

INSPECTOR A/C

System for the control of the A/C system oil quality and for the protection of the recovery system

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 Operating instructions

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 WARNING

Safety precautions

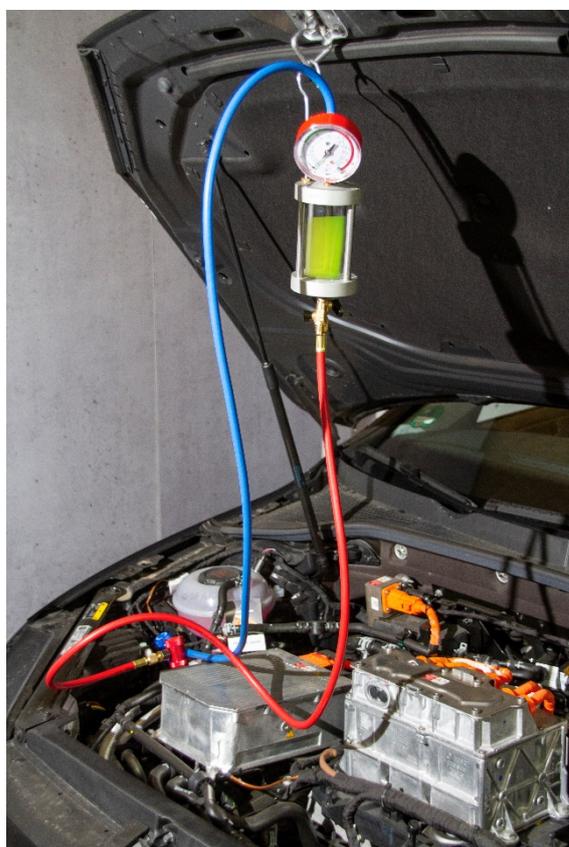
- a) This equipment is designed for trained personnel only, who must know the refrigeration fundamentals, cooling systems, refrigerants and possible damage that pressurized equipment may cause.
- b) Carefully read the instructions contained in this manual; strict observance of the procedures described is fundamental to the operator's safety, the perfect state of the unit and constant performances as declared.
- c) Before performing any operation, make sure that the hoses used for connections have been previously evacuated and that they do not contain non-condensable gases.
- d) Avoid skin contact; the low boiling temperature of the refrigerant (about -30°C) can cause freezing.
- e) Avoid breathing refrigerant vapours.
- f) It is recommended to wear suitable protections like safety glasses and gloves; contact with refrigerant may cause blindness and other personal injuries.
- g) Do not operate near open flames and hot surfaces; the high temperatures decompose the refrigerant releasing toxic and caustic substances which are hazardous for the operator and the environment.
- h) During operations avoid release of refrigerant to the environment; this precaution is required by international environmental standards and is essential to avoid difficult leak detection in a refrigerant polluted environment.
- i) The equipment must always work under the operator's control.
- j) **Do not go beyond the limit of pressure mentioned in this manual**

1. Introduction to INSPECTOR

The aim of the INSPECTOR equipment, in both its CHECKING and PROTECTION functions, is to check the quality of oil in the A/C systems and to protect your recovery unit during the maintenance operations.

1.1. TECHNICAL FEATURES

Model	INSPECTOR A/C
Refrigerant	R134a / R1234yf
Max capacity	150 ml
Max working temperature	50 °C
Max working pressure	20 bar
Type of pressure gauge	Ø80mm class 1
Connections	Quick couplers R134a LOW and HIGH
Quick couplings	HP und LP for the Refrigerant R1234yf



2. Preparation for the use of INSPECTOR

WARNING

Read this user's manual carefully before starting any operation.

2.1. VACUUM CYCLE

IMPORTANT

- a) Remove the cap from the high pressure service connection of INSPECTOR
- b) Connect the service connection to a recovery, vacuum and charging unit
- c) Make sure that the ball valves of INSPECTOR are open
- d) Make a vacuum in the INSPECTOR system for about 5 minutes



3. Using Inspector system with its CHECKING function

3.1 CHECKING THE MISCIBILITY OF OIL WITH REFRIGERANT

- a) Connect Inspector high pressure hose to the A/C system high pressure connection
- b) Connect Inspector low pressure hose to the A/C system low pressure connection
- c) Close Inspector's ball valves and open the quick couplers connected to the A/C system
- d) Start the A/C system
- e) Keep Inspector upright, with the pressure gauge upward: gradually open the high pressure ball valve (red), then gradually open the low pressure ball valve (blue) and have the refrigerant mixed with oil flow into the glass cylinder up to about 1/4 of its volume.
- f) Close the two ball valves
- g) Keep Inspector horizontally
- h) At this point, the operator can value, visually, the miscibility of the oil with refrigerant.

WARNING

The above procedure requires caution and sensitivity from the operator. We advise the greatest attention while having liquid sucked from the low pressure side by using the blue ball valve especially mounted to prevent the compressor from sucking liquid refrigerant.

3.2 CHECKING THE OIL QUALITY

After having checked visually the miscibility of the oil, we can now check the quality of it following the below procedure:

- Place Inspector upright so that the blue ball valve is upward.
- Gradually open the blue ball valve to have the refrigerant evaporate so that only the oil or other impurities stay inside the cylinder.
- Check the quality of the oil by means of the below pictures:



Oil and refrigerant with good miscibility



Oil, refrigerant and UV with good miscibility



Bad degree of miscibility between oil and refrigerant



Visual analysis of the dissolution of different substances present in the fluid

Dusts or contaminated particles present in the fluid



Refrigerant + UV contaminated by water



Defective compressor

3.3 CHECKING THE SYSTEM WORKING PRESSURE

With the pressure gauge mounted on the Inspector assembly, it is possible to check the A/C system pressures, as explained below:

- a) CHECKING THE SUCTION PRESSURE: close the red valve and keep the blue one completely open. Check the compressor suction pressure on the pressure gauge.



- b) CHEKING THE DELIVERY PRESSURE: close the blue valve, completely open the red valve and check the compressor delivery pressure on the pressure gauge.



3.4 DISCONNECTING

- By means of the red ball valve, introduce refrigerant into the Inspector taking care not to exceed the 50% of the total volume, then close the red ball valve.
- When the refrigerant is mixed with the oil, close the quick coupler valve (HIGH), then open the red ball valve
- Gradually move the blue valve by opening then closing it briefly several times until Inspector is completely empty. Check that there is no longer pressure inside the circuit.

WARNING

The above procedure requires caution and sensitivity from the user. We advise you to be extremely careful when having the liquid sucked from the low pressure side by regulating the opening of the blue ball valve in order to avoid liquid strokes (overpressures) on the system inner components, situated next to the abovementioned valve.

- Close both the blue and red valves of Inspector, close the quick coupler valves connected to the system and disconnect the hoses.

The manufacturer reserves the right to discontinue, or change at any time specifications or designs without notice and without incurring obligations according to her policy of always improving her products.

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