0.98]	58.4 [2.30]	5 [0.20]	40 [1.57]	28 [1.10]	8 [0.31]	80 [3.15]	110.5 [4.36]
AQT160	40 [1.57]	90.3 [3.56]	8.0 [0.32]	65 [2.55]	43 [1.69]	12 [0.47]	105 [4.13]	140 [5.50]

Part Number	F Pilot Length mm [in.]	D Output Housing Thread	E 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.]
					ratio 3:1 - 10:1	ratio 15:1 - 100:1		
AQT060	2.5 [0.098]	M5x0.8-6H	8.1 [0.32]	92 [3.62]	91.7 [3.61]	109 [4.29]	52 [2.05]	38.5 [1.51]
AQT080	2.5 [0.098]	M6x1.0-6H	10.1 [0.40]	114.5 [4.51]	119.7 [4.71]	142.7 [5.62]	70 [2.76]	30.8 [1.21]
AQT120	4.0 [0.157]	M10x1.5-6H	16 [0.63]	150 [5.9]	148.2 [5.83]	179.3 [7.06]	95 [3.74]	56.1 [2.21]
AQT160	5.0 [0.197]	M12x1.75-6H	21.6 [0.85]	188.7 [7.43]	195.8 [7.71]	243.8 [9.60]	124 [4.88]	76 [2.99]

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
	2	15	88%	3.3	[7.3]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1
AQT080	1	13	93%	5.7	[12.7]	3:1, 4:1, 5:1, 7:1; 8:1; 10:1
	2	15	88%	7.2	[15.9]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 80:1; 100:1
AQT120	1	13	93%	12.0	[26.5]	3:1, 4:1, 5:1, 7:1; 10:1
	2	15	88%	15.4	[33.9]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1
AQT160	1	13	93%	24.8	[53.8]	3:1, 4:1, 5:1, 7:1; 10:1
	2	15	88%	31.2	[68.8]	15:1, 20:1, 25:1, 30:1, 40:1, 50:1; 70:1; 100:1

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.

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Performance Specifications									
Part Number	Ratio	20,000 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]	
		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]	0.572 [5.066]	1.49 [13.17]
	AQT060-004	4:1	20 [177]	17 [149]	15 [130]	14 [121]	46 [409]	0.457 [4.047]	1.47 [12.97]
	AQT060-005	5:1	18 [158]	15 [130]	13 [112]	12 [102]	48 [427]	0.408 [3.615]	1.45 [12.79]
	AQT060-007	7:1	17 [149]	14 [121]	12 [102]	11 [93]	43 [381]	0.367 [3.245]	1.40 [12.41]
	AQT060-010	10:1	16 [139]	15 [130]	14 [121]	13 [112]	47 [418]	0.347 [3.068]	1.36 [12.07]
	AQT060-015	15:1	26 [232]	21 [186]	19 [167]	17 [149]	55 [483]	0.387 [3.424]	1.49 [13.14]
	AQT060-020	20:1	27 [242]	25 [223]	22 [195]	21 [186]	48 [427]	0.385 [3.408]	1.47 [13.00]
	AQT060-025	25:1	25 [223]	23 [204]	20 [177]	19 [167]	55 [483]	0.384 [3.400]	1.45 [12.85]
	AQT060-030	30:1	29 [260]	26 [232]	23 [204]	21 [186]	55 [483]	0.340 [3.006]	1.49 [13.18]
	AQT060-040	40:1	28 [251]	27 [242]	27 [242]	25 [223]	48 [427]	0.339 [3.002]	1.47 [13.04]
AQT060-050	50:1	26 [232]	25 [223]	25 [223]	23 [204]	55 [483]	0.339 [3.001]	1.46 [12.88]	
AQT060-070	70:1	25 [223]	24 [214]	24 [214]	22 [195]	48 [427]	0.339 [2.999]	1.38 [12.23]	
AQT060-100	100:1	21 [186]	20 [177]	19 [167]	18 [158]	43 [381]	0.339 [2.998]	1.29 [11.41]	
AQT080	AQT080-003	3:1	59 [520]	48 [427]	43 [381]	39 [344]	165 [1459]	2.433 [21.5]	6.21 [54.96]
	AQT080-004	4:1	70 [623]	58 [511]	53 [465]	48 [427]	165 [1459]	1.929 [17.1]	6.19 [54.81]
	AQT080-005	5:1	65 [576]	53 [465]	47 [418]	43 [381]	165 [1459]	1.692 [15.0]	6.12 [54.18]
	AQT080-007	7:1	63 [558]	50 [446]	45 [400]	40 [353]	165 [1459]	1.472 [13.0]	5.70 [50.41]
	AQT080-008	8:1	62 [549]	49 [434]	45 [398]	42 [372]	165 [1460]	1.426 [12.6]	5.53 [48.98]
	AQT080-010	10:1	54 [474]	48 [427]	45 [400]	43 [381]	165 [1459]	1.387 [12.3]	5.83 [51.62]
	AQT080-015	15:1	90 [799]	78 [688]	69 [613]	63 [558]	175 [1552]	1.605 [14.2]	6.18 [54.70]
	AQT080-020	20:1	92 [818]	88 [781]	81 [716]	75 [660]	175 [1552]	1.598 [14.1]	6.18 [54.67]
	AQT080-025	25:1	87 [771]	83 [734]	76 [669]	69 [613]	175 [1552]	1.594 [14.1]	6.11 [54.10]
	AQT080-030	30:1	100 [883]	90 [799]	85 [753]	78 [688]	175 [1552]	1.367 [12.1]	6.18 [54.68]
AQT080-040	40:1	96 [846]	92 [818]	90 [799]	88 [781]	175 [1552]	1.365 [12.1]	6.18 [54.67]	
AQT080-050	50:1	90 [799]	87 [771]	85 [753]	83 [734]	175 [1552]	1.364 [12.1]	6.11 [54.10]	
AQT080-070	70:1	88 [781]	85 [753]	83 [734]	82 [725]	175 [1552]	1.363 [12.1]	5.37 [48.28]	
AQT080-080	80:1	84 [743]	80 [708]	78 [690]	74 [655]	175 [1549]	1.363 [12.1]	5.33 [47.21]	
AQT080-100	100:1	72 [641]	67 [595]	63 [558]	61 [539]	175 [1552]	1.363 [12.1]	5.58 [49.34]	
AQT120	AQT120-003	3:1	90 [799]	74 [650]	65 [576]	59 [520]	298 [2639]	9.014 [79.8]	13.58 [120.15]
	AQT120-004	4:1	107 [948]	89 [790]	79 [697]	74 [650]	298 [2639]	7.286 [64.5]	13.49 [119.36]
	AQT120-005	5:1	99 [873]	81 [716]	71 [632]	65 [576]	298 [2639]	6.484 [57.4]	13.37 [118.32]
	AQT120-007	7:1	97 [855]	79 [697]	68 [604]	63 [558]	298 [2639]	5.746 [50.9]	12.96 [114.65]
	AQT120-010	10:1	87 [771]	79 [697]	74 [650]	69 [613]	298 [2639]	5.376 [47.6]	12.12 [107.27]
	AQT120-015	15:1	146 [1292]	119 [1050]	105 [929]	96 [846]	298 [2639]	6.161 [54.5]	13.40 [118.60]
	AQT120-020	20:1	169 [1496]	139 [1227]	124 [1097]	114 [1013]	298 [2639]	6.137 [54.3]	13.32 [117.90]
	AQT120-025	25:1	161 [1422]	130 [1152]	116 [1022]	106 [939]	298 [2639]	6.199 [54.9]	13.38 [118.36]
	AQT120-030	30:1	180 [1589]	146 [1292]	129 [1143]	119 [1050]	298 [2639]	5.298 [46.9]	13.39 [115.53]
	AQT120-040	40:1	187 [1654]	169 [1496]	150 [1329]	139 [1227]	298 [2639]	5.292 [46.8]	13.47 [119.22]
AQT120-050	50:1	179 [1580]	161 [1422]	142 [1254]	130 [1152]	298 [2639]	5.289 [46.8]	13.40 [118.57]	
AQT120-070	70:1	176 [1561]	159 [1403]	140 [1236]	128 [1134]	298 [2639]	5.274 [46.7]	13.00 [115.05]	
AQT120-100	100:1	120 [1059]	109 [966]	104 [920]	100 [883]	298 [2639]	5.281 [46.7]	12.22 [108.18]	
AQT160	AQT160-003	3:1	317 [2806]	257 [2277]	228 [2016]	209 [1849]	876 [7750]	36.396 [322.13]	46.71 [413.39]
	AQT160-004	4:1	371 [3280]	305 [2695]	272 [2407]	251 [2221]	876 [7750]	26.642 [235.80]	46.16 [408.73]
	AQT160-005	5:1	350 [3094]	284 [2509]	251 [2221]	230 [2035]	876 [7750]	22.246 [196.89]	45.43 [402.08]
	AQT160-007	7:1	344 [3048]	278 [2463]	246 [2174]	225 [1989]	876 [7750]	18.551 [164.19]	43.44 [384.46]
	AQT160-010	10:1	222 [1961]	198 [1756]	185 [1635]	175 [1552]	876 [7750]	16.606 [146.97]	40.98 [362.68]
	AQT160-015	15:1	508 [4498]	417 [3689]	370 [3271]	339 [3001]	876 [7750]	19.892 [176.06]	45.19 [399.89]
	AQT160-020	20:1	513 [4544]	481 [4256]	428 [3791]	395 [3494]	876 [7750]	19.721 [174.55]	46.39 [410.38]
	AQT160-025	25:1	492 [4358]	460 [4070]	407 [3605]	374 [3308]	876 [7750]	19.632 [173.75]	45.62 [403.72]
	AQT160-030	30:1	562 [4971]	508 [4498]	455 [4024]	417 [3689]	876 [7750]	15.971 [141.36]	46.82 [413.83]
	AQT160-040	40:1	536 [4739]	513 [4544]	500 [4423]	481 [4256]	876 [7750]	15.971 [141.36]	46.37 [410.36]
AQT160-050	50:1	515 [4553]	492 [4358]	479 [4237]	460 [4070]	876 [7750]	15.971 [141.35]	45.60 [403.59]	
AQT160-070	70:1	509 [4507]	487 [4312]	474 [4191]	455 [4024]	876 [7750]	15.952 [141.18]	45.53 [385.27]	
AQT160-100	100:1	306 [2704]	279 [2472]	265 [2342]	254 [2249]	876 [7750]	15.941 [141.09]	40.95 [362.45]	

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

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

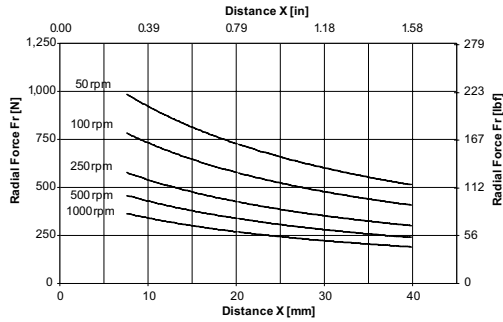
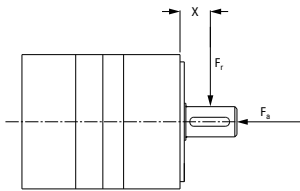
J = Mass moment of inertia reflected to the input shaft (including pinion assembly).

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True Planetary Gearheads

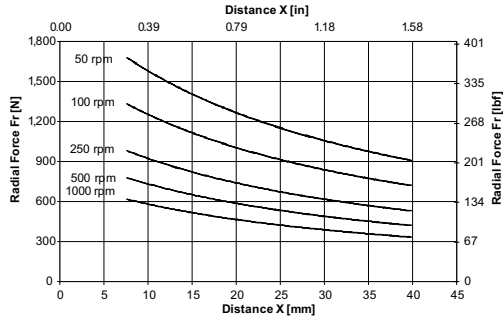
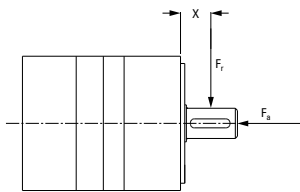
Radial and Axial Load Ratings

AQT060



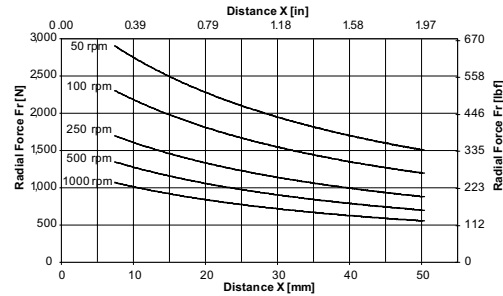
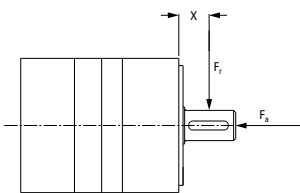
Speed rpm	Axial Load, F_a N [lb.]
50	2542 [571]
100	2017 [454]
250	1486 [334]
500	1180 [265]
1000	936 [211]

AQT080



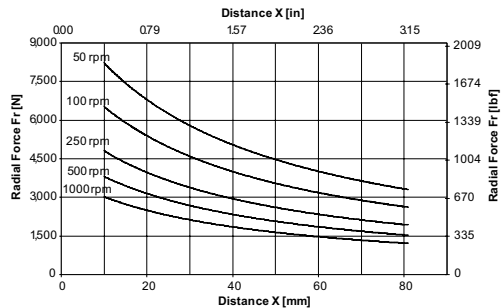
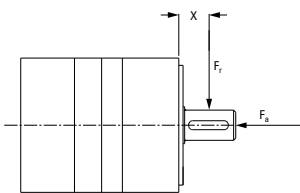
Speed rpm	Axial Load, F_a N [lb.]
50	3780 [850]
100	3000 [675]
250	2211 [497]
500	1755 [394]
1000	1393 [313]

AQT120



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

AQT160



Speed rpm	Axial Load, F_a N [lb.]
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.