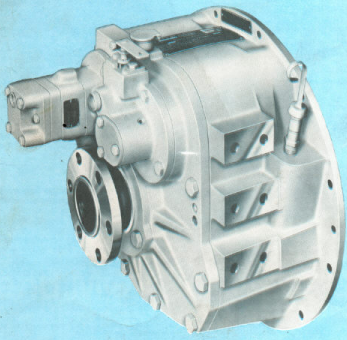
TWIN DISC

BULLETIN
319-P-06

Model MG-506-1 and MG-506 Deep Case Marine Transmissions

62 to 254 kW
(83 to 340 hp)



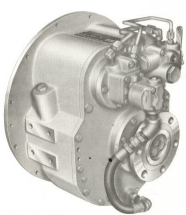
TWIN DISC, INCORPORATED • RACINE, WISCONSIN 53403, U.S.A.

Model MG-506-1 and MG-506 Deep Case

Marine Transmissions

MG-506-1

(Consult Twin Disc for input speeds exceeding 3000 rpm and for special models that will accept engine starter over transmission.)



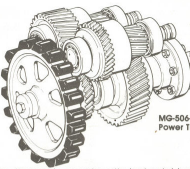
MG-506 Deep Case

- Oil controlled clutch engagement
- Carburized and hardened gears
- Helical or spur gears depending on model
- Built with jig-bore accuracy
- Rubber block drive
- Ratios:
  MG-506 Deep Case Spur Gear Models: 3.79:1, 4.48:1
  MG-506-1 Helical Gear Models: 1.09:1, 1.50:1, 1.97:1, 2.50:1, 2.96:1
- Equipped with SAE No. 1, 2 or No. 3 housing, depending on model
- Dry flywheel housing
- For use with standard engine rotation (counter-clockwise facing flywheel)
- Hydraulically-actuated and oil-cooled clutches shift with fast, fingertip response
- Oil gauges can be mounted port or starboard

The MG-506 Marine Transmission features countershaft design with rugged tapered roller bearings throughout the unit at all points of continuous rotation. However, unlike most marine countershaft arrangements, this transmission has a straight-through power flow with input and output on the same centerline (except on two deep-case ratios). This feature is of particular advantage to marine architects for planing type hulls.

The bearing bores and dowel holes in the main housing and rear cover of the MG-506 are machined simultaneously on automatic horizontal boring machines. Finish machining also is accomplished during this operation on the pilot ring.

In the coaxial models, a trolling valve assembly is available as optional equipment.



MG-506-1
Power Train

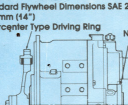
Heat Exchanger

Customers who wish to furnish their own heat exchanger should contact their nearest Twin Disc or marine engine distributor for exchanger specifications. When ordering, specify if raw or fresh water is to be used in the heat exchanger.

Standard Mounting Brackets and Companion Flanges for the MG-506 Models are available from Twin Disc.

MG-506-4

Standard Flywheel Dimensions SAE 292 mm (11½") or 356 mm (14")
Overcenter Type Driving Ring



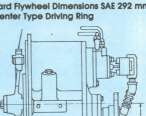
Use Certified Print for Installation

Width Across Mounting Pads 361 mm (14.24")

DRAWING NUMBER	RATIOS	A	SAE HSG. NO.	APPROX. DRY WGT.
Helical Gears				
XA7022-A	1.09:1, 1.50:1 1.97:1	269 mm (10.59") 255 mm (10.03")	1 2 or 3	100 kg (220 lbs)
XA7048-A	2.50:1, 2.96:1	279 mm (10.98") 265 mm (10.42")	1 2 or 3	102 kg (225 lbs)

MG-506 Deep Case

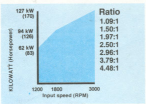
Standard Flywheel Dimensions SAE 292 mm (11½")
Overcenter Type Driving Ring



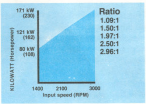
Width Across Mounting Pads 381 mm (15")

DRAWING NUMBER	RATIOS	SAE HSG. NO.	APPROX. DRY WGT.
Spur Gears			
X9844	3.79:1, 4.48:1	2 or 3	130 kg (286 lbs)

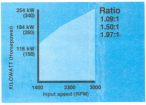
Continuous Duty

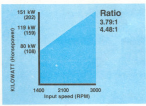


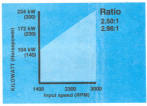
Intermediate Duty



Pleasure Craft (Planing Hull)







IMPORTANT NOTICE

Disregarding propulsion system torsional compatibility could cause damage to components in the drive train resulting in loss of mobility. At minimum, system incompatibility could result in gear clatter at low speeds.

The responsibility for ensuring that the torsional compatibility of the propulsion system is satisfactory rests with the assembler of the drive and driven equipment.

Torsional vibration analysis can be made by the engine builder, marine survey societies, independent consultants and others. Twin Disc is prepared to assist in finding solutions to potential torsional problems that relate to the marine transmission.

For Service Classification Definitions see back cover.

Service Classification Definitions

Continuous Duty

Often called "Work Boat Duty", these marine transmission applications are expected to operate continuously at full engine governed speed. The propulsion engine power setting must be known and must be within the marine transmission's allowable input rating for continuous day long or around the clock service.

Most displacement hull vessels are powered for Continuous Duty service. However, the actual engine (and marine transmission) power loading depends on:

a. The propeller used
b. The vessel's work assignment
c. The captain's choice of throttle setting during continuous service

Twin Disc recommends that all displacement and semi-displacement hull commercial applications be classed as Continuous Duty usage of the marine transmission.

Examples:
- Fishing trawlers
- Purse seiners
- Lobster boats and crab boats
- Tugs
- Tow boats
- Buoy tenders
- Offshore Supply boats
- Ferries
- Research vessels
- Ocean freighters

Intermediate Duty

Commercial usage of semi-displacement or planing hulls can qualify for Intermediate Duty classification if:

Full throttle usage averages only a few hours per day and, total annual usage is not over 2000 hours per year.

Examples:
- Crew boats
- Party fishing boats
- Long range cruisers
- Harbor and coastal patrol boats
- Search and rescue boats
- Fireboats

Compared to Continuous Duty, Intermediate Duty should have a substantial amount of partial throttle operation.

Intermediate ratings are higher than the continuous ratings for each marine transmission.

The additional horsepower is allowed for Intermediate Duty with the expectation the total yearly hours of usage will be much less than is normal for Continuous Duty.

Pleasure Craft (Maximum Rating)

Marine transmission kilowatt (horsepower) and speed (rpm) ratings are the highest for planing type pleasure craft service.

Normal pleasure craft duty presumes there will be only occasional usage at full engine power such as may be necessary to "get up on step" or race a storm to shore. Normal cruising is expected to be at a comfortable partial-throttle setting.

NOTE: When a pleasure craft is being planned for any commercial service, the marine transmission should not be selected according to its pleasure craft rating.

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IMPORTANT NOTICE: Twin Disc, Incorporated reminds users of these products that their safe operation depends on use in compliance with engineering information provided in this catalog. Users are also reminded that safe operation depends on proper installation, operation and routine maintenance and inspection under prevailing conditions. It is the responsibility of users (and not Twin Disc, Incorporated) to provide and install guards or safety devices which may be required by recognized safety standards or by the Occupational Safety and Health Act of 1970 and its subsequent provisions.

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