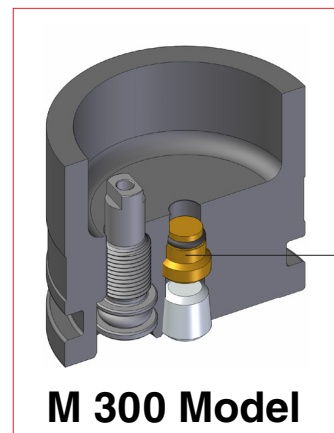
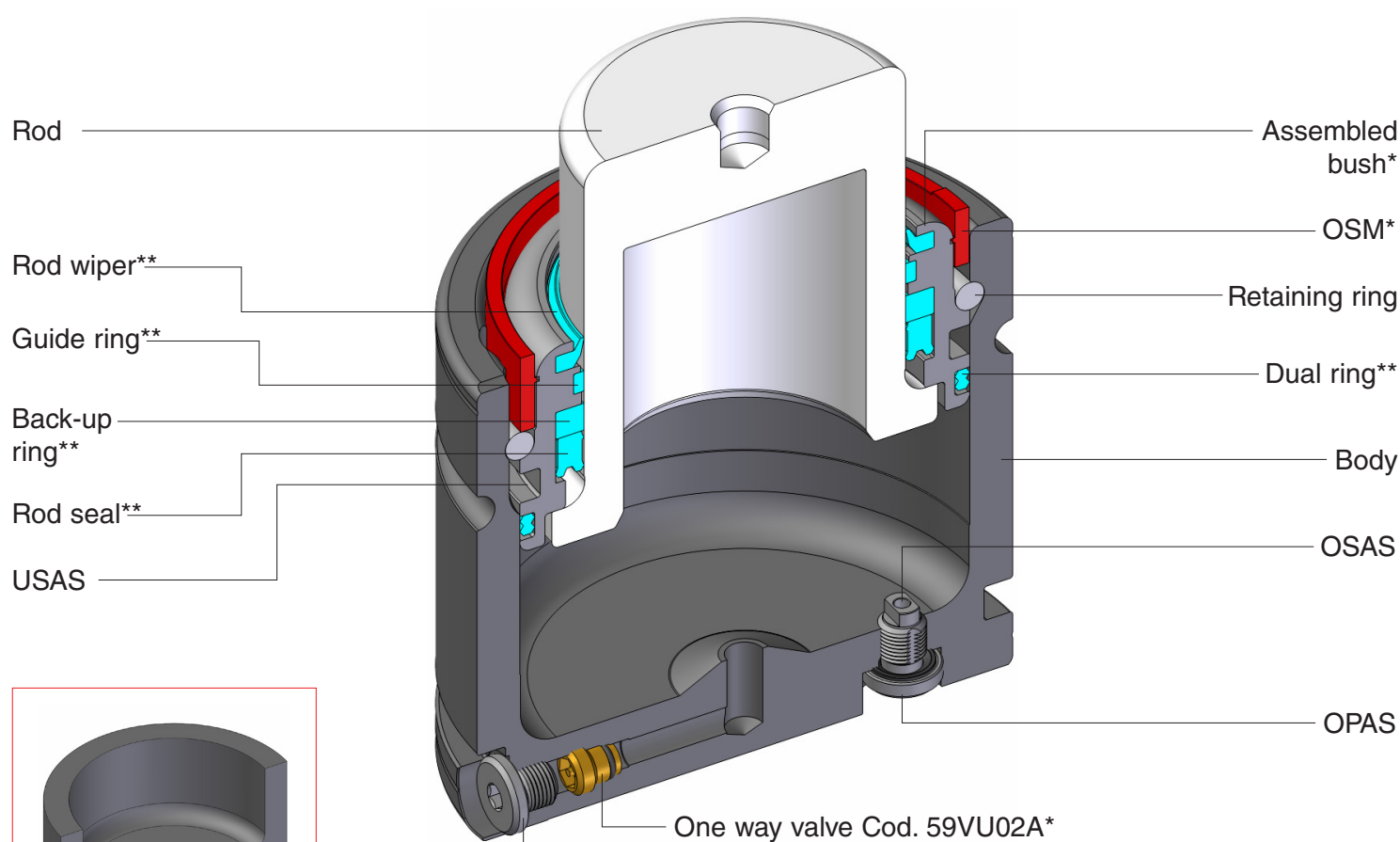


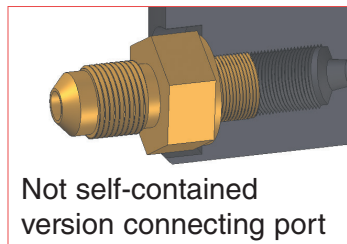
RV350B÷RV20000B, RF750B÷RF2400B, RG750B÷RG6600B, RT350B÷RT9500B, M300B,

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



One way valve
Cod. 59VU02A*

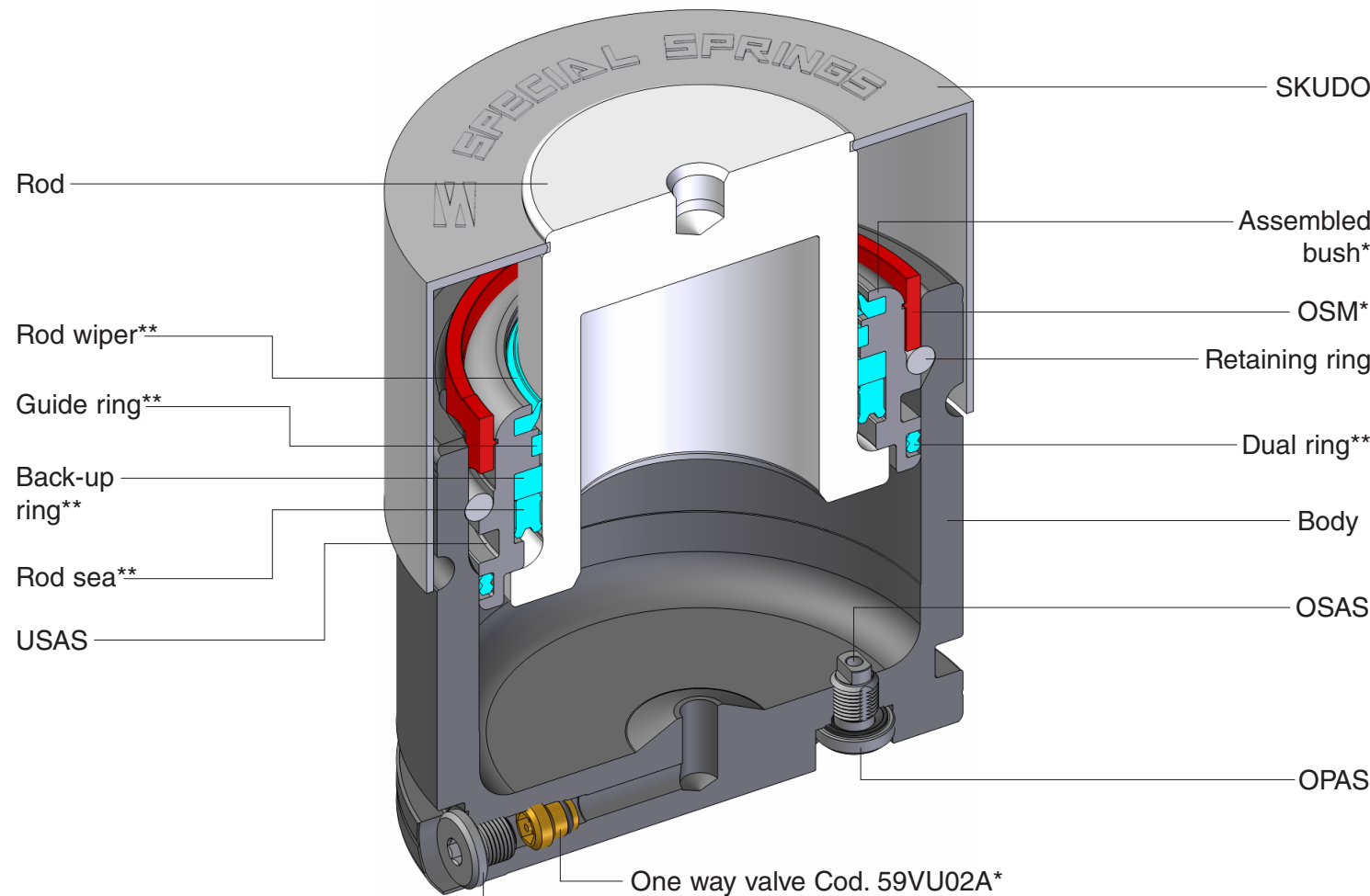
Plug M6 Cod. 39TM6A
Plug 1/8"G Cod. 39T1/8



Charging hole suitable for
M6 (RV/RS350 ÷ 2400)
1/8"G (RV4200 ÷ 20000; RF750 ÷ 2400; RG; RT;)

RS350B ÷ RS9500B

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



Plug M6 Cod. 39TM6A
Plug 1/8"G Cod. 39T1/8

Cod. **39DMA**

The multi device for, decre-
asing/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**

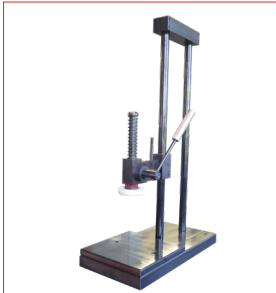
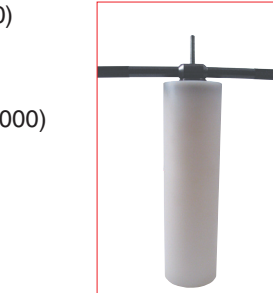


Table manual press for
easy and safe positioning
of components.

Cod. **58UT002A** (RV/RS/RF/RG/RT2400)
Cod. **58UT003A** (RV/RS/RF/RG/RT4200)
Cod. **58UT004A** (RV/RS/RF/RG/RT6600)
Cod. **58UT005A** (RV/RS/RT9500-RV12000)
Cod. **58UT006A** (RV20000)

Screw extracting device for rod
and bushing.



Cod. **49TP016** (RV/RS/RT350-M300)
Cod. **49TP020** (RV/RS/RT500)
Cod. **49TP024** (RV/RS/RF/RG/RT750)
Cod. **49TP030** (RV/RS/RF/RG/RT1000)
Cod. **49TP030** (RV/RS/RF/RT1200)
Cod. **49TP036.5** (RV/RS/RF/RG/RT1500)
Cod. **49TP046** (RV/RS/RF/RG/RT2400)
Cod. **49TP061.5** (RV/RS/RT4200)
Cod. **49TP081.5** (RV/RS/RT6600)
Cod. **49TP106.5** (RV/RS/RT9500-RV12000)
Cod. **49TP095** (RV20000)



Cod. **49TC016** (RV/RS/RT350-M300)
Cod. **49TC020** (RV/RS/RT500)
Cod. **49TC024** (RV/RS/RF/RG/RT750)
Cod. **49TC030** (RV/RS/RF/RG/RT1000)
Cod. **49TC030** (RV/RS/RF/RT1200)
Cod. **49TC036.5** (RV/RS/RF/RG/RT1500)
Cod. **49TC046** (RV/RS/RF/RG/RT2400)
Cod. **49TC061.5** (RV/RS/RT4200)
Cod. **49TC081.5** (RV/RS/RT6600)
Cod. **49TC106.5** (RV/RS/RT9500-RV12000)
Cod. **49TC095** (RV20000)

Reassembly guiding tube.



Cod. **49TN023** (RV/RS/RT350-M300)
Cod. **49TN027** (RV/RS/RT500)
Cod. **49TN032** (RV/RS/RF/RG/RT750)
Cod. **49TN036** (RV/RS/RF/RG/RT1000)
Cod. **49TN036** (RV/RS/RF/RG/RT1200)
Cod. **49TN045** (RV/RS/RF/RG/RT1500)

Cod. **49TN055** (RV/RS/RF/RG/RT2400)
Cod. **49TN070** (RV/RS/RT4200)
Cod. **49TN088** (RV/RS/RT6600)
Cod. **49TN117** (RV/RS/RT9500-RV12000)
Cod. **49TN148** (RV20000)

Anti scratch nylon tube.



GAS SPRINGS MAINTENANCE KIT

RV/RS350B Cu ≥ 13	Cod. 39BMRV00350C
RT350B Cu ≥ 16	Cod. 39BMRV00350C
RV/RS500B Cu ≥ 13	Cod. 39BMRV00500C
RT500B Cu ≥ 16	Cod. 39BMRV00500C
RV/RS/RF750B Cu ≥ 13	Cod. 39BMRV00750C
RG/RT750B Cu ≥ 16	Cod. 39BMRV00750C
RV/RS/RF1000B Cu ≥ 16	Cod. 39BMRV01000C
RG/RT1000B Cu ≥ 16	Cod. 39BMRV01000C
RV/RS1200B Cu ≥ 16	Cod. 39BMRV01000C
RF/RT1200B Cu ≥ 16	Cod. 39BMRV01000C
RV/RS/RF1500C Cu ≥ 16	Cod. 39BMRV01500C
RG/RT1500B Cu ≥ 19	Cod. 39BMRV01500C
RV/RF/RG/RT2400B Cu ≥ 25	Cod. 39BMRV02400D
RS2400B Cu ≥ 22	Cod. 39BMRV02400D
RV/RG/RT4200B Cu ≥ 25	Cod. 39BMRV04200C
RS4200B Cu ≥ 22	Cod. 39BMRV04200C
RV/RG/RT6600B Cu ≥ 25	Cod. 39BMRV06600C
RS6600B Cu ≥ 22	Cod. 39BMRV06600C
RV/RT9500B Cu ≥ 25	Cod. 39BMRV09500C
RS9500B Cu ≥ 29	Cod. 39BMRV09500C
RV12000B Cu ≥ 25	Cod. 39BMRV12000A
RV20000B Cu ≥ 32	Cod. 39BMRV20000A
M300B Cu ≥ 13	Cod. 39BMMCI32A



The complete assembled kit along with this
step-by-step service manual is result of Special
Springs research for the most useful maintenian-
ce 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 net-
work 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 immediatley and do
not procede 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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www.specialsprings.com



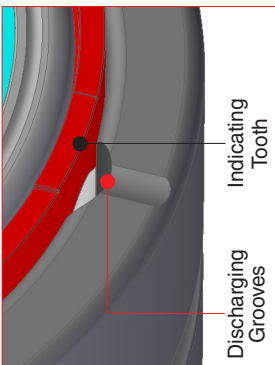
SKUDO REMOVAL I. HOW TO REMOVE THE OVER STROKE MARKER.



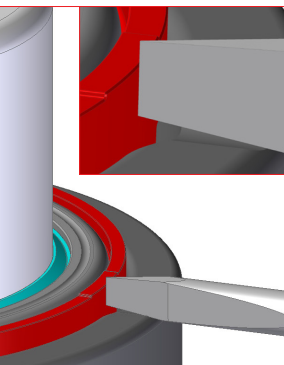
FOR RS GAS SPRINGS ONLY
Remove the protective SKUDO cap. For certain models the operation will require a certain train. Preserve the protective SKUDO cap for further reassembly.



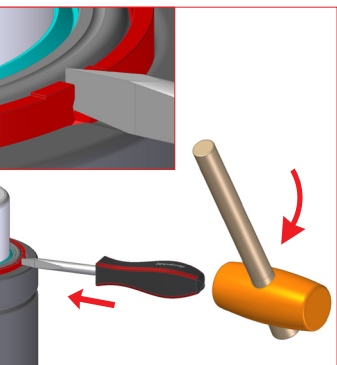
1. Position and clamp the gas spring into a selfcentring chuck or a vice.



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

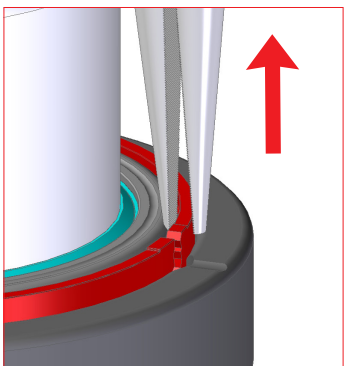


4. Position the flathead screwdriver at the center of the discharging grooves and keep it in contact with the Over Stroke Marker (OSM) ring.




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


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.

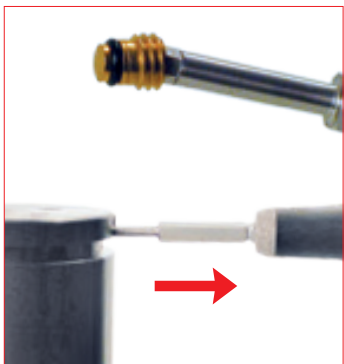


8. Thread DDS discharging device on the charging port then exhaust completely the pressure. Point away from the operator for maximum safety.
39DDS01A BLUE side for M6 hole
GOLD side for 1/8"G hole




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 removingsetting dynamometric wrench.

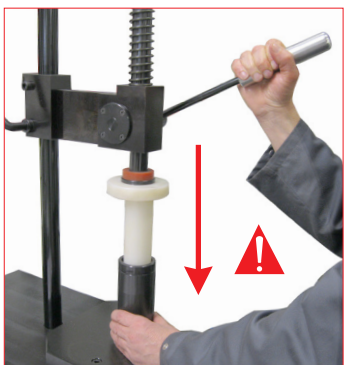


A. To exhaust pressure of hosed cylinders open the discharging valve on the control panel.

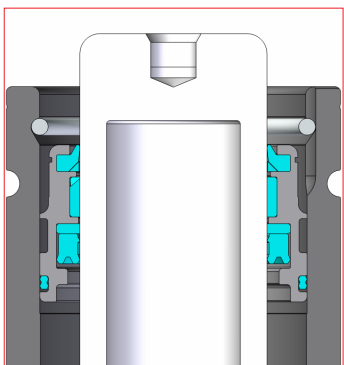


B. Make sure that no gas remains inside the gas springs connected to the system by **PARTIALLY** compressing the rods into the bodies.


IV. RETAINING RING REMOVAL.



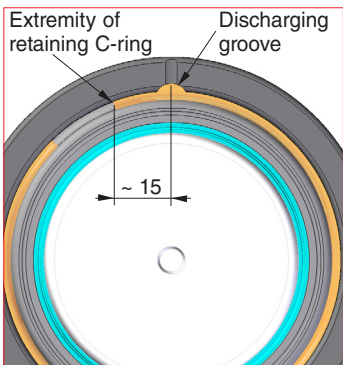
11. Position the anti scratch nylon removal tube (49TN...) on the bush then by the manual press (39PM02A) press all down into the body. The retaining ring is now free for an easy removal. **▲ Risk of OSAS safety activation in case of excessive rod compression ▲**



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

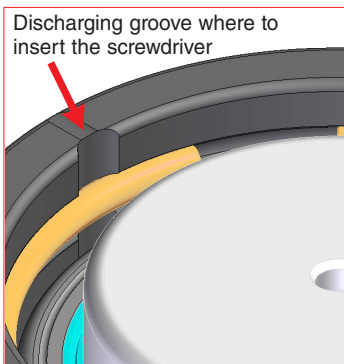


12. Position and clamp the gas spring into a self-centring chuck or a vice.




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


V. PISTON ROD + BUSH REMOVAL.



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 pliers (58KNIPEX) to avoid that the ring comes out sharply. **Use the flat screwdriver 2,5 x 75.**



14. Extract the rod + the bush using the manual extractor (58EM ...) or the suitable screw extractor (58UT ...).



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

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.

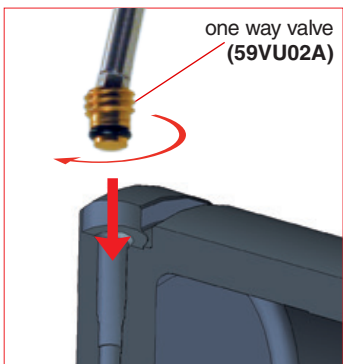


17. Carefully check and clean the piston-rod. If the piston rod shows any damage, wear or scratch do NOT use it again and replace it with a new one.

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.

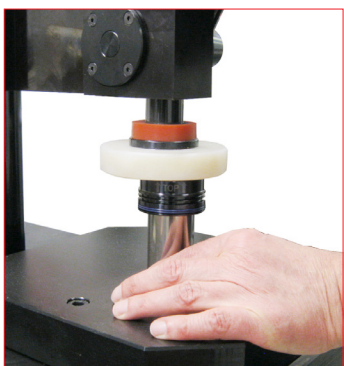


19. Position and thread the one way valve into the hole by using the appropriate special dynamometric tool already calibrated. **Torque force required maximum 0,6 Nm.** Do not exceed the maximum torque force indicated to not damage the one way valve.
58CD01 dynamometric wrench.


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.




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.

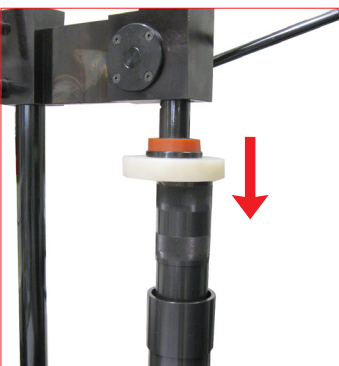
Model	OIL
RV/RS/RT350 - M300	5 ml
RV/RS/RT500	5 ml
RV/RS/RF/RG/RT750	5 ml
RV/RS/RF/RG/RT1000	5 ml
RV/RS/RF/RT1200	5 ml
RV/RS/RF/RG/RT1500	5 ml
RV/RS/RF/RG/RT2400	5 ml
RV/RS/RT4200	10 ml
RV/RS/RT6600	10 ml
RV/RS/RT9500 - RV12000	10 ml
RV20000	15 ml

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

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... riduttore di pressione



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.



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.




29. Manually extract the assembly piston-rod/bush until it rests against the C-ring.
58EM06A T-handle M6
58EM08A T-handle M8.




29.1. Cross section view with all components correctly assembled.




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

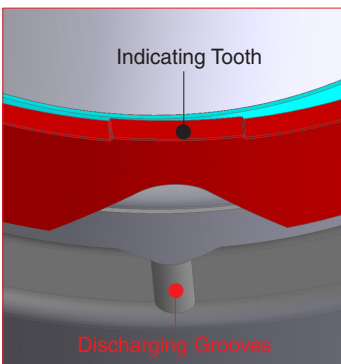


37. It is always recommended to check leaks on the charging port after the maintenance work and before re-using the gas springs by using the gas detector.

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.

SKUDO REASSEMBLY



FOR RS GAS SPRINGS ONLY.
Manually reassembly the protective SKUDO on the rod. It would be required a light pressure to correctly position it. When the protective SKUDO cap enter correctly into the groove you will hear a sound like "CLICK".