



## Heat pumps, Thermodynamic water heaters

### Good practice – Maintenance visit Troubleshooting

JS

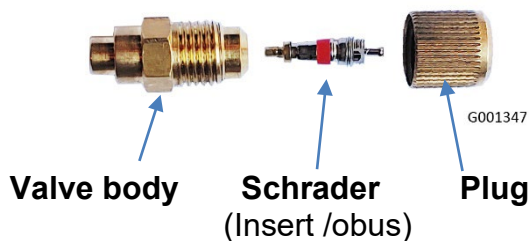
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## 1. Purpose

We have noticed in the field, 2 types of leaks during the maintenance visits:

- **Leakage at the dudgeon** (a fissure may appear as a result of vibrations...).  
Reminder: we advise to make the dudgeons with an automatic dudger in order to avoid excessive crushing of the copper.
- **Leakage at the charging valve (Schrader valve) :**
  - The manifold hoses can damage the Schrader spring by repeated stressing
  - The Schrader seal can become inefficient as a result of repetitive pressing



The following recommendations indicate good practice:

- During commissioning,
- During a maintenance visit,
- In case of troubleshooting

**IMPORTANT:** The following operations are only to be carried out by technicians who have a Certificate of Competence for handling refrigerants.

## 2. Recommended equipment

We highly recommend the use of the following equipment :

- **Electronic leak detector with a sensitivity in accordance with the regulations <5gr/year.**

Preferred: Electronic leak detector

Example: model TIF XP-1A\*



or



**Foaming type leak detector aerosol:**  
(less precise, less efficient)

\* **Not suitable** for R32 and R290

- **Torque screwdriver** (0.3 Nm or according to Schrader type)



- **Tool for replacing the Schrader under pressure** (the model below is an example)



## 3. Recommendations for interventions

- **It is strongly recommended that Schrader valves are not touched unless there is an anomaly.**

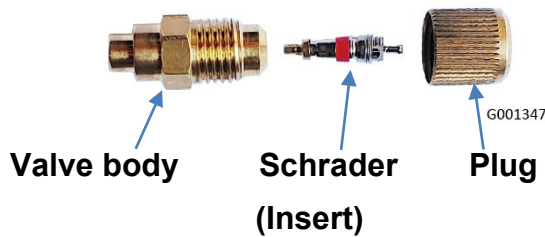
**Only connect the manifold if there is a need for servicing (malfunction, leakage).**

- **Use the electronic leak detector to check for leaks:**

- at the connections (dudgeon, brazing, ...)
- at the Schrader valves (plug removed)

- **Fix leaks if any.**

## 4. After any intervention on the Schrader valve



After any intervention on the Schrader valve (use of the manifold):

1. Check the Schrader for leaks with the plug removed using the electronic leak detector.
2. If the Schrader valve is tight, **always fit a new plug anyway**.
3. If the Schrader is leaking, you can carefully tighten it with a suitable **torque screwdriver**: the tightening torque **depends on the device model** (there are different types of Schrader valve inserts).

Appliances concerned	Ref of Schrader insert	Color of the Schrader seal	Manufacturer	Tightening torque
OENOVIA PAC GS EcOil-Hybrid EnoviaGaz-Hybrid	7611664	Green (R404A, R407C, R410A)	REFCO (A-31999-G)	0.25 – 0.3 Nm
OEnoviaPAC-C (MHC) OEnoviaPAC-C CONFORT MHC MB OTWH EV	300017260	Red (R404A, R407C, R410A)	REFCO (A-31999-R)	0.25 – 0.3 Nm
AWHP (Outdoor units)	Replace the complete Schrader valve if leakage occurs			

4. Check for leaks (without the plug) using the electronic leak detector:
  - If the Schrader is tight after re-tightening: **always fit a new plug anyway**.  
*Note: The plugs of the AWHP... outdoor units do not have a gasket in case of a clamped seal (flare connection)..*
  - If the Schrader is not tight, replace it (see section 5 below)

## 5. Replacing the Schrader (valve insert)

**IMPORTANT:** The following operations are only to be carried out by technicians who have a Certificate of Competence for handling refrigerants.

Replace the Schrader with an under pressure Schrader-replacement tool, when troubleshooting, or until final troubleshooting is done.

(The following Schrader-replacement tool model is an example)

Click to watch the video: <https://youtu.be/Jbhv7MS-OC0>

**Procedure for Schrader (valve insert) replacement under pressure:**

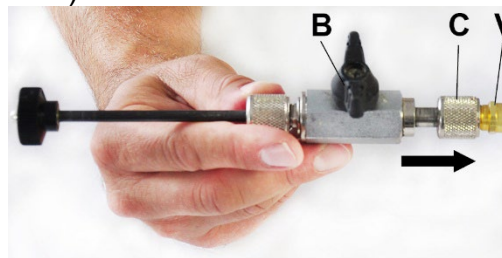
1. Prepare the Schrader replacement-tool:
  - a) Pull out the rod **A** of the replacement-tool to the stop in the extended position
  - b) Close the valve **B** on the tool

- c) Remove the plug from the refrigerant circuit charge plug so that the tool can be screwed on (at nut **C**)



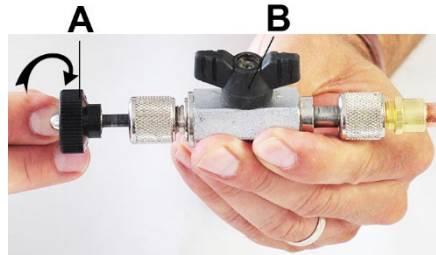
2. To remove the Schrader to be replaced:

- a) Screw the tool (nut **C**) onto the Schrader valve **V** of the refrigerant circuit



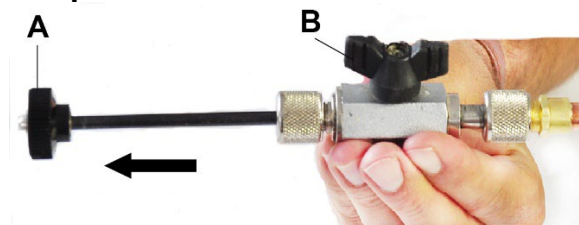
- b) Open the valve **B** on the tool

- c) Push in rod **A** and turn it until it engages the Schrader to be replaced



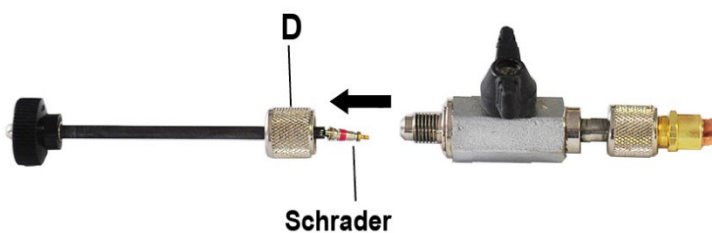
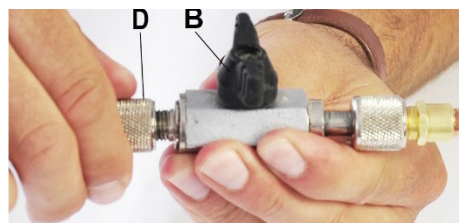
- d) Unscrew the rod **A** with the Schrader to remove:

**CAUTION: once the Schrader unscrewed, the rod A will move back by itself under the effect of the pressure**



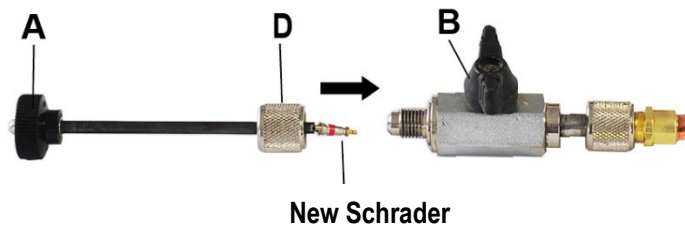
- e) Close valve **B** on the tool

- f) Unscrew nut **D** to access the Schrader to be replaced

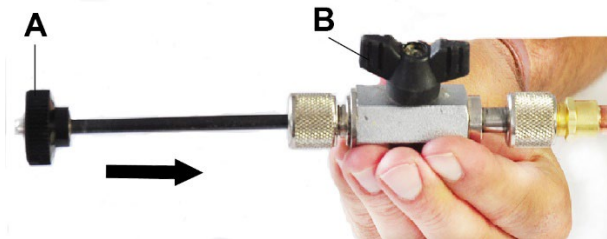


### 3. Replacing the Schrader :

- a) Fit a **new Schrader** to the end of the rod **A** (note the direction of the Schrader)
- b) Tighten nut **D** again



- c) Open the valve **B**
- d) Push rod **A**
- e) **Push and turn** rod **A** to screw the **new Schrader** into the valve



- f) After the Schrader is screwed in the valve, pull rod **A**
  - g) Close valve **B**
  - h) Unscrew the tool
4. Check for tightness (without the plug) with the electronic leak detector
  5. **Imperatively fit always a new plug.**