

VIGOR DRIVE

GH SERIES

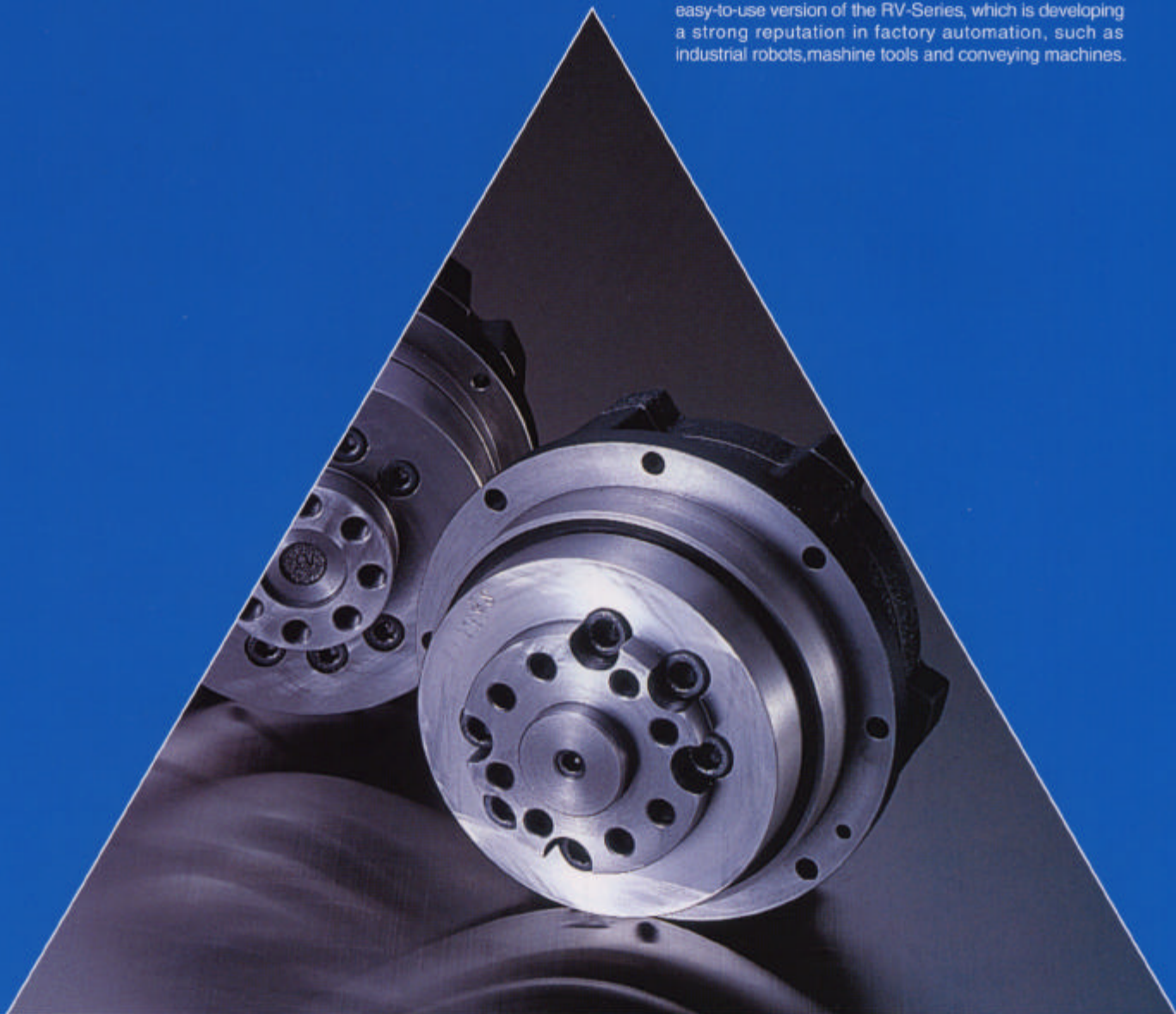


ISO 9001
JQA-1190

High Precision Gear Heads for Servomotors

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.



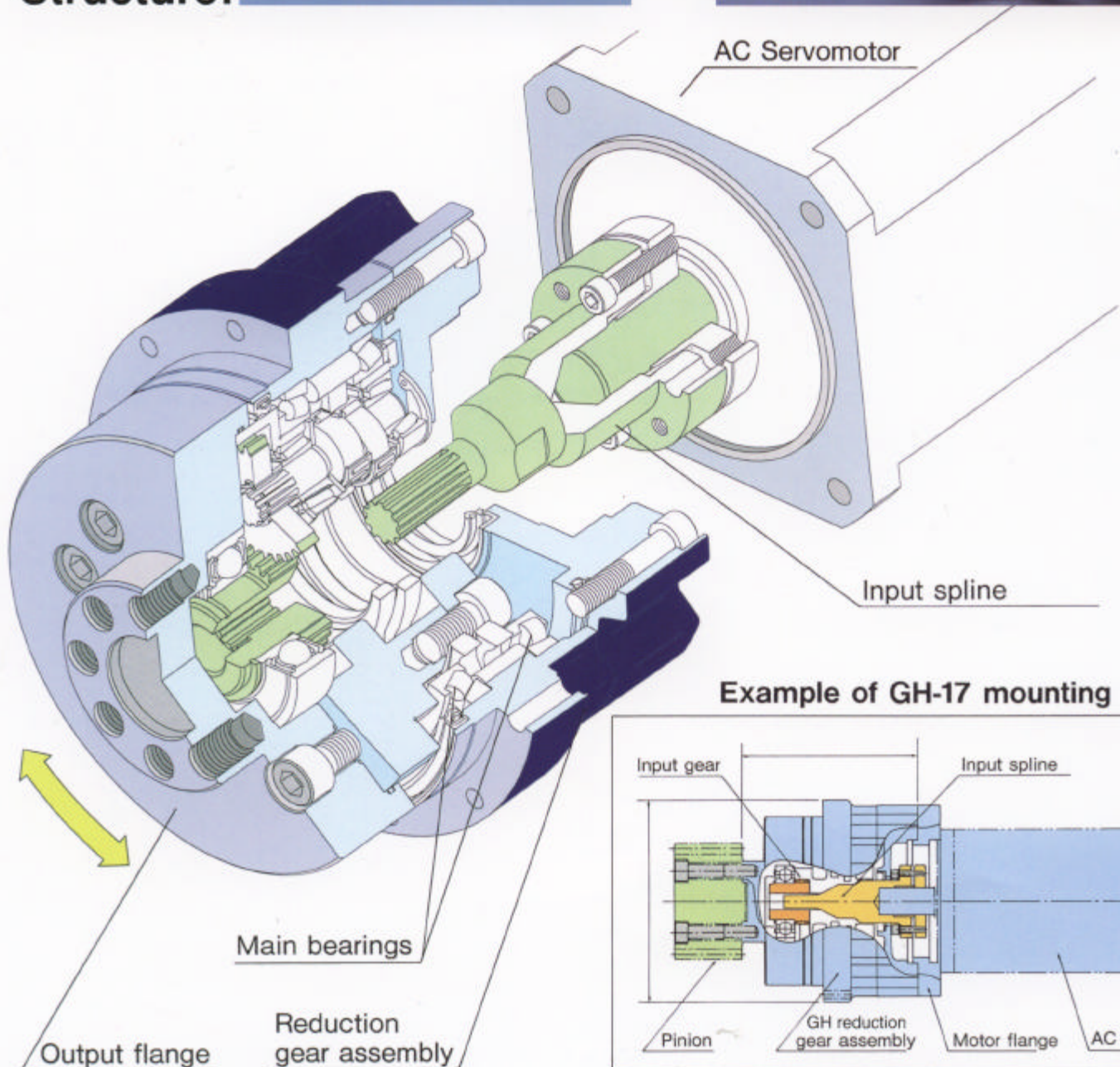
TEIJIN  SEIKI

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:



Ordering Information

Performance and Specifications:

GH — **24** — **31** — **P**

Type symbol

Frame number

Speed ratio

Output

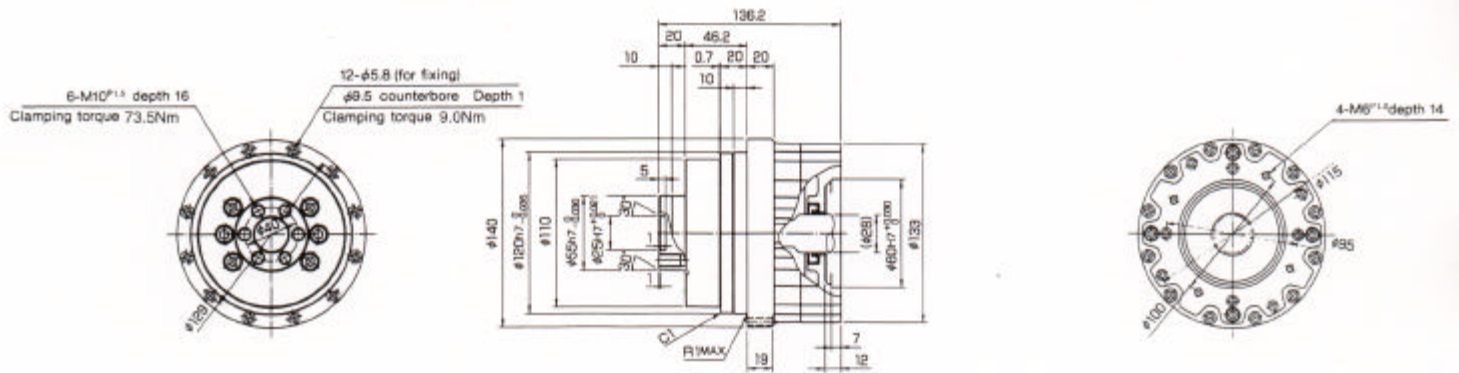
P: Flange

S: Shaft

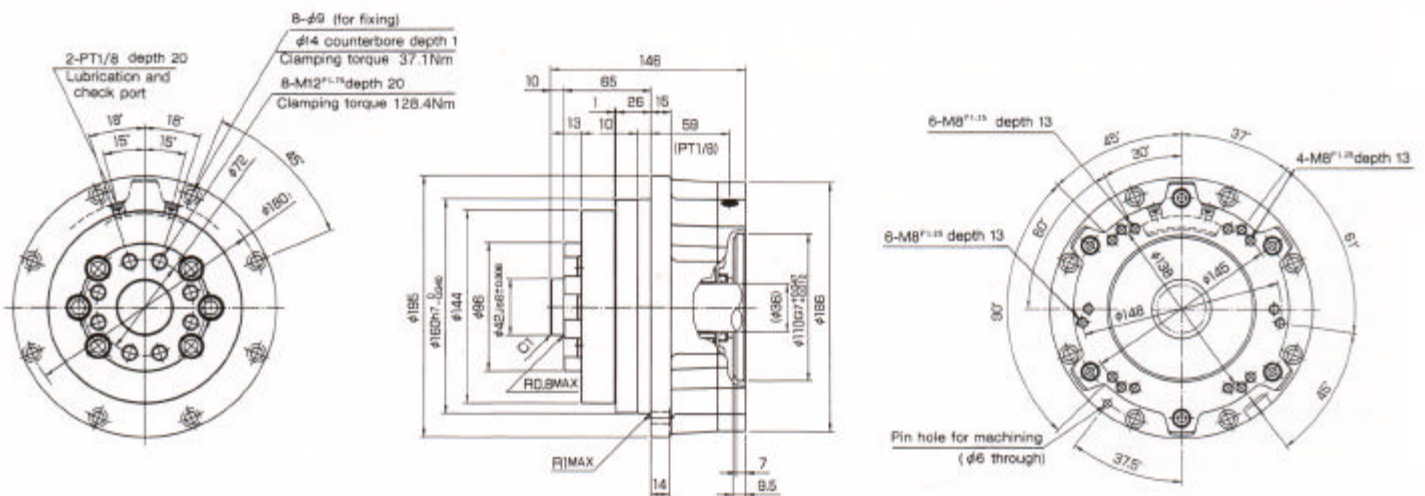
External Dimensions

Dimensions given below do not include those of the motor flange.

GH7



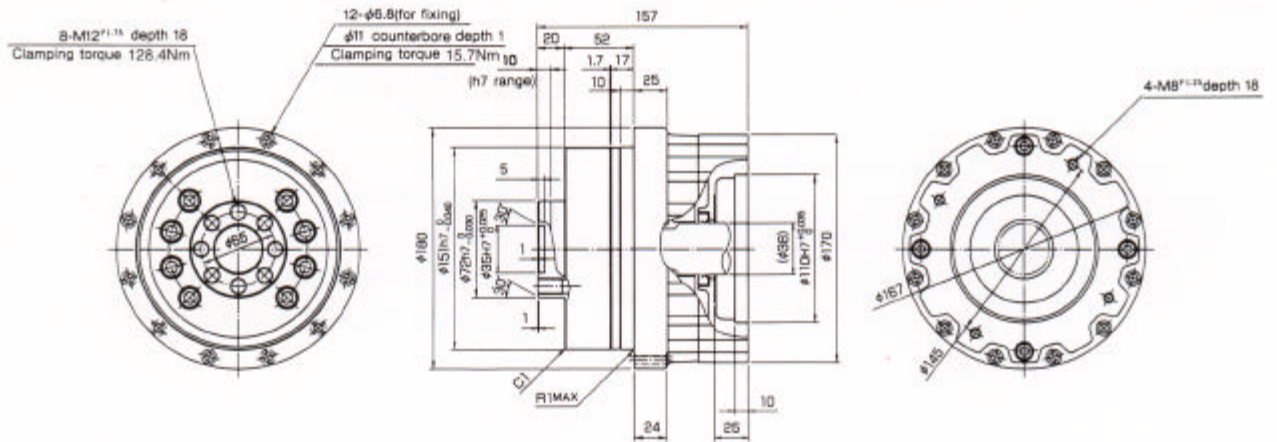
GH24



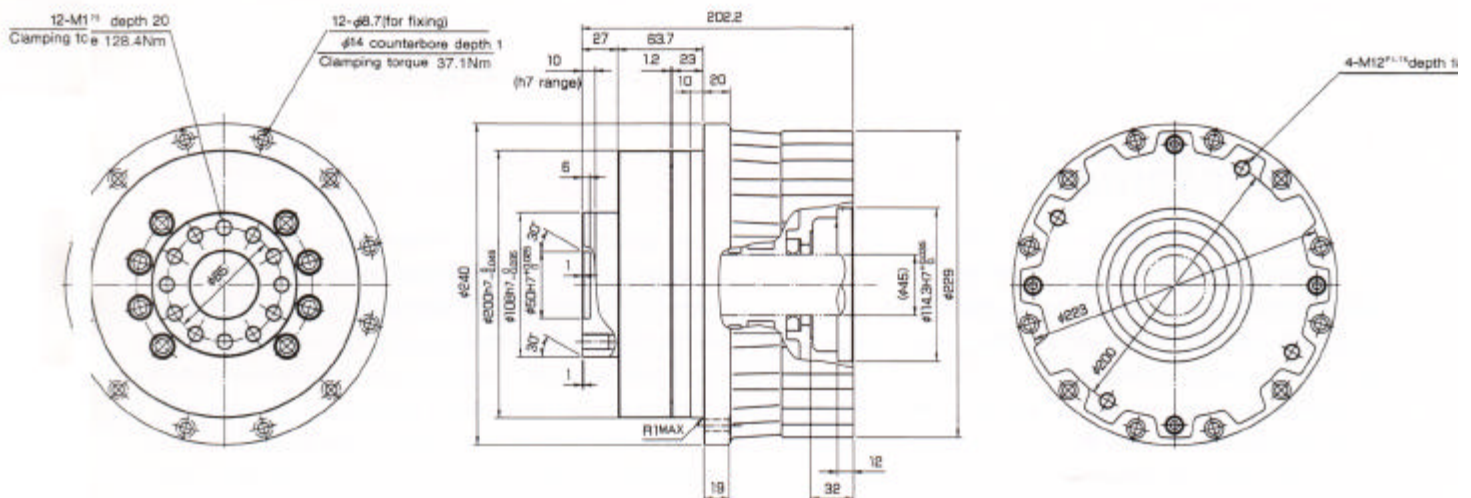
| Model | Specifications Speed ratio | Rated torque lb.in(Nm) | Permissible torque upon starting stopping lb.in(Nm) | Permissible instan- taneous maximum torque lb.in(Nm) | Permissible maximum output speed rpm | | Backlash Max. (arc min) | Permissible moment capacity lb.in(Nm) | Servomotor capacity (kW) | Input inertia (converted values, based on the input side) lb.in.S ² | Weight lb (kg) |
|-------------|-------------------------------|---------------------------|--|---|--|------------------------------------|-------------------------------|---|--------------------------------|---|----------------------|
| | | | | | Under continuous operation | Under non-contin- ous operation | | | | | |
| GH7 | 11. ^{2,333} | 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. | | | | | | | | | 0.206×10^{-3} | |
| | 30. ⁶ | | | | | | | | | 0.153×10^{-3} | |
| GH17 | 11. | 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. | | | | | | | | | 0.850×10^{-3} | |
| | 31. | | | | | | | | | 0.713×10^{-3} | |
| GH24 | 11. | 2,085.1 (235) | 6,249.3 (705) | 14581.7 (1,646) | 150 | 250 | 6 | 6,250 (706) | 1.2 { 4.0 | 1.009×10^{-3} | 34.1 (15.5) |
| | 21. | | | | | | | | | 0.547×10^{-3} | |
| | 31. | | | | | | | | | 0.393×10^{-3} | |
| GH40 | 10. ⁷⁴³⁶ | 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. | | | | | | | | | 3.991×10^{-3} | |
| | 31. ⁴³⁴⁸ | | | | | | | | | 1.938×10^{-3} | |

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

GH17



GH40

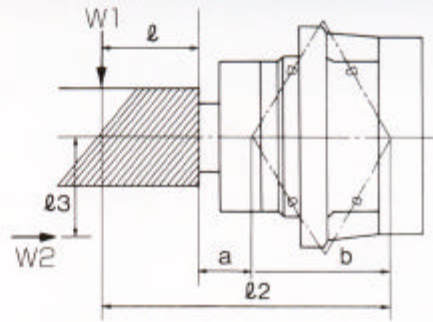
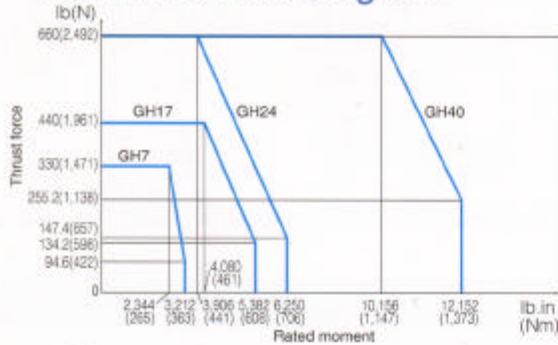


Capacity of the main bearing

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) | 660(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.

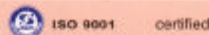
Lubricant brands

(Recommended standard brands)

| | |
|---------------------|-----------------|
| TEIJIN SEIKI | Mori white RE00 |
| Nippon Oil Co. Ltd. | Epinoc AP0 |

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

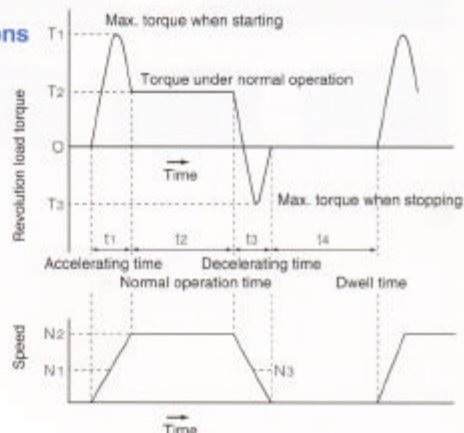
Rated torque: lb.in(Nm)

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 T1 | T2 | T3 | --- |
| Speed | r.p.m N1 | N2 | N3 | --- |
| Time | SEC. t1 | t2 | t3 | t4 |

Operating time cycles/day days/year for years

5. External load conditions

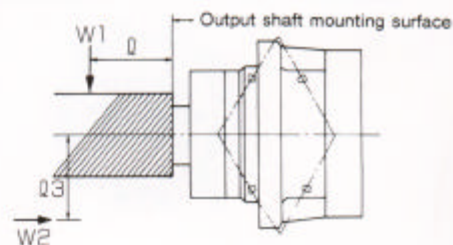
(Typical drawing)

(W₁):

(Q):

(W₂):

(Q₃):



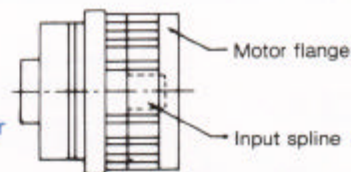
6. Others

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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.



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