Engine Protection Partner AS
Schaller Automation Scandinavia & Baltics

SCHALLER AUTOMATION

Recommended maintenance schedule VN/87 EMC

The recommended maintenance schedule must be followed as described below to ensure highest safety standard for your engine operation. The maintenance schedule is to be viewed as precautionary measures in relation to technical problems.

It is recommended to use authorized service personnel every 4 years to inspect the entire oil mist detector system to ensure proper functionality of the complete installation.

NOTE: All maintenance steps should be performed while engine is stopped!

Proc. no.:	Description of work:	Interval & required parts/tools:
1	• **01.87:** Check the negative pressure with u-tube manometer or digital manometer. Adjust if necessary! Setting level is 55.00 – 65.00 mm WC!	Every month or 650 hrs. **-whatever comes first!** **151800 -** U- tube gauge or **100138 -** Digital u- tube man.
2	• **02.87:** Clean infrared filters in measuring head with cotton pins and cleaning fluid and clean fresh air bores with cleaning needle. • **03.87:** Exchange air filters in measuring head. • **04.87:** Perform functional test with test glass kit.	Every 3 months or 2000 hrs. - **whatever comes first!** **151481 -** Filter kit VN/87 **151482 -** Cleaning kit. **11072-** Test glass kit
3	• **05.87:** Exchange air filters in pressure regulator unit • **06.87:** Replace filter cartridge of water separator, if used.	Every 6 months or 4000 hrs. - **whatever comes first!** **273119-** Filter cartridge
4	• **07.87:** Clean inside and outside of the baseplate thoroughly, check bellows for cracks, gaskets and suspensions between measuring head and baseplate- *replace necessary parts!* • **05.87 & 01.87:** Check performance of pressure regulator- *replace necessary parts!* • **08.87:** Check and clean suction pipes/ pipe system and siphon blocks with compressed air - *replace necessary parts!* **Do not forget to refill the siphon blocks!** • **09.87:** Check scavenging air outlet behind the control cover manually (low-right) by feeling the air stream. • **11.87:** Perform functional test of entire OMD system with smoke ampulla kit or smoke generator.	Every 12 months or 8000 hrs. **-whatever comes first!** **Service kits:** **VN 115/87** – P/n.: 100150-151483 **VN 116/87** – P/n.: 100151-151484 **VN 215/87** – P/n.: 100152-151485
5	• **10.87:** Overhaul the complete OMD incl. clean the inside & outside of baseplate thoroughly and replace service kit parts for oil mist detector. • **05.87 & 01.87:** Check performance of pressure regulator- *replace necessary parts!* • **08.87:** Check and clean suction pipes/ pipe system and siphon blocks with compressed air - *replace necessary parts!* **Do not forget to refill the siphon blocks!** • **12.87 or 13.87:** Replace measuring head or complete oil mist detector. Use our Exchange pool (EXP) and perform **11.87**. When replacing complete oil mist detector, process no. **10.87** is not necessary to perform! As an alternative, use authorized service personnel to define the condition of the main components – *to be replaced as necessary!*	Every 48 months or 32 000 hrs. -**whatever comes first!** **Main service kits:** **VN 115/87** – P/n.: 100150-151483 **VN 116/87** – P/n.: 100151-151484 **VN 215/87** – P/n.: 100152-151485 **151482** - Cleaning kit **151780** - Smoke test kit **150740** - Smoke test generator **Exchange Pool (EXP):** Please contact us at **epp@epp.no** to find your specific exchange unit!

Section 01.87: Adjust negative pressure

1. Turn off the air and install the quick connection.

2. Fill in slacked water in the u-tube manometer to the middle line.

3. Insert it into the quick connection and adjust the pressure to 60mmWC.

4. Disconnect the u-tube manometer and install the plug for inspection cover.

Section 02.87: Exchange air filters

1. Open the inspection cover.

2. Using circlip pliers, change the scavenging air filter.

3. Close the inspection cover.

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Section 03.87: Clean infrared filters and air bores in measuring head

1. Open the inspection cover.

2. Clean the infrared sensor glasses with cotton sticks and cleaning fluid.

3. Clean the bores with cleaning needle.

4. Close inspection cover.

Section 04.87: Test system with test glass kit

1. Open the inspection cover on the measuring head.

2. The oil mist detector needs to be in operation mode with negative pressure set to 60mmWC.

3. Place the test plate over the open chamber – the test plate will be sucked into position by the vacuum in the measuring head.

4. Press the 10% glass into the slit in the test plate. Ensure the glass is in a straight vertical position.

5. The measuring head will now enter alarm mode.

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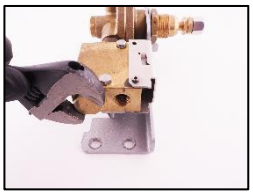
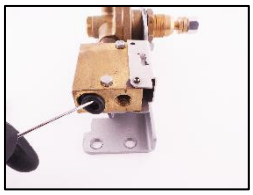
Section 05.87(1): Replace filter and o-ring in pressure regulator (old type)

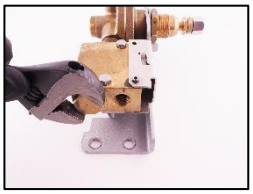

1. Close the air pressure.


2. Unscrew the filter plug.


3. Pull out the o-ring and filter using a small flat screwdriver.


4. Replace both the o-ring and filter.


5. Screw in the filter plug with new parts on it.


6. Tighten the plug.


7. Open the air pressure.

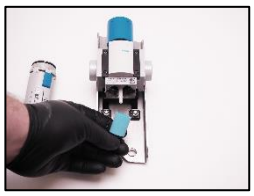
Section 05.87(2): Replace filter in pressure regulator (new type)


1. Close the air pressure.


2. Hold the filter cage in one hand and pull the blue tab down horizontally with your thumb.


3. Turn the filter cage clockwise and pull out downwards.


4. Unscrew the black plastic disc and remove the dirty filter.


5. Screw in the new filter counter clockwise and make sure that it is aligned for installation.


6. Reinstall the filter cage.


7. Open the air pressure.

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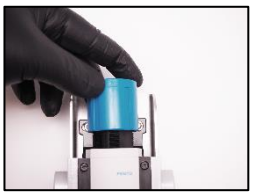
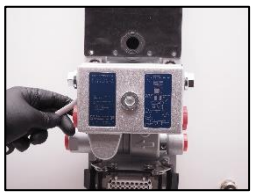
Section 07.87: Clean inside & outside of the baseplate and replace service kit


1. Stop the engine and close the incoming air pressure.

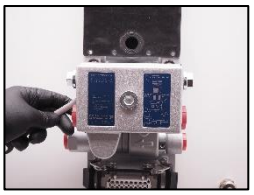

2. Disconnect the RESET task connector.


3. Dismount the measuring head.


4. Disconnect the connection case.

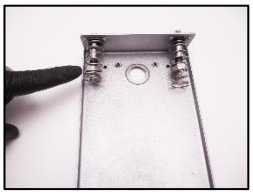
5. Change the small seal.

6. Change the valve box seal.



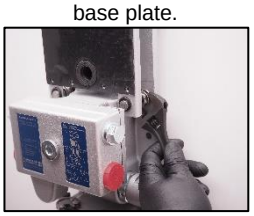
7. Reconnect the connection case to the base plate.

8. Unscrew the vibration plate.



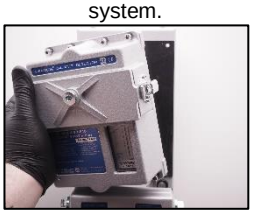
9. Change the upper and lower elastic mounting system.

10. Change the flexible bellows.

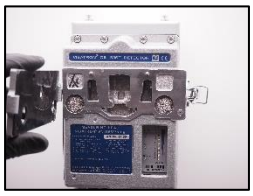


11. Reinstall the vibration plate to the base plate.

12. Change the measuring head seal.



13. Reinstall the measuring head at the vibration plate.



14. Open the inspection cover.

15. Change the scavenging air filter.

16. Change the seal for inspection cover.

17. Clean the infrared sensor glasses with cotton sticks and cleaning fluid.

18. Clean the bores with cleaning needle.

19. Change the screw plug seal ¼" for inspection cover.

20. Close inspection cover.

21. Unscrew the plugs at the connection case.

22. Change the screw plug seal ½".

23. Check the heating element if it is hot. If cold – replace!

24. Check all leaders in the main socket. If bad condition – replace!

Section 08.87: Check and clean pipe system and siphon blocks

1. Loosen the pipe connections from the connection casing.

2. Use compressed air to blow back collected oil into the engine.

3. Tighten the pipe to the connection casing.

4. Loosen the screws on the siphon block…

5. …until able to be removed from the engine.

6. Disconnect the pipes from the siphon block.

7. Unscrew the screws completely

8. Take of the cover of the siphon block.

9. Remove and check the rubber inserts.

10. Check the o-ring.

11. Tighten the screws until the siphon block holds together.

12. Re-connect the pipes to the siphon block.

13. Unscrew the bottom screw on the siphon block.

14. Insert pump into the siphon block.

15. Tighten the screw on the pump.

16. Pump in the oil.

17. Unscrew the pump and reinstall the screw.

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Section 09.87: Check scavenging air inlet

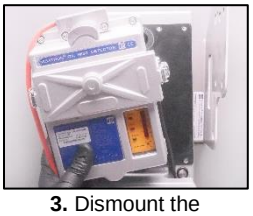
1. Open the inspection cover on the measuring head.

2. Feel that air streams from hole in the lower-right corner.

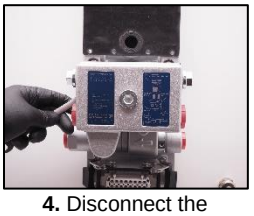
Section 10.87: Clean inside & outside of the baseplate and replace service kit

1. Stop the engine and close the incoming air pressure.

2. Disconnect the RESET task connector.



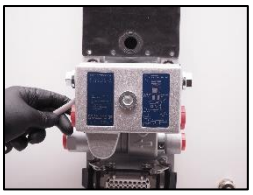
3. Dismount the measuring head.



4. Disconnect the connection case.

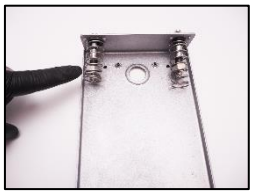
5. Change the small seal.

6. Change the valve box seal.



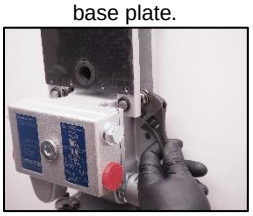
7. Reconnect the connection case to the base plate.

8. Unscrew the vibration plate.



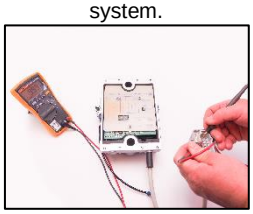
9. Change the upper and lower elastic mounting system.

10. Change the flexible bellows.



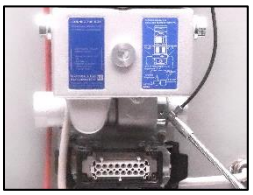
11. Reinstall the vibration plate to the base plate.

12. Change the measuring head seal.



13. Unsure the exchange measuring head has the same wire break value as the previous measuring head. See the next page description.

14. Replace the measuring head.



15. Connect the scavenging air hose from the measuring head to the injector on the baseplate.

16. Check all leaders in the main socket. If bad conditions – replace the connection socket!

Section 11.87: Perform functional test of entire OMD system with smoke ampulla kit.

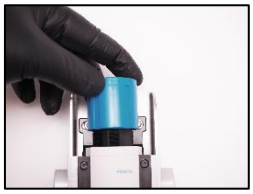
1. With the crank cases open, break glass capsules in the smoke test tube to activate smoke production.

2. Place the test tube right under sampling funnel and pump smoke into it until the measuring head enters alarm mode.

3. Repeat the process for all the sampling funnels to ensure the pipe is not blocked. Use the same tube as long as it is producing smoke.

4. When all sampling funnels have been tested, close the crank case covers and your system is ready for use.

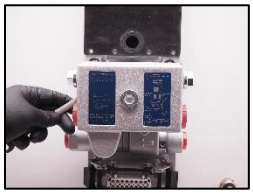
Section 12.87: Replacement of exchange measuring head and service kit



1. Stop the engine and close the incoming air pressure.

2. Disconnect the RESET task connector.

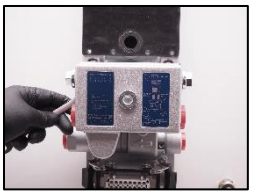
3. Dismount the measuring head.



4. Disconnect the connection case.

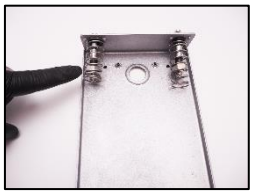
5. Change the small seal.

6. Change the valve box seal.



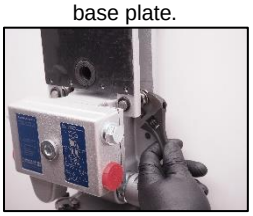
7. Reconnect the connection case to the base plate.

8. Unscrew the vibration plate.



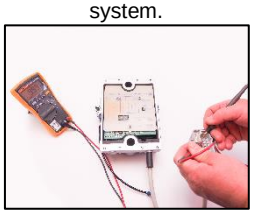
9. Change the upper and lower elastic mounting system.

10. Change the flexible bellows.



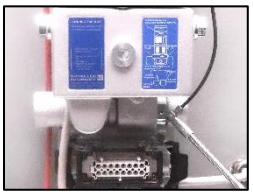
11. Reinstall the vibration plate to the base plate.

12. Change the measuring head seal.



13. Unsure the exchange measuring head has the same wire break value as the previous measuring head. See the last page for description.

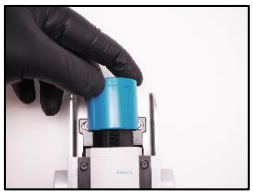
14. Replace the measuring head.



15. Connect the scavenging air hose from the measuring head to the injector on the baseplate.

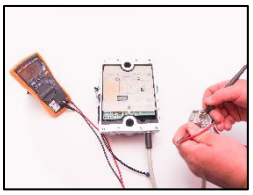
16. Check all leaders in the main socket. If bad conditions – replace the connection socket!

Section 13.87: Replacement of exchange oil mist detector



1. Stop the engine and close the incoming air pressure.

2. Disconnect the used oil mist detector.



3. Unsure the exchange measuring head has the same wire break value as the previous measuring head. See the last page for description.

4. Install new exchange unit and main connection socket.

Wire break resistance for oil mist alarm

The wire break resistance is a set resistance value for the oil mist alarm. It is important to ensure that the wire break resistance is correct according to the required resistance for the alarm shut down function of the engine. If the value is not correct according to required wire break resistance value (at the alarm shut down function panel) this may lead to a situation where you get no shut down or reduced RPM of the engine during a real high oil mist level alarm situation!

If you are replacing the complete VN/87 EMC or VN/87plus oil mist detector or a measuring head with an exchange unit you always need to check the documented wire break resistance on the used device. When you have this information, you need to check that it is the same wire break resistance value on the new device before starting up the engine. If the wire break resistance is different between the devices, you can transfer the wire break resistances (2 pc. presented on the backside of the electronic module placed in the measuring head) from the used device to the new device.