

KPP Series Regulators Maintenance Instructions

Swagelok®

Kit Contents



Piston seal and spring



Piston seal retainer



Seat retainer



Body seal and spring



Seat



Poppet damper



Poppet



Poppet spring



Lubricant
MS-LT-WL8



Inlet filter

Symbols












Discard



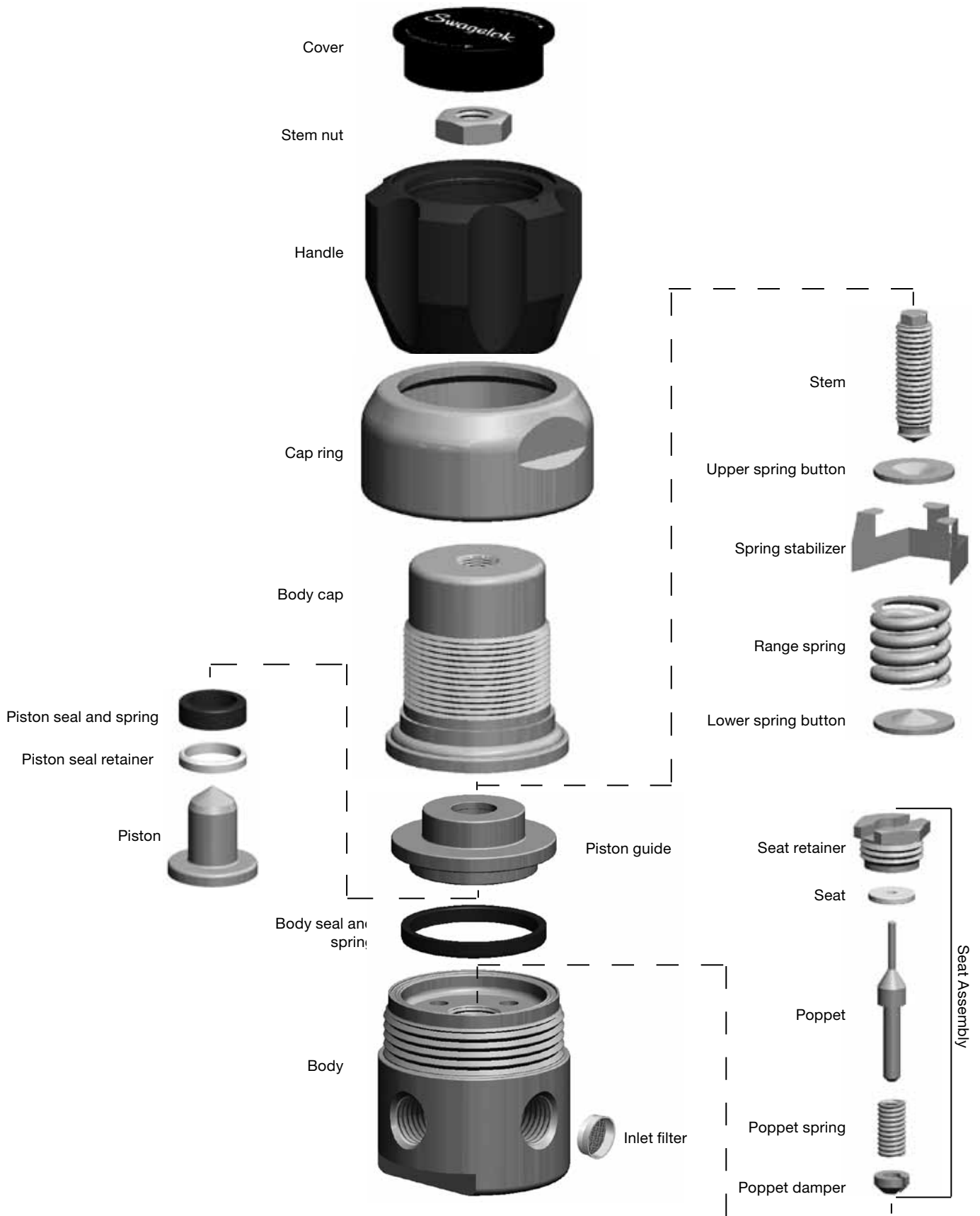
Lightly lubricate

Tools Required

Tool	Size	Component
Vise 	-	Body
Socket 	11/16 in. or 17 mm	Stem nut, Antitamper nut
	5/8 in. or 16 mm	Seat retainer
Crow's Foot 	2 in. or 50 mm	Cap ring
Open-ended wrench 	2 in. or 50 mm	Cap ring
Torque wrench 	Capable of 100 ft·lb (135 N·m, 13.8 m·kg)	Seat retainer, Cap ring
Swagelok Tools Available		
Piston seal insertion tool 	-	Piston seal and spring
Body seal insertion tool 	-	Body seal and spring
Filter insertion tool 	-	Inlet filter
Filter pick tool 	-	Inlet filter

Note: See *Pressure Regulators*, MS-02-230, for tool ordering information.

Exploded View



Note: Plated steel spring buttons shown.
 Assemblies with the 316 SS spring buttons do not include the spring stabilizer.

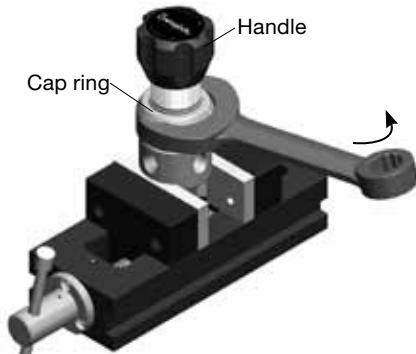
⚠ WARNING

Before removing a regulator from the system for service, you must

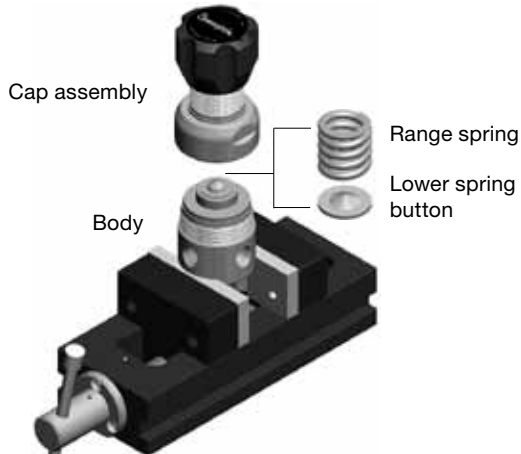
- depressurize system
- purge the system to remove any residual system media left in the regulator.

Disassembly

1. Place the regulator in a vise.
2. Turn the **handle** counterclockwise until it stops.
Note: If using an antitamper nut, remove it from the body. Then turn the stem counter clockwise until it stops.
3. Loosen the **cap ring**.



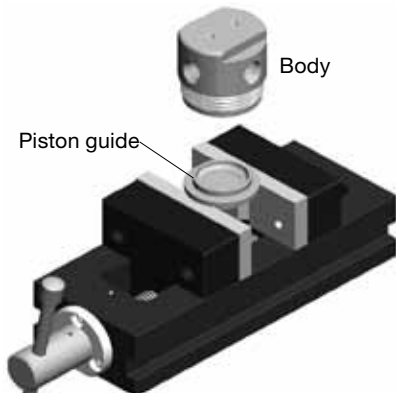
4. Remove the **cap assembly** and handle as one piece and set aside for later use.
Note: The **range spring** and the **lower spring button** may fall from the **cap assembly**. Set aside for later use.



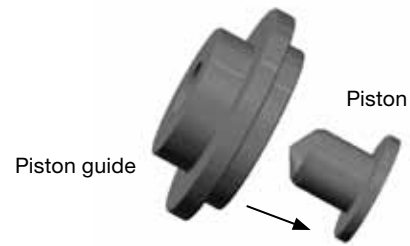
5. Lightly grip the **piston guide** in the vise and remove the **body**.

NOTICE

Twist the body gently to avoid body seal and spring damage. Leakage could result.



6. Push the **piston** out of the **piston guide**.



7. Remove the **piston seal and spring** and the **piston seal retainer** from the **piston guide**, and the **body seal and spring** from the **body**.

NOTICE

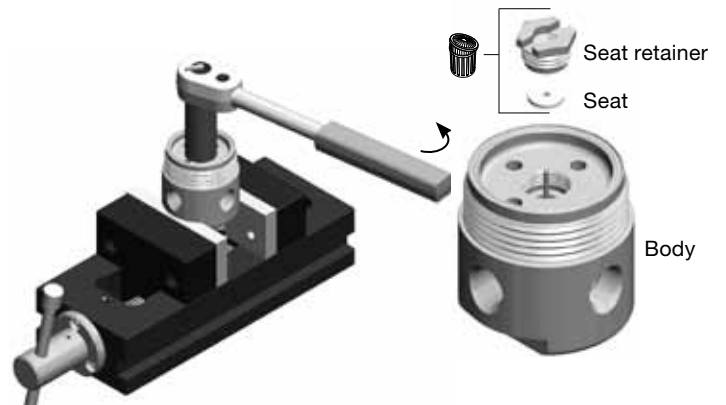
Do not damage the inner diameter of the piston guide. Leakage could result.



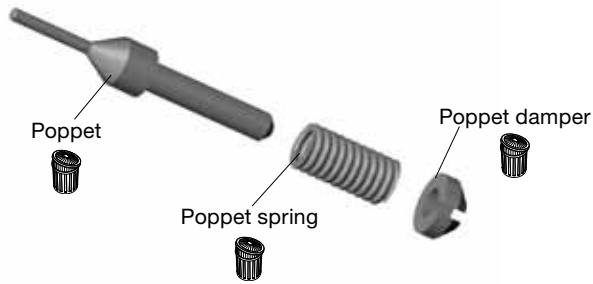
8. Loosen and remove the **seat assembly**. Discard the **seat** and **seat retainer**.

NOTICE

Be careful not to scratch the inside of the body. Leakage could result.



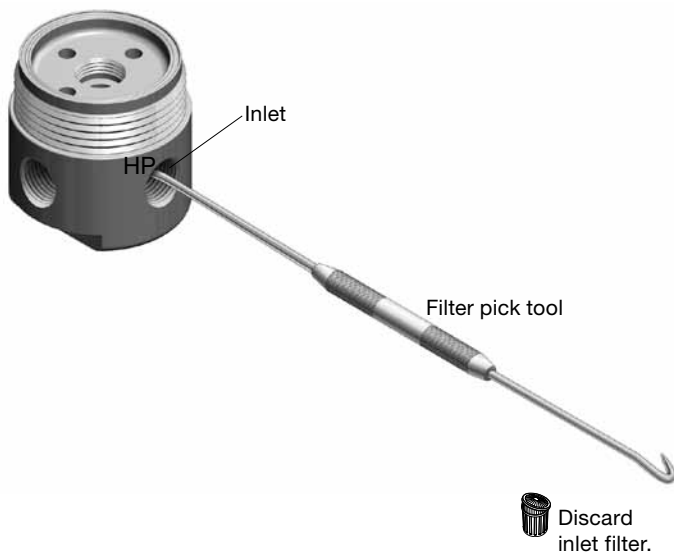
9. Invert the body and remove the **poppet**, the **poppet spring**, and the **poppet damper**.



10. Remove the **inlet filter** from the **inlet** (marked 'HP') of the body using the **filter pick tool**. Discard old filter.

NOTICE

Be careful not to scratch the sides of the inlet port. Leakage could result.

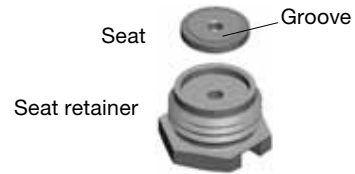


Reassembly

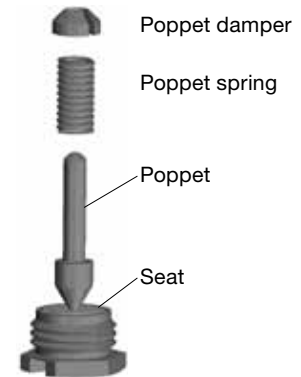
NOTICE

Ensure all parts and tools are free of debris or damage.

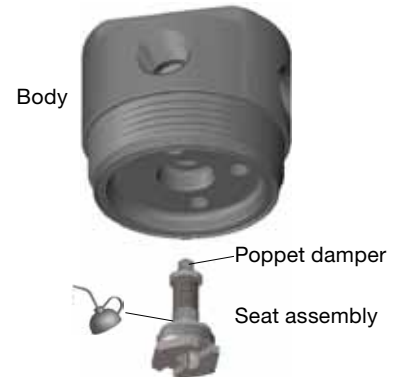
11. Insert the **seat** into the **seat retainer** with the groove facing away from the seat retainer.



12. Place the **poppet** through the **seat**. Place the **poppet spring** and the **poppet damper** onto the exposed end of the poppet.



13. Invert the **body** and thread the **seat assembly** into the body.

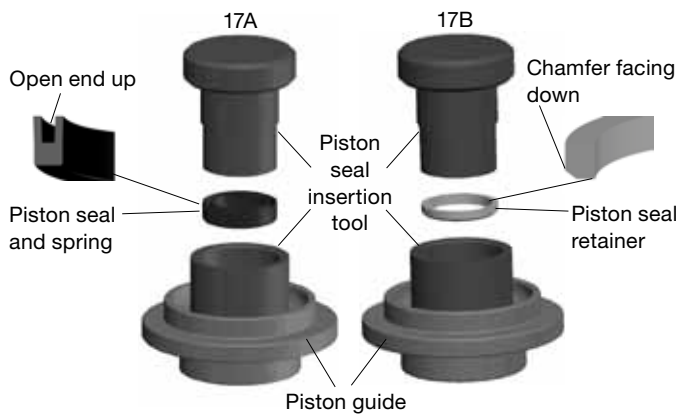


14. Tighten the **seat assembly** to 13 lb-ft (17.5 N-m, 1.8 m·kg).



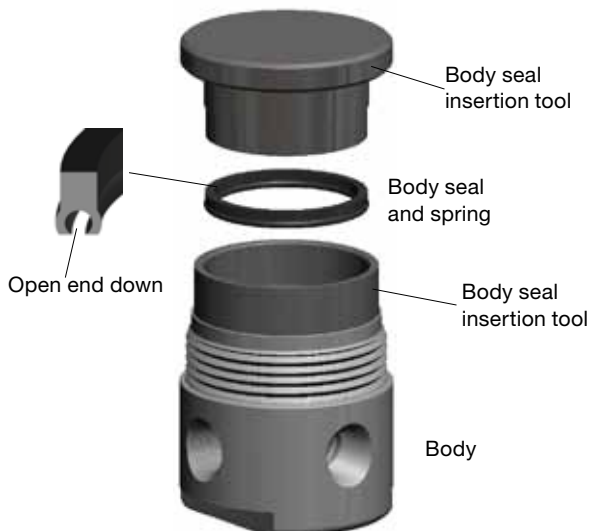
15. Insert the bottom of the **piston seal insertion tool** into the **piston guide**. Insert the **piston seal and spring** into the piston guide and use the top part of the piston seal insertion tool to press the seal into place (17A). Then insert the **piston seal retainer**, pressing it into place using the top part of the piston seal insertion tool (17B).

Note: The open end of the **piston seal and spring** should be facing up. The chamfer of the **piston seal retainer** should be placed against the piston seal and spring.

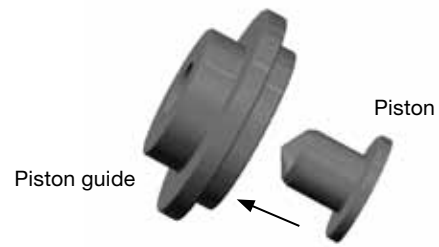


16. Insert the bottom of the **body seal insertion tool** into the **body**. Insert the **body seal and spring** and use the top part of the body seal insertion tool to press the seal into place.

Note: The open end of the body seal and spring should be facing down.



17. Push the **piston** into the **piston guide**.



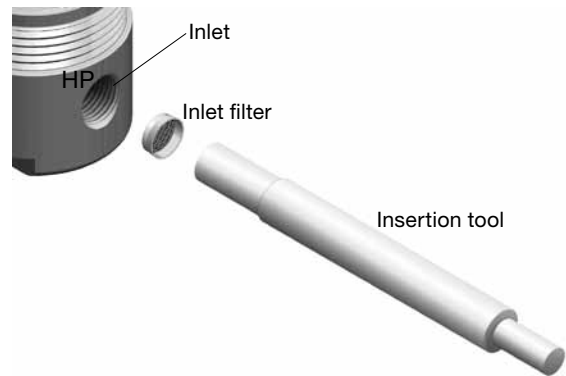
18. Push the **piston guide** onto the body until it fully engages with the **body seal and spring**.



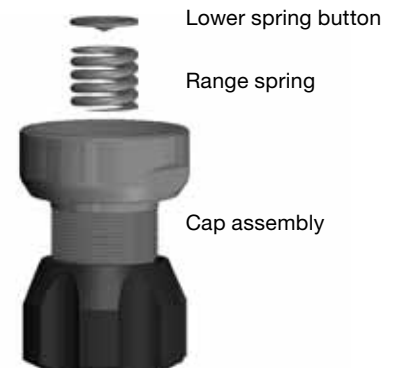
19. Insert the **inlet filter** in the **inlet** (marked 'HP') using the **filter insertion tool**.

NOTICE

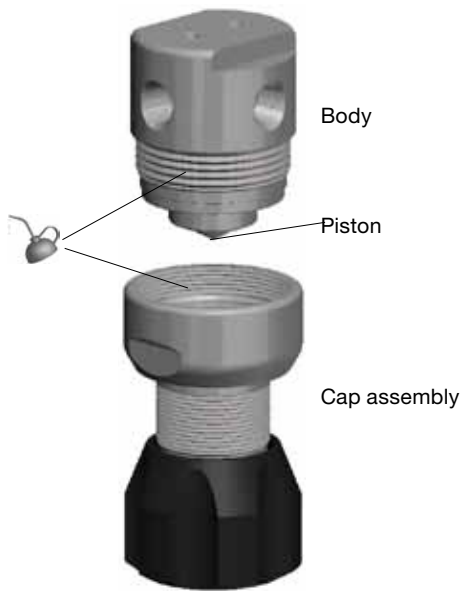
Do not insert the inlet filter with a sharp tool. Damage to the filter could result.



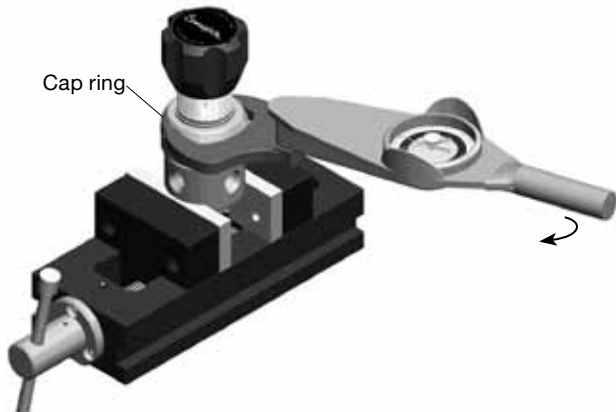
20. Insert the **lower spring button** into the cap assembly with the point towards the **range spring** if necessary.



21. Invert and thread the **body** into the **cap assembly**.



22. Tighten the **cap ring** to 100 ft·lb (135 N·m, 13.8 m·kg).



23. Test the regulator for proper operation.

24. If using an antitamper nut, thread the antitamper nut onto the stem after the set outlet pressure is reached. Tighten the nut to 13.0 ft·lb (17.5 N·m, 1.8 m·kg).

For additional information, see www.swagelok.com.