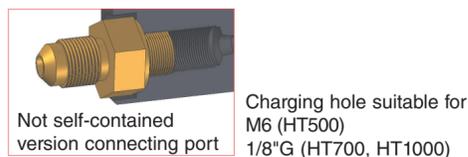
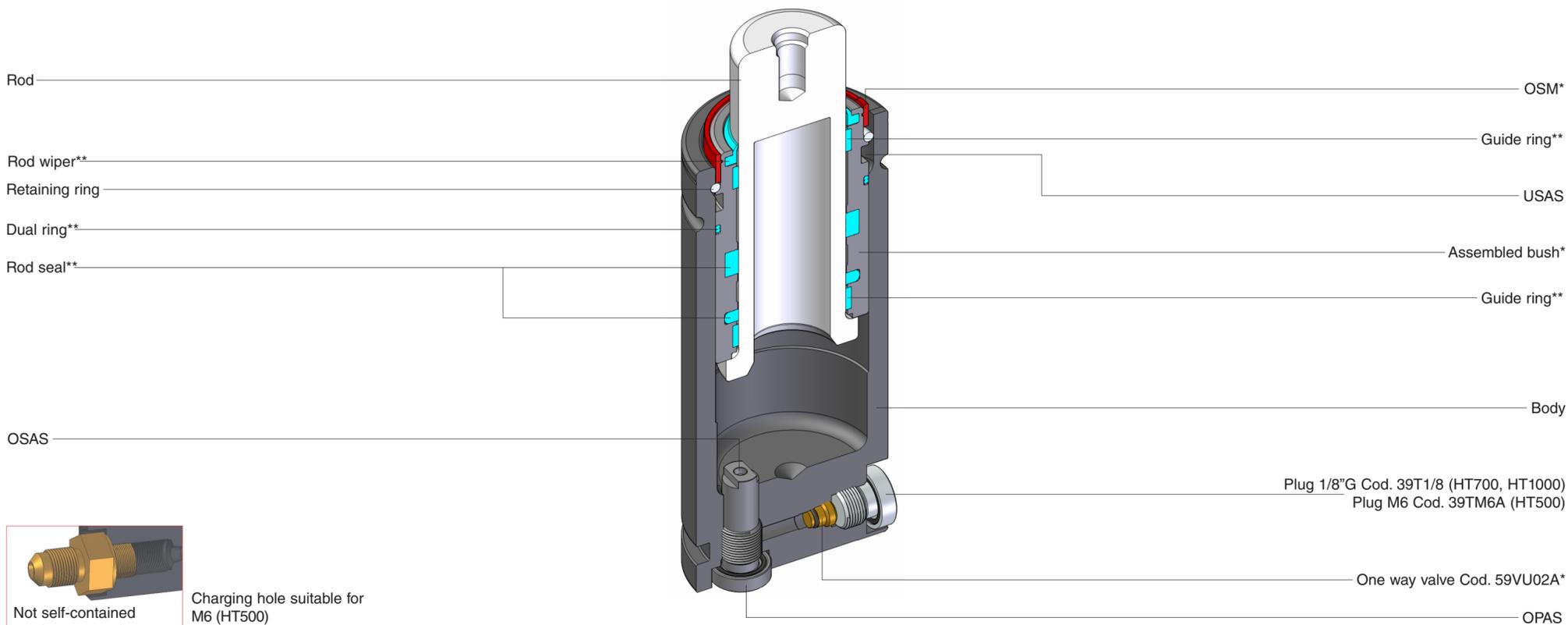


# HT500BT1/T2, HT700BT1/T2, HT1000BT1/T2

\* included in the maintenance kit - \*\* included in the assembled bush



Cod. **39DMA**

The multi device for, decreasing/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](http://www.tecnogas.net)

Cod. **58KNIPEX**

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. **49TP020** (HT500)  
Cod. **49TP024** (HT700)  
Cod. **49TP030** (HT1000)



Reassembly guiding tube.

Cod. **49TC020** (HT500)  
Cod. **49TC024** (HT700)  
Cod. **49TC030** (HT1000)



Reassembly positioning tube for the retaining C-ring.

Cod. **49TN027** (HT500)  
Cod. **49TN032** (HT700)  
Cod. **49TN036** (HT1000)



Anti scratch nylon tube.



## GAS SPRINGS MAINTENANCE KIT

HT500B T1 Cu  $\geq$  13 Cod. **39BMMMGS00038B**  
HT500B T2 Cu  $\geq$  13 Cod. **39BMMMGS00038B**  
HT700B T1 Cu  $\geq$  13 Cod. **39BMMMGS00045B**  
HT700B T2 Cu  $\geq$  13 Cod. **39BMMMGS00045B**  
HT1000B T1 Cu  $\geq$  25 Cod. **39BMHT01000A**  
HT1000B T2 Cu  $\geq$  25 Cod. **39BMHT01000A**

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 gas springs. Few minutes and the Special Springs gas springs 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 gas springs are damage or wear. If yes, it is recommended to replace the gas spring immediately and do not proceed 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](http://www.specialsprings.com)



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**Special Springs S.r.l.**

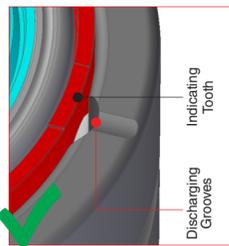
via Nardi, 124/A  
36060 Romano d'Ezzelino (VI) ITALY  
Tel +39 0424 539181  
Fax +39 0424 898230  
info@specialsprings.com  
www.specialsprings.com



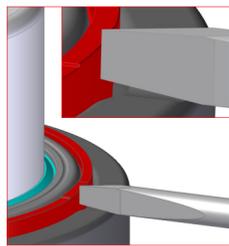
## I. HOW TO REMOVE THE OVER STROKE MARKER.



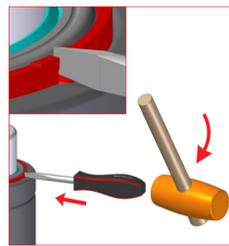
1. Position and clamp the gas spring into a self-centering chuck or a vice.



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.



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
HT500	2,5 ml
HT700	5 ml
HT1000	6 ml

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

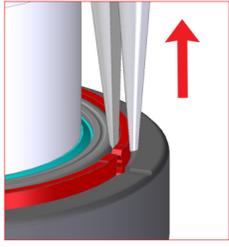


25. Set the positioning tube on the upper part of the gas spring body, then manually insert the piston-rod and the assembled bushing into the positioning tube.



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.

## 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.



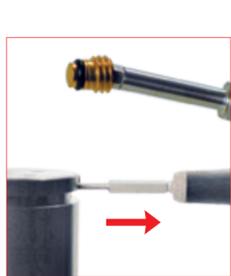
7. Remove the charging plug from the charging hole by using the appropriate tool. Preserve the charging plug for further assembly.



8. Thread DDS discharging device on the charging port then exhaust completely the pressure. Point away from the operator for maximum safety.



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.



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.

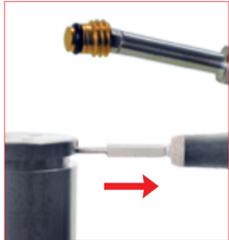


A. To exhaust pressure of hoses cylinders open the discharging valve on the control panel.



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

## 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.



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

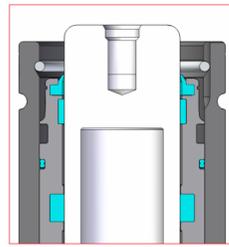


B. Make sure that no gas remains inside the gas springs connected to the system by **PARTIALLY** compressing the rods into the bodies.

## IV. RETAINING RING REMOVAL.



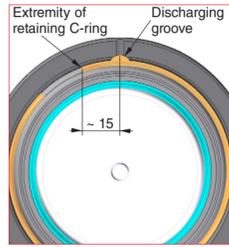
11. Position the anti scratch nylon removal tube (49TN...) on the bush then by the manual press (39PM02A) press all down into the body. The retaining ring is now free for an easy removal.



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-centering chuck or a vice.



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



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 7,5.



14. By using the T-handle M6/M8 (58EM...) extract the piston-rod and the bush from the body.



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

## VI. CLEANING AND INSPECTION



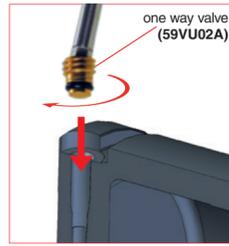
16. Carefully check and clean the gas spring body. If the body show any wear or damage do not use it again and replace it with a new one.



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.



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.

## 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.

## IX. REASSEMBLY OF THE RETAINING C-RING.



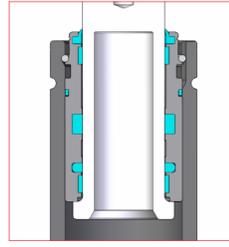
27. Position the retaining C-ring into the conical centring guide tube.



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".



29. Manually extract the assembly piston-rod/bush until it rests against the C-ring.



29.1. Cross section view with all components correctly assembled.

## 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.



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.



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.



33. Once reached and stabilized the desired pressure, for an easy and safe operation carefully follow the instructions supplied with the charging unit.

## 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 7,5.



14. By using the T-handle M6/M8 (58EM...) extract the piston-rod and the bush from the body.



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

## VII. VALVE REASSEMBLY.



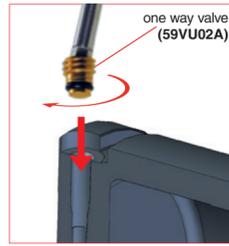
16. Carefully check and clean the gas spring body. If the body show any wear or damage do not use it again and replace it with a new one.



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.



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.



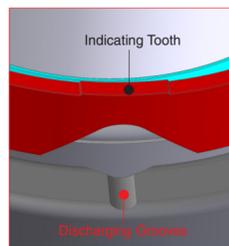
38. It is advisable to check the correct gas sealing after maintenance using a leak detector spray on the upper part of the body.



39. Thread the protective screw into the charging hole by using the appropriate tool.



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.



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.

## 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 trough the control panel for charging all the gas springs. Make sure that the discharging valve is closed properly (15 Nm).



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.