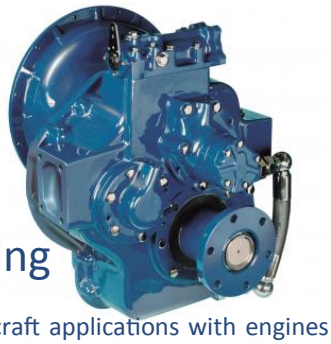
PRM 1500



Full Hydraulic Operation

Drop Centre Output Shaft - Two Stage Reduction Gearing

The PRM 1500 series marine transmissions are the ideal choice for pleasure and commercial craft applications with engines rated at up to 520hp (390kW). They are available in both shallow and deep case form - corresponding to reduction ratios ranging from 1.22:1 to 3.0:1 and 3.12:1 to 4.9:1 respectively - and are supplied with integral SAE housings as standard.

All PRM 1500 series transmissions feature a twin countershaft design compatible with left or right hand propeller rotations - making them equally suitable for both single or twin engine installations. In addition, the PRM 1500's two-stage reduction gearing enables maximum input torque of 1500Nm to be transmitted continuously in either direction at engine speeds of up to 2500 rev/min.

Simple Operation

Operation is by a single lever compatible with proprietary remote control operating systems. The need for special purpose automatic transmission fluid is eliminated by the use of engine oil specification lubricant. Smooth drive engagement in both ahead and astern is achieved by a pressure modulated selection valve - ensuring outstanding boat handling and manoeuvrability.

Durable & Reliable

PRM 1500 units carry a Lloyd's approved published ratings and utilise maintenance-free oil-operated, self adjusting multi-disc clutches for consistent reliability and in-service performance. The gearcase is manufactured from high grade cast iron and is internally ribbed for extra rigidity and strength. The oil pump, oil filter and hydraulic control valve on all PRM 1500 models are mounted externally for easy access and servicing.

Optional Equipment

Two optional clutched power take-offs - compatible with SAE classification hydraulic pumps - are available to drive on-board machinery. Further ancillary equipment for PRM 1500 gearboxes include an oil pressure gauge, oil cooler kit and electrically operated control valve - incorporating a trolling valve facility that allows propeller speeds to be varied down to zero. This is fully interchangeable with the standard control valve and can be retrofitted in service.

Nominal Power Ratings - PRM 1500 Deep Case Marine Gearbox - 'D' denotes Deep Case: manufactured only with integral SAE 1 or SAE 2 adaptor housings. If there is a need to convert from SAE 1 to SAE 3, then additional adaptor ring MT8239 will also be required

		Pleasure		Light Commercial		Heavy Commercial	
MODEL	GEAR RATIOS	BHP	kW	BHP	kW	BHP	kW
1500D31SAE1 1500D31SAE2	3.12:1	21.06	15.70	19.65	14.65	18.28	13.63
1500D39SAE1 1500D39SAE2	3.88:1	21.06	15.70	19.65	14.65	18.28	13.63
1500D45SAE1 1500D45SAE2	4.50:1	21.06	15.70	19.65	14.65	18.28	13.63
1500D49SAE1 1500D49SAE2	4.90:1	18.28	13.63	16.87	12.58	15.46	11.53
Maximum operating speeds, intermittent 3000 rev/min, continuous 2500 rev/min							

PRM 1500

Full Hydraulic Operation

Drop Centre Output Shaft - Two Stage Reduction Gearing

Nominal Power Ratings - PRM 1500 Shallow Case Marine Gearbox

'D' denotes Deep Case: manufactured only with integral SAE3 adaptor housings

		Pleasure		Light Commercial		Heavy Commercial	
MODEL	GEAR RATIOS	BHP	kW	BHP	kW	BHP	kW
1500S12SAE3	1.22:1	21.06	15.70	19.65	14.65	18.28	13.63
1500S15SAE3	1.56:1	21.06	15.70	19.65	14.65	18.28	13.63
1500S19SAE3	1.94:1	21.06	15.70	19.65	14.65	18.28	13.63
1500S22SAE3	2.25:1	21.06	15.70	19.65	14.65	18.28	136.63
1500S24SAE3	2.45:1	21.06	15.70	19.65	14.65	18.28	13.63
1500S30SAE3	3.00:1	18.93	14.12	17.52	13.07	15.77	11.76
Maximum operating speeds, intermittent 3000 rev/min, continuous 2500 rev/min							

Note: These powers are expressed in BHP an kW per 100 rev/min engine speeds and are measured at the engine flywheel. Ratings have been established to ensure the long, trouble-free life of the gearbox and should not therefore be exceeded.

Service Classification Definitions - Pleasure

Limited to planing hull pleasure craft with a maximum of 500 hours operating time per year, of which not more than 5% should be at full engine
throttle, with the balance of usage at 90% or less of full throttle. The use of Marine gearboxes according to this classification in any commercial boat, or in sport-fishing charter boats or long-range pleasure cruisers, is not approved.

Service Classification Definitions - Light Commercial

Planing or semi-displacement craft used in pleasure or commercial application may qualify for light commercial rating if annul usage is less than 1500 hours and full throttle operation is limited, with most operating time at partial throttle.

Service Classification Definitions - Heavy Commercial

All displacement and semi-displacement craft used for commercial applications should be classified as heavy commercial duty. In this type of vessel (such as trawlers, purse seiners, lobster and crab boats, tugs, ferries, offshore supply boats etc) the gearbox is expected to work at full governed engine speed. The power of the engine must be known and must be within the permitted heavy commercial rating of the gearbox.

Important Note

1) **It is essential for the engine, transmission model, reduction ratio and propeller size to be correctly matched so that the engine can attain its rated speed appropriate to the relevant service classification without labouring.**
2) **It is also necessary to ensure the torsional compatibility of the complete propulsion system from engine through to propeller, since disregarding this may result in gear noise, particularly at low speed operation, and may even result in damage to the engine as well as the transmission components.**

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Operating Pressure

Minimum - 2827kPa (410 lb./in²). Maximum - 3100 kPa (450 lb./in²). Two tapped holes, 1 hole 1/8" BSP on the top, and 1 hole M18 on the side of the valve block are provided so that the pressure gauge can be fitted if required. Gear selector is designed with modulated engagement for soft shift.

Oil Cooling

The normal operating temperature of the oil should be in the 50°C - 80°C range and should not be permitted to exceed 90°C. An oil cooler is necessary to ensure that correct operating temperatures are maintained, and two 3/8" BSP connections are provided on the valve block to allow it to be fitted. The size of the cooler required depends on a number of factors including the transmitted horsepower, operating speed, duty cycle, inlet water temperature and ambient temperature.

Propeller Thrust

Both ahead and astern thrust is carried out by the output shaft taper roller bearings which are of ample capacity for all factory approved ratings.

Approximate Weight & Oil Capacity

Gearbox Type	Estimated Dry Weight	Estimated Oil Capacity	
PRM1500D (Deep Case)	300kg (663lbs)	8.0 litres	(14 pints)
PRM1500S (Shallow Case)	260kg (570lbs)	8.0 litres	(14 pints)

Note: Weight excluding drive coupling and cooler
Note: Oil capacity does not include amount to fill cooling circuit

Flexible Input Couplings for PRM 1500

Flywheel Size	Part No
SAE 11.5 in	CF-DS-40-011-61230
SAE 14 in	CF-DS-40-014-61229
SAE 11.5 in	Vilkarden - E3410 4000 series
SAE 14 in	Vilkarden - E3410 4000 series
SAE 10 in	750lbf.ft(1020Nm) 54S107
SAE 11.5 in	1200lbf.ft(1630Nm) 55Z78
SAE 14 in	1200lbf.fl(1630Nm) 55Z79