

Full speed ahead with 10,000 kW

Even more power to suit the increased demand of vessels with high payload and speed: with 10,000 kW, the robust Series 8000 diesel engine offers the best performance. Thanks to its proven advantages and naval qualification, the MTU Series 8000 is also the ideal partner in worldwide military and civilian use.

Proven in many missions

The MTU Series 8000 has already impressively provided proof of its reliability for over 540,000 operating hours and in numerous missions. So far, our global customer base has ordered nearly 200 engines and most of these are in operation or close to being commissioned. More than three quarters of the engines are or will be installed in naval and governmental ships. The compact propulsion engine impresses with its outstanding power-to-weight ratio and unlimited low load operation.

Economical in several dimensions

The Series 8000 engines stand out for their low life-cycle costs and particularly low fuel consumption thanks to the perfectly matched components. Exceptional availability of the Series 8000 engines is guaranteed by long service intervals and easy handling in maintenance and repair. Even more economical in a system: with 10,000 kW power per engine, an all-diesel arrangement with Series 8000 can be installed – replacing combined propulsion systems with gas turbines (CODAG, CODOG).

System solutions from one source

As a full-range supplier, we offer our customers a comprehensive range – whether diesel engines, gas turbines, complete propulsion systems, on-board power supply or ship-automation: We customize the systems to your needs. Furthermore, as a system supplier, we offer complete service solutions for the entire product life-cycle. Based on our many years of know-how, high-quality propulsion systems are tailor-made to meet any demand.

Competent service around the clock

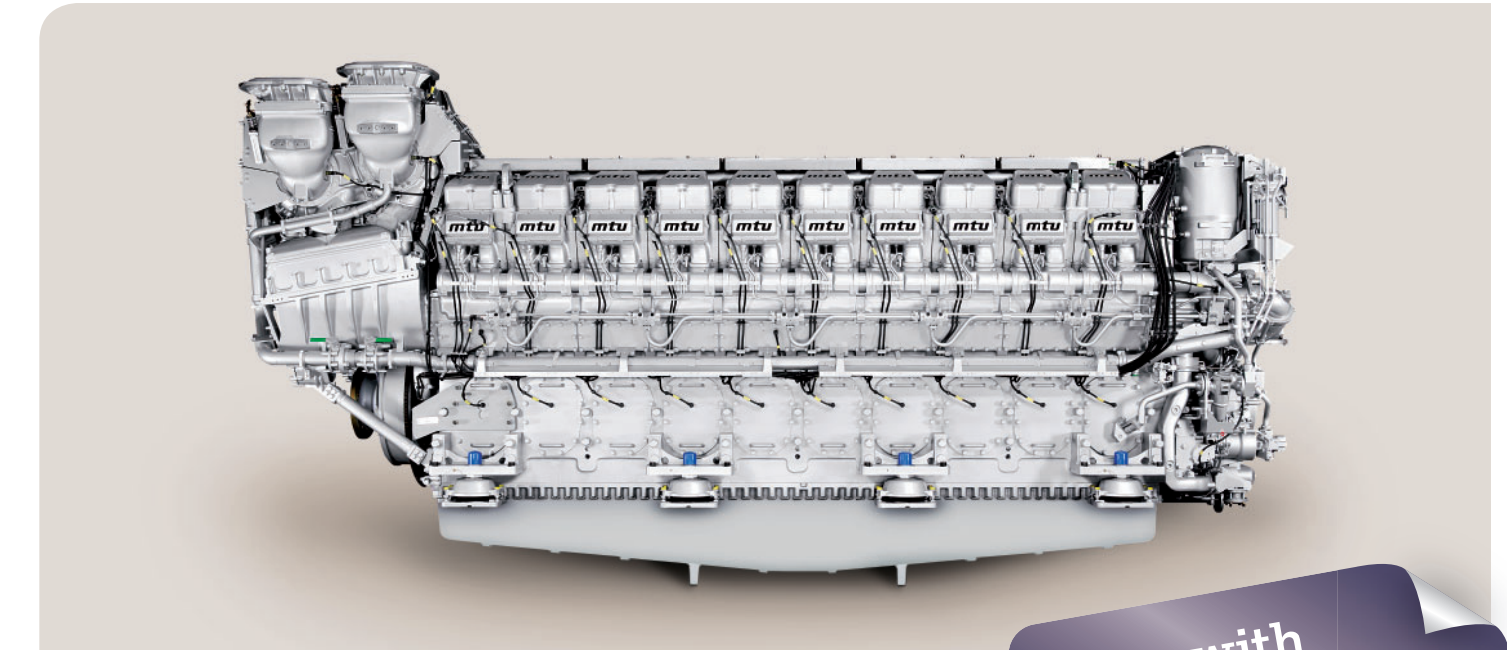
The MTU service network can be relied on – worldwide: we also support our customers with complete and customized service packages as part of our integrated logistics solutions (ILS), for example with cost-effective management of spare parts, on-board training, and maintenance schedules geared entirely to the requirements of our customers.

MTU Friedrichshafen GmbH | MTU Asia Pte Ltd | MTU America Inc.
Rolls-Royce Power Systems Companies

www.mtu-online.com

Series 8000 diesel engines | Marine Defense

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Now with
10 MW

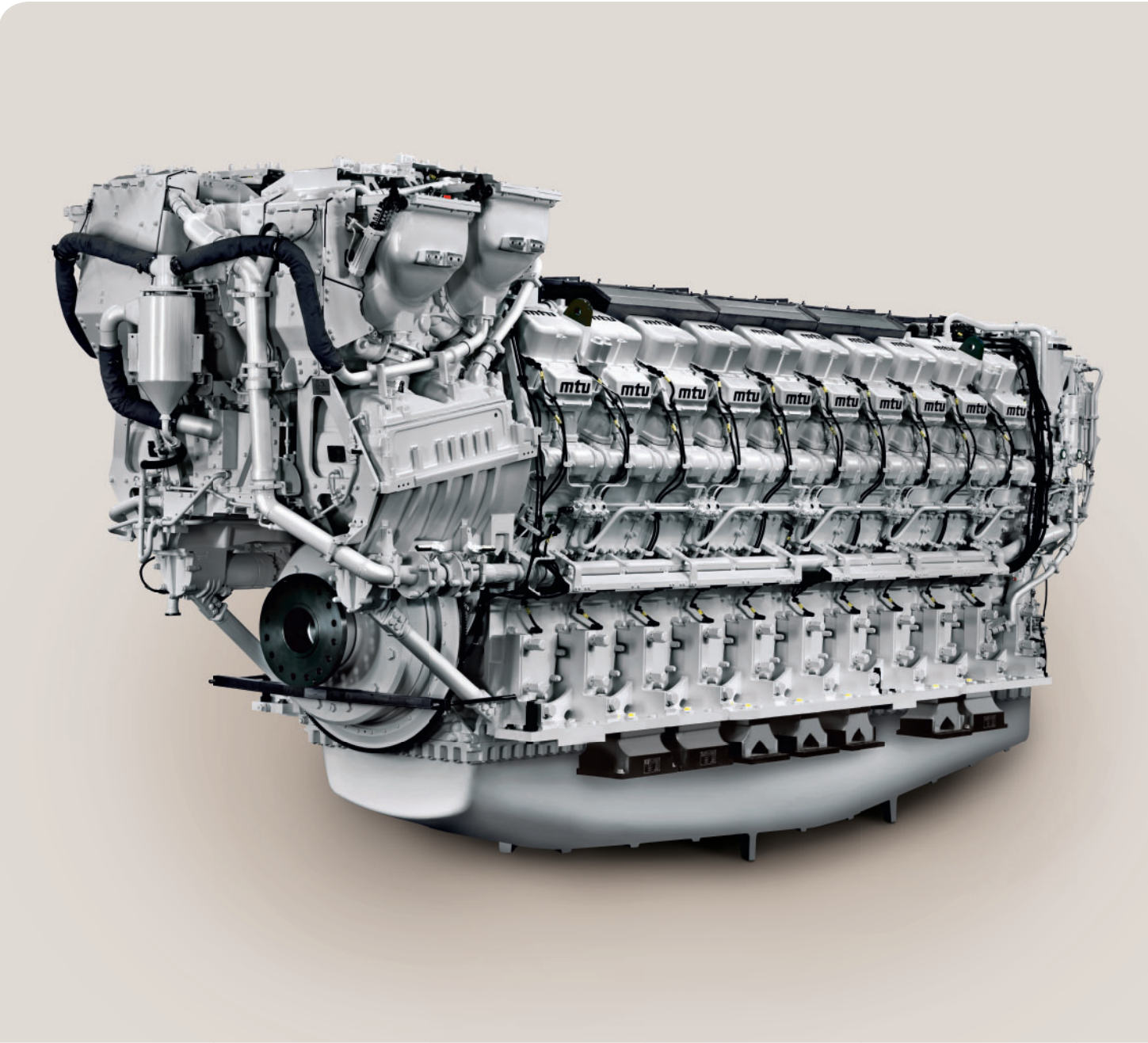


Marine Defense

Series 8000
diesel engines for
marine applications



Power. Passion. Partnership.



Republic of Singapore Navy
"Formidable Class"

Six multi-purpose frigates
4 x MTU 20V 8000, with a
combined power of 35,600 kW

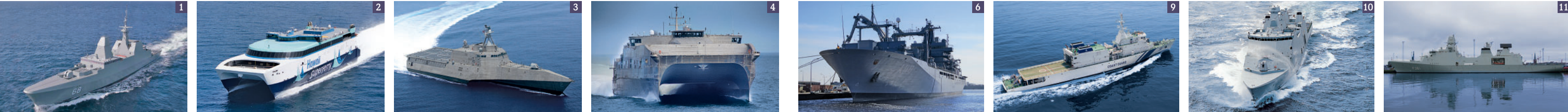
Republic of Singapore Navy

« Navy ships need diesel engines and propulsion systems that are high performance, reliable and with competent local support.

It is for these reasons that the Republic of Singapore Navy have selected MTU engines for our Formidable Class frigates. Each frigate is powered by four 20V 8000 diesel engines in a combined diesel and diesel (CODAD) configuration. »

For the most demanding operations

Quality proven 200 times



No.	Application	User / operator	Project or ship name	Ship type	Ship's LOA [m]	Max. ship speed [kn]	Propulsion arrangement	No. of engines per ship	No. of engines in class	Engine model	Power per engine [kW]	First ship operational since (year)
1	Naval	Singapore Navy	"Formidable" class	Frigate	114	26+	CODAD	4	24	20V 8000 M90	8900	2005
2	Naval	US Navy	AutoExpress 107 "USNS Puerto Rico", "USNS Guam"	Ferry catamaran	107	35	Direct Drive	4	8	20V 8000 M70	8200	2007
3	Naval	US Navy	"Independence" class (LCS 2)	Littoral combat ship	127	45+	CODAG	2	20	20V 8000 M91	9100	2011
4	Naval	US Navy	"Spearhead" class	Theatre support vessel	103	43	Direct Drive	4	40	20V 8000 M71L	9100	2013
5	Naval	Oman Navy	"Khareef" class	Corvette	99	25+	CODOE	2	6	20V 8000 M91	9100	2013
6	Naval	German Navy	FGS "Bonn"	Supply vessel	174	20	Direct Drive	2	2	20V 8000 M71R	7200	2013
7	Naval	Indian Navy	Naval OPV	OPV	105	25+	Direct Drive	2	10	20V 8000 M71L	9100	2014 exp.
8	Naval	Indian Coast Guard	AOPV Batch 2	OPV	105	25+	Direct Drive	2	12	20V 8000 M71L	9100	2014 exp
9	Naval	Indian Coast Guard	"Vishwast" class	OPV	90	25+	Direct Drive	2	6	20V 8000 M90	9000	2010
10	Naval	Danish Navy	"Absalon" class	Multi purpose frigate	137	23+	Direct Drive	2	4	20V 8000 M70	8200	2004
11	Naval	Danish Navy	"Iver Houtfeldt" class	Frigate	139	28	CODAD	4	12	20V 8000 M70	8200	2012
12	Naval	Oman Navy	"Al Ofouq" class	OPV	75	27+	CODOE	2	8	20V 8000 M91	9100	2014 exp.
13	Commercial	Fred.Olsen	AutoExpress 127 "Benchijigua Express"	Ferry trimaran	127	43	Direct Drive / CODAD	4	4	20V 8000 M71L	9100	2004
14	Commercial	FRS	AutoExpress 86 "Dolphin Jet"	Ferry catamaran	86	42	Direct Drive	4	4	20V 8000 M70	8200	2004
15	Commercial	NEL Lines	140 m Fast Ferry "Red Sea"	Ferry monohull	140	42	Direct Drive	2	2	20V 8000 M70	8200	2006
16	Commercial	IDO	AutoExpress 88 "Osman Gazi", "Orhan Gazi"	Ferry catamaran	88	37	Direct Drive	4	8	20V 8000 M70R	7200	2007
17	Commercial	Egypt	AutoExpress 88 "Al Riyadh", "Al Kahera"	Ferry catamaran	86	34	Direct Drive	4	4	20V 8000 M71R	7200	2008
18	Commercial	Bugsier	"Nordic"	Rescue ship	78	20	Direct Drive	2	2	20V 8000 M71R / GSB	8600	2010
19	Commercial	VIRTU Ferries	AutoExpress 106	Ferry catamaran	106	38	Direct Drive	4	4	20V 8000 M71L	9100	2010
20	Commercial	AUSTAL Charter	AutoExpress 102	Ferry trimaran	102	39	Direct Drive	3	3	20V 8000 M71L	9100	2012
21	Yacht	private / USA	"Rising Sun"	Mega yacht	138	40	CODAD	4	4	20V 8000 M90	9000	2004
22	Yacht	Oman Navy	"Al Said"	Mega yacht	150	22	Direct Drive	2	2	20V 8000 M70	9000	2007
23	Yacht	private / UAE	"Swift 1 + 2"	Mega yacht	141	27	Direct Drive	2	4	20V 8000 M71	8200	2008
									193			

Diesel engine Series 8000		
Configuration	20V	
Bore / stroke	mm (in)	265 / 315 (10.4 / 12.4)
Capacity per cylinder	l / cyl.	17.37
Fuel specification	EN590, conditional use of ISO8217-DMX and DMA, NATO F75 and F76	

Application group	Marine propulsion unit rated power to ICFN						
	Maximum continuous rating 1B						High performance rating 1DS
Designation	M71R	M71	M71L*	M81R	M81	M91*	M91L
Rated speed	rpm	1150	1150	1150	1150	1150	1150
Power output	kW	7200	8200	9100	7200	8200	10000
	bhp	9655	10995	12205	9655	10995	13410
Exhaust emissions	IMO 2	IMO 2 / EPA 2	IMO 2 / EPA 2	IMO 2	IMO 2 / EPA 2	IMO 2 / EPA 2	IMO 2

Operating hours Series 8000 (status: July 2013)		
Naval and Governmental	approx.	212,000 h
Pleasure Craft and Yachts	approx.	39,000 h
Commercial Vessels	approx.	289,000 h
Total operating hours	approx.	540,000 h

*Certified to ABS NVR up to 9100 kW

Power definition by DIN/ISO 3046 at intake air temp. of 25 °C / sea-water temperature of 25 °C.

Rated power available up to intake air temperature of 45 °C / sea-water temperature of 32 °C.

Exhaust emissions: IMO – International Maritime Organization;
EPA – US Marine Regulation 40 CFR 94