





RH3 & RH4 Relief Valve

Maintenance Instructions



Spring Kit Contents

Spring	Spring Support
	
Lock-wire with Lead Seal	Label
	

Seal Kit Contents

Quad Seal	O-Ring
	
Seat O-Ring	Retainer (RL3 Only)
	

Manual Override Kit Contents

Handle	Pull Rod
	

WARNING
If the valve is disconnected from a system, it must be depressurized, cycled, and purged.

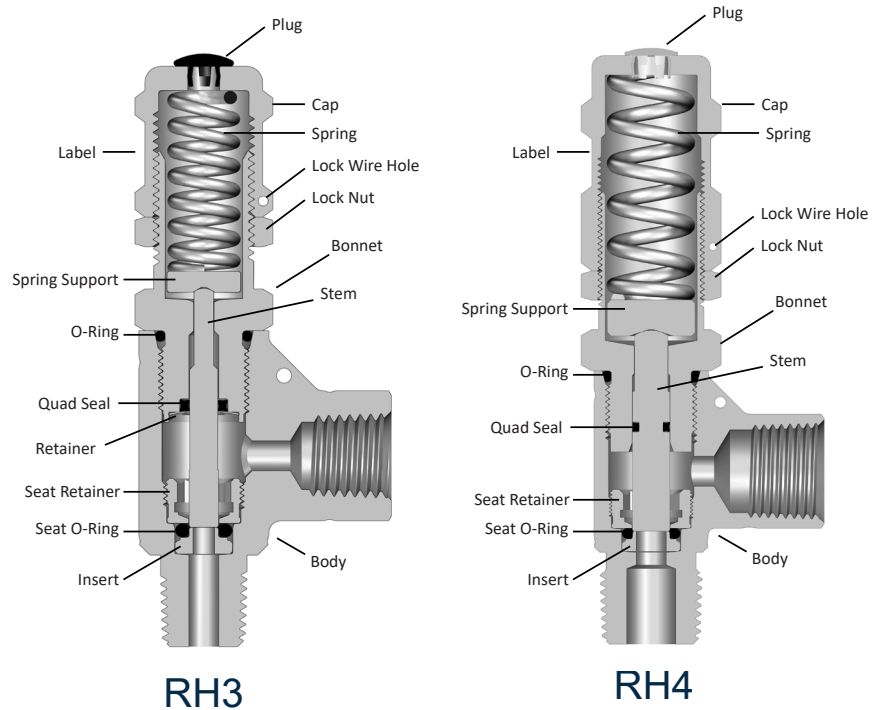
CAUTION
Care should be taken to not scratch or damage sealing surfaces.

Spring Kit Instructions

1. Remove valve from system.
2. Loosen **lock nut** and remove **cap** from **bonnet**.
3. If installed, remove and discard old **spring** and **spring support**.
4. Insert new **spring support** into **bonnet**.
Important: Large dimpled (beveled) surface must face toward **stem**.
5. Insert the new **spring**.
6. If different, replace old label with new label.
7. Thread the **cap** onto the **bonnet**. (See chart)
8. If replacing the spring only, proceed to **Adjusting the Set Pressure**.

Seal Kit Instructions

1. Remove valve from system.
2. Loosen **bonnet**.
3. Remove **bonnet** from **body**.
4. Remove **stem** and **O-Ring** from **bonnet**.
Discard **O-Ring**.



5. **RH3 Only:** Remove **retainer** and discard.

6. Remove **quad seal** and discard.

7. Remove **seat retainer** with hex wrench.
(**RH3 - 5/16"** / **RH4 - 7/16"**).

8. Remove **seat O-Ring** and **insert**. Discard **seat O-Ring**.

9. Make sure all parts are clean before reassembly.

10. Install new **seat O-Ring** onto **insert**. (Lubricate with system compatible lubricant). Insert assembly into **body**.

11. Install **seat retainer** into **body** and tighten to
• **RH3: 200 in.·lb (22.6 N·m)**
• **RH4: 300 in.·lb (33.9 N·m)**

12. Install new **quad seal** (lubricate with system compatible lubricant).

13. **RH3 Only:** Install new **retainer** (teeth of retainer must face away from quad seal).

14. Install new **O-Ring** onto **bonnet**. (Lubricate with system compatible lubricant).

15. Lubricate tip of **stem** and insert into **bonnet**.

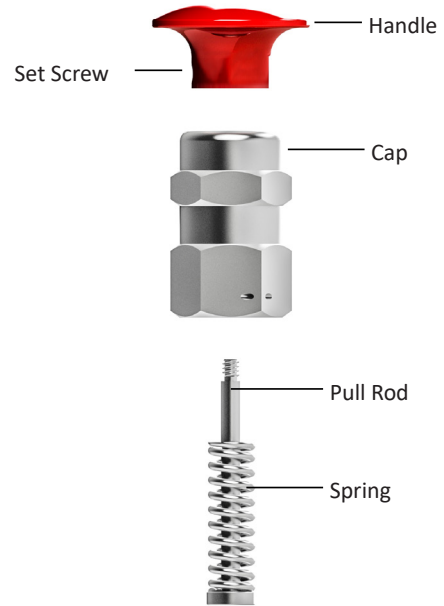
16. Thread **bonnet** into **body** and tighten to
• **RH3: 400 in.·lb (45.2 N·m)**
• **RH4: 600 in.·lb (67.8 N·m)**

17. Proceed to **Adjusting the Set Pressure**.

Manual Override Conversion

- ⚠ Use With:**
- RH3 - A, B and C Springs only.
 - RH4 - A Spring only.

1. Remove valve from system.
2. Loosen **lock nut** and remove **cap** from **bonnet**.
3. Remove **plug** from **cap** and discard.
4. Remove **spring** from **bonnet**.
5. Remove **spring support** and discard.
6. Install **pull rod** into **bonnet**.
7. Place **spring** over **pull rod**.
8. Place **cap** over **pull rod**, resting it on **bonnet**.
9. Screw **handle** onto **pull rod**. Tighten set screw on **handle** to **10 in.·lb (1.1 N·m)** with 5/64 in. hex bit.
10. Thread the **cap** onto the **bonnet**. (See chart)
11. Proceed to **Adjusting the Set Pressure**.



Adjusting the Set Pressure

NOTE: Adjust the set pressure before installing the valve in a system

1. Tighten **lock nut** against the **cap**.
2. Test set pressure.
3. Adjustment of set pressure:
 - Relieve system pressure and loosen **lock nut**.
 - Turn **cap** clockwise to increase set pressure.
 - Turn **cap** counterclockwise to decrease set pressure.
4. Repeat steps 1 through 3 until desired pressure is obtained.
5. With backup wrench on **cap**, tighten **lock nut** to **100 in.·lb (11.3 N·m)**.
6. Attach lock wire with lead seal.
7. Install valve in system.

Spring Designator and Color		Set Pressure Range psig (bar)	Initial Cap Position (number of turns)
RH3			
A	Blue	50 to 350 (3.4 to 24.1)	9
B	Yellow	350 to 750 (24.1 to 51.7)	8.5
C	Purple	750 to 1500 (51.7 to 103)	9
D	Orange	1500 to 2250 (103 to 155)	6
E	Brown	2250 to 3000 (155 to 206)	6
F	White	3000 to 4000 (206 to 275)	6
G	Red	4000 to 5000 (275 to 344)	6
H	Green	5000 to 6000 (344 to 413)	6
RH4			
A	Blue	50 to 350 (3.4 to 24.1)	9
B	Yellow	350 to 750 (24.1 to 51.7)	8.5
C	Purple	750 to 1500 (51.7 to 103)	9