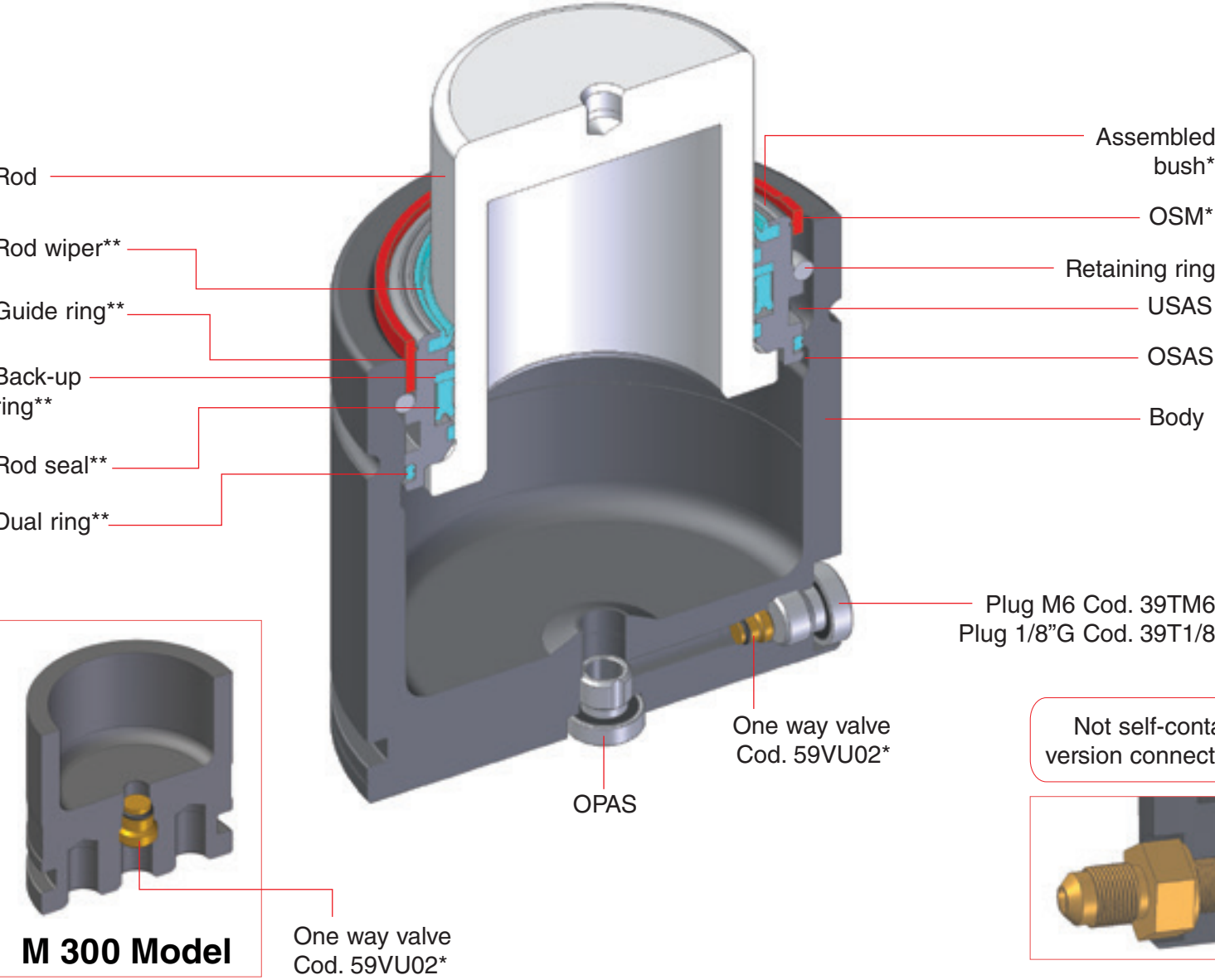
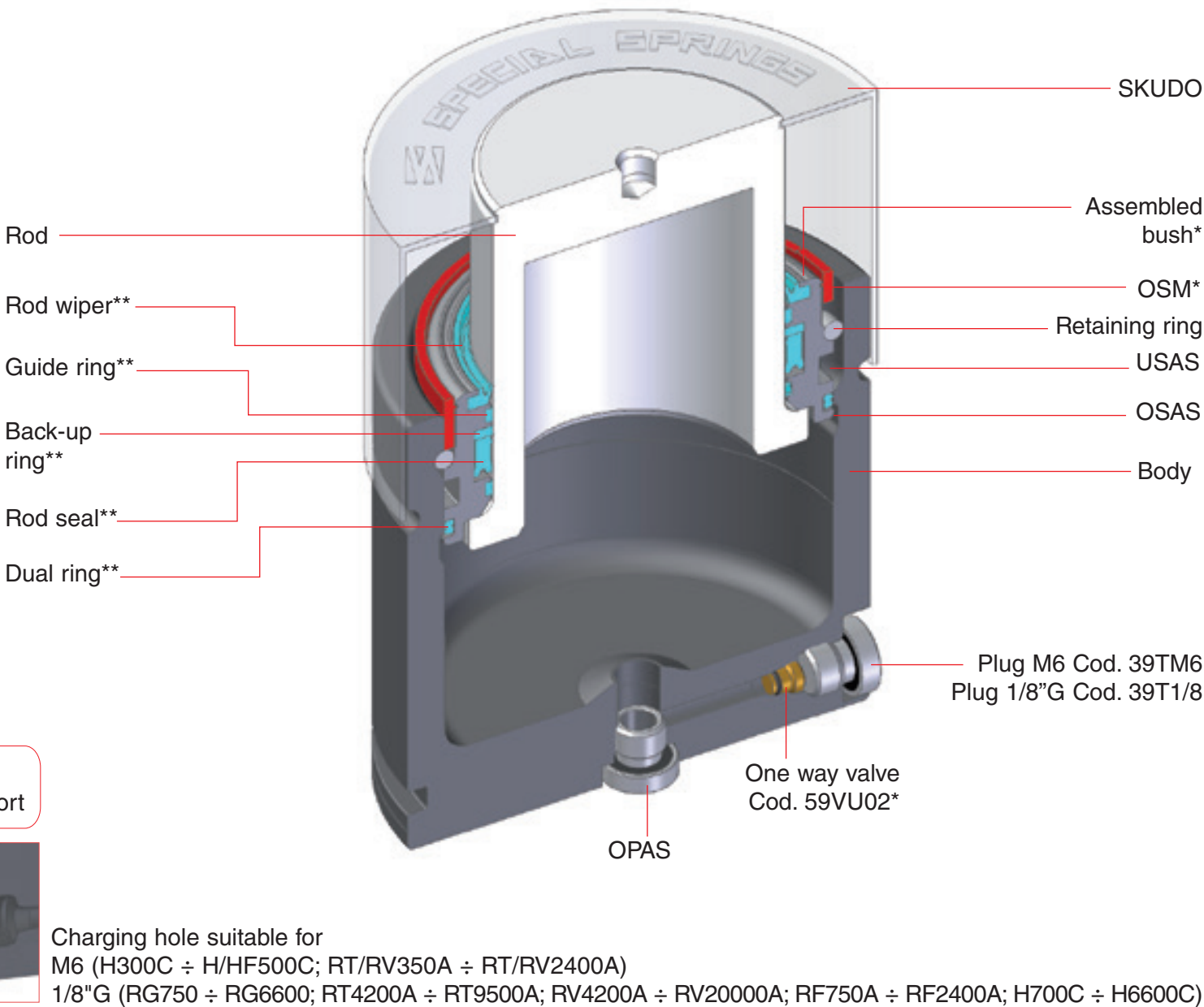


RT 350 A ÷ RT 9500 A RV 350 A ÷ RV 20000 A RF 750 A ÷ RF 2400 A
M 300 A H 300 C H/HF500C H 700 C (for Cu ≤ 80) H 1000 C (for Cu ≤ 80)
H 2400 C ÷ H 6600 C (for Cu ≤ 80) RG750A ÷ RG6600A
* included in the mainenance kit - ** included in the assembled bush



RS350A ÷ RS9500A

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



Cod. 39DMA

The multi device for, decrea-
sing/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. QDFV01 per foro 1/8"G
Cod. QDFV02 per foro M6

Cejin male quick fit adapter for
direct charging.



Cod. 58CE03 per M6
Cod. 58CE05 per 1/8"G

Hex T-key to remove charg-
ing hole plug and valve
retaining screw.



Cod. 39DDS01A

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



Cod. 39RFG

Special Springs gas detec-
tor for easy gas leakage.



Cod. 58KNIPEX

Multipurpose pliers with spouts.



Cod. 58CD01

Torque wrench for one way
valve.



Cod. 58EM06
Cod. 58EM08

Estrattore manuale per gruppo
stelo + boccia.



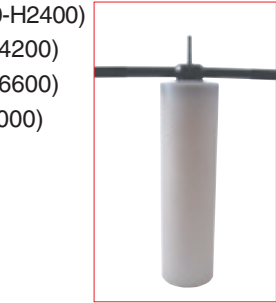
Cod. 39PM02A

Pressa manuale per assem-
blaggio stelo, boccia e
anello di ritegno a C.



Cod. 58UT002A (RG/RT/RV/RF/RS2400-H2400)
Cod. 58UT003A (RG/RT/RV/RS4200-H4200)
Cod. 58UT004A (RG/RT/RV/RS6600-H6600)
Cod. 58UT005A (RT/RV/RS9500-RV12000)
Cod. 58UT006A (RV20000)

Screw extracting device for rod
and bushing.



Cod. 49TB016 (RT/RV/RS350-H300-M300)
Cod. 49TB020 (RT/RV/RS500-H/HF500)
Cod. 49TB024 (RG/RT/RV/RF/RS750-H700)
Cod. 49TB030 (RG/RT/RV/RF/RS1000-H1000)
Cod. 49TB030 (RT/RV/RF/RS1200)
Cod. 49TB036.5 (RG/RT/RV/RF/RS1500)

Cod. 49TB046 (RG/RT/RV/RF/RS2400-H2400)
Cod. 49TB061.5 (RG/RT/RV/RS4200-H4200)
Cod. 49TB081.5 (RG/RT/RV/RS6600-H6600)
Cod. 49TB106.5 (RT/RV/RS9500-RV12000)
Cod. 49TB095 (RV20000)



Reassembly guiding tube + reassembly positioning tube for the retaining C-ring.

Cod. 49TN023 (RT/RV/RS350-H300-M300)
Cod. 49TN027 (RT/RV/RS500-H/HF500)
Cod. 49TN032 (RG/RT/RV/RF/RS750-H700)
Cod. 49TN036 (RG/RT/RV/RF/RS1000-H1000)
Cod. 49TN036 (RG/RT/RV/RF/RS1200)
Cod. 49TN045 (RG/RT/RV/RF/RS1500)

Cod. 49TN055 (RG/RT/RV/RF/RS2400-H2400)
Cod. 49TN070 (RG/RT/RV/RS4200-H4200)
Cod. 49TN088 (RG/RT/RV/RS6600-H6600)
Cod. 49TN117 (RT/RV/RS9500-RV12000)
Cod. 49TN148 (RV20000)



Anti scratch nylon tube.

Charging hole suitable for M6 (H300C ÷ H/HF500C; RT/RV350A ÷ RT/RV2400A) 1/8"G (RG750 ÷ RG6600; RT4200A ÷ RT9500A; RV4200A ÷ RV20000A; RF750A ÷ RF2400A; H700C ÷ H6600C)

NITROGEN CYLINDERS MAINTENANCE KIT

RT/RV/RS350A;H300C Cod. 39BMRV00350B
RT/RV/RS500A;H/HF500C Cod. 39BMRV00500B
RT/RV/RS/RF750A Cod. 39BMRV00750B
RT/RV/RS/RF1000A Cod. 39BMRV01000B
RT/RV/RS/RF1200A Cod. 39BMRV01000B
RT/RV/RS/RF1500A Cod. 39BMRV01500B
RT/RV/RS/RF2400A Cod. 39BMRV02400B
RT/RV/RS4200A Cod. 39BMRV04200B
RT/RV/RS6600A Cod. 39BMRV06600B
RT/RV/RS9500A Cod. 39BMRV09500B
RV12000A Cod. 39BMRV12000A
RV20000A Cod. 39BMRV20000A
H700C Cu 10 ÷ 80 Cod. 39BMRV00750B/C
H1000C Cu 13 ÷ 80 Cod. 39BMRV01000B/C
H2400C Cu 25 ÷ 80 Cod. 39BMRV02400B/C
H4200C Cu 25 ÷ 80 Cod. 39BMRV04200B/C
H6600C Cu 25 ÷ 80 Cod. 39BMRV06600B/C
M300A Cod. 39BMMC132A
RT/RV/RS350A;H300C Cod. 39BMRV00350C
RT/RV/RS500A;H/HF500C Cod. 39BMRV00500C
RG/RT/RV/RS/RF750A Cod. 39BMRV00750C
RG/RT/RV/RS/RF1000A Cod. 39BMRV01000C
RT/RV/RS/RF1200A; Cod. 39BMRV01000C
RG/RT/RV/RS/RF1500A Cod. 39BMRV01500C
RG/RT/RV/RS/RF2400A Cod. 39BMRV02400C
RG/RT/RV/RS4200A Cod. 39BMRV04200C
RG/RT/RV/RS6600A Cod. 39BMRV06600C
RT/RV/RS9500A Cod. 39BMRV09500C

The complete assembled kit along with this
step-by-step service manual is result of Special
Springs research for the most useful manuten-
ance operation for Special Springs nitrogen gas
cylinders. Few minutes and the Special Springs
nitrogen gas cylinders 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 cylinder are
damage or wear. If yes, it is recommended to
replace the cylinder 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 cylinder for which is required.

Before starting any maintenance work carefully
check this step-by-step manual to correspond to
the model of cylinder 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



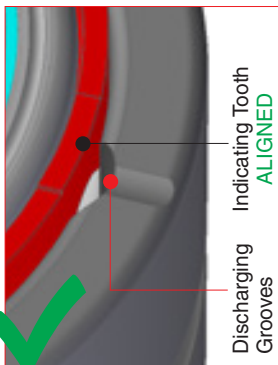
SKUDO REMOVAL. I. HOW TO REMOVE THE OVER STROKE MARKER.



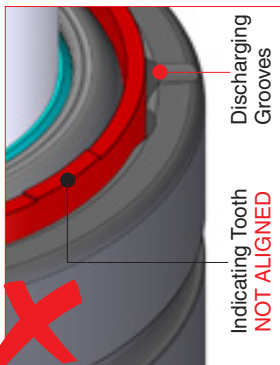
FOR RS CYLINDERS ONLY.
Remove the protective SKUDO cap. For certain models the operation will require a certain strain. Preserve the protective SKUDO cap for further reassembly.



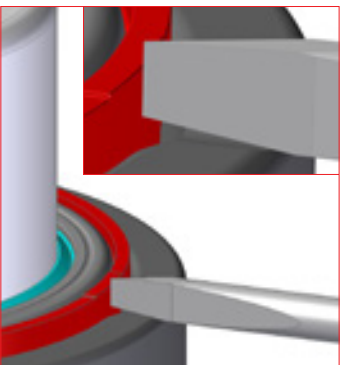
1. Position and clamp the cylinder into a self-centring chuck or a vice.



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

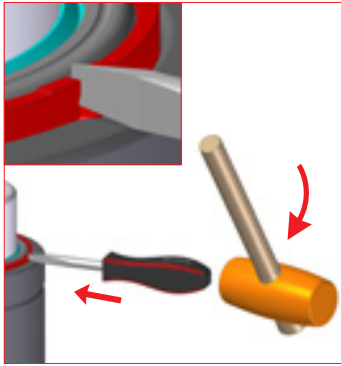


3. If the Indicating Tooth is not aligned with the discharging grooves, reposition it manually.

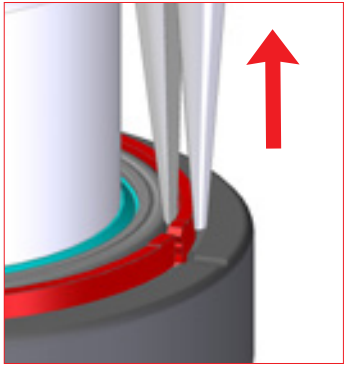


4. Position the flathead screwdriver at the center of the discharging grooves and keep it in contact with the Over Stroke Marker (OSM) ring.

II. DISCHARGING + VALVE REMOVAL for self-contained cylinders.



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



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.

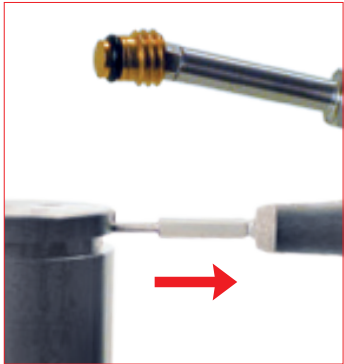


8. Thread DDS discharging device on the charging port then exhaust completely the pressure. Point away from the operator for maximum safety.
39DDS01A BLUE side for M6 hole GOLD side for 1/8" G hole

III. DISCHARGING non self-contained cylinders.



9. Be sure the pressure is completely exhausted by pressing down the piston rod into the cylinder body. Then unthread the discharging device from the discharging hole.



10. Hang and release the one way valve from the hole by using the appropriate tool. Some oil leaks may occur when cylinder 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.

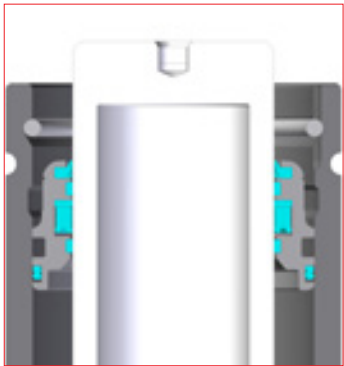


B. Be sure the pressure is completely exhausted by pressing down the piston rod into the cylinders body.

IV. RETAINING RING REMOVAL.



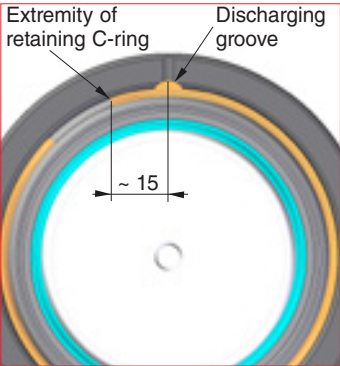
11. Position the anti scratch nylon removal tube (**49TN...**) on the bush then by the manual press (**39PM02A**) press all down into the body. The retaining ring is now free for an easy removal.



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



12. Position and clamp the cylinder 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. By using the T-handle M6/M8 (**58EM...**) extract the piston-rod and the bush from the body (only model RT/RV350÷RT/RV1500;RF750÷RF1500;M300A). 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.



VI. CLEANING AND INSPECTION.



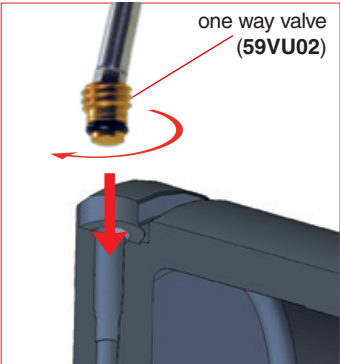
16. Carefully check and clean the cylinder body. If the body show any wear or damage do not use it again and replace it with a new one.



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.



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 cylinder body with the specific Special Springs oil supplied with the repair kit. Pay attention to the quantity as indicated for each cylinder model.

Modello	OIL
RT/RV/RS350A H300C M300A	5 ml
RT/RV/RS500A H/HF500C	5 ml
RG/RT/RV/RF/RS750A H700C	5 ml
RG/RT/RV/RF/RS1000A H1000C	5 ml
RT/RV/RF/RS1200A	5 ml
RG/RT/RV/RF/RS1500A	5 ml
RG/RT/RV/RF/RS2400A H2400C	5 ml
RG/RT/RV/RS4200A H4200C	10 ml
RG/RT/RV/RS6600A H6600C	10 ml
RT/RV/RS9500A RV12000A	10 ml
RV20000A	15 ml

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



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

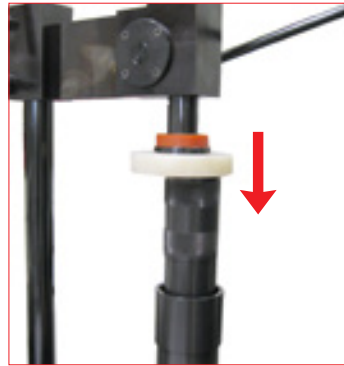


26. Insert the positioning tube over the rod in contact with the upper side of the assembled bushing, then by the manual press, press down into the cylinder body, the piston rod and the assembled bushing.
49TB... conical centring guide tube.
39PM02A manual press.

IX. REASSEMBLY OF THE RETAINING C-RING.



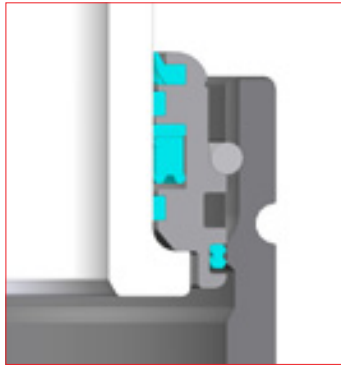
27. Position the retaining C-ring into the conical centring guide tube.



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".
49TB... conical centring guide tube.
39PM02A manual press.



29. Manually extract the assembly piston-rod/bush until it rests against the C-ring.
58EM06 T-handle M6.
58EM08 T-handle M8.



29.1. Cross section view with all components correctly assembled.

X. CHARGING AND FORCE TEST for self-contained cylinders.



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.
39R... 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 cylinder.
39R... 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.
QDFV... adapter for direct charging.



35. Thread and release 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
IPCDIG Digital force tester

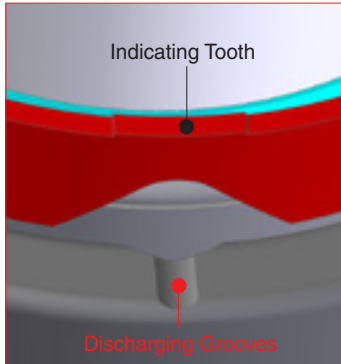


37. It is always recommended to check leaks on the charging port after the maintenance work and before re-using the cylinders by using the special gas detector.
39RFG Special Springs gas detector.

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.



XII. CHARGING AND FORCE TEST for non self-contained cylinders.



A. After positioning and hosing all the cylinders, proceed through the quick fit device through the control panel for charging all the cylinders. 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 cylinders.
39R... pressure reducer.

SKUDO REASSEMBLY.



Manually reassemble the protective SKUDO cap on the proper groove on the top of 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".



Manually reassemble the protective SKUDO cap on the proper groove on the top of 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".