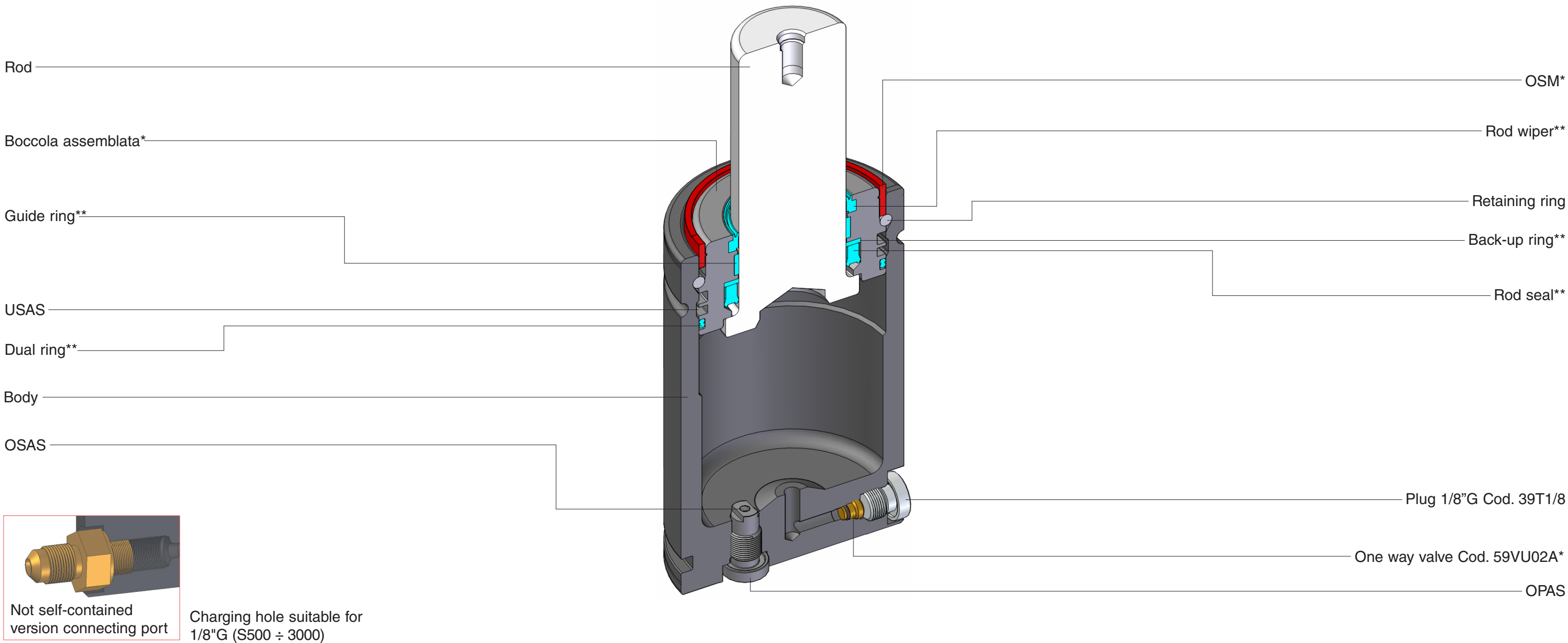


S500B, S750C, S1500B, S3000B

* included in the mainenance kit - ** included in the assembled bush



Cod. 39DMA

The multi device for, decreasing/increasing pressure. It consists of two units:
- Main 39DMCILA
- Secondary 39DMCPVA.



Cod. 39DMCILA

Multi device for charging, discharging and adjust gas pressure.



Cod. 39DMCPVA

3 meters of high pressure hose, 1 female Cejin quick fit, 1 ON/OFF valve, 1 shut off valve and 1/2-20 UNF male coupling to connect to the nitrogen bottle.



Cod. 39QDFV01 for 1/8"G hole
Cod. 39QDFV02 for M6 hole

Cejin male quick fit adapter for direct charging.



Cod. 58CE03 for M6 hole
Cod. 58CE05 for 1/8"G hole



Hex T-key

Cod. 39DDS01A

Discharging device.
BLUE side for M6 hole
GOLD side for 1/8"G hole



Gas detector



Potential supplier
www.tecnogas.net

Cod. 58PKNIPEX

Multipurpose pliers with spouts.



Cod. 58CD01



Torque wrench for one way valve.

Cod. 58EM06A
Cod. 58EM08A

T-handle to remove piston-rod + bushing.



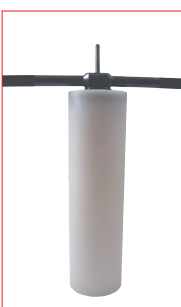
Cod. 39PM02A



Table manual press for easy and safe positioning of components.

Cod. 58UT002A (S1500B)
Cod. 58UT003A (S3000B)

Screw extracting device for rod and bushing.



Cod. 49TP024 (S500B)
Cod. 49TP030 (S750C)
Cod. 49TP046 (S1500B)
Cod. 49TP061.5 (S3000B)



Reassembly guiding tube.

Cod. 49TC024 (S500B)
Cod. 49TC030 (S750C)
Cod. 49TC046 (S1500B)
Cod. 49TC061.5 (S3000B)

Reassembly positioning tube for the retaining C-ring.



Cod. 49TN032 (S500B)
Cod. 49TN036 (S750C)
Cod. 49TN055 (S1500B)
Cod. 49TN070 (S3000B)

Anti scratch nylon tube.



GAS SPRINGS MAINTENANCE KIT

S500B Cu \geq 19
S750C Cu \geq 19
S1500B
S3000B

Cod. 39BMS00500B
Cod. 39BMS00750B
Cod. 39BMS01500B
Cod. 39BMS03000B



The complete assembled kit along with this step-by-step service manual is result of Special Springs research for the most useful maintenance operation for Special Springs gas springs. Few minutes and the Special Springs gas springs are regenerated as new one.



Special Springs along with its own global network are pleased to help you anytime for the best result of your work.



Before starting any maintenance work, carefully check if the rod or the body of the gas springs are damage or wear. If yes, it is recommended to replace the gas spring immediately and do not proceed with the maintenance operation.



Before starting any maintenance work carefully check the maintenance kit to correspond to the model of gas spring for which is required.



Before starting any maintenance work carefully check this step-by-step manual to correspond to the model of gas spring for which is required.



Instructions and pictures of this step-by-step manual could slightly differ from practise.



All Special Springs step-by-step manuals are available for download from our web site: www.specialsprings.com



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Special Springs S.r.l.

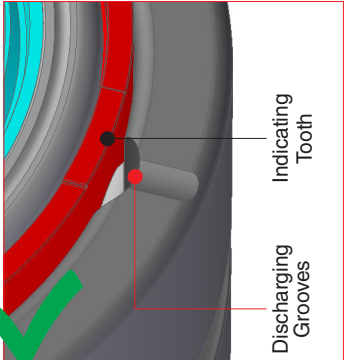
via Nardi, 124/A
36060 Romano d'Ezzelino (VI) ITALY
Tel +39 0424 539181
Fax +39 0424 898230
info@specialsprings.com
www.specialsprings.com



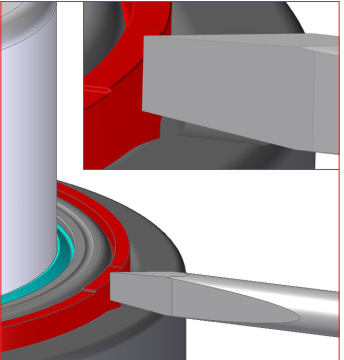
I. HOW TO REMOVE THE OVER STROKE MARKER.



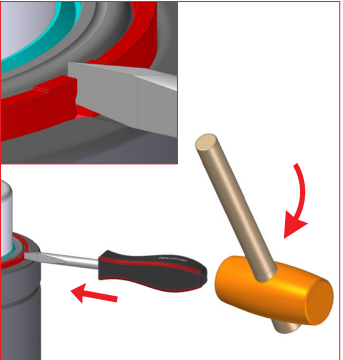
1. Position and clamp the gas spring into a selfcentring chuck or a vice.



2. On the upper side of the gas spring's body, find the indicating tooth on the OSM ring and the discharging grooves.



4. Position the flathead screwdriver at the center of the discharging grooves and keep it in contact with the Over Stroke Marker (OSM) ring.



5. By using a rubber mallet, hit the flathead screwdriver to break the OSM ring halfway.



24. Lubricate inside the gas spring body with the specific Special Springs oil supplied with the repair kit. Pay attention to the quantity as indicated for each gas spring model.

Model	OIL
S500	5 ml
S750	5 ml
S1500	10 ml
S3000	15 ml

NOTE: Each oil dispenser contains a volume of 5 ml.

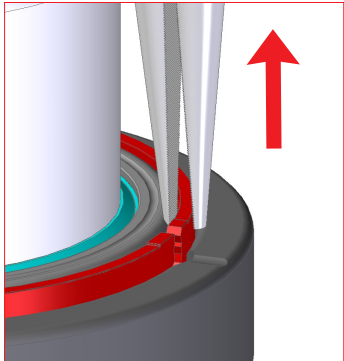


25. Set the positioning tube on the upper part of the gas spring body, then manually insert the piston-rod and the assembled bushing into the positioning tube.
49TC... , positioning tube.



26. Insert the positioning tube over the rod in contact with the upper side of the assembled bushing, then by the manual press, press down into the gas spring body, the piston rod and the assembled bushing.
49TP... tubo di posizionamento
39PM02A pressa manuale.

II. DISCHARGING + VALVE REMOVAL for self-contained gas springs.



6. Remove the broken Over Stroke Marker (OSM) ring from its location with a pliers. Clean any residual material.



7. Remove the charging plug from the charging hole by using the appropriate tool. Preserve the charging plug for further reassembly.
58CE05 for the 1/8" G port.
58CE03 M6/3 for the M6 port.

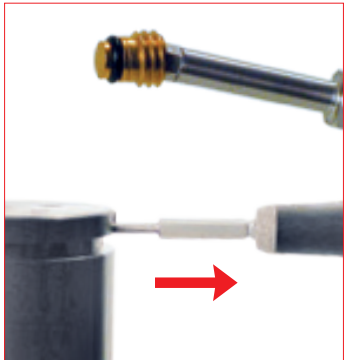


8. Thread DDS discharging device on the charging port then exhaust completely the pressure. Point away from the operator for maximum safety.
39DDS01A BLUE side for M6 hole
GOLD side for 1/8"G hole



9. Make sure that no gas remains inside the gas spring by **PARTIALLY** compressing the rod into the body, then remove the discharging device from the charging hole.

III. DISCHARGING non self-contained gas springs.



10. Hang and release the one way valve from the hole by using the appropriate tool. Some oil leaks may occur when gas spring is upside down.
58CD01 one way valve removing
setting dynamometric wrench.

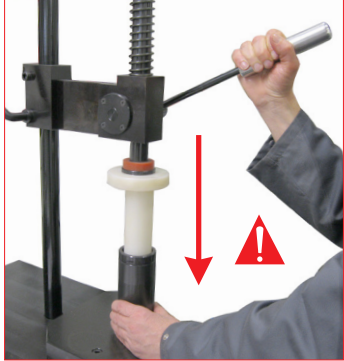


A. To exhaust pressure of hosed cylinders open the discharging valve on the control panel.

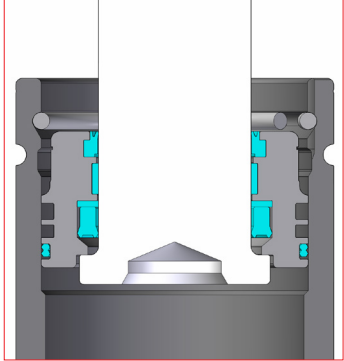


B. Make sure that no gas remains inside the gas springs connected to the system by **PARTIALLY** compressing the rods into the bodies.

IV. RETAINING RING REMOVAL.



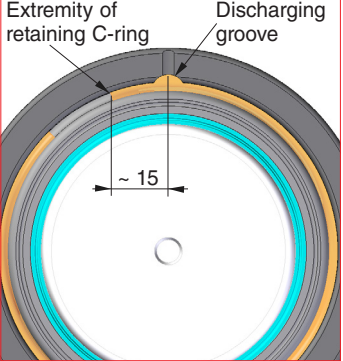
11. Position the anti scratch nylon removal tube (49TN...) on the bush then by the manual press (39PM02A) press all down into the body. The retaining ring is now free for an easy removal. **▲ Risk of OSAS safety activation in case of excessive rod compression ▲**



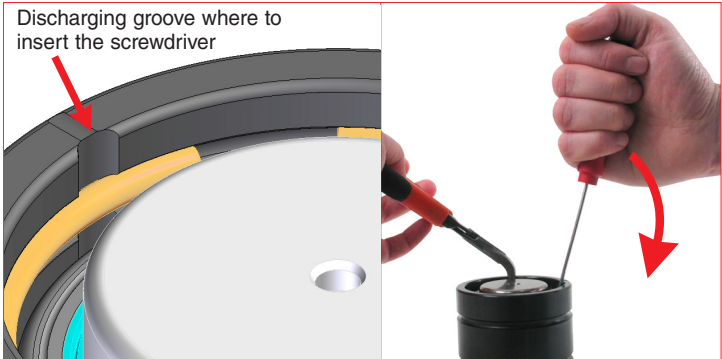
11.1. Cross section view of gas spring to see the right position of the bush and C-ring after operation.



12. Position and clamp the gas spring into a self-centring chuck or a vice.



12.1. Position the extremity of the retaining ring at about 15 mm from the groove centre.



13. By inserting the screwdriver on the appropriate discharging groove, between the retaining ring and the body border, remove the ring as indicated. Use the flat screwdriver 2,5 x 75.

VI. CLEANING AND INSPECTION.



16. Carefully check and clean the gas spring body. If the body show any wear or damage do not use it again and replace it with a new one.

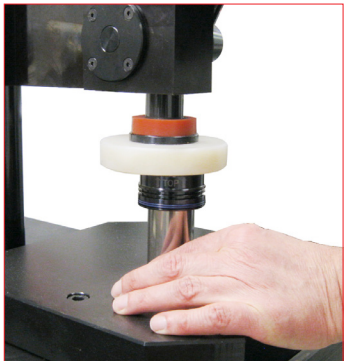


17. Carefully check and clean the piston-rod. If the piston rod shows any damage, wear or scratch do NOT use it again and replace it with a new one.

VIII. REASSEMBLY OF PISTON-ROD AND BUSH.



20. Lubricate all the installed components into the assembled bush with the Special Springs grease.



21. With the manual press (39PM02A) insert the assembled bush into the rod. Pay attention to position it on the right side, follow the laser print arrows on the bush. (↑ TOP)



22. Slide down the assembled bush to the piston shoulder.



23. Grease the external seal on the assembled bush with the specific Special Springs grease.

V. PISTON ROD + BUSH REMOVAL.



14. By using the T-handle M6/M8 (58EM...) extract the piston-rod and the bush from the body (only model S500-700). By using the proper Screw extracting device (58UT...) extract the piston-rod and the bush for other models.

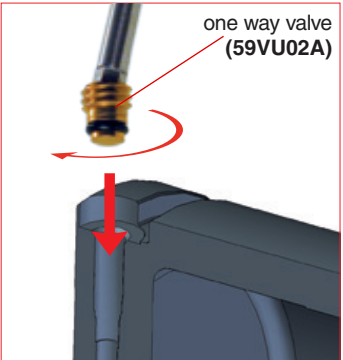


15. Slide off the bush from the rod. Discard the bush.

VII. VALVE REASSEMBLY.



18. Carefully clean the lodging hole of the valve with compressed air and then position the new one way valve supplied along with the maintenance kit. Pay attention to its right position.

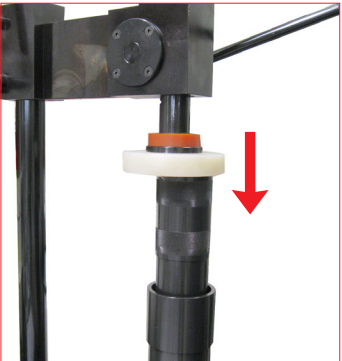


19. Position and thread the one way valve into the hole by using the appropriate special dynamometric tool already calibrated. **Torque force required maximum 0,6 Nm.** Do not exceed the maximum torque force indicated to not damage the one way valve.
58CD01 dynamometric wrench.

IX. REASSEMBLY OF THE RETAINING C-RING.



27. Position the retaining C-ring into the conical centring guide tube.



28. Insert the positioning tube in contact with the retaining C-ring, then by the manual press, press down the retaining C-ring into the groove. When the C-ring enters correctly into the groove you will hear a loud like "CLICK".
49TP... conical centring guide tube.
39PM02A manual press.

X. CHARGING AND FORCE TEST for self-contained gas springs.



30. Check the correct assembly of the pressure regulation valve on the gas bottle, then open the main tap. The gauge on the left will indicate the bottle pressure.
39RHP... pressure reducer.



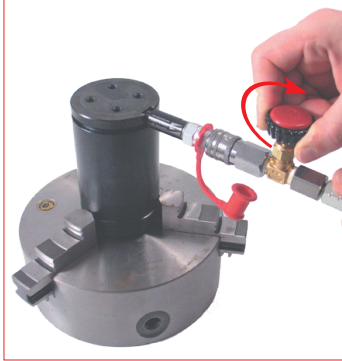
31. Adjust the required maximum pressure through the regulation valve. The gauge on the right will indicate the maximum allowed pressure to charge the gas spring.
39RHP... pressure reducer.



32. Select and assemble the desired charging adapter and thread it on the charging port. For an easy and safe operation carefully follow the instructions supplied with the charging unit. Do NOT exceed the maximum pressure indicated for any specific model
39DMA charging unit.



33. Once reached and stabilized the desired pressure, for an easy and safe operation carefully follow the instructions supplied with the charging unit.
39DMA charging unit.



34. When directly charging through the adapter, after the desired pressure is reached, shut off the hose and bottle valves and disconnect the quick fit coupling. For an easy and safe operation carefully follow the instructions supplied with the charging unit.
39DMCPVA charging unit.
39QDFV... adapter for direct charging.



35. Thread and relase the adapter from the charging hole.



36. More precise force control can be carried out by using the digital force testing rigs.
FT... Digital force tester

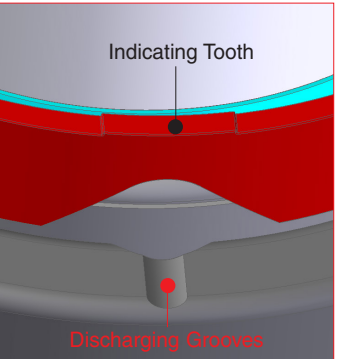


37. It is always recommended to check leaks on the charging port after the maintenance work and before re-using the gas springs by using the gas detector.

XI. HOW TO INSERT THE OVER STROKE MARKER.



40. Direct the V-shaped discharging section, as shown in the image. Place the Over Stroke Marker by aligning the indicator tooth with the discharging grooves.



41.1. Example of a cross section view, in which the Over Stroke Marker ring can be seen assembled correctly.

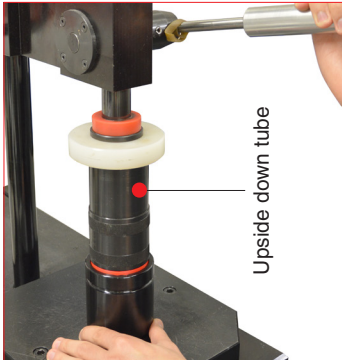
XII. CHARGING AND FORCE TEST for non self-contained gas springs.



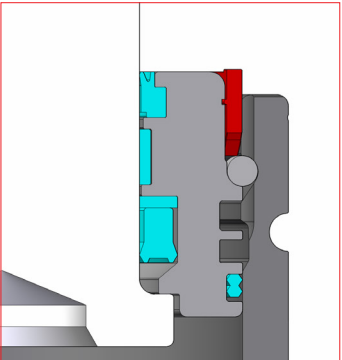
A. After positioning and hosing all the gas springs, proceed through the quick fit device through the control panel for charging all the gas springs. Make sure that the discharging valve is closed properly (15 Nm).
39DMCPVA control panel charging unit.



B. Adjust the required pressure on the regulation valve on the bottle. The gauge on the right will indicate the maximum allowed pressure to charge the gas springs.
39RHP... pressure reducer.



41. Place the positioning tube making sure that it is in perfect contact with the Over Stroke Marker. Then push with the press and place the Over Stroke Marker ring into its location. The correct positioning will produce a sound like a "CLICK".
49TB... Positioning tube.
39PM02A Manual press.



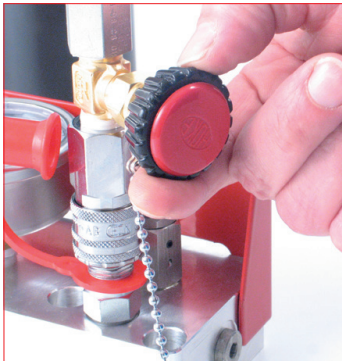
41.1. Example of a cross section view, in which the Over Stroke Marker ring can be seen assembled correctly.



A. After positioning and hosing all the gas springs, proceed through the quick fit device through the control panel for charging all the gas springs. Make sure that the discharging valve is closed properly (15 Nm).
39DMCPVA control panel charging unit.



B. Adjust the required pressure on the regulation valve on the bottle. The gauge on the right will indicate the maximum allowed pressure to charge the gas springs.
39RHP... pressure reducer.



C. Connect the female quick fit on the male quick fit on the panel and open the gas tap. For an easy and safe work carefully follow the instructions supplied with the charging unit.
39DMCPVA control panel charging unit.



D. It is always recommended to check leaks on all connection to and from the gas spring by using the gas detector.



E. It is always recommended to check leaks on the upper side of the gas springs after the maintenance work and before re-using the gas springs by using the gas detector.