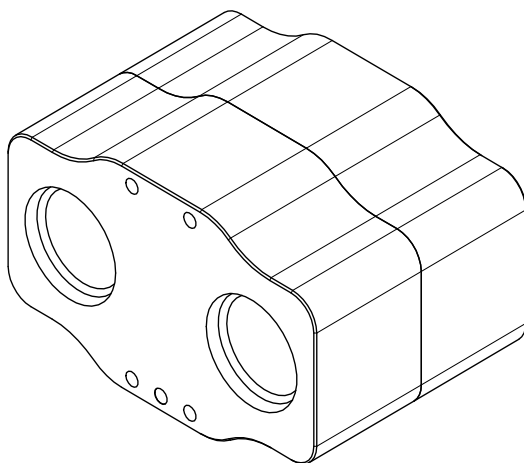




## FSM THERMOSTAT REBUILD KIT

PART NO. FSM-XXX-RKIT

MADE IN USA



Important: Read these instructions in their  
entirety prior to installation.

For contact information, visit [www.improvedracing.com](http://www.improvedracing.com)  
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# APPLICATIONS

- The FSM-XXX-RKIT is a rebuild kit for Improved Racing's Flow-Series-Motorsports (FSM) family of thermostats.
- The rebuild kit can be optioned with the original temperature element, or a different temperature should the needs of the system change.

# SCHEMATIC, PARTS LIST & HARDWARE

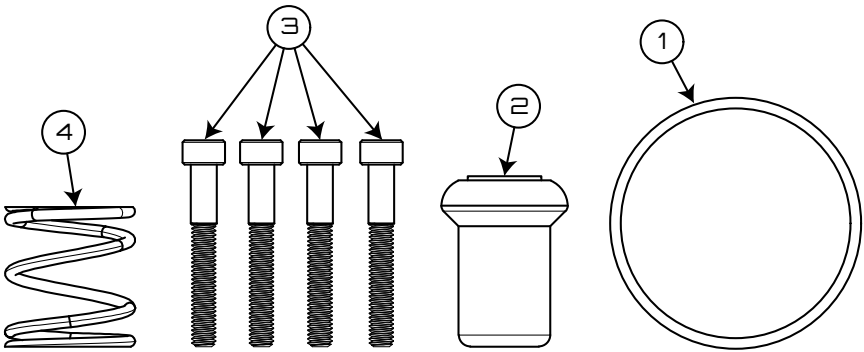


Figure 1 - FSM-XXX-RKIT Contents

Item	Qty	Part Number	Description
1	1	HRG-1003	-034 Viton Elastomer O-ring
2	2	HEL-100X	Element (Choose Temperature)
3	4	HSC-1018	M4x0.7x30 Socket Screw
4	1	HSG-1008	Stainless Steel Spring

# GENERAL REBUILD KIT INFO





Maximum Operating Temperature	302°F (150°C)
Minimum Operating Temperature	-22°F (-30°C)
Maximum Operating Pressure	300 psi (20.68 bar)
HRG-1003 O-ring Info	AS568 -034 Size, OD = 2.254 inch, ID = 2.114 inch, W = 0.070 inch, Viton Rubber (75A)

<b>HEL-100X Element Info</b>	Brass Body, Steel Ram & Thermostatic Wax, >10K Cycle Life Regardless of Temperature
<b>HSC-1018 Hardware Info</b>	M4x0.7x30 ISO 4762 Socket Screw, 10.9 Class Alloy Steel, Clear-Zinc, 5g6g Fit, 3 mm Drive
<b>HSG-1008 Spring Info</b>	Lee Spring PN LC 072K 03 S, 302/304 Stainless Steel, Passivated per ASTM A967, OD = 0.845 inch, Wire Diameter = 0.072 inch, k = 22.4 lbf/inch, Squared & Ground Spring Ends


## HEL-100X ELEMENT TEMPERATURE INFO

Part Number	Activation Temperature	Stabilization Temperature
HEL-1000	180°F +/- 2°F (82°C +/- 1°C)	185°F +/- 2°F (85°C +/- 1°C)
HEL-1001	160°F +/- 2°F (71°C +/- 1°C)	165°F +/- 2°F (74°C +/- 1°C)
HEL-1002	212°F +/- 2°F (100°C +/- 1°C)	215°F +/- 2°F (101°C +/- 1°C)
HEL-1003	140°F +/- 2°F (60°C +/- 1°C)	145°F +/- 2°F (63°C +/- 1°C)
HEL-1004	200°F +/- 2°F (93°C +/- 1°C)	205°F +/- 2°F (96°C +/- 1°C)




## BEFORE YOU BEGIN

-  **Tip:** The **Red Numbers** in Figure 2 are for disassembly steps.
-  **Tip:** The **Green Numbers** in Figure 2 are for reassembly steps.
-  **Tip:** Ensure that the O-ring stays in the gland during reassembly.
-  **Tip:** Perform the thermostat rebuild on a clean and level surface for the easiest rebuild experience, and check out Improved Racing's videos on rebuilding the FSM thermostat: <https://www.youtube.com/user/ImprovedRacing/videos>.

## DISASSEMBLY INSTRUCTIONS

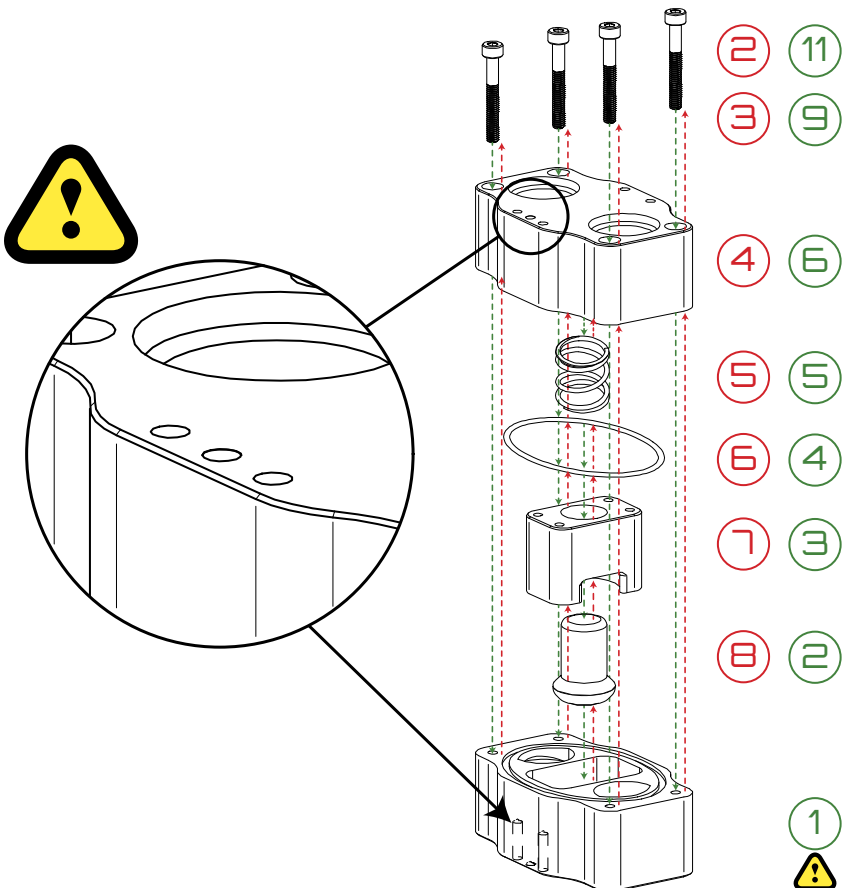
1. Lightly clamp the thermostat down to a work surface.
2. Use a 3 mm tool to break all of the M4 screws loose in a crisscrossing pattern. ②
3. Use the 3 mm tool to completely remove each screw from the top thermostat half. Discard / recycle the screws. ③
4. Slowly release and remove the clamp from the thermostat, followed by carefully removing the top half of the thermostat. Set aside. ④
5. Remove the old spring from the thermostat and discard / recycle. ⑤
6. Working from the inside oval of the gasket gland, carefully extract the old O-ring from the gland using a gasket pick or similar tool. ⑥
-  **WARNING: DO NOT damage the outside edge of the oval O-ring gland.**
7. Carefully remove the valve and element from the bottom half of the thermostat. ⑦
8. Remove the element from the valve and discard the element. ⑧
9. Clean / wipe-off all parts prior to reassembly.

## REASSEMBLY INSTRUCTIONS

1. Place the bottom half of the thermostat onto the work surface. ①
-  **WARNING: Ensure that the alignment dots are oriented properly.**
2. Place the new element into the valve. ②
3. Carefully slide the valve and element back into the recess on the bottom half of the thermostat. ③
4. Place the new O-ring into the oval gland on the bottom half of the thermostat. ④
5. Place the new spring onto the valve, centered over the element. ⑤
6. Place the top half of the thermostat onto the spring, ensuring the spring locates in the milled pocket within the top half of the thermostat. ⑥
-  **WARNING: Ensure that the alignment dots are oriented properly.**
7. Slowly compress the top half of the thermostat onto the bottom half.
-  **Tip:** Ensure that the O-ring stays in the gland during reassembly.
8. Gently fixture the top half using the same clamp as before.

9. Place all four of the new M4 screws to their respectable holes in the top half of the thermostat. ⑨
10. Hand-start each screw, followed by fully hand-tightening the screws with a 3 mm tool.
11. Use a 3 mm driver and torque wrench to torque the screws in a crisscrossing pattern to 25 lb-in. **DO NOT EXCEED THIS TORQUE.** ⑪
12. Perform a second pass in the same pattern to validate the torque value on the fasteners.
13. Release the clamp.

*The rebuild has been completed!*



**Figure 2 - FSM-XXX-RKIT Disassembly & Reassembly Steps**