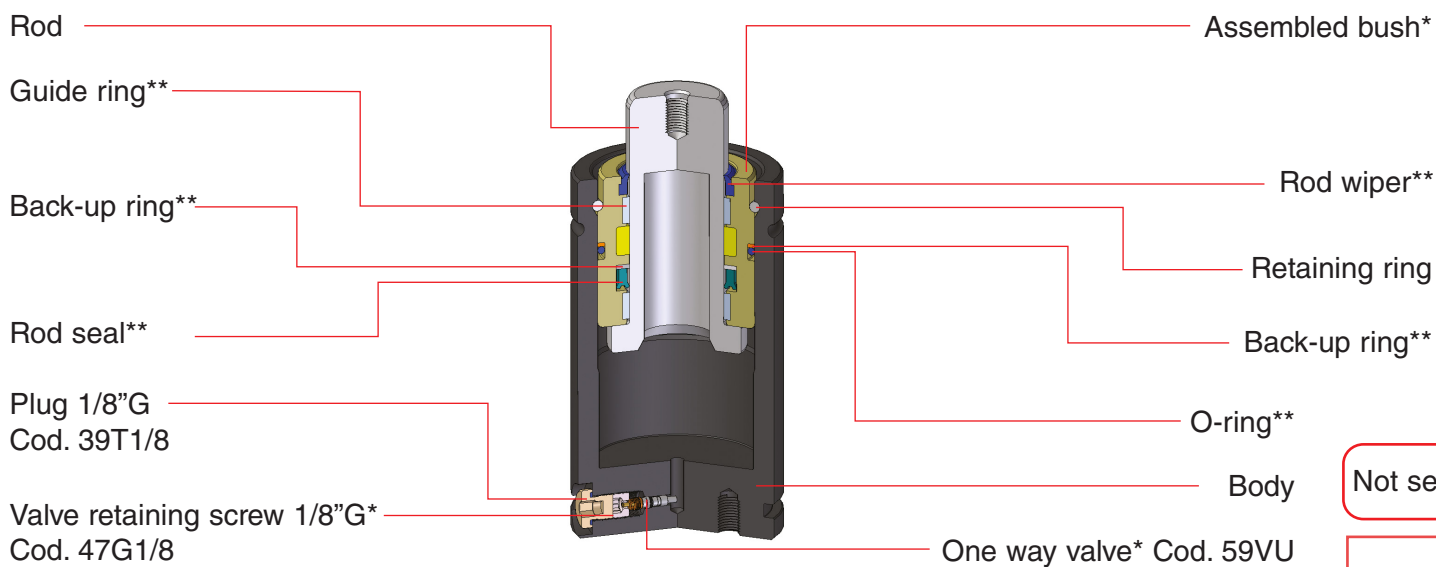


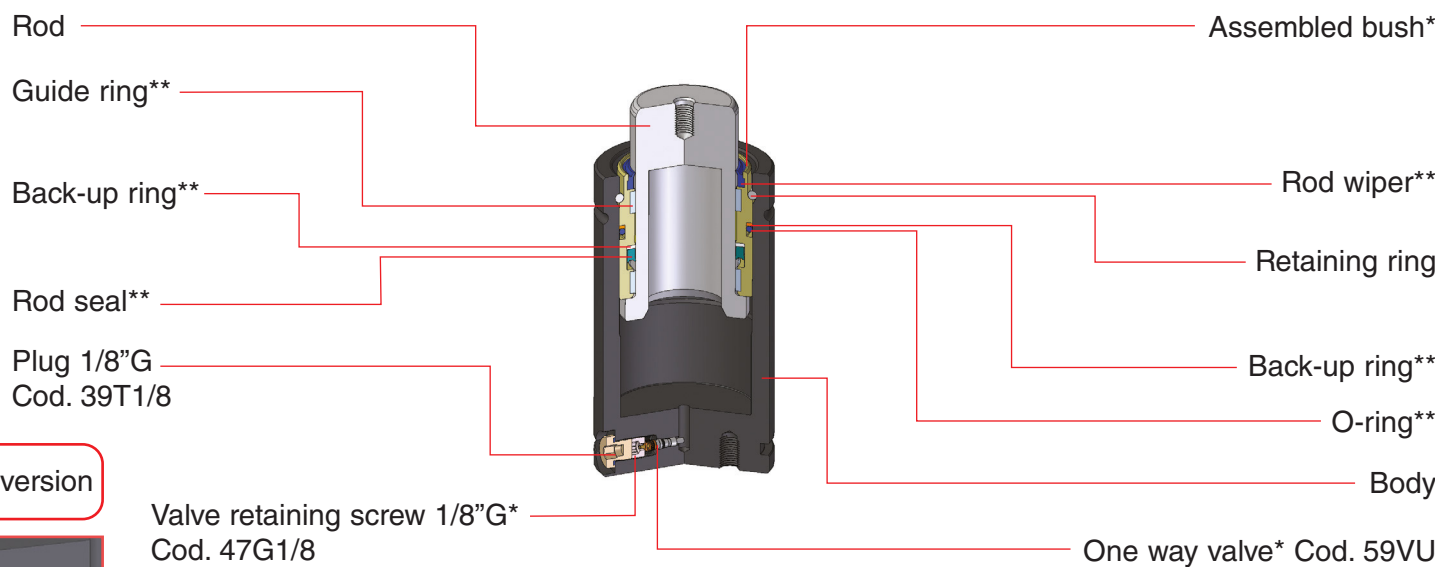
SC 500 B SCF 500 A SC 750 B SCF 750 A SC 1500 B ÷ SC 10000 C

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



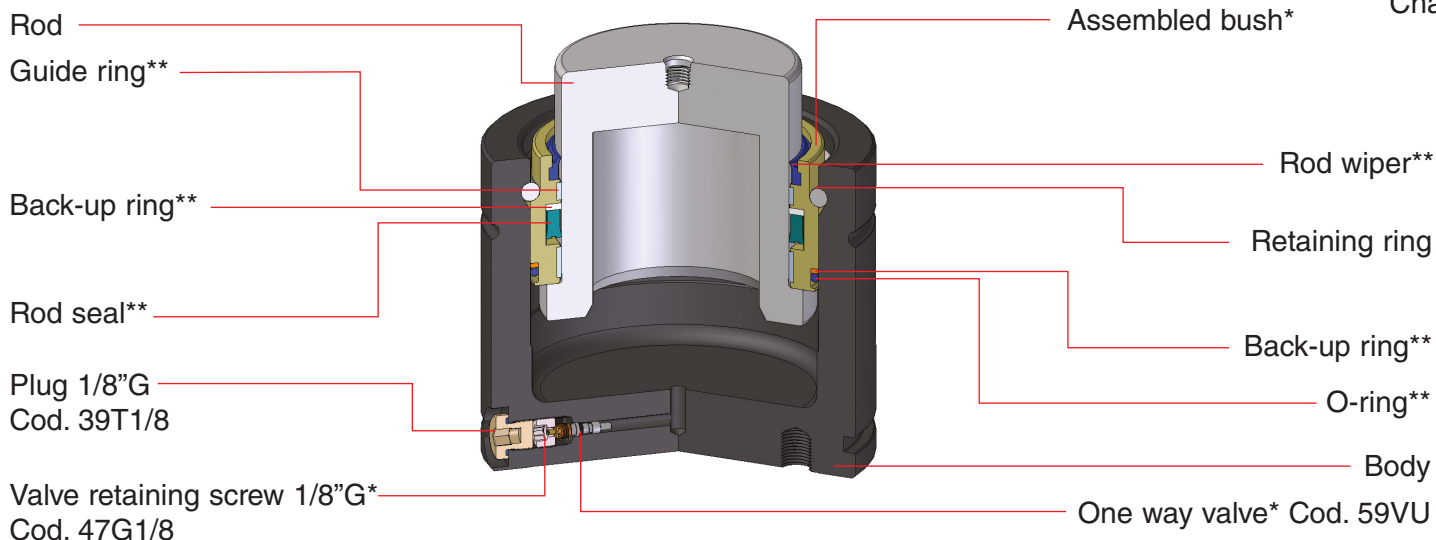
H/HF 700 A H/HF 1000 A H 2400 A ÷ H 11800 A

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



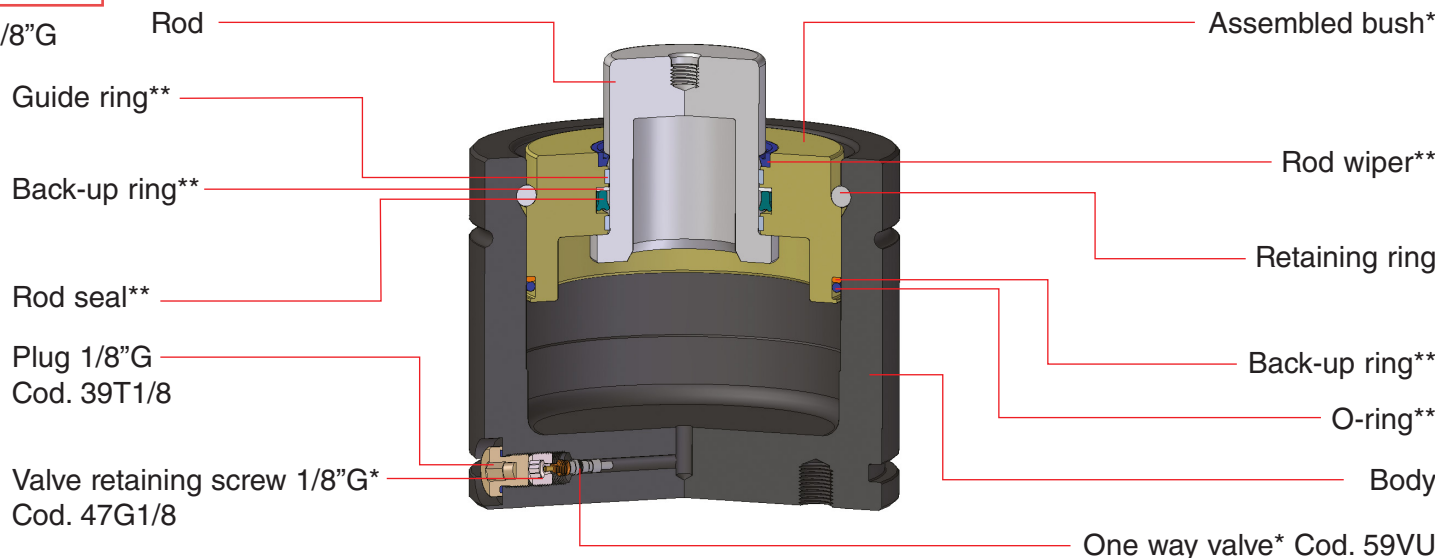
HR 6600 A ÷ HR 18000 A

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



LI 3200 A

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



Cod. **39DMA**
The DMA multi device is designed and built to facilitate cheking, decreasing/increasing pressure or pressurising self-contained cylinders or hoses systems. It consists of two units: Main (**39DMCILA**) and 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** for 1/8"G hole
Cod. **QDFV02** for M6 hole
Cejin male quick fit adapter for direct charging.



Cod. **58CE03** for M6 thread
Cod. **58CE05** for 1/8"G thread
Hex T-key to remove charging hole plug and valve retaining screw.



Cod. **39DDS01A**
Discharging device.
BLUE side for M6 hole
GOLD side for 1/8"G hole



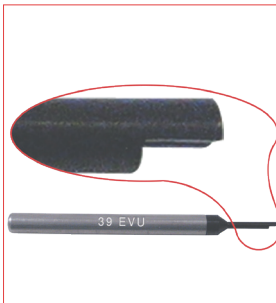
Cod. **39RFG**
Special Springs gas detector for easy gas leakage.



Cod. **58KNIPEX**
Multipurpose pliers with spouts.



Code **39EVU**
One way valve E59VU removal tool.



Cod. **58EM06**
Cod. **58EM08**
T-handle to remove piston-rod + bushing.



Code **58EAR**
Retaining C-ring removal tool.



Cod. **39PM02A**
Table manual press for easy and safe positioning of components.



Cod. **49TB024** (SC500B;SCF500A;H/HF700A)
Cod. **49TB030** (SC750B;SCF750A;H/HF1000A)
Cod. **49TB045** (SC1500B;H2400A)
Cod. **49TB060** (SC3000B;H4200A)
Cod. **49TB075** (SC5000B;H6600A;HR6600A;LI3200A)

Cod. **49TB080** (SC7500B)
Cod. **49TB095** (SC10000C;H18500A)
Cod. **49TB100** (HR11800A)



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

Cod. **49TN032** (SC500B;SCF500A;H/HF700A)
Cod. **49TN036** (SC750B;SCF750A;H/HF1000A)
Cod. **49TN055** (SC1500B;H2400A)
Cod. **49TN070** (SC3000B;H4200A)
Cod. **49TN088** (SC5000B;H6600A;HR6600A;LI3200A)
Cod. **49TN108** (SC7500B)

Cod. **49TN117** (HR11800A)
Cod. **49TN120** (SC10000C)
Cod. **49TN148** (H18500A)



Anti scratch nylon tube to set the bushing into the cylinder body to release the retaining C-ring.

Cod. **58UT002A** (SC1500B;H2400A)
Cod. **58UT003A** (SC3000B;H4200A)
Cod. **58UT004A** (SC5000B;H6600A;HR6600A;LI3200A)
Cod. **58UT005A** (SC7500B)
Cod. **58UT006A** (SC10000C;H18500A)



Screw extracting device for rod and bushing.



NITROGEN CYLINDERS MAINTENANCE KIT

SC500B;SCF500A	Cod. 39BMSC00500B
SC750B;SCF750A	Cod. 39BMSC00750B
SC1500B	Cod. 39BMSC01500B
SC3000B	Cod. 39BMSC03000B
SC5000B	Cod. 39BMSC05000B
SC7500B	Cod. 39BMSC07500B
SC10000C	Cod. 39BMSC10000C
H/HF700A	Cod. 39BMH00700A
H/HF1000A	Cod. 39BMH01000A
H2400A	Cod. 39BMH02400A
H4200A	Cod. 39BMH04200A
H6600A	Cod. 39BMH06600A
H18500A	Cod. 39BMH18500A
HR6600A	Cod. 39BMHR06600A
HR11800A	Cod. 39BMHR11800A
LI3200A	Cod. 39BMLI3200A

⚠ 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 nitrogen gas cylinders. Few minutes and the Special Springs nitrogen gas cylinders 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 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 requied.

⚠ 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



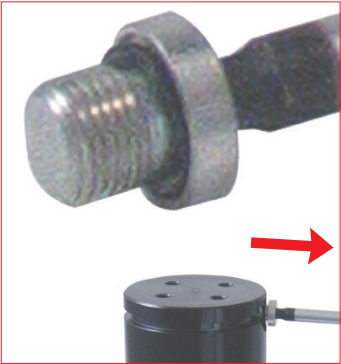
9801C00402010 © All right reserved.

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



1. Remove the protective screw cap from the charging hole by using the appropriate tool.
Preserve the the protective screw cap for further assembly.
58CE05 for the 1/8 G port.



2. Thread DDS bleed device on the charging port then exhaust completely the pressure. Point away from the operator for maximum safety.
39DDS01A for the 1/8 G port.



3. 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.



4. Unthread the valve retaining screw by using the hex key (**58CE05**). Preserve the valve retaining screw for reassembly.

II. DISCHARGING non self-contained cylinders.



5. Hang and remove the one way valve from the conical lodging site by using the proper tool (**39EVU**).

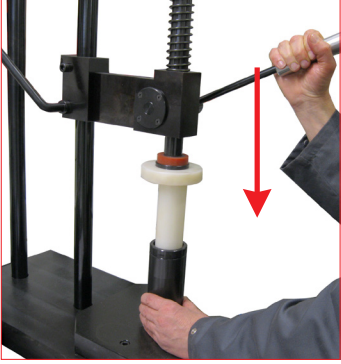


A. To exhaust pressure of hosed cylinders open the discharging valve on the control panel.

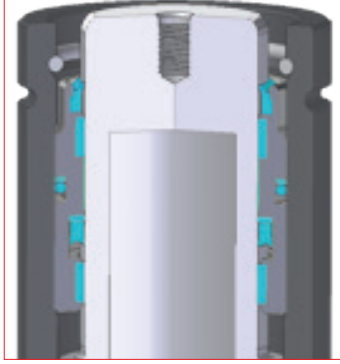


B. Be sure the pressure is completely exhausted by pressing down the piston rod into the cylinders body.

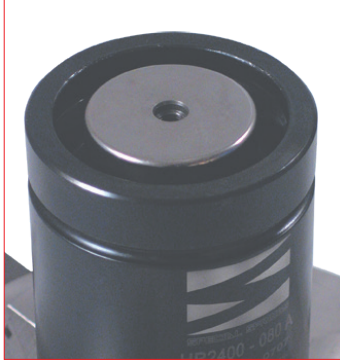
III. RETAINING C-RING REMOVAL.



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



6.1. Cut off of cylinder to see the right position of the cartridge and C-ring after operation.



7. Clamp the cylinder into a self-centring chuck or a vise.



8. By using the removal C-ring (**58KNIPX**) hook up the retaining C-ring. Preserve the retaining C-ring for reassembly.

IV. PISTON ROD + CARTRIDGE REMOVAL.



9. By using the T-handle M8 (**58EM08**) extract the piston-rod and the bushing from the body (only model SC500B; SCF500A; SC750B; SCF750A; H/HF700A; H/HF1000A). By using the proper Screw extracting device (**58EV...**) extract the piston-rod and the bushing from the oder models.



10. Then slide off the bushing from the rod and discard the bushing.



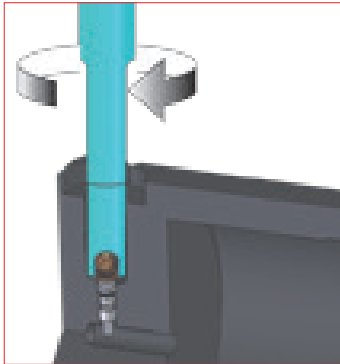
11. Carefully check and clean the cylinder body. If the cylinder body shows any damage or wear do not use it again and replace it with a new one.



12. 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.



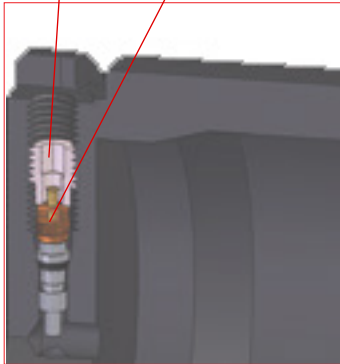
13. Carefully clean through the charging hole with an air gun, then drop the new one way valve (**59VU**) into the conical hole.



13.1 Cut off of piston-rod with the one way valve correctly positioned. Make easier the positioning by a light turning made by using the proper tool (**47ASVU**).



14. By using the hex key (**58CE05**) thread the one way valve retaining screw 1/8"G (**47G1/8G**). Pay attention to not tight excessively the retaining screw to avoid damage on the one way valve.
Torque force required max 1,4 Nm.

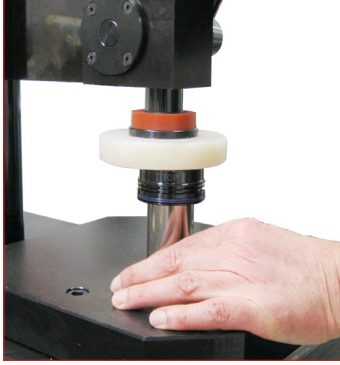


14.1 Cut off of the conical hole with the one way valve and the 1/8"G one way valve retaining screw correctly positioned.

VII. REASSEMBLY OF PISTON ROD AND CARTRIDGE.



15. Take the new assembled bushing and grease inside all over by using the specific Special Springs grease compound supplied with the repair kit.



16. Manually or by using the manual press (**39PM02A**) insert the assembled bushing into the rod. Be care to position it on the right side, follow the laser print arrows on the bushing.



17. Slide down the assembled bushing to the piston shoulder.



18. Grease the O-ring on the assembled bushing with the specific Special Springs grease compound supplied with the repair kit.



19. Lubricate inside the cylinder body with the specific Special Springs oil supplied with the repair kit. Be care to the quantity as indicated for each cylinder model.

Model	OIL
SC500B;SCF500A	H/HF700A 5 ml
SC750B;SCF750A	H/HF1000A 6 ml
SC1500B	H2400A 10 ml
SC3000B	H4200A 20 ml
SC5000B	H6600A 35 ml
SC7500B	60 ml
SC10000C	H18500A 110 ml
HR6600A	15 ml
HR11800A	35 ml
LI3200A	15 ml

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

VIII. REASSEMBLY OF THE RETAINING C-RING.



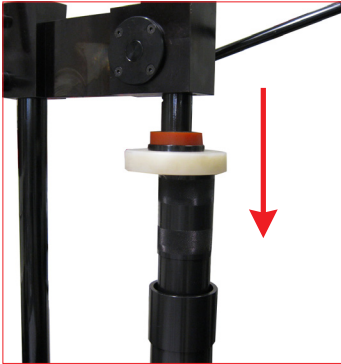
20. Set the positioning tube on the upper part of the cylinder body, then manually insert the piston-rod and the assembled bushing into the positioning tube.
49TB... positioning tube.



21. 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.



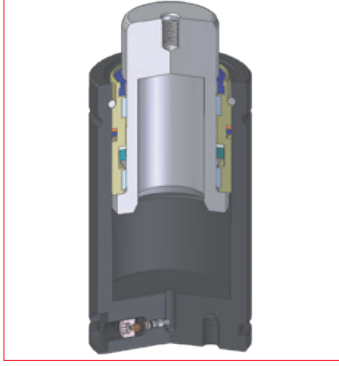
22. Position the retaining C-ring into the conical centring guide tube.



23. 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 enter correctly into the groove you will hear a loud like "CLICK".
49TB... conical centring guide tube.
39PM02A manual press.



24. Manually extract the assembly piston-rod/cartridge untill it rests against the C-ring.
58EM08 T-handle M8.



24.1 Cut off with all components correctly assembled.

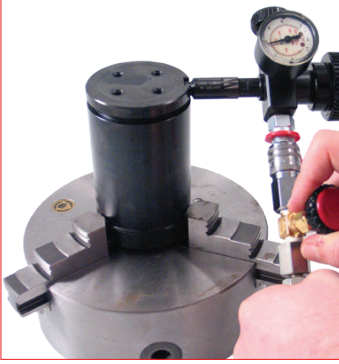
IX. CHARGING AND FORCE TEST for self-contained cylinders.



25. 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 regulation valve.



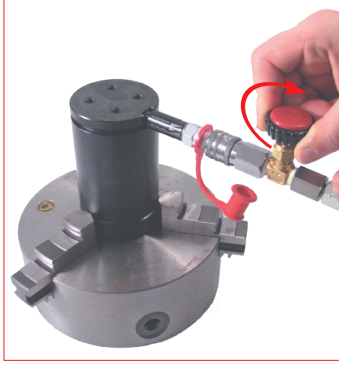
26. Adjust the required maximum pressure through the regulation valve. The gauge on the right will indicate the maximum allowed pressure to charge the cylinder.
39R... pressure regulation valve.



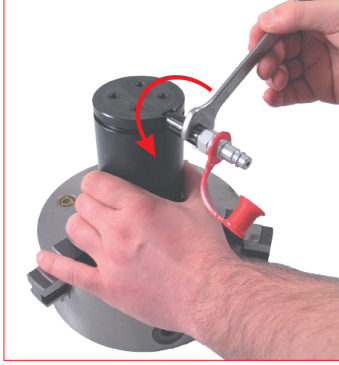
27. Select and assemble the desired charging adapter and thread it on the charging port. For an easy and safety work carefully follow the instructions supplied with the charging unit. DO NOT exceed the maximum pressure indicated for any specific model.
39DMA charging unit.



28. Reached and stabilized the desired pressure, for an easy and safety work carefully follow the instructions supplied with the charging unit.
39DMA charging unit.



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



30. Unthread and release the adapter from the charging hole.



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



32. 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.



33. Use Special Springs gas detector to check leaks on top of body.



34. Thread the protective screw cap into the charging hole M6 by using the hex key (**58CE05**).

IX. CHARGING AND FORCE TEST for 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.
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 regulation valve.



C. Connect the female quick fit on the male quick fit on the panel and open the gas tap. For an easy and safety 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 cylinder by using the special gas detector.
39RFG Special Springs gas detector.



E. It is always recommended to check leaks on the upper side of the cylinders after the maintenance work and before re-using the cylinders by using the special gas detector.
39RFG Special Springs gas detector.