



## ZF 325 ATS

7° Down angle, direct mount marine transmission.

### Description

- Fully works tested, reliable and simple to install .
- Design, manufacture and quality control standards comply with ISO 9001 .
- Reverse reduction TWO SPEED transmission equipped with electric shift from first to second speed. .
- Compatible with all types of engines and propulsion systems, including waterjets and surface- piercing propellers, as applicable .
- Suitable for high performance applications in luxury motor yachts, sport fishers, express cruisers and light duty applications (eg. Customs/police boats) .

### Features

- 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 .
- Suitable for twin engine installations (same ratio and torque capacity in ahead or astern mode) .
- Two-speed spur gear set front mounted to the basic transmissions .
- Lightweight and robust aluminium alloy casings (sea water resistant) with integrated SAE 1 bell housing .
- Smooth and reliable hydraulic shifting with electronic clutch control for main transmission and two-speed set 24 V DC .
- "SUPERSHIFT" clutch control .

### Options

- Engine-matched torsional coupling .
- Propeller shaft flange and coupling bolt sets .
- Classification by all major Classification Societies on request .
- Mounting brackets .



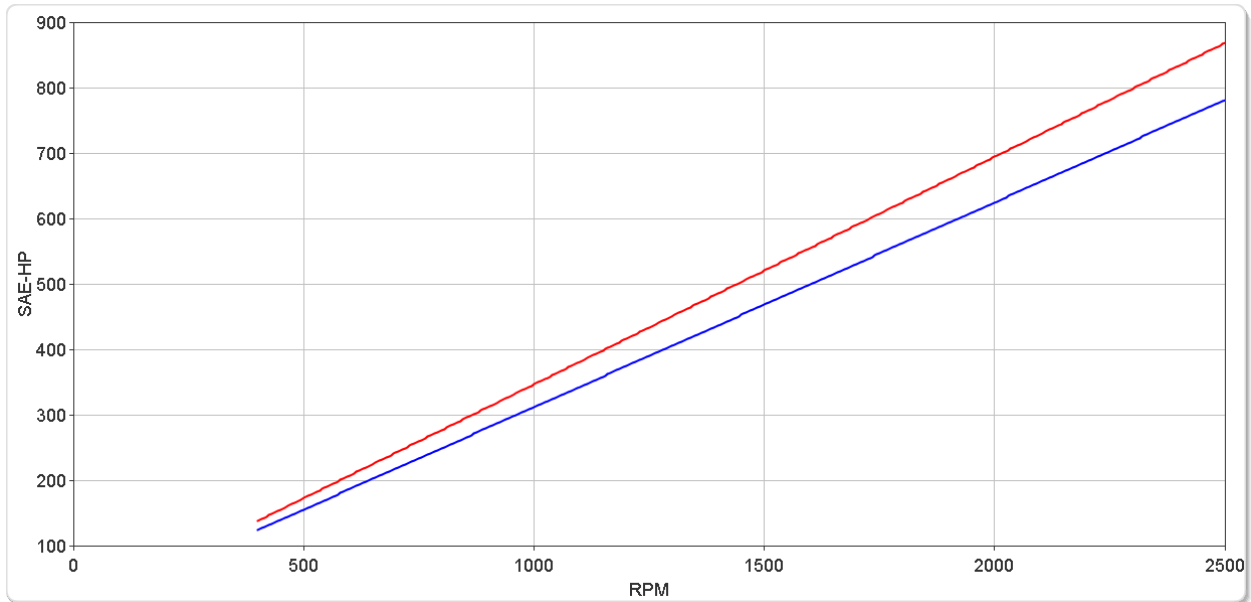
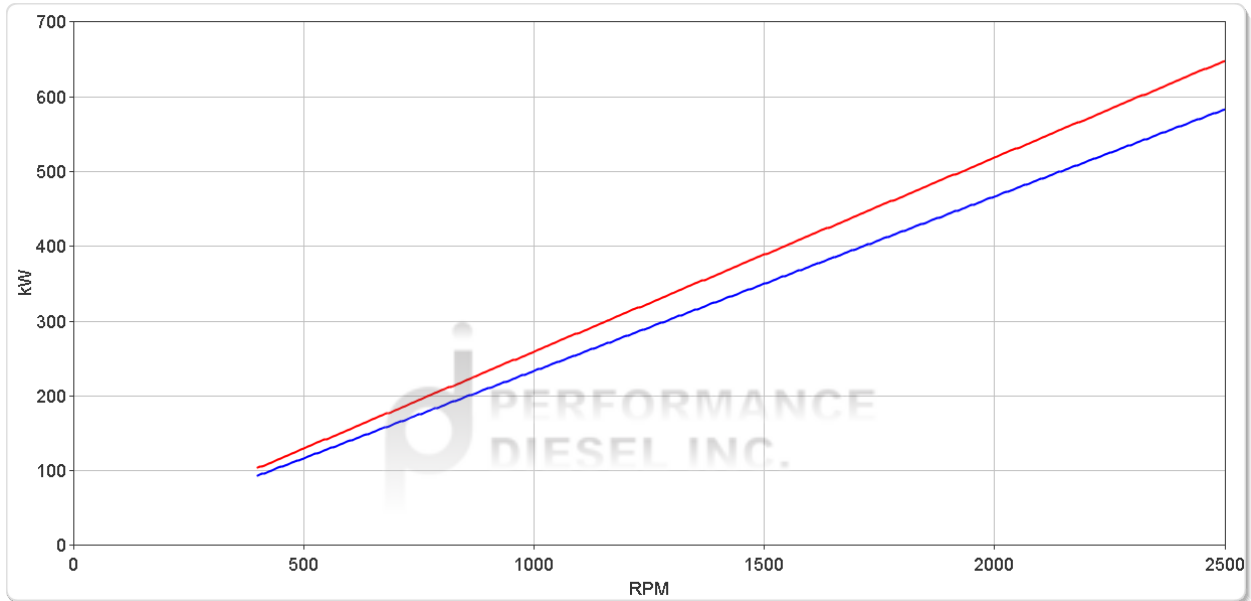
# ZF 325 ATS

## Ratings

### Pleasure Duty

	RATIOS					MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY					MAX. RPM	
	1st	2nd				Nm	ftlb	kW	hp	1800 rpm			2100 rpm			2300 rpm
■	1.216	0.968,1.011,1.062,1.087,1.113	2477	1827	0.2594	0.3478	467	626	545	730	597	800	2500			
■	1.485	1.182,1.235,1.297,1.327,1.359	2477	1827	0.2594	0.3478	467	626	545	730	597	800	2500			
■	1.733	1.380,1.441,1.514,1.549,1.586	2477	1827	0.2594	0.3478	467	626	545	730	597	800	2500			
■	2.037	1.622,1.694,1.779,1.821,1.864	2477	1827	0.2594	0.3478	467	626	545	730	597	800	2500			
■	2.240*	1.783,1.862,1.956,2.002,2.050	2477	1827	0.2594	0.3478	467	626	545	730	597	800	2500			
■	2.417	1.924,2.009,2.111,2.160,2.212	2229	1644	0.2334	0.3130	420	563	490	657	537	720	2500			

\* Special Order Ratio.



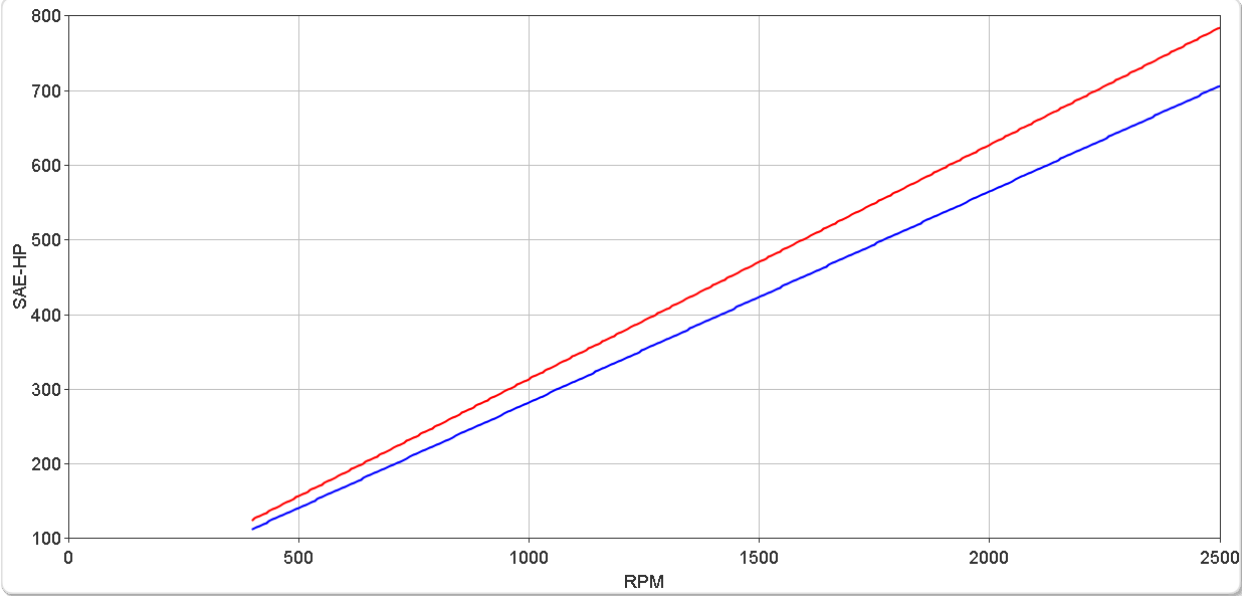
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## Ratings

### Light Duty

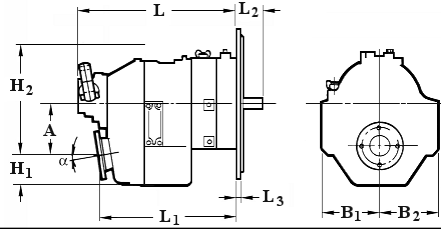
	RATIOS					MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	1st	2nd				Nm	ftlb	kW	hp	1800 rpm		2100 rpm		2300 rpm		
■	1.216	0.968,1.011,1.062,1.087,1.113	2235	1648	0.2340	0.3138	421	565	491	659	538	722	2500			
■	1.485	1.182,1.235,1.297,1.327,1.359	2235	1648	0.2340	0.3138	421	565	491	659	538	722	2500			
■	1.733	1.380,1.441,1.514,1.549,1.586	2235	1648	0.2340	0.3138	421	565	491	659	538	722	2500			
■	2.037	1.622,1.694,1.779,1.821,1.864	2235	1648	0.2340	0.3138	421	565	491	659	538	722	2500			
■	2.240*	1.783,1.862,1.956,2.002,2.050	2235	1648	0.2340	0.3138	421	565	491	659	538	722	2500			
■	2.417	1.924,2.009,2.111,2.160,2.212	2012	1484	0.2107	0.2825	379	509	442	593	485	650	2500			

\* Special Order Ratio.



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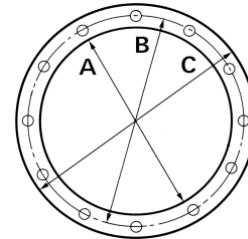
## Dimensions



mm (inches)										
Angle	A	B <sub>1</sub>	B <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Bell Hsg.
7.0	180 (7.09)	265 (10.4)	265 (10.4)	128 (5.04)	439 (17.3)	703 (27.7)	590 (23.2)	-	-	
Weight kg (lb)						Oil Capacity Litre (US qt)				
180 ( 396)						6.50 (6.90)				

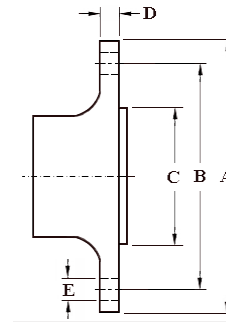
### SAE Bell Housing Dimensions

SAE No.	A		B		C		Bolt Holes No.	Diameter	
	mm	in	mm	in	mm	in		mm	in
1	511.18	20.125	530.23	20.875	552.45	21.75	12	11.91	15/32



### Output Coupling Dimensions

A		B		C		D		Bolt Holes No.	Diameter (E)	
mm	in	mm	in	mm	in	mm	in		mm	in
170	6.69	140	5.51	115	4.53	16.0	0.63	12	16.2	0.64



## Duty Definitions

**PLEASURE DUTY DEFINITION** Highly intermittent operation with very large variations in engine speed and power

Average engine operating 500 hours/year  
hours limit: 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 2500 hours/year  
hours limit: (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.

## 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.

