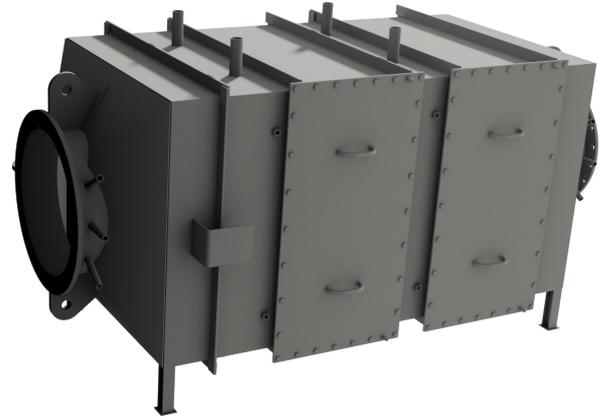


SCR49

SCR SYSTEM

An SCR system is a system that reduces NOx emissions from the engine exhaust gases. The GESAB SCR system design and settings have been fully optimized and tested (according to scheme A) to the Mitsubishi Marine Engines and Generator Sets to be cost-effective as well as meeting our quality requirements and the IMO Tier III environmental regulations.



SCR REACTOR

Design	Vertical / horizontal
Type	SCR49
Emission / NOx requirements	IMO Tier III
Number of catalyst layers	2
Material housing SCR reactor	Carbon steel
Size (excl. insulation) L x W x H (mm)	1195 x 1190 x 2658
Weight (incl. catalyst elements) (kg)	1392
Flanged inlet diameter (DN)	DN600
Flanged outlet diameter (DN)	DN500
Min operation temp. (°C)	290
Fuel type	MGO/MDO (<0.1% Sulphur)

INJECTION UNIT

Design	Pipe with injection boss
Material	Stainless steel
Dimension	DN600 - length 300 mm

SCR DOSING UNIT

Type	CDU-60-1-230
Main voltage (V)	230
Control voltage (V)	24 VDC
Electrical power (kW)	0.25
Electrical protection	IP44
Max. ambient temp.	45 °C
Standard	IEC
Mounting	Wall-mounted
Sensors	<ul style="list-style-type: none"> Differential pressure transmitter Temperature transmitters, Pt100 NOx sensor for continuous monitoring and adjustment during operation

UREA PUMP UNIT (OPTIONAL)

Design	Skid mounted pump unit
Capacity (m ³ /h)	2.2
Head (mhc)	14.7
E-motor	0.37 kW - 3 x 440 V - IP55
Material	Stainless steel

SYSTEM SPECIFIC INFORMATION

Engine type	S16R-MPTAW	S16R-MPTAW	S16R-MPTAW	S16R2-T2MPTAW	S16R2-T2MPTAW
Rating	Prime / DEP	DEP	Prime	Prime / DEP	Prime / DEP
Engine speed (rpm)	1500	1800	1800	1200	1500
Output (kW)	1500	1536	1690	1568	1960
Base engine emission level	IMO Tier II	IMO Tier II	IMO Tier II	IMO Tier II	IMO Tier II
Urea consumption (l/h at 100% MCR)	10.4	10.4	9.7	14.6	17.7
Mixing pipe diameter (DN)*	600	600	600	600	600
Mixing pipe length (mm)*	2800	2800	2800	2600	2600

* Insulation of the SCR system is not included in the scope of supply, to be supplied and installed by the shipyard.

STANDARD AND OPTIONAL EQUIPMENT

STANDARD EQUIPMENT

SCR reactor

- Supports for catalyst elements
- Flanged inlet connection with counter flange
- Flanged outlet connection with counter flange
- Catalytic elements

Injection unit

- Mixer element
- Boss for injector
- Flanges and counter flanges

SCR dosing unit and field equipment

- Control cabinet including PLC and dosing equipment
- Touch operation panel
- Urea dosing pump
- Urea injector
- Differential pressure transmitter
- Temperature transmitters, Pt100

- NOx sensor
- Pitot pipe for NOx sensor

Soot blower system (air pulse)

- Soot blower manifold pipe
- Pressure switch
- Soot blower valves
- Soot blower hoses
- Clamps for soot blower hoses

Documentation

- IMO Tier III certificate (scheme A)

- Skid-mounted electrical cabinet
- Urea filter
- Pressure gauges with root valves
- Pressure sensor
- Leakage tray
- Leakage sensor
- Spill valve unit

The pump unit is needed when the distance between the bottom of the urea tank and the inlet of the dosing unit is more than 2.5 meter. If there is no urea pump unit installed a strainer unit must be added to the urea supply line.

OPTIONAL EQUIPMENT

Classification

We are cooperating with many of the major classification societies.

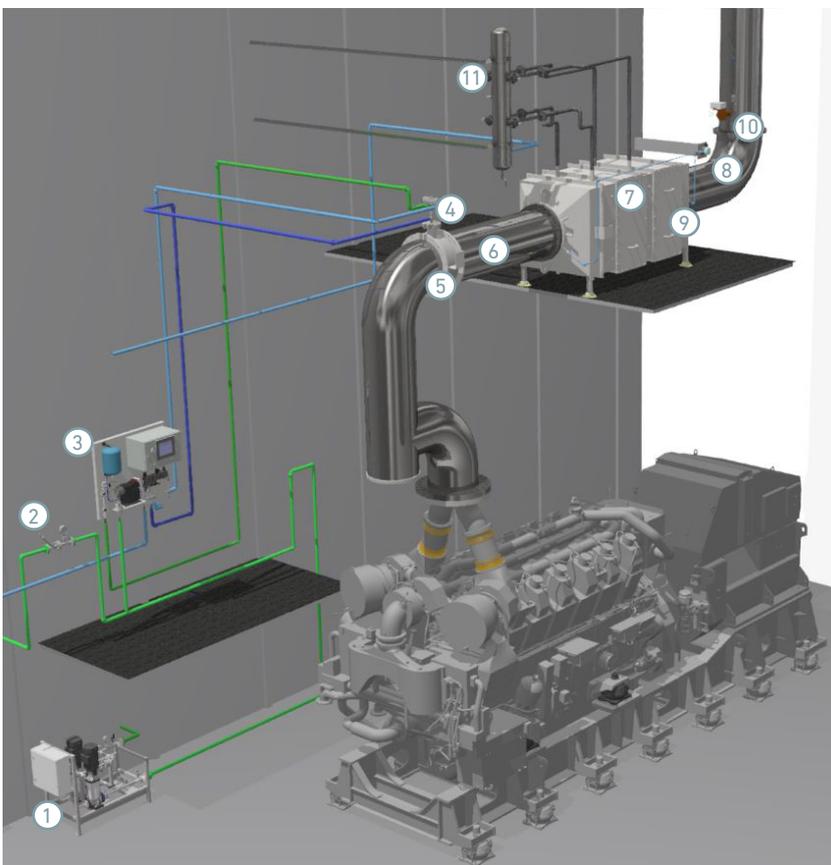
Urea pump unit

- Urea pump(s)

REMARKS

Insulation of the SCR system is not included in the scope of supply, to be supplied and installed by the shipyard.

SYSTEM EXPLANATION (HORIZONTAL)



ITEM	FUNCTION
1 Pump unit <i>(optional)</i>	Build pressure in urea ring line
2 Spill valve unit <i>(optional)</i>	Set pressure of urea ring line
3 Dosing unit	Control urea and airflow
4 Urea injector	Inject and atomize urea
5 Injection and mixing unit	Inject and mix urea with exhaust gases
6 Mixing section <i>(shipyard supply)</i>	Evaporate urea into ammonia
7 SCR reactor	Housing for catalyst material
8 Differential pressure transmitter	Measure pressure drop across catalyst material
9 Temperature transmitters	Measure temperature on catalyst inlet/outlet
10 NOx sensor	Measure NOx concentration after reactor
11 Soot blower unit	Remove pollutants from catalyst material

More information

Contact your local dealer for more information regarding Mitsubishi Marine Engines and optional equipment or, visit engine-genset.mhi.com