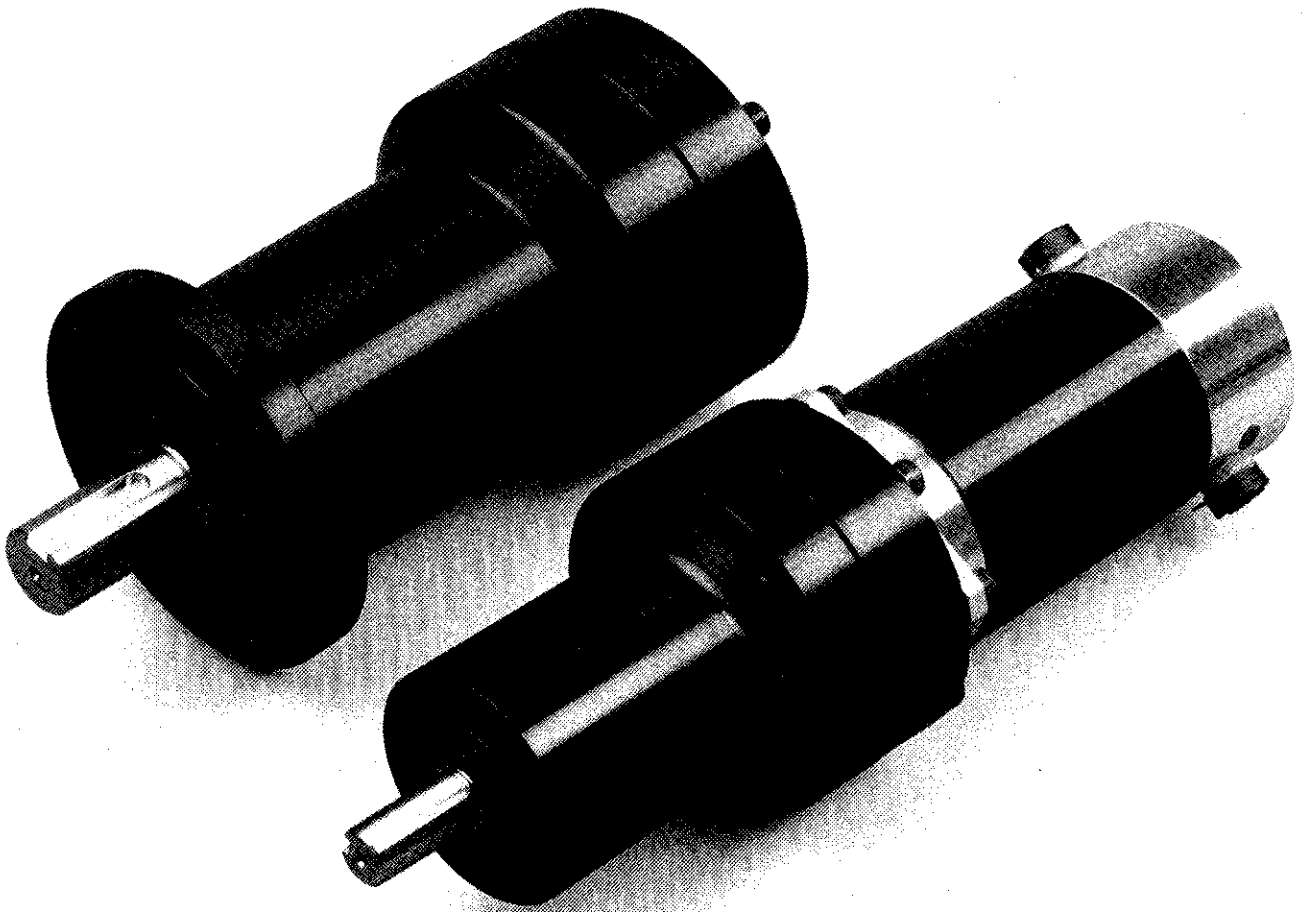


MSR

QUICK CONNECT GEARHEADS FOR SERVO MOTORS



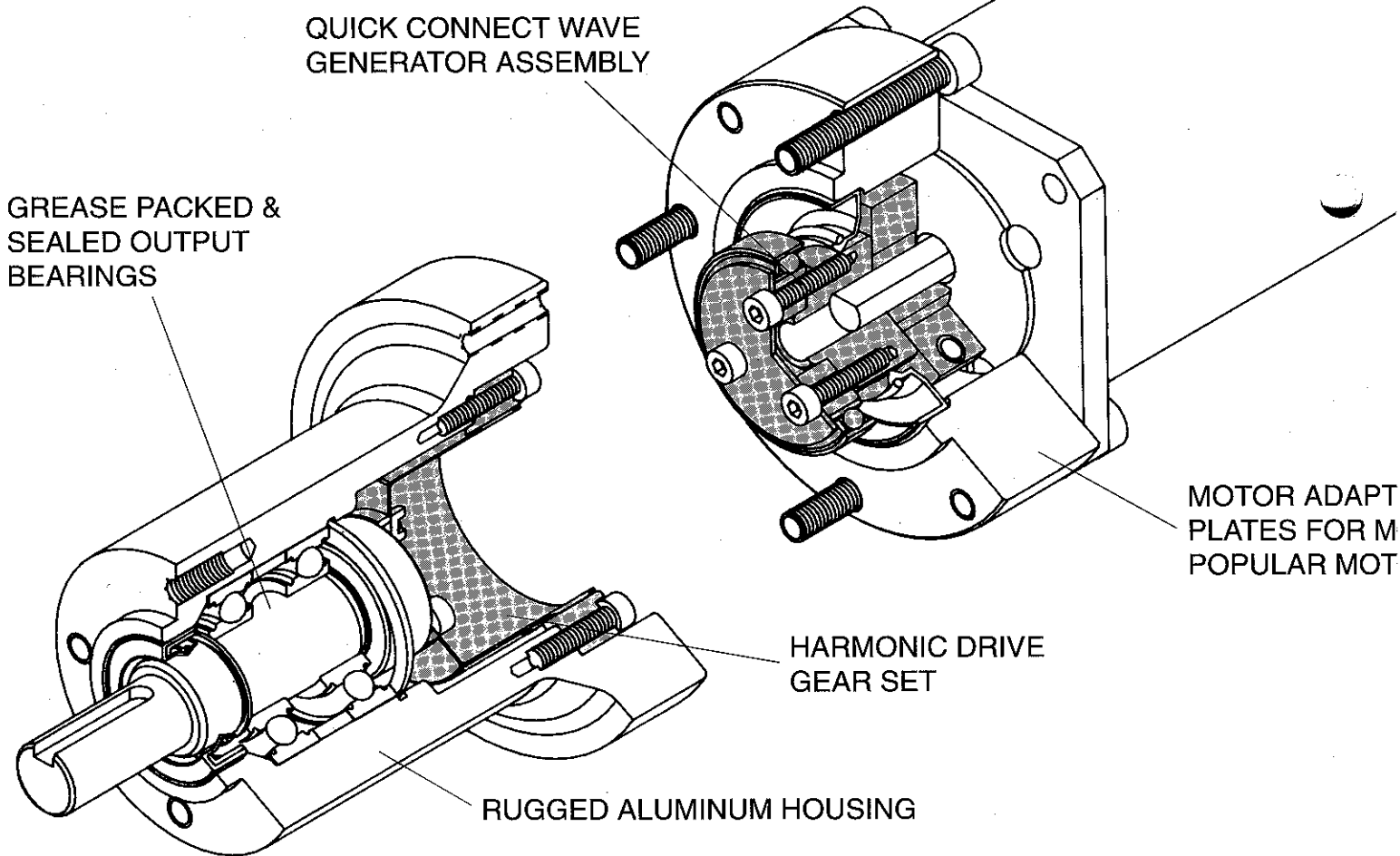
**Harmonic
Drive®**
TECHNOLOGIES

MSR Precision Gearheads

MSR gearheads provide the benefits of harmonic drive gearing in a housing that includes motor mounting interfaces and a simple to use coupling for quick and easy attachment to a motor shaft. The user is then able to quickly fashion a high precision servo actuator using any of a variety of popular servo or stepper motors.

A zero-backlash coupling, an input shaft seal, grease, mounting screws and assembly instructions are all included with each MSR.

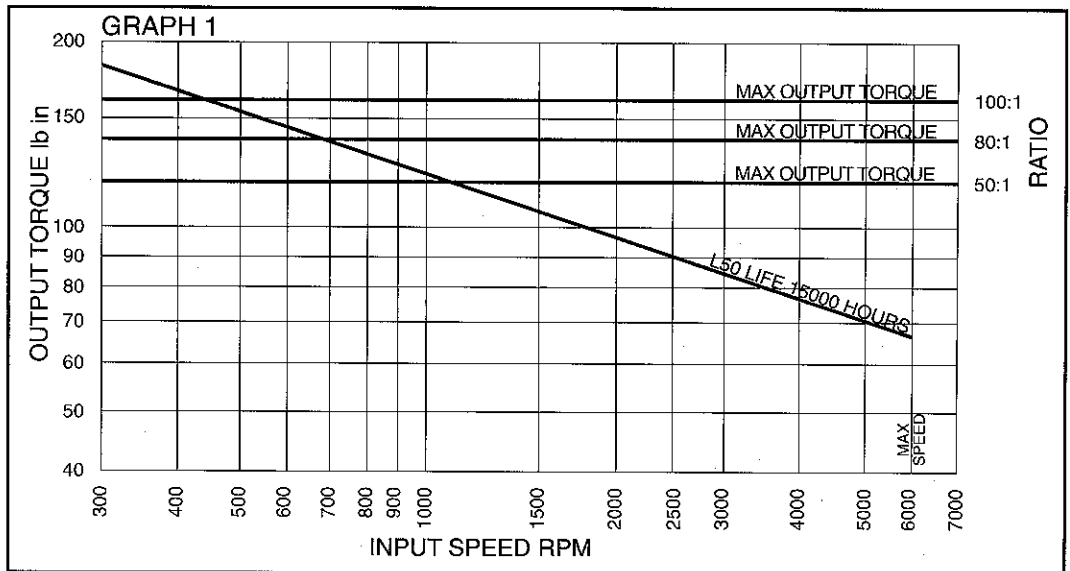
The HARMONIC DRIVE gearing in MSR gearheads provides single stage high gear ratios, zero mechanical backlash, positionally accurate output and very high torque in a small package. The unique radial tooth mesh delivers a long life with minimal wear, and is unaffected by the repeated impact of starts, stops and reversals.



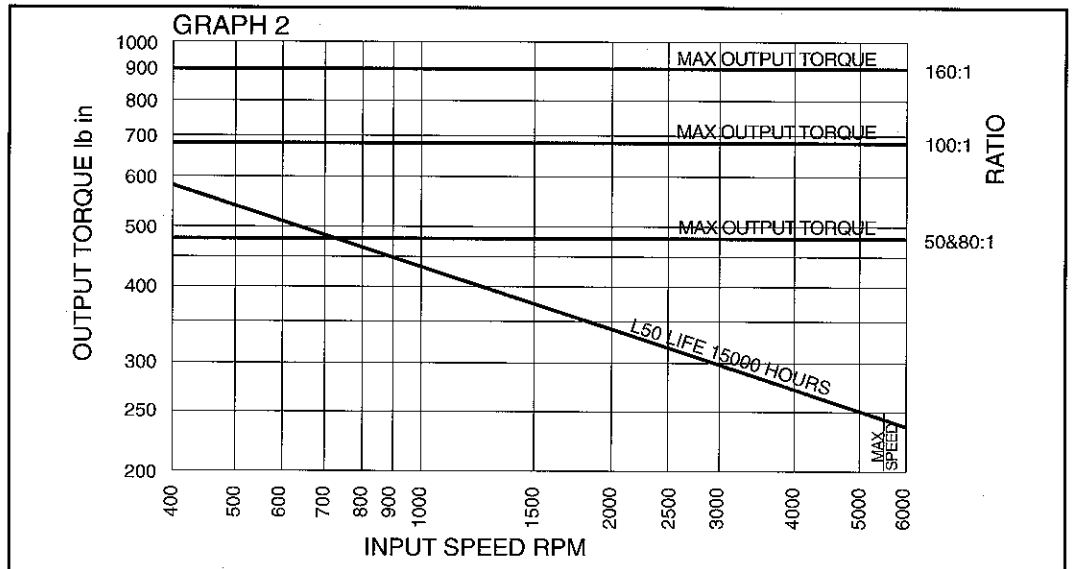
THE PROVEN TECHNOLOGY OF HARMONIC DRIVE GEARING OFFERS:

- Outstanding positional accuracy
- In-line, high single-stage reduction
- Low or zero backlash configurations
- Long life and high reliability
- Exceptional torque-to-weight ratio
- High efficiency
- Configuration versatility

MSR14



MSR20



Ratings

The operating life expectancy of a MSR gear set is based on the life of the ball bearing used on the input wave generator when run continuously at rated torque. Because of the unique Harmonic Drive operation, gear tooth life is well in excess of bearing life, provided maximum torques and speeds are not exceeded. The above graphs show maximum reducer output torque versus speed for an L50 life of 15,000 hours. Maximum output torques should never be exceeded.

Example

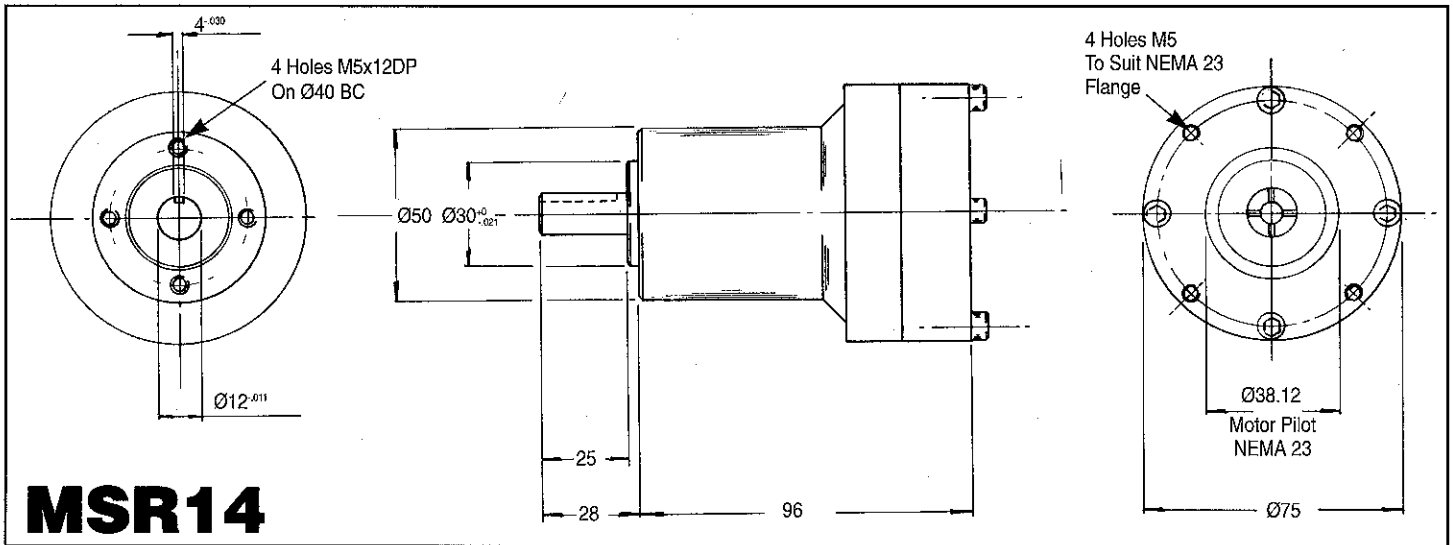
From graph 2, an MSR 20 with a ratio of 100:1 can deliver an output torque of 335 lb in at 2000 RPM for an expected L50 life of 15,000 hours. However, instantaneous start up or emergency stop peak loads should not exceed 680 lb in.

Ratios

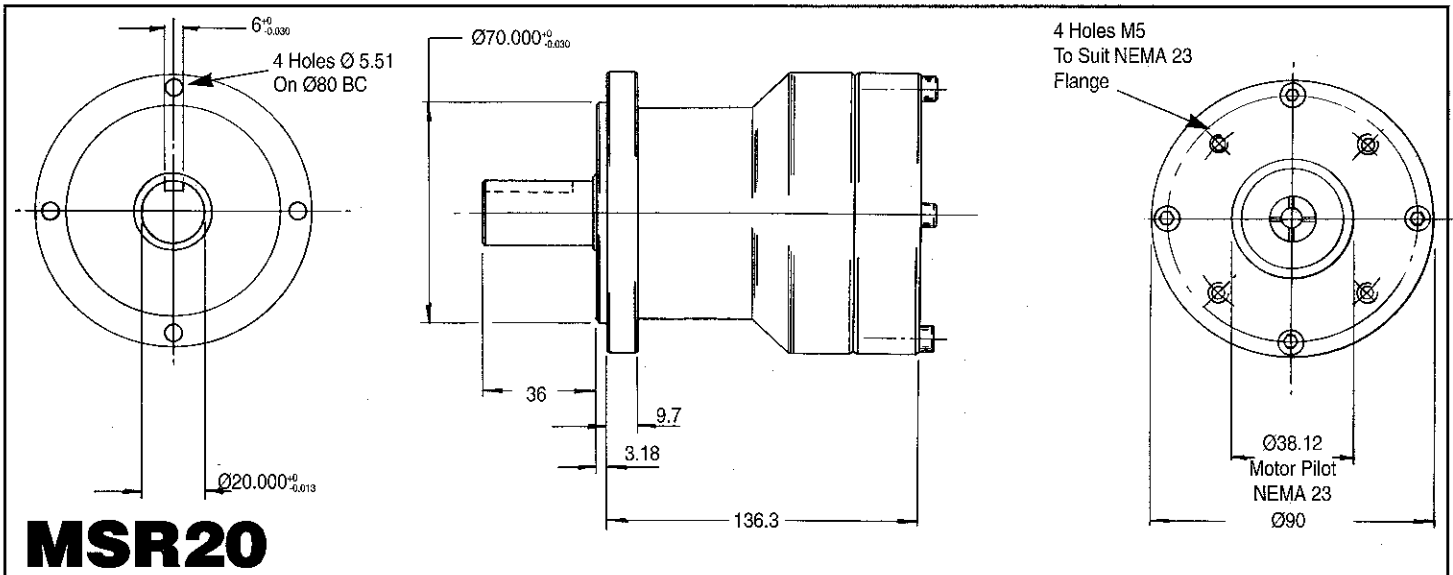
Standard ratios are shown on the above graphs. However, other ratios may be possible. See HDC cup component selection guide or consult factory for further details.

DIMENSIONS

NOTE: ALL DIMENSIONS IN MM



MSR14

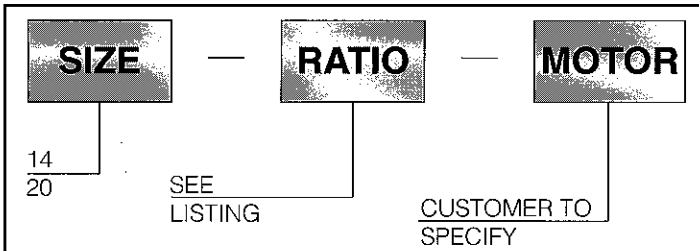


MSR20

FOR FULL DIMENSIONAL DETAILS & ASSEMBLY INSTRUCTIONS CONSULT FACTORY

ORDERING INFORMATION

MSR Gearheads are primarily designed for use with NEMA23 Motors. Consult factory for alternatives.



MADE IN USA

The information contained in this catalog may be subject to change without notice, consult factory.

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