



PRM1000 Gearbox

Full hydraulic operation: offset or down angle output shaft.

The PRM1000 marine gearbox is purpose built for use in both pleasure craft and commercial boats; its 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 PRM1000 is offered either with output shaft, offset or 10° down angle output shaft. Reduction ratios available are 1.53:1, 2.03:1, 2.857:1, and 4.00:1 (4.00:1 reduction is not available on down angle gearbox) all of which can provide either left-hand or right-hand propeller rotation in "ahead", making the gearbox particularly well suited to twin engine installations.

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.

The hydraulic operating system functions on normal lubricating oil of the same viscosity as that used in the engine, avoiding the need to use automatic transmission fluid, and ensures rapid response to movements of the operating lever for good boat handling. The operating lever has a positive neutral detent and is suitable for use with proprietary single lever remote control operating systems.

Robust and reliable, the hydraulic system is nevertheless provided with a mechanical lock-up device for added security, so that in the unlikely event of hydraulic failure the boat can be brought safely back to port. Access to this device is via a detachable cover located on top of the main gearcase

A special feature of the PRM1000 is the clutched 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.

An electronically operated trolling valve can be fitted, which will allow variable speed of the propeller to zero whilst allowing a maximum engine speed of up to 1200 rpm.



Nominal Power Ratings, PRM1000D Marine Gearbox (Drop Centre)

Model	Ahead Ratio	Pleasure		Light Commercial		Heavy Commercial	
		kW	BHP	kW	BHP	kW	BHP
1000D1.5	1.53:1	10.47	14.04	7.75	10.39	7.33	9.82
1000D2	2.03:1	9.43	12.64	7.44	9.96	7.02	9.40
1000D3	2.857:1	8.58	11.50	7.44	9.96	7.02	9.40
1000D4	4.000:1						

Maximum operating speeds: 3500 rev/min intermittent, 3000 rev/min continuous

Nominal Power Ratings, PRM1000A Marine Gearbox (Angle Drive Only)

Model	Ahead Ratio	Pleasure		Light Commercial		Heavy Commercial	
		kW	BHP	kW	BHP	kW	BHP
1000A1.5	1.53:1	9.66	12.95	7.10	9.52	6.67	8.95
1000A2	2.03:1	9.43	12.64	7.10	9.52	6.67	8.95
1000A3	2.857:1	8.58	11.50	7.10	9.52	6.67	8.95

Maximum operating speeds: 3500 rev/min intermittent, 3000 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.

Operating Pressure

Minimum – 30.34 bar (440 lb./in²), Maximum – 33.44 bar (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
PRM1000D	86kg (190lb)	3.0 litres (5.28 pints)
PRM1000D4	93kg (205lb)	4.0 litres (7.04 pints)
PRM1000A	118kg (260lb)	3.5 litres (6.16 pints)

excluding adaptor, drive coupling and oil cooler. plus the amount required to fill the cooling circuit

Flexible Input Couplings for PRM1000

Part Number	Outside Diameter		No.	Mounting Hole Pattern				Remarks
	mm.	in.		Diameter		Pitch Circle Dia.		
				mm	in	mm	in	
MT4915	352.4	13.875	8	10.99	0.433	333.4	13.125	SAE 11 ½ in
MT4916	466.7	18.375	8	12.70	0.500	438.2	17.250	SAE 14 in

Adaptor Flanges for PRM1000

Part Number	Description		Weight	
			kg	lb
MT4586S/A	SAE1 adaptor flange	For ratio up to 2.86:1	19.3	42.5
MT4587S/A	SAE2 adaptor flange		14.7	32.4
MT4588S/A	SAE3 adaptor flange		12.4	27.3
MT4889S/A	SAE1 adaptor flange	For ratio 4:1 only	19.3	42.5
MT4890S/A	SAE2 adaptor flange		14.7	32.4
MT4891S/A	SAE3 adaptor flange		12.4	27.3

Other Accessories for PRM1000D & PRM1000A

Part Number	Description	Weight	
		kg	lb
MT0205S/A	Clutched power take-off for SAE 'B' Hydraulic pump	11.2	24.7
MT4611S/A	Oil cooler kit: PRM1000D engines up to 180 kW PRM1000A & PRM1000 with PTO engines up to 150 kW	1.70	3.75
MT4735S/A	Oil cooler kit: PRM1000D engines over 130 kW PRM1000A & PRM1000 with PTO engines over 105 kW	4.40	9.70
MT915	Oil pipes (pair)	0.50	1.10
MT783	Tail shaft half coupling (pilot bored) not 4:1 ratio	5.60	12.30
MT4594	Tail shaft half coupling (pilot bored) 4:1 ratio only	10.10	22.30
MT1105	Tail shaft flexible coupling	2.50	5.30
MT5036	Oil pressure gauge (direct mounting)	0.10	0.20
MT0345	10° Angle drive unit (supplied loose)	32.20	70.84

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