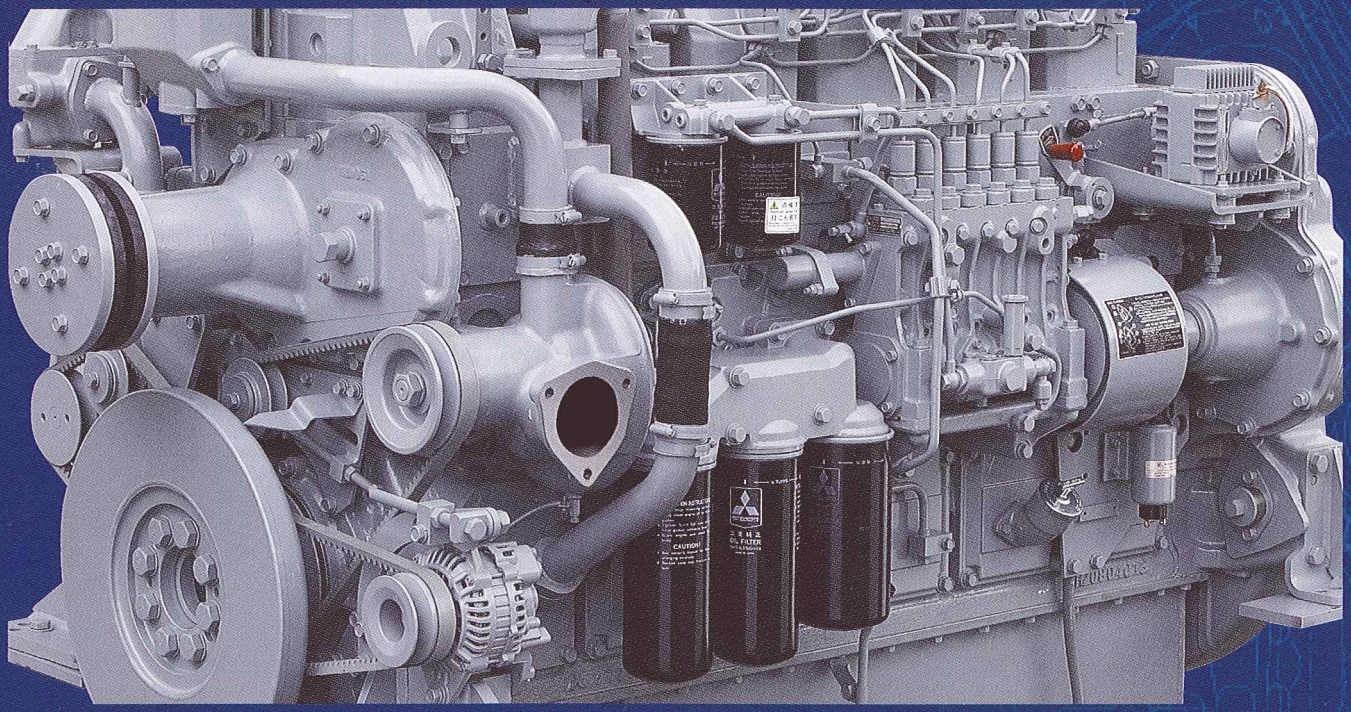
MITSUBISHI
Tier2 DIESEL ENGINES

S6R / S12A2 / S12H / S12R / S16R



Environment-friendly Engines High in Quality and Easy to Maintain

MITSUBISHI
HEAVY INDUSTRIES, LTD.

MITSUBISHI EPA Tier2 DIESEL ENGINES

Environment-friendly engines featuring high quality, easy maintenance and superior reliability

Environment friendly
Mitsubishi Tier2 Diesel Engines comply with Tier2 regulations on emissions control of the U.S. Environmental Protection Agency (EPA).

Easy maintenance
Accessories requiring daily maintenance are conveniently located on the left side of the engine.

High-reliability design
Engine reliability is enhanced through the adoption of a simple design for optimal functional performance.

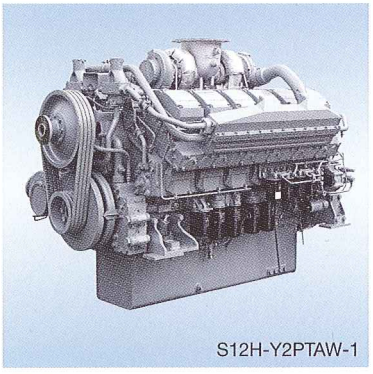
Full lineup meeting market needs
The series includes engines from 6 to 16 cylinders, with a wide range of optional equipment to meet diverse market requirements.

Development Concept

Tier2 diesel engines were developed in response to the Tier2 emissions control standards issued by the U.S. EPA. Mitsubishi Heavy Industries, Ltd. succeeded in producing "eco-friendly" engines by making improvements to its existing models: for example, by upgrading our brand fuel-injection pumps and turbochargers the company had developed in-house. Mitsubishi also newly adopted a 2-way cooling system and polished fluid nozzles, and in its S12H engines it adopted an electronic control unit injector (ECUI). These developments and sophisticated technologies have led to outstanding engine reliability.

SH Series

- The adoption of the best-matching in-house-developed ECUI, high-efficiency turbochargers and 2-way cooling system has enabled clean, eco-friendly engines.
- The adoption of an electronic control system makes for optimized variable injection timing, for improved low-temperature sustainability.
- The adoption of a large-sized intercooler enables stable combustion under high loads.


S12H-Y2PTAW-1

SR, SA Series

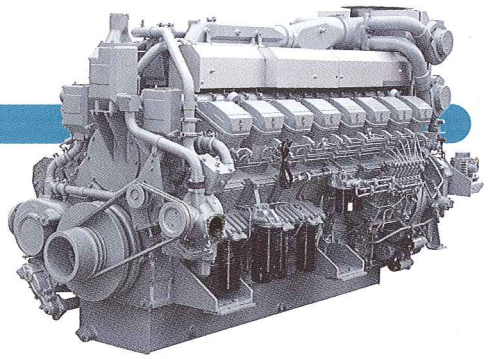
- In-house-developed high-performance turbochargers provide outstanding engine performance under all loads.
- High reliability is achieved through the adoption of high-quality parts while retaining the superior features of earlier models.
- The adoption of a large-sized intercooler enables stable combustion under high loads.
- For easier maintenance, SR engines adopt cartridge-type fuel and oil filters and standalone cylinder heads. A large inspection window is also provided. The result is superlative maintainability in addition to high quality.

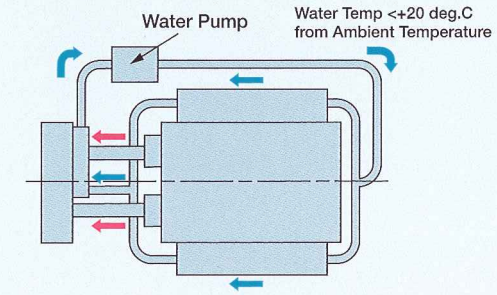

S16R-Y2PTAW-1

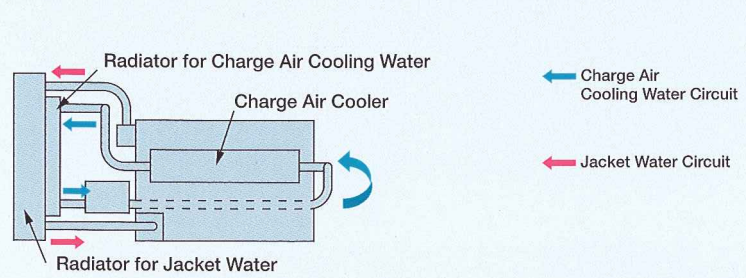

S6R-Y2PTAW-1

PTAW (2-way cooling system)

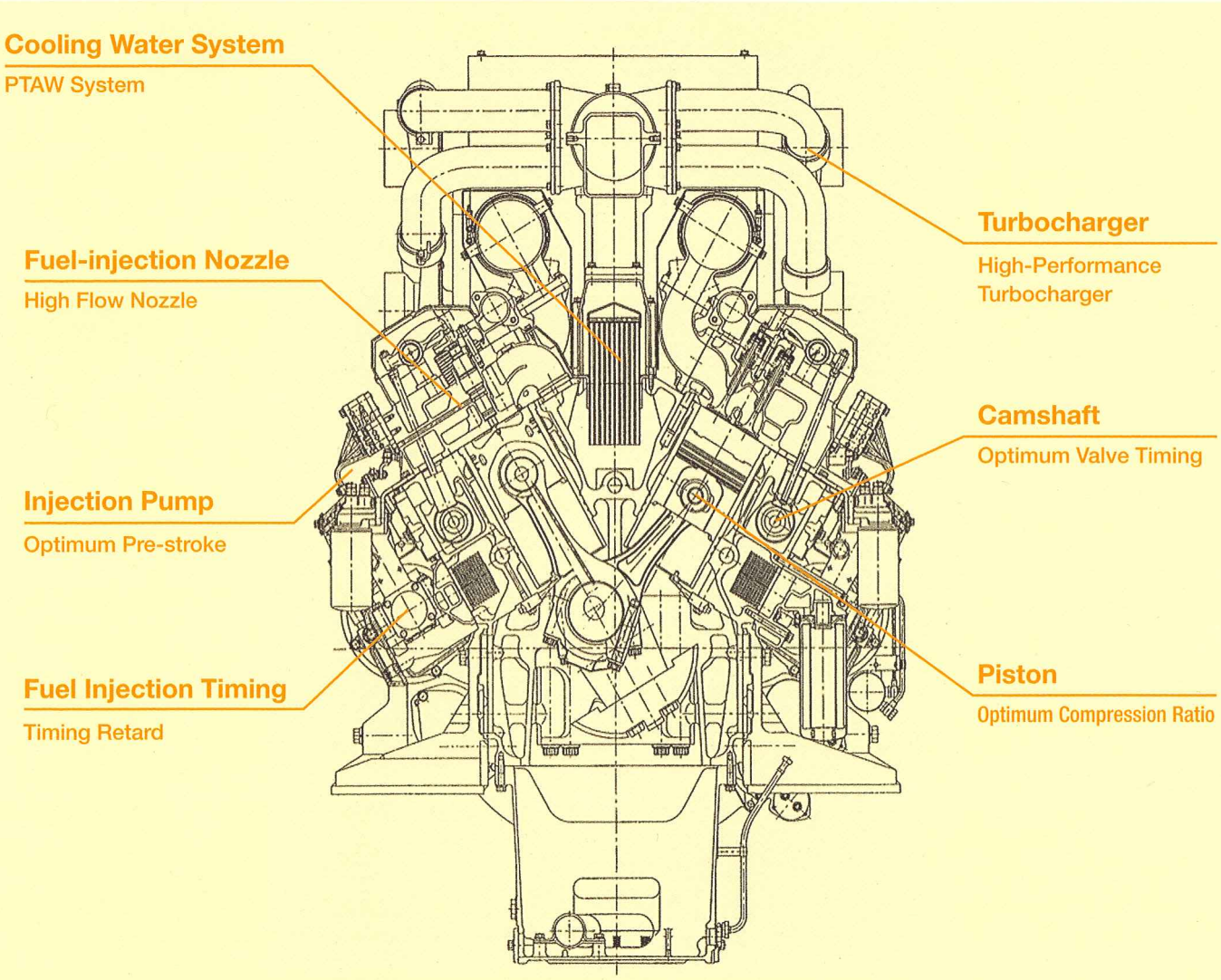
PTAW models feature a 2-way cooling system. By separating the cooling system from the intercooler for the jacket water, Mitsubishi succeeded in achieving cooler intake-air temperature than with earlier models. This has enabled lower exhaust gas emissions and improved combustion.







EPA Tier 2 Structure



Specifications

	Model			S6R Y2PTAW-1	S12A2 Y2PTAW-2	S12H Y2PTAW-1	S12R Y2PTAW-1	S16R Y2PTAW-1	S16R Y2PTAW2-1
SPECIFICATIONS	Type			4 cycle, watercooled, turbocharged diesel engine					
				Intercooler					
	Cylinder arrangement, piston bore x stroke		mm (inch)	6-170x180 (0.2x6.7x7.1)	12-150x160 (0.47x5.9x6.3)	12-150x175 (0.47x5.9x6.9)	12-170x180 (0.47x6.7x7.1)	16-170x180 (0.62x6.7x7.1)	16-170x180 (0.62x6.7x7.1)
	Total displacement		ℓ	24.51	33.93	37.11	49.03	65.37	65.37
	Combustion system			Direct injection					
	Dimensions	Length	mm (inch)	1872.0 (73.7)	2098.5 (82.6)	2173.2 (85.56)	2490.5 (98.05)	3045.5 (119.9)	3045.5 (119.9)
		Width	mm (inch)	1085.5 (42.7)	1555.5 (61.2)	1673.6 (65.9)	1457.0 (57.4)	1457.0 (57.4)	1457.0 (57.4)
		Height	mm (inch)	1498.0 (59.0)	1542.0 (60.7)	1693.5 (66.7)	1646.5 (64.8)	1810.0 (71.3)	1810.0 (71.3)
	Dry weight		kg (pound)	2705 (5964)	3380 (7452)	4300 (9480)	5270 (11618)	6530 (14396)	6680 (14727)
	Starting system			Electric starting with cell motor					
	Fuel oil			Diesel fuel oil (ISO8217 DMX, ASTM No.2-D)					
GENERATOR	Standby power	HP (kW)	60Hz 1800rpm	918 (685)	1207 (900)	1528 (1140)	1881 (1403)	2346 (1750)	2923 (2180)
	Prime power	HP (kW)	60Hz 1800rpm	835 (623)	1099 (820)	1389 (1036)	1709 (1275)	2133 (1591)	2657 (1982)

NOTES: 1) Specifications are based on North American standards, variable according to conditions.
2) HP value is derived from the formula: HP = kWm / 0.746.
3) Ratings are based on SAE J1349 standard conditions of 100kPa (29.61 inHg) barometric pressure and 25°C (77°F) intake air temperature.
These ratings also apply at ISO 3046/1, DIN 6271 and BS 5514 standard conditions of 100kPa (29.61 inHg), 27°C (81°F) and 60% relative humidity.
4) The above output ratings apply when no fan is used.
5) Output ratio on engine nameplate refers to standby power.

■ Power Generation Rating Definitions

Output Symbol	Rating		Overload	Definition	Typical Operation: Allowable Average Load Factor for 24 Hours	Typical Operation: Yearly Average Load Factor	Typical Operation: Yearly Operating Hours	Typical Overhaul Interval: Top	Typical Overhaul Interval: Complete	Application
E	Stand-by		None	Applicable for supplying emergency power with varying load for the duration of normal power interruption. (Equivalent to Fuel Stop Power in accordance with ISO8528)	80% of rated power 100%of rated power is available in case of emergency.	Less than 60%	Less than 500Hr		3000Hr	Stand-by Power Source
P	Prime	Limited Running Time	None	Applicable for supplying continuous power paralleled with the utility for limited short periods. Limited running time in accordance with ISO8528. Additional power for governing purpose only is available in accordance with ISO8528.	—	100% of rated power is available continuously for up to 300Hr out of 500 Hr. Less than 500Hr	Less than 500Hr		1000Hr	Seasonal Peak Cut
		Unlimited Running Time	None	Applicable for supplying power with varying load instead of the utility for an unlimited time. Prime power in accordance with ISO8528. Additional power for governing purpose only is available in accordance with ISO8528.	80% of rated power 100% of rated power is available intermittently for 3Hr per 24Hr operation.	Less than 60%	Unlimited		8000 through 12000Hr	Standalone Power Source Daily Peak Cut Power Source for Construction

ISO 9001 REGISTERED FIRM DNV Certification B.V. THE NETHERLANDS MGMT. SYS. RvA C 024

ISO 14001 REGISTERED FIRM DNV Certification B.V. THE NETHERLANDS MGMT. SYS. RvA C 425

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