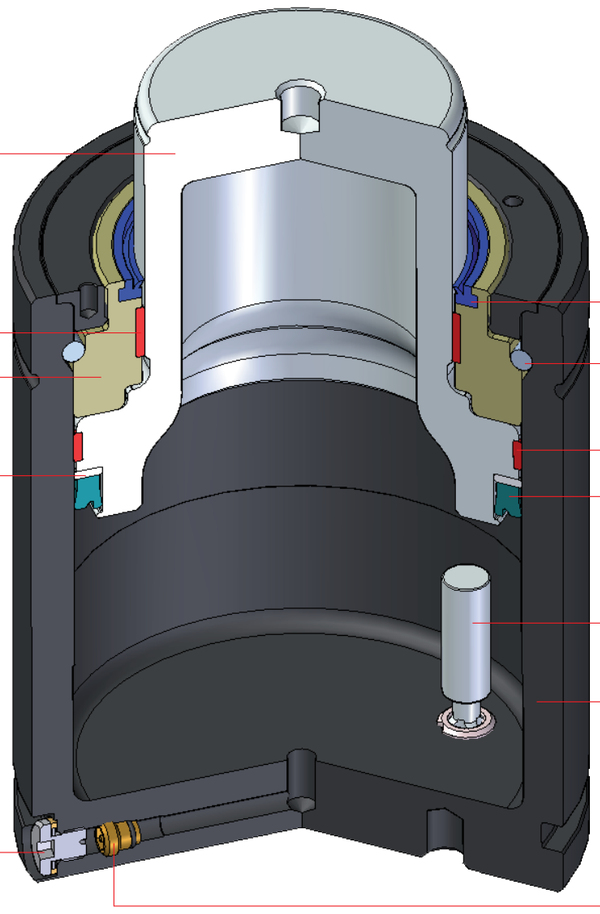
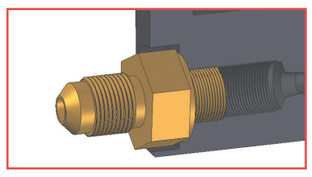
KE 1800 A ÷ KE 18500 A

* inclusa nel kit - ** inclusi nella boccola assemblata.





Not self-contained version

Charging hole
M6 (KE1800A ÷ KE7500A)
1/8"G (KE12000A ÷ KE18500A)

Cod. **39DMA**
The DMA 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. **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.

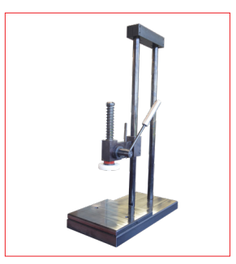
Cod. **58CE03** for M6 thread
Cod. **58CE05** for 1/8”G thread
Hex T-key to remove charging hole plug and valve retaining screw.

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

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

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

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



Cod. **49TB026.5** (KE1800A)
Cod. **49TB035.5** (KE3000A)
Cod. **49TB048.5** (KE4700A)
Cod. **49TB061.5** (KE7500A)
Cod. **49TB081.5** (KE12000A)
Cod. **49TB106.5** (KE18500A)

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

Cod. **49TN032** (KE1800A)
Cod. **49TN045** (KE3000A)
Cod. **49TN055** (KE4700A)
Cod. **49TN070** (KE7500A)
Cod. **49TN088** (KE12000A)
Cod. **49TN120** (KE18500A)

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

Cod. **39DMCILA**
Multi device for charging, discharging and adjust gas pressure.

Cod. **QDFV01** for 1/8”G hole
Cod. **QDFV02** for M6 hole
Cejin male quick fit adapter for direct charging.

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

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

Cod. **58CC03** KE3000A ÷ KE18500A
Cod. **58CC02** KE1800A
Compass key with plugs to remove the rod top cap.

Cod. **58CD01**
Torque wrench for one way valve 59VU02.

NITROGEN CYLINDERS MAINTENANCE KIT

KE1800A	Cod. **39BMKE01800A**
KE3000A	Cod. **39BMKE03000A**
KE4700A	Cod. **39BMKE04700A**
KE7500A	Cod. **39BMKE07500A**
KE12000A	Cod. **39BMKE12000A**
KE18500A	Cod. **39BMKE18500A**

⚠ 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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www.specialsprings.com

NITROGEN GAS CYLINDERS MAINTENANCE INSTRUCTIONS

KE 1800 A
KE 3000 A
KE 4700 A
KE 7500 A
KE 12000 A
KE 18500 A

Marked OSPAS

SPECIAL SPRINGS

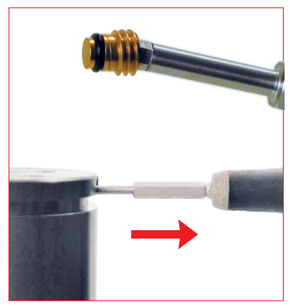
I. SKUDO REMOVAL.

1. Manually remove the protective cap SKUDO. Do not use tools. For certain models the operation will require a certain strain.
Preserve the protective cap SKUDO for further reassembly.

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

2. Remove the protective screw cap from the charging hole by using the appropriate tool.
58CE05 for the 1/8 G port.
58CE03 M6/3 for the M6 port.

3. 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

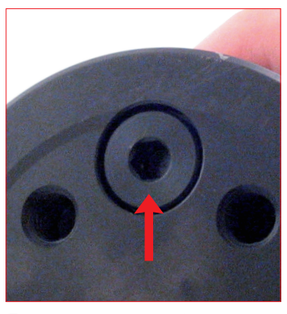


4. Hang and release the one way valve from the hole by using the appropriate tool. It would be normal some oil leak from the hole when upside down the cylinder.
58CD01 one way valve removing-setting dynamometric wrench.

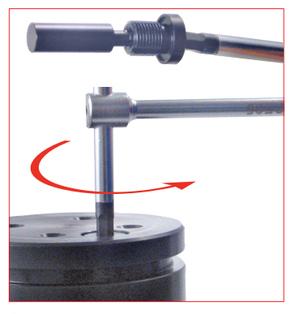
III. OSPAS REMOVAL.

5. It is severely forbidden to press down the piston-rod into the cylinder body before removing the safety device OSPAS. High risk of damaging and compromise the regular function of the safety device.

6. To remove the safety device OSAPS it is necessary to remove first the aluminium seal from the hex hole of the screw. Use the special drill hit, included in the maintenance kit, and mount it on a small hand drill.



7. The hex hole will be then completely free and ready to be used.



8. Remove the safety device OSAPS by using the appropriate tool and take it away from the hole.
Preserve the safety device OSAPS for further reassembly.
58CE05 hex key.

IV. DISCHARGING non self-contained cylinders.

9. ONLY after the safety device OSPAS has been removed the piston rod can be pressed down into the cylinder body.

A. For hosed cylinders exhaust pressure through the bleed valve on the control panel. When completely exhausted the gauge on the panel will display 0 (zero) pressure. Then disconnect all cylinders from hoses and fitting.

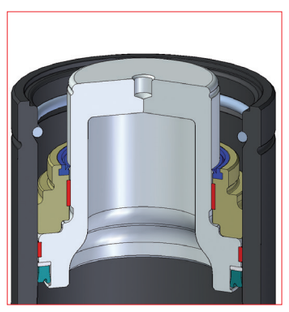
B. Repeat then the procedure as above indicated at points **1,2,3,4,5,6,7,8,9.**

V. UPPER RING NUT REMOVAL.

10. Remove the upper ring nut on the body by using the appropriate wrench.
58CC… compass wrench.

VI. RETAINING RING REMOVAL.

11. Position the anti scratch nylon removal tube on the cartridge then press down into the body for about 25 mm to set free the retaining C.
39PM02A manual press.
49TN… nylon removal tube.



12. Cylinder section with piston/rod and cartridge completely pressed into the body.
The retaining C-ring result free.

13. Position and clamp the cylinder into a self - centring chuck or a wise.

14. Remove the retaining C-ring by using the appropriate removal tool and pincer.
Preserve the retaining C-ring for further reassembly.
58EAR C-ring removal tool.
58KNIPEX pincer.

VII. PISTON ROD + CARTRIDGE REMOVAL.

15. Manually extract together piston/rod/cartridge from the cylinder body. It would be required some strain for certain models.
58EM04 T-handle M4 thread.
58EM06 T-handle M6 thread.
58EM08 T-handle M8 thread.

16. Slide off the cartridge from the rod and remove seal and guide from the piston.
Discard all of them.

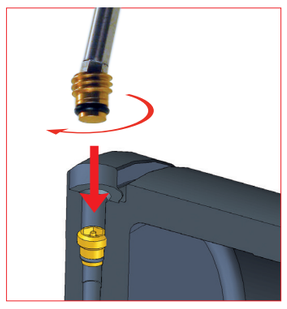
VIII. CLEANING AND INSPECTION.

17. 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.

18. 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.

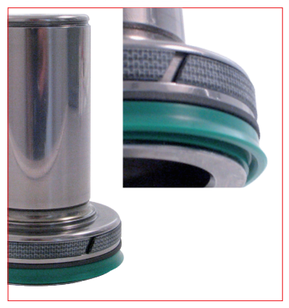
IX. VALVE REASSEMBLY.

19. Carefully clean the lodging hole of the valve with an airgun and then position the new one way valve supplied along with the maintenance kit. Be care on the right position of it.



20. Position and thread the one way valve into the hole by using the appropriate special dynamometric tool. **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.

X. REASSEMBLY OF PISTON ROD + CARTRIDGE.



21. Assembly into the proper groove the new guide and the new piston seal.
Pay the best attention to not damage the seal as well as to the right positioning.

22. Grease all over inside the cartridge with the special grease supplied with the kit and manually press the pre-assembled cartridge into the rod and slide down to the piston shoulder. Pay the best attention to the right orientation of the cartridge.

XI. REASSEMBLY OF THE RETAINING C-RING.

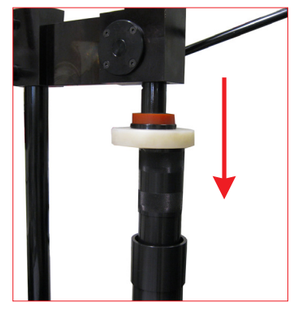
23. Grease all over around the cartridge, the guide and the seal with the special grease supplied with the kit.

24. Position the conical centring guide tube on the top side of the cylinder body, then position the piston/rod/cartridge into the tube and assure to keep all perpendicular to the tube itself and the cylinder body.
49TB… conical centring guide tube.

25. Insert the positioning tube over the rod in contact with the upper side of the cartridge, then by the manual press, press down into the cylinder body all the assembled parts.
49TB… conical centring guide tube.
39PM02A manual press.

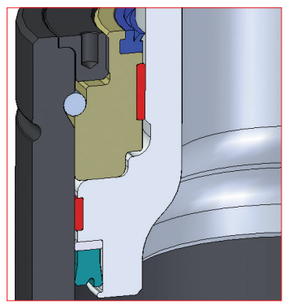
26. Position the retaining C-ring into the conical centring guide tube.

XII. REASSEMBLY OF THE UPPER RING NUT



27. 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.

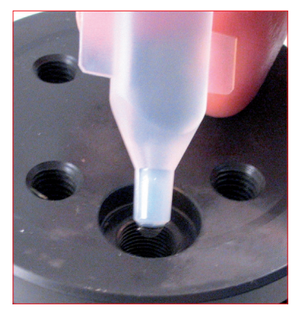
28. Manually extract the assembly piston-rod/cartridge completely.
58EM04 T-handle M4.
58EM06 T-handle M6.
58EM08 T-handle M8.



29. Cut off with all components correctly assembled.

30. Position and thread the upper ring nut of the cylinder by using the appropriate compass wrench.
58CC… compass wrench.

XIII. POSITIONING OF OSPAS + OIL LUBICATION.

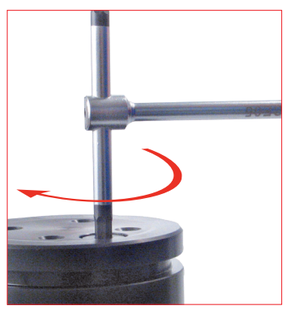


31. Upside-down the cylinder and drop the lubricating oil supplied with the kit. Please do not exceed the volumes as indicated in the tab.

Model	OIL
KE 1800 A	3 ml
KE 3000 A	4 ml
KE 4700 A	5 ml
KE 7500 A	8 ml
KE 12000 A	15 ml
KE 18500 A	30 ml

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

32. Position the safety device OSPAS into the proper hole located in the cylinder bottom. It is severely forbidden to press the piston-rod into the body when the safety device OSPAS is positioned. High risk to damage and compromise the functional of the safety device.

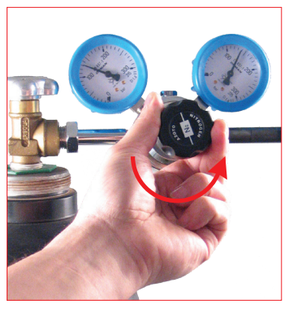


33. Lock up the safety device by using the appropriate tool.
58CE05 hex key.

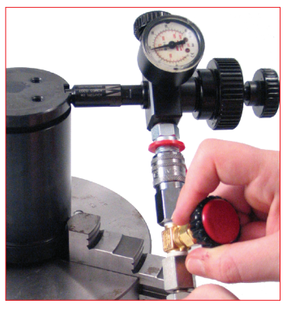
XIII. CHARGING AND FORCE TEST self container cylinders.

34. Once re-positioned the OSPAS device set the aluminum seal on the hexagonal hole and smash it.
It is severely forbidden to press the piston-rod into the body when the safety device OSPAS is positioned. High risk to damage and compromise the functional of the safety device.

35. 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.

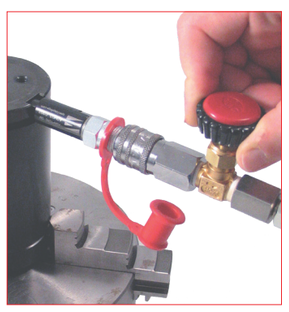


36. Adjust the required maximum pressure trought the regulation valve. The gauge on the right will indicate the maximum allowed pressure to charge the cylinder.
39R... pressure regulation valve.



37. 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.

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



39. 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.

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

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

42. 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.

42.1. 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.

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

44. After the charging operation it is recommended to double check the right locking of the upper ring nut on the body by using the appropriate compass wrench.
58CC… compass wrench.

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

A. After positioning and hosing all the cylinders, proceed through the quick fit device trough 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.

XV. SKUDO REASSEMBLY.

E. It is always recommended to check leaks on the upper side of the cylinders by using the special gas detector.
39RFG Special Springs gas detector.

45. After the charging operation it is recommended to double check the right docking of the upper ring nut on the body by using the appropriate compass wrench.
58CC… compass wrench.

46. Manually reassembly the protective cap SKUDO on the proper groove on the top of the rod. It would be required a light pressure to correctly position it. When the protective cup SKUDO enter correctly into the groove you will hear a loud like "CLICK".

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