



PRM 750



Full Hydraulic Operation In-line, Offset or Down Angle Output Shaft

The PRM 750 marine gearbox is purpose built for use in both pleasure craft and commercial boats; it's twin countershaft design provides separate oil-operated multi-disc clutches (which need no adjustment) for ahead and astern drive allowing full rated power to be transmitted continuously in either direction.

To cater for the widest possible variety of boats the PRM 750 is offered in three different configurations: in-line, with offset output shaft and 8" down angle output shaft. Reduction ratios available are 1.09:1, 1.459:1, 1.935:1, 2.565:1 and 3.952:1 (3.952:1 reduction is not available on in-line or down-angle gearboxes) all of which can provide either left-handed or right-handed propeller rotation in "ahead", making the gearbox particularly well suited to twin engine installations.

A special feature of the PRM 750 is the direct drive power take-off which is available as an optional extra: this will power a hydraulic pump to SAE J744C type 'B' specification, thus providing an economical and space efficient means of driving on-board machinery.

A trolling valve is also offered as an optional extra. This is electronically operated which allows variable speed of the propeller to zero whilst allowing a maximum engine speed of up to 1200rpm.

The robust and reliable hydraulic uses lubricating oil of the same viscosity as that used in the engine, and helps ensure good boat handling by it's rapid response to movements of the operating lever.

The operating lever has a positive neutral detent which assists the setting up of the remote control operating unit whilst for added security, to guard against the unlikely event of hydraulic failure of gearboxes incorporate a mechanical lock up device so the boat can be brought safely back to port.

The gearcase is constructed of high grade cast iron, internally ribbed for rigidity and strength, and consists of two separate halves to facilitate servicing, the oil pump and hydraulic control valves being externally mounted for easy accessibility.

Nominal Power Ratings - PRM 750 'A' Marine Gearbox (Angle Drive Only)

Ratios	Pleasure		Light Commercial		Heavy Commercial	
	BHP	kW	BHP	kW	BHP	kW
1.09:1, 1.459:1	9.62	7.17	7.62	5.68	7.23	5.39
1.935:1, 2.565:1	9.48	7.07	7.62	5.68	7.23	5.639
2.904:1	8.00	5.96	7.51	5.60	7.02	5.24

Note: These powers have been measured at the engine flywheel. Ratings have been established to ensure the long trouble free life of the gearbox which should not, therefore be used at powers in excess of those shown.



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Nominal Power Ratings - PRM 750 'D & C' Marine Gearbox (In-line & Drop Centre)

Ratios 3.95:1 In-Line Not Available	Pleasure		Light Commercial		Heavy Commercial	
	BHP	kW	BHP	kW	BHP	kW
1.09:1, 1.459:1	10.52	7.85	8.13	6.07	7.85	5.86
1.935:1, 2.565:1	9.48	7.07	7.85	5.86	7.43	5.55
2.904:1, 3.952:1	8.00	5.96	7.50	5.60	7.02	5.24

Maximum operating speeds: 4500 rev/min intermittent, 4000 rev/min continuous

Note: These powers have been measured at the engine flywheel. Ratings have been established to ensure the long trouble free life of the gearbox which should not, therefore, be used at powers in excess of those shown.

Service Classification Definitions - Pleasure

Limited to planing hull pleasure craft; operation at full engine throttle should not exceed 5% of total time, with balance usage at 90% of full throttle engine speed, or less. Maximum operation 500 hours per year. The selection of PRM marine transmissions according to this classification for any commercial boat, or in sport-fishing charter boats or in long range pleasure cruisers is not approved.

Service Classification Definitions - Light Commercial

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

Service Classification Definitions - Heavy Commercial

PRM Marine Ltd recommends that all displacement and semi-displacement craft used for commercial applications should be classed as heavy commercial duty. In vessels of this type (including trawlers, purse seiners, lobster and crab boats, tugs, ferries, offshore supply boats etc.) the marine gearbox is expected to work at full governed engine speed. The power setting of the engine must be known and must be within the gearbox's permissible heavy commercial rating.

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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Working Oil Pressure

Minimum - 3000kPa (440 lb./in²). Maximum - 3300 kPa (485 lb./in²). Two tapped holes 1/8" BSP on the top, and M18 on the side of the valve block are provided so that the pressure gauge can be fitted if required.

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 by the output shaft bearings which are of adequate capacity for all factory approved ratings.

Approximate Weight & Oil Capacity

Gearbox	Approximate Dry Weight	Oil Capacity		
PRM750D	72kg (159lb)	Excluding adaptor, drive coupling and oil cooler	2.5 litres (4.40 pints)	Plus the amount required to fill the cooling circuit
PRM750D	80kg (176lb)		3.5 litres (6.16 pints)	
PRM750A	90kg (198lb)		3.0 litres (5.28 pints)	
PRM750C	93kg (205lb)		3.0 litres (5.28 pints)	

Adaptor Flanges for PRM 750

Part Number	Description	Weight - kg	Weight - kg
MT1212S/A	SAE 2 Adaptor Flange	13.0kg	28.7lb
MT1211S/A	SAE 3 Adaptor Flange	11.0kg	24.2lb
MT1216S/A	SAE 4 Adaptor Flange	9.6kg	21.2lb
MT1563S/A	B/W (Velvet Drive) Adaptor Flange (not suitable for 3.952:1 ratio)	4.2kg	9.25lb



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Other Accessories for the PRM 750

Part Number	Description	Weight	
MT461S/A	Oil cooler kit - PRM750D, engines up to 130kW; PRM750A/PRM750C engines up to 105kW	1.00	2.20
MT4611S/A	Oil cooler kit - PRM750D, engines over 130kW; PRM750A/PRM750C engines over 105kW	1.70	3.75
MT915	Oil pipes(pair)	0.50	1.10
MT784	Oil cooler mounting bracket	0.20	0.50
MT783	Tailshaft half coupling (pilot bored)	5.60	12.30
MT1105	Tailshaft flexible coupling	2.50	5.30
MT0193	Live PTO, for SAE 'B' hydraulic pump	6.90	15.20
MT0214	Neutral Safety Start Switch	0.04	0.10
MT4733	Oil pressure gauge (direct mounting)	0.10	0.20
MT0210	8°Angle drive unit (supplied loose)	17.70	38.94
MT4992	Trolling Valve Assembly 12v	9.50	20.90
MT4993	Trolling Valve Assembly 24v	9.50	20.90



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Part Number	Outside Diameter		No.	Mounting Hole Pattern				Remarks	
	in	mm		Diameter		Pitch Circle Diameter			
				in	mm	in	mm		
MT1358	12.375	314.4	6	0.320	8.13	7.875	200.0	SAE 10 in	
			6	0.320	8.13	9.853	250.0		
			6	0.320	8.13	10.625	269.9		
			6	0.320	8.13	10.750	273.1		
			8	0.375	9.53	11.625	295.3		
MT1359	13.875	352.4	8	0.433	10.99	13.125	333.4	SAE 11½ in	
MT1357	14.25	362.0	6	0.320	8.13	7.785	200.0	Ford 2720 series	
			6	0.320	8.13	8.268	210.0		
			6	0.320	8.13	10.375	263.5		
			6	0.320	8.13	10.625	269.9		
			6	0.320	8.13	10.875	276.2		
			6	0.320	8.13	11.375	288.9		
			6	0.320	8.13	11.625	295.3		Perkins 6-3544
			6	0.344	8.74	12.000	304.8		
			6	0.320	8.13	12.375	314.3		
			6	0.375	9.53	12.625	320.7		
			6	0.320	8.13	13.500	342.9		
			6	0.375	9.53	13.500	342.9		



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