



Engine Protection Partner AS

Schaller Automation Scandinavia & Baltics



Information for your VN/87plus Visatron Oil Mist Detector

Version: V2-2023-2

Our **Knowledge** Is Your Safety

Recommended maintenance schedule VN/87plus

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

Proc. no.:	Description of work:	Section no.:	Interval & required parts/tools:
1	<ul style="list-style-type: none"> Check the negative pressure with u-tube manometer or digital manometer. Adjust if necessary! Setting level is 55.00 – 65.00 mm WC! Clean infrared filters in measuring head with cotton pins and cleaning fluid and clean fresh air bores with cleaning needle. Exchange air filters in measuring head Perform functional test with test glass kit. 	<u>01.87</u>	Every 3 months or 2000 hrs. -whatever comes first!
		<u>02.87</u>	
		<u>03.87</u>	151481 - Filter kit VN/87 151482 - Cleaning kit. 11072- Test glass kit
		<u>04.87</u>	151800 - U- tube gauge or 100138 - Digital u- tube man.
2	<ul style="list-style-type: none"> Perform procedure 1 Exchange air filters in pressure regulator unit ...If you have a water separator. Replace filter cartridge of water separator. 	<u>05.87</u>	Every 6 months or 4000 hrs. - whatever comes first!
		<u>06.87</u>	273119- Filter cartridge
3	<ul style="list-style-type: none"> Perform procedure 1 and 2 Clean inside and outside of the base plate, check bellows for cracks, gaskets and suspensions between measuring head and baseplate- <i>replace necessary parts!</i> Check performance of pressure regulator- <i>replace necessary parts!</i> Check and clean suction pipes/ pipe system and siphon blocks with compressed air - <i>replace necessary parts!</i> Do not forget to refill the siphon blocks! Check scavenging air outlet behind the control cover manually (low-right) by feeling the air stream. 	<u>07.87</u>	Every 12 months or 8000 hours. -whatever comes first!
		<u>01.87</u>	
		<u>08.87</u>	
		<u>09.87</u>	Service kits: VN 115/87 – P/n.: 100150-151483 VN 116/87 – P/n.: 100151-151484 VN 215/87 – P/n.: 100152-151485
4	<ul style="list-style-type: none"> Perform procedure 1, 2 & 3 (except section no. 07.87) Overhaul the complete OMD incl. clean the baseplate and replace service kit parts for oil mist detector* Perform functional test of entire OMD system with smoke ampulla kit or smoke generator* Inspection of entire OMD system* 	<u>10.87</u>	Every 24 months or 16000 hrs. -whatever comes first!
		<u>11.87</u>	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 *Schaller authorized service staff.
5	<ul style="list-style-type: none"> Perform procedure 1, 2 & 3 (except section no. 07.87) Overhaul the complete OMD incl. clean the baseplate and replace service kit parts for oil mist detector* Perform functional test of entire OMD system with smoke ampulla kit or smoke generator* Inspection of entire OMD system* <p>If service by Schaller staff is not possible for various reasons, contact us for exchange unit set as an alternative! **</p>	<u>10.87</u>	Every 48 months or 32 000 hours -whatever comes first!
		<u>11.87</u>	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 parts: VN 115/87plus – P/n.: 11650EXP VN 116/87plus – P/n.: 11750EXP VN 215/87plus – P/n.: 11850EXP *Schaller authorized service staff.

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

This system requires service by authorized Engine Protection Partner/Schaller Automation personnel every 2 years to ensure that the complete oil mist detector installation meet the makers requirements.

Note: If service by authorized staff is not possible for various reasons, alternatively use the exchange pool components from Engine Protection Partner's EXP stock for procedure no. 5 (2+2-year service or 32 000 hours) **

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.

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.

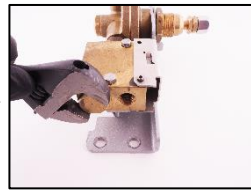


5. The measuring head will now enter alarm mode.

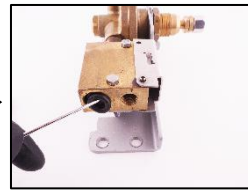
Section 05.87(1): Replace filter and o-ring in pressure regulator (old type)



1. Close the air pressure.



2. Unscrew the filter plug.



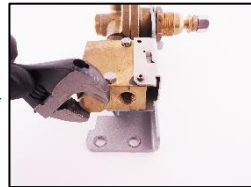
3. Pull out the o-ring and filter using a small flat screwdriver.



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)



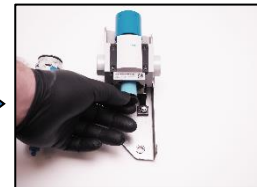
1. Close the air pressure.



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.



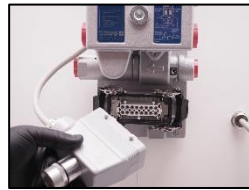
7. Open the air pressure.



Section 07.87: Clean inside & outside of the baseplate and check parts



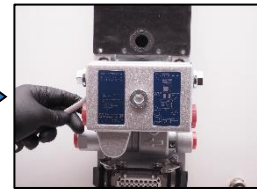
1. Stop the engine and close the incoming air pressure.



2. Disconnect the RESET task connector.



3. Dismount the measuring head.



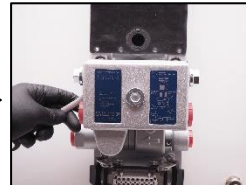
4. Disconnect the connection case.



5. Check the small seal.



6. Check the valve box seal.



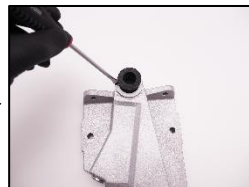
7. Reconnect the connection case to the baseplate.



8. Unscrew the vibration plate...



9. ... and check for damage.



10. Check the flexible bellows for any damage.



11. Reinstall the vibration plate to the base plate

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.

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



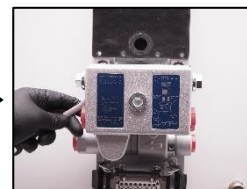
1. Stop the engine and close the incoming air pressure.



2. Disconnect the RESET task connector.



3. Dismount the measuring head.



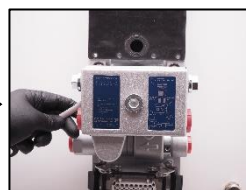
4. Disconnect the connection case.



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.



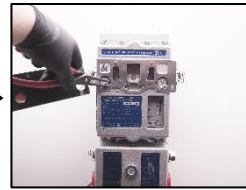
12. Change the measuring head seal.



13. 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 $\frac{1}{4}$ " for inspection cover.



20. Close inspection cover.



21. Unscrew the plugs at the connection case.



22. Change the screw plug seal $\frac{1}{2}$ ".



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



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

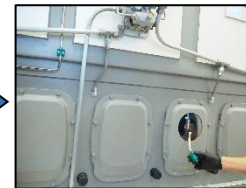
Section 11.87: Perform functional test of entire OMD system with smoke ampulla kit



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.



Parts and kit overview for VN/87plus

For model:	Name:	Part no.:
VN 115/87plus	Exchange complete oil mist detector VN 115/87plus	11650EXP
VN 115/87plus	Reconditioned complete oil mist detector VN 115/87plus	11650R
VN 115/87plus	Exchange measuring head VN 115/87plus	11651EXP
VN 115/87plus	Reconditioned measuring head VN 115/87plus	11651R
VN 115/87plus	Service kit for VN 115/87 series	100150-151483

- See page 9

VN 116/87plus	Exchange complete oil mist detector VN 116/87plus	11750EXP
VN 116/87plus	Reconditioned complete oil mist detector VN 116/87plus	11750R
VN 116/87plus	Exchange measuring head VN 116/87plus	11751EXP
VN 116/87plus	Reconditioned measuring head VN 116/87plus	11751R
VN 116/87plus	Service kit for VN 116/87 series	100151-151484

- See page 10

VN 215/87plus	Exchange complete oil mist detector VN 215/87plus	11850EXP
VN 215/87plus	Reconditioned complete oil mist detector VN 215/87plus	11850R
VN 215/87plus	Exchange measuring head VN 215/87plus	11851EXP
VN 215/87plus	Reconditioned measuring head VN 215/87plus	11851R
VN 215/87plus	Service kit for VN 215/87 series	100152-151485

- See page 11

All VN/87plus	Filter kit for VN/87 EMC & plus	151481
All VN/87plus	Cleaning kit for Oil Mist Detector	151482
All VN/87plus	Smoke test kit	151780
All VN/87plus	Digital u-tube manometer for Oil Mist Detector	100138
All VN/87plus	Test plate kit for functional test of Oil Mist Detector	11072
All VN/87plus	Main connection socket VN/87plus	11004
All VN/87plus	Pressure regulator modification kit	273440

- See page 12 - 14

VN 115/87PLUS KITS

Oil mist detector VN 115/87plus

Part no.: 11650EXP – Exchange complete oil mist detector VN 115/87plus

- Used unit to be returned to Engine Protection Partner AS in repairable condition.

Part no.: 11650R – Reconditioned complete oil mist detector VN 115/87plus



Measuring head VN 115/87plus

Part no.: 11651EXP – Exchange measuring head VN 115/87plus

- Used unit to be returned to Engine Protection Partner AS in repairable condition.

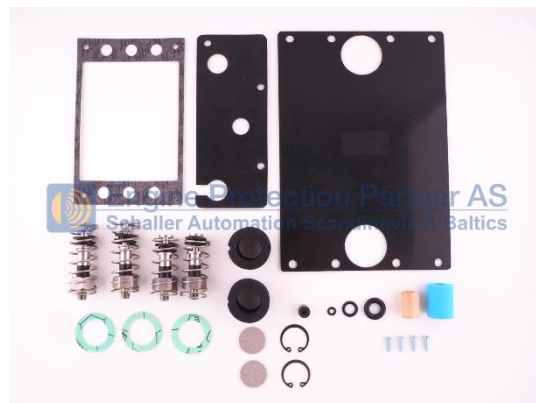
Part no.: 11651R – Reconditioned measuring head VN 115/87plus



100150-151483 – Service kit for VN 115/87 series

Parts:

- 2 x Part no.: 10042 – Fresh air filter
- 2 x Part no.: 10041 – Fresh air filter circlip
- 2 x Part no.: 10023 – Flexible bellow
- 1 x Part no.: 10022 – Measuring head gasket for VN/87
- 1 x Part no.: 10166 – Inspection cover gasket for VN/87
- 3 x Part no.: 10562 – Air-jet pump gasket
- 2 x Part no.: 10209 – Plug 1/2" gasket
- 1 x Part no.: 10206 – Oil mist seal
- 2 x Part no.: 10018 – Upper suspension
- 2 x Part no.: 10019 – Lower suspension
- 1 x Part no.: 10405 – Connection casing gasket
- 1 x Part no.: 10003 – O-ring 9,0x4,5 NBR872
- 1 x Part no.: 10004 – O-ring 8,0x2,572 NBR872
- 1 x Part no.: 10679 – O-ring 4,0x1,75 NBR70
- 1 x Part no.: 155005 – Pressure regulator filter (new type)
- 1 x Part no.: 10002 – Pressure regulator filter (old type)



VN 116/87PLUS KITS

Oil mist detector VN 116/87plus

Part no.: 11750EXP – Exchange complete oil mist detector VN 116/87plus

- Used unit to be returned within 60 days in repairable condition.

Part no.: 11750R – Reconditioned complete oil mist detector VN 116/87plus



Measuring head VN 116/87plus

Part no.: 11751EXP – Exchange measuring head VN 116/87plus

- Used unit to be returned within 60 days in repairable condition.

Part no.: 11751R – Reconditioned measuring head VN 116/87plus



100151-151484 – Service kit for VN 116/87 series

Parts:

- 2 x Part no.: 10042 – Fresh air filter
- 2 x Part no.: 10041 – Fresh air filter circlip
- 2 x Part no.: 10023 – Flexible bellow
- 1 x Part no.: 10022 – Measuring head gasket for VN/87
- 1 x Part no.: 10166 – Inspection cover gasket for VN/87
- 3 x Part no.: 10562 – Air-jet pump gasket
- 2 x Part no.: 10313 – Tube connection for VN116 gasket
- 1 x Part no.: 10306 – Oil return gasket
- 1 x Part no.: 10307 – Oil mist gasket
- 2 x Part no.: 10018 – Upper suspension
- 2 x Part no.: 10019 – Lower suspension
- 1 x Part no.: 10405 – Connection casing gasket
- 1 x Part no.: 10003 – O-ring 9,0x4,5 NBR872
- 1 x Part no.: 10004 – O-ring 8,0x2,572 NBR872
- 1 x Part no.: 10679 – O-ring 4,0x1,75 NBR70
- 1 x Part no.: 155005 – Pressure regulator filter (new type)
- 1 x Part no.: 10002 – Pressure regulator filter (old type)



VN 215/87PLUS KITS

Oil mist detector VN 215/87plus

Part no.: 11850EXP – Exchange complete oil mist detector VN 215/87plus

- Used unit to be returned to Engine Protection Partner AS in repairable condition.

Part no.: 11850R – Reconditioned complete oil mist detector VN 215/87plus



Measuring head VN 215/87plus

Part no.: 11851EXP – Exchange measuring head VN 215/87plus

- Used unit to be returned to Engine Protection Partner AS in repairable condition.

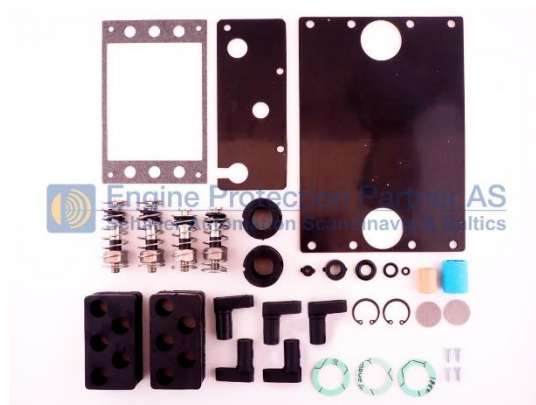
Part no.: 11851R – Reconditioned measuring head VN 215/87plus



100152-151485 – Service kit for VN 215/87 series

Parts:

- 2 x Part no.: 10042 – Fresh air filter
- 2 x Part no.: 10041 – Fresh air filter circlip
- 2 x Part no.: 10023 – Flexible bellow
- 1 x Part no.: 10022 – Measuring head gasket for VN/87
- 1 x Part no.: 10166 – Inspection cover gasket for VN/87
- 3 x Part no.: 10562 – Air-jet pump gasket
- 2 x Part no.: 10411 – Rubber sleeve
- 5 x Part no.: 10412 – Lock plug
- 1 x Part no.: 10406 – Oil return gasket
- 1 x Part no.: 10407 – Oil mist gasket
- 2 x Part no.: 10018 – Upper suspension
- 2 x Part no.: 10019 – Lower suspension
- 1 x Part no.: 10405 – Connection casing gasket
- 1 x Part no.: 10003 – O-ring 9,0x4,5 NBR872
- 1 x Part no.: 10004 – O-ring 8,0x2,572 NBR872
- 1 x Part no.: 10679 – O-ring 4,0x1,75 NBR70
- 1 x Part no.: 155005 – Pressure regulator filter (new type)
- 1 x Part no.: 10002 – Pressure regulator filter (old type)



Maintenance kits:

151481 – Filter kit for VN/87 EMC & plus

Parts:

- 2 x Part no.: 10166 – Inspection cover gasket for VN/87
- 10 x Part no.: 10042 – Fresh air filter
- 4 x Part no.: 10041 – Fresh air filter circlip
- 3 x Part no.: 10003 – O-ring 9,0x4,5 NBR872
- 2 x Part no.: 155005 – Pressure regulator filter (new type)
- 3 x Part no.: 10002 – Pressure regulator filter (old type)



151482 - Cleaning kit for Oil Mist Detector

Parts:

- 1 x Part no.: 10035 – Cleaning fluid
- 20 x Part no.: 10036 – Cotton sticks
- 1 x Part no.: 10135 – Cleaning needle



151780 – Smoke test kit

Parts:

- 6 x Smoke ampulla
- 1 x Pump
- 1 x Connection tube for VN301plus
- 1 x Connection tube for inspection cover
- 1 x Connection tube for pipe system



100138 – Digital u-tube manometer for Oil Mist Detector

Parts:

- 1 x Digital u-tube manometer
- 1 x Connection hose
- 1 x Quick connection adapter



Optional kits:

11072 – Test plate kit for functional test of Oil Mist Detector

Parts:

- 1 x 10% glass
- 1 x Test plate



Main connection socket VN/87plus

Part no.: 11004 – Main connection socket VN/87plus



Modification kits:

273440 – Pressure regulator modification kit

Parts:

- 1 x Pressure regulator
- 1 x Mounting plate
- 1 x Flexible tube
- 1 x Solid tube
- 1 x Engine wall connection

