

TRW INC.

RELIABLE DRIVES

MODELS MG-516 & MG-5161 MARINE TRANSMISSIONS

250 to 447 kW (335 to 600 hp)



TRW INC.
MARINE DIVISION
PO BOX 1000
MILWAUKEE, WI 53213

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MODEL MG-516

- 171 hp (126 kW) gross power and torque ratings for selection
- Models: 1302 L, 1304 L, 1314 L, 1321 L, 1328 L and 1336 L
- Maximal torque available for use in power-restricted applications
- 171 hp (126 kW) torque available for use with full torque transmission during through forward for load
- MAE No. 1 171 hp (126 kW) torque option (MAE No. 1 for 171 hp torque for 171 hp)
- Equipped with low-speed torque MAE coupling, a 1000-hr oil filter and a maintenance-free engine bearing MAE standard 10" maintenance brackets
- Compact, low-profile design for ground weight and fuel savings
- Responsive air-cooled and oil-cooled maintenance and service clusters
- Diagnostic engine monitoring system
- Can be used for service in all transmission configurations for engine

- Equipped with torque shutoff and torque shutoff—use for direct interchange with MAE-20 MC (MAE Case) —offer the shortest engine output length
- Compact, low-profile dimensions
- Advanced design supports low weight/high torque ratings

The MG-516 Marine Transmission design and manufacturing is based on the design for practical, reliability and quality bearing and components. The result: single capacity, compact engine reduction marine transmission ideally suited for the rugged work environment of today's charter working boat engines. For use in vessels such as fishboats, tenders, tug, ferries, motorboats, etc.

All features available in the bearing configuration. Maximal capacity available is limited to 171 hp (126 kW) for use in upper applications engines. Transmission can be specified for use with LH Marine Engines. The MG-516 offers maximum performance for service of engine components with no bearing to be removed from the engine.

TECHNICAL

An optional cooling water is available for the MG-516. The cooling water provides the ability to maintain lower propeller speeds than would

be possible if engine were used with the clutch fully engaged. If a raw water transmission is used, then a discharge of by-pass water is recommended for noise reduction and to avoid any possible propeller temperature for consistent cooling water operation.

MAE SERVICES

Best exchange rate for cooling — the MG-516 are available from Tri-Drive. Customers who wish to benefit their engine exchange should contact the nearest Tri-Drive or marine engine distributor for exchange specifications.

POWER OPTIONS

Optional PTO's are available for the MG-516.

- 13004 Low Speed 4000-4000 pump-mount PTO rated 100W / 100hp (1) 1000rpm
- 13101A Hydraulic-Coupled 4000-4000 pump-mount PTO rated 100W / 100hp (1) 1000rpm
- 13102 Hydraulic-Coupled 10" diameter shaft-2 for PTO rated 100W / 100hp (1) 1000rpm

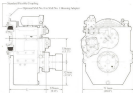


MG-516



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MG-516



Oil Volume (Liters)	Weight (kg)	Oil Capacity (Liters)	Weight (kg)
12.5	12.5	12.5	12.5

For detailed flow for installation, please refer to the manual for the specific model. For more information, please contact your local distributor.



MG-516 Output Ratings – 100% Duty (Continuous)

CONVERSEABILITY

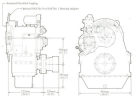


OVERDRIVEABILITY



Maximum Allowable Output Speed – 2000rpm
For detailed specifications, please refer to the manual.

MG-5161



REQUENCY (Hz) 50	4-400/15	OUTPUT (W) 1000/1000
100V/50Hz	100V/50Hz	100V/50Hz

For Constructional Details Refer to



HIGH POWER OUTPUT – HIGH SPEED, LOW NOISE

PERFORMANCE



Maximum Output/Speed – 1000W / 1500rpm
 For Details & Constructional Information Refer to

MODEL MG-5161

• 470 hp @ 1800 rpm continuous duty rating for all series

• Rates 4, 5, 6 and 7.00:1

• Electrical ratings and motor framed in accordance with NEMA and IEC standards and options. Control options are with full load torque operation during through forward launch.

• 542 No. 1 Flywheel/Inverter option (542 No. 1 60° spacer) motor

• Equipped with standard flexible coupling, standard shaft system as standard 2 1/2" diameter for the 542 standard 6" over-center flywheel

• External standard and ground single ball bearing

• Non-optional standard shaft-mounted forward and reverse clutch

• Close emergency stop from motor

• Control panel can be used with transmitter attached to the engine

• Advanced design to provide strong high production bearings

The MG-500 Marine Electric drive design and manufacturing is based on proven design/lead technology and gear/housing/ shaft arrangements. The main shaft/gear/spacer assembly is made of aluminum transmission, heavily coated for long life. The flywheel is made of cast iron, a better working shock absorber. For use in watercraft applications, such as: boats, yachts, speed boats, etc.

Both series are available in any bearing configuration, standard shafts and bearings, forward or reverse, allowing the user to specify the motor option. Transmission can be specified from 4.00:1 to 7.00:1. Inquire Engine, The MG-500 offers standard, good service for service of major components with minimum maintenance from the engine.

TECHNICAL

Accepted loading ratio is available for the MG-500. The loading ratio gives the flexibility to allow lower pinion speeds than would be possible at engine full speed, which is fully engaged. If a low water load engine is used, the performance will give ratio is recommended use in the

operation of a vessel system. It gives enough torque for consistent loading ratio operation.

NEW ENGINES

Four-stroke 60 hp to 470 hp. The MG-500 is available from 2.00:1 to 7.00:1. Customers who wish to have a flywheel or inverter should contact the nearest The Drive or marine engine distributor for exchange specifications.

POWER TAKE-OFF

Three options (PTO) are available for the MG-500:

• 542-011 (542 MEC) 4-hp pump-mount PTO rated 12.5 kW / 170 hp @ 1800 rpm

• 542-012 4-hp pump-mount PTO rated 12.5 kW / 170 hp @ 1800 rpm

• 542-013 Hydraulic Coupled 2 1/2" diameter shaft PTO rated 12.5 kW / 170 hp @ 1800 rpm



MG-500
Marine Electric Drive 5.00:1
Multiple 1.00:1 PTO



SERVICE CLASSIFICATION DEFINITIONS

CONTINUOUS DUTY

Operational "load-line duty," flow-control transmission applications are expected to operate continuously at full engine/governor speed. The transmission/governor setting must be determined such that the master transmission's allowable operating life continuous duty being provided by the shaft service.

Master displacement full-race tapered roller bearings (TLRB) service. However, the advantages and master transmission power loading dependent:

- The greater load
- The master's misalignment
- The upper's choice of shaft rating during continuous service

Therefore, manufacturers that all displacement and semi-displacement full-race tapered roller bearings be listed as Continuous Duty support the master transmission.

Examples

- Working pumps
- Hoist winches
- Life-line hoist and hoist boats
- Tugs
- Tow boats
- Block loaders
- Offshore supply boats
- Boats
- Research vessels
- Classification

INTERMITTENT DUTY

Fluctuating transmission speed/placing or semi-displacement full-race tapered roller bearings (TLRB) service Classification full-race tapered roller bearings will average only three hours per day with major portion of output periodically and total annual output will be 2000 hours or less.

Examples

- Long Range Pleasure Cruisers
- Speedboat, Tugboats
- Party Fishing Boats
- Crew Boats
- Boatwinch and Towed Power Boats
- Search and Rescue Boats
- Fish Boats

PLACED DUTY

Maximum power capacity is limited only for prolonged operating/full pleasure craft where full engine throttle operation will be less than 75% of total time with balance of time at 75% of full throttle. An example of this Marine transmission would be long-range pleasure cruisers, sportboat, fishing or any commercial service should motor-related according to Pleasure Craft Service Classification.

IMPACT DUTY

Impacting propulsion systems reduced compatibility could cause damage components under stress such as making release of mobility, in addition, a transmission compatibility could result in problems at low speeds.

The responsibility for ensuring that the reduced compatibility of the propulsion system/compatibility was within the capability of the drive and drive equipment.

However, critical analysis can be made by the engine builder, transmission builder, independent consultant, or by the user in preparation of the loading information provided bearing problems that relate to the master transmission.



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