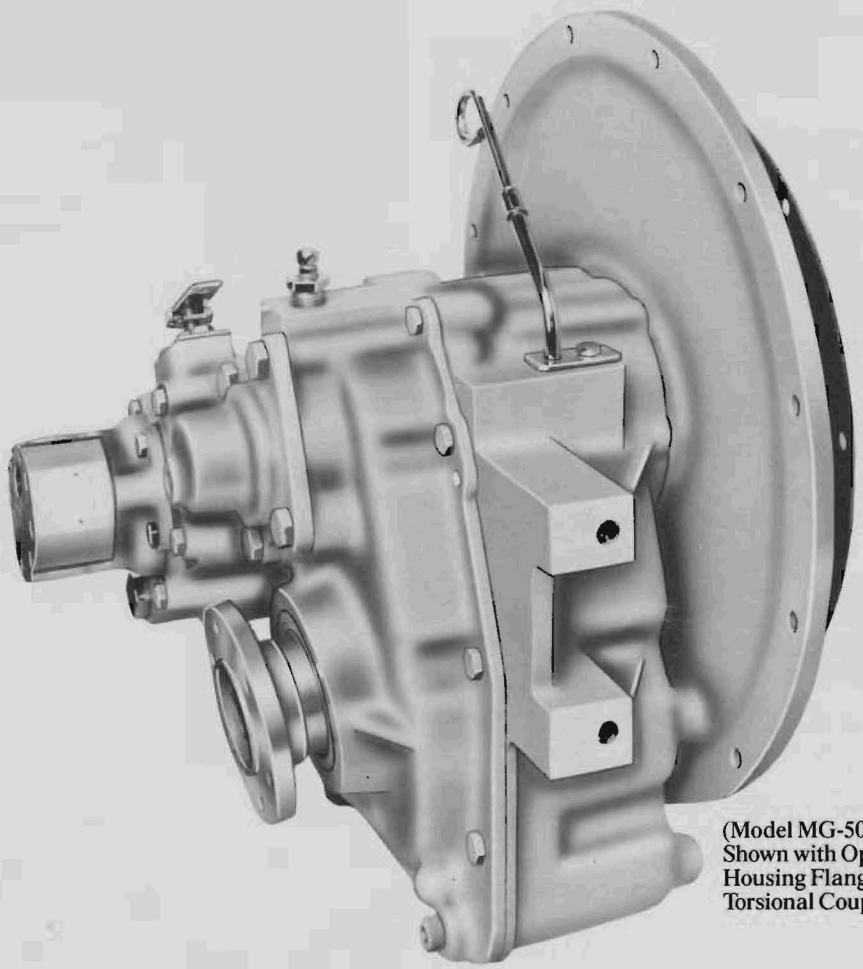
BULLETIN 319-S-02

MODEL MG-502 & MG-502-1
MARINE TRANSMISSIONS

52 to 288 kW (70 to 386 hp)



(Model MG-502-1 Shown with Optional Housing Flange and Torsional Coupling)

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

Model MG-502 and MG-502-1

Marine Transmissions

MG-502 and MG-502-1

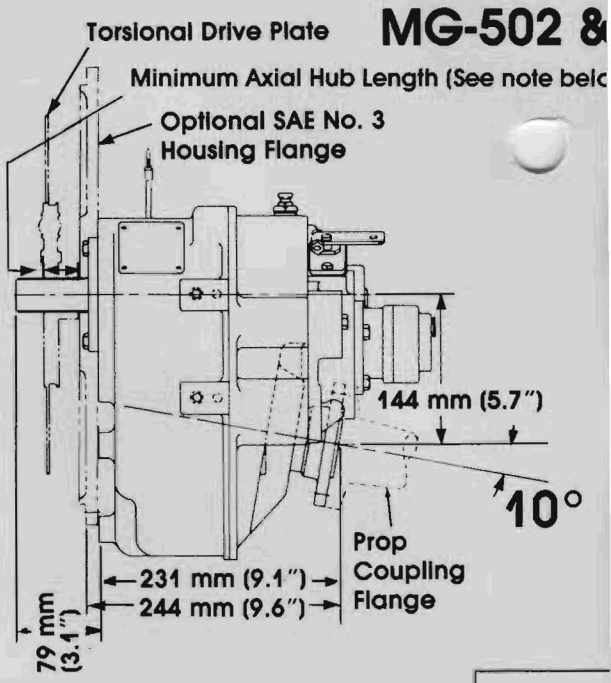
(Shown with optional housing flange and torsional drive plate)
*Maximum allowable input speed:
With Diesel Engines ..... 4000 rpm
With Gasoline Engines ..... 4200 rpm
*Unless granted prior written approval.

- Lighter and 1/2 the length of comparable capacity transmissions
- 10° output shaft down angle—provides for near level engine installation
- Permits lower deck and more usable room
- Oil controlled clutch engagement
- Carburized, hardened, conical helical gears
- No external plumbing
- Built with jig-bore accuracy
- Identical forward and reverse ratios: MG-502—2.47:1; MG-502-1—1.54:1 and 2.00:1
- Unlimited engine flywheel housing adaptability
- Identical performance forward or reverse—provides either left or right-hand propeller rotation with identical right-hand rotation engines

QUIET OPERATION...MORE ON-BOARD LIVING AREA... GREATER DESIGN FLEXIBILITY.

The MG-502 and MG-502-1 use conical involute gearing to provide a 10° down angle. This feature eliminates the need for engine installation at severe high angles and provides easier installation and more on-board living space.

Identical performance and ratios in forward or reverse eliminate the need for opposite rotation engines.



Use Certified Print for Installation

MODEL
MG-502
MG-502-1

These lightweight, high-capacity marine transmissions permit the use of higher powered engines that are required for the best vessel performance. These units all have helical gears and torque capacity to accommodate most mid-range, high-speed diesels and high-performance gasoline engines. The MG-502-1 incorporates design and material improvements which allows its use at higher Pleasure Craft ratings than the MG-502.

Unlike most marine countershaft arrangements, this transmission with 10° down angle offers broader design flexibility for marine architects.

Optional Equipment

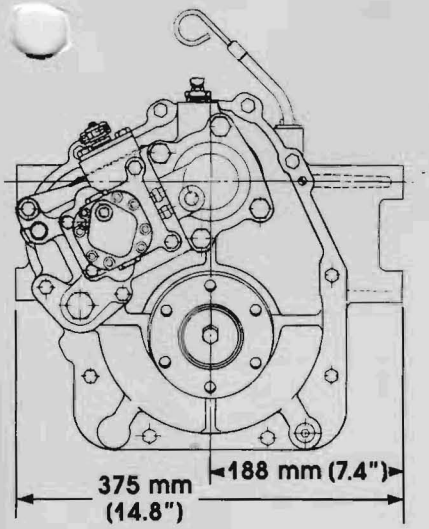
Includes housing flange—SAE No. 3 (XB5690) or special adapter (XA7157) 235 mm (9.25") B.C.; prop coupling flange—SAE No. 2S (XB3431); and torsional couplings—SAE No. J620C—292 mm (11.5") (A7052A), polyurethane element (A7559), or 292 mm (11.5") elastomeric (PM8756A). **NOTE:** Customer sourced torsional drive plates other than from Twin Disc must have a minimum axial hub length of 35 mm (1.38") when used on MG-502's and a minimum hub length of 45 mm (1.75") when used on MG-502-1's.

Heat Exchanger

Available from Twin Disc. Customers who wish to furnish their own heat exchanger should contact the 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.

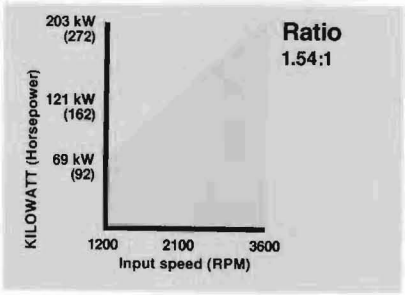
MG-502-1

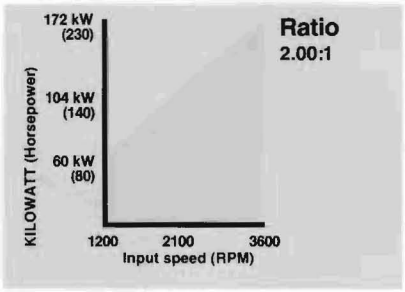
)

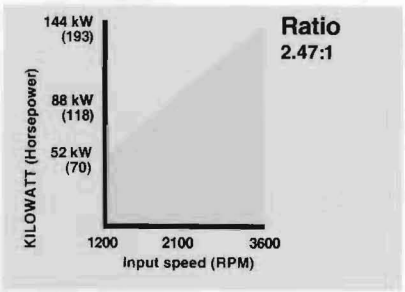


	DRAWING NUMBER	RATIOS	APPROX. DRY WEIGHT
	X9994A	2.47:1	70 kg (155 lbs)
	X9994C	1.54:1, 2.00:1	70 kg (155 lbs)

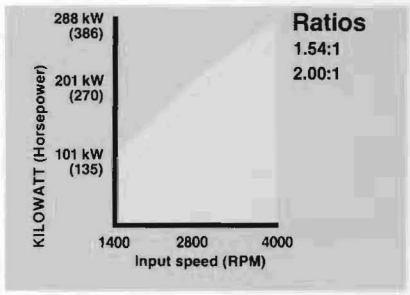
MG-502-1 and MG-502 Intermediate Duty

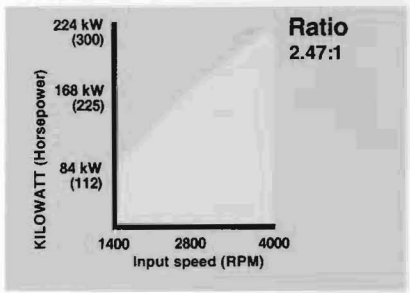




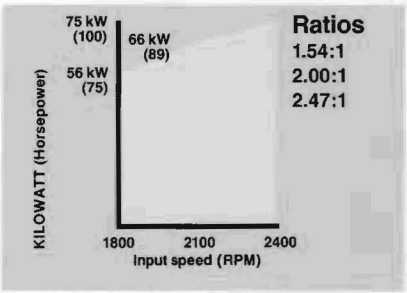


MG-502-1 and MG-502 Pleasure Craft (Planing Hull)

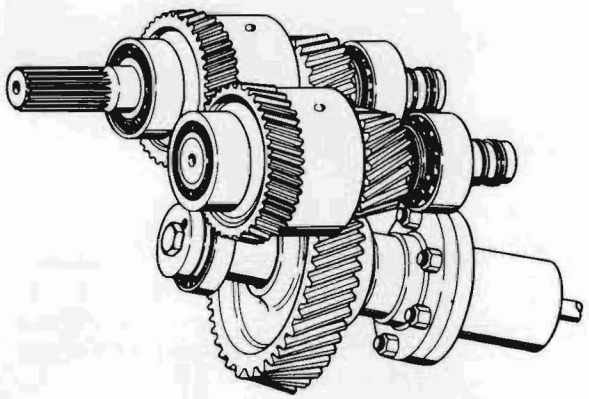




MG-502-1 and MG-502 Continuous Duty



For Service Classification Definitions see back cover.



MG-502 and MG-502-1 Power Train

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

Pleasure or Commercial usage of planing or semi-displacement hull craft can qualify for Intermediate Duty Service Classification if full throttle operation will average only a few hours per day with major portion of usage at partial throttle and total annual usage will be 2000 hours or less.

Examples:

Long Range Pleasure Cruisers
Sportfish Charter Boats
Party Fishing Boats
Crew Boats
Harbor and Coastal Patrol Boats
Search and Rescue Boats
Fire Boats

PLEASURE CRAFT

Maximum power capacity is intended only for personal use, planing hull pleasure craft where full engine throttle operation will be less than 5% of total time with balance of time at 87% of full throttle engine rpm or less. Marine transmissions used in long-range pleasure cruisers, sportfish charters or any commercial service should not be selected according to Pleasure Craft Service Classification.

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.

TWIN DISC, INCORPORATED
Racine, Wisconsin 54303, U.S.A.
England South Africa Singapore
Hong Kong Australia
TWIN DISC INTERNATIONAL S.A.
1400 Nivelles, Belgium

BULLETIN 319-S-02 3M-8-89

PRINTED IN UNITED STATES OF AMERICA