

Roles and responsibilities for ScrubberGuard commissioning

This document should give you an overview regarding the necessary steps for a successful commissioning of a ScrubberGuard. Another target of that document is to clarify the responsibilities. There are some key factors for the people involved. Commissioning can be most efficient if the following steps are correctly carried out:

Action	Responsible, Necessary	Instruction manual chapter
Mount the ScrubberGuard in place	Shipyard	4.1, 4.2
Connect water pipes	Shipyard	4.3.2
Connect mains and signal wires	Electrician	5.3, 5.4
Program PLC	Programmer	Reference handbook: 6
Commissioning + testing	Commissioning engineer	6
Instruction	Commissioning engineer, crew	7,8,9,10
Instrument approval	Commissioning engineer, shipowner / chief engineer	

SIGRIST and their representatives look forward to support you with their know-how and can act as commissioning engineers. The other points must be organized by third parties. When the commissioning is prepared in the best way, it will take 1-2 days. Experience has shown that 3-5 days are usually necessary due to installation that is not ready, programming, missing parts or no water available for testing. To supply support in the best manner, the following things are necessary as basis:

For remote support:

- Pictures and drawings to get an idea about the situation on site
- Hydraulic + electric scheme of the ScrubberGuard installation
- Description of the situation and the open points
- Description of the measures already taken
- Serial number of the ScrubberGuard (ex. 297xxx)
- Pictures of the AquaScat (righthand side instrument) screen

For on-site support:

- Purchase order for on-site work
- Description of the situation and the open points
- Schedule
- Boarding information
- Full internet access
- A satellite telephone when no signal for cells
- Support of crew, shipyard and shipowner
- Approval of commissioning, sign report



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Key Factors by role:

Purchaser:

- Add the maintenance kit to the purchase order; it is valuable in case something will be damaged during commissioning as well as for the first planned maintenance
- Coordinate together with the planner to purchase the correct items according to the situation on site. Important questions:
Are the water connections correct?
Are there flexible hoses for the water connection?
Is a pressure reduction valve necessary?
What communication to the PLC is required?
Should the equipment be with the automatic recalibration for less manual maintenance?

Planner:

- Use flexible hoses for the water connection, no forces such as weight, vibrations should affect the water connection of the ScrubberGuard
- Verify that the correct water connection is ordered
- Verify that pressure and waterflow for water inlet and outlet pipes are according to the technical data: 4-20 L/min, max 3 bar pressure (inlet and outlet)
- Makes sure to choose the correct communication to PLC and that a good programmer is available
- Plan some space around the ScrubberGuard - it makes maintenance much easier
- Verify the electrical needs according to the technical data: 215-240 VAC, 50 / 60 Hz, 650 W / 1000 VA (1000 W / 1700 VA incl. inlet pump)

Shipyard:

- Mount the equipment correctly according to the drawings
- Handle the equipment carefully, it is a measuring instrument
- When something is unclear or seems wrong: Ask and tell observations
- In case of a damage: Organize repair, new parts early

Electrician:

- Verify that the electrical needs according to the technical data are fulfilled
- Correct connection of mains and signal, doublecheck and verify

Programmer:

- Study the manuals and function of the ScrubberGuard before programming
- Program the PLC according to the reference manual
- Verify the correct function with the commissioning engineer

Commissioning engineer:

- Take the ScrubberGuard into operation
- Verify that the newest software is installed
- Check the correct function of the instrument
- Verify the correct function together with the programmer
- Instruct the crew
- Approve the commissioning and sign the report