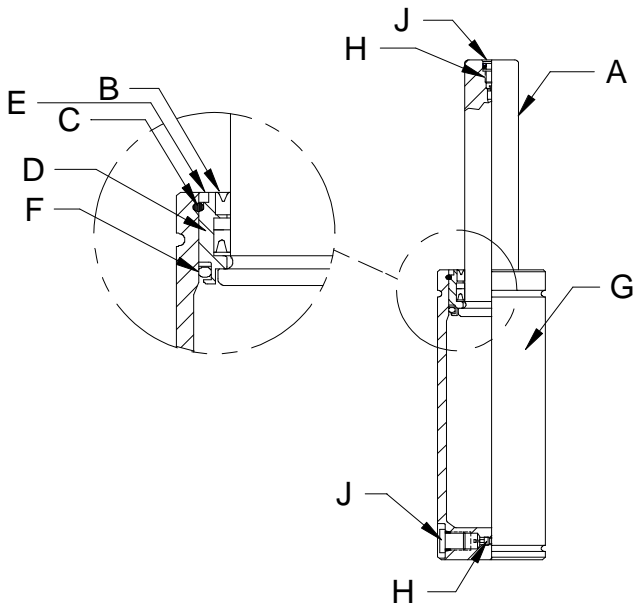


Service Instructions for T2 L & LS Series Gas Springs

Hyson™ Products
Associated Spring 

Service Tools

Spring Model	Seal Kit P/N	Tool Kit	Original Style Valve Tool	New Valve Tool	Service Gauge Assembly	Service Fitting
T2LS-250	T2LSK-250	T2TK-250-750	T2TK-IN-M6	T2TK-IN-M6	MGA-3000	T2-770-M6
T2LS-300	T2LSK-300		T2TK-IN-M6	T2TK-IN-M6		T2-770-T3
T2L-300	T2LSK-300		N/A	T2TK-IN-M6		T2-770-T3
T2LS-500	T2LSK-500		T2TK-IN-M6	T2TK-IN-M6		T2-770-M6
T2L-500	T2LSK-500		T2TK-IN-M6 or T2TK-IN	T2TK-IN		T2-770-M6 or T2-770-4
T2LS-750	T2LSK-750		T2TK-IN-M6	T2TK-IN-M6		T2-770-M6
T2L-750	T2LSK-750		T2TK-IN-M6 or T2TK-IN	T2TK-IN		T2-770-M6 or T2-770-4
T2L-1500	T2LSK-1500	T2TK	T2TK-IN-G1/8	T2TK-IN		T2-770-4
T2L-3000	T2LSK-3000		T2TK-IN-G1/8	T2TK-IN		T2-770-4
T2L-5000	T2LSK-5000		N/A	T2TK-IN		T2-770-4



the spring in a vise.

Note: Original Style T2L-500 and T2L-750 have charge port (J) and valve (H) in both the cylinder tube (G) and rod (A) as shown in the figure; either port can be used for charging or discharging. All T2LS models, except the T2LS-300, have the charging valve located in the rod (A) only. The T2LS-300, T2L-1500, T2L-3000 and T2L-5000 have the charging valve located in the cylinder tube (G) only.

Discharging self-contained springs

1. Remove one charge port plug (J) located in the piston rod (A) or cylinder tube (G).
2. Close the bleed-down valve on the MGA-3000 service-gauge assembly. Thread the service fitting into the charge port. Attach the MGA-3000 to the service fitting to depress the valve. *Alternative method: Thread the valve tool into the charge port to depress the valve.*
3. To verify all pressure has been exhausted, manually depress the piston rod (A) into the cylinder (G) by striking the top of the rod with a rubber mallet.

Charging self-contained springs

1. Close the bleed down valve on the MGA-3000 service gauge assembly. Thread the service fitting into the charge port. Attach the MGA-3000 to the service fitting.
2. Open the valve on the nitrogen bottle and slowly charge the spring to the desired pressure.

Warnings

- Failure to exhaust all gas pressure prior to disassembly could result in serious injury.
- The maximum charging pressure is 150 bar (2175 psi).
- Once the charge port plug (J) is removed, **never** lean directly over the valve. Always direct the valve port away from yourself and others.
- Never use extreme force on the gas spring. Charged gas springs are under high internal pressure and should be protected from damage.
- Always use protective jaws when clamping

- Close the valve to the nitrogen bottle. Disconnect the service gauge assembly and unscrew the service fitting from the spring.
- Thread the charge port plug (J) into the port.

Disassembly

- Verify all pressure has been exhausted from the spring by following the “Discharging self-contained springs” instructions.
- Remove all port plugs (J) located in the piston rod (A) and/or cylinder tube (G).
- Using the valve tool, unscrew the valve (H) from the valve ports. Remember that original style T2L-500 and T2L-750 have a valve located in both the rod (A) and the cylinder tube (G).
- Using a socket and rubber mallet, tap the guide (D) into the cylinder tube (G) until the lock ring (C) is exposed. Remove the lock ring (C) using the lock ring tool. Bend the lock ring upwards and inwards.
- Thread the T-handle into the top of the piston rod (A). Pull the rod/guide assembly out from the cylinder tube (G).
- Remove guide from the piston rod (A).
- Save the piston rod (A) and cylinder tube (G).


Inspection

- Clean the piston rod (A) and the cylinder tube (G).
- Visually inspect the piston rod (A) and cylinder tube (G) to ensure they are reusable. There should be no scratches or indentations on the piston rod, the inside surface of the tube, or the lock ring groove. If defects exist, replace the parts.

Assembly

- Unpack the seal kit.
- Oil the seals on the guide (D) and the top of the piston rod (A). Insert the guide (D) onto the piston rod (A). **Note:** The end of the guide holding the static o-ring (F) should be facing the piston end.
- Lightly oil the inside diameter of the cylinder tube (G) to prevent damage to the o-ring on the guide.
- Using the following table, fill the spring with the appropriate volume of oil.

Spring Model	Stroke Lengths	Oil Volume
T2LS-250	all	4 ml
T2L-300	all	4 ml
T2LS-300	all	4 ml
T2L-500	all	8 ml
T2LS-500	0.5"-1.5" 12.7-38mm	5 ml
T2LS-500	1.97"-4.92" 50-125mm	8 ml
T2L/LS-750	0.25"-1.5" 6.35-38.1mm	5 ml
T2L/LS-750	2"-5" 50.8-127mm	10 ml
T2L-1500	all	30 ml
T2L-3000	all	30 ml
T2L-5000	all	40 ml

- Insert the piston/guide assembly into the cylinder tube (G). Tap down the guide (D) using a socket and rubber mallet.
 - Fit the lock ring (C) into the lock ring groove by pushing one end of the ring into the groove and knocking the other end with a mallet until it snaps into place. You can hear a clicking sound when the ring snaps into place.
 - Thread the T-handle into the piston rod and pull the piston rod/guide assembly upwards so the top of the guide is in line with the cylinder tube end.
-  **Warning:** If the guide cannot be pulled in line with the upper tube end, there is something wrong with the assembly. Gas should not be put into the spring until the guide is in line with the tube end.
- Using the valve tool, thread the valve (H) into the valve port. Remember original style T2L-500 and T2L-750 have a valve located in both the piston rod (A) and cylinder tube (G). **Note:** Finger strength is enough; do not over-tighten.
 - Charge the springs according to the “Charging self-contained springs” instructions.
 - Install the dust cover (E).
 - Thread the port plug (J) into the charge ports. Tighten with 133-159 in-lbs (15-18Nm) of torque. **Note:** The cover screw (J) has a sealing function and must be tightly fastened.