2016.11.08

MSG MS101P

FLUSHING STAND
FOR AIR CONDITIONING SYSTEM

USER MANUAL

QUALITY WARRANTY INNOVATION SERVICE TRAINING UNIQUENESS

CONTENTS

1. DESCRIPTION

Flushing stand is used for quality cleansing of air conditioning pipelines from contamination.

Flushing is conducted through forced circulation of flushing fluid in the closed circuit: car – flushing stand.

The equipment was designed according to the latest requirements of air conditioning system service centers.

Control elements are placed, considering easy operation of the stand.

Several flushing fluids are selected and set out in the table 'Technical Characteristics', which do not react with component parts of the pump and elements of the stand.

The stand consists of metal body, air pump, 10 l stainless steel tank, hoses with universal holders.

The stand is constructed in the following way: constant pulsating flow is generated in both the stand circuit, and a car, thus, it provides quick flushing of the system.

2. TECHNICAL CHARACTERISTICS

Fig. 1. Stand MS101P

Air power pressure, bar	2-7
Maximum air consumption, m3/min	0-3
Fluid flow pressure, bar	1-6
Pump performance, l/min	15
Filter element	Polypropylene
Filter element size, mm (inch)	127 (5”)
Recommended micron range, µm	10-50
Tank power volume, l	10
Recommended flushing fluids	R141b, Super Flush, SUNAIR A/C FLUSH
Maximum nitrogen pressure, bar	10
Length of hoses, connected to a car, m	2.5
Dimensions, mm	360*300*700
Weight, kg	28

3. CONTROL UNITS AND INDICATORS

Fig. 2. Description of the elements, placed on the front side

1 – Valve, regulating the pump; **2** – **HP** valve; **3** – Filler neck cover;

4 – Manometer; **5** – **N2** valve; **6** – Indicator of tank flushing fluid level;

7 – **N2** nitrogen connection fitting; **8** – **AIR** fitting; **9** – **LP** fitting;

10 – **HP** fitting.

1 – Valve, regulating the pump of the flushing stand.

2 – HP valve, supplying flushing fluid from the tank of the stand to a car line.

3 – Filler neck cover, filler neck and filter element container.

4 – Manometer. Flushing fluid pressure indicator in air conditioning system.

5 – N2 valve, supplying nitrogen to remove the remainings of flushing fluid from air conditioning system.

⚠ **WARNING! It is strictly forbidden to open N2 valve during operation of the pump and/or when HP valve is open.**

6 – Indicator of tank flushing fluid level.

7 – N2 nitrogen connection fitting.

⚠ **WARNING! Use of compressed nitrogen of pressure over 10 bar in the stand is strictly forbidden.**

8 – AIR compressed air connection fitting.

9 – Fitting of flushing fluid return to **LP** flushing stand tank from air conditioning system.

10 – Fitting of flushing fluid supply to air conditioning system from **HP** flushing stand tank.

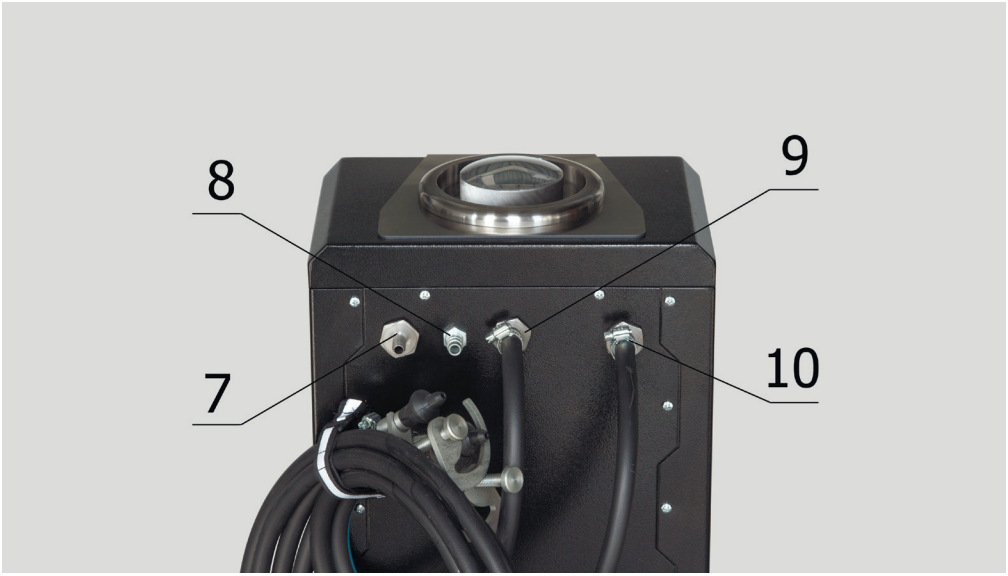

Fig. 3. Description of the elements, placed on the back side

4. FILTER ELEMENT

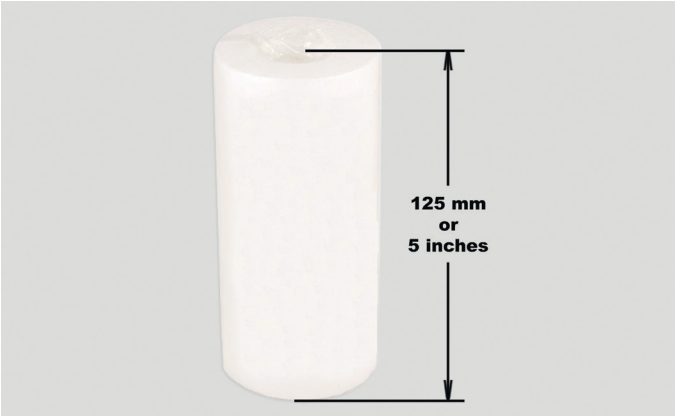

Fig. 4. Filter element front view

Regular polypropylene water filter can be used for this stand.

The filter is made of polypropylene which does not react with flushing fluids, recommended for use.

Filter element circulation capacity must correspond 10-50 µm. Filter element height is 5 inches.

5. SETTING INTO OPERATION

5.1 Receipt and Inspection

Check the set received. It must contain:

- flushing stand
- 2 hoses (connected to the stand)
- 2 universal connector (connected to the hoses)
- User Manual

Inspect the equipment for existence of damage. If it is found, please contact either the manufacturer or trade representative before launching the equipment.

⚠ **WARNING! In case of obvious damage, use of equipment is forbidden.**

5.2 Safety Measures

It is strongly recommended to learn actual User Manual before launching the equipment. The stand can be used in well-ventilated premises only.

Tightening or unscrewing the nuts on N2, LP, HP hoses in operation is strictly forbidden.

Twisting of the filler neck in the process of operation of the pump is strictly forbidden.

Replacement of filter element in the process of operation of the pump is strictly forbidden.

Operation of flushing station with damaged hoses is strictly forbidden.

Work with the stand must be carried out in rubber gloves and safety glasses.

In case of skin contact with flushing fluid, follow the instruction, described in specifications to particular flushing fluid.

6. STEP-BY-STEP OPERATION

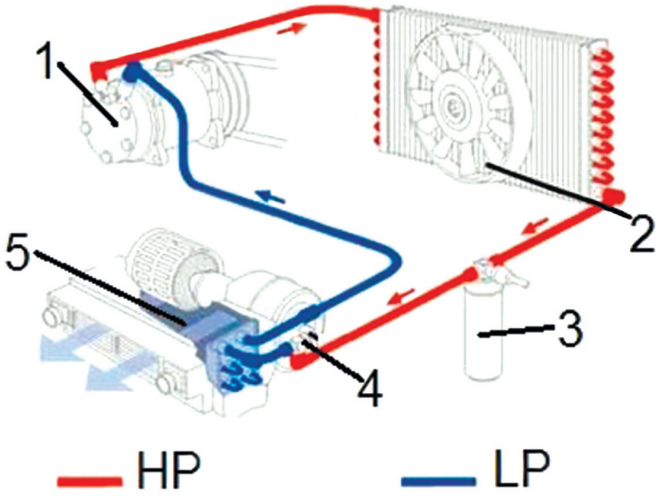

Fig. 5. Air conditioning system

1 – Compressor; **2** – Condenser; **3** – Dryer; **4** – Expansion valve (EV); **5** – Evaporator.

6.1 Preparation of Flushing Stand to Operation

Connect the stand to air-supply system. Pressure in air-supply system must correspond to the parameters, described in 'Technical Characteristics'.

Power activation valve (1) must be switched off. Valves 2 and 5 must be switched off, set in the position '-'.

The tank must be filled with flushing fluid (5 to 10 l) through the filler neck 3.

Polypropylene filter element is fixed in the filler neck 3, the filter element cover is twisted (3).

6.2 Connection to Air Conditioning System and Work with Flushing Stand

The following actions must be conducted before connection of the flushing stand to air conditioning system:

- remove coolant out of air conditioning system with a special tool for gathering coolant.
- dismount component parts of air conditioning system, which are not to be flushed (expansion valve (EV)), compressor, dryer, condenser).

Connect **HP** and **LP** hoses through specialized connectors to high-pressure and low-pressure lines of air conditioning system.

To provide circulation of flushing fluid, activate **HP** valve (2) on the stand (set in position '+').

To supply flushing fluid to air conditioning system, activate the pump with the valve 1. Pump performance is regulated by the same valve, if necessary.

Air conditioning system goes through several cycles of flushing.

The first cycle is the quickest one: activate the stand for 10 minutes, then deactivate and check its filter element for contamination, gathered on it. If large dispersing parts of contamination (aluminum chip) are observed, replace the filter element and continue flushing.

Quantity of cycles depends on contamination degree of the system, but not less than 2. If necessary, change flushing fluid, the filter element and repeat flushing.

Quantity of cycles can be set by the user personally, as far as the pump can operate during a long period of time.

Remove the remainings of flushing fluid from air conditioning system when flushing is finished. It is done in the following way:

- connect nitrogen line to the stand fitting 7 **(N2)**, deactivate the valve **HP** (2), activate the valve **N2** (5) smoothly, thus, supplying nitrogen to air conditioning line.

Nitrogen purge is done until total removal of flushing fluid from air conditioning system.

Removal of flushing fluid from the tank is done in the following way:

- pull **HP** hose into the container
- activate **HP** valve
- activate the pump with the valve 1.

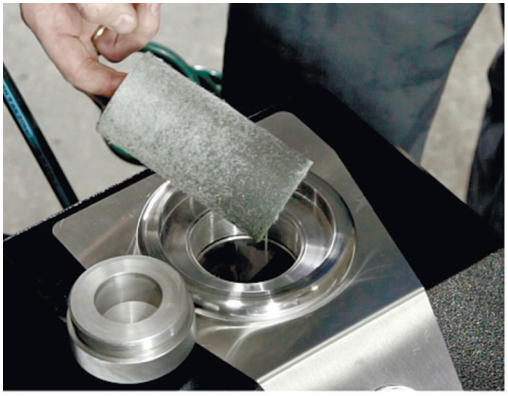

Fig. 6. Filter element after the first flushing cycle.

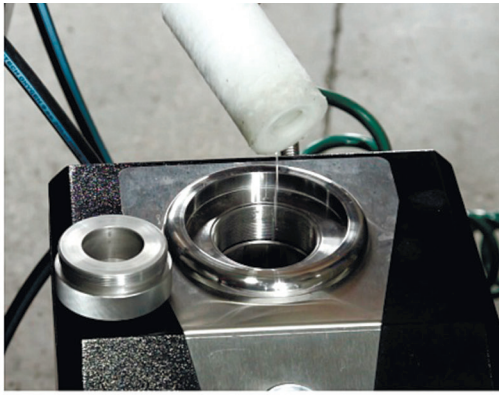

Fig. 7. Filter element after the last flushing cycle.

7. STORAGE AND CARE

To keep the stand in storage, it is recommended to clean it with flushing fluid and drain the remainings.


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