



15° V-drive, direct mount marine transmission.

Maximum Input**

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Duty	kW	hp	RPM
Pleasure	55	73	5000
Light	50	67	5000
Medium	46	61	5000
Continuous	40	53	5000

^{**} Must not be exceeded

Description

- Reverse reduction marine transmission with mechanically actuated multi-disc clutches .
- Suitable for high performance applications in luxury sailboats, motoryachts, fishing boats, etc. .
- Robust design also withstands continuous duty in workboat applications .
- Fully works tested, reliable and simple to install .
- Design, manufacture and quality control standards comply with ISO 9001.

Features

- Lightweight and robust 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 .
- Compact, space saving design .

Options

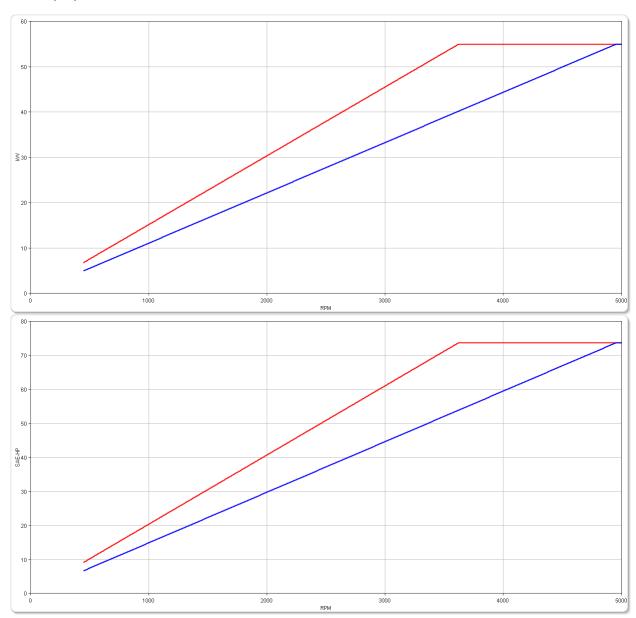
- · Engine-matched torsional coupling .
- BW, SAE 4 or SAE 5 bell housings .
- Oil cooler. To be used when input power exceeds following values:- Pos. «A» 25 kW Pos. «B» 20 kW .
- Control cable bracket for mounting of push-pull cable to the control lever .
- Classification by all major Classification Societies on request .

Ratings

Pleasure Duty

	RAT	MAX. To	MAX. TORQUE POWER/RPM					MAXIMUM RATED POWER					
	'A' Pos	'B' Pos	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	RPM
								rpm	3600	rpm	3800	rpm	
	2.134	2.224	145	107	0.0152	0.0204	46	61	55	73	55	74	5000
	2.718	2.224	106	78	0.0111	0.0149	33	45	40	54	42	57	5000
	2.995	2.224	106	78	0.0111	0.0149	33	45	40	54	42	57	5000

Max input power 55 kW

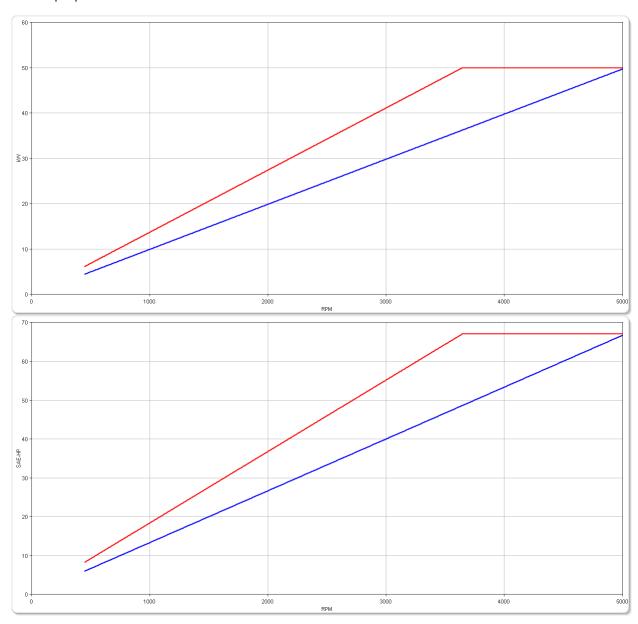


Ratings

Light Duty

	RAT	MAX. TO	RQUE	POWE	VER/RPM MAXIMUM RATED POWER					ER	MAX.		
	'A' Pos	'B' Pos	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	RPM
							2800	rpm	3000	rpm	3600	rpm	
	2.134	2.224	131	97	0.0137	0.0184	38	52	41	55	49	66	5000
	2.718	2.224	95	70	0.0099	0.0133	28	37	30	40	36	48	5000
	2.995	2.224	95	70	0.0099	0.0133	28	37	30	40	36	48	5000

Max input power 50 kW

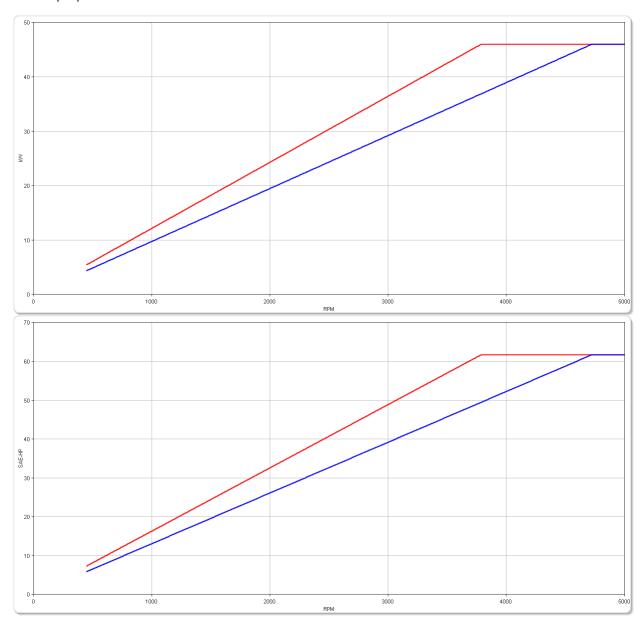


Ratings

Medium Duty

	RAT	IOS	MAX. TO	RQUE	POWE	R/RPM	MA	XIML	JM RA	RATED POWER					
	'A' Pos	'B' Pos	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	MAX. RPM		
							2100	rpm	2500	rpm	2800	rpm			
	2.134	2.224	116	86	0.0121	0.0163	26	34	30	41	34	46	5000		
	2.718	2.224	93	69	0.0097	0.0131	20	27	24	33	27	37	5000		
	2.995	2.224	93	69	0.0097	0.0131	20	27	24	33	27	37	5000		

Max input power 46 kW

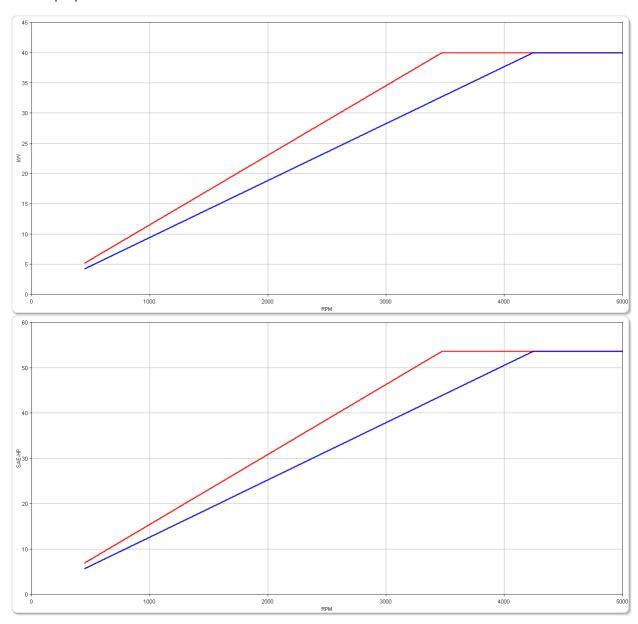


Ratings

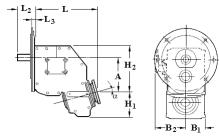
Continuous Duty

	RAT	IOS	MAX. TO	RQUE	POWE	R/RPM	MA	XIML	JM RA	TED	MAX.		
	'A' Pos	'B' Pos	Nm	ftlb	kW	hp	kW	hp	kW	hp	kW	hp	RPM
						1800	rpm	2300	rpm	2600	rpm		
	2.134	2.224	110	81	0.0115	0.0154	21	28	26	36	30	40	5000
	2.718	2.224	90	66	0.0094	0.0126	17	23	22	29	25	33	5000
	2.995	2.224	90	66	0.0094	0.0126	17	23	22	29	25	33	5000

Max input power 40 kW



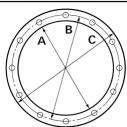
ZF 15 MIVDimensions



	mm (inches)											
Angle	Α	B ₁	B ₂	H ₁	H ₂	YL (L ₂	L ₃	Bell Hsg.			
15.0	147 (5.79)	80.0 (3.15)	133 (5.24)	106 (4.17)	197 (7.76)	265 (10.4)	60.0 (2.36)	15.0 (0.59)	B/W			
		Weight kg	(lb)		Oil Capacity Litre (US qt)							
		20.0 (44.0	0)				1.00 (1.06)					

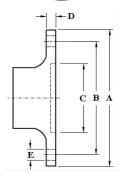
SAE Bell Housing Dimensions

SAE No.	۸		T D	TPA			Bolt Holes			
	A							Diameter		
	mm	in	mm	in	mm	in	No.	mm	in	
4	361.95	14.25	381.0	15.0	403.23	15.875	12	10.32	13/32	



Output Coupling Dimensions

Δ				4	1		1/1/2	Bolt Holes				
	^		,	4	1					No.	Diame	ter (E)
mm	in	mm	in	mm	in	mm	in	140.	mm	in		
102	4.02	82.5	3.25	63.5	2.50	10.0	0.39	4	10.5	0.41		





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. MEDIUM DUTY DEFINITION Intermittent operation with some variations in engine speed and power

Average engine operating 4000 hours/year.

hours limit: 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 Unlimited hours limit:

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 Ú.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.

