

## Rating definition chart | Marine diesel engines – High speed

Rating definitions for the SB, SA and SR engine series for propulsion application are as per the table below:

Rating EMEAR area	Overload operation	Required condition for warranty <sup>1</sup>					Recommend operating hours per year	Typical application <sup>6</sup> (reference)
		Load/operating hours <sup>2</sup>			Overhaul interval after delivery (maximum) <sup>3</sup>			
		Allowable average load factor	Allowable average speed <sup>5</sup>	Allowable continuous operation with over 90% load	Top <sup>4</sup>	Major		
Unrestricted Continuous Duty (UCD)	Not possible	100% or lower	100% or lower	Unlimited	6000hrs	16000hrs or 3yrs whichever comes earlier (recommend: 8000hrs)	Unlimited	Fishing boats, cargo boats, pusher boats
Heavy Duty (HD)	Not possible	83% or lower	94% or lower	Up to 8hrs per 24hrs	4000hrs	12000hrs or 3yrs whichever comes earlier (recommend: 8000hrs)	6000hrs	Tug boats, working boats, passenger boats, ferry boats
Medium Duty (MD)	Not possible	75% or lower	91% or lower	Up to 1hr per 6hrs	4000hrs	8000hrs or 3yrs whichever comes earlier	3000hrs	Pleasure boats, yachts, patrol boats, fire fighting boats, tug boats

<sup>1</sup> This condition constitutes a part of required conditions for warranty. Atmospheric condition as per ISO 15550:2002 (JIS B 8003:2005) (barometric pressure: 100kPa, ambient temperature: 298K, relative humidity: 30%).

<sup>2</sup> Average load factor shall be calculated as per the formula in ISO 8528:2005 'Average power output (P<sub>pp</sub>)'.

<sup>3</sup> Refer to operation manual for more information regarding inspection and maintenance including items and descriptions.

<sup>4</sup> Completion of Top overhaul is not a condition to receive warranty. However, it is desirable to inspect the engine condition.

<sup>5</sup> This applies to FPP (Fixed Pitch Propellers). For CPP (Controllable Pitch Propeller), allowable average load factor shall be as per the required conditions for warranty of the average load factor.

<sup>6</sup> 'Typical application' is only for reference. The selection of rating be due to "Required condition for warranty".