



Combining Today's Best Technologies

For Tomorrow's Break Through Discoveries

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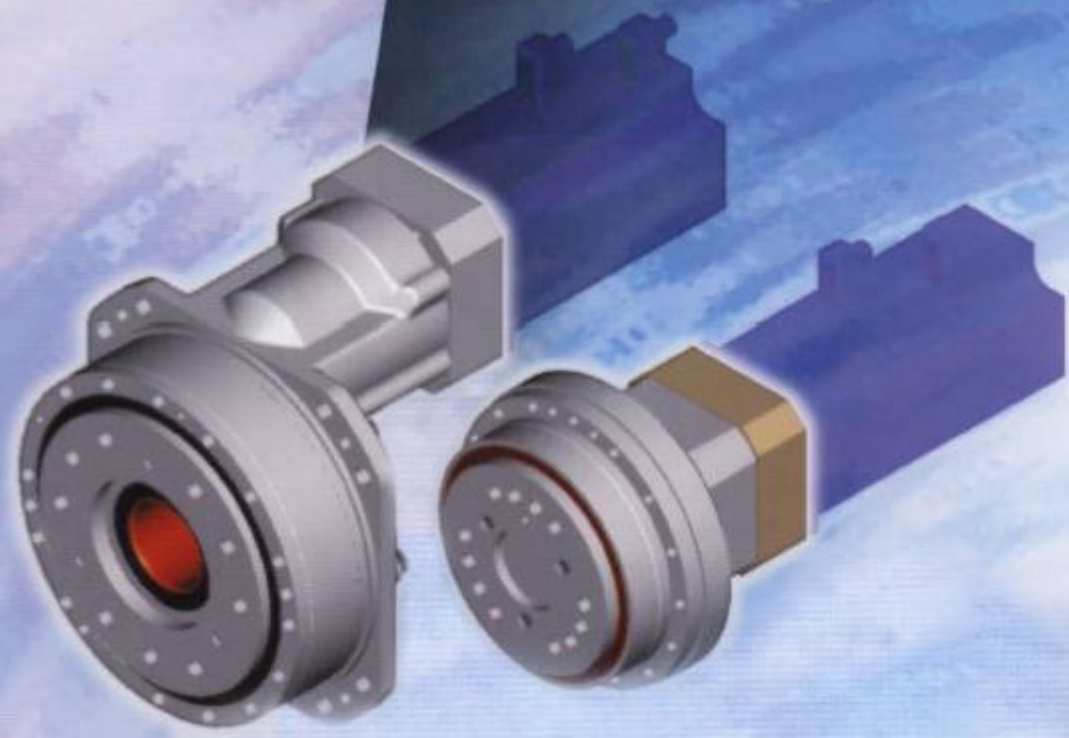


ISO 9001
JQA-1190

VIGO DRIVE™

High Precision Gearhead

RD SERIES



RD SERIES High-precision Gearheads

Taking servo motor performance to the limit

The RD SERIES Gearheads are based upon the highly successful, high-precision RV Series Reduction Gears. The high-performance RV has over 2 million units in service in various applications around the world today. The RD SERIES are high-precision servomotor gearheads that provide significant advantages in terms of ease-of-use and cost for performance.

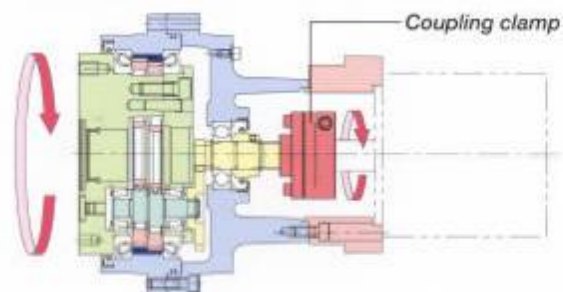
RD Advantages

1. High shock load capability - can withstand load 5 times the rated torque.
2. High Stiffness - constant contact between Cycloidal gear teeth and stainless steel pins provide extreme rigidity.
3. High Precision in all standard models - Less than 1 arc-min
4. Main bearing support - Large integrated angular ball bearing provides direct support for external loads.
5. Simple Installation - Coupling design provides easy connection to servomotor.
6. Completely sealed unit (pre-greased) - Shipped ready-to-mount to servomotor.

RD-E Series

Standard

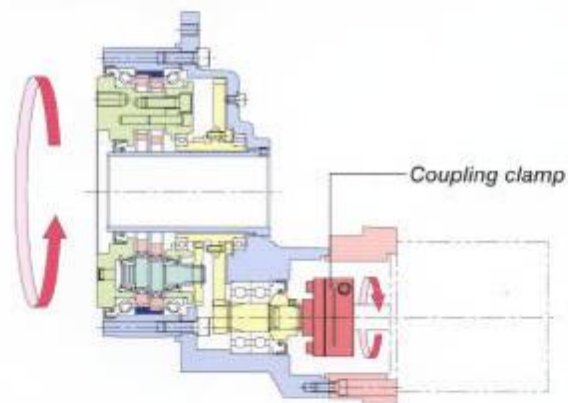
For 100W to 5.2KW servo motors



RD-C Series

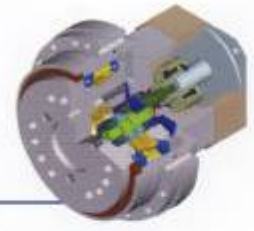
Hollow Shaft

For 100W to 4.9KW servo motors



RD-E Series

Standard



Rating Table

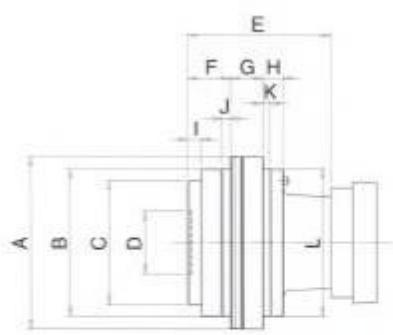
RD-Models	Ratio		Rated Torque In-lb (N-m)	Allowable Torque		Allowable Output Speed With Rated Torque Loading		Backlash Max. arc.min	Torsional Rigidity In-lb/arc.min (N-m/arc.min)	Capacity of Main Bearing	
				Acceleration /deceleration Torque In-lb (N-m)	Momentary Max. Torque In-lb (N-m)	Intermittent Drive r.p.m.	Continuous Drive r.p.m.			Allowable Moment In-lb (N-m)	Max. Axial Load lb (N)
006E	*31.0	79.0	513 (58)	1,035 (117)	2,602 (294)	100	60	1.5	177 (20)	1,735 (196)	330 (1,470)
	*43.0	103.0									
	53.5	—									
020E	*41.0	105.0	1,478 (167)	3,646 (412)	7,372 (833)	75	45	1.0	434 (49)	7,806 (882)	879 (3,920)
	57.0	161.0									
	81.0	—									
040E	*41.0	105.0	3,646 (412)	9,107 (1,029)	18,213 (2,058)	70	42	1.0	956 (108)	14,744 (1,666)	1,164 (5,190)
	*57.0	153.0									
	81.0	—									
080E	*41.0	101.0	6,938 (784)	17,346 (1,960)	34,692 (3,920)	70	42	1.0	1,735 (196)	19,081 (2,156)	1,759 (7,840)
	*57.0	153.0									
	81.0	—									
160E	*41.0	101.0	13,877 (1,568)	34,692 (3,920)	69,384 (7,840)	45	27	1.0	3,469 (392)	34,692 (3,920)	3,298 (14,700)
	*66.0	145.0									
	*81.0	171.0									
320E	*41.0	101.0	27,754 (3,136)	69,384 (7,840)	138,768 (15,680)	35	21	1.0	8673 (980)	62,446 (7,056)	4,397 (19,600)
	*66.0	141.0									
	*81.0	185.0									

* Optional Speed Ratio

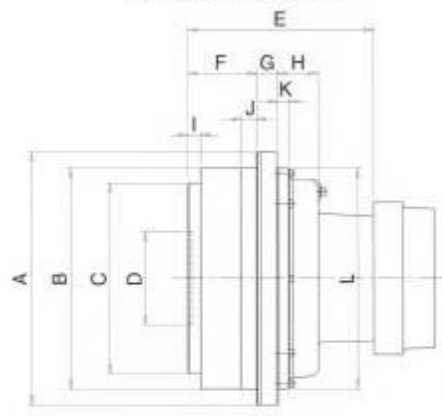
For ordering: Please select RD-Model and Ratio, and contact Teijin Seiki for Motor Mounting Options

Dimensions

RD-006E, RD-020E, RD-040E, RD-080E



RD-160E, RD-320E



(Reference Values)

RD-Models	A Ø	B h7 Ø mm	C h7 Ø mm	D h7 Ø mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L h7 Ø mm	Weight kg
006E	mm	103	86	20	132	28.5	32	24.5	8.5	8	8	103	6.3
020E	125.5	124	105	32	136.5	30	40	24.5	5.5	10	10	122	11.1
040E	150	160	135	50	156	31	51.5	22.5	7	10	10	160	23.0
080E	192	190	160	55	182	54	41.5	26	17	10	10	190	30.9
160E	223	240	204	130	210.5	73.6	22	42.9	13.1	15	10	240	56.1
320E	280	284	245	150	236.5	87.5	27	52	16	20	15	284	79.9

RD-C Series

Hollow Shaft

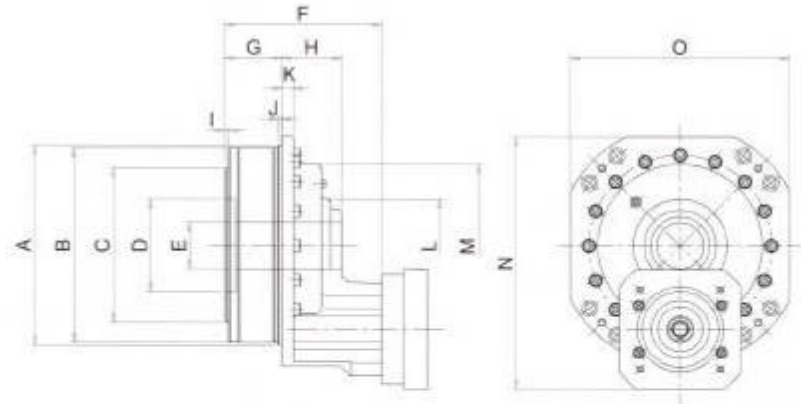


Rating Table

RD-Models	Ratio		Rated Torque In-lb (N-m)	Allowable Torque		Allowable Output Speed With Rated Torque Loading		Backlash Max. arc.min	Torsional Rigidity In-lb/arc.min (N-m/arc.min)	Hole Dia. Ø mm	Capacity of Main Bearing	
				Acceleration/Deceleration Torque In-lb (N-m)	Momentary Max. Torque In-lb (N-m)	Intermittent Drive r.p.m.	Continuous Drive r.p.m.				Allowable Moment In-lb (N-m)	Max. Axial Load lb (N)
010C	81.00	189.00	867 (98)	2,168 (245)	4,337 (490)	80	48	1.0	416 (47)	25	6,071 (686)	1,319 (5,880)
	108.00	243.00										
	153.00	—										
027C	99.82	233.45	2,345 (265)	5,859 (662)	11,709 (1,323)	60	36	1.0	1,336 (151)	36	8,673 (980)	1,979 (8,820)
	143.29	—										
	184.00	—										
050C	109.00	239.80	4,337 (490)	10,841 (1,225)	21,683 (2,450)	50	30	1.0	2,257 (255)	47	15,611 (1,764)	2,638 (11,760)
	152.60	—										
	196.20	—										
100C	100.50	258.00	8,673 (980)	21,683 (2,450)	43,365 (4,900)	40	24	1.0	4,514 (510)	60	21,683 (2,450)	3,078 (13,720)
	150.00	—										
	210.00	—										
200C	105.83	245.08	17,346 (1,960)	43,365 (4,900)	86,730 (9,800)	30	18	1.0	8,682 (981)	75	78,057 (8,820)	4,397 (19,600)
	155.96	—										
	206.09	—										
320C	115.00	253.00	27,754 (3,136)	69,384 (7,840)	138,768 (15,680)	20	12	1.0	17,346 (1,960)	120	182,133 (20,580)	6,596 (29,400)
	157.00	—										
	207.00	—										

For ordering: Please select RD-Model and Ratio, and contact Teijin Seiki for Motor Mounting Options

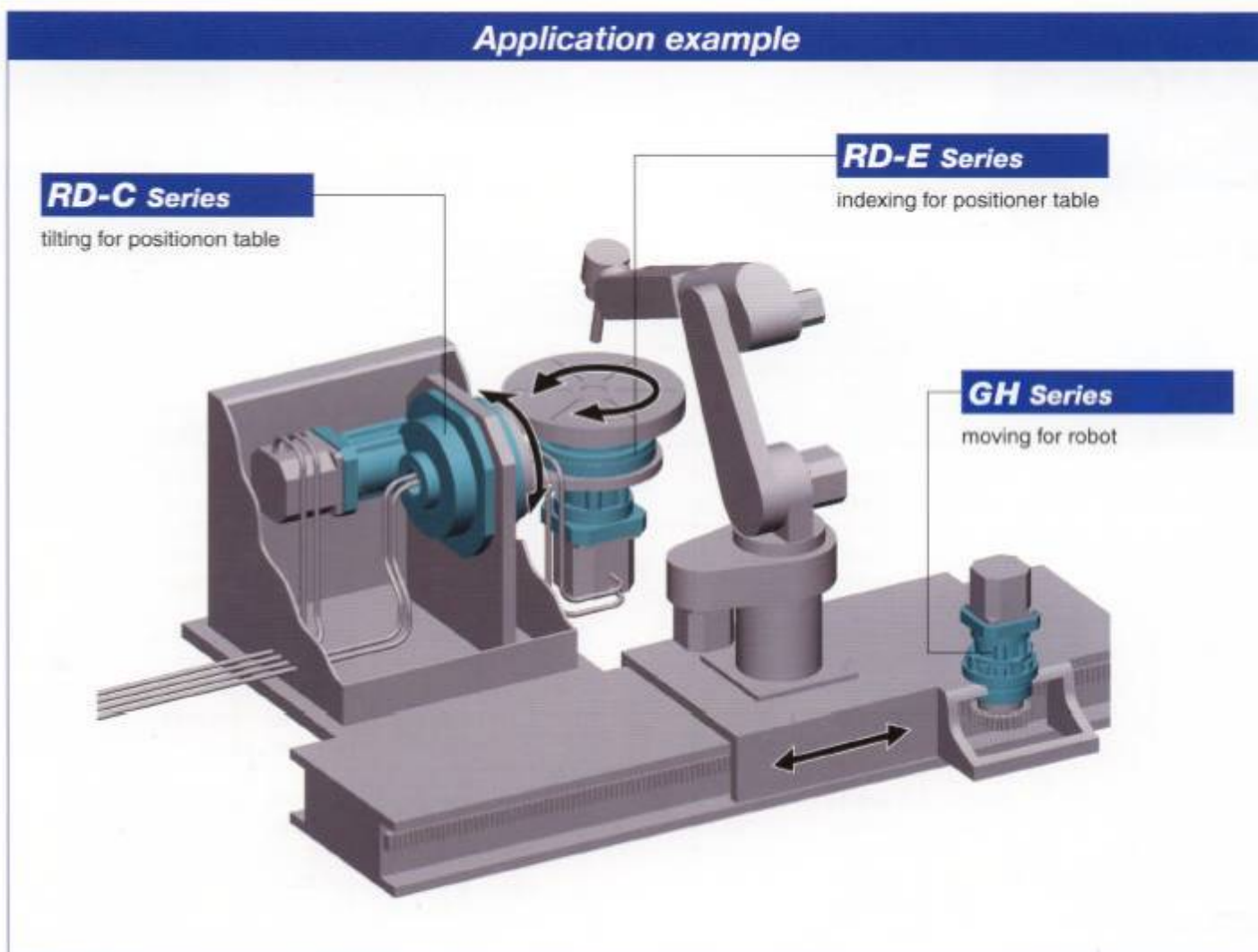
Dimensions



RD-Models	A h7 Ø mm	B Ø mm	C h7 Ø mm	D h7 Ø mm	E Ø mm	F mm	G mm	H mm	I mm	J mm	K mm	L Ø mm	M Ø mm	N mm	O mm	Weight kg
010C	146		110	46	25	157.5	46	63.5	14	6.5	4.5	126	53	195.5	170	10.7
027C	189	182	140	66	36	174.5	57.5	62.5	14	5	5	163	78	235.5	205	17.5
050C	230	222.5	176	93	47	196.5	68	71	15	4	5	190	103	281	252	29.1
100C	258	251	199	106	60	200	72.5	76.5	15	5	5	210	120	325.5	280	40.4
200C	354	347	260	138	75	262	102	101.5	20	5	7	292	142	425	368	95.1
320C	440	400	340	200	120	277.5	101	132	25	35	5.5	376	214	523.5	447	142.9

(Reference Values)

Application example



Please contact us for more information and ordering assistance for the RD series.

• **In North and South America**

Teijin Seiki Advanced Technologies Inc. (TSAT)

31731 Northwestern Hwy., Suite 113E, Farmington Hills, Michigan 48334

PHONE: 248-538-9165 FAX: 248-538-9170

E-MAIL: info@teijinseiki.com

HomePage : www.teijinseiki.com

• **In Europe and Africa**

Teijin Seiki Europe GmbH

KlosterstraBe 49, D-40211 Dusseldorf, Germany

PHONE: 49-211-173790 FAX: 49-211-364677

E-MAIL: info@teijinseiki.js.de

HomePage : www.teijinseiki.de

• **In Asia and others**

Tokyo Head Office

Nishishinbashi TS Bldg., 3-3-1 Nishishinbashi, Minato-ku, Tokyo 105-8628, Japan

PHONE: 81-3-3578-7461 FAX: 81-3-3578-7471

E-MAIL: info-ps@teijinseiki.co.jp

HomePage : www.teijinseiki.co.jp

Tsu Plant (Engineering Department)

594 Ichimachida, Katada-cho, Tsu-shi, Mie Pref. 514-0084, Japan

PHONE: 81-59-237-4602 FAX: 81-59-237-4612

• *Specifications are subject to change without notice.*

CAT. 020315

VIGO DRIVE

GH SERIES

High Precision Gear Heads for Servomotors



ISO 9001
JQA-1190

The most ideal reducer for improving servomotor functions.

The GH-Series of high-precision reducers is an easy-to-use version of the RV-Series, which is developing a strong reputation in factory automation, such as industrial robots, machine tools and conveying machines.

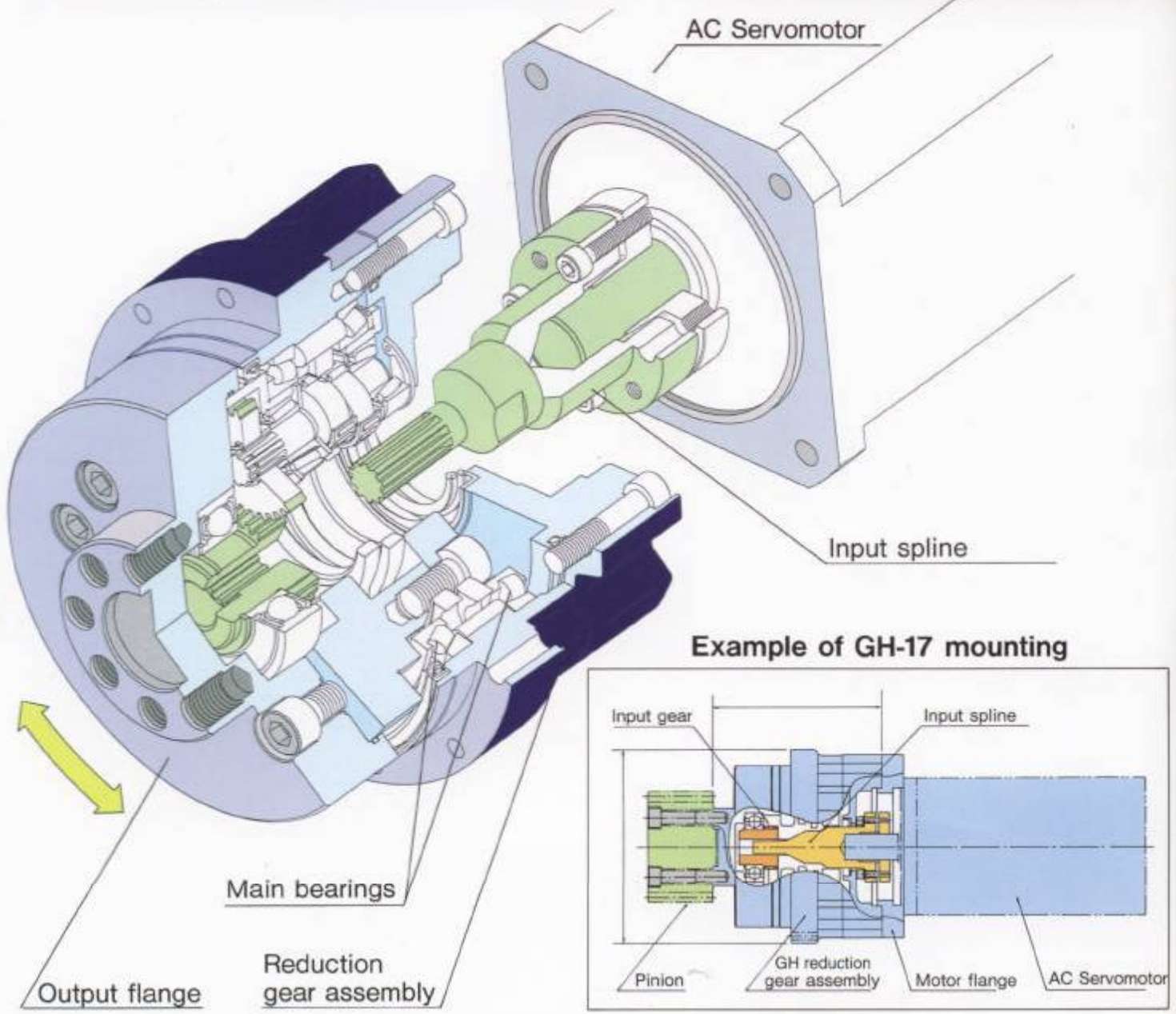


Ultra-thin, High-rigidity, High-precision, Reducers for Servomotors

Features:

- Resistant to overloads
- High rigidity
- Low backlash (max. 6 arc min)
- Simple one-touch mounting to the main types of servomotors
- Compact
- Low reduction ratio (1/11-1/31) and high output revolution (max.250 rpm)

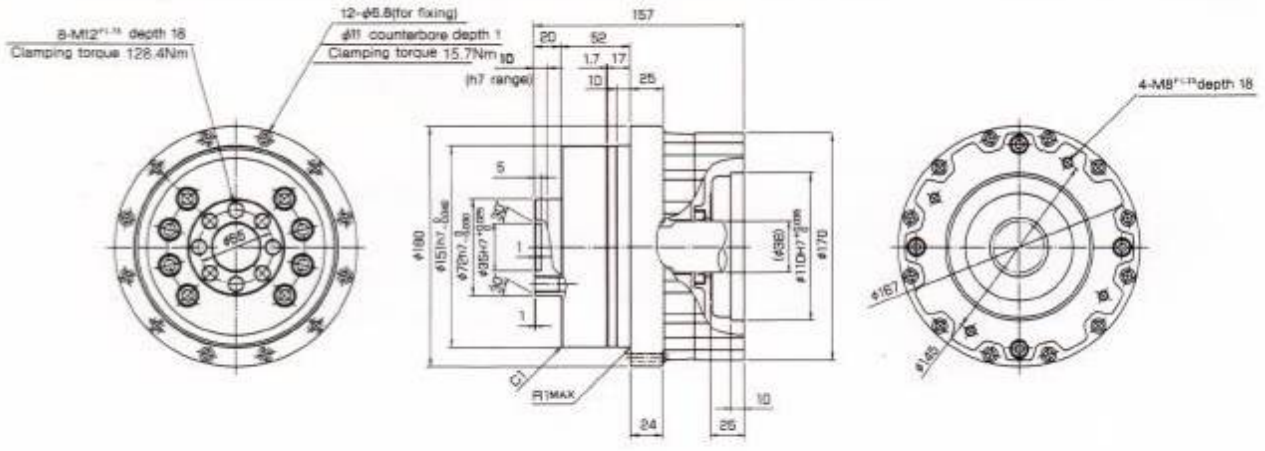
Structure:



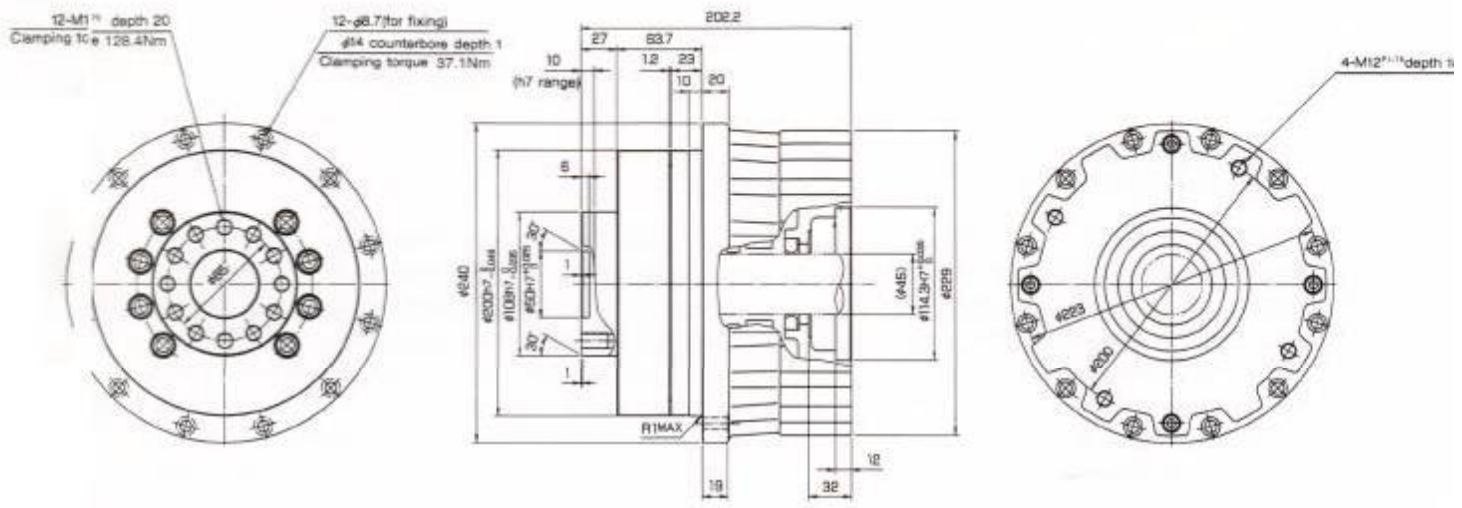
Specifications Model	Speed ratio	Rated torque lb.in(Nm)	Permissible torque upon starting/stopping lb.in(Nm)	Permissible instantaneous maximum torque lb.in(Nm)	Permissible maximum output speed rpm		Backlash Max. (arc min)	Permissible moment capacity lb.in(Nm)	Servomotor capacity (kW)	Input inertia (converted values, based on the input side) lb.in.S ²	Weight lb (kg)
					Under continuous operation	Under non-continuous operation					
GH7	11.0:1	607.6 (68)	1,822.7 (205)	4253.0 (480)	150	250	6	3,212 (363)	0.3 1.0	0.275 × 10 ⁻³	17.6 (8)
	21.0:1									0.206 × 10 ⁻³	
	30.0:1									0.153 × 10 ⁻³	
GH17	11.0:1	1,475.5 (166)	4,426.6 (500)	10,328.7 (1,166)	150	250	6	5,382 (608)	0.5 2.0	1.550 × 10 ⁻³	34.1 (15.5)
	21.0:1									0.850 × 10 ⁻³	
	31.0:1									0.713 × 10 ⁻³	
GH24	11.0:1	2,083.1 (235)	6,249.3 (705)	14,581.7 (1,646)	150	250	6	6,250 (706)	1.2 4.0	1.009 × 10 ⁻³	34.1 (15.5)
	21.0:1									0.547 × 10 ⁻³	
	31.0:1									0.393 × 10 ⁻³	
GH40	10.0:1	3,471.8 (392)	10,415.5 (1,176)	24,302.9 (2,744)	150	250	6	12,152 (1,373)	2.0 7.0	6.292 × 10 ⁻³	78.1 (35.5)
	21.0:1									3.991 × 10 ⁻³	
	31.0:1									1.938 × 10 ⁻³	

The input spline is not included. Values are set after the motor size is selected.

GH17



GH40

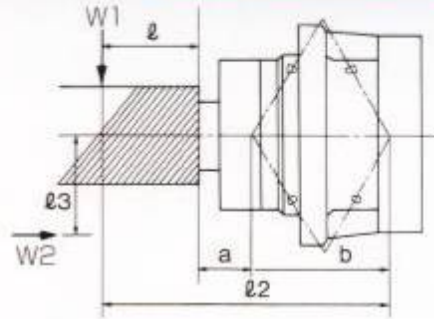
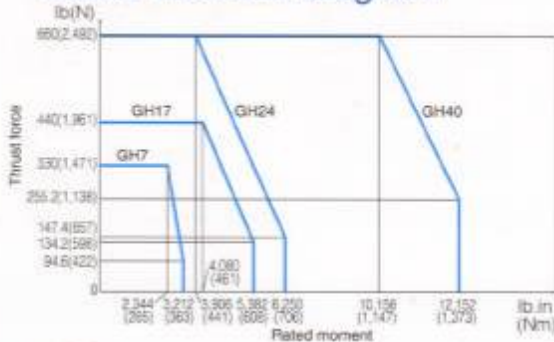


Capacity of the main bearing

Rated moment

	Rated moment capacity lb.in (Nm)	Permissible thrust force lb (N)	a	b
GH7	3,212(363)	330(1,471)	51.4	55.4
GH17	5,382(608)	440(1,961)	55.5	65.8
GH24	6,250(706)	660(2,492)	46.5	81.5
GH40	12,152(1,373)	860(2,492)	61.8	91.8

Rated moment diagram



M_c : External moment

W_1, W_2 : Load

l : Distance between the mounting surface of the output shaft and the load point(mm)

l_2 : Distance between the working point of the mainshaft bearing and the load point(mm)

l_3 : Distance between the center and the loading point(mm)

l_2 : $l+a+b$ (mm)

$M_c \leq$ Rated moment capacity(lb.in)

$M_o = W_1 l_2 + W_2 l_3 (l_2 > b)$

Service life rating

The service life of the GH-Series of reducers is determined by the service life of the crankshaft rolling bearings.

However, since the load conditions differ according to the type of operation, the service life is calculated using the formula on the right.

Model	Rated torque(T_o)	Rated output speed(N_o)
GH7	607.6lb.in(68Nm)	50 r.p.m
GH17	1,475.5lb.in(166Nm)	
GH24	2,083.1lb.in(235Nm)	
GH40	3,471.8lb.in(392Nm)	

$$L_h = K \times \frac{N_o}{N_m} \times \left(\frac{T_o}{T_m} \right)^{10}$$

L_h : Service life(Hrs.)

K : 6,000

N_m : Average output speed (r.p.m)

T_m : Average load torque (lb.in)

Lubrication

Grease is sealed in before shipment. The standard period for replenishing old grease is 20,000 hours when the reducer is operated with an appropriate amount of grease. When fouling of grease is feared or

when using under harsh ambient temperatures (40°C or over), check deterioration and fouling periodically to determine when to replace the grease.

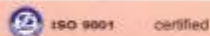
Lubricant brands

(Recommended standard brands)

TEIJIN SEIKI	Mori white RE00
Nippon Oil Co. Ltd.	Epinoc APs

Note: Avoid mixing different brands.

Guarantee



TEIJIN SEIKI warrants to Purchaser that the Products GH manufactured by TEIJIN SEIKI shall be free from any defect in material and workmanship, provided that the equipment is appropriately used and that proper maintenance procedures are followed.

The period of such mechanical warranty shall be for twelve(12) months following the date when the Products are put into service but not exceeding two thousand (2,000) working hours sixteen (16) months after the date of the Bill of Lading for the Products, whichever period expires earlier.

If any defect is found to be attributable to inferior quality of material or poor workmanship during such a warranty period, TEIJIN SEIKI shall replace the defective Product with a new Product without any charge or expense on the part of Purchaser; nevertheless, any transportation charges incurred shall be at Purchaser's expense. TEIJIN SEIKI shall not be obligated to pay consequential damages incurred by the Purchaser or any other party except as may be agreed upon in writing in advance by TEIJIN SEIKI.

Application Worksheet

The following information is required when ordering:

1. Place of use: Name of the machine

Application _____

2. Model No. GH- _____ - _____

3. Type of driving equipment

[] Servomotor [] Others (_____)

Manufacturer: _____

Model or type: _____

Capacity: _____ kW

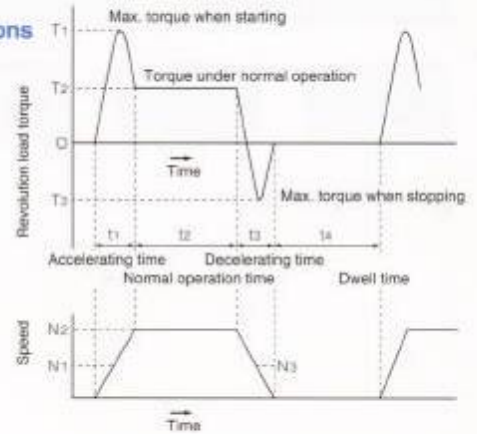
Rated torque: _____ lb.in(Nm)

Max. torque: _____ lb.in(Nm)

Max. speed: _____ r.p.m

Shaft and flange shape and dimensions:

4. Load conditions



	When starting (MAX)	During normal operation	When stopping	Dwell time
Load torque	lb.in T ₁	T ₂	T ₃	_____
Speed	r.p.m N ₁	N ₂	N ₃	_____
Time	sec. t ₁	t ₂	t ₃	t ₄

Operating time _____ cycles/day _____ days/year _____ for years

5. External load conditions

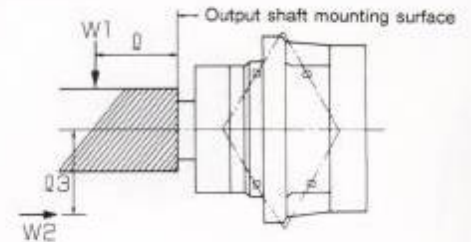
(Typical drawing)

(W₁): _____

(Q): _____

(W₂): _____

(Q_s): _____



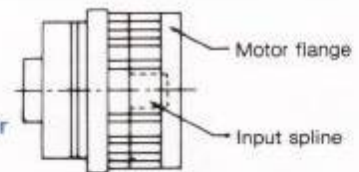
6. Others

(_____)

Standard accessories:

The reducer unit is delivered together with standard accessories including motor flange, fixing bolts and input spline.

Inform us of the type, dimensions, shaft shape, etc. of the motor to which the reducer is to be installed at your earliest convenience.



Specifications in this catalog are subject to change for improvement without prior notice.



Tokyo Head Office
Nishishimbashi TS Bldg., 3-3-1,
Nishishimbashi, Minato-ku, Tokyo 105-8628, Japan
PHONE: +81-3-3578-7461 FAX: +81-3-3578-7471
home page : <http://www.teijinseiki.co.jp>
e-mail : info-ps@teijinseiki.co.jp

Teijin Seiki Advanced Technologies, Inc.
31731 Northwestern Hwy., Suite 113E,
Farmington Hills, MI 48334, U.S.A
PHONE: 248-538-9165 FAX: 248-538-9170
e-mail : tsat@teijinseiki.com

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