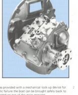
PRM 601 MARINE GEARBOX BY NEWAGE

FULL HYDRAULIC OPERATION: OFFSET OR DOWN-ANGLE OUTPUT SHAFT

The PRM601 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 PRM601 is offered either with output shaft offset, or with 10° down - angle output shaft. Reduction ratios available are 1.19:1, 1.53:1, 2.03:1, 2.86:1 and 4.00:1, 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 engine 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 PRM601 is the availability of power take-offs as optional extras. Two types are available, either with integral clutch or "live", both of which can power a hydraulic pump to SAEJ744C type 'B' specification, thus providing an economical and space efficient means of driving on-board machinery.

NEWAGE
NEWAGE TRANSMISSIONS plc
Barlow Road Coventry CV2 2LD England
Telephone 0203-617141 Telex 31333
Cables "Supagears" Coventry Fax 0203-611845

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PRM GEARBOXES BY NEWAGE

APPROXIMATE WEIGHTS AND OIL CAPACITIES

DRY WEIGHT				OIL CAPACITY	
PRM601D	86kg	(190lb)	excluding adaptor	3.0 litres (5.28 pints)	plus the amount
4:1 only	93kg	(205lb)	input coupling	4.0 litres (7.04 pints)	required to fill
PRM601A	118kg	(260lb)	and oil cooler.	3.5 litres (6.16 pints)	the cooling circuit

ADAPTORS FOR PRM601

PART NUMBER	DESCRIPTION	WEIGHT kg.	WEIGHT lb
MT4586 S/A	SAE1 Adaptor	19.3	42.5
MT4587 S/A	SAE2 Adaptor	14.7	32.4
MT4588 S/A	SAE 3 Adaptor	12.4	27.3
MT4689 S/A	SAE3 - Caterpillar 3208T, rear facing starter (without mounting pads)	12.0	26.4
MT4746 S/A	SAE3 Adaptor - Perkins, rear facing starter	12.0	26.4
MT4750 S/A	SAE3 Adaptor - Caterpillar, rear facing starter	12.0	26.4
MT4754 S/A	SAE3 Adaptor - Cummins, rear facing starter	12.0	26.4
MT4755 S/A	SAE3 Adaptor - G. M., rear facing starter	12.0	26.4

FLEXIBLE INPUT COUPLINGS FOR PRM601

PART NUMBER	OUTSIDE DIAMETER	MOUNTING HOLE PATTERN			REMARKS
		No	DIAMETER	PITCH CIRCLE DIA.	
MT4597	13.875in (352.4mm)	8	0.433in (10.99mm)	13.125in (333.4mm)	SAE 11.5in
MT4598	18.375in (466.7mm)	8	0.50in (12.70mm)	17.250in (438.2mm)	SAE 14in

OTHER ACCESSORIES FOR PRM601

PART NUMBER	DESCRIPTION	WEIGHT kg.	WEIGHT lb
MT0205	Clutched power take - off for SAE 'B' hydraulic pump	11.2	24.7
MT0128	Live power take - off for SAE 'B' hydraulic pump	3.2	7.1
MT4611	Oil cooler; PRM601D engines to 180 kW PRM601A and PRM601 + PTO - engines to 150 kW	1.7	3.75
MT4735	Oil cooler; PRM601D engines over 180 kW PRM601A and PRM601 + PTO - engines over 150 kW	4.4	9.7
MT915	Oil cooler pipes (pair)	0.5	1.1
MT783	Tailshaft half coupling, pilot bored (not 4:1 ratio)	5.6	12.3
MT4594	Tailshaft half couplings, pilot bored (4:1 ratio only).	10.1	22.3
MT1105	Tailshaft flexible coupling	2.5	5.3
MT4733	Oil pressure gauge (direct mounting)	0.1	0.2

NOMINAL POWER RATINGS, PRM601 MARINE GEARBOX

RATIO	PLEASURE		LIGHT COMMERCIAL		HEAVY COMMERCIAL	
	BHP	kW	BHP	kW	BHP	kW
1.19:1 1.53:1	12.95	9.66	9.52	7.10	8.95	6.67
2.03:1	12.19	9.09	9.52	7.10	8.95	6.67
2.857:1	10.28	7.67	9.14	6.82	8.57	6.39
4.000:1	10.28	7.67	9.14	6.82	8.57	6.39
Maximum operating speeds: 3200 rev/min intermittent, 2800 rev/min continuous						

Note: these ratings refer to diesel engines; 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 and 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 not to exceed 5% of total time, with balance of usage at 90% or less 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 plc 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 plc 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.

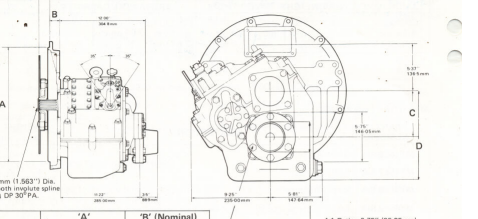
OPERATING PRESSURE: Minimum 2275 kPa (330lbf.in^2). Maximum 2655 kPa (385 lbf.in^2). Two tapped holes, 1/8" BSP on the top, and M18 on the side of the valve block are provided so that a pressure gauge can be fitted if required.

OIL COOLING: The normal operating temperature of the oil should be in the 50°C - 70°C range, and should not be permitted to exceed 80°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: Ahead and astern thrust is carried by high angle thrust bearings on output shaft, of adequate capacity for all factory-approved ratings.

FREE-WHEELING THE PROPELLER: The PRM601 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-sailers.

OUTLINE DIMENSIONS - PRM601



39.7mm (1.563") Dia.
18 tooth involute spline
12/24 DP 30° PA.

Adaptor	'A'		'B' (Nominal)	
	mm	inches	mm	inches
SAE 1	511.17	20.125	50.80	2.00
SAE 2	447.67	17.625	36.57	1.44
SAE 3	409.57	16.125	36.57	1.44

4:1 Ratio - 3.75" (95.25mm)
Other Ratios - 3.00" (76.20mm)

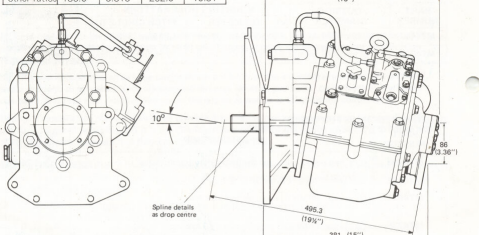
4:1 Ratio - 6 Holes 0.64" (16.25mm)
on a 6.00" (152.4mm) PCD

Other Ratios - 6 Holes 0.515" (13.00mm)
on a 4.75 (120.7mm) PCD

DROP CENTRE DISTANCE				
	'C'		'D'	
	mm	inches	mm	inches
4:1	174.0	6.856	336.0	13.23
other ratios	135.0	5.315	262.0	10.31

Installation angle

The maximum fore and aft installation angle permissible at rest is 15°



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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