

KPF Series Regulators Maintenance Instructions

Swagelok®

Kit Contents



Seat retainer



Seat



Poppet spring



Poppet



Poppet seal and spring



Piston seal retainer



Piston seal and spring



Poppet seal retainer



Spring retainer



Body seal



Inlet filter



Lubricant
MS-LT-WL8

Symbols















Discard



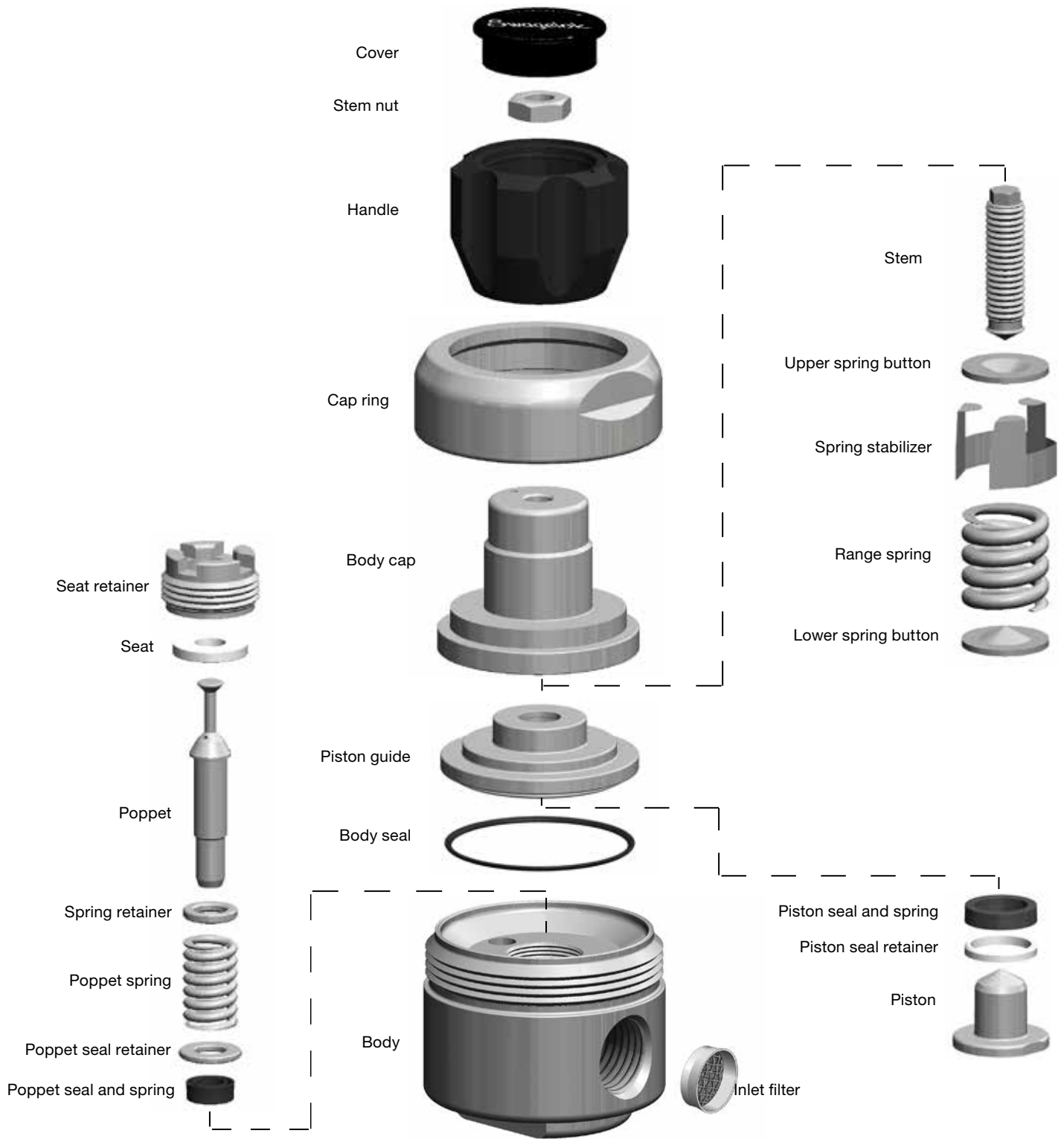
Lightly lubricate

Tools Required

Tool	Size	Component
Vise 	-	Body
Socket 	11/16 in. or 17 mm	Stem nut, Antitamper nut
Crow's Foot 	3/4 in. or 19 mm	Seat retainer spanner
Open-ended wrench 	3/4 in. or 19 mm	Seat retainer spanner
Torque wrench 	Capable of 120 ft-lb (160 N·m, 16.5 m·kg)	Cap ring spanner
Swagelok Tools Available		
Large cap ring spanner 	2 7/8 in. or 73 mm	Cap ring
Seat retainer spanner 	-	Seat retainer
Poppet seal insertion tool 	-	Poppet seal and spring
Piston seal insertion tool 	-	Piston seal and spring
Seal extraction tool 	-	Poppet seal and spring
Filter insertion tool 	-	Inlet filter
Filter pick tool 	-	Inlet filter

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

Exploded View



Note: Plated steel spring buttons shown.

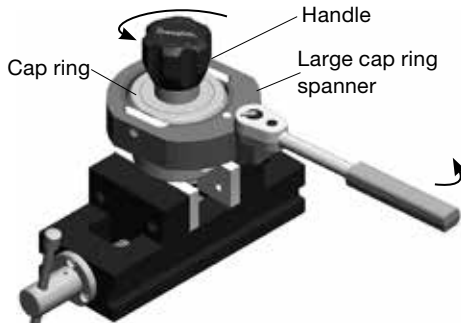
⚠ WARNING

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.

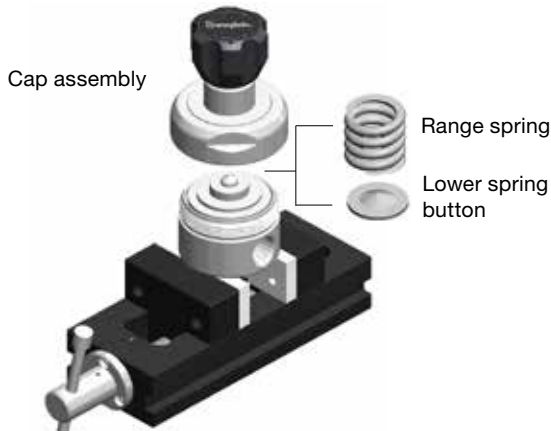
Disassembly

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.

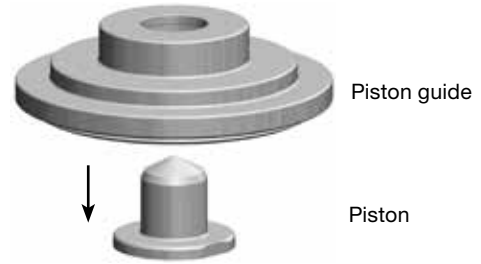
Note: The **range spring** and the **lower spring button** may fall from the **cap assembly** when lifted. Set aside for later use.



5. Remove the **piston assembly** from the **body**.



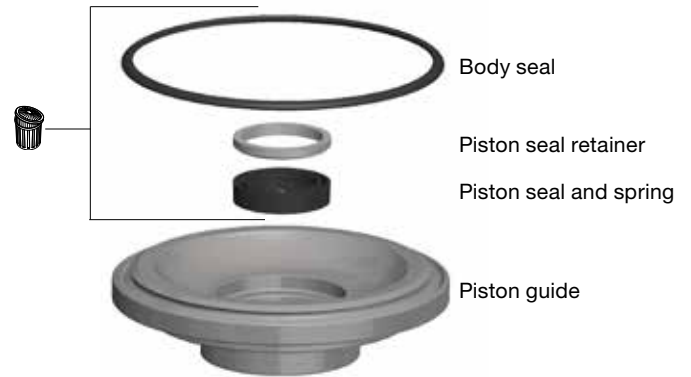
6. Push the **piston** out of the **piston guide**.



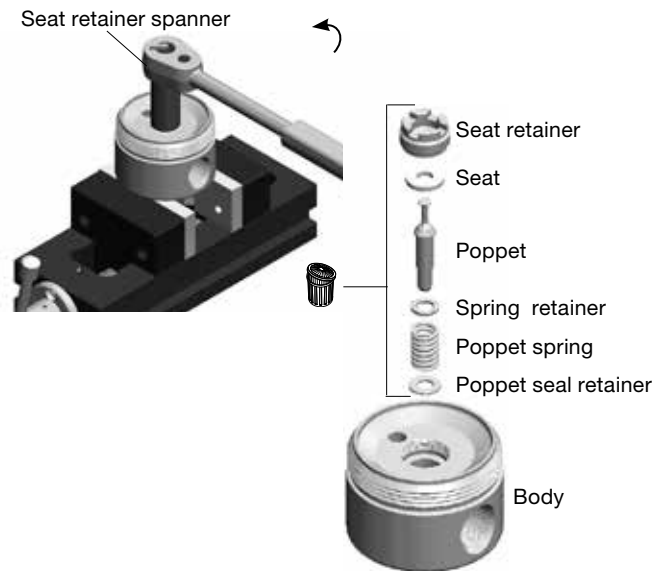
7. Remove the **body seal**, the **piston seal retainer**, and the **piston seal and spring** from the **piston guide**. Set the piston guide aside for later use.

NOTICE

Do not damage the piston guide sealing surfaces. Leakage could result.



8. Use the **seat retainer spanner** to loosen the **seat assembly**. Discard the **seat retainer**, the **seat**, the **poppet**, the **spring retainer**, the **poppet spring** and the **poppet seal retainer**.



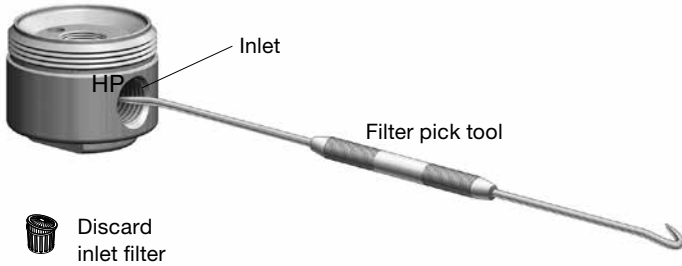
9. Thread the seal extraction tool into the body and remove the **poppet seal and spring**.



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

NOTICE

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



Reassembly

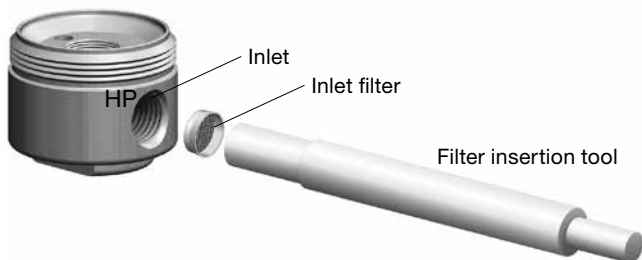
NOTICE

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

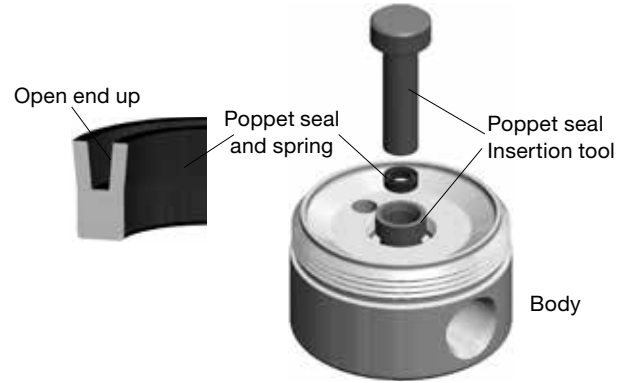
11. Insert the **inlet filter** into the inlet port (marked 'HP') using the **filter insertion tool**.

NOTICE

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



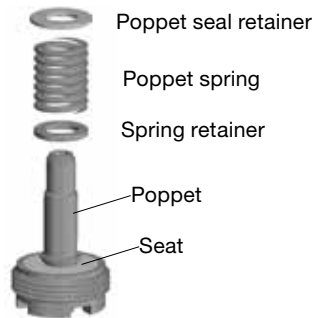
12. Insert the **poppet seal and spring** into the **body** using the **poppet seal insertion tool** with the open end of the poppet seal and spring facing up.



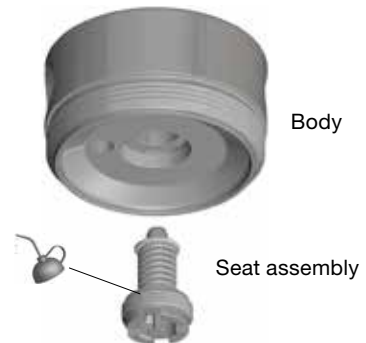
13. Insert the **seat** into the **seat retainer** with the groove facing away from the seat retainer.



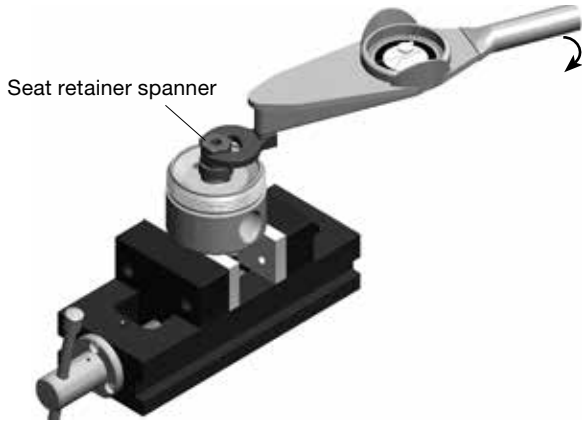
14. Place the **poppet** through the **seat**. Then place the **spring retainer**, the **poppet spring** and the **poppet seal retainer** onto the exposed end of the poppet.



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

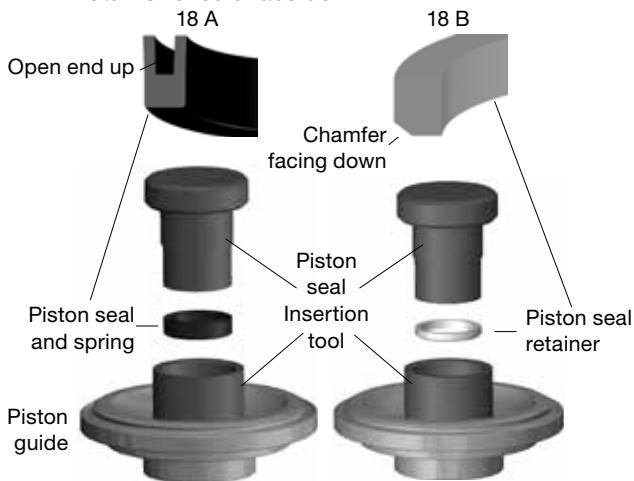


16. Tighten the **seat assembly** to 30 ft-lb (40 N·m, 4 m·kg).



17. Set lower section of the **piston seal insertion tool** on the **piston guide**. Place the **piston seal and spring** into the insertion tool. Use upper section of insertion tool to press the piston seal and spring into place (18A). Then place the **piston seal retainer** into the lower section of the insertion tool. Use the upper section of insertion tool to press the piston seal retainer into place (18B).

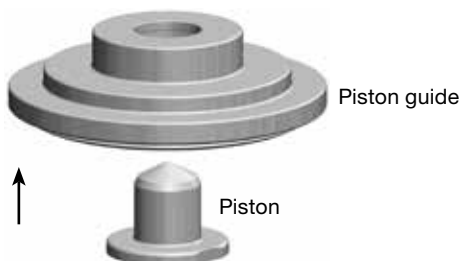
Note: The open end of the **piston seal and spring** should be facing up and the chamfer of the **piston seal retainer** should face down.



18. Fit the **body seal** into the groove on the **piston guide**.



19. Push the **piston** into the **piston guide**.



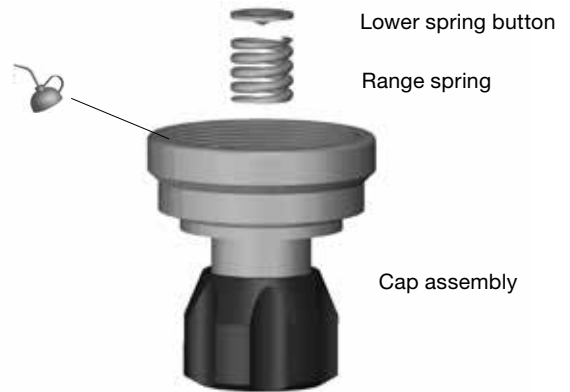
20. Place the **piston assembly** on the **body**.

NOTICE

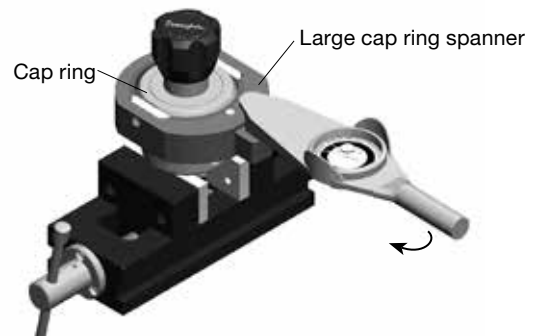
Do not damage the sealing surface on the body. Leakage could result.



21. Reinsert the **lower spring button** into the **cap assembly** with the point towards the **range spring** if necessary.



22. Thread the cap assembly onto the body and tighten the **cap ring** to 120 ft-lb (160 N·m, 16.5 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 ft-lb (17.5 N·m, 1.8 m·kg).

For additional information, see www.swagelok.com.