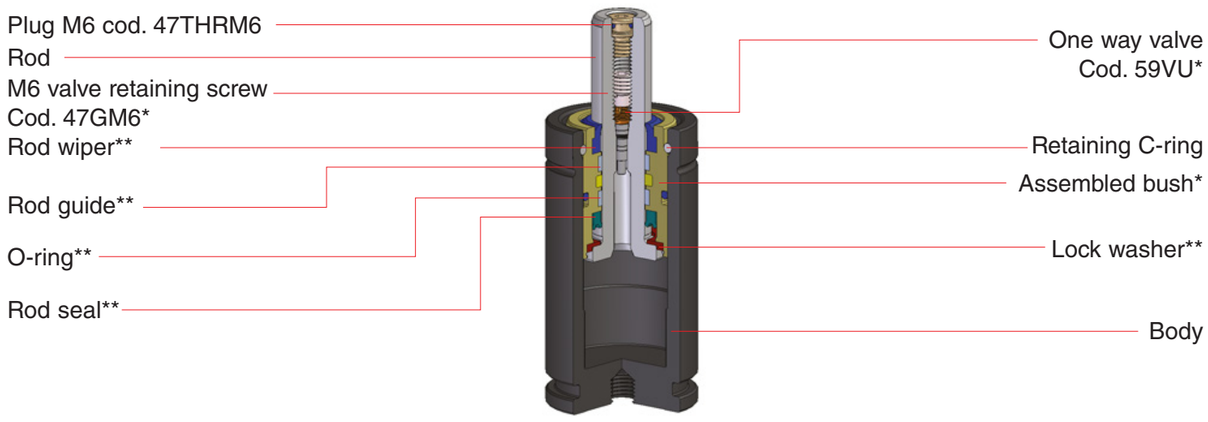
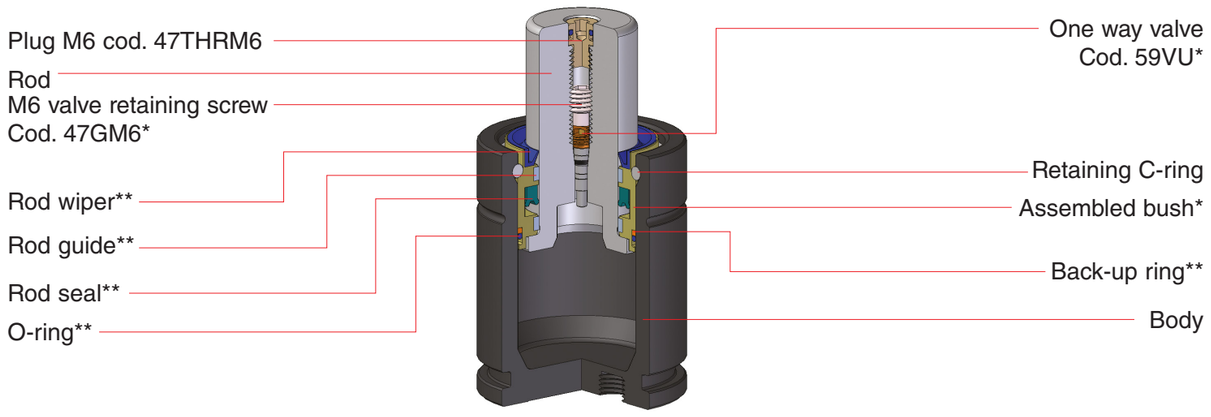
SC 150 B ÷ SC 250 B SCF250 A

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



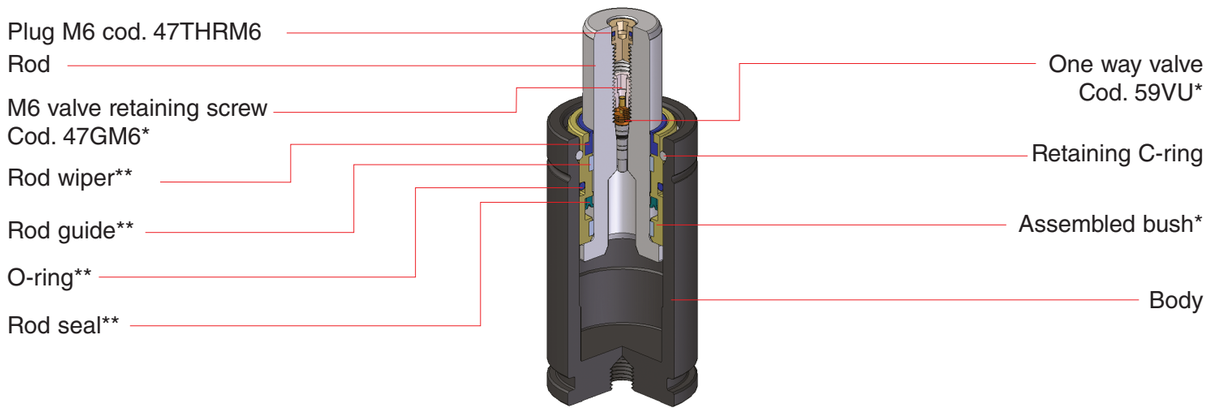
HR 300 A (Cu 19 ÷ 125) HR/HRF 500 A (Cu 19 ÷ 125) HR/HRF 700 A (Cu 19 ÷ 125)

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



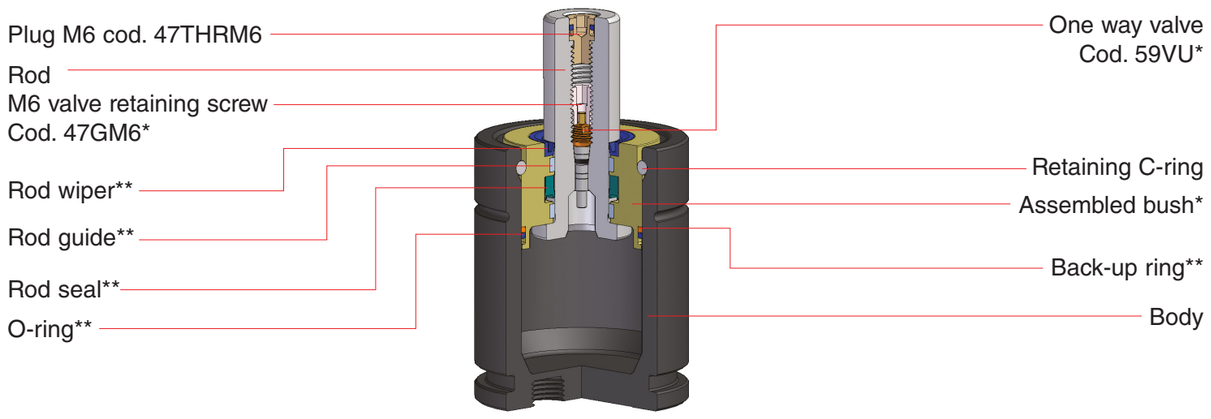
H 300 B ÷ H 500 B HF 500 A

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



LI 400 A

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



Cod. **39DMA**
The DM1 multi device is designed and built to facilitate cheking, decreasing/increasing pressure or pressurising self-contained cylinders or hosed 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 Cejn 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.

NITROGEN CYLINDERS MAINTENANCE KIT

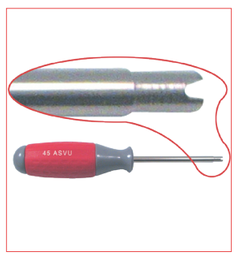
SC150B	Code **39BMSC00150B**
SC250B;SCF250A	Code **39BMSC00250B**
HR300A Cu 19 ÷ 125	Code **39BMHR00300B**
HR/HRF500A Cu 19 ÷ 125	Code **39BMHR00500B**
HR/HRF700A Cu 19 ÷ 125	Code **39BMHR00700B**
H300B	Code **39BMH00300B**
H500B;HF500A	Code **39BMH00500B**
LI400A	Code **39BMLI00400A**

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. **DDS-M6/2**
Discharging device.

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

Cod. **47ASVU**
One way valve positioning driver.



Cod. **58EC**
Retaining C-ring removal tool.

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

Cod. **39PM02A**
Table manual press for an easy assembly of piston-rod, assembled bushing and retaining C-ring.

Cod. **39RFG**
Special Springs gas detector special made to check possible gas leakge.

Cod. **49TB016** (SC150;H300;HR300)
Cod. **49TB020** (SC250;SCF250;H500;HF500;HR/HRF500)
Cod. **49TB024** (HR/HRF700;LI400)

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

Cod. **49TN023** (SC150;H300;HR300)
Cod. **49TN027** (SC250;SCF250;H500;HF500;HR/HRF500)
Cod. **49TN032** (HR/HRF700;LI400)

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

⚠ The complete assembled kit along with this step-by-step service manual is result of Special Springs research for the most useful manteniance 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

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NITROGEN GAS CYLINDERS MAINTENANCE INSTRUCTIONS

SC 150 B
SC 250 B - SCF 250 A
HR 300 A Cu ≥ 19
HR/HRF 500 A Cu ≥ 19
HR/HRF 700 A Cu ≥ 19
H 300 B
H 500 B - HF 500 A
LI 400 A

UK Sole Distribuer

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E: sales@berger-tools.co.uk
W: www.berger-tools.co.uk

SPECIAL SPRINGS

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

1. Remove the protective screw cap from the charging hole M6 by using the hex key **(58CE03)**.
Preserve the screw cap from reassembly.

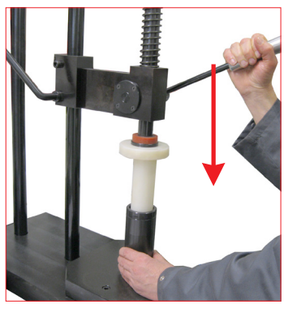
2. Thread the discarging device **(DDS-M6/2)** on the charging hole then exhaust completley the gas.
For safety point the gas flow away from the operator.

3. Be sure the pressure is completley exhauted by pressing down the piston rod into the cylinder body.
Then unthread the discarging device from the discarging hole.

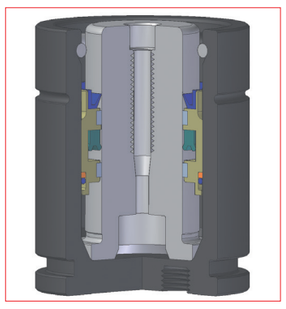
4. Unthread the valve retain-ing screw by using the hex key **(58CE03).** Preserve the valve retaining screw for reassembly.

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

II. RETAINING 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 for about 20-25 mm. The retaining ring is now free for an easy removal.



6.1. Cut of the cylinder to see the right position of the cartridge and C-ring after operation #6.

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

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

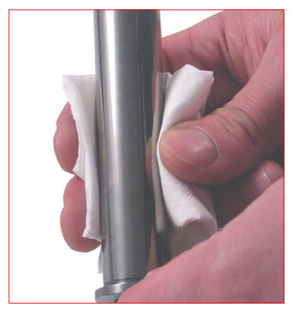
III. PISTON ROD + CARTRIDGE REMOVAL.

9. By using the T-handle **(58EM06)** extract the piston-rod and the bushing from the body.

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

IV. CLEANING AND INSPECTION.

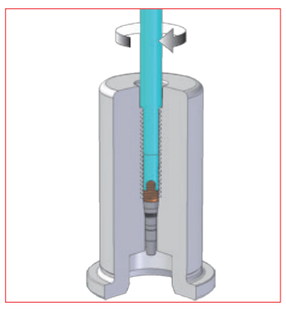
11. Carefully check and clean the cylinder body.
If the cylinder body shows any damage or wear do not use it again and replace it with a new one.



12. Carefully check and clean the piston-rod. If the piston-rod shows any dam- age, wear or scratch do not use it again and replace it with a new one.

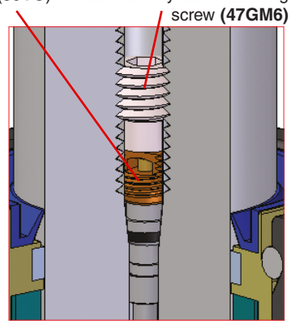
V. VALVE REASSEMBLY.

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



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

15. By using the hex key **(58CE03)** thread the one way valve retaining screw M6 **(47GM6).** Pay attention to not tight exessively the retaining screw to avoid damage on the one way valve.
Torque force requied max N 0,6.



15.1 Cut off of piston-rod with the one way valve and the M6 one way valve retaining screw correctley positioned.

VI. REASSEMBLY OF PISTON-ROD AND CARTRIDGE.

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

17. 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.

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

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

20. Lubrificate 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
SC150B		1,5 ml
SC250B	SCF250A	2,5 ml
H300B		1,5 ml
H500B	HF500A	2,5 ml
HR300 19÷125A		1,5 ml
HR/HRF500 19÷125A		2 ml
HR/HRF700 19÷125A		2,5 ml
LI400A		2 ml

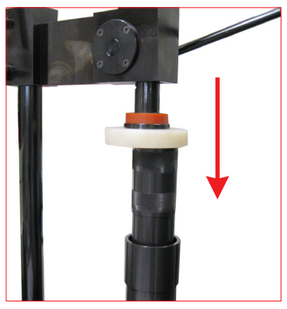
NOTE: Each oil dispenser contains a volume of 5 ml.

VII. REASSEMBLY OF THE RETAINING C-RING.

21. 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.

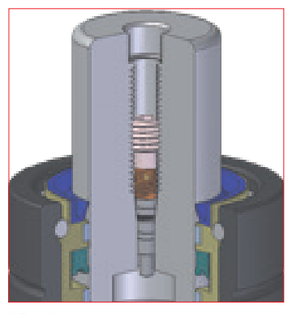
22. Insert the positioning tube over the rod in contact with the upper side of the assembled bushing, then by the manual press, press down into the cylinder body, the piston rod and the assembled bushing.
49TB... conical centring guide tube.
39PM02 manual press.

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



24. 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.

25. After threading the T-handle M6 **(58EM06)** into the rod head threaded hole, pull completley the unit piston-rod and bushing.



25.1 Cut off of the piston-rod, bushing and retaining C-ring correctly positioned.

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

26. Check the correct assembly of the pressare 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.

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

28. 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.

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

30. When directly charging throught 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.
39QDFV... adapter for direct charging.

31. Unthread and relase the adapter from the charging hole.

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

33. 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.

34. 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.

35. Thread the protective screw into the charging hole by using the appropriate tool.
58CE05 for 1/8G charging port.
58CE03 for M6 charging port.