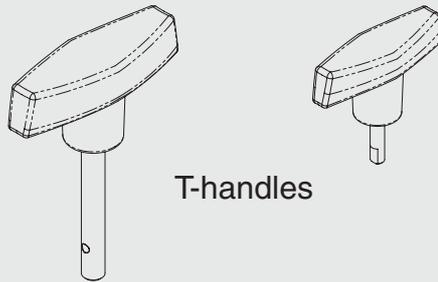
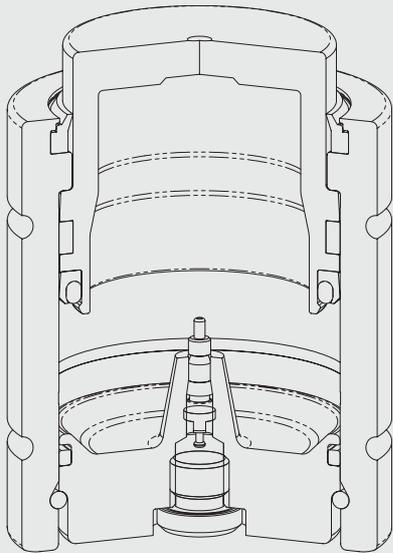
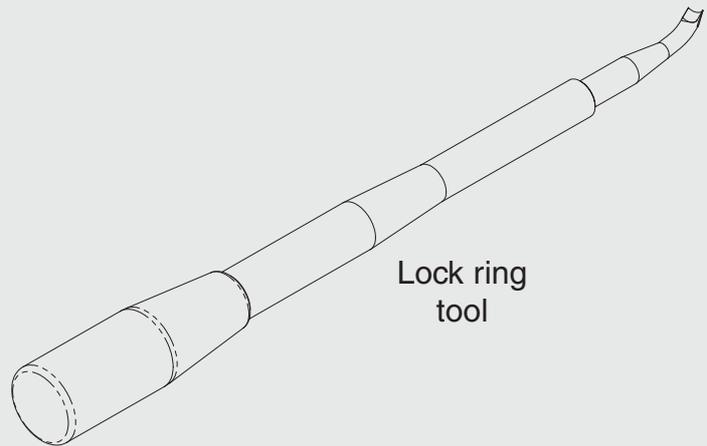


# KALLER<sup>®</sup>

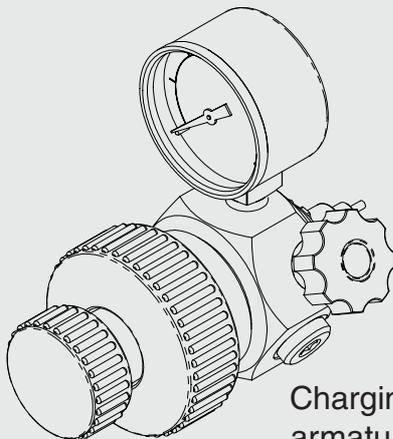
Service & maintenance instructions for gas spring models:  
**CU 1000, CU 1800, CU 2900, CU 4700, CU 7500,  
CU 11800, CU 18300**



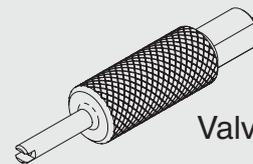
T-handles



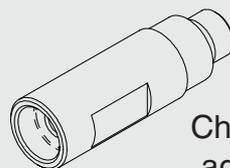
Lock ring  
tool



Charging  
armature



Valve tool

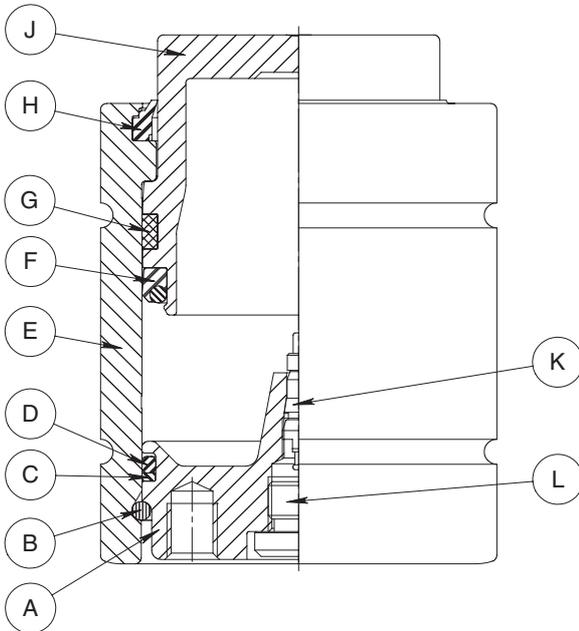


Charging  
adapter



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# SERVICE INSTRUCTION



- A) Bottom
  - B) Lock ring
  - C)\* Back-up ring
  - D)\* O-ring
  - E) Tube
  - F)\* Piston seal with O-ring
  - G)\* Wear ring
  - H)\* Scraper
  - J) Piston
  - K)\* Valve
  - L)\* Cover screw
- \* = Parts included in the repair kit

## ⚠ Warnings

- PED designed gas springs whose tube and bottom are marked with a circular ring have internal components which differ from the design of the previous model. Therefore you must never mix PED and non-PED gas spring components together when servicing the spring.
- Always read the permanently marked information on the side of the tube before servicing to make sure you use the correct Repair Kit.
- Failure to exhaust all gas pressure prior to disassembling could result in serious injury.
- The maximum charging pressure is 150 bar (2175 psi).
- Use only pure nitrogen gas, N<sub>2</sub> for charging.
- Always wear safety goggles, when servicing the gas spring.

- Only specially trained personnel with good knowledge about the products should carry out the maintenance.
- Once the cover screw is 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.

For more information, also refer to the "Instructions for service and maintenance of KALLER Gas Springs", Part No. 8100-2000.

## Disassembly

- 1) Clamp the gas spring in a vice (fitted with protective jaws). Unscrew the G 1/8" cover screw (L) with a 5 mm Allen key. If there is no gas left in the spring the bottom (A) may rotate. If so, gently fasten the tube at its lower end to clamp the bottom slightly.
- 2) If there is still gas pressure in the spring, release it by screwing the threaded end of the valve tool into the charging port until the valve needle opens. The valve (K) must not be unscrewed until the bottom can be pushed in by hand or be tapped in using a plastic mallet. Then unscrew the valve with the opposite end of the valve tool and remove the valve using the needle nose pliers.
- 3) Tap in the bottom (A) using a socket and mallet until the lock ring (B) is exposed. Remove the lock ring with the lock ring tool (the tool with the concave tip). Bend the lock ring upwards and inwards.
- 4) Pull out the bottom (A), using the T-handle and then pour out the remaining oil.
- 5) Clamp the gas spring in the vice with the piston facing upwards and tap out the piston (J) using socket and plastic mallet.

- 6) Remove the piston seal (F) and the guide ring (G) from the piston.

**Note! Be careful not to damage the piston seal groove when removing the seal.**

On smaller models it can be difficult to remove the seal by hand. If so, lift the seal and cut it loose using a sharp knife.

- 7) Remove the scraper (H) from the tube. Please note! The same repair kit is used for all stroke lengths of the CU 1000 and it should always be repaired from the bottom as the separate guiding for stroke lengths 32 - 50 mm is not removable.
- 8) Next, remove the O-ring (D) and the support ring (C) from the bottom.

## Inspection

- 9) Clean the tube, piston and bottom.
- 10) Closely inspect the inside of the tube and the sealing grooves on the piston and bottom. There should be no scratches or dents on the inside surface of the tube, the piston 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. Check to make sure all parts are contained in the kit by comparing the contents to the picture in this service instruction. Discard all parts that are to be replaced with new ones from the repair kit.
- 12) First fit the scraper (H) into the top of the tube. Make sure the scraper sits correctly in the groove with the lip pointing upwards.
- 13) Clamp the piston in the vice and mount the guide ring (G) and the piston seal (F) with the O-ring facing downwards (nitrogen side).
- 14) Mount the support ring (C) and the O-ring (D) to the bottom. Note! Check that the O-ring is fitted correctly (nitrogen side).

**⚠ Warning! When servicing a PED designed gas spring, make sure the tube and bottom are both either marked or not marked with a circular ring. Do not mix marked and un-marked components.**

- 15) Clamp the tube with the lock ring groove facing upwards securely in the vice. Oil the seals on the piston and the upper part of the tube. Fit the piston by pressing it into the tube and then tapping it down carefully, using a socket and plastic mallet. Making sure all of the stroke length becomes exposed.
- 16) Fill the spring with the appropriate amount of oil (see table below).

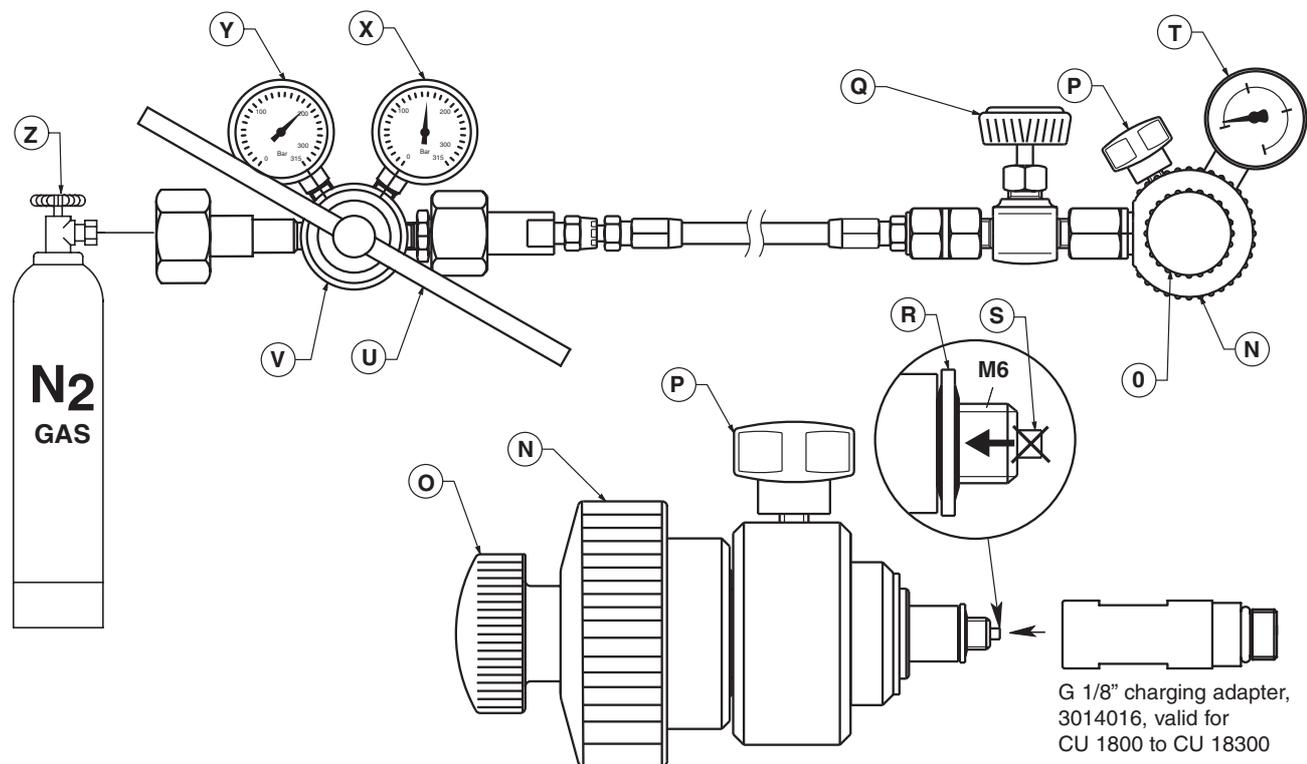
Model	Oil
CU 1000, stroke 6 - 25 mm	2 ml
CU 1000, stroke 32 - 50 mm	4 ml
CU 1800, stroke 6 - 25 mm	4 ml
CU 1800, stroke 32 - 50 mm	8 ml
CU 2900, stroke 10 - 25 mm	4 ml
CU 2900, stroke 32 - 50 mm	8 ml
CU 4700, stroke 10 - 25 mm	6 ml
CU 4700, stroke 32 - 50 mm	10 ml
CU 7500, stroke 10 - 25 mm	10 ml
CU 7500, stroke 32 - 50 mm	15 ml
CU 11800, stroke 10 - 25 mm	20 ml
CU 11800, stroke 32 - 50 mm	40 ml
CU 18300, stroke 10 - 25 mm	30 ml
CU 18300, stroke 32 - 50 mm	50 ml

- 17) Oil the O-ring (D) on the bottom. Tap down the bottom (A) into the tube until the lock ring groove is exposed using the socket and plastic mallet.
- 18) Fit the lock ring (B) into the lock ring groove by pushing one of the ends into the groove, then either press or hit the other until it snaps into the groove.
- 19) Pull out the bottom (A) using the T-handle until the bottom and the tube are flush.
- ⚠ Warning! If the bottom and tube are not flush, the assembly is incorrect. DO NOT charge the spring. Charging an incorrectly assembled spring could result in serious injury.**
- 20) Mount the valve (K) into the charging port using the valve tool. Tighten only finger tight. The gas spring is now ready for charging.

# SERVICE INSTRUCTION

## Charging gas

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



- 21) Check that the evacuating 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).  
For G 1/8" port: connect G 1/8" adapter 3014016 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 bleed 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 (L) on the gas spring, tighten with 2 Nm for M6 cover screw and 5 Nm for G1/8" cover screw. 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 bleed valve (P) and shut-off valve (Q) until all gas is released.