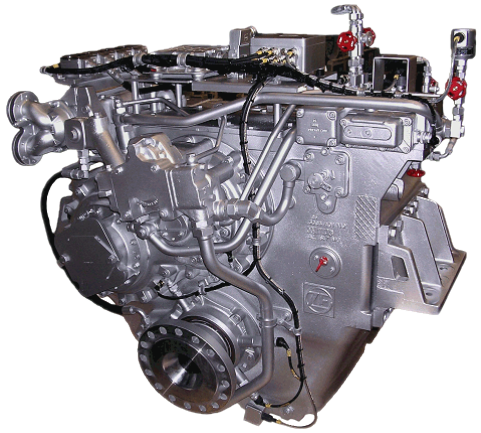


ZF 7600 A

8° Down angle, remote mount marine transmission.

Description

- 3 shaft, reverse reduction transmission with hydraulic clutch mounted on the input shaft and another one mounted on the reverse shaft. Input drive on opposite side to output drive.
- Fully works tested, reliable and simple to install .
- Non-reversing NR version also available .
- Suitable for high performance applications in all types of fast craft, luxury motoryachts, patrol vessels, crew-boats etc .
- Design, manufacture and quality control standards comply with ISO 9001 and AQAP .
- Compatible with all types of engines and propulsion systems, including waterjets and surface-piercing propellers and cpps .

Features

- Lightweight aluminum alloy casing (sea-water resistant) .
- Case hardened and precisely ground gear teeth for long life and smooth running .
- Output shaft thrust bearing designed to take maximum propeller thrust astern and ahead .
- Compact, space saving design due to 8° down angle with oil cooler, pump and full flow filter .
- Smooth and reliable hydraulic shifting with control lever for attachment of push-pull cable or other operating system .
- Suitable for multi engine installation (same ratio and torque capacity enginewise or counter enginewise .

Options

- Mounting brackets for rigid connection to foundation .
- Trolling valve for slow-speed drive .
- Propeller shaft flange and coupling bolt sets .
- Classification by all major Classification Societies on request .
- Monitoring kit .
- PTO (live) .
- Trailing pump .
- Electric clutch control (24 VDC) .
- "AUTOTROLL" .

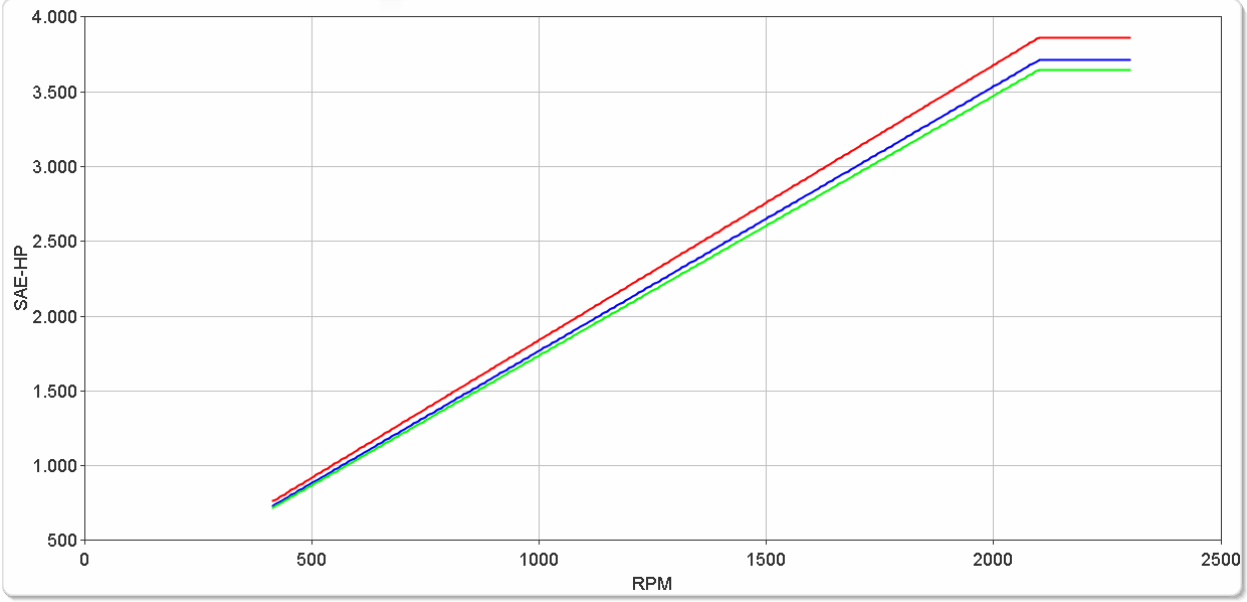
ZF 7600 A

Ratings

Pleasure Duty

RATIOS	MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	
					1800 rpm		2000 rpm		2100 rpm		
1.486*, 2.033, 2.250*, 2.538, 2.957	13100	9662	1.3717	1.8395	2469	3311	2743	3679	2881	3863	2300
3.286*	12590	9286	1.3183	1.7679	2373	3182	2637	3536	2768	3713	2300
3.450*	12370	9124	1.2953	1.7370	2332	3127	2591	3474	2720	3648	2300

* Special Order Ratio.



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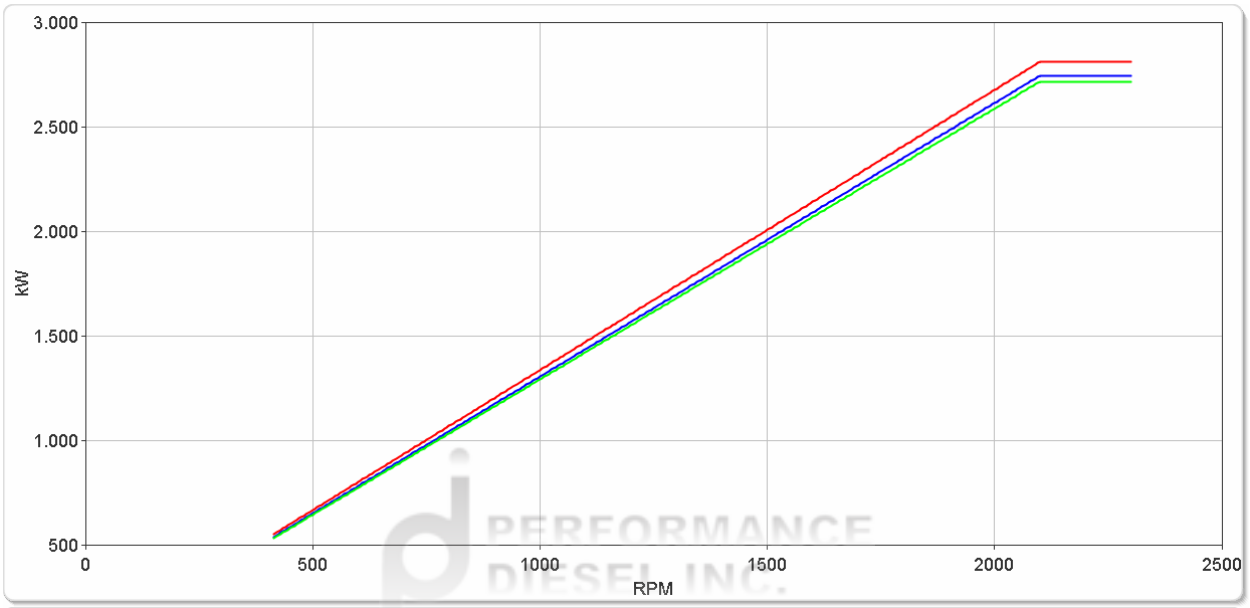
ZF 7600 A

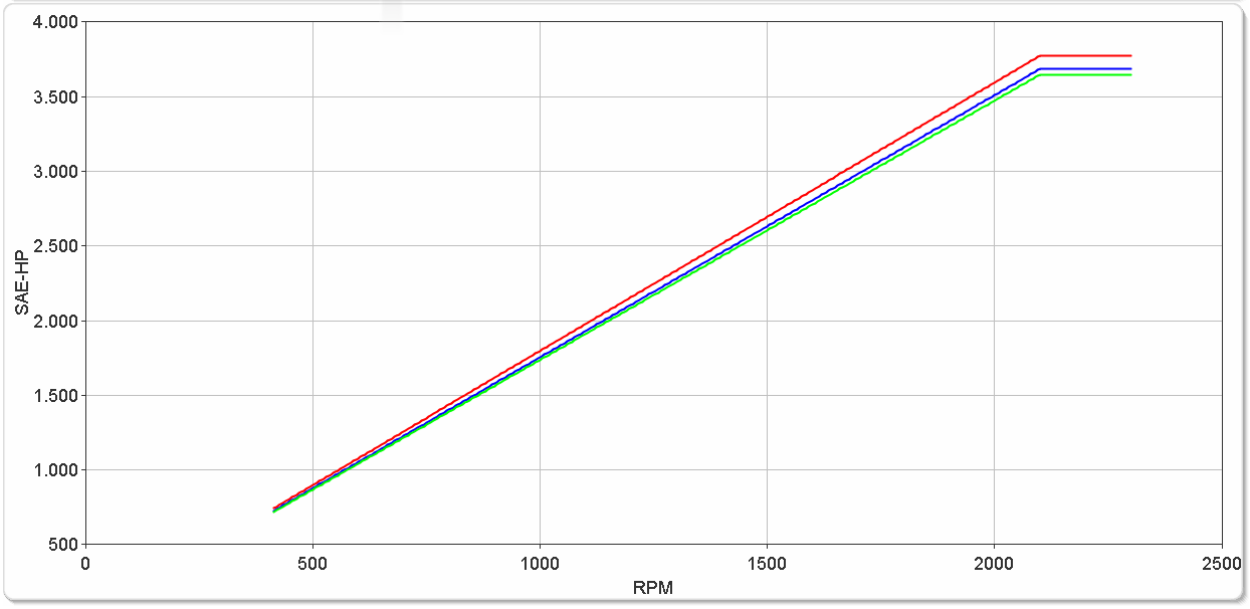
Ratings

Light Duty

RATIOS	MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	
					1800 rpm		2000 rpm		2100 rpm		
1.486*, 2.033, 2.250*, 2.538, 2.957	12800	9441	1.3403	1.7974	2413	3235	2681	3595	2815	3775	2300
3.286*	12499	9219	1.3088	1.7551	2356	3159	2618	3510	2748	3686	2300
3.450*	12370	9124	1.2953	1.7370	2332	3127	2591	3474	2720	3648	2300

* Special Order Ratio.





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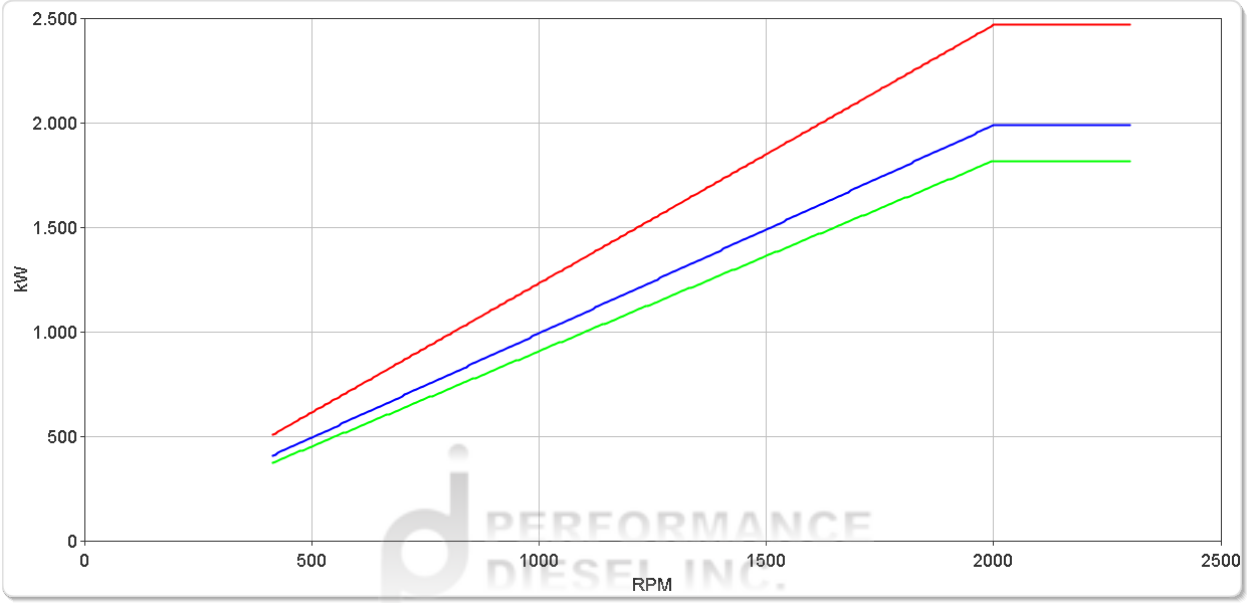
ZF 7600 A

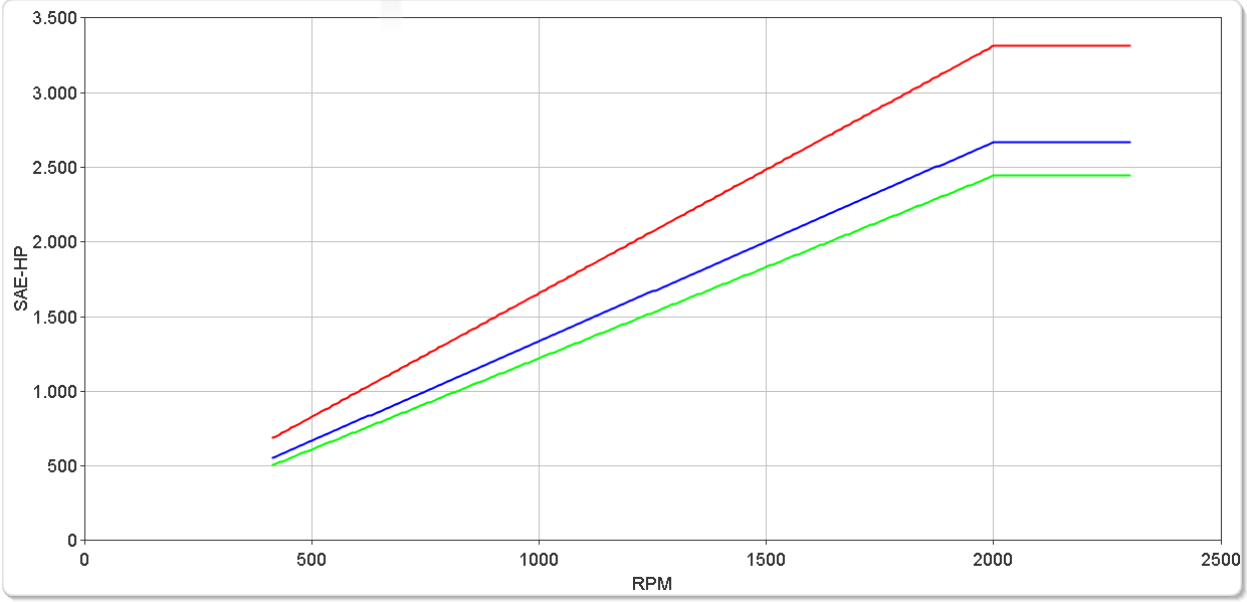
Ratings

Medium Duty

RATIOS	MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	
					1600 rpm		1800 rpm		2000 rpm		
1.486*, 2.033, 2.250*, 2.538, 2.957	11800	8703	1.2356	1.6570	1977	2651	2224	2983	2471	3314	2300
3.286*	9510	7014	0.9958	1.3354	1593	2137	1792	2404	1992	2671	2300
3.450*	8700	6417	0.9110	1.2217	1458	1955	1640	2199	1822	2443	2300

* Special Order Ratio.





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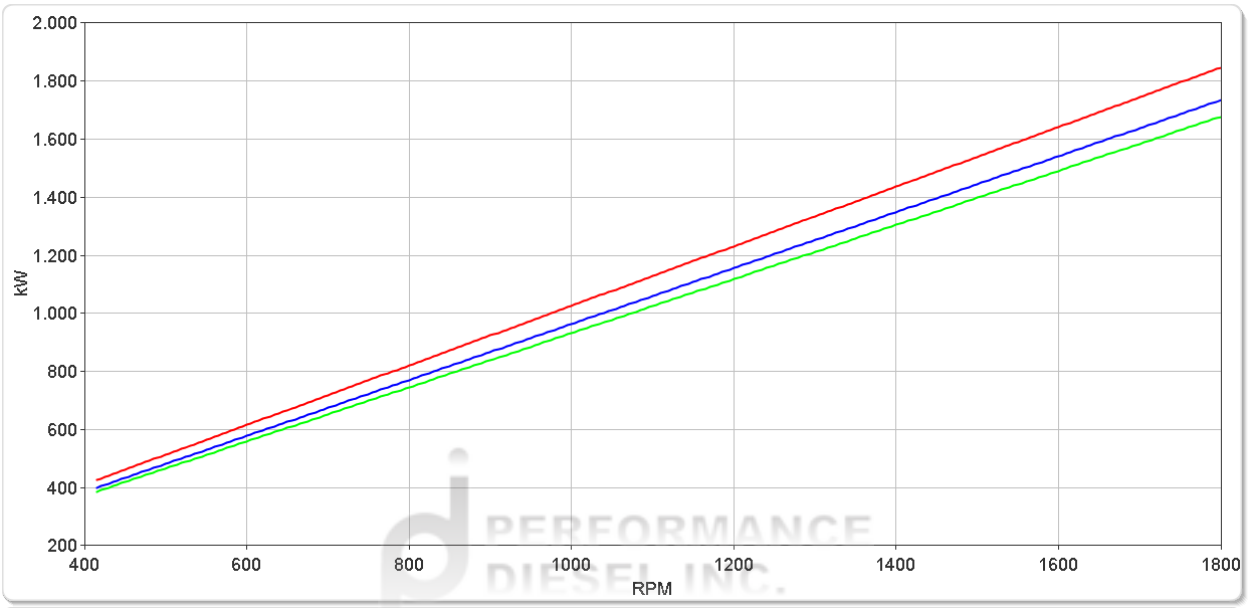
ZF 7600 A

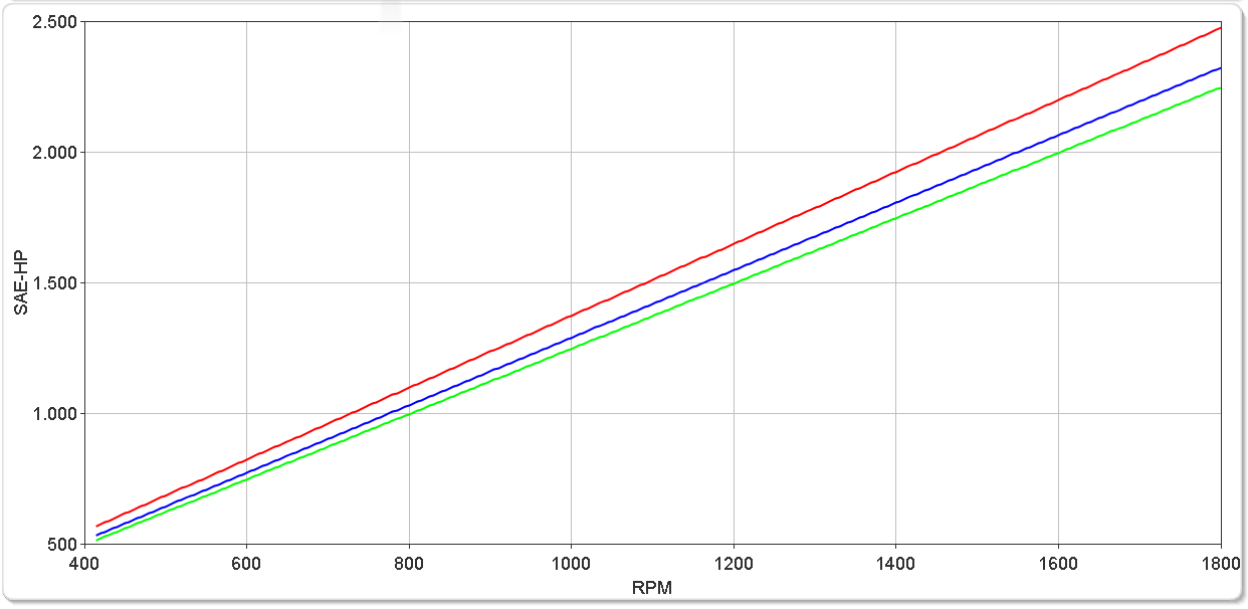
Ratings

Continuous Duty

RATIOS	MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	
					1200 rpm		1600 rpm		1800 rpm		
1.486*, 2.033, 2.250*, 2.538, 2.957	9800	7228	1.0262	1.3761	1231	1651	1642	2202	1847	2477	1800
3.286*	9201	6786	0.9635	1.2920	1156	1550	1542	2067	1734	2326	1800
3.450*	8900	6564	0.9319	1.2497	1118	1500	1491	2000	1677	2250	1800

* Special Order Ratio.





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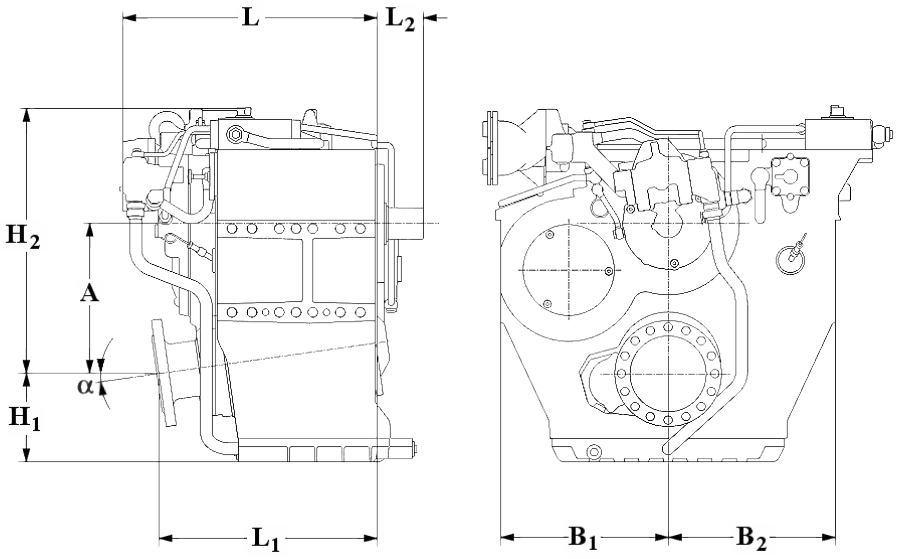
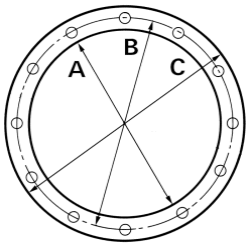
ZF 7600 A
Dimensions



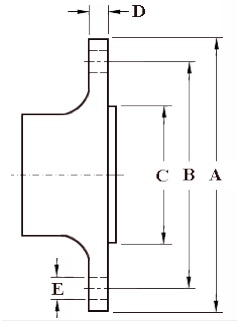
mm (inches)										
Angle	A	B_1	B_2	H_1	H_2	L	L_1	L_2	L_3	Bell Hsg.
8.0	448 (17.6)	500 (19.7)	500 (19.7)	263 (10.4)	868 (34.2)	760 (29.9)	653 (25.7)	138 (5.41)	-	00
Weight kg (lb)						Oil Capacity Litre (US qt)				
1,125 (2,475)						75.0 (79.5)				

SAE Bell Housing Dimensions



SAE No.	A		B		C		Bolt Holes		
							No.	Diameter	
	mm	in	mm	in	mm	in		mm	in
00	787.4	31	850.9	33.5	882.65	34.75	16	13.49	17/32

Output Coupling Dimensions



A		B		C		D		Bolt Holes		
								No.	Diameter (E)	
mm	in	mm	in	mm	in	mm	in		mm	in
320	12.6	280	11.0	230	9.06	30.0	1.18	16	24.2	0.95

Refer to the Installation Drawing for detail.

Duty Definitions

PLEASURE DUTY DEFINITION	Highly intermittent operation with very large variations in engine speed and power
Average engine operating hours limit:	500 hours/year 300 hours/year for mechanical gearboxes
Typical hull forms:	Planing.
Typical applications:	Private, non-commercial, non-charter sport/leisure activities.
LIGHT DUTY DEFINITION	Intermittent operation with large variations in engine speed and power
Average engine operating hours limit:	2500 hours/year (for hydraulic gearboxes smaller than the ZF 650 series, 2000 hours/year).
Typical hull forms:	Planing and semi-displacement.
Typical applications:	Private and charter, sport/leisure activities, naval and police activities.
MEDIUM DUTY DEFINITION	Intermittent operation with some variations in engine speed and power
Average engine operating hours limit:	4000 hours/year. 3500 hours/year for gearboxes smaller than ZF 2000 series and workboat ZF W2700 series.
Typical hull forms:	Semi-displacement and displacement
Typical applications:	Charter and commercial craft (example: crew boats and fast ferries), and naval and police activities.
CONTINUOUS DUTY DEFINITION	Continuous operation with little or no variations in engine speed and power
Average engine operating hours limit:	Unlimited
Typical hull forms:	Displacement.
Typical applications:	Heavy duty commercial vessels, tugs, fishing boats.

Duty Ratings

Ratings apply to marine diesel engines at the indicated speeds. At other engine speeds, the respective power capacity (kW) of the transmission can be obtained by multiplying the Power/Speed ratio by the speed.
Approximate conversion factors:

1 kW = 1.36 metric hp

1 kW = 1.34 U.S. hp (SAE)

1 U.S. hp = 1.014 metric hp

1 Nm = 0.74 lb.ft.

Ratings apply to right hand turning engines, i.e. engines having counterclockwise rotating flywheels when viewing the flywheel end of the engine.
These ratings allow full power through forward and reverse gear trains, unless otherwise stated.
Contact your nearest ZF Sales and Service office for ratings applicable to gas turbines, gasoline (petrol) engines, as well as left hand turning engines, and marine transmissions for large horsepower capacity engines.
Ratings apply to marine transmissions currently in production or in development and are subject to change without prior notice.
NOTE: THE MAXIMUM RATED INPUT POWER MUST NOT BE EXCEEDED (SEE RESPECTIVE RATINGS IN THE TECHNICAL DATA SHEETS)

Safe Operating Notice

The safe operation of ZF products depends upon adherence to technical data presented in our brochures. Safe operation also depends upon proper installation, operation and routine maintenance and inspection under prevailing conditions and recommendations set forth by ZF. Damage to transmission caused by repeated or continuous emergency manoeuvres or abnormal operation is not covered under warranty. It is the responsibility of users and not ZF to provide and install guards and safety devices, which may be required by recognized safety standards of the respective country (e.g. for U.S.A. the Occupational Safety Act of 1970 and its subsequent provisions).

Monitoring Notice

The safe operation of ZF products depends upon adherence to ZF monitoring recommendations presented in our operating manuals, etc. It is the responsibility of users and not ZF to provide and install monitoring devices and safety interlock systems as may be deemed prudent by ZF. Consult ZF for details and recommendations.

Torsional Responsibility and Torsional Couplings

The responsibility for ensuring torsional compatibility rests with the assembler of the drive and driven equipment. ZF can accept no liability for gearbox noise caused by vibrations or for damage to the gearbox, the flexible coupling or to other parts of the drive unit caused by this kind of vibration. Contact ZF for further information and assistance. ZF recommends the use of a torsional limit stop for single engine powered boats, wherein loss of propulsion power can result in loss of control. It is the buyer's responsibility to specify this option, which can result in additional cost and a possible increase in installation length.

ZF can accept no liability for personal injury, loss of life, or damage or loss of property due to the failure of the buyer to specify a torsional limit stop. ZF selects torsional couplings on the basis of nominal input torque ratings and commonly accepted rated engine governed speeds. Consult ZF for details concerning speed limits of standard offering torsional couplings, which can be less than the transmission limit. Special torsional couplings may be required for Survey Society Ice Classification requirements.