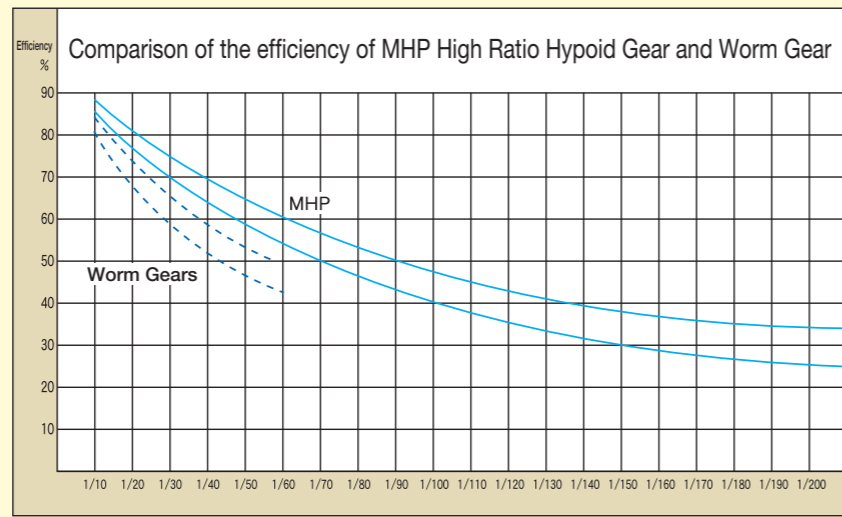


■ Features of MHP High Ratio Hypoid Gears

A pair of MHP high-ratio hypoid gears are able to produce an amazing reduction of speed of 60:1 in one stage.

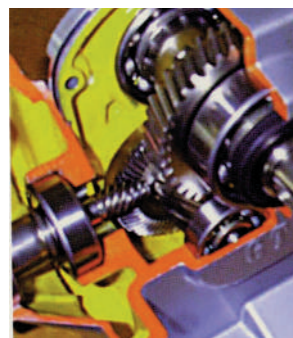
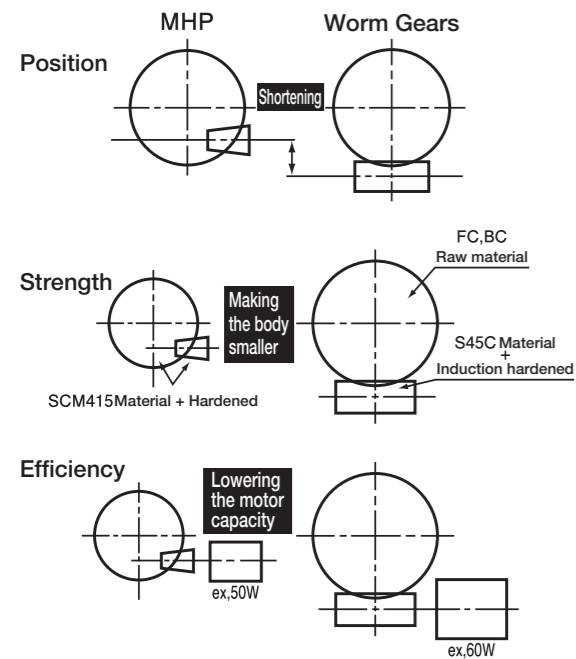
- 1. Total-cost reduction**  
The MHP provides a compact gearing body replacing several stages of reduction gears. This reduces the cost sharply.
- 2. High efficiency**  
Compared to worm gear drives, the MHP has less sliding contact. The resulting higher efficiency allows the use of smaller motors. (See graph on the right)
- 3. High rigidity**  
The carburized hypoid gears lead to smaller size than comparable worms gears.
- 4. Compact gear assembly**  
The size of the gear housing is nearly the same as outer diameter of the large gear. (See the diagrams below)



■ How to determine the radial and thrust loads

Before using the MHP high-ratio hypoid gears, be sure to confirm the direction of radial and thrust loads. Following equations are used to compute these loads. The radial and thrust load coefficients are given on the product pages.

Comparison of MHP and Worm Gear



Radial load calculation

$W_{RP}$  : Radial load on the pinion or L(N)

$$W_{RP} = W_{KP} \times T_G \times \frac{n}{z}$$

$W_{KP}$  : Radial load coefficient of pinion or L (given on the product pages)

$T_G$  : Torque of gear or R(N-m)

$n$  : Number of teeth of pinion or L

$z$  : Number of teeth of gear or R

$W_{RG}$  : Radial load on the gear or R(N)

$$W_{RG} = W_{KG} \times T_G$$

$W_{KG}$  : Radial load coefficient of gear or R (given on the product pages)

$T_G$  : Torque of gear or R(N-m)

Thrust load

$W_{XP}$  : Thrust load on the pinion or L(N)

$$W_{XP} = W_{NP} \times T_G \times \frac{n}{z}$$

$W_{NP}$  : Thrust load coefficient of pinion or L (given on the product page)

$T_G$  : Torque of gear or R(N-m)

$n$  : Number of teeth of pinion or L

$z$  : Number of teeth of gear or R

$W_{XG}$  : Thrust load of gear or R(N)

$$W_{XG} = W_{NG} \times T_G$$

$W_{NG}$  : Thrust load coefficient of gear or R (given on the product pages)

$T_G$  : Torque of gear or R(N-m)

■ Variations in tooth contact due to poor alignment of gears

If the gear engagement position is out of the normal position, variations in tooth contact, as illustrated below, may appear.

