



## ZF 300 IVTS

14° V-drive, 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 motoryachts, sport fishers, express cruisers and light duty applications. .

### Features

- Lightweight and robust aluminum alloy casing (sea water resistant) .
- Case hardened and precisely ground gear teeth for long life and smooth running .
- Planetary step-up gear on power input side .
- Output shaft thrust bearing designed to take maximum propeller thrust astern and ahead .
- Smooth and reliable hydraulic shifting with control lever for attachment of push-pull cable .
- Suitable for twin engine installations (same ratio and torque capacity in ahead or astern mode) .
- Compact, space saving design; 14° vee-angle and beveloid gear .

### Options

- Engine-matched torsional coupling .
- Propeller shaft flange and coupling bolt sets .
- Classification by all major Classification Societies on request .
- Oil cooler complete with fittings and flexible oil hoses .
- Mounting brackets .
- Trolling valve (mechanical) for slow-speed drive .
- SAE 2 and SAE 3 bell housings .
- Electric clutch control (12 or 24 VDC) .
- PTO (live) .



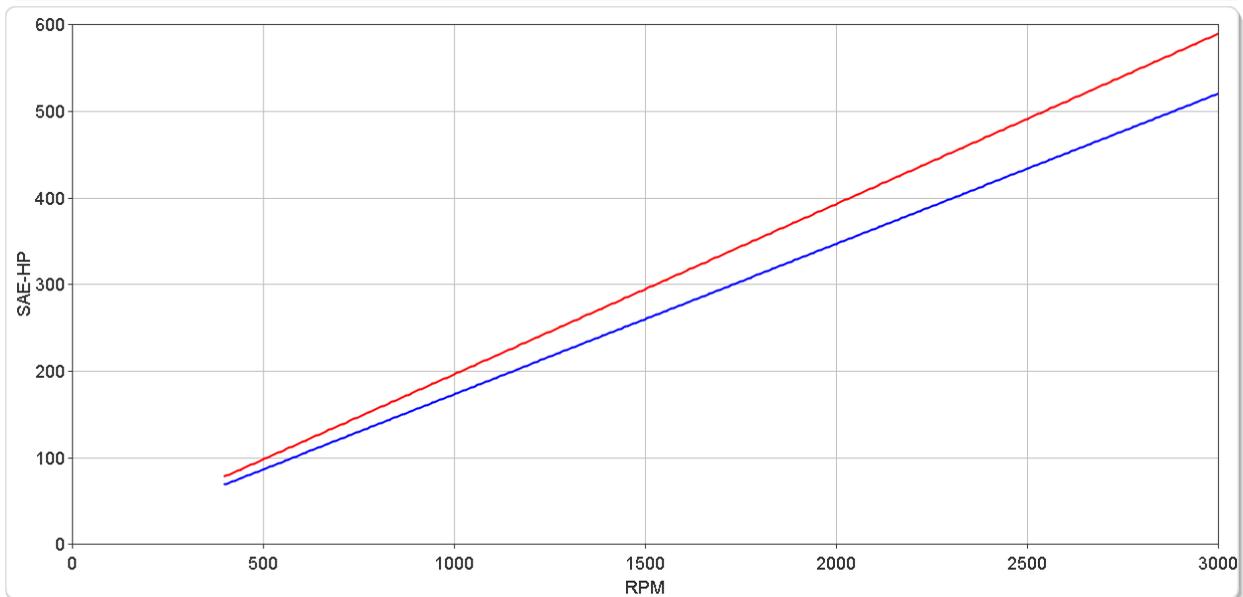
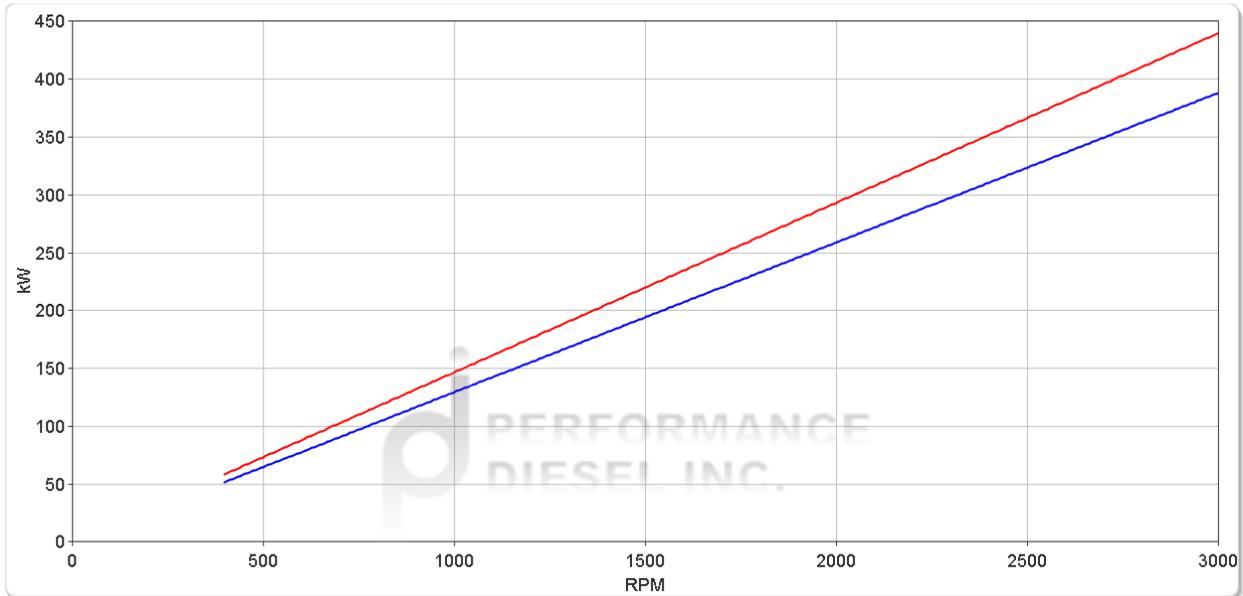
# ZF 300 IVTS

## Ratings

### Pleasure Duty

	RATIOS		MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	1st	2nd	Nm	ftlb	kW	hp	2300 rpm		2800 rpm		3000 rpm		
							kW	hp	kW	hp	kW	hp	
■	1.252	0.981	1400	1033	0.1466	0.1966	337	452	410	550	440	590	3000
■	1.561	1.223	1400	1033	0.1466	0.1966	337	452	410	550	440	590	3000
■	1.772	1.388	1400	1033	0.1466	0.1966	337	452	410	550	440	590	3000
■	2.063	1.616	1400	1033	0.1466	0.1966	337	452	410	550	440	590	3000
■	2.556	2.002	1400	1033	0.1466	0.1966	337	452	410	550	440	590	3000
■	3.094*	2.423	1236	912	0.1294	0.1736	298	399	362	486	388	521	3000

\* Special Order Ratio.



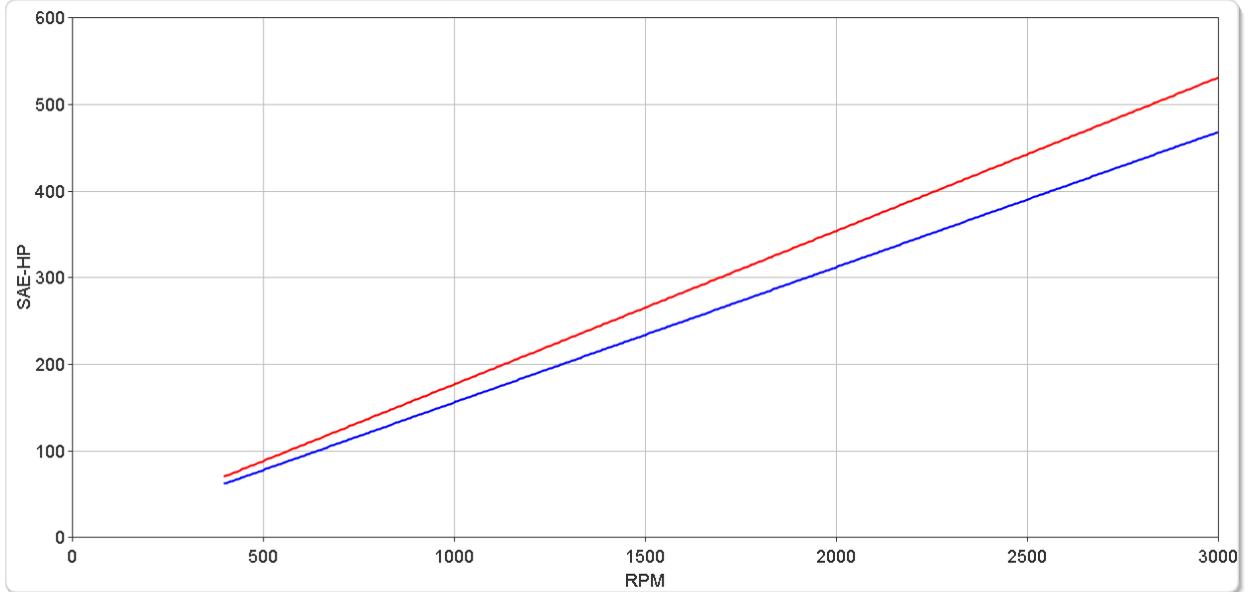
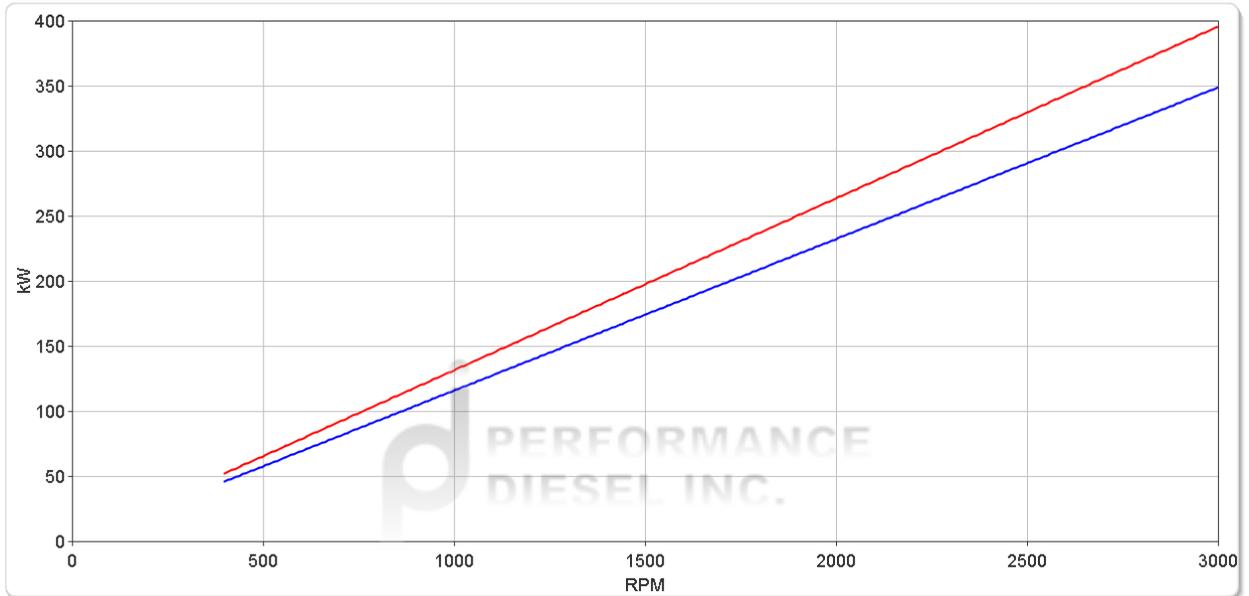
# ZF 300 IVTS

## Ratings

### Light Duty

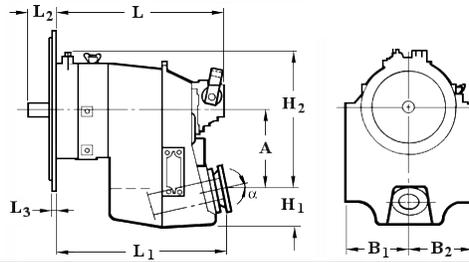
	RATIOS		MAX. TORQUE		POWER/RPM		INPUT POWER CAPACITY						MAX. RPM
	1st	2nd	Nm	ftlb	kW	hp	2300 rpm		2800 rpm		3000 rpm		
							kW	hp	kW	hp	kW	hp	
■	1.252	0.981	1261	930	0.1320	0.1771	304	407	370	496	396	531	3000
■	1.561	1.223	1261	930	0.1320	0.1771	304	407	370	496	396	531	3000
■	1.772	1.388	1261	930	0.1320	0.1771	304	407	370	496	396	531	3000
■	2.063	1.616	1261	930	0.1320	0.1771	304	407	370	496	396	531	3000
■	2.556	2.002	1261	930	0.1320	0.1771	304	407	370	496	396	531	3000
■	3.094*	2.423	1112	820	0.1164	0.1561	268	359	326	437	349	468	3000

\* Special Order Ratio.



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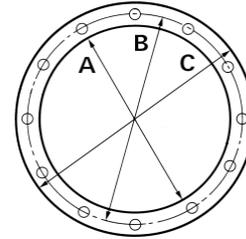
## Dimensions



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.
14.0	331 (13.0)	184 (7.24)	184 (7.24)	90.1 (3.55)	501 (19.7)	505 (19.9)	221 (8.68)	71.5 (2.81)	35.5 (1.40)	
Weight kg (lb)					Oil Capacity Litre (US qt)					
149 (331)					6.00 (6.34)					

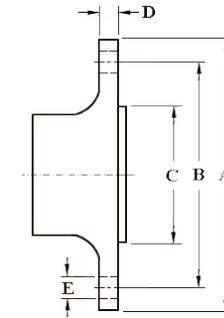
### SAE Bell Housing Dimensions

SAE No.	A		B		C		Bolt Holes		
	mm	in	mm	in	mm	in	No.	Diameter	
2	447.68	17.625	466.73	18.375	488.95	19.25	12	10.32	13/32
3	409.58	16.125	428.63	16.875	450.85	17.75	12	10.32	13/32



### Output Coupling Dimensions

A		B		C		D		Bolt Holes		
mm	in	mm	in	mm	in	mm	in	No.	Diameter (E)	
146	5.75	121	4.75	76.2	3.00	14.0	0.55	6	16.3	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.