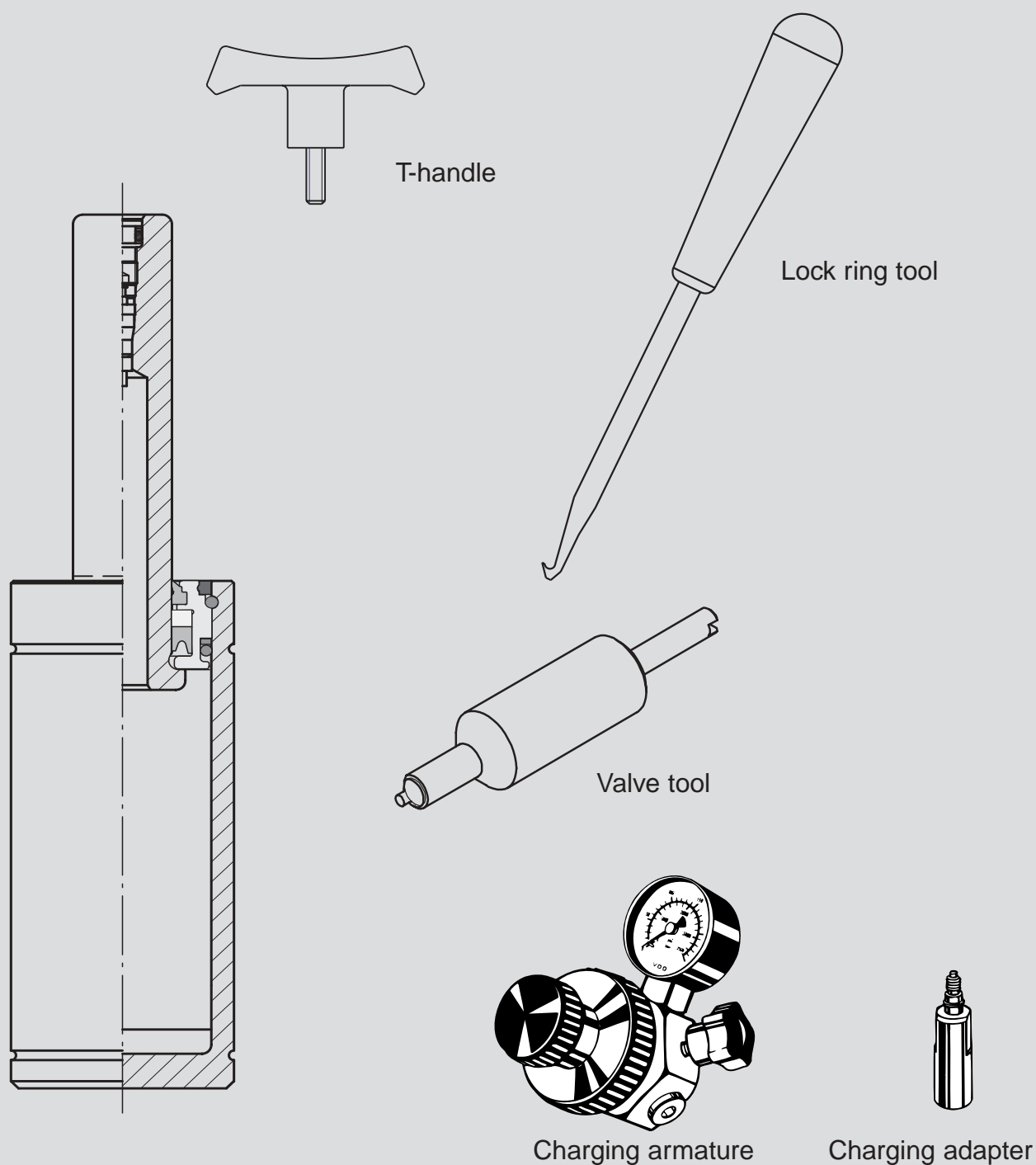


# KALLER<sup>®</sup>

Service & maintenance instructions for gas spring models:

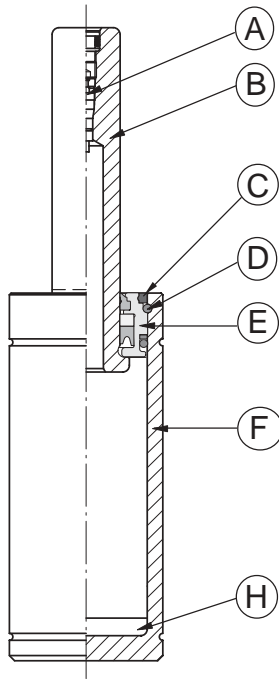
**KS/KSM 250, KS/KSM 500, KS/KSM 750**



 **STRÖMSHOLMEN**

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

# SERVICE INSTRUCTION



- A) \* Valve
  - B) Piston Rod
  - C) \* Dirt protection ring
  - D) \* Lock ring
  - E) \* Guide
  - F) Tube
  - H) \* Oil
- \* = Parts included in the repair kit

## Warnings

- Failure to exhaust all gas pressure prior to disassembling could result in serious injury.
- Maximum charging pressure is 150 bar (2175 psi)
- Use only pure nitrogen gas, N<sub>2</sub> for charging.
- Once the cover screw is removed from the piston rod, 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.

## Disassembling

- 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.
- 2) Unscrew the M6 cover screw from the piston rod (G) using a 3 mm Allen key.
- 3) Empty all gas from the spring by screwing the threaded end of the valve tool into the gas port until the valve opens.



**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 end of the valve tool to unscrew the valve. Pull the valve from the port with a pair of needle-nose pliers.

- 4) Tap the guide (D) into the tube, using a socket and rubber mallet, until the lock ring (C) is exposed. Remove the dirt protection ring (B) which becomes loose during the 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.**

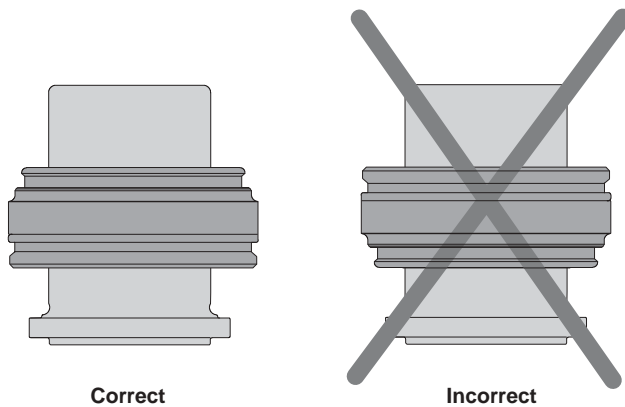
- 6) Pull out the piston rod (A) and the guide (D), using the T-handle.
- 7) Remove the guide (D) from the piston rod.
- 8) Save the piston rod (A) and the tube (E).

## Inspection

- 9) Thoroughly clean the tube and the piston rod.
- 10) Closely inspect the piston rod and the tube. There should be no scratches or dents on the inside surface of the tube, the piston rod or the lock ring grooves. If these parts are scratched or damaged in any way, then they should be replaced.

## Assembly

- 11) Unpack the repair kit.
- 12) Lightly oil the seals and the bushing on the guide (D).
- 13) Fit the guide (D) on the piston rod (A) so that the small diameter of the guide, is positioned toward the top of the piston rod (see picture below).



- 14) Oil around the inside of the upper end of the tube to prevent damage to the O-ring on the guide.
- 15) Fill the spring with the appropriate amount of oil (see table below). Before the oil is poured into the tube, clamp the gas spring in a leaning position (about 30°) with the opening facing upwards.
- 16) Insert the piston rod and guide into the tube. Tap down the guide (D) straight in to the tube, using a socket and rubber mallet until the lock ring groove is exposed.

Model	Oil
KS/KSM 250, stroke 12.7 - 100 mm	4 ml
KS/KSM 500, stroke 12.7 - 38.1 mm	5 ml
KS/KSM 500, stroke 50 - 125 mm	8 ml
KS/KSM 750, stroke 12.7 - 38.1 mm	5 ml
KS/KSM 750, stroke 50 - 125 mm	10 ml

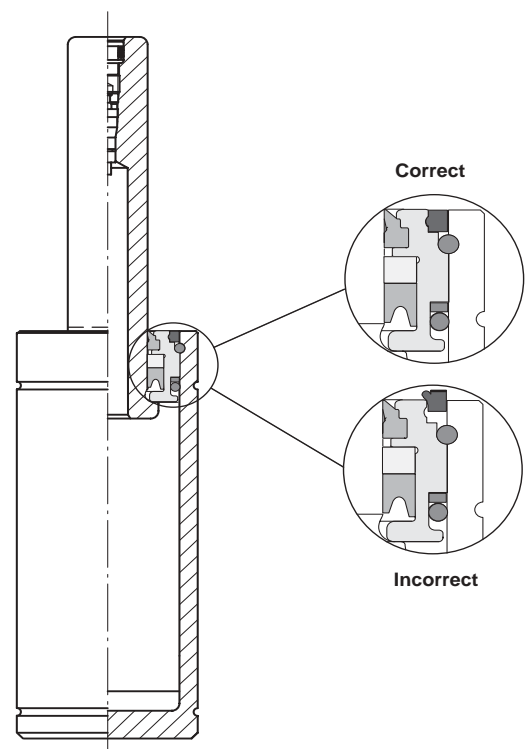
- 17) Fit the lock ring (C) into the groove in the tube by first pushing one end of the lock ring ends into the groove. Hold down the rest of the lock ring flat to the tube's upper surface. Lastly hit the exposed end of the lock ring inwards using a rubber mallet until it snaps into the groove. You can hear a clicking sound when the ring 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 top of the guide is not in line with the top of the cylinder tube, 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) Oil and fit the dirt protection ring (B) so that it makes contact with the lock ring (see picture below).

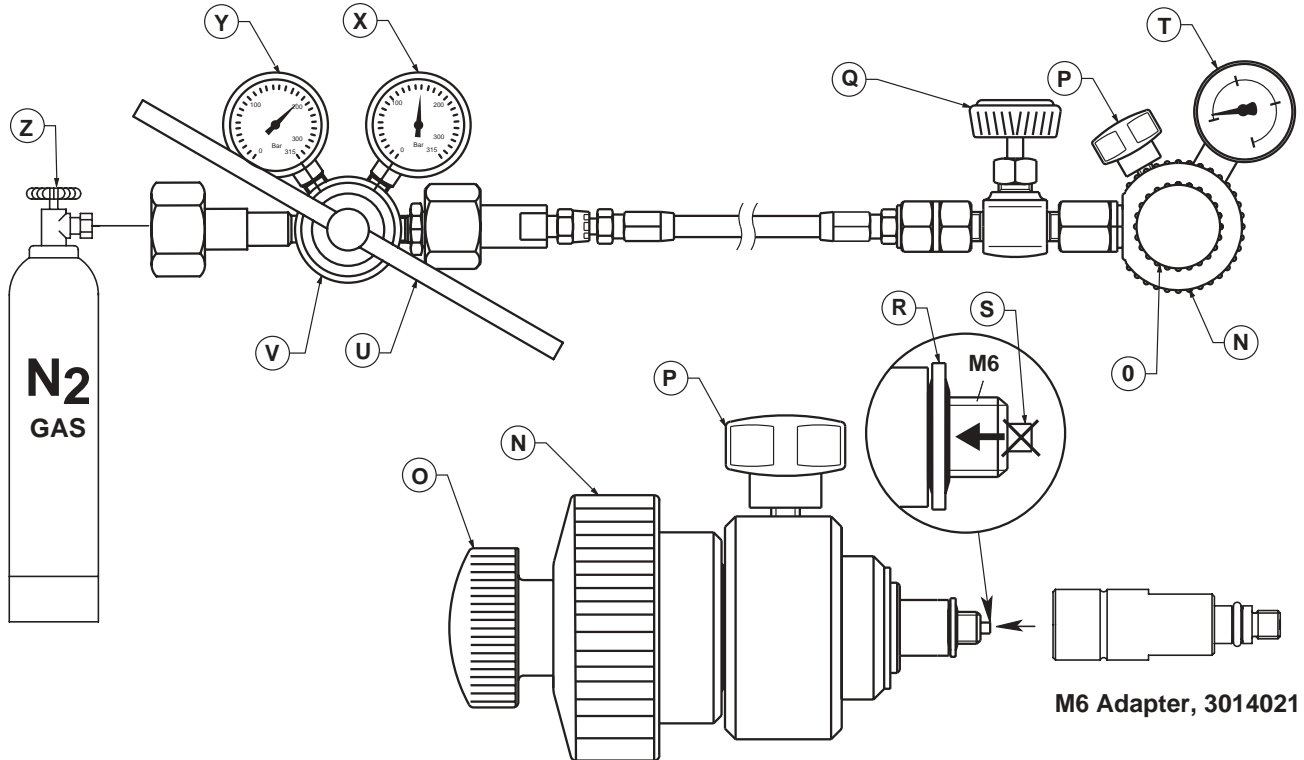


The function of the dirt protection ring is to prevent dirt from penetrating into the gas spring and also prevent the guide from falling into the tube when the spring is uncharged.

# SERVICE INSTRUCTION

## Charging gas

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



- 21) 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).
- 22) Check that the M6 thread at the end of the armature is equipped with the sealing washer (R). Connect the M6 adapter 3014021 to the replenishing armature.
- 23) Connect the replenishing armature to the gas spring, by means of knob (N), turned in a clockwise direction.
- 24) 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)**  
The manometer (X) shows the charging pressure and manometer (Y) shows the bottle pressure.
- 25) 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 the gas spring.
- 26) 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.
- 27) 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!**
- 28) Fit the cover screw (G) to the piston rod, tighten with 15-18 Nm of torque. Note that it has a sealing function and must always be fitted and tightened.
- 29) 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.