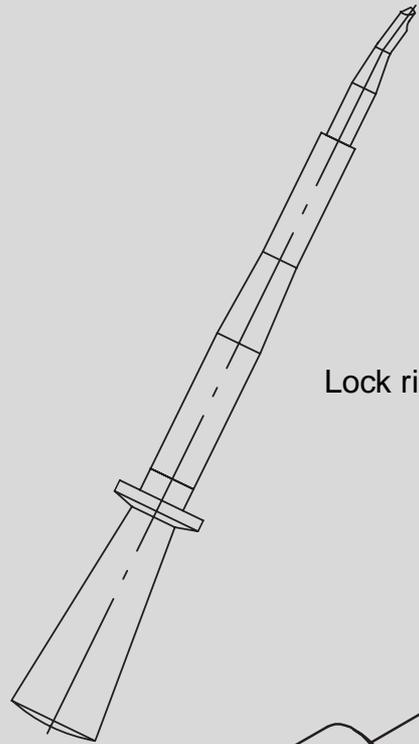
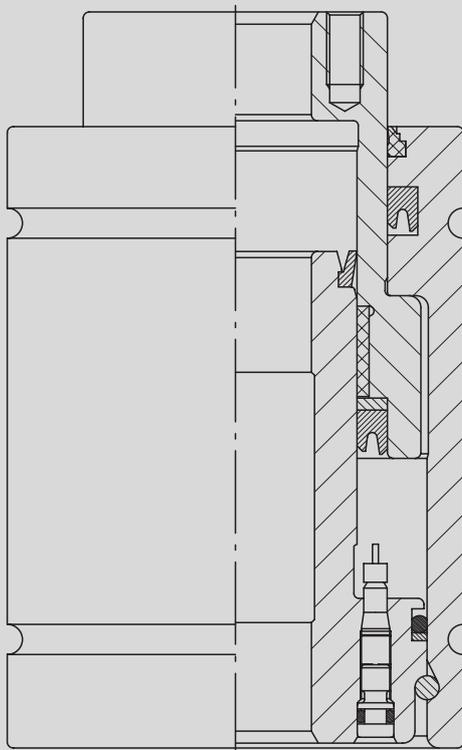


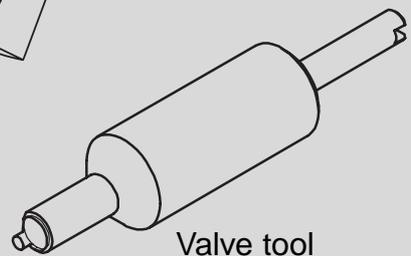
KALLER[®]

Service instruction for gas spring models:

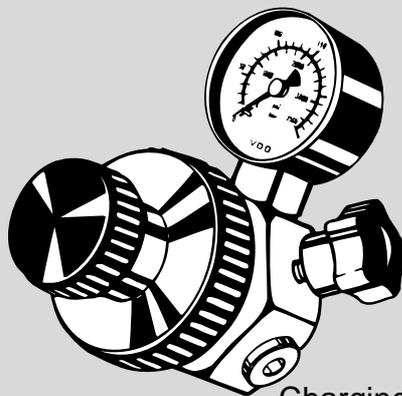
HG 270-4250



Lock ring tool



Valve tool



Charging armature

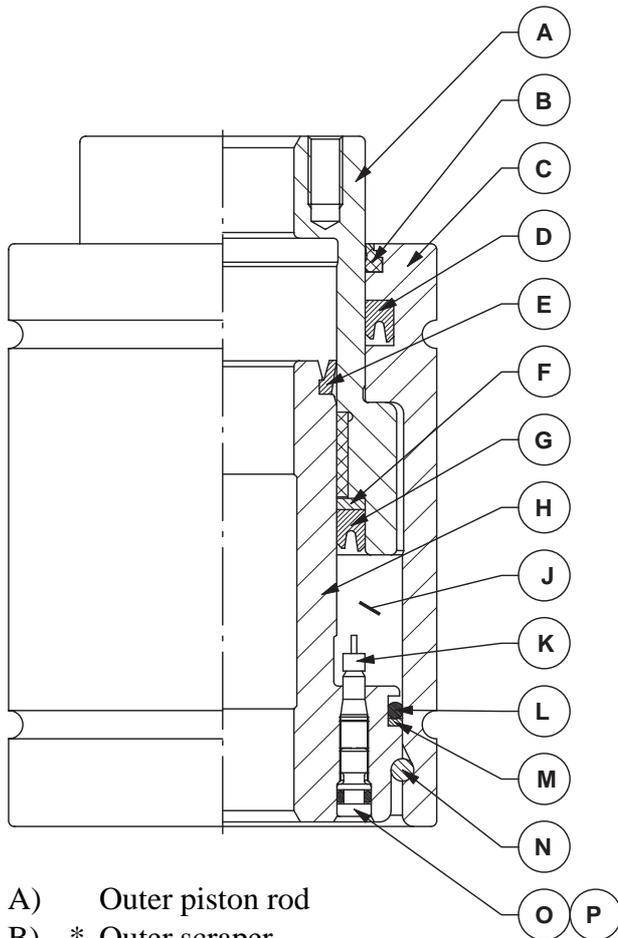


Charging adapter

 **STRÖMSHOLMEN**

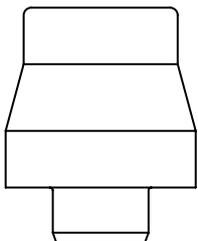
Box 216, SE-573 23 Tranås, Sweden, Tel +46 140 571 00, Telefax +46-140-571 99

SERVICE INSTRUCTION, HG 270-4250



- A) Outer piston rod
- B) * Outer scraper
- C) Tube
- D) * Outer rod seal
- E) * Inner scraper
- F) * Back-up ring
- G) * Inner rod seal
- H) Inner piston rod
- J) * Oil
- K) * Valve
- L) * O-ring
- M) * Back-up ring
- N) * Lock ring
- O) * Cover screw
- P) * O-ring

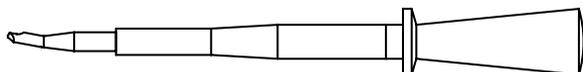
* = Parts included in the repair kit



Assembly tool 4018345-XXXX*



Valve tool 3014172-04



Lock ring tool 3015464

* (See table)

Warnings

- 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, N₂ for charging.
- 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 from 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 use safety goggles, when servicing the gas spring.
- Only specially trained personnel with good knowledge about the products should carry out the maintenance.

Disassembly

- 1) To enable an easy working position, clamp the spring in a vice, using protective jaws, with the piston rod facing downwards. Position the gas spring into a leaning position (roughly 45°). Place a bowl under the gas spring as oil may leak out during servicing.
- 2) Unscrew the cover screw (O) in the inner piston rod using a 2 mm allen key.
- 3) Discharge the gas pressure from the spring by threading the valve tool (3014172-04) into the charge port until the valve needle opens.

Warning! The valve (K) must not be unscrewed until the outer piston rod can be pushed down by hand.

Using the other end of the valve tool, unscrew the valve. Remove the valve using the needle nose pliers.

- 4) Tap the inner piston rod (H) down with a rubber mallet so that the locking ring (N) is exposed.
- 5) Remove the locking ring (N) using the locking ring tool 3015464.

- 6) Pull out the inner piston rod (H). Watch out for the oil that might pour out. Push out the outer piston rod (A) in the same direction as the inner.
- 7) Remove the scrapers (B and E), the rod seals (D and G), the back-up rings (F and M) and the O-ring (L). Be careful not to damage the sealing surfaces.
- 8) Save the outer and the inner piston rods (A and H) and the tube (C).

Inspection

- 9) Clean the parts that will be reused.
- 10) Visually inspect the sealing surfaces on the piston rods and the tube. There should be no scratches or dents. The gas spring is sensitive to damages on the piston rods. If defects exist, replace the parts.

Assembly

- 11) Take the repair kit.
- 12) Lubricate well all the new seals and the bushing in the outer piston rod.
- 13) Fit the inner scraper (E) by carefully levering it over the rim. Fit the O-ring (L) and back-up ring (M).
- 14) Fit the back-up ring (F) and the inner rod seal (G). Gently press the rod seal into its groove.
- 15) Fit the outer rod seal (D) and the outer scraper (B) in the tube.
- 16) Lubricate the outer diameter of the inner piston rod (H). Gently push the outer piston rod (A) onto the inner. Be careful not to damage the scraper (E) and rod seal (G). Push the two rod ends together.
- 17) Fit the assembly tool 4018345-XXXX* on the top of the outer piston rod (A). Lubricate the tool and the rod. Fit the tube over the tool and push it past the tool and down onto the outer piston rod. Do not stop pushing until the rod (A) has passed the scraper (B).
- 18) Push in the inner piston rod (H) into the tube (C) so that the locking ring groove is fully visible. Fit the locking ring (N) into the groove by pushing one of its ends into the groove, steadying it with your thumb and then hitting on the ring until it snaps into the groove. You can hear a clicking sound when it falls into position.

- 19) Pull out both of the piston rods (A and H) to their outermost positions. The inner rod (H) should be in line with the tube, if not the locking ring is not in its right position. Correct the problem before you proceed.



Warning! If the inner rod (H) is not in line with the bottom of the tube, the assembly is incorrect. DO NOT charge the spring. Charging an incorrectly assembled spring could result in serious injury.

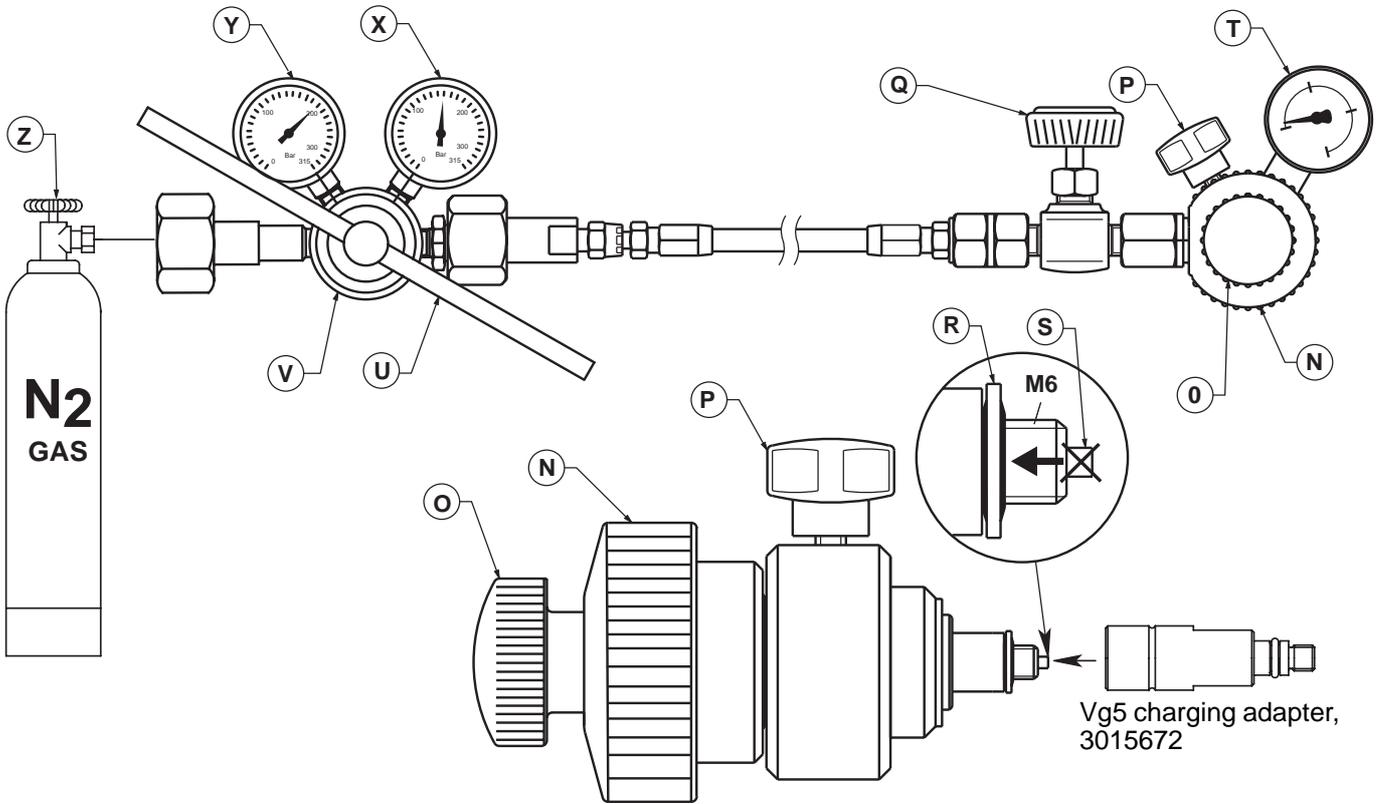
- 20) Fill the spring with the right amount of oil (see table below) through the charge port. Screw in the valve (K) using the valve tool. Tighten the valve by hand, finger tight. The gas spring is now ready for gas charging.

Spring model	Oil volume	Assembly tool
HG 270	4 ml	4018345-0270
HG 490	4 ml	4018345-0490
HG 1060	6 ml	4018345-1060
HG 1750	8 ml	4018345-1750
HG 3300	10 ml	4018345-3300
HG 4250	12 ml	4018345-4250

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). Attach the Vg5 Charging adapter 3015672 to the replenishing armature.
 - 23) Connect the replenishing armature to the gas spring, by turning 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 pressure 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 stop 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 (O) with the O-ring (P) to the gas spring, 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.