

# NEWAGE

# PRM

## PRM750 MARINE GEARBOX

### FULL HYDRAULIC OPERATION: IN-LINE, OFFSET OR DOWN ANGLE OUTPUT SHAFT

The PRM750 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 PRM750 is offered in three different configurations: in-line, with offset output shaft and with 8° down angle output shaft. Reduction ratios available are 1.09:1, 1.459:1, 1.935:1, 2.565:1, 2.904:1 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-hand or right-hand propeller rotation in "ahead", making the gearbox particularly well suited to twin engine installations.

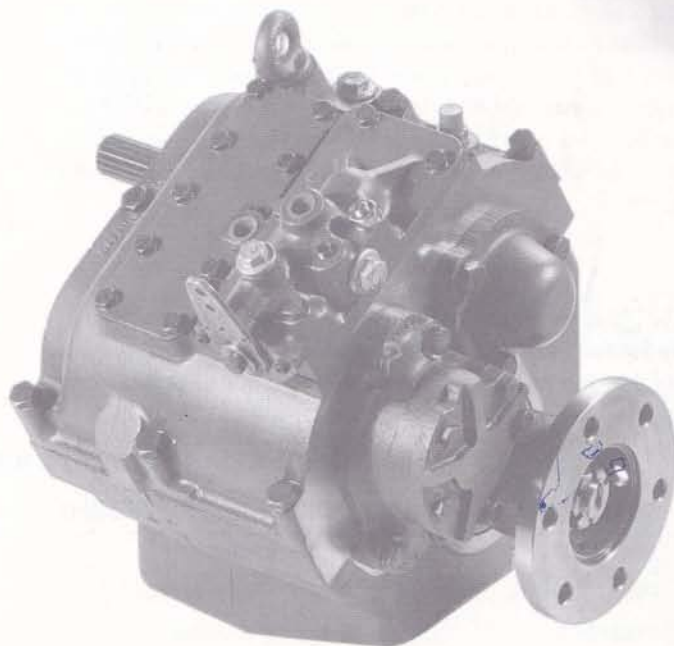
A special feature of the PRM750 is the direct drive power take-off which is available as an optional extra: this will power a hydraulic pump to SAE J744C type B specification, thus providing an economical and space efficient means of driving on-board machinery (see separate leaflet).

The Newage 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 1200 rpm.

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

The operating lever itself 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 all gearboxes incorporate a mechanical lock-up device so that 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, PRM750 '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	5.39
2.904:1	8.00	5.96	7.51	5.60	7.02	5.24

## NOMINAL POWER RATINGS, PRM750 'D&C' MARINE GEARBOX (IN-LINE & DROP CENTRE)

RATIOS	PLEASURE		LIGHT COMMERCIAL		HEAVY COMMERCIAL	
	BHP	kW	BHP	kW	BHP	kW
3.95:1 IN-LINE NOT AVAILABLE						
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 are expressed in BHP and kW per 100 rev/min engine operating speed, and are 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 of usage at 90% of full throttle engine speed, and maximum operating time 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.

### 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.

### HEAVY COMMERCIAL

Newage Transmissions Limited 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 to transmission components.

Newage Transmissions Limited will provide all possible information and assistance to help find solutions to potential torsional problems, but it is the ultimate responsibility of the person assembling the drive and driven equipment to ensure that they are torsionally compatible.

### WORKING OIL PRESSURE

Minimum - 3000 kPa (440 lb/in<sup>2</sup>), Maximum - 3300 kPa (485 lb./in<sup>2</sup>). 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 roller bearings which are of adequate capacity for all factory approved ratings.

### APPROXIMATE WEIGHT AND OIL CAPACITY

GEARBOX	APPROXIMATE DRY WEIGHT		OIL CAPACITY	
PRM750D	72 kg (159 lb)	} excluding adaptor, input coupling and oil cooler	2.5 litres (4.40 pints)	} plus the amount required to fill the cooling circuit.
PRM750D4	80 kg (176 lb)		3.5 litres (6.16 pints)	
PRM750A	90 kg (198 lb)		3.0 litres (5.28 pints)	
PRM750C	93 kg (205 lb)		3.0 litres (5.28 pints)	

## PROPELLER FREE-WHEELING

The PRM750 output shaft can be rotated continuously with the gearbox in neutral. It is not therefore necessary to fit a

propshaft brake when running with the engine shut down, e.g. in multi-engine installations or in motor sailors.

## FLEXIBLE INPUT COUPLINGS FOR PRM750

PART NUMBER	OUTSIDE DIAMETER		MOUNTING HOLE PATTERN				REMARKS	
	in	mm	NO.	DIAMETER		PITCH CIRCLE DIA.		
				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 11 1/2 in
MT1357	14.25	362.0	6	0.320	8.13	7.785	200.0	Perkins 6-3544  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	
			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	
MT1469	14.25	362.0	Hole Pattern as MT1357				For PRM750C only	

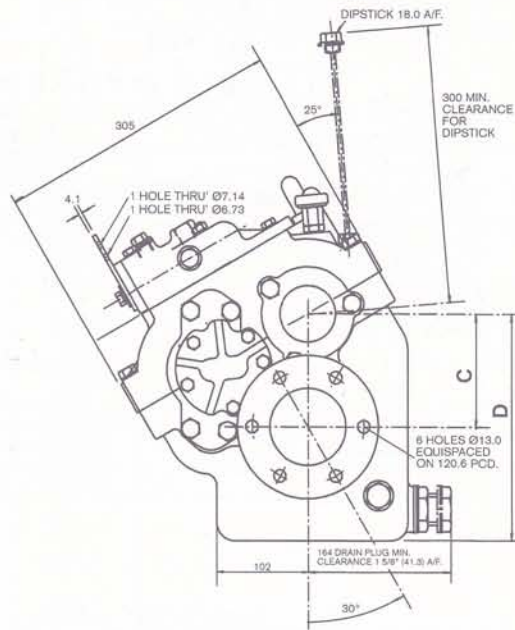
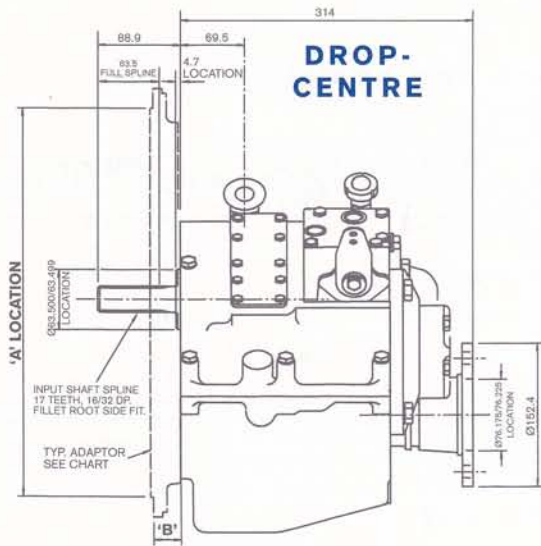
## ADAPTOR FLANGES FOR PRM750

PART NUMBER	DESCRIPTION	WEIGHT	
		kg.	lb.
MT1212 S/A	SAE2 adaptor	13.0	28.7
MT1211 S/A	SAE3 adaptor	11.0	24.2
MT1216 S/A	SAE4 adaptor	9.60	21.2
MT1563 S/A	B/W (Velvet Drive) adaptor (not suitable for 3.952:1 ratio)	4.20	9.25

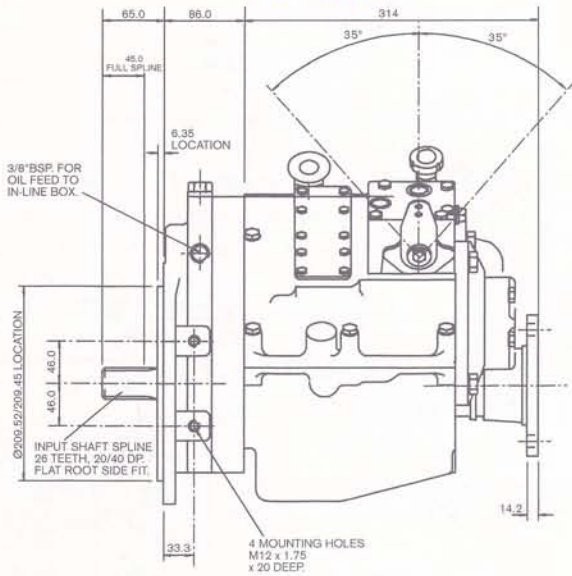
## OTHER ACCESSORIES FOR PRM750

PART NUMBER	DESCRIPTION	WEIGHT	
		kg.	lb.
MT4613 S/A	Oil cooler kit - PRM750D, engines up to 130kW; PRM750A/PRM750C engines up to 105kW	1.00	2.20
MT4611 S/A	Oil cooler kit - PRM750D, engines over 130kW; PRM750A/PRM750C engines over 105kW	1.70	3.75
MT915	Oil cooler 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
MT4733	Oil pressure gauge (direct mounting)	0.10	0.20
MT0193	Live PTO, for SAE 'B' hydraulic pump	6.90	15.20
MT0214	Neutral safety start switch	0.04	0.10
MT0210	8° Angle drive unit (supplied loose)	17.7	38.94
MT4992	Trolling valve assembly 12V	9.5	20.9
MT4993	Trolling valve assembly 24V	9.5	20.9

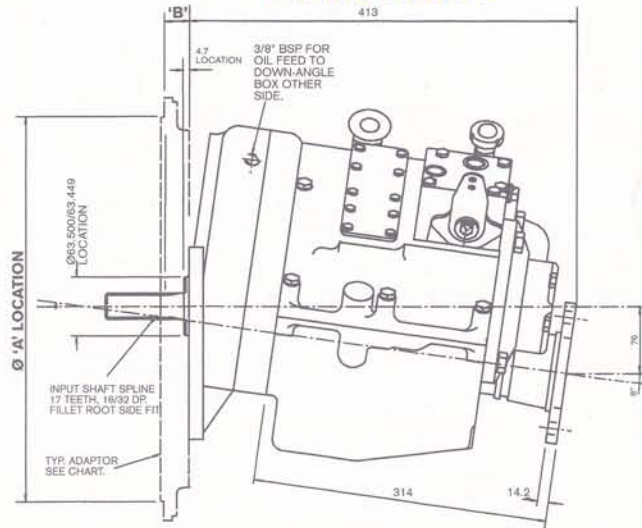
# BASIC INSTALLATION DATA - PRM750



## IN-LINE



## DOWN-ANGLE



RATIOS	DROP CENTRE DISTANCE	
	'C'	'D'
4:1	152.4	292.1
other	120.7	241.3

## INSTALLATION ANGLE

The maximum fore and aft installation angle permissible at rest is 17°.

ADAPTORS	Ø 'A'	'B'
	mm	mm
SAE2	447.68	15.88
SAE3	409.55	15.75
SAE4	361.95	19.05
B/W	209.52	28.57

## IMPORTANT NOTE

All information given in this leaflet is correct at the time of going to press. However, in the interests of technical progress, design specifications are subject to change without notice. Accordingly, data given herein should be regarded as a general guide only and does not form part of any contract. Any specific performance requirements must be made known to us in writing with customer orders for goods. Illustrations are approximate only and do not form part of any contract with us; certified installation drawings are available on request. All goods are supplied in accordance with our standard terms and conditions of sale.

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