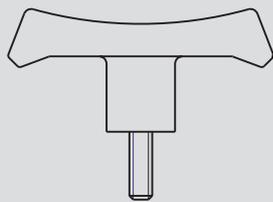


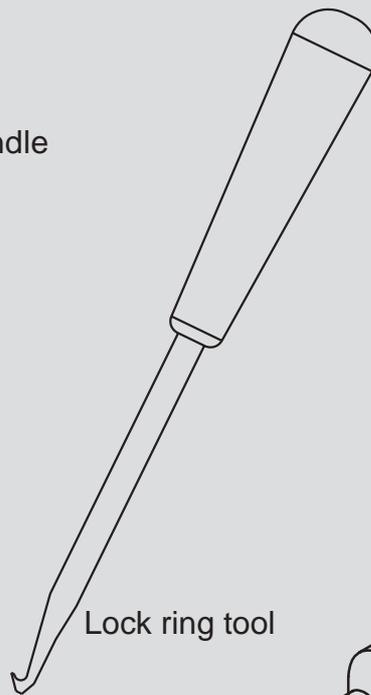
# KALLER<sup>®</sup>

Service & maintenance instructions for gas spring models:

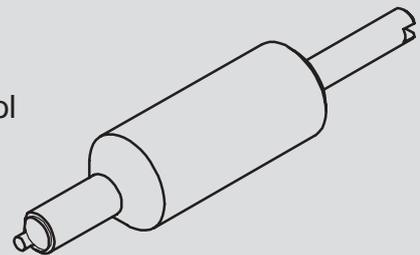
**M, MM, MC, TS/TM/TMS 750**



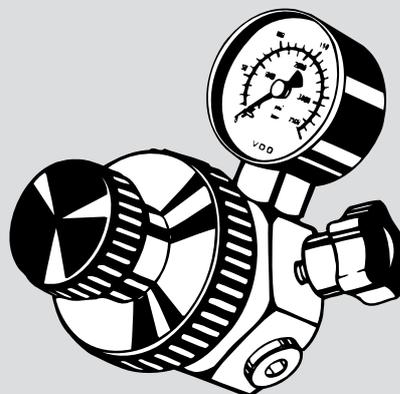
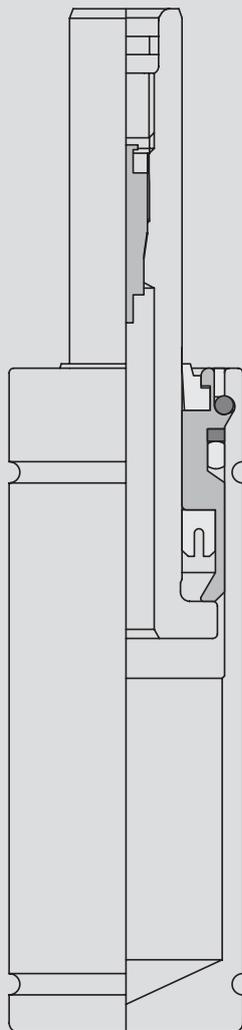
T-handle



Lock ring tool



Valve tool



Charging armature

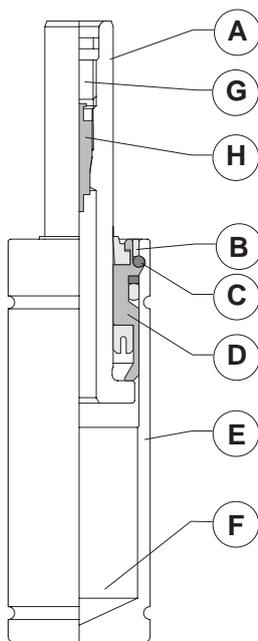


Charging adapter

 **STRÖMSHOLMEN**

Box 216, SE-573 23 Tranås, Sweden, Tel +46 140 571 00, Telefax +46-140-571 99

# SERVICE INSTRUCTION



Valve in the piston rod

- A) Piston rod
- B) \* Dirt protection ring
- C) \* Lock ring
- D) \* Guide
- E) Tube
- F) \* Oil
- G) \* Cover screw/charging port
- H) \* Valve

\* = Parts included in the repair kit

\* = Special tools included in our tool kit,  
Order No. 1014779

## This instruction is valid for:

- a) = Gas springs M, MM, MC,  
TS/TM/TMS 750  
(valve in the piston rod)

## ⚠ Warnings

- Failure to exhaust all gas pressure prior to disassembling could result in serious injury.
- Maximum charging pressure :  
150 bar (2175 psi).  
For M, MM, MC = 180 bar (2610 psi)
- Use only pure nitrogen gas, N<sub>2</sub> for charging.

- Once the cover screw has been removed, never lean directly over the valve. Always direct the valve port away from yourself and others.
- Never use extreme force on the gas spring. Charged gas springs are under high internal pressure and should be protected against damage.
- Always use protective jaws when clamping the spring in a vice.
- To achieve maximum service life, keep the gas spring protected from dirt, drawing fluids, and grinding dust.
- Always wear safety goggles, when servicing the gas spring.
- Only specially trained personnel with good knowledge of the products should carry out the maintenance.

## Disassembly

- 1) To obtain an easy working position, clamp the spring in a vice ( use protective jaws). Clamp the gas spring in a leaning position (about 30°) with the piston rod upwards for all models. This is to prevent oil from leaking out during the servicing.
- 2) Unscrew the M6 cover screw (G) in the top of the piston rod using a 3 mm Allen key.
- 3) Discharge the gas in the spring. Thread the the valve tool\* into the charge port to open the valve.



**Warning! The valve (H) must not be unscrewed until the piston rod can be pushed down by hand or with a rubber mallet.**

Once the gas is released use the opposite side of the valve tool\* to unscrew the valve. Pull the valve from the port with the needle nose pliers\*.

- 4) Tap the guide (D) into the tube, using a mounting sleeve\* and rubber mallet, until the lock ring (C) is exposed. Remove the dust cover (B) that becomes loose during this procedure.
- 5) Remove the lock ring (C) using the lock ring tool\*.



**Warning! The lock ring could fly out, be sure to wear safety goggles.**

- 6) Pull out the piston rod (A) and the guide (D) using the T-handle\*.
- 7) Remove the guide (D) from the piston rod by pulling the guide upwards .
- 8) Save the piston rod (A) and the tube (E).

## Inspection

- 9) Clean the tube and the piston rod.
- 10) Visually inspect piston rod and the tube. There should be no scratches or dents on the inside surface of the tube, nor on the piston rod or the lock ring grooves. If defects exist, replace the parts.

## Assembly

- 11) Unpack the repair kit.
- 12) Lightly oil the seals and the bushing on the guide (D) and the piston rod (A).
- 13) Insert the guide (D) onto the piston rod (A) (according to picture previous page).
- 14) Oil the inside of the upper tube end to prevent damage to the guide O-ring.
- 15) Fill the spring with the appropriate oil volume in the tube (see table below).

Model	Oil
M, MM, MC, ISO-MC	2 ml
TS/TM/TMS/750	10 ml

- 16) Insert the piston rod with guide into the tube. Tap down the guide (D) using a mounting sleeve\* and rubber mallet until the lock ring groove is exposed.
- 17) Fit the lock ring (C) into the groove in the tube by pushing one of the lock ring ends into the groove, steadying it with your thumb and then hit on the ring until it snaps into the groove. You can hear a clicking sound when the rings snaps into position.

- 18) Pull out the piston rod (A) and the guide (D) using the T-handle\*. Pull until the guide is in line with the tube end.



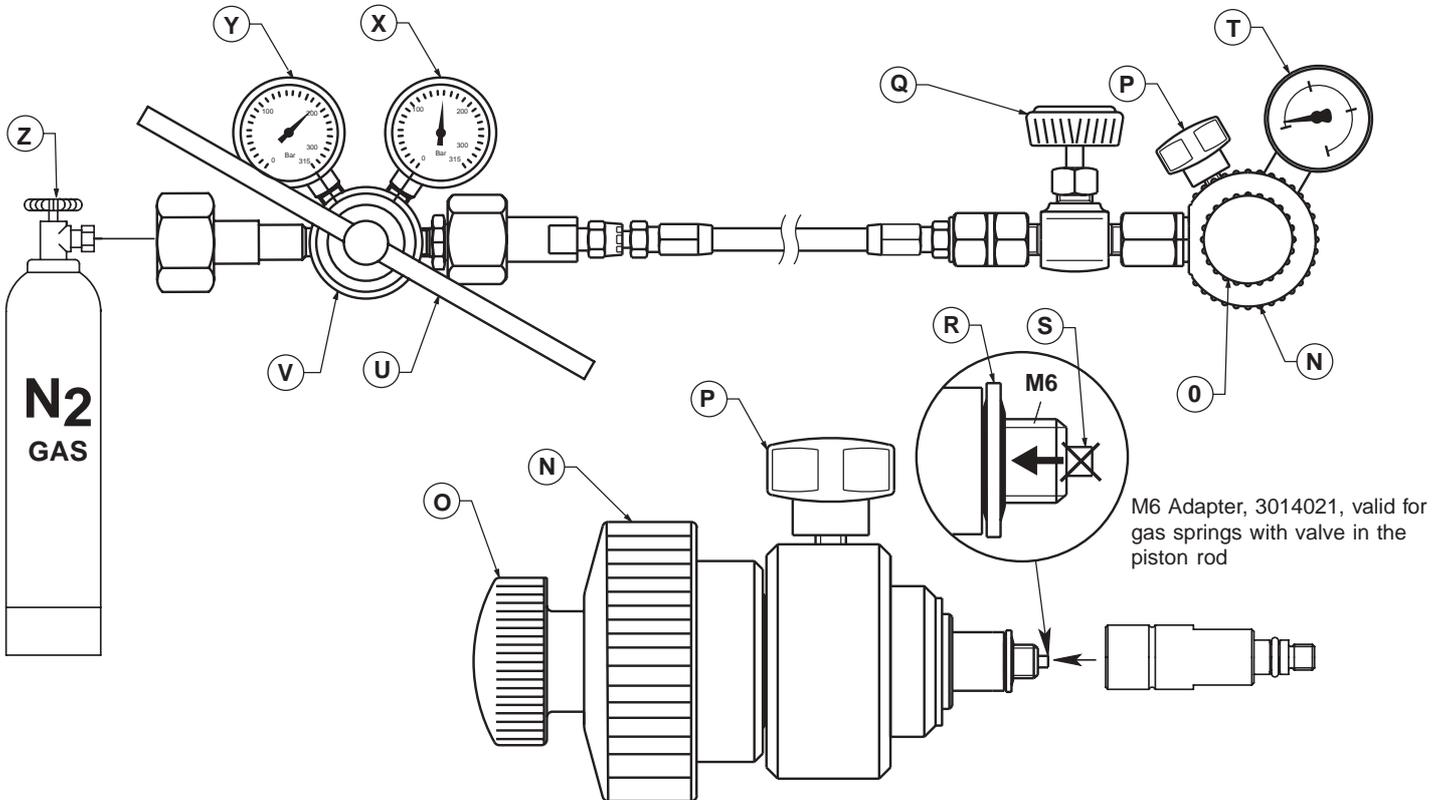
**Warning! If the guide cannot be pulled in line with the upper tube end, the assembly is incorrect. DO NOT charge the spring. Charging an incorrectly assembled spring could result in serious injury.**

- 19) Using the valve tool\*, fit the valve (H) into the charging port. Finger strength is enough to tighten the valve.
- 20) Charge the spring with the desired amount of pressure. **The maximum charging pressure is 150 bar (2175 psi), for M, MM, MC 180 bar (2610 psi).**
- 21) Install the M6 cover screw (G) in the piston rod. Note that it has a sealing function and always must be fitted and tightened to the spring.
- 22) Oil and install the dirt protection ring (B) so that it fits in line with the end of the tube and guide. The function of the dirt protection ring is to prevent dirt from penetrating into the gas spring.

# SERVICE INSTRUCTION

## Charging gas

We recommend that a replenishing armature with pressure regulator is used (Order No. 3415075-2000).



- 23) Check that the evacuation valve (P) and the shut-off valve (Q) are closed (turn in a clockwise direction). The release pin (S) should be inside the M6 thread on the armature (turn knob (O) in a counter-clockwise direction).
  - 24) Check that the M6 thread at the end of the armature is equipped with the sealing washer (R). Connect M6 adapter 3014021 to the replenishing armature.
  - 25) Connect the replenishing armature to the gas spring, by means of knob (N), turned in a clockwise direction.
  - 26) Open the Nitrogen bottle using knob (Z). Regulate to the desired charging pressure with handle (U) on the regulator (V).  
**Note! maximum charging pressure is 150 bar (2175 psi,) for M, MM, MC it is, 180 bar (2610 psi).**  
The manometer (X) shows the charging pressure and manometer (Y) is shows the bottle pressure.
  - 27) Open the shut-off valve (Q) slowly on the armature and charge as slowly as possible. After charging, the manometer (T) shows the pressure supplied to in the gas spring.
  - 28) After charging, empty the gas inside the armature by first closing the shut-off valve (Q) and opening the evacuation valve (P) until the gas is released.
  - 29) Unscrew the armature fully using knob (N). Check to make sure that the valve does not leak. If the valve is leaking, it must be replaced.
- ⚠ For safety, never lean over the valve!**
- 30) Fit the cover screw (G) on the gas spring. Note that it has a sealing function and must always be fitted and tightened.
  - 31) When finished with the armature, empty the gas inside the armature and hose by closing the nitrogen bottle using knob (Z) and opening evacuation valve (P) and shut off valve (Q) until all gas is released.