

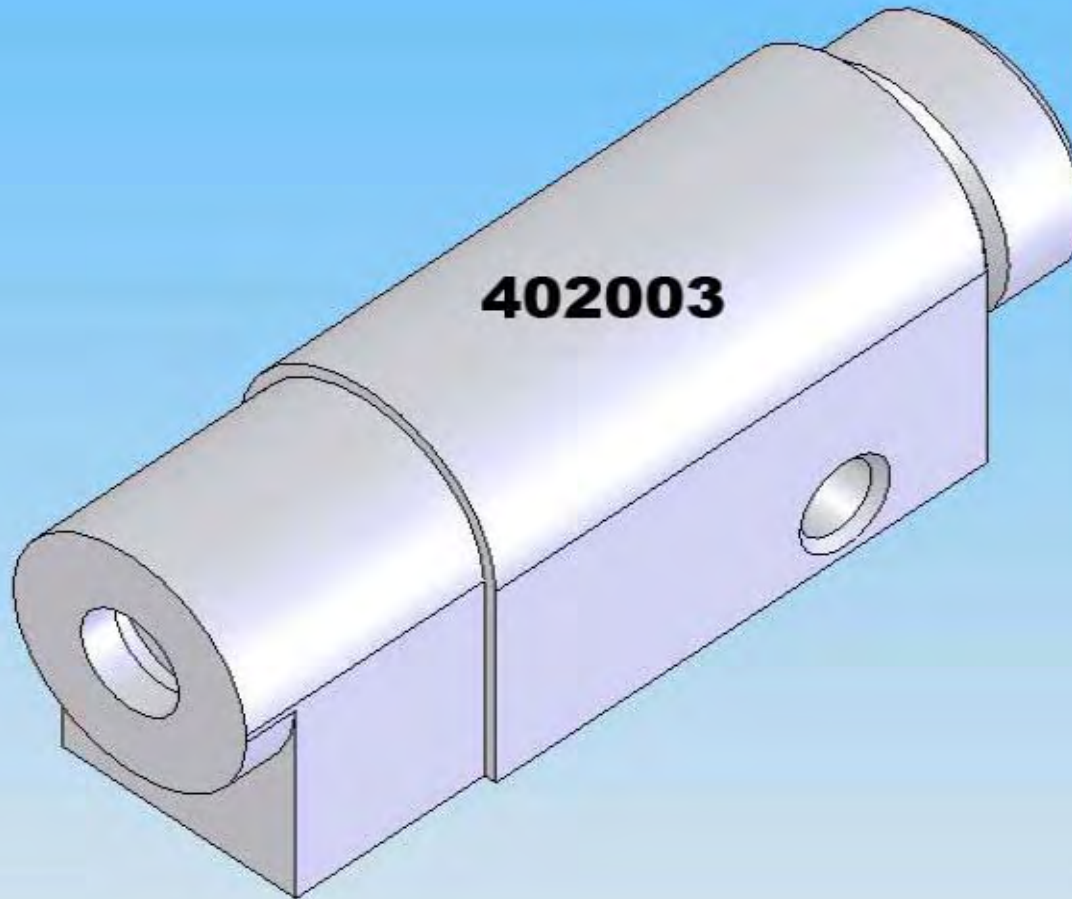
# 2005 B2K Assembly Manual

Version 1.2

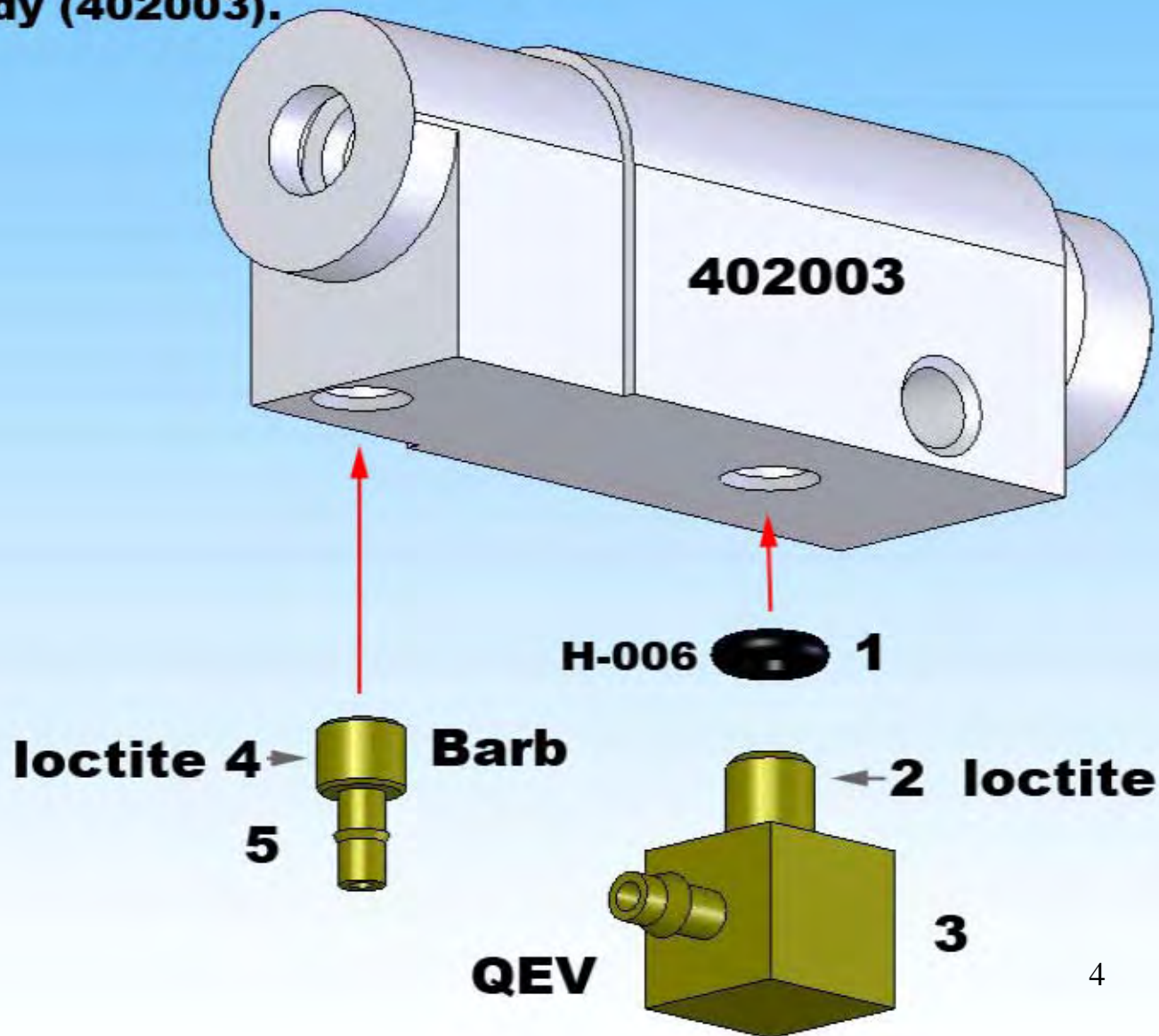
# You will need:

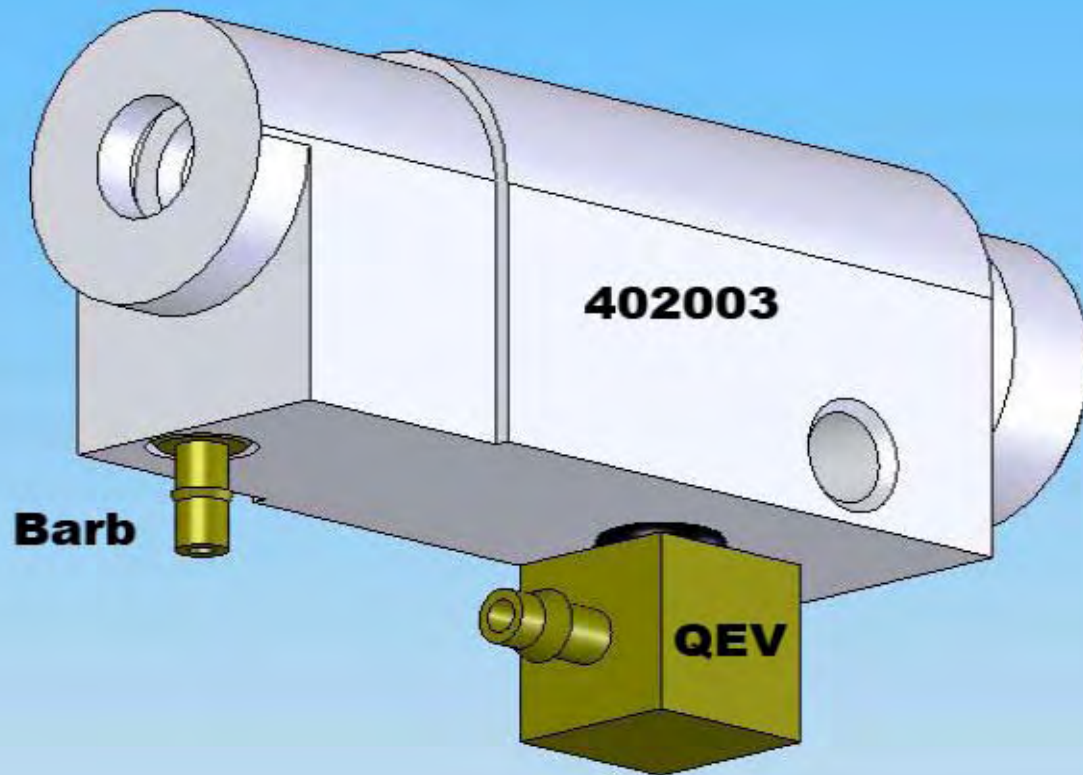
- Set of Allen Keys and screwdrivers
- Vice grips, presses, and assorted wrenches
- Red Loctite
- Blue Loctite
- Lithium Grease
- Teflon Tape

**Begin with the cylinder body  
(402003)**



1. **Press H-006 O-ring in place.**
2. **Apply a small dab of red loctite to QEV threads.**
3. **Screw into Body (402003).**
4. **Apply a small dab of red loctite to Barb.**
5. **Screw into Body (402003).**

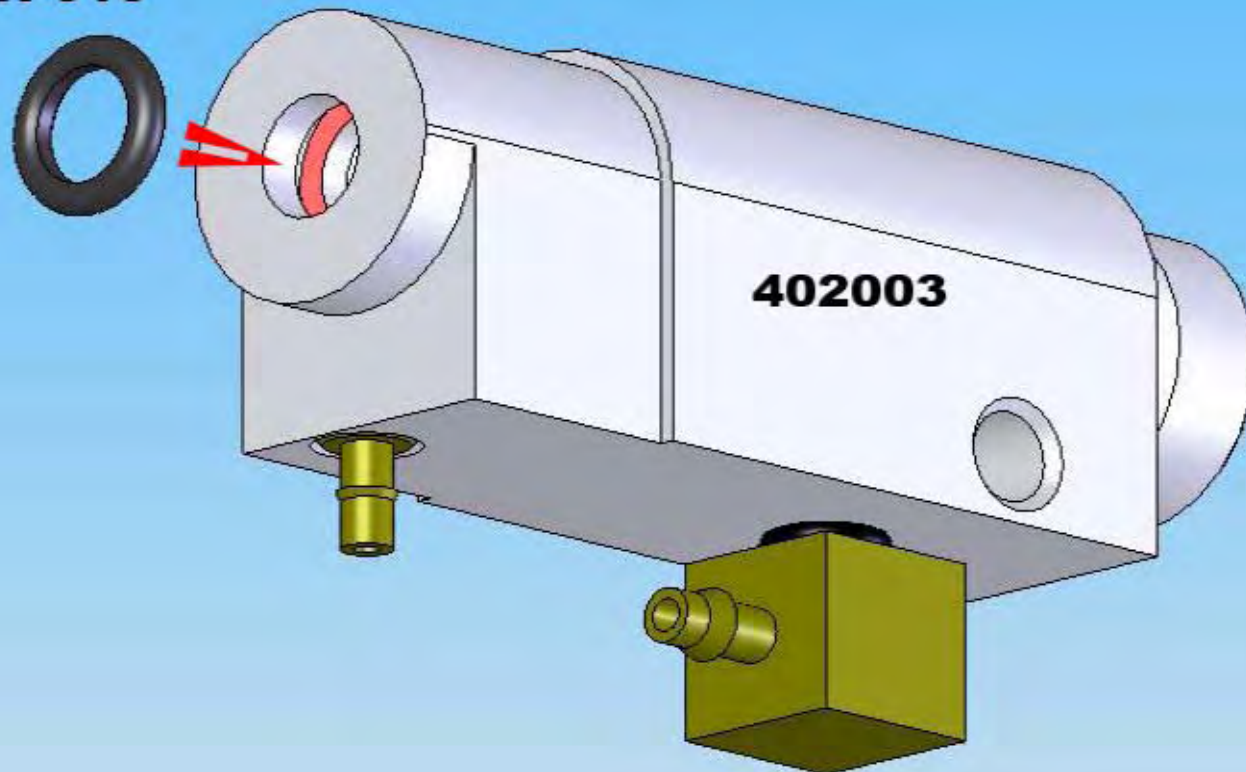




**The 10/32 barb should be hand-tightened.**

**Ensure that the QEV is facing the right direction.**

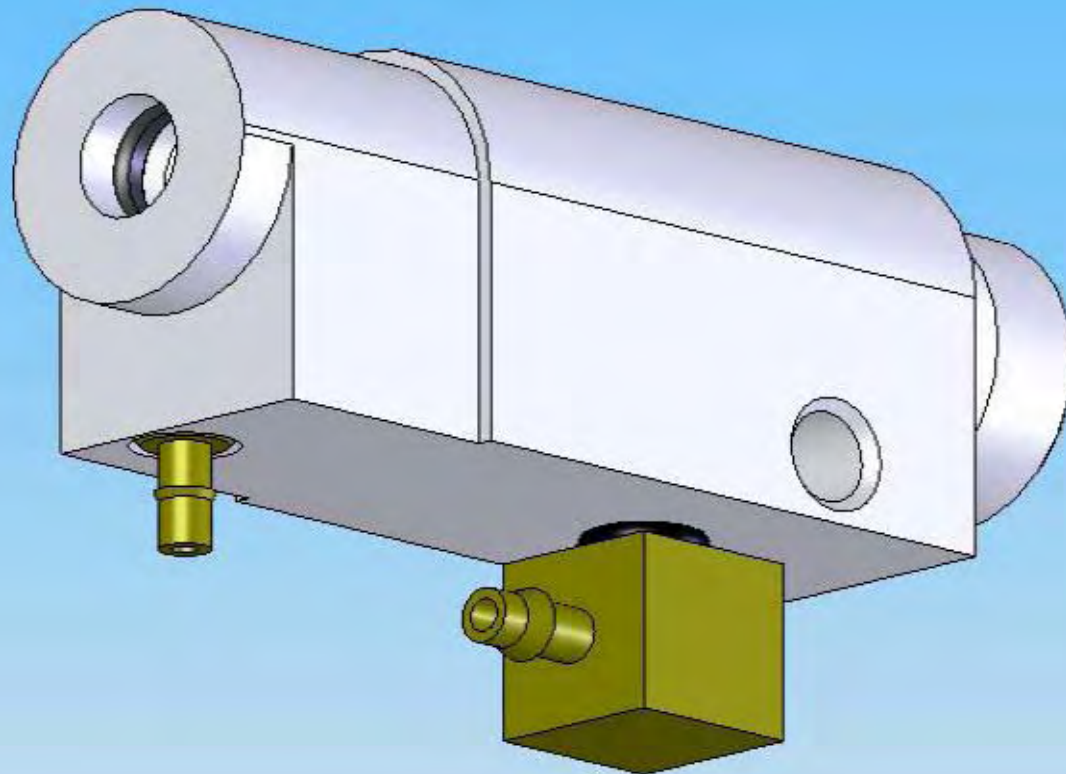
**H-010**



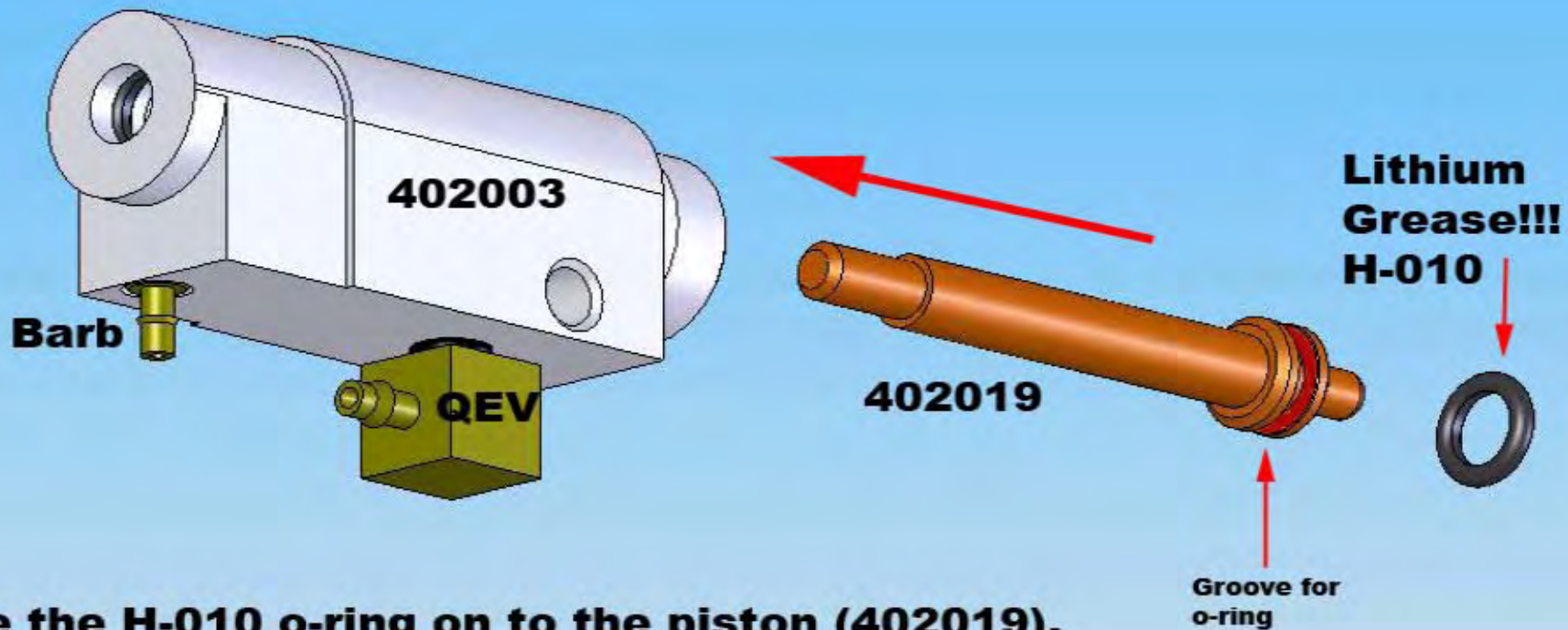
**Insert the H-010 o-ring into the groove within the cylinder (402003).**

**Make sure you do not tear or scratch the o-ring.**





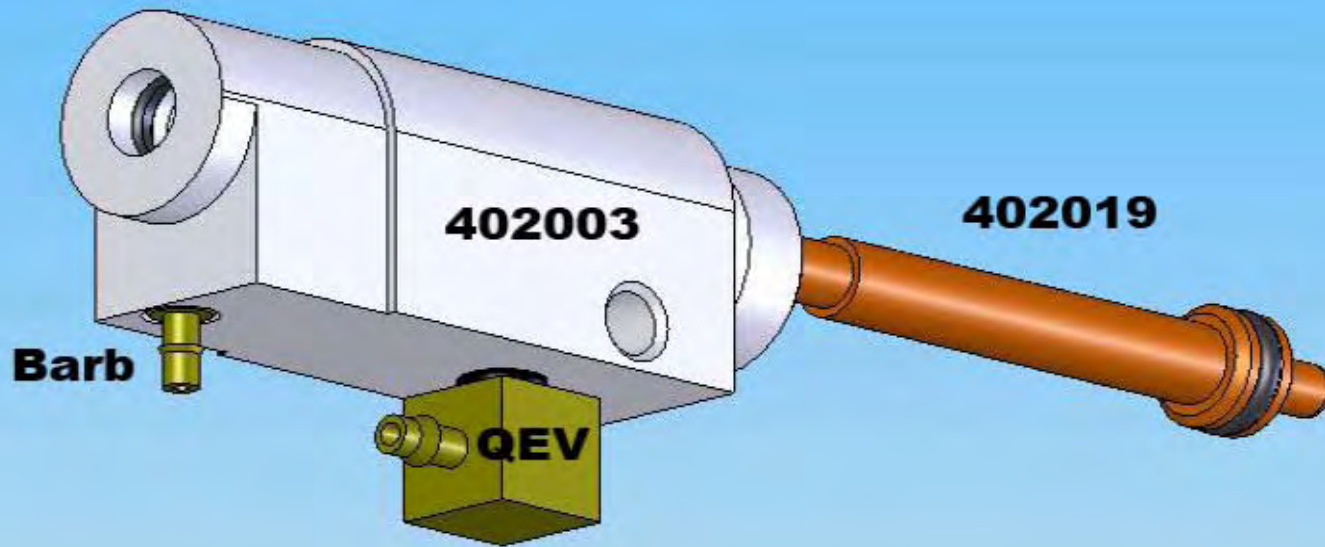
**Verify that the piece looks like this.**



**Slide the H-010 o-ring on to the piston (402019).**

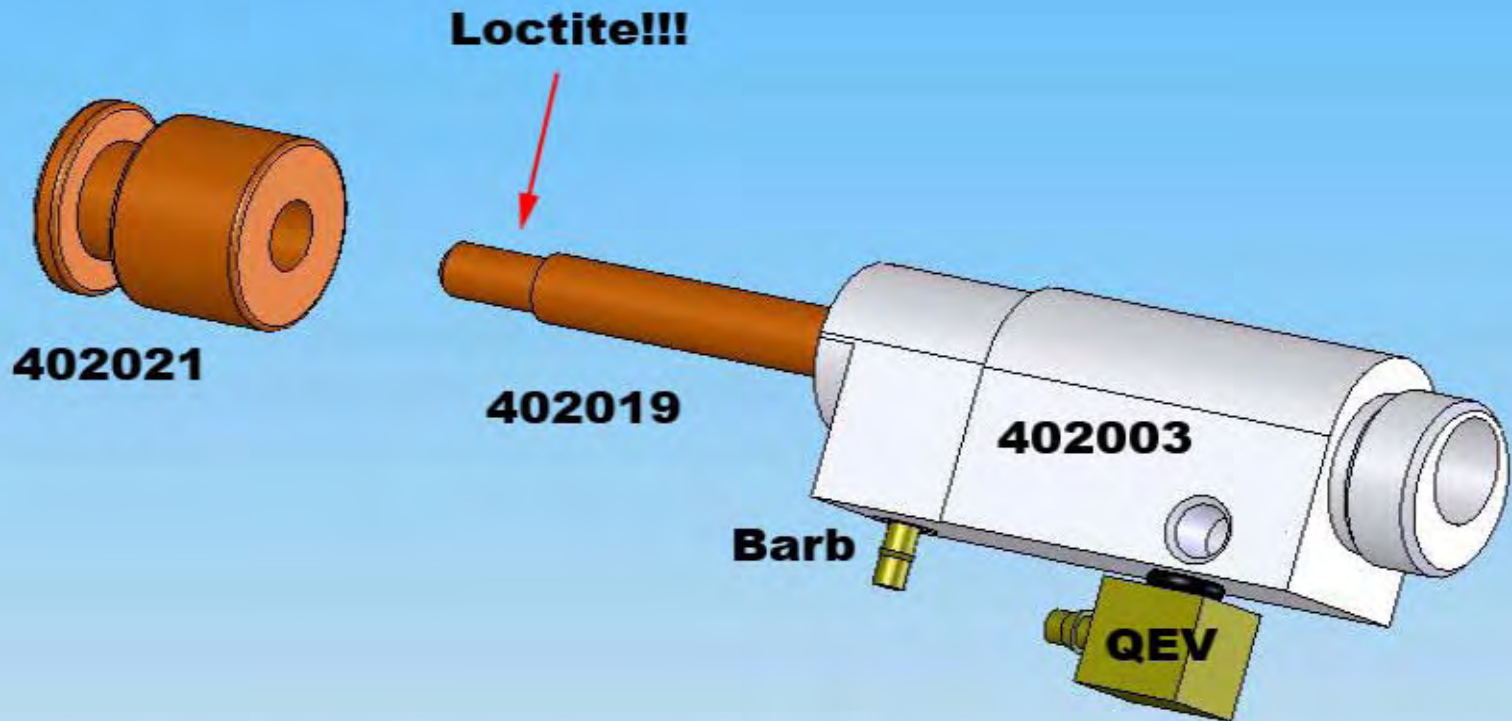
**Lubricate o-ring with Lithium Grease.**





**Slide the piston (402019) into the cylinder (402003).**

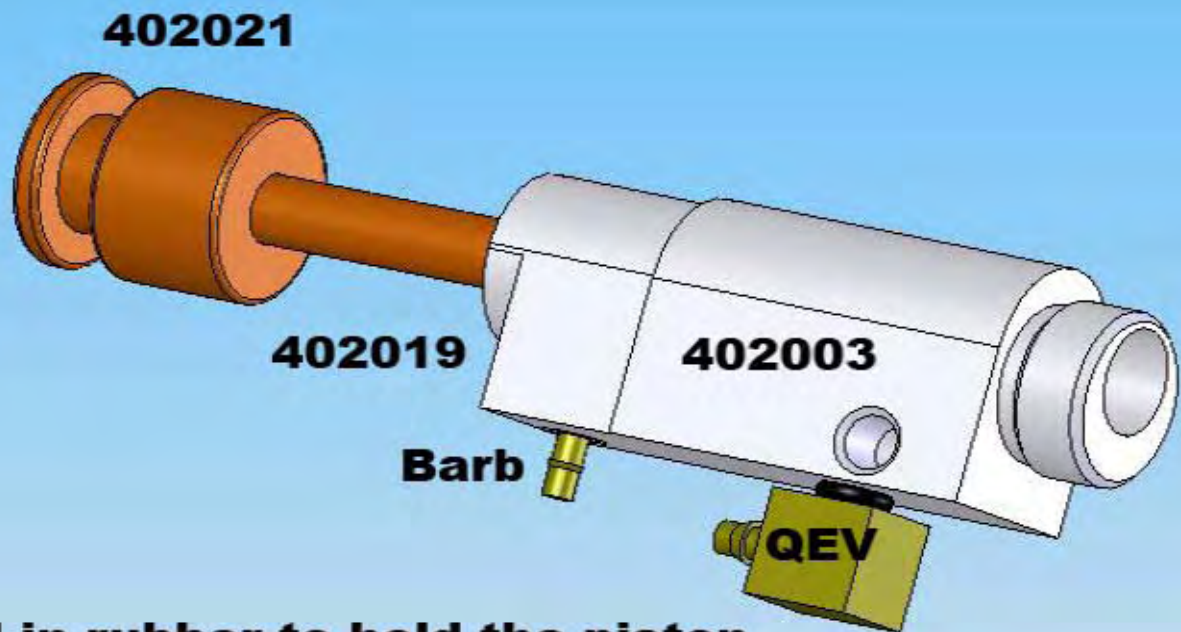
**Make sure that the piston slides freely and does not get stuck.**



**Slide piston (402019) all the way down inside cylinder (402003).**

**Put a drop of loctite on the piston (402019) threads.**

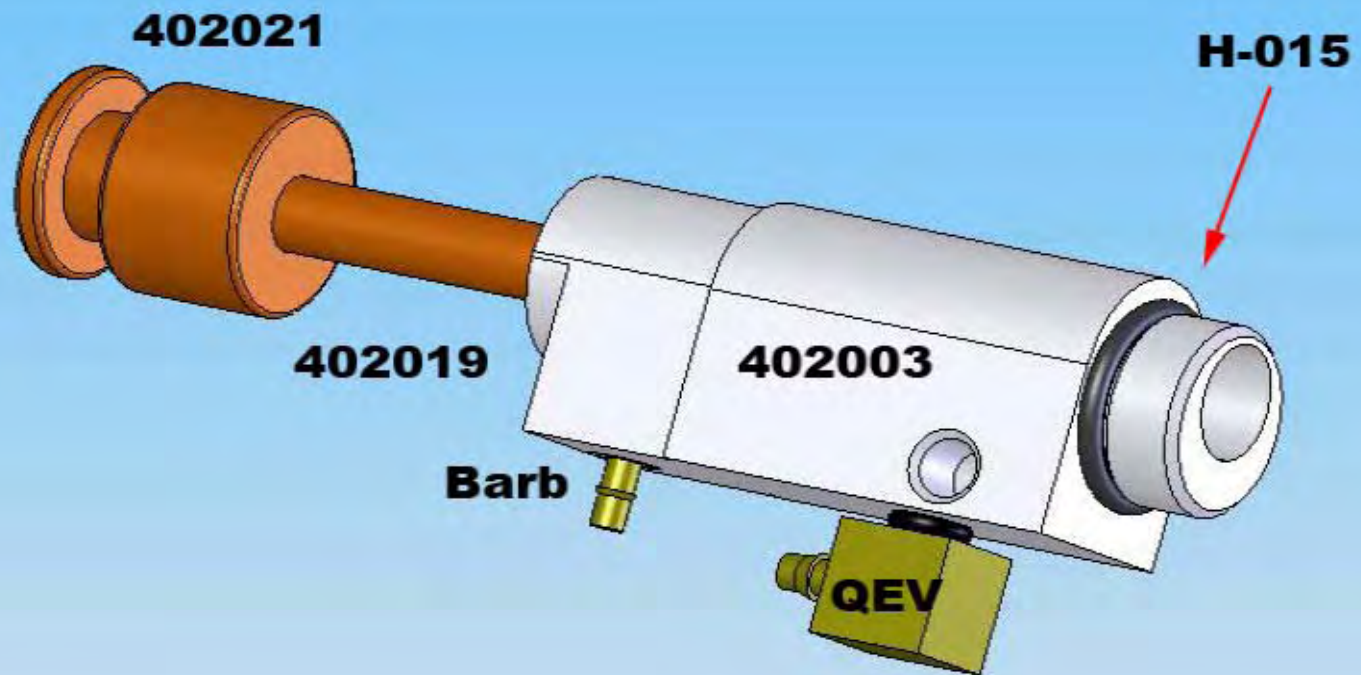
**Screw on hammer (402021) until it is hand-tight.**



**Use a vice wrapped in rubber to hold the piston (402019) tight.**

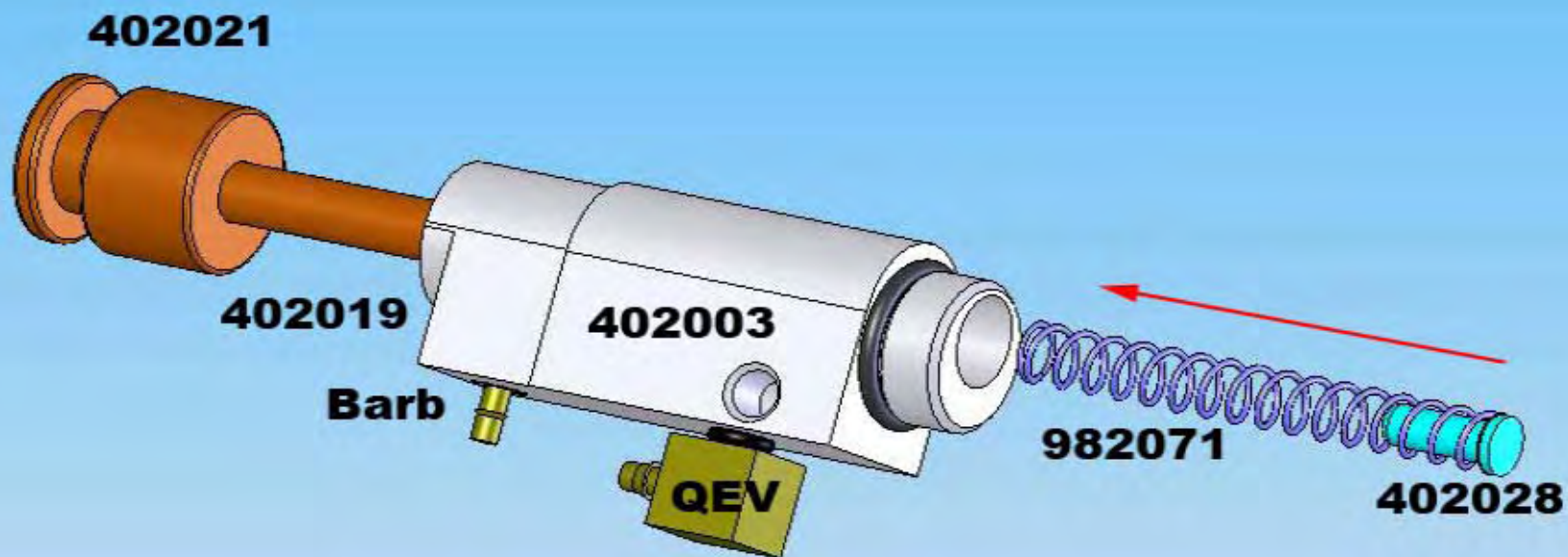
**Use a wrench wrapped in rubber to tighten the hammer (402021) onto the piston (402019) about 1/4 turn past hand-tight.**

**DO NOT MAR OR SCRATCH THE PISTON OR HAMMER!!**



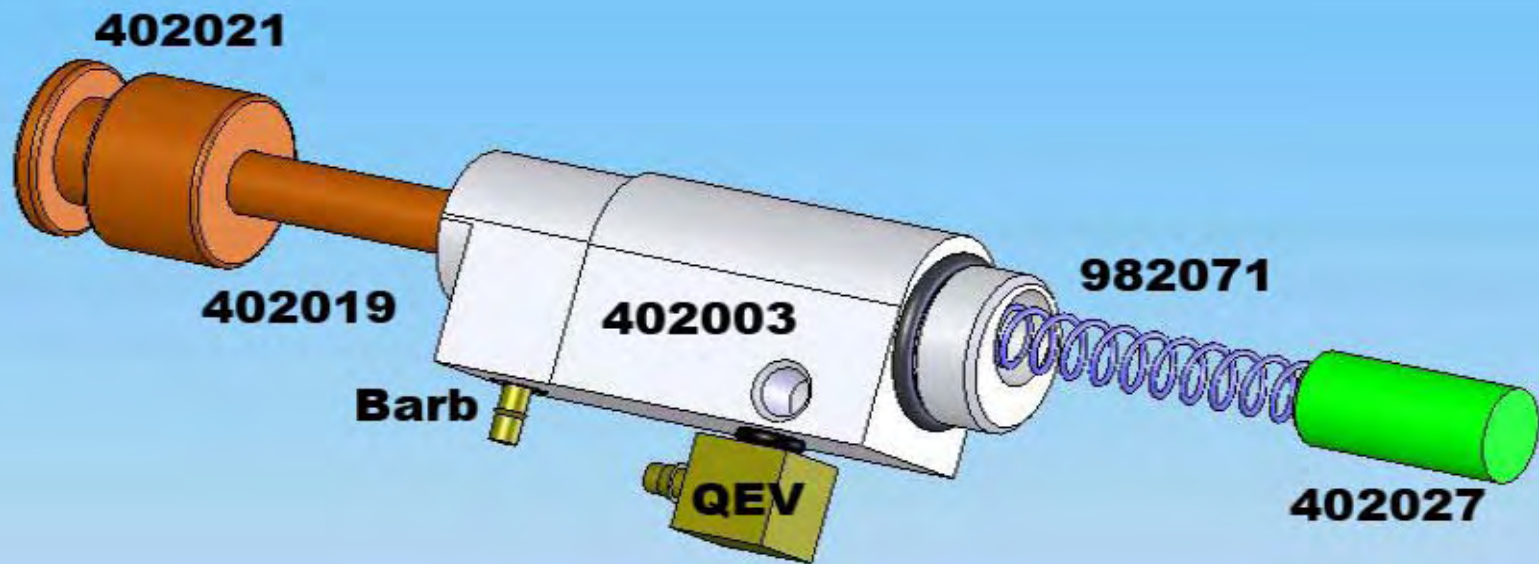
**Place the H-015 O-Ring around the outside of the threads on cylinder body (402003).**



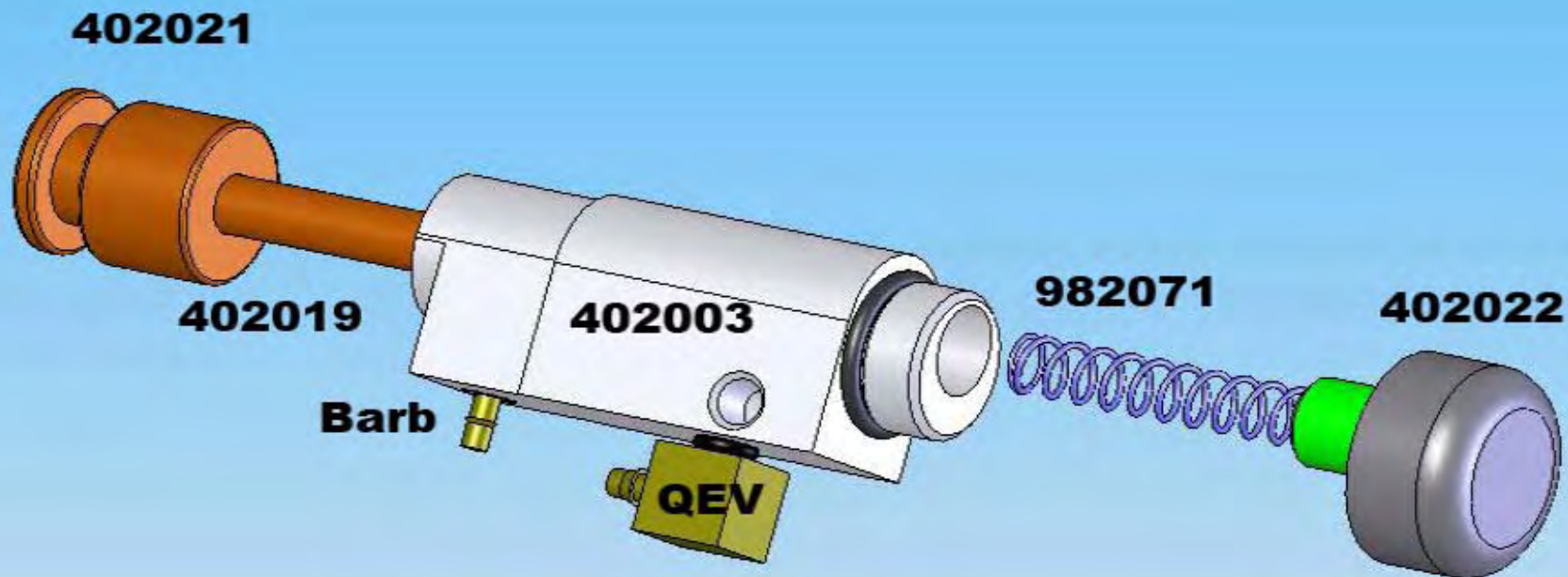


**Insert the spring (982071) and spring guide (402028) into the cylinder body (402003).**

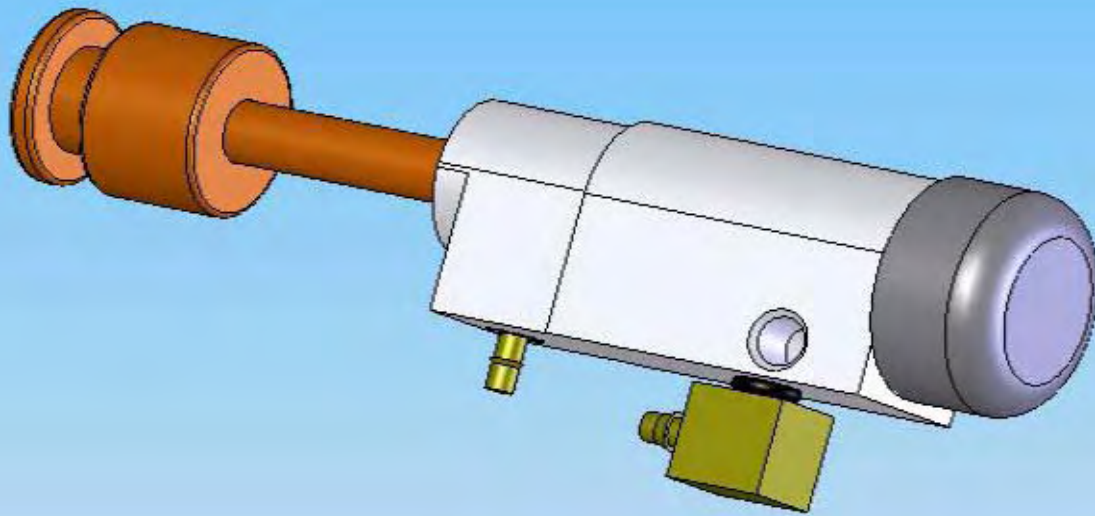




**Insert sleeve (402027) over the spring guide (402028).**

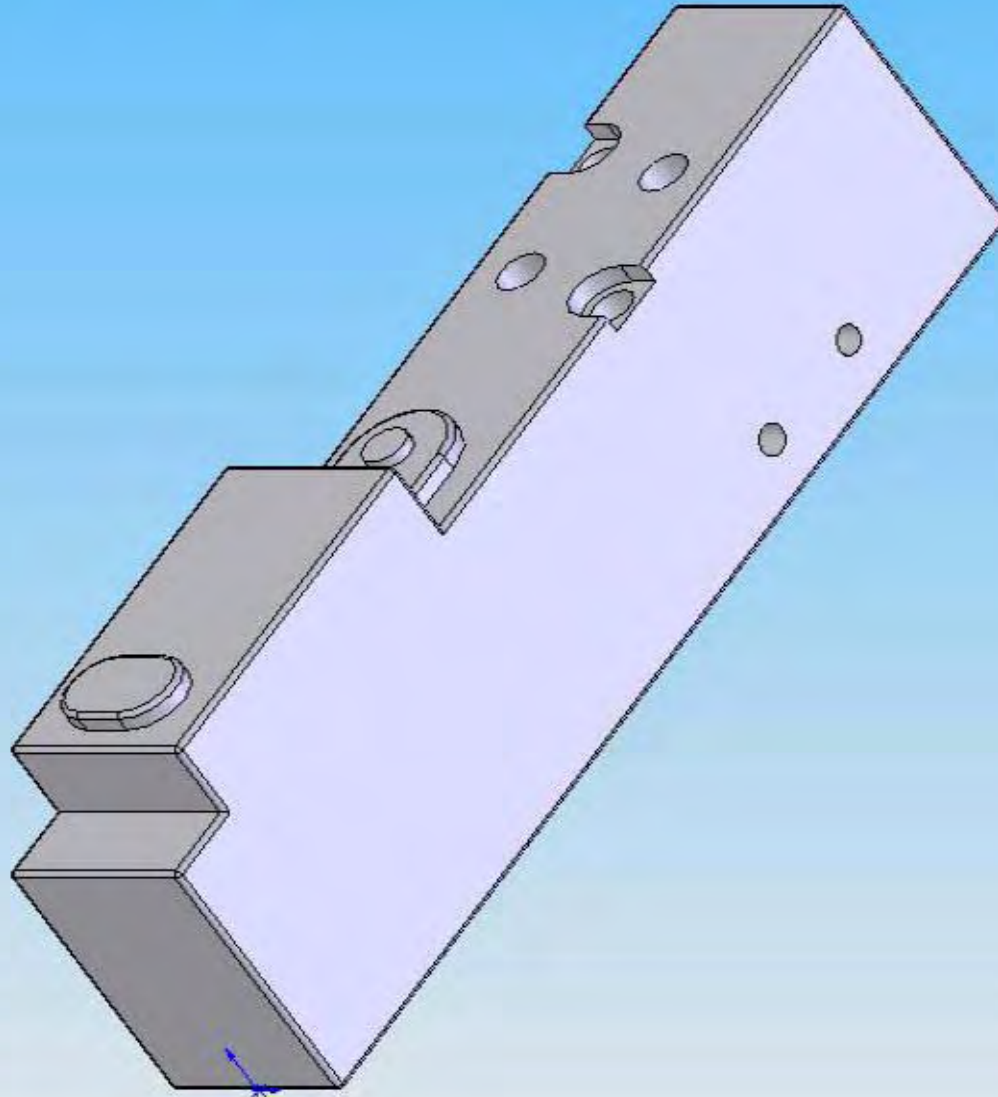


**Place end cap (402022) over the end of spring assembly. Push down on spring (982071) to screw end cap (402022) onto threads of cylinder (402003).**

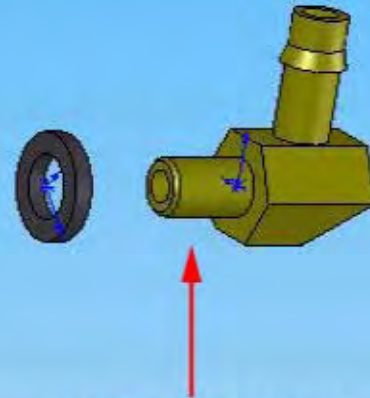
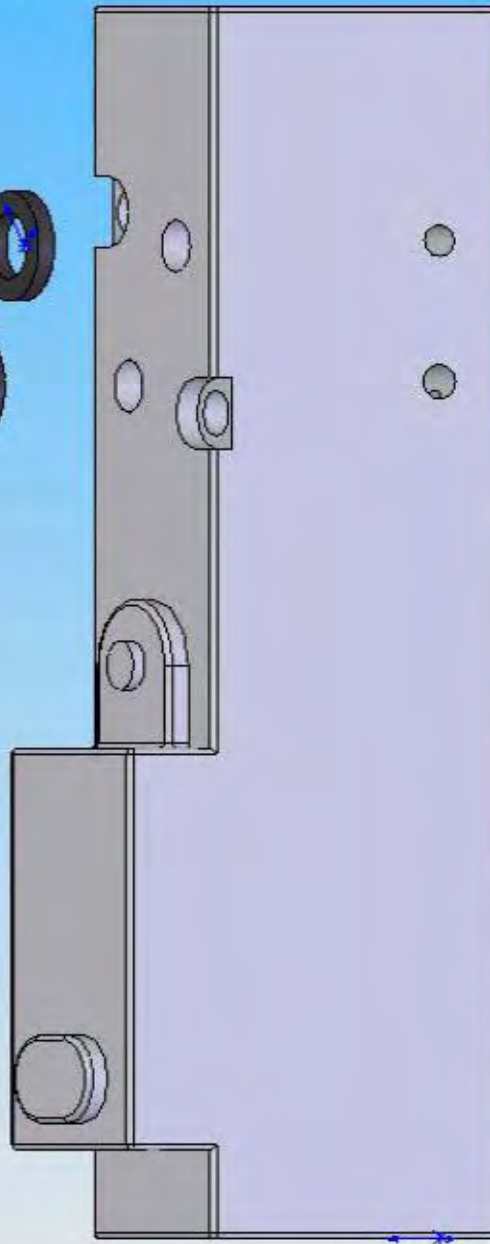
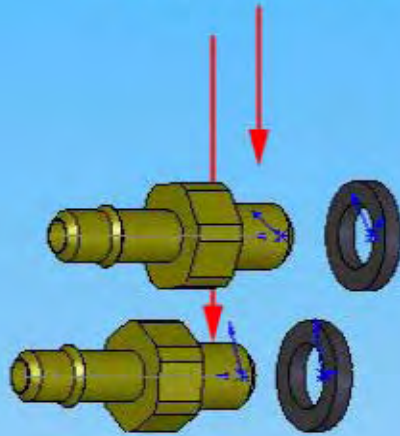


**Piece should look like this.**

**Attach the barbs to the solenoid.**



**LOCTITE!!!**



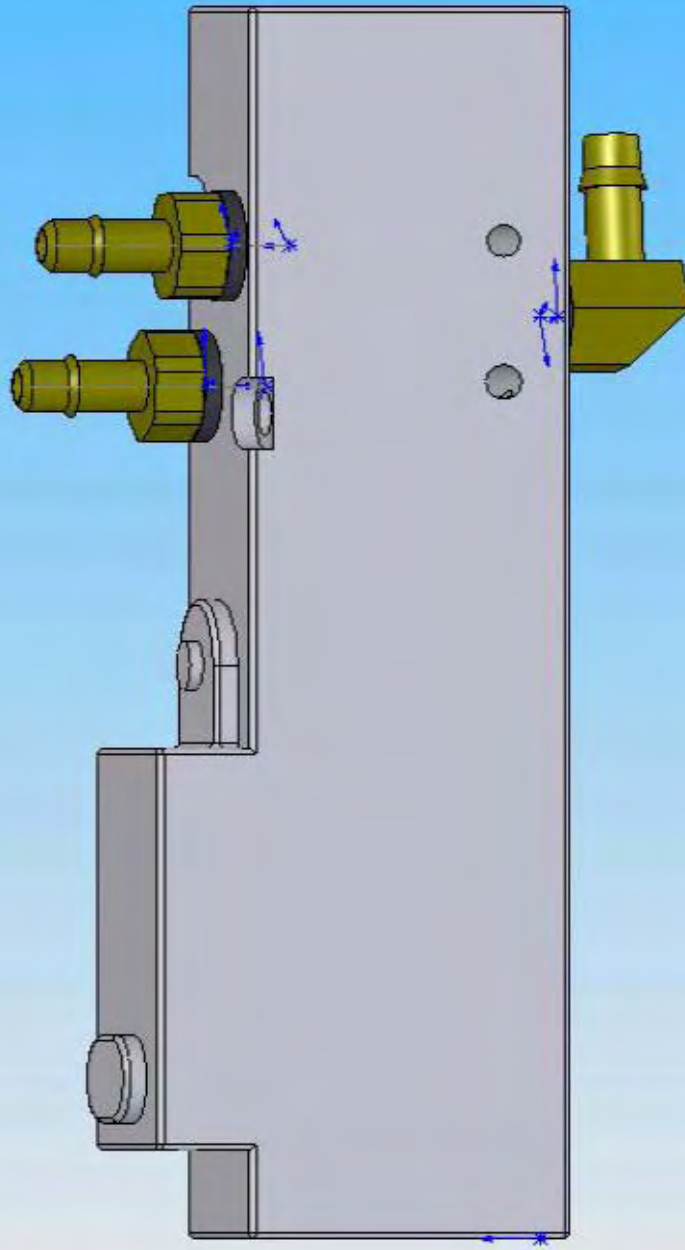
**LOCTITE!!!**

**Place H-006 o-rings  
onto barbs.**

**Apply a small dab of  
loctite to the threads  
of the barbs.**

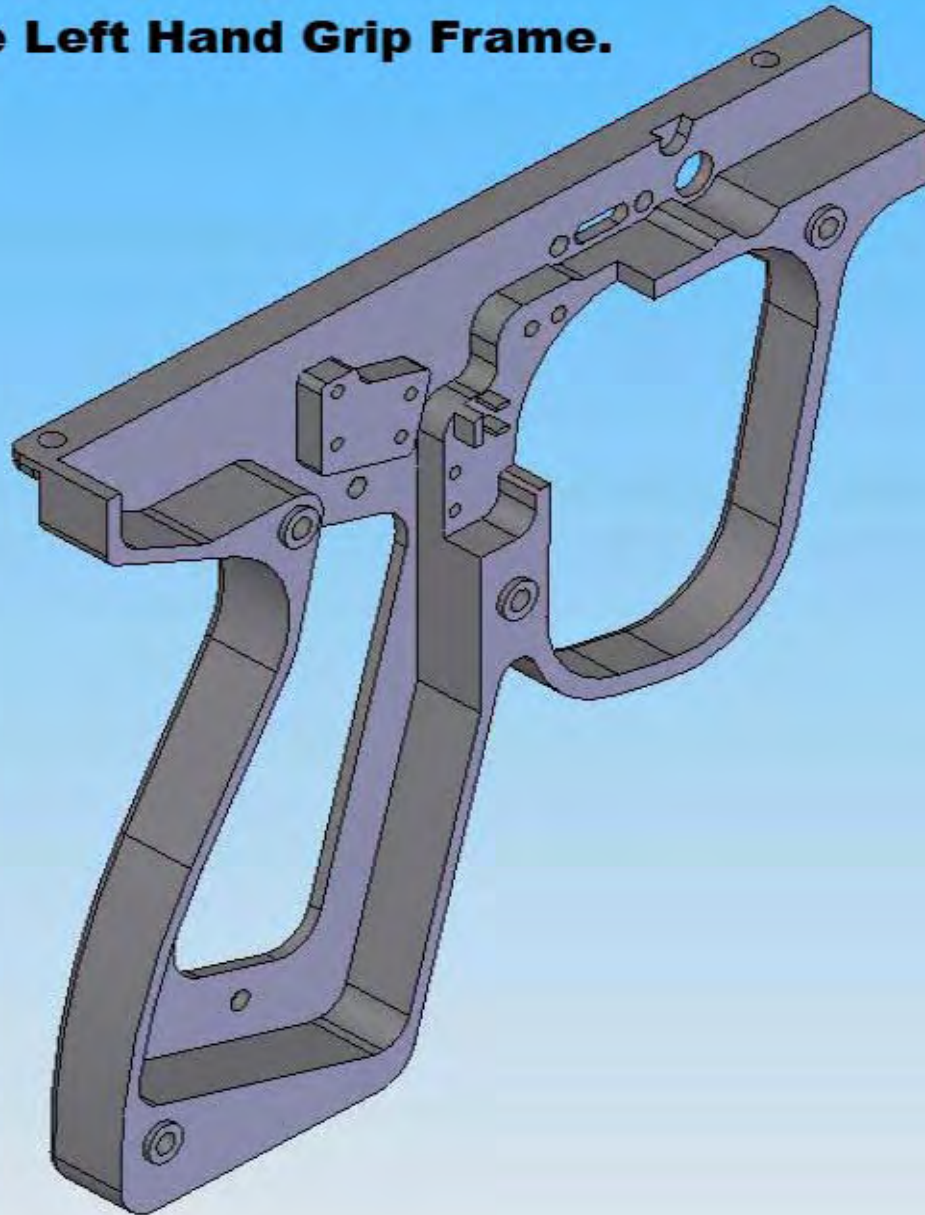
**Screw the barbs into  
the solenoid.**

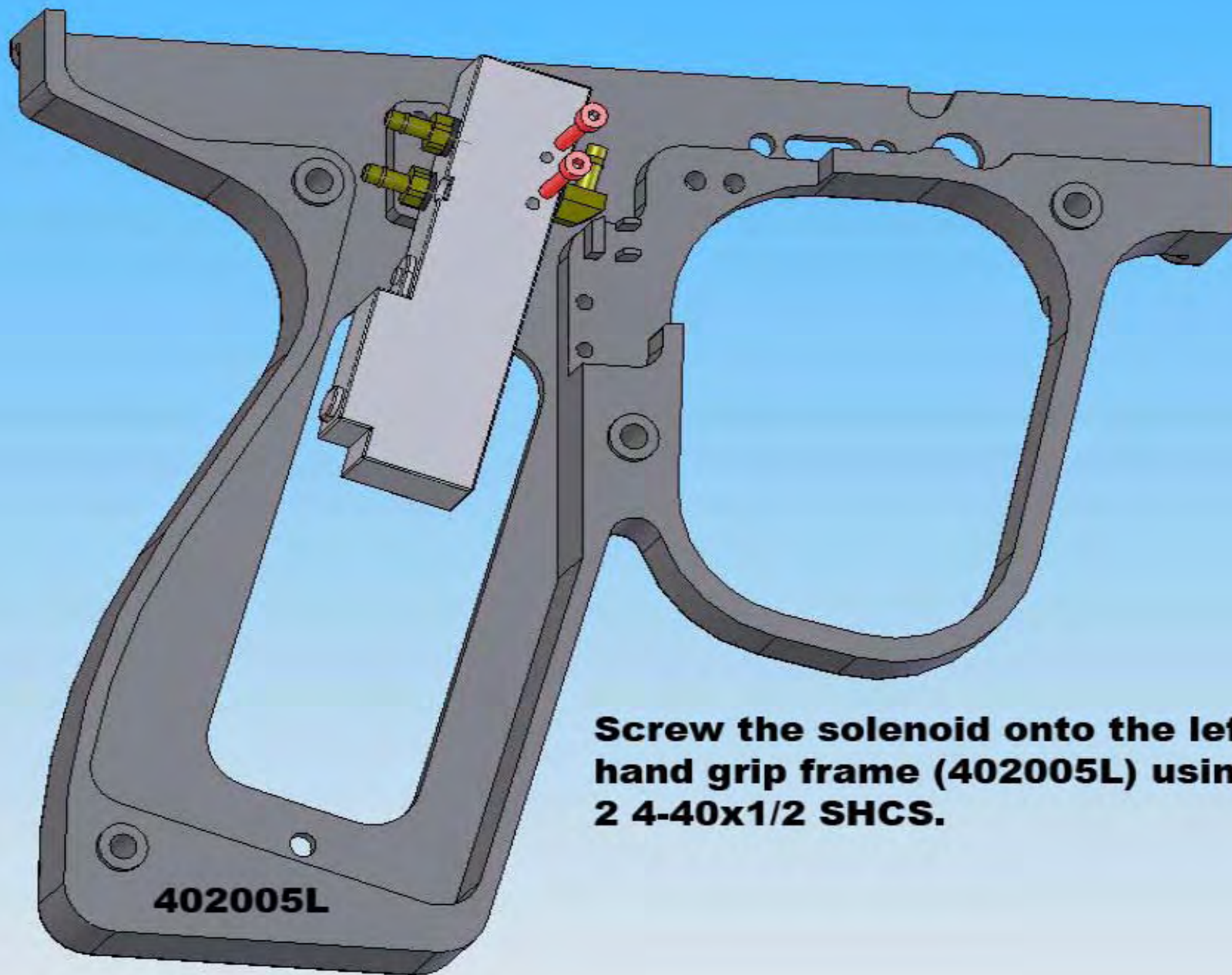




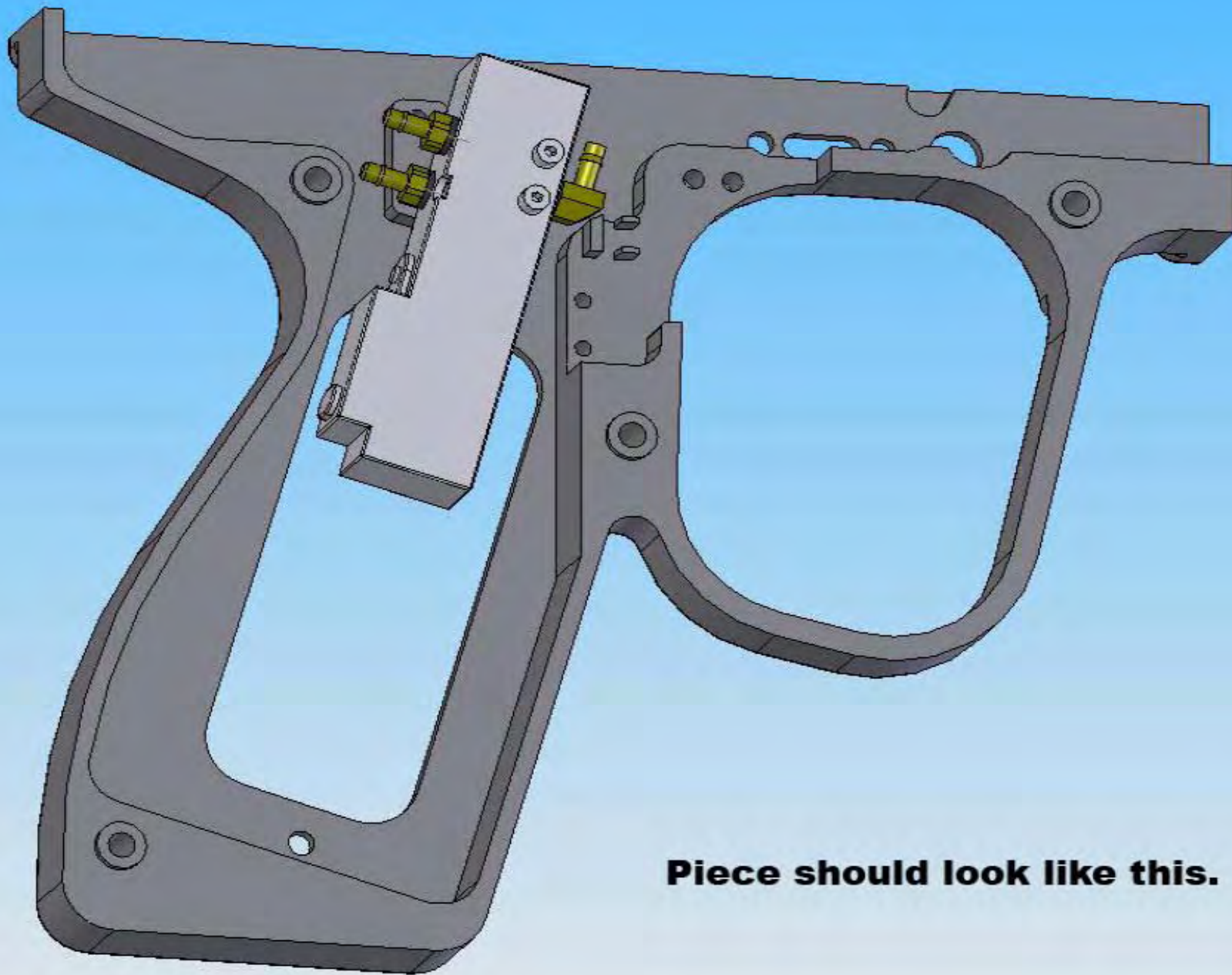
**Piece should look like this.**

**Start with the Left Hand Grip Frame.**



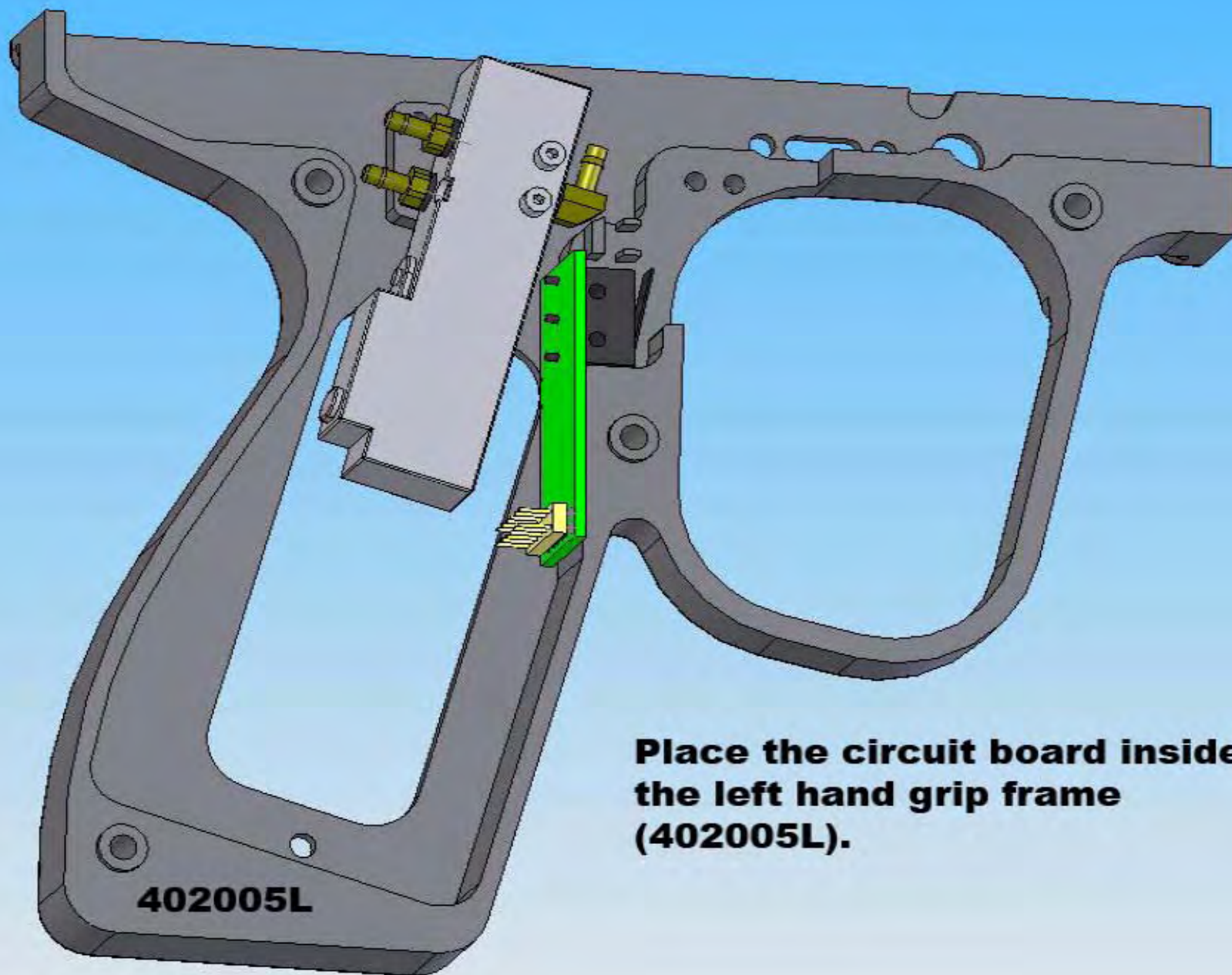


**Screw the solenoid onto the left hand grip frame (402005L) using 2 4-40x1/2 SHCS.**



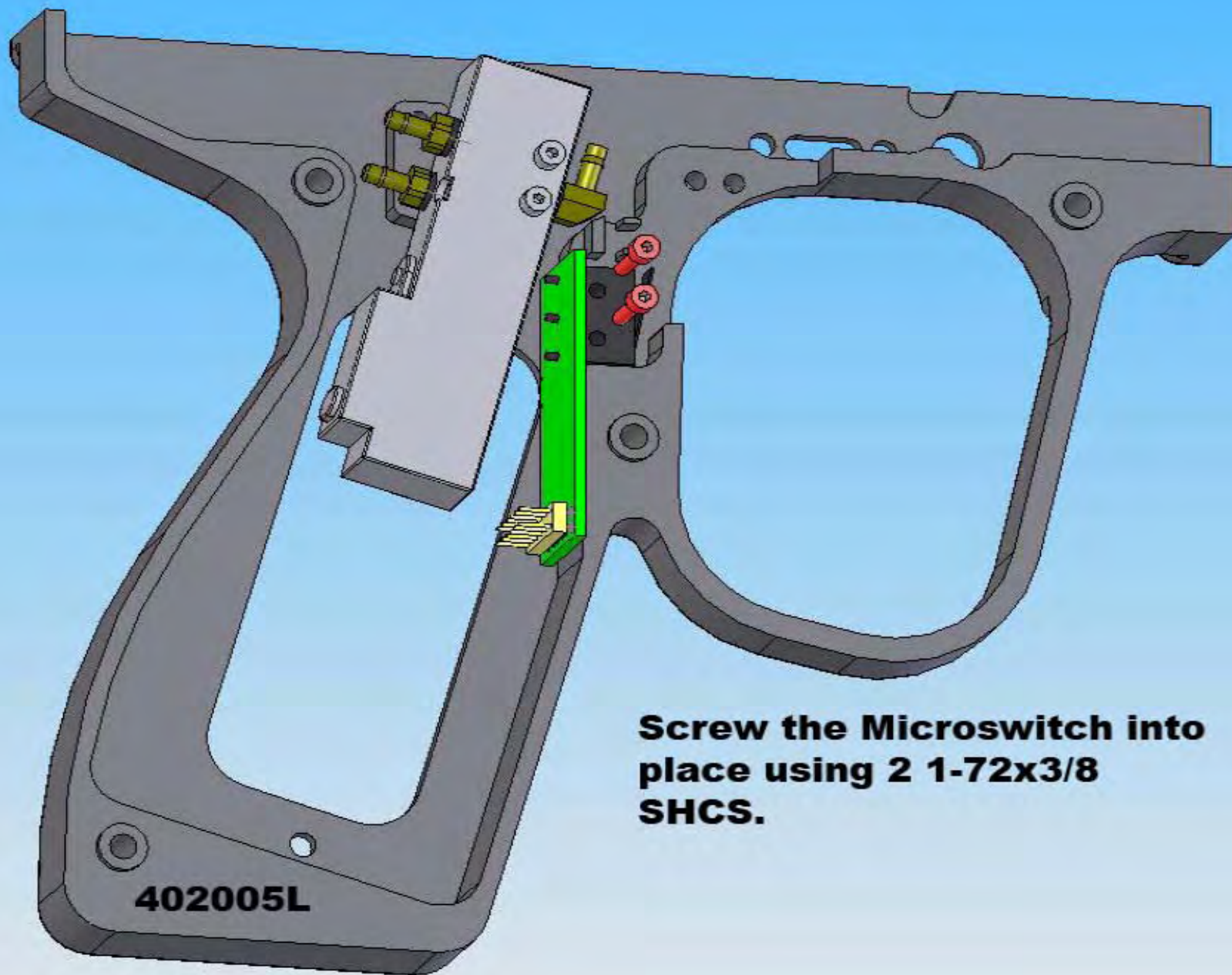
**Piece should look like this.**





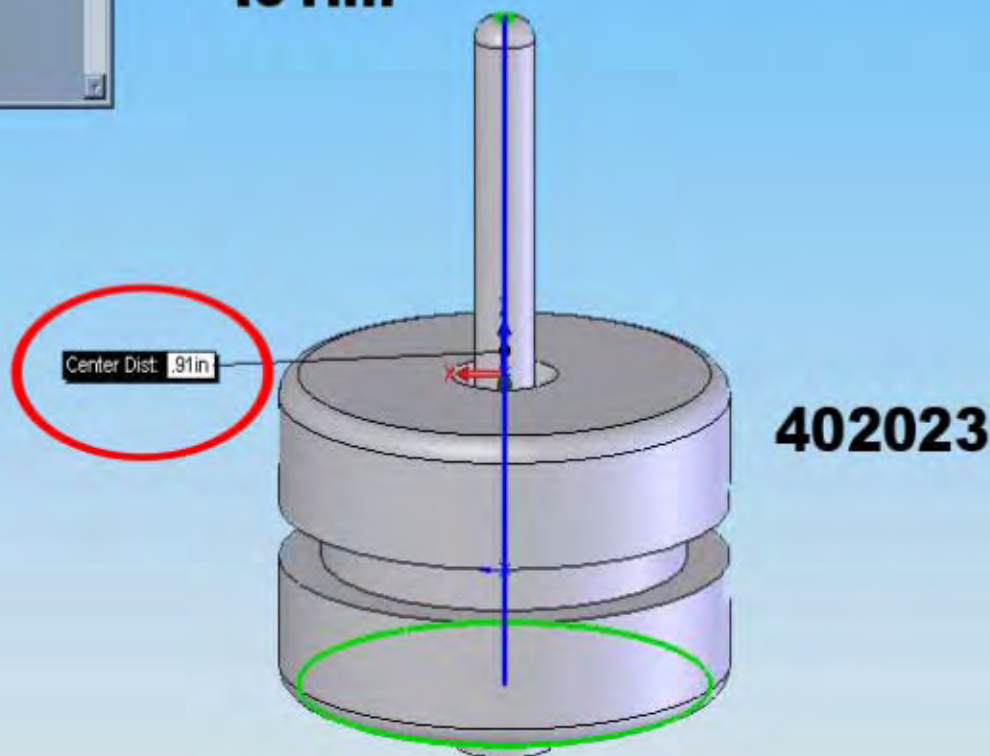
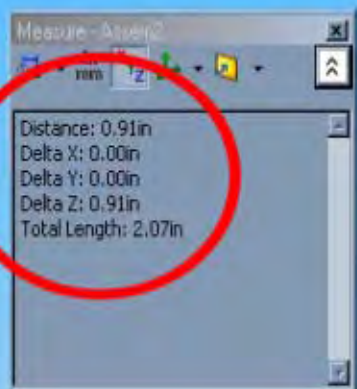
**Place the circuit board inside  
the left hand grip frame  
(402005L).**



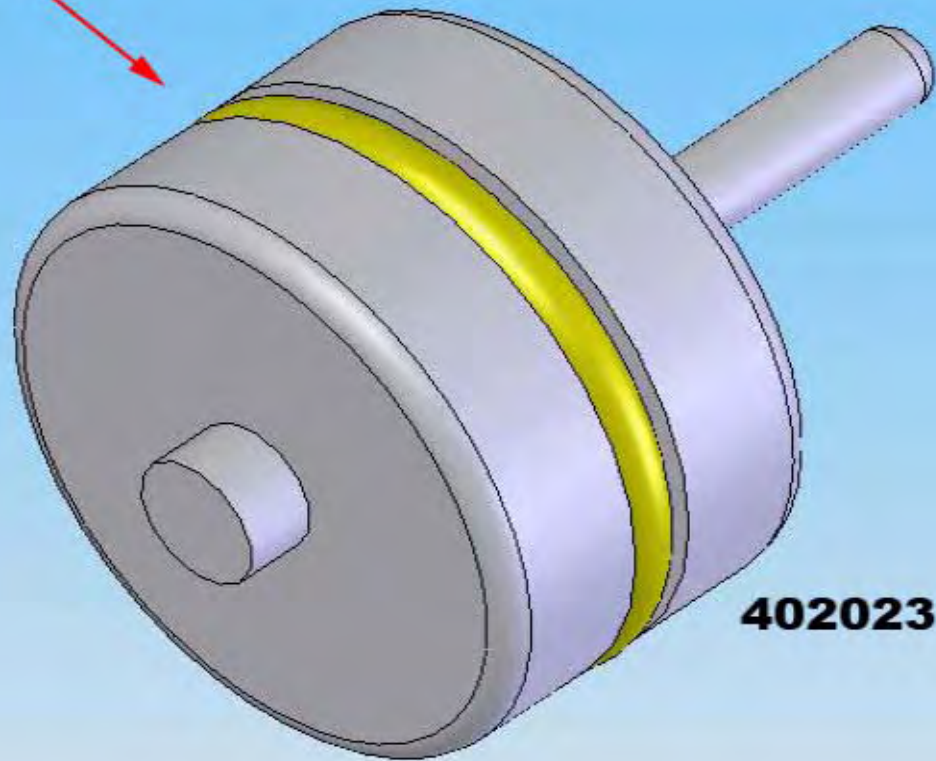


**Screw the Microswitch into place using 2 1-72x3/8 SHCS.**

**Press the 3-32x3/4 Dowel pin into the regulator plunger (402023). Make sure the pin is straight.**  
**VERIFY THAT THE OVERALL LENGTH IS .91!!!!**



**LITHIUM GREASE!!!!**

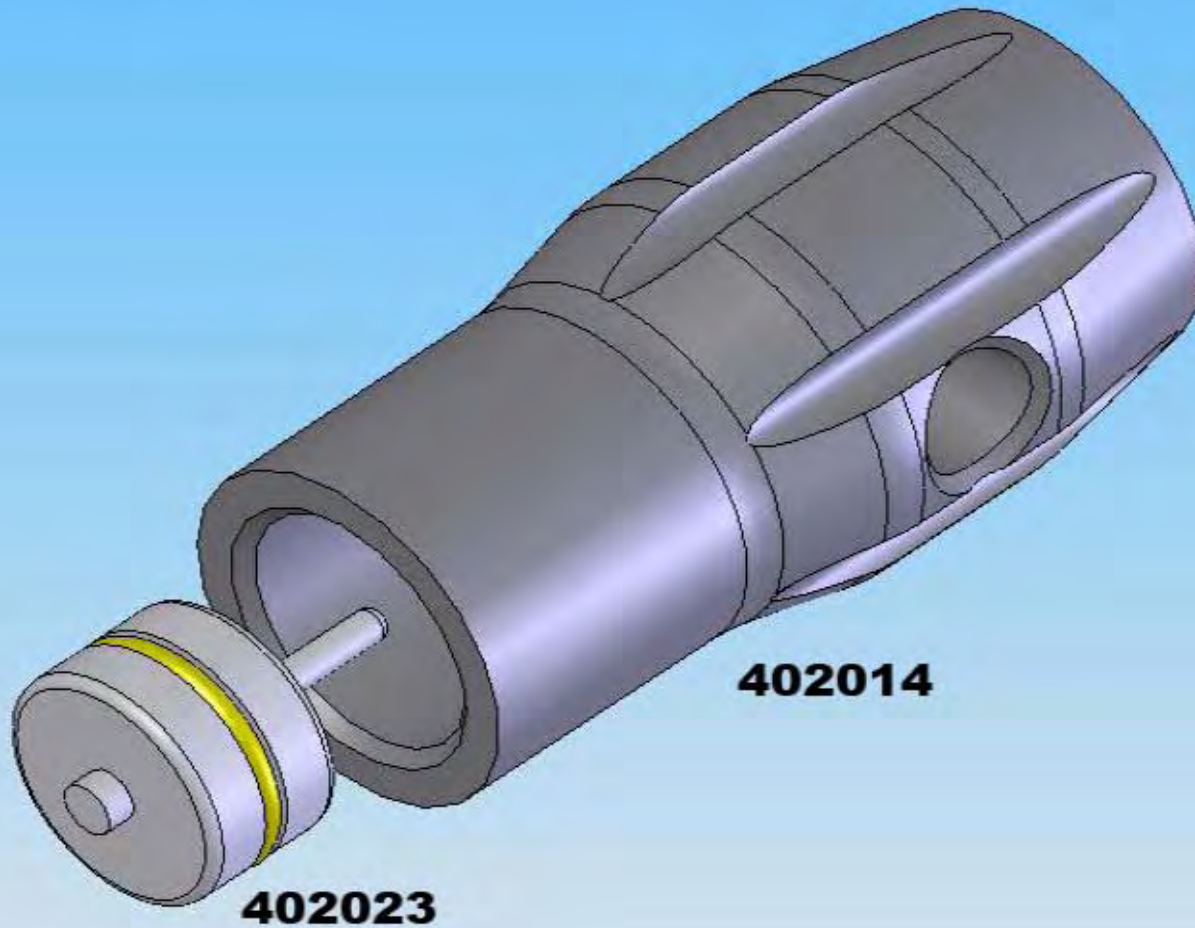


**402023**

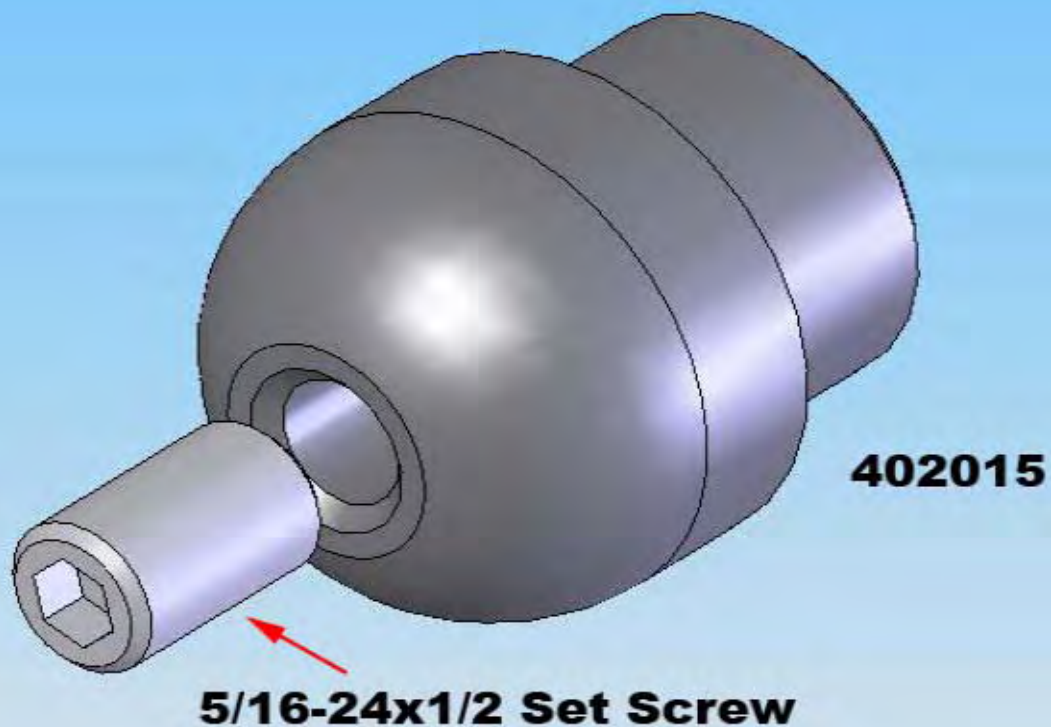
**Place the H-015 UR o-ring on the Plunger (402023) and lubricate well with lithium grease.**



**Slide the Plunger (402023) into the HP regulator body (402014) all of the way.**



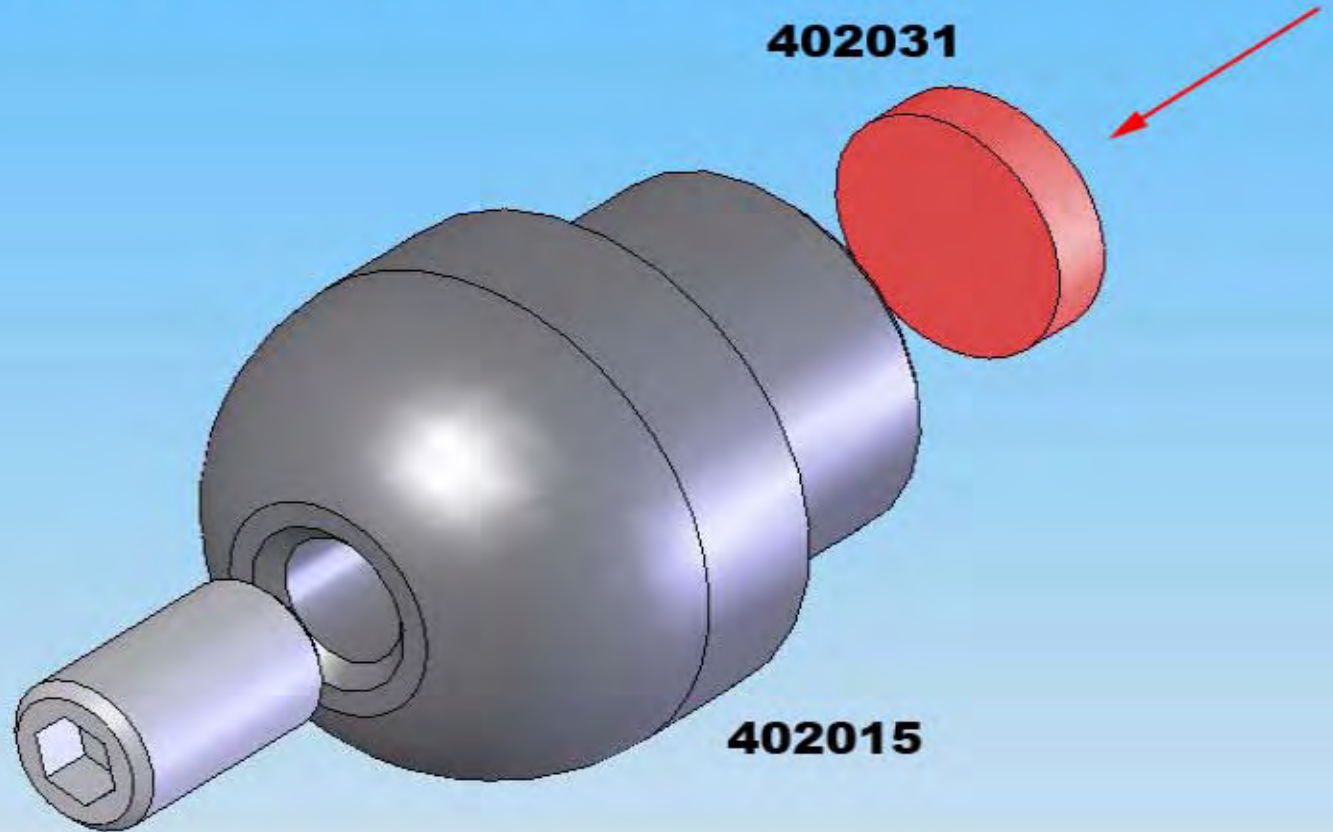
**Screw the 5/16-24x1/2 Set screw into the HP regulator bottom (402015).**





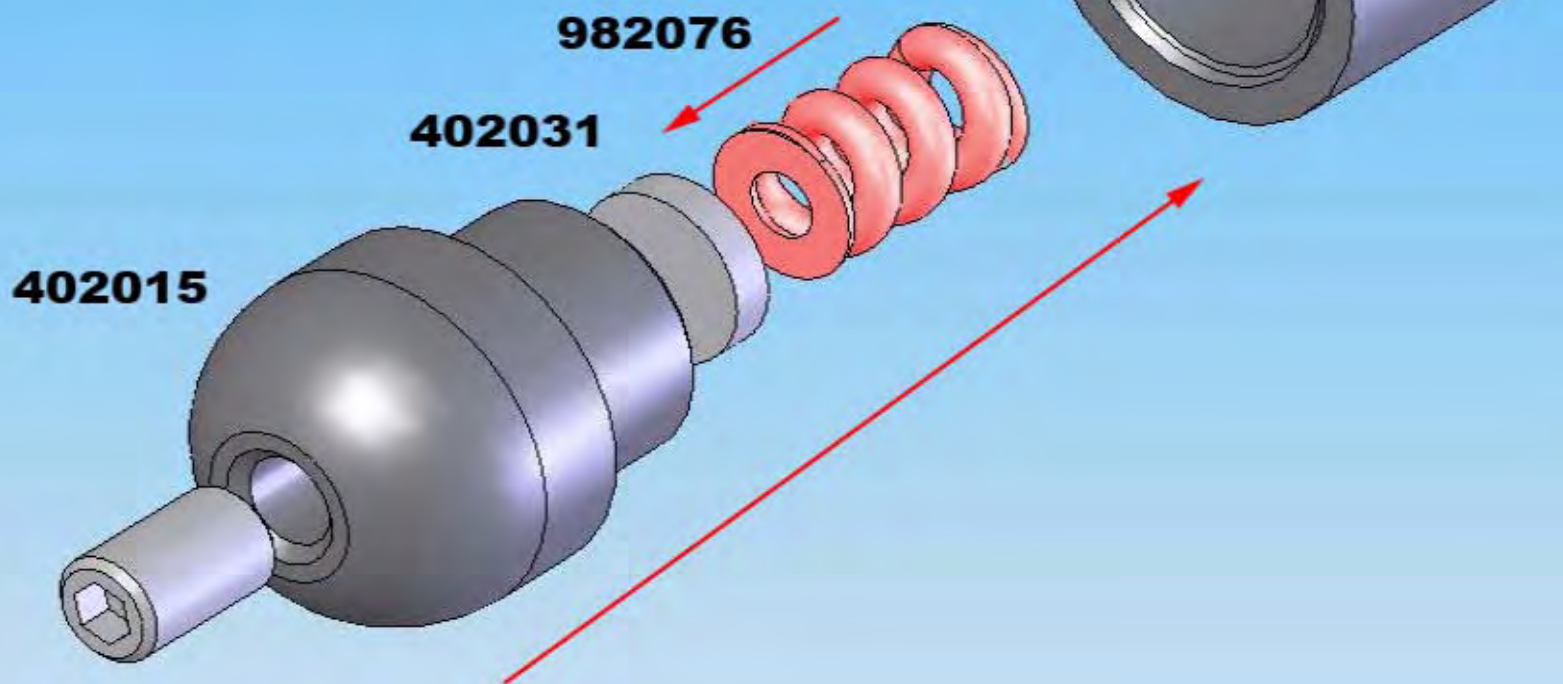
**Place the HP spacer (402031) inside the HP regulator Bottom (402015).**

**Make sure there is no burr on the bottom.**

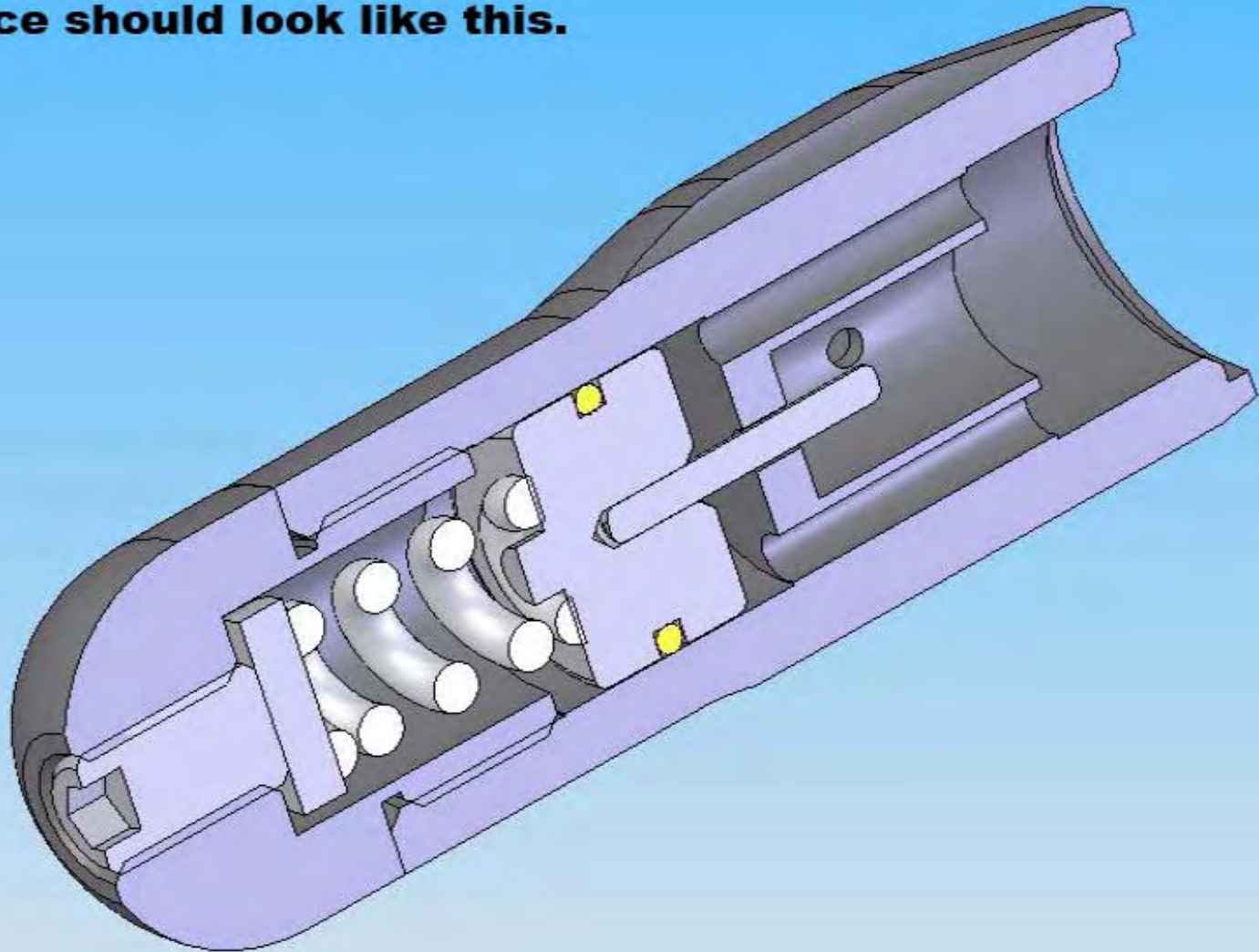


**Slide the HP Regulator Main Spring (982076) into the HP regulator bottom (402015).**

**Screw the HP regulator bottom (402015) into the HP regulator body (402014).**

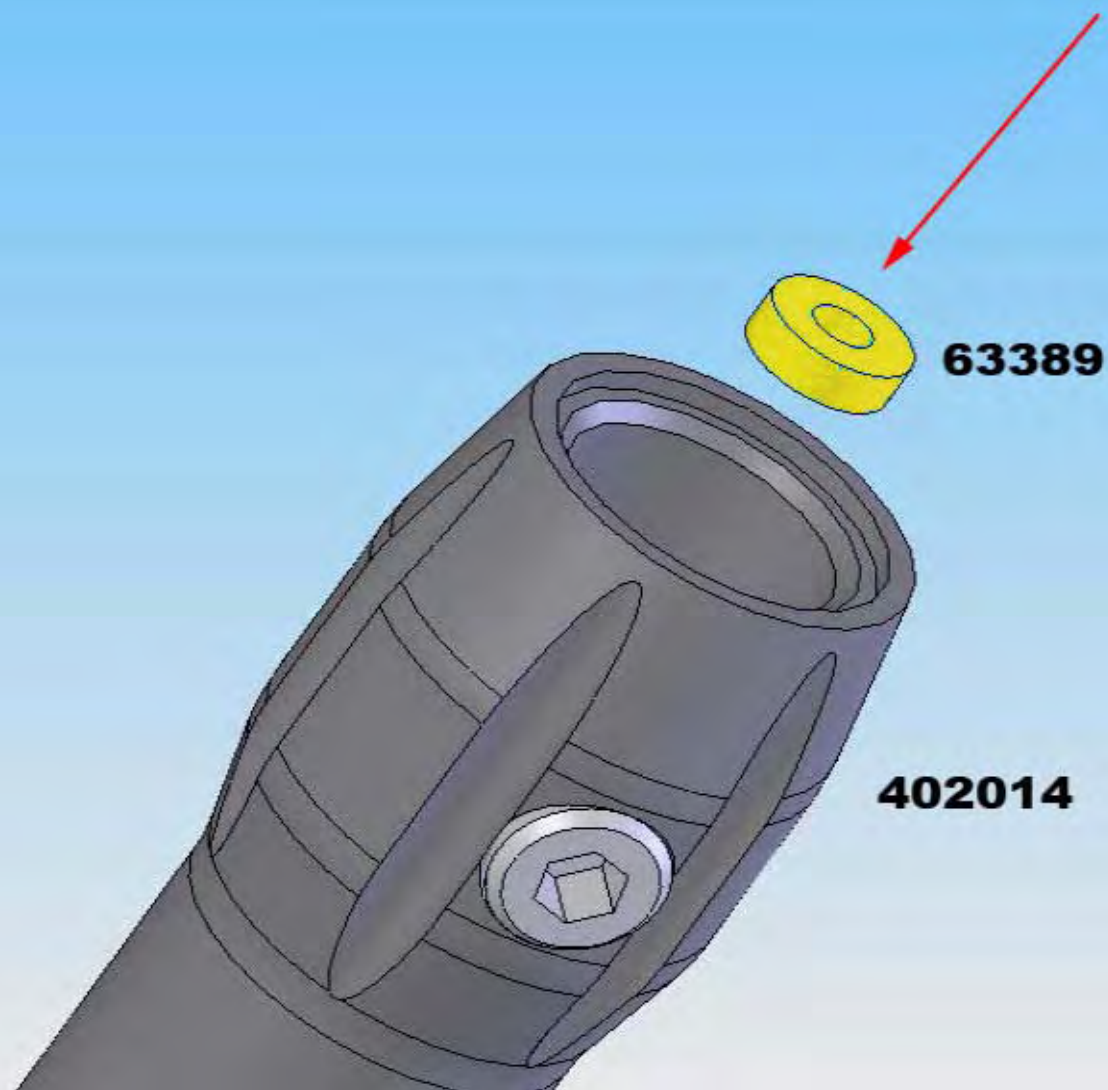


**The piece should look like this.**

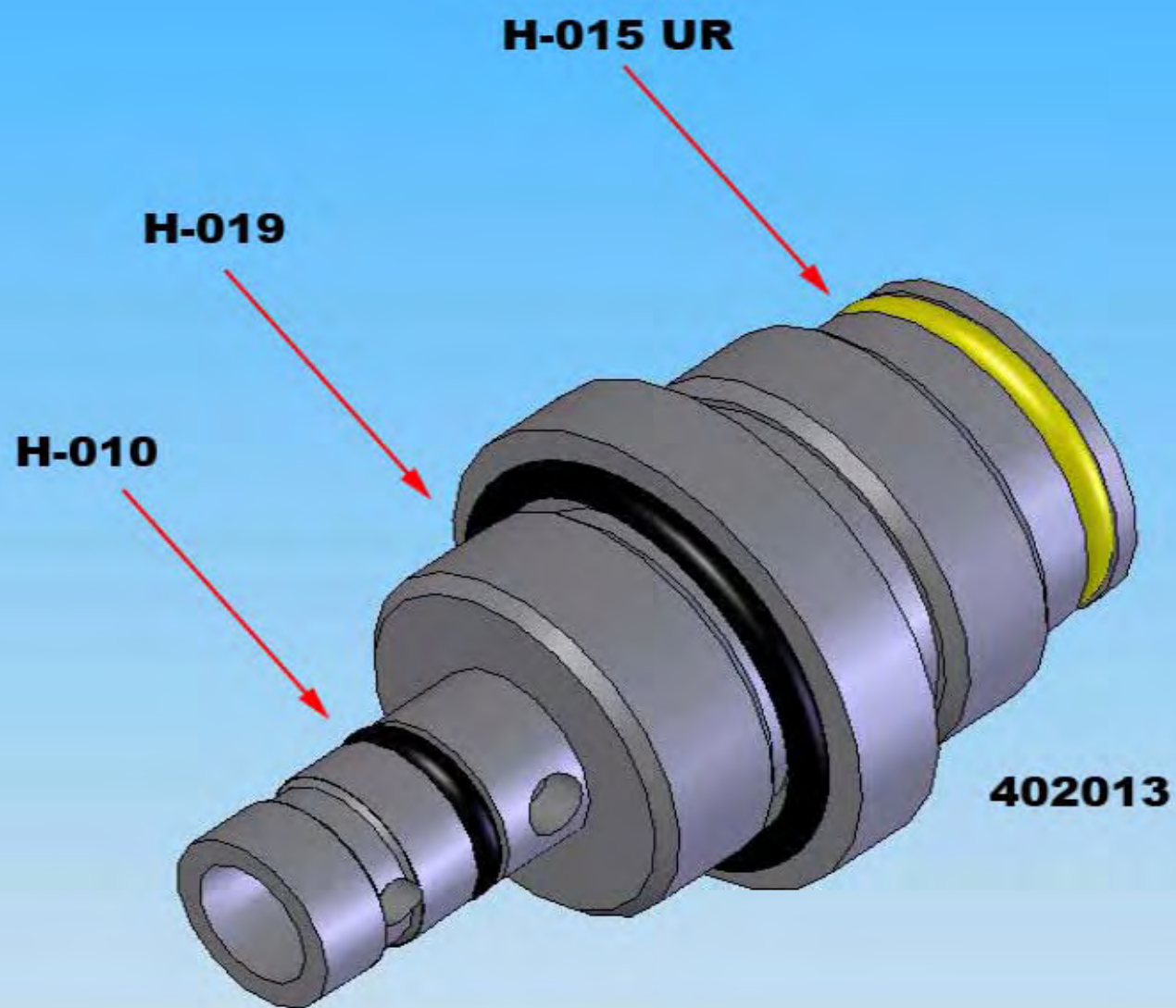




**Drop the regulator seal (63389) into the top of the HP regulator body (402014). Press flat with a blunt object.**

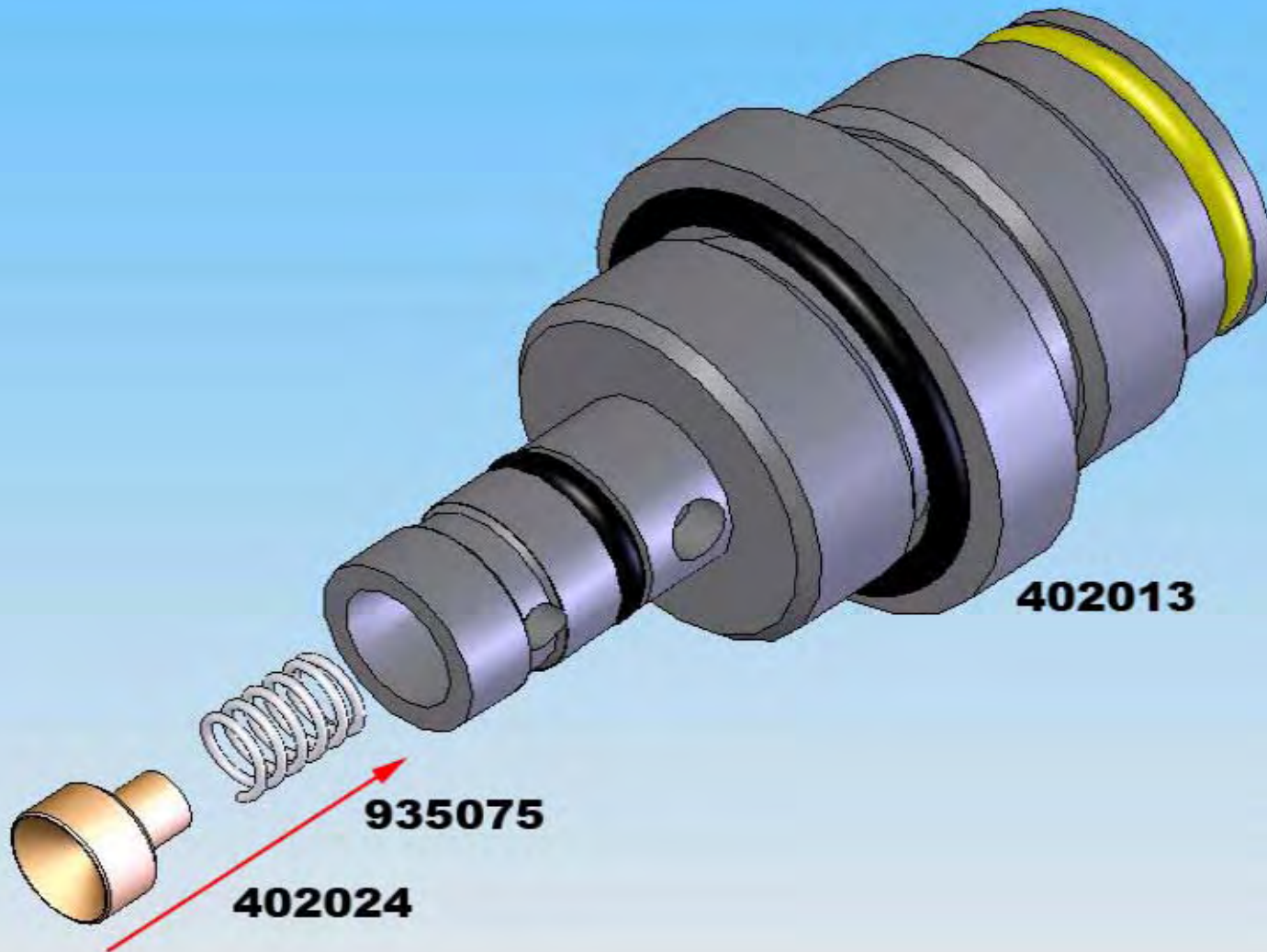


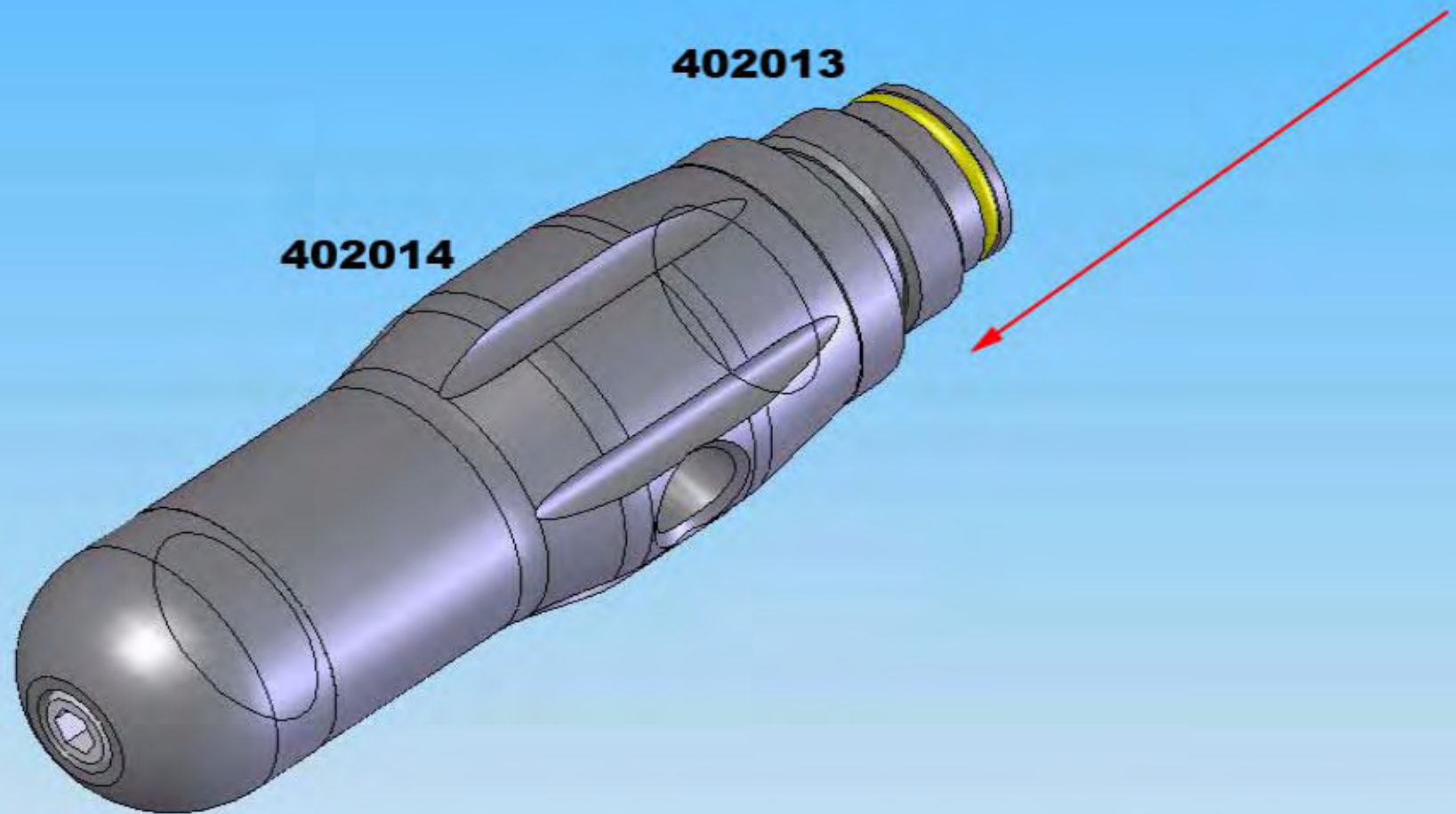




**Place the 3 o-rings on the HP Regulator Top (402013).**

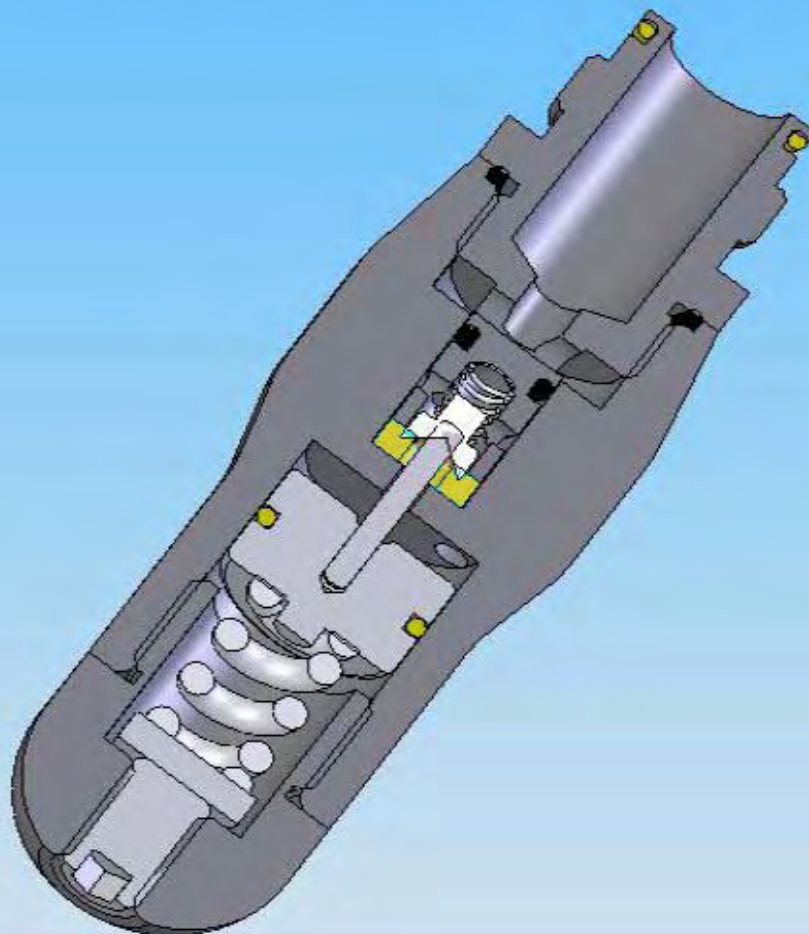
**Slide the regulator cup spring (935075) and regulator cup (402024) into the HP regulator top (402013). Make sure the “cup” portion of the regulator cup (402024) is facing out.**





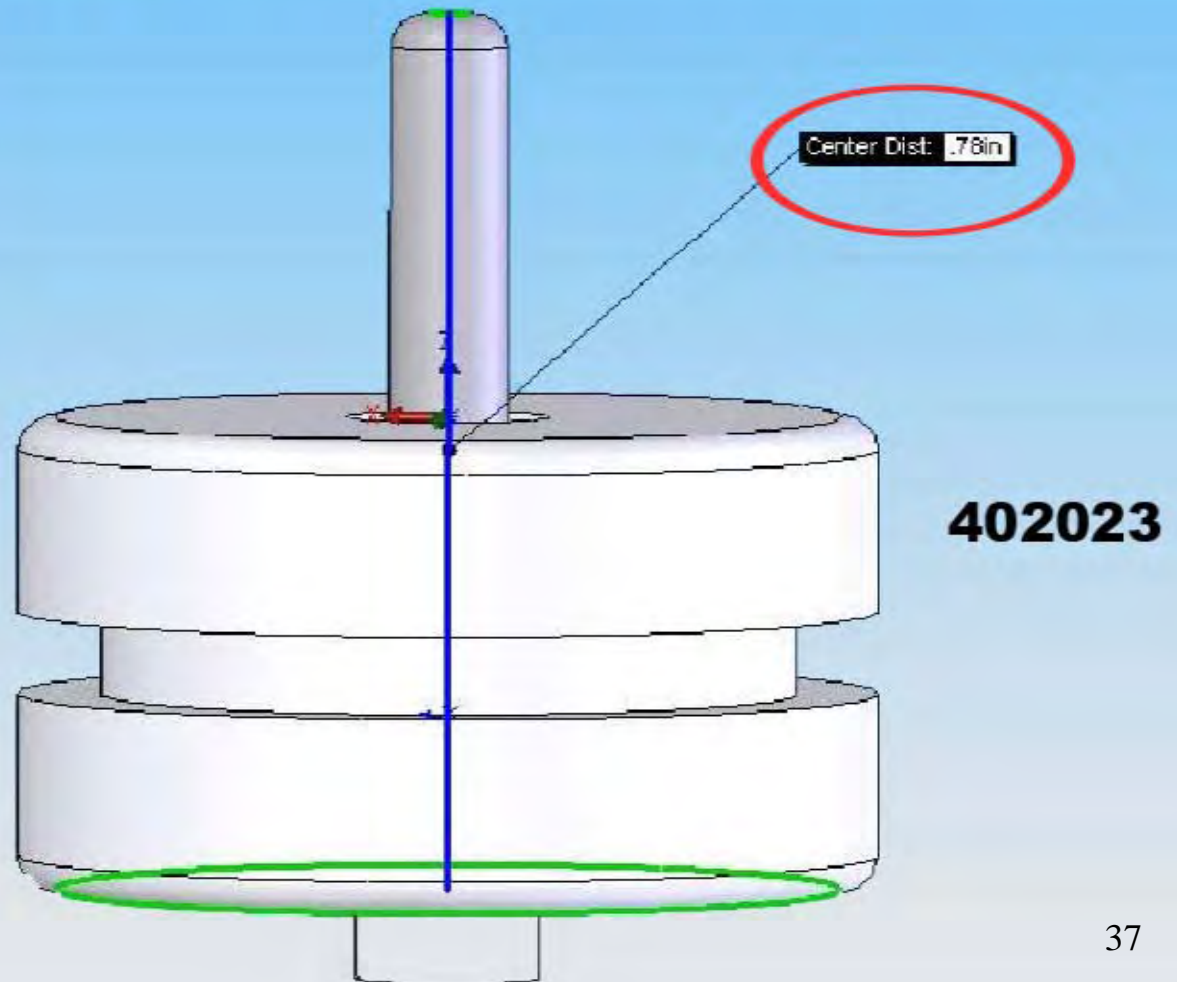
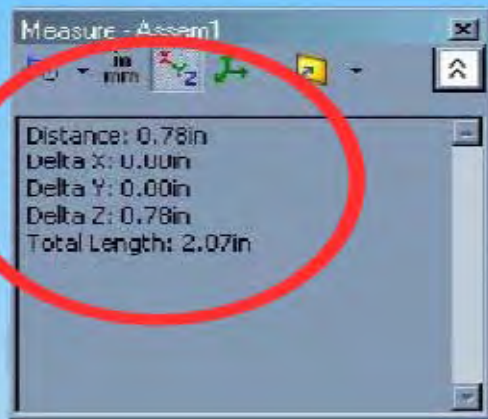
**Screw the HP regulator top (402013) into the HP regulator body (402014), making sure not to lose pieces.**

**Piece should look like this.**

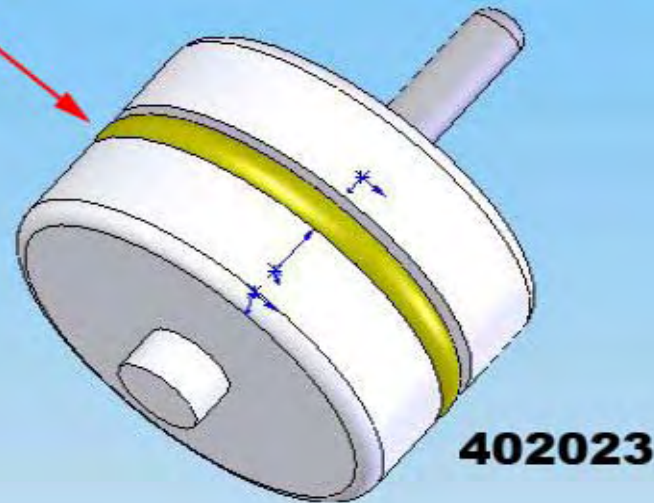




**Press the 3-32x5/8 Dowel pin into the regulator plunger (402023). Make sure the pin is straight.**  
**VERIFY THAT THE OVERALL LENGTH IS .78!!!!**

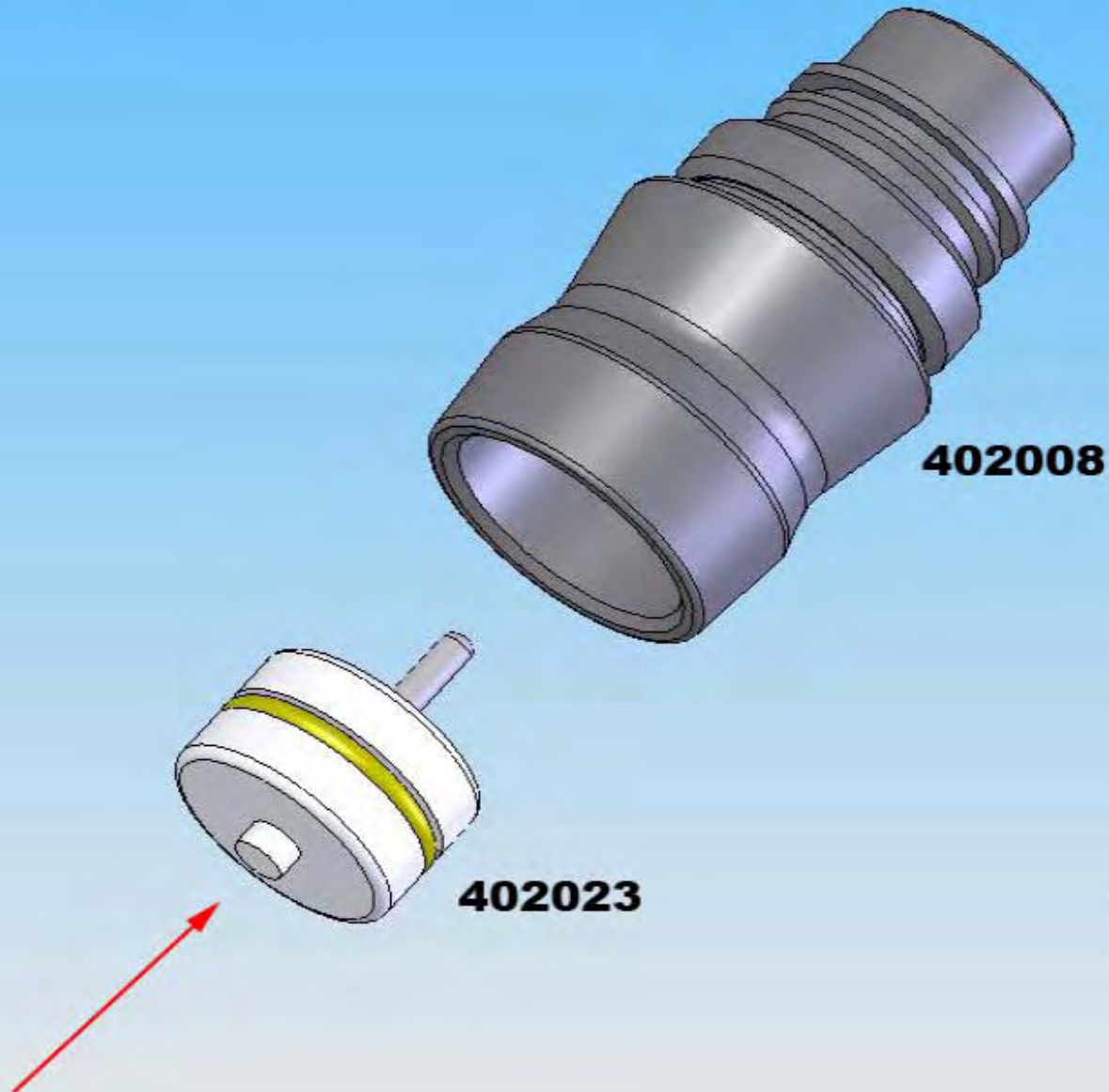


**LITHIUM GREASE!!!!!!**

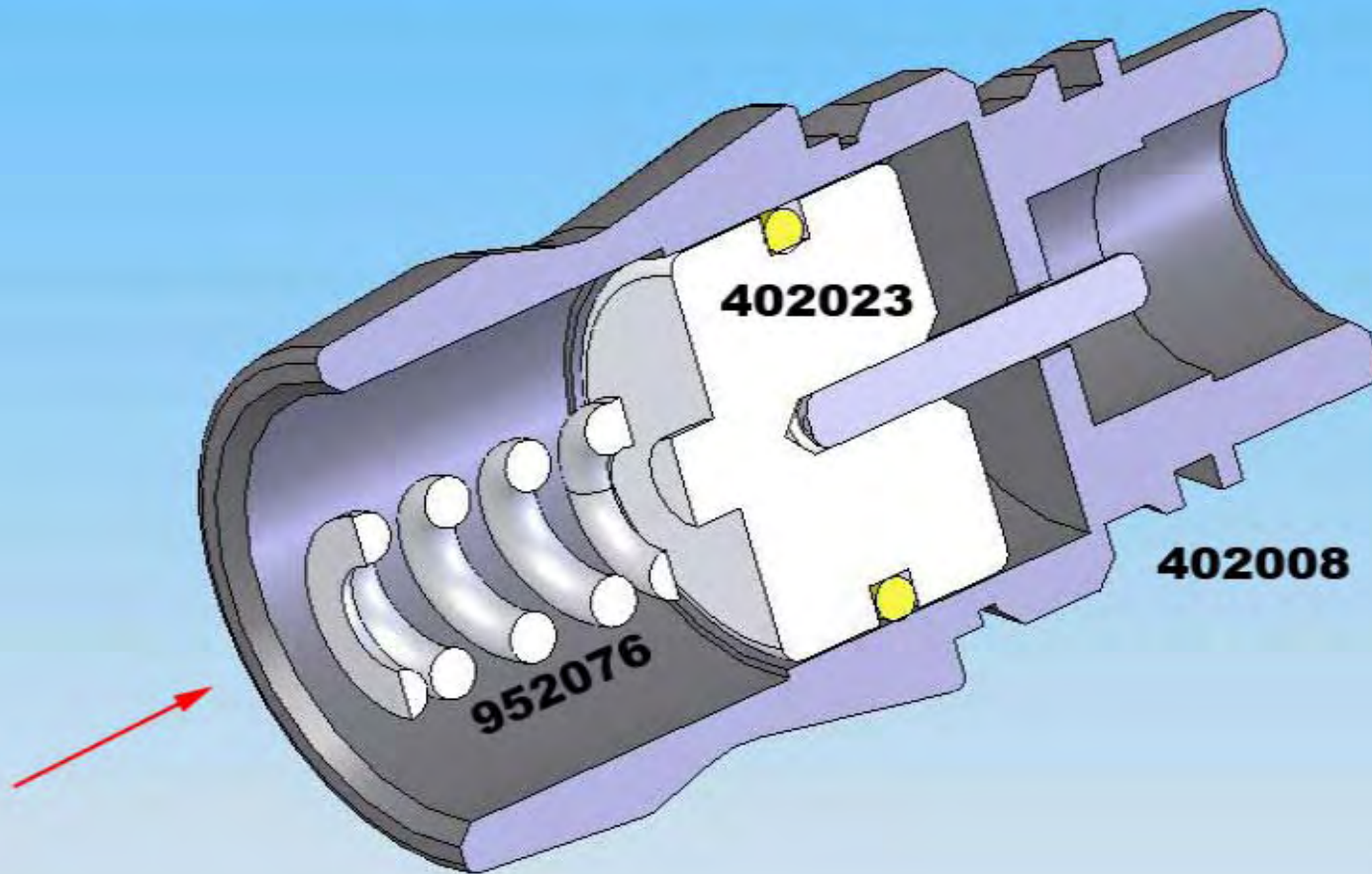


**Place the H-015 UR o-ring on the Plunger (402023) and lubricate well with lithium grease.**

**Slide the Plunger (402023) into the LP regulator body (402008) all of the way.**

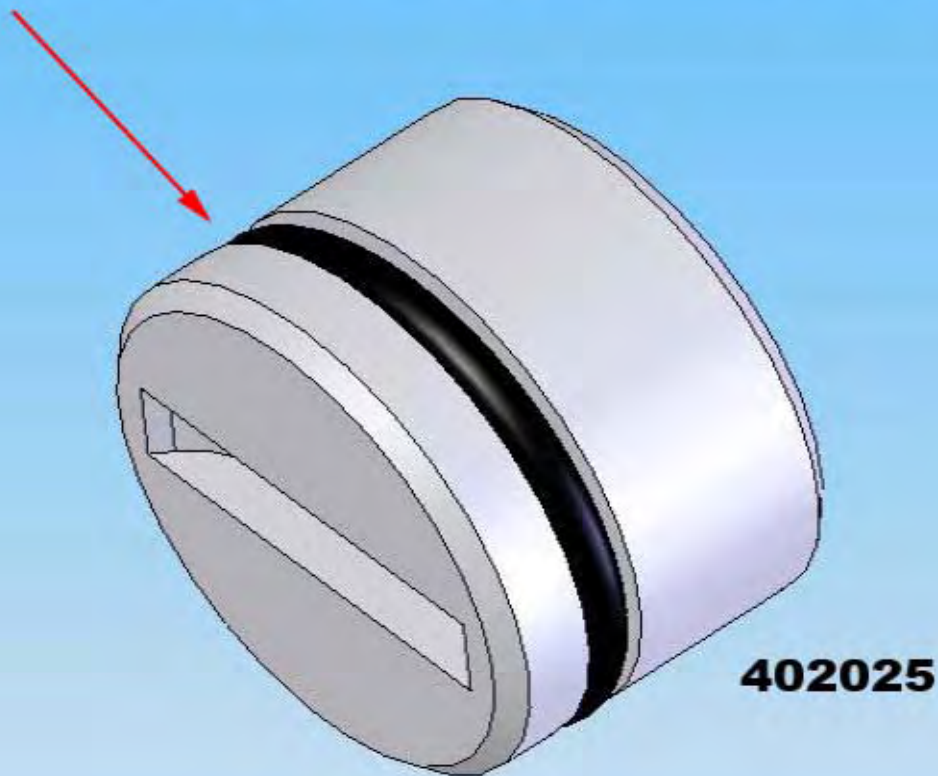


**Place LP Regulator Main Spring (952076) inside LP regulator body (402008).  
Make sure the spring (952076) is straight.**

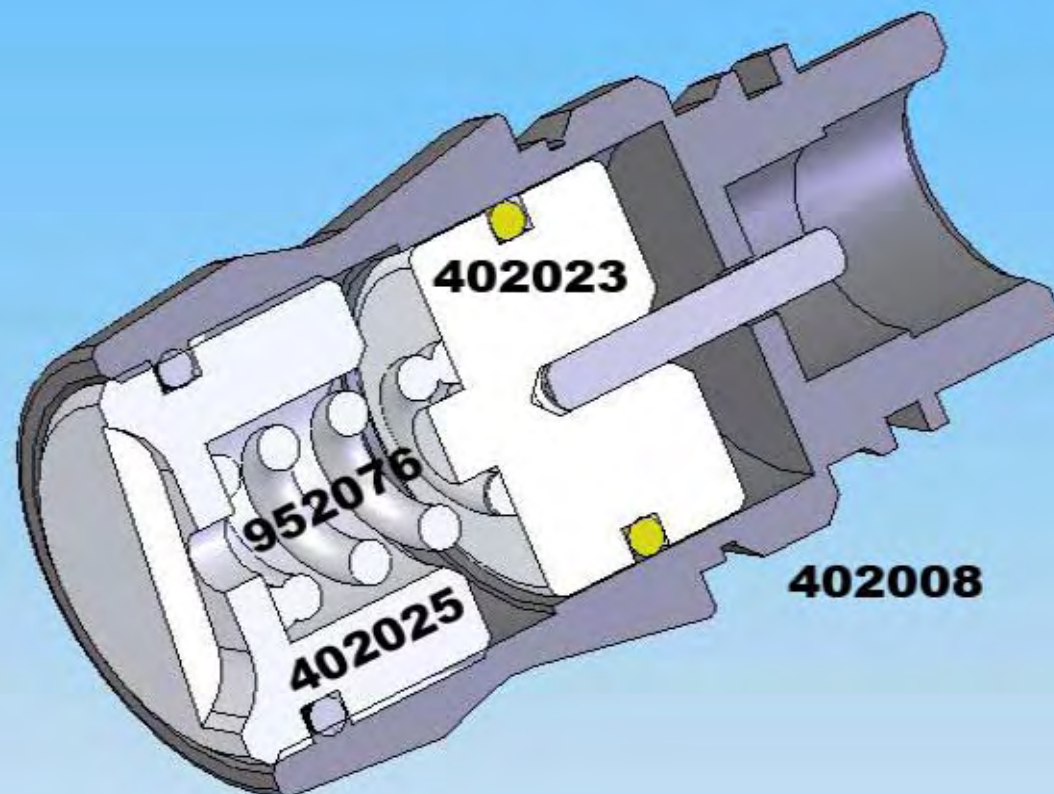




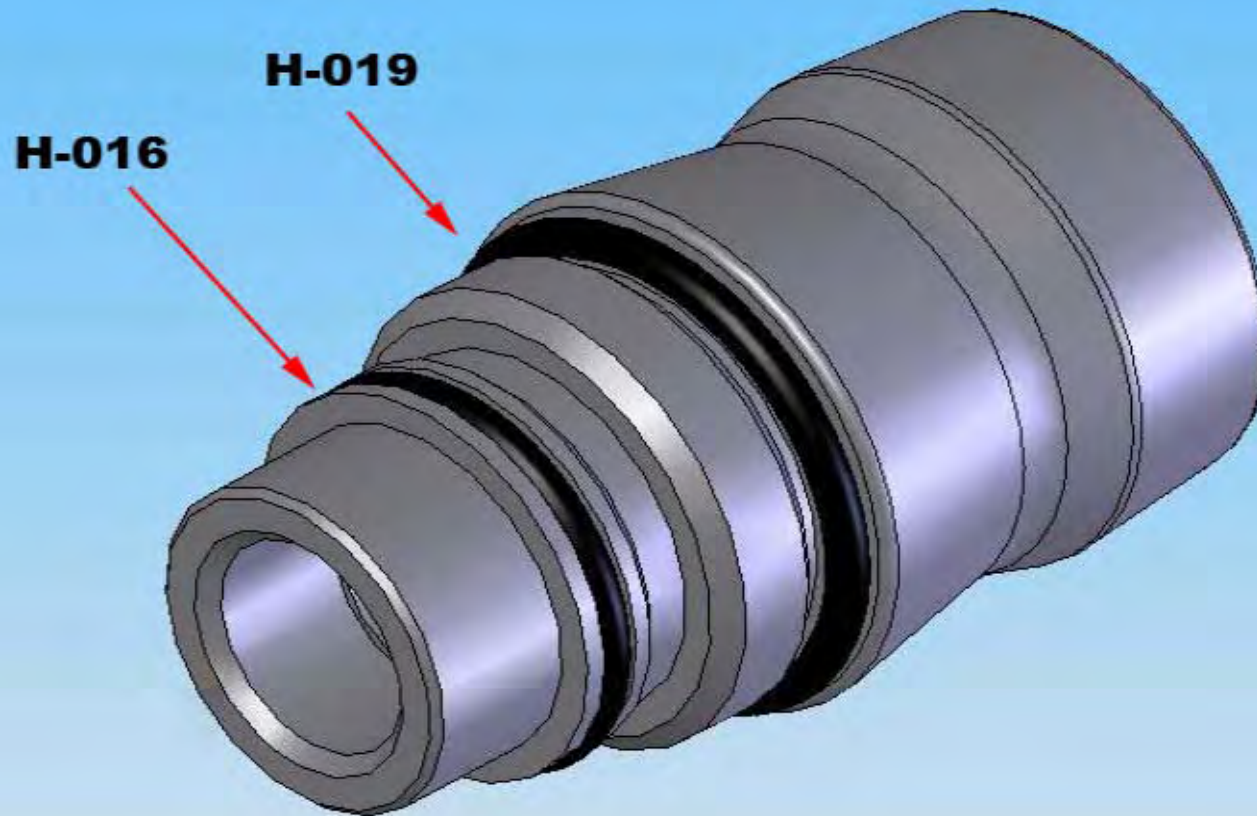
**Place H-015 o-ring on LP Adjustment Screw (402025).**



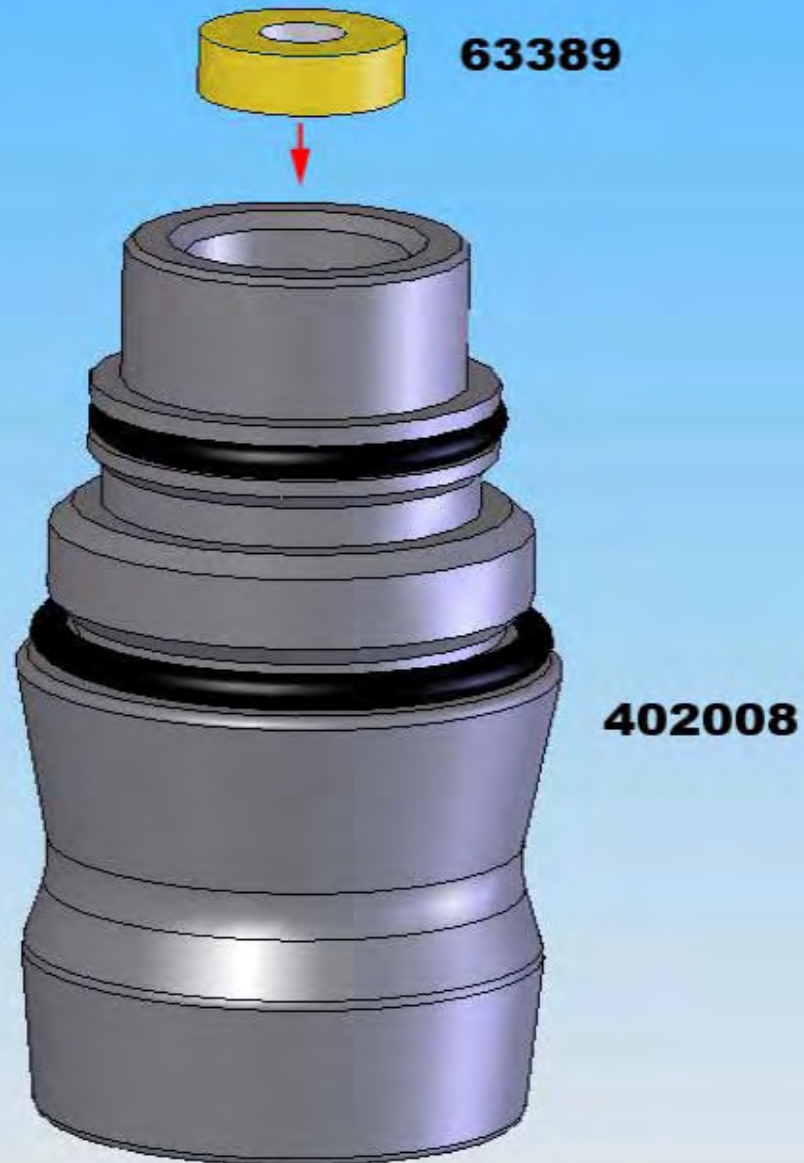
**Screw LP Adjustment Screw (402025) into LP regulator body (402008).**



**Slide the H-016 and H-019 o-rings onto the LP regulator body (402008).**

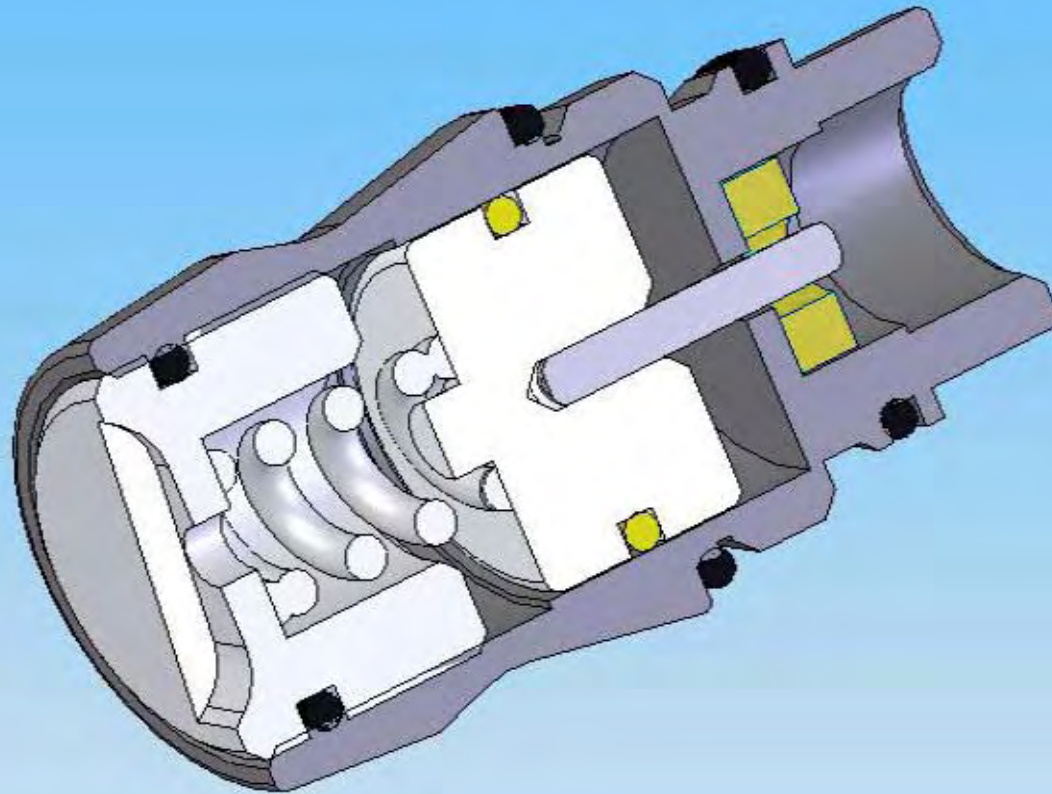


**Drop Regulator seal (63389) into top bore of LP regulator body (402008) and flatten with a blunt object.**

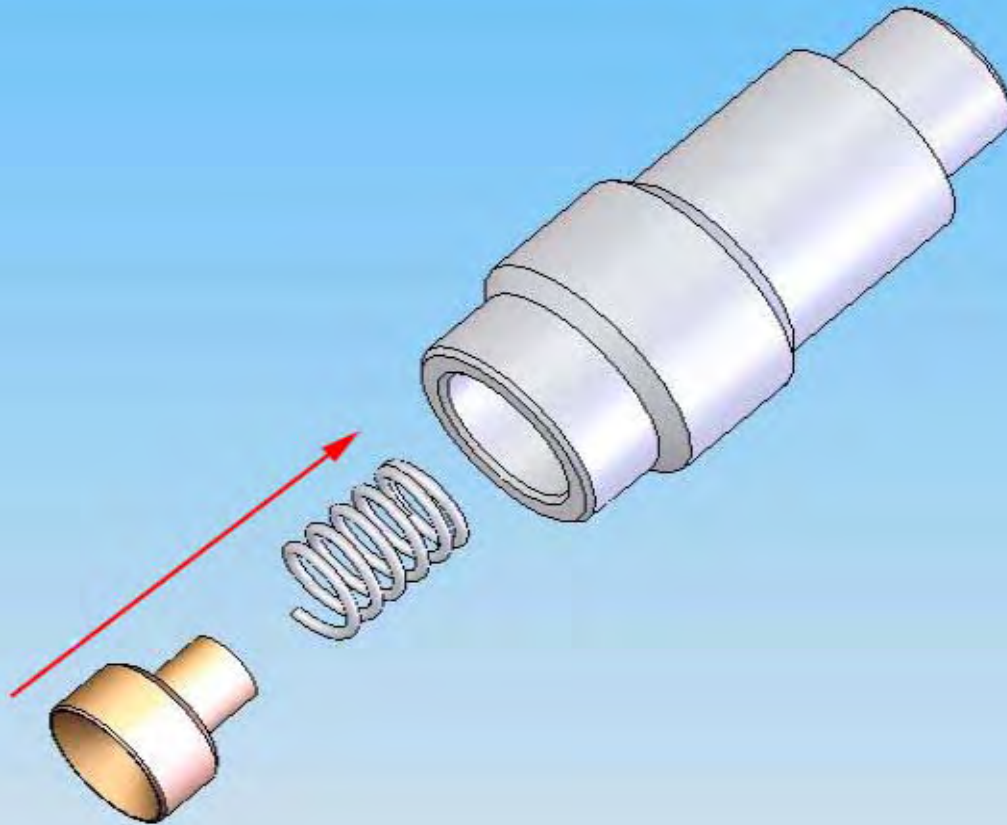




**Piece should look like this.**



**Slide the regulator cup spring (935075) and regulator cup (402024) into the LP regulator cup housing (402009). Make sure the “cup” portion of the regulator cup (402024) is facing out.**

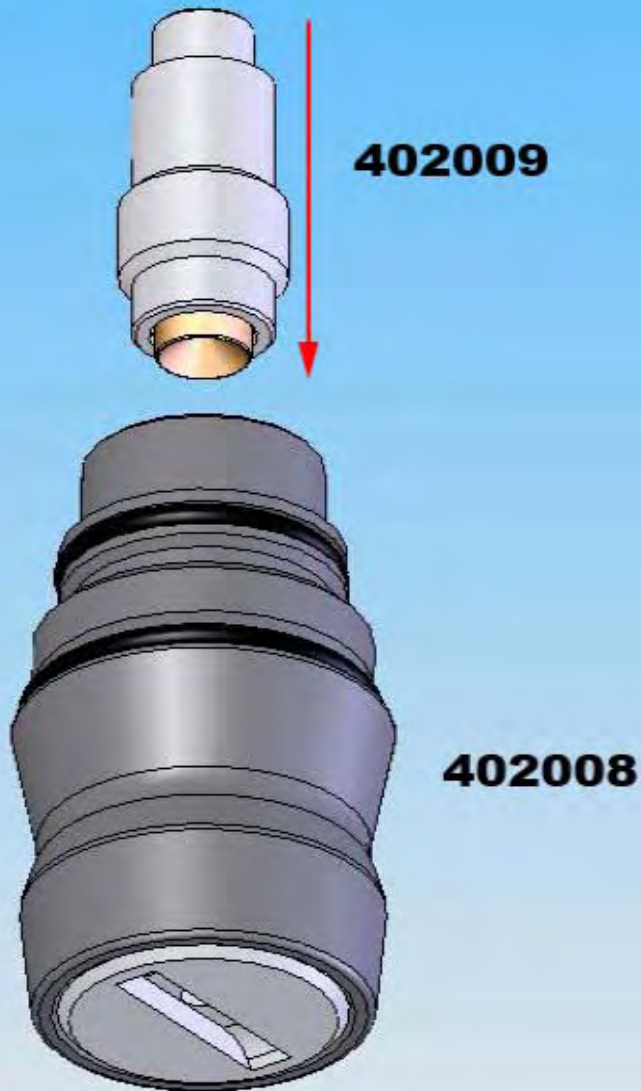


**Screw the LP Cup housing (402009) onto the LP reg body (402008), making sure no pieces fall out.**

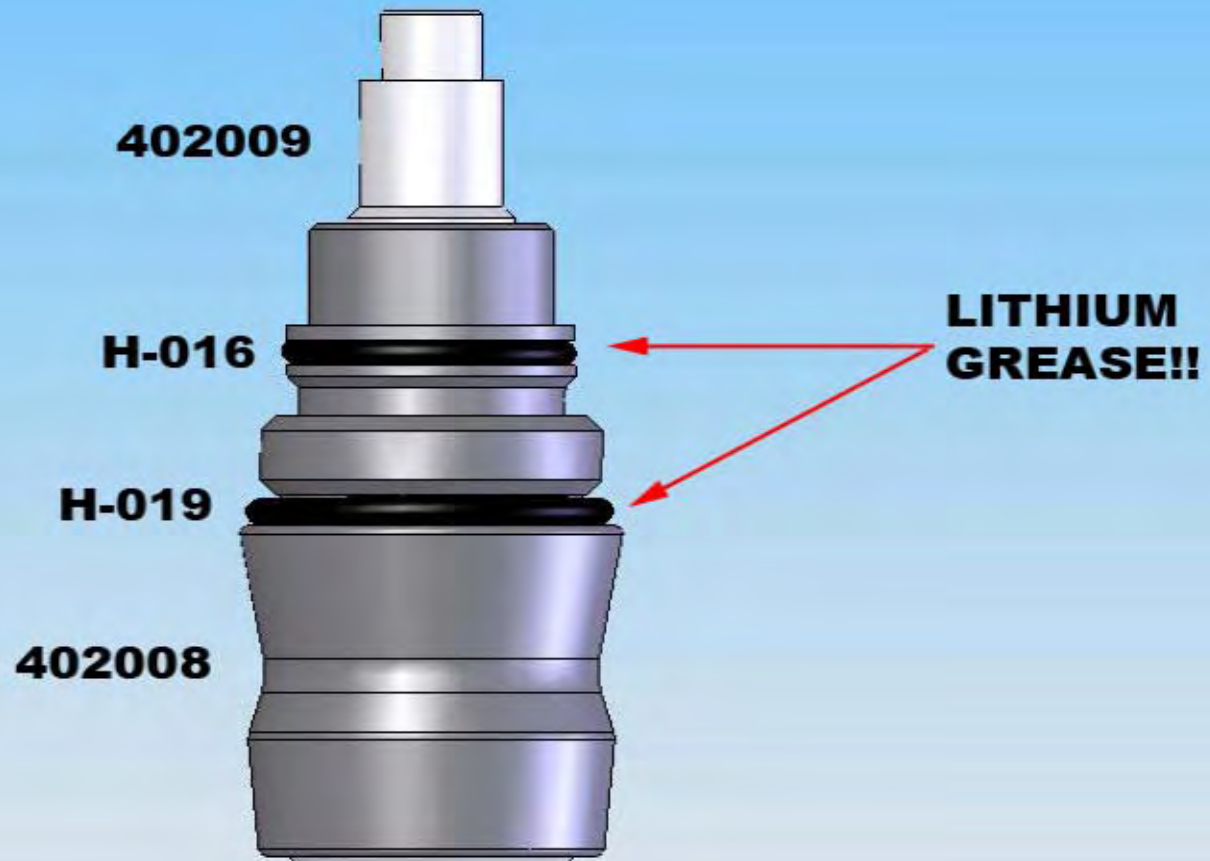
**Tighten Hand-tight.**

**Then, using a wrench, tighten another 1/16-1/8 turn.**

**DO NOT OVERTIGHTEN.**

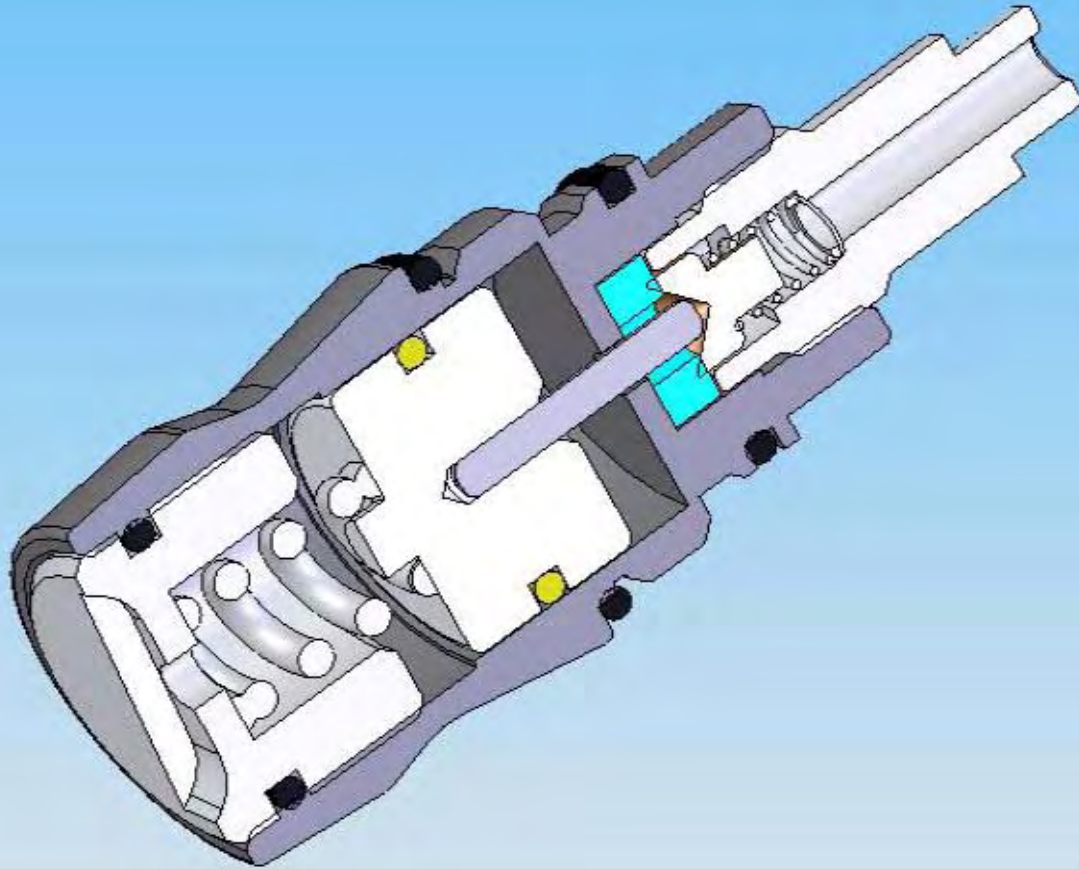


**Lubricate o-rings with lithium grease.**

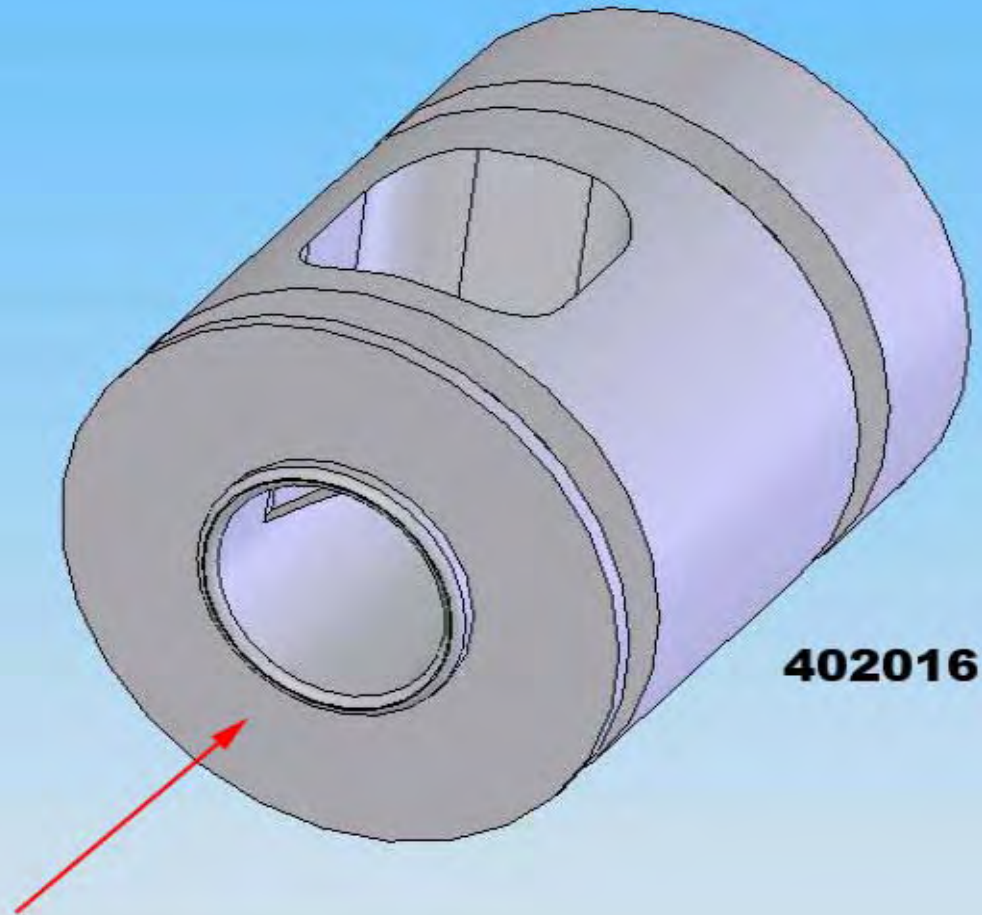


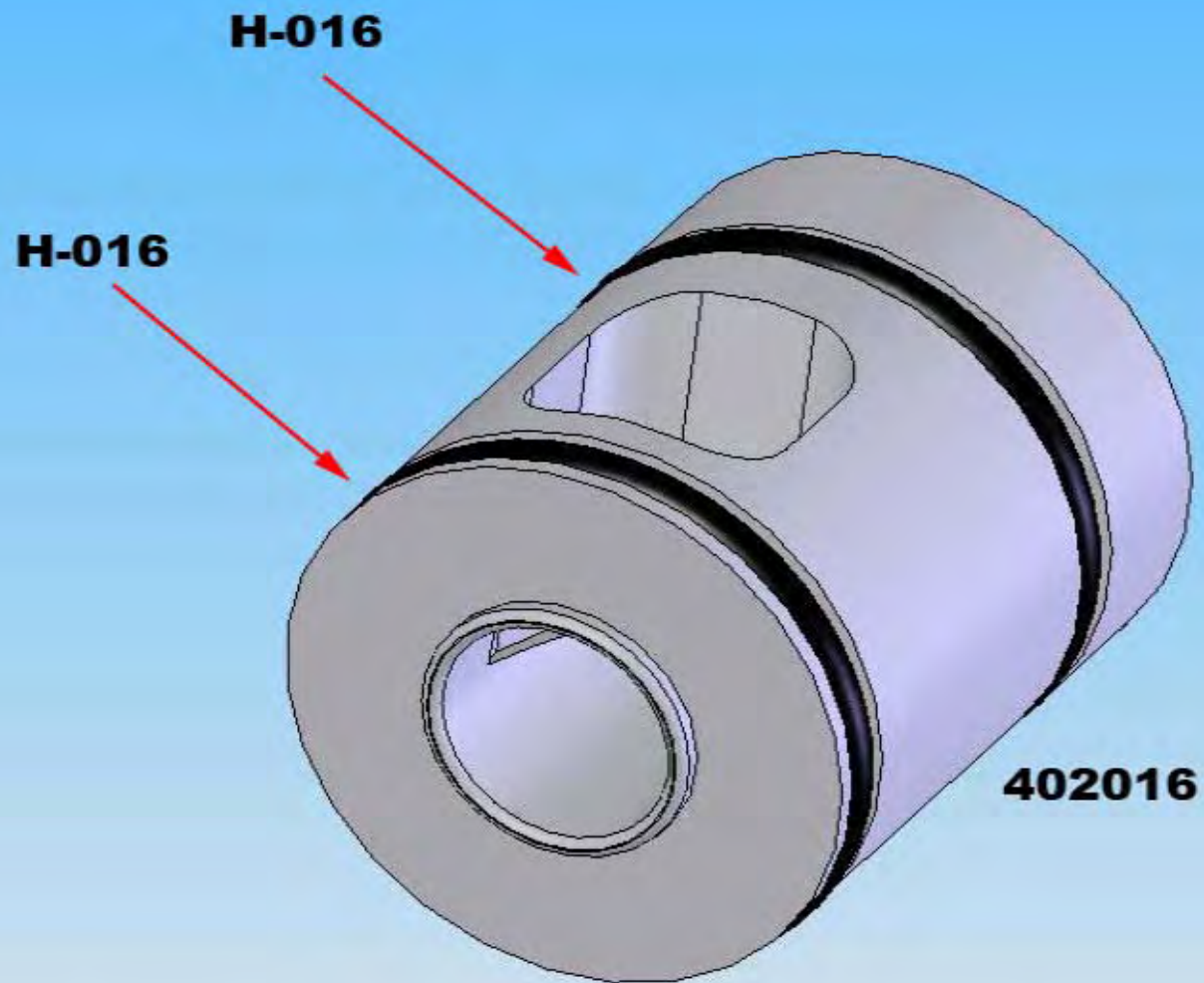


**The piece should look like this.**



**Inspect the edge of the valve seat (402016) and make sure there are no scratches or dents. Flat polish with sandpaper if necessary.**



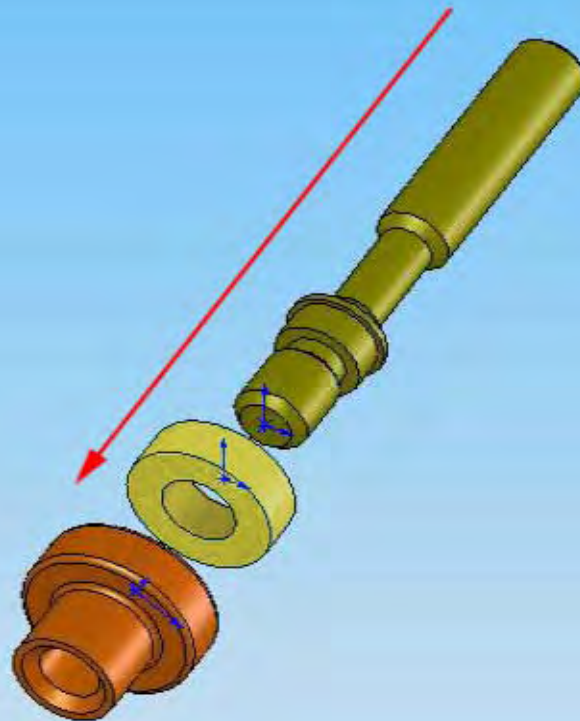


**Place the o-rings on the valve seat (402016).**

**Press the valve seal (63388) into the valve cup (402018).**

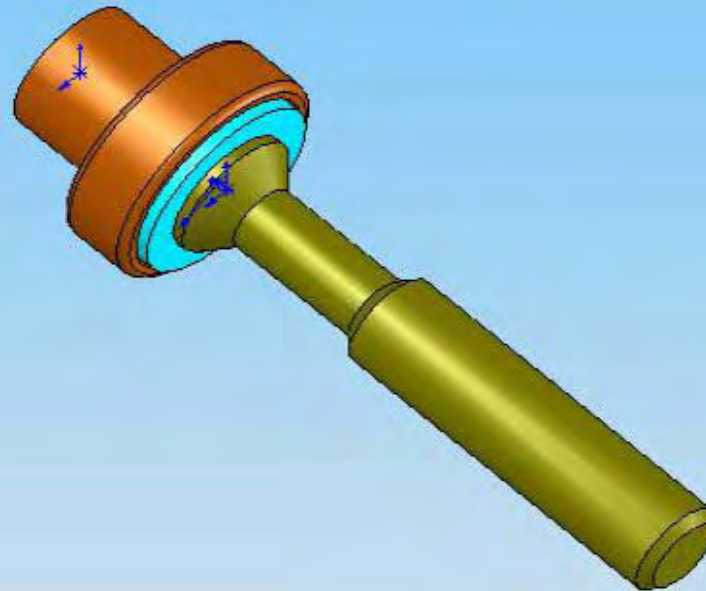
**Drop a small dab of blue loctite on the threads of the valve pin (402017).**

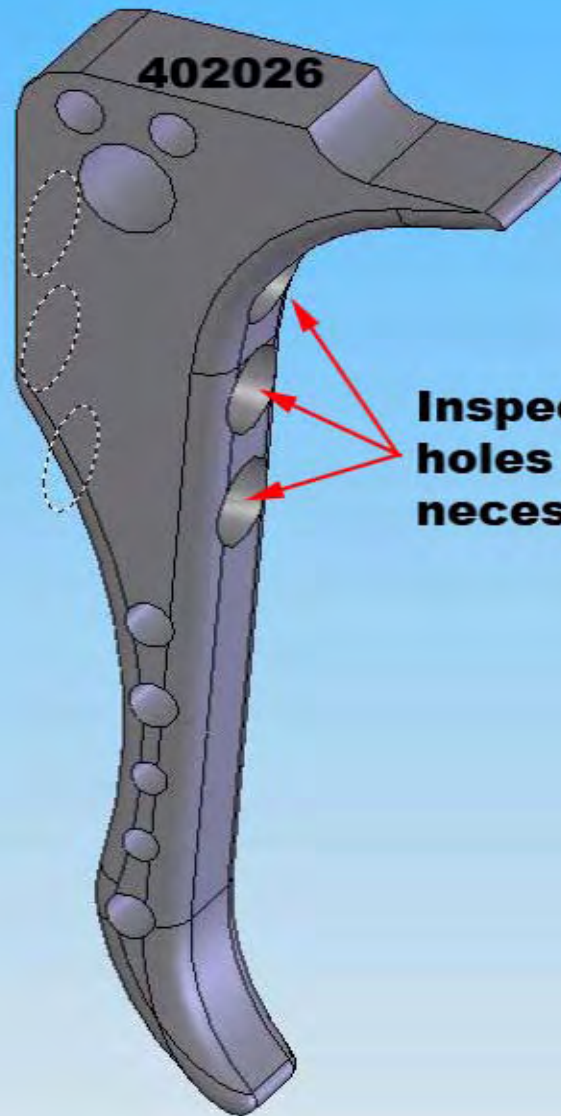
**Screw the valve pin (402017) into the valve cup (402018) until the chamfered edge is almost flush with the valve seal (63388).**





**The piece should look like this.**

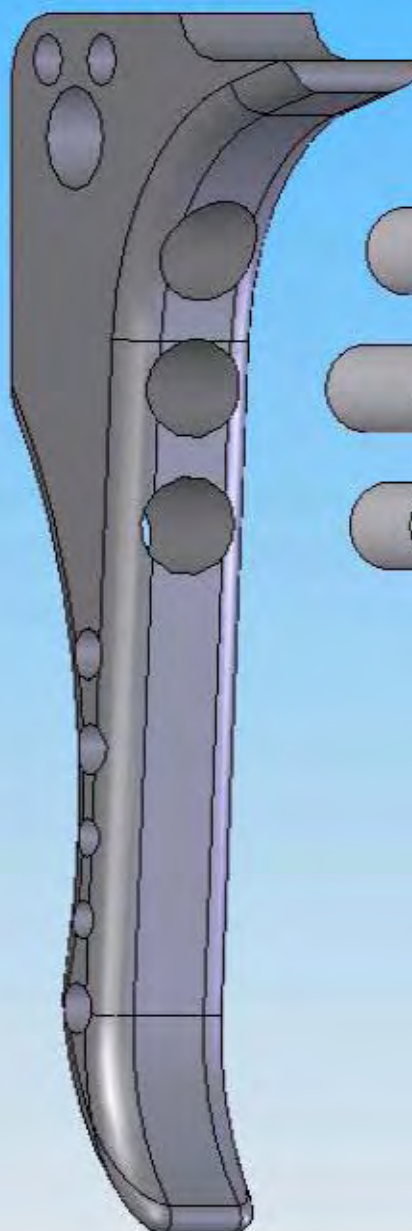




**Inspect the set screw  
holes for burrs and clean if  
necessary.**

**402026**

**Screw in the 3 set  
screws until flush with  
the outside of trigger  
face.**



**8-32x1/4 Set Screw**

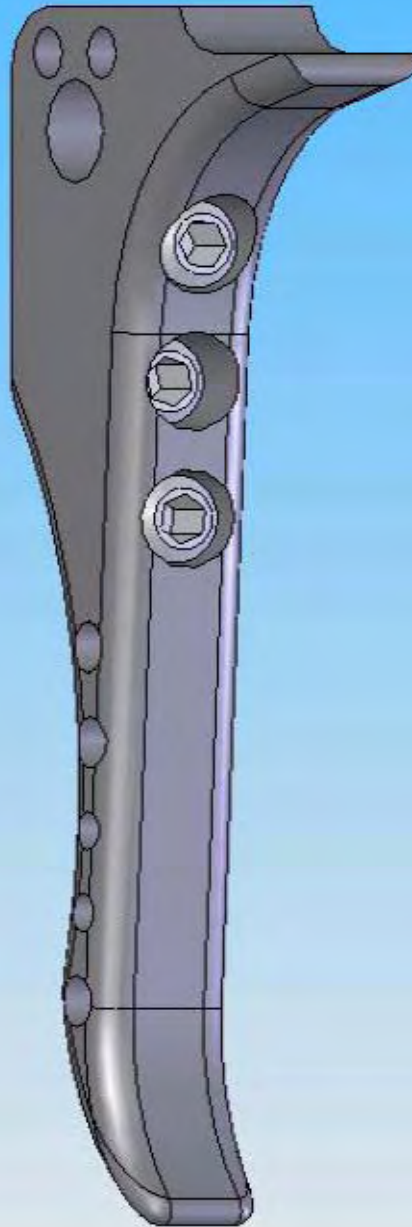


**8-32x1/2 Set Screw**



**8-32x1/4 Set Screw**

**Piece should look like this.**



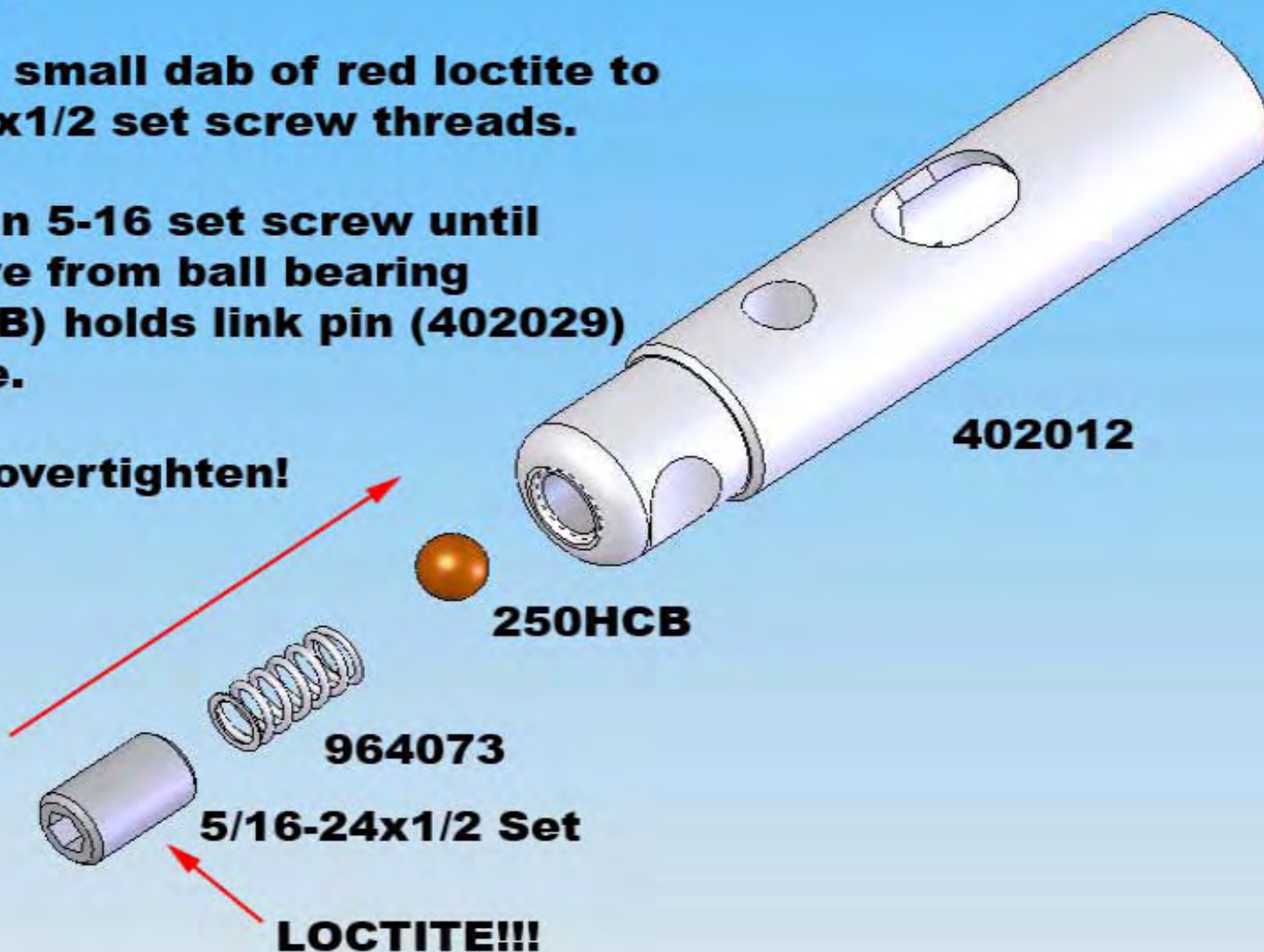


**Drop ball bearing (250HCB) and spring (964073) into bore on bolt (402012).**

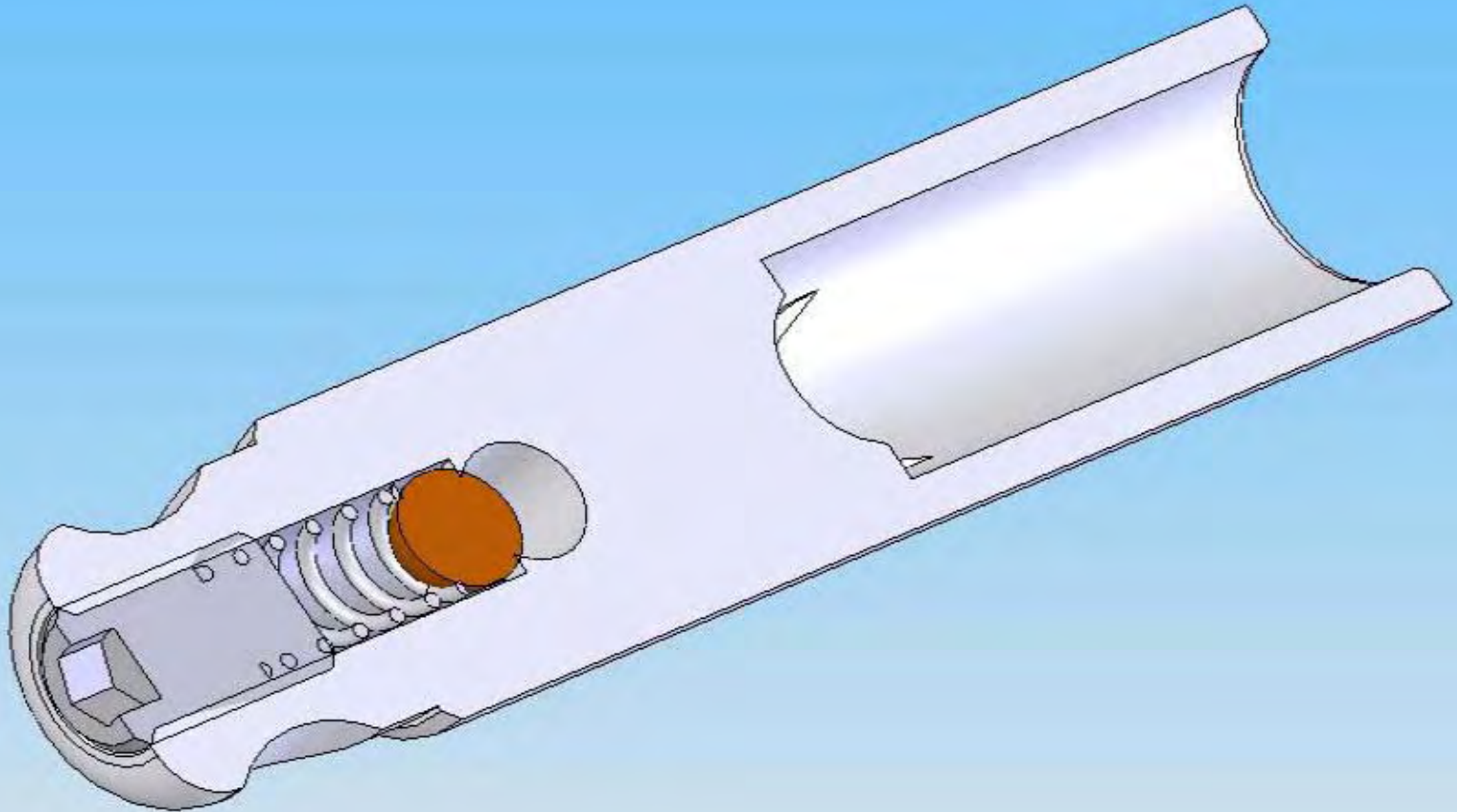
**Apply a small dab of red loctite to 5/16-24x1/2 set screw threads.**

**Screw in 5-16 set screw until pressure from ball bearing (250HCB) holds link pin (402029) in place.**

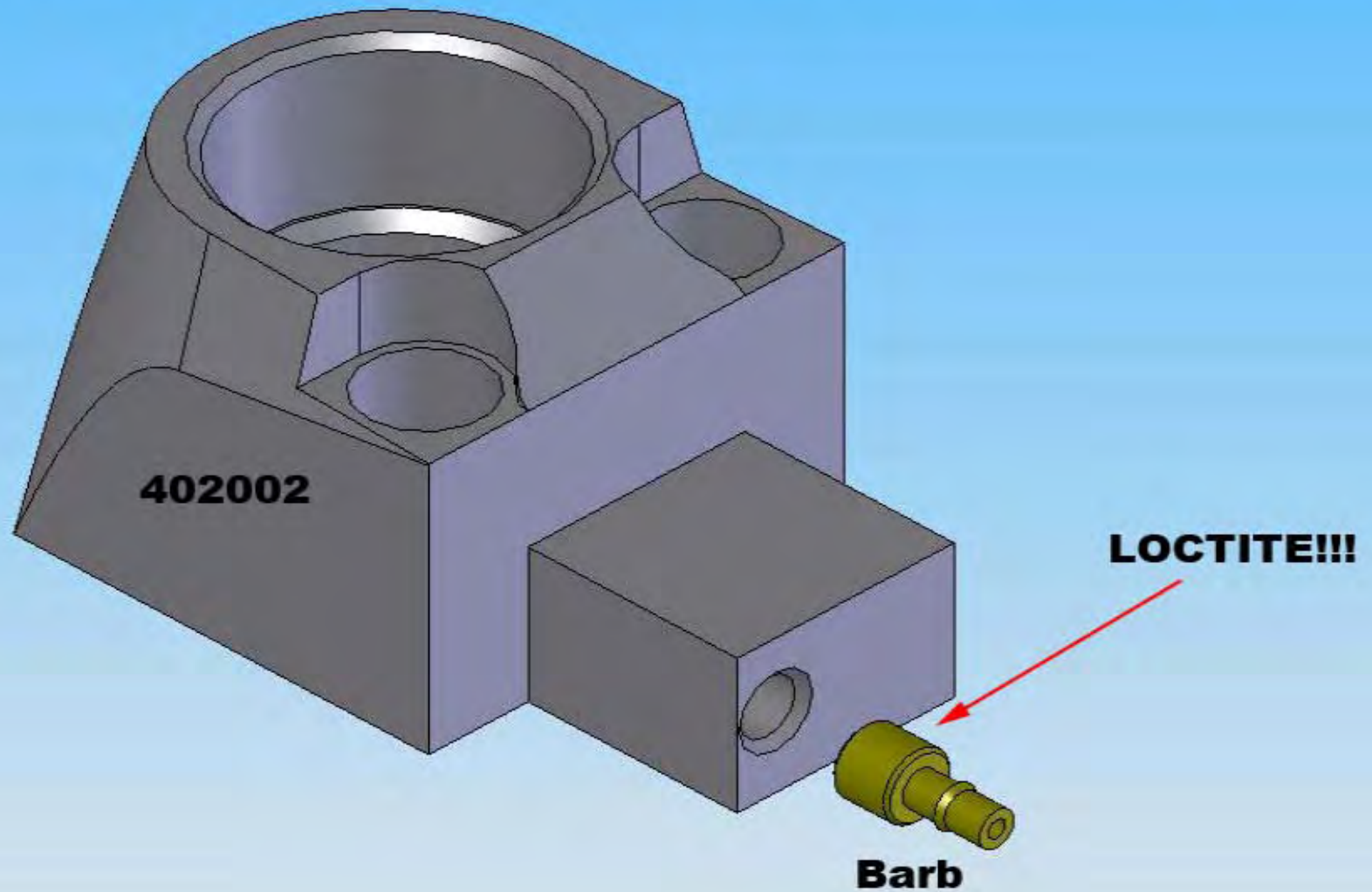
**Do not overtighten!**



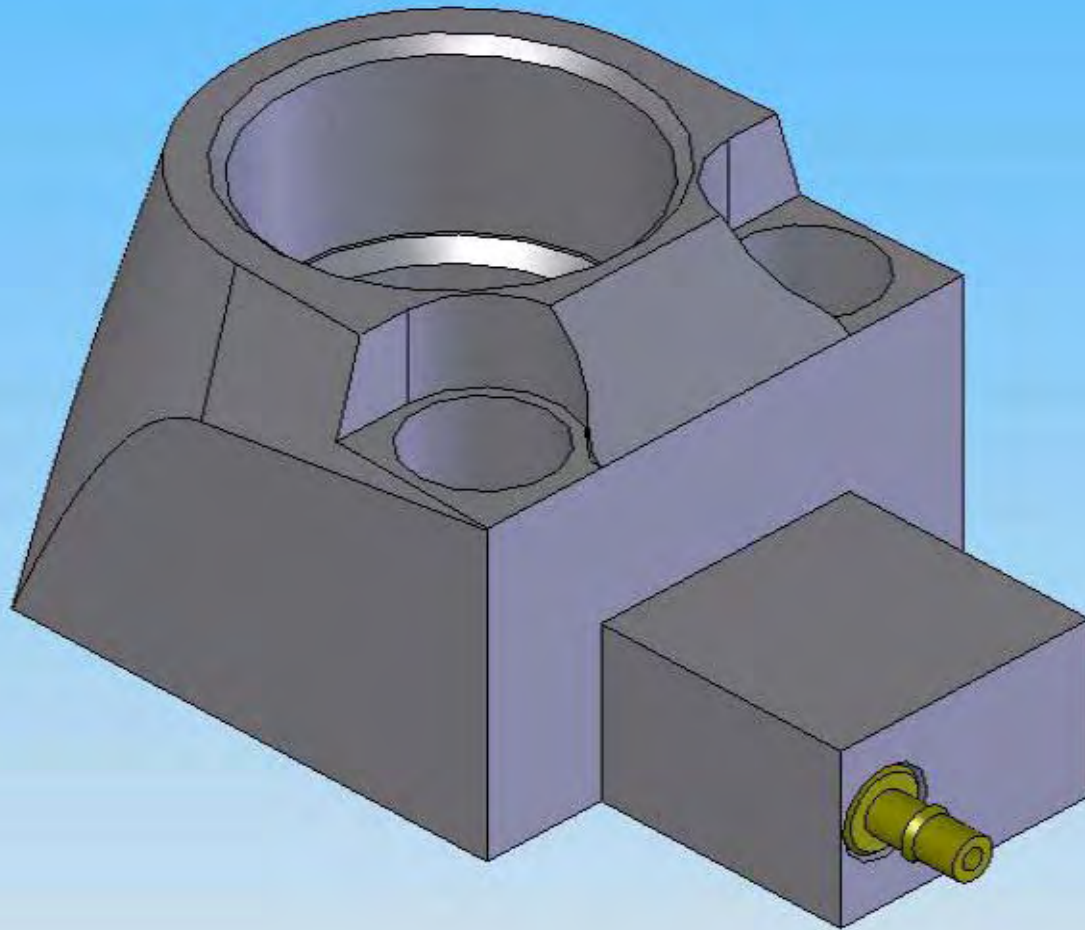
**Piece should look like this.**



**Apply a small dab of red loctite to the threads on the barb. Screw the barb into the regulator mount (402002).**



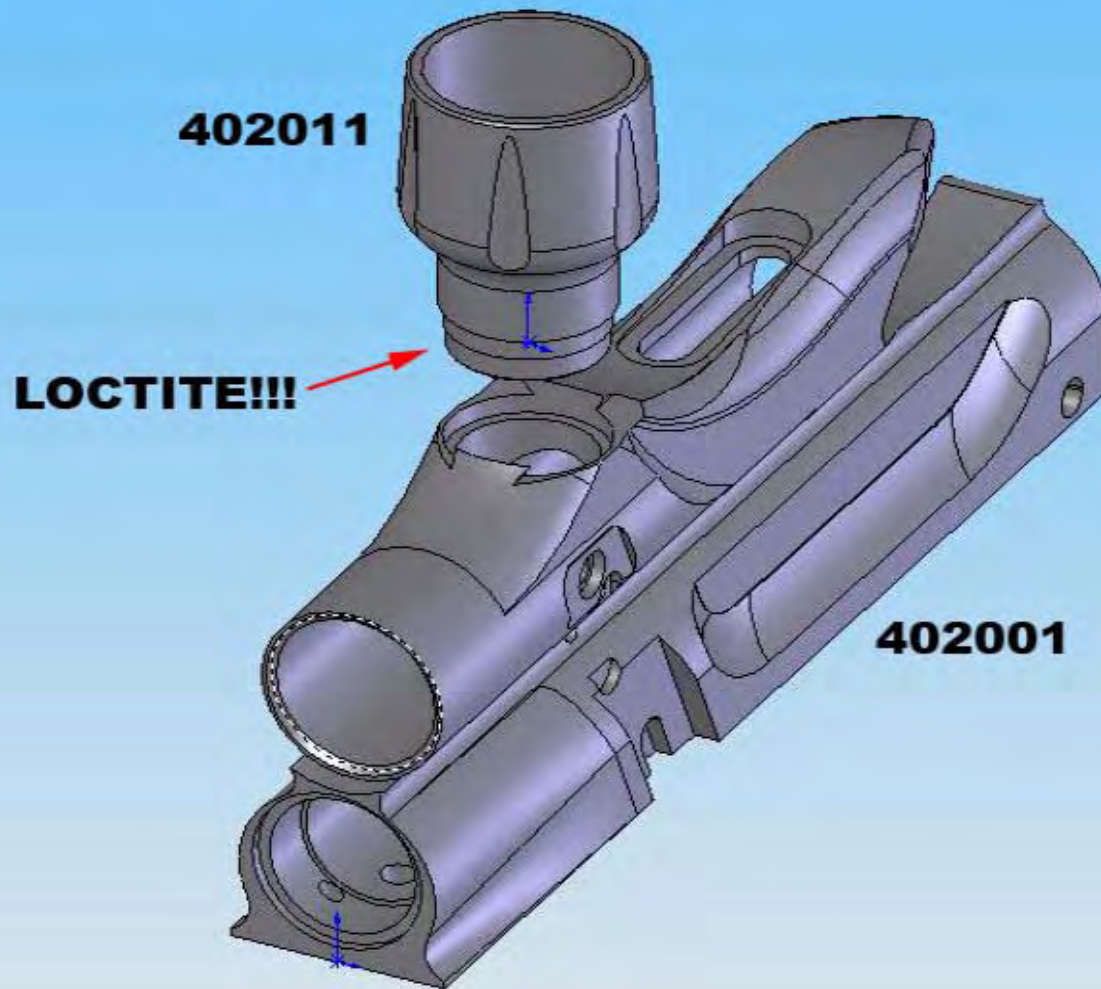
**Piece should look like this.**



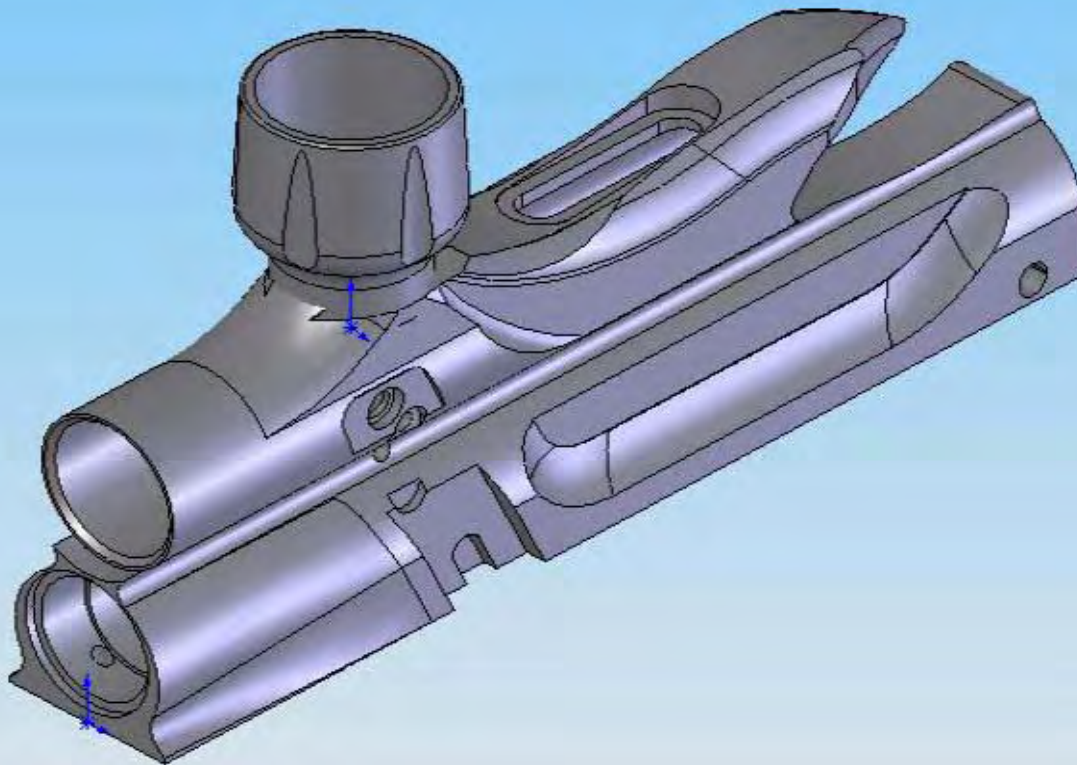


**Apply a small dab of blue loctite to threads of feed tube (402011).**

**Screw into main receiver (402001).**



**Piece should look like this.**

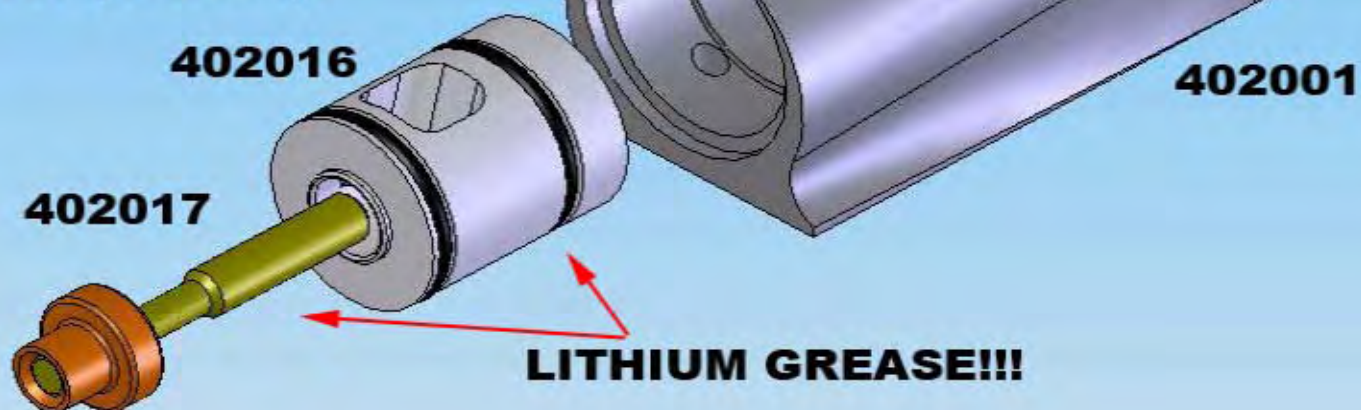


**Lubricate valve seat (402016)  
with lithium grease.**

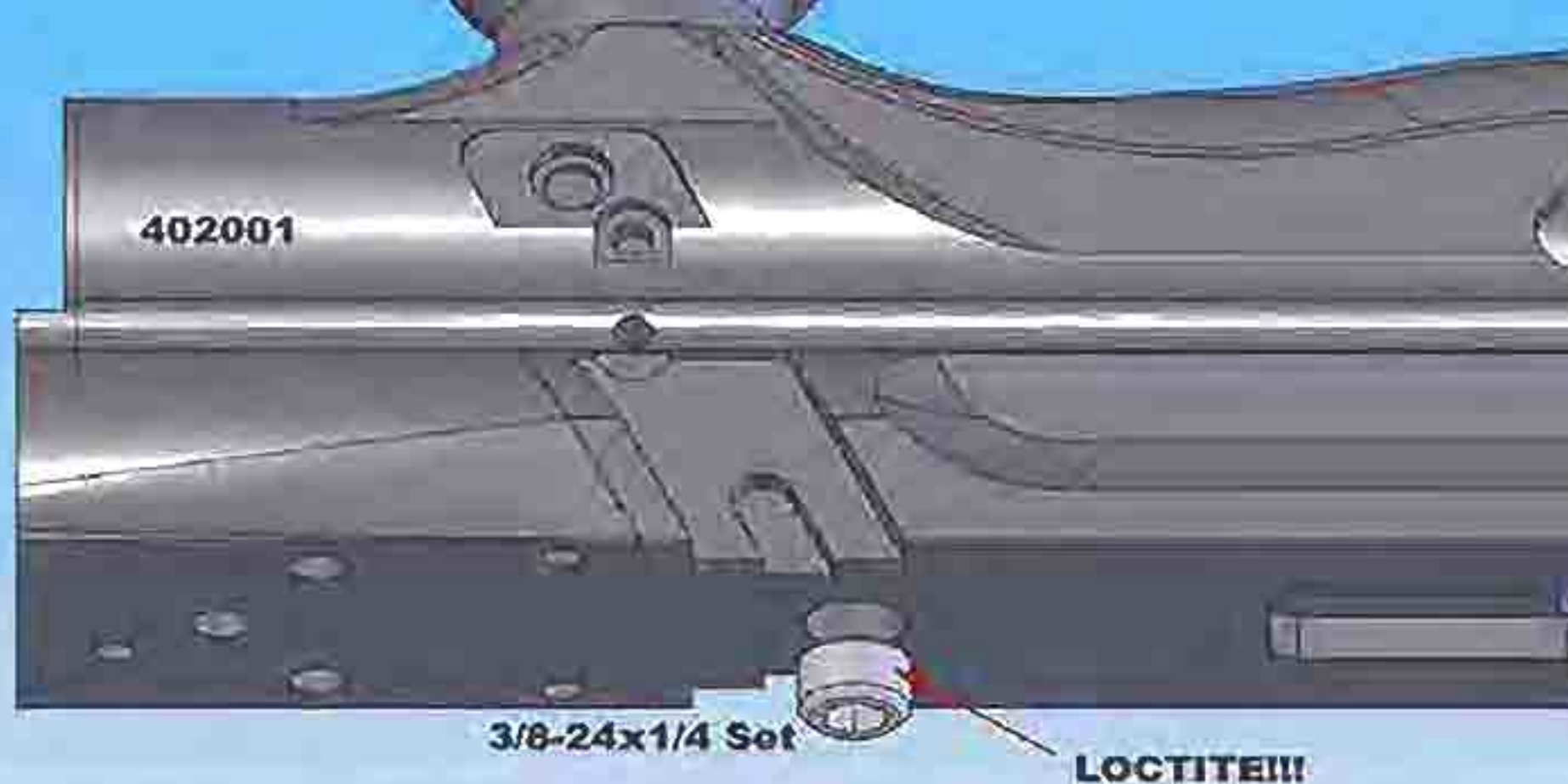
**Lubricate valve pin (402017)  
with lithium grease.**

**Slide valve pin (402017) into  
valve seat (402016).**

**Slide valve seat (402016) into  
main receiver (402001).**





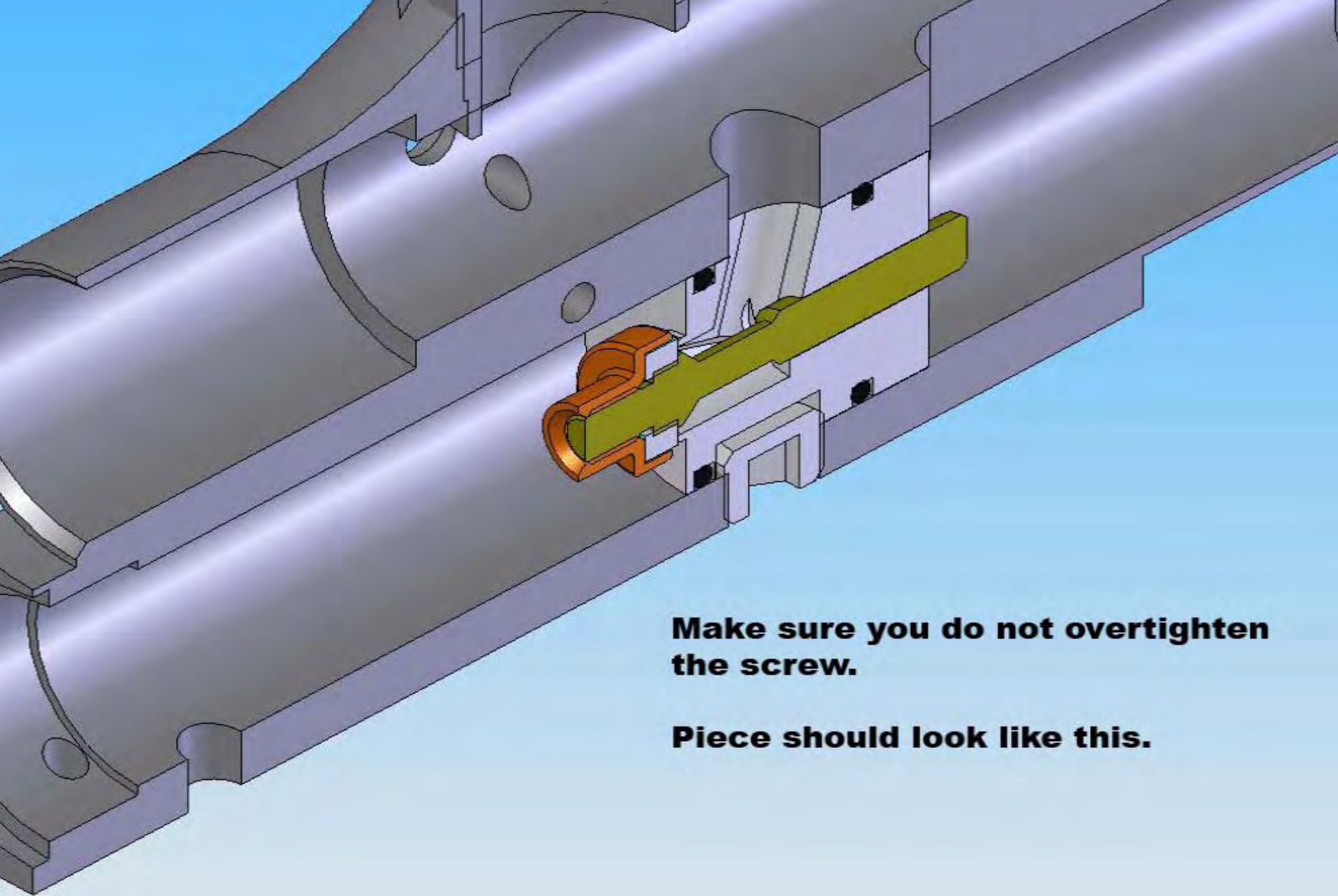


**Make sure the set screw notch in valve seat (402016) is lined up perfectly with the hole in bottom of main receiver (402001).**

**Apply a small dab of blue loctite to threads of the 3/8-24x1/4 set screw.**

**Screw in set screw until hand-tight. Then back off the screw 1/8-1/4 of a turn.**





**Make sure you do not overtighten the screw.**

**Piece should look like this.**

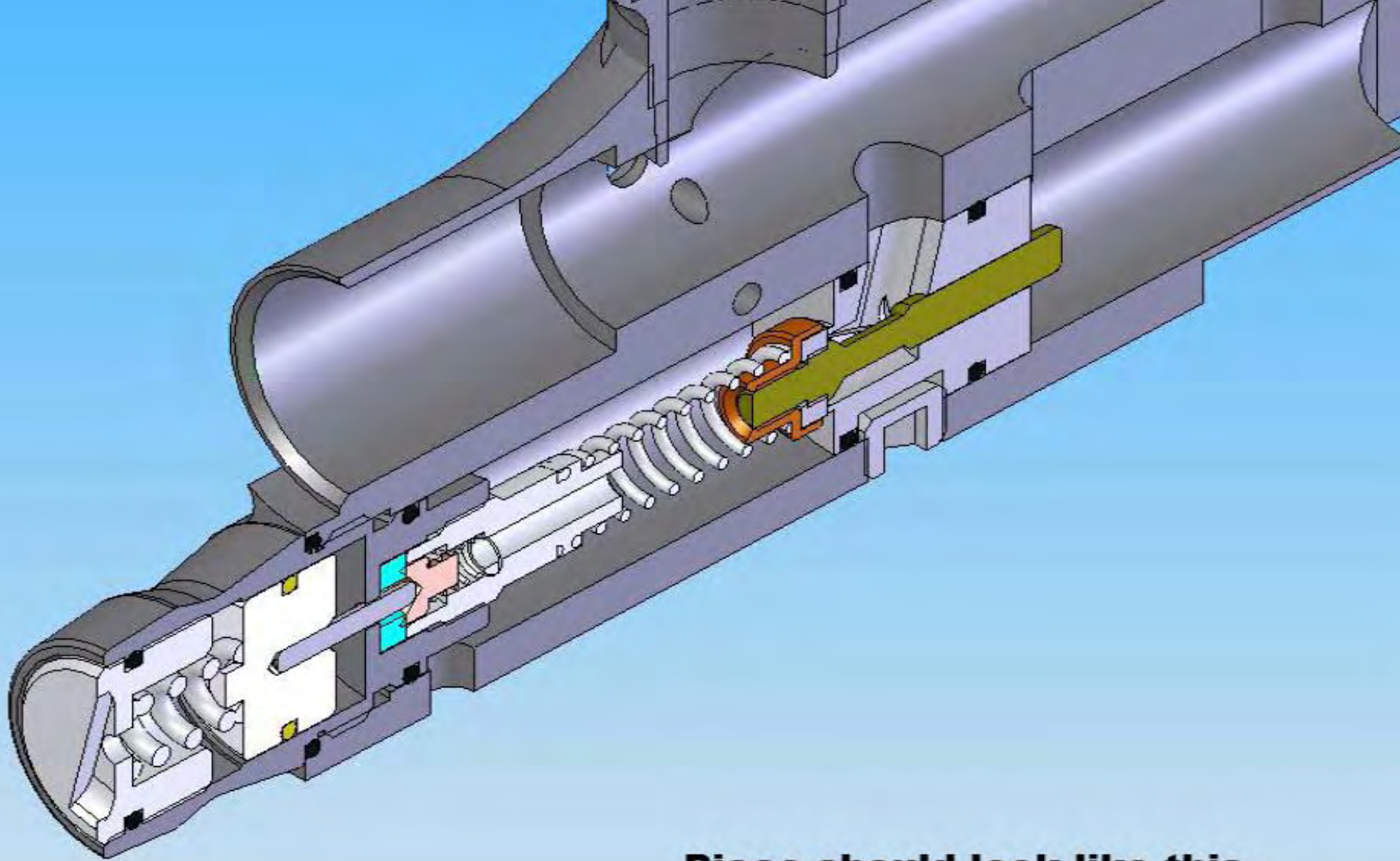


**Slide Spring (982073) onto LP cup housing (402009).**

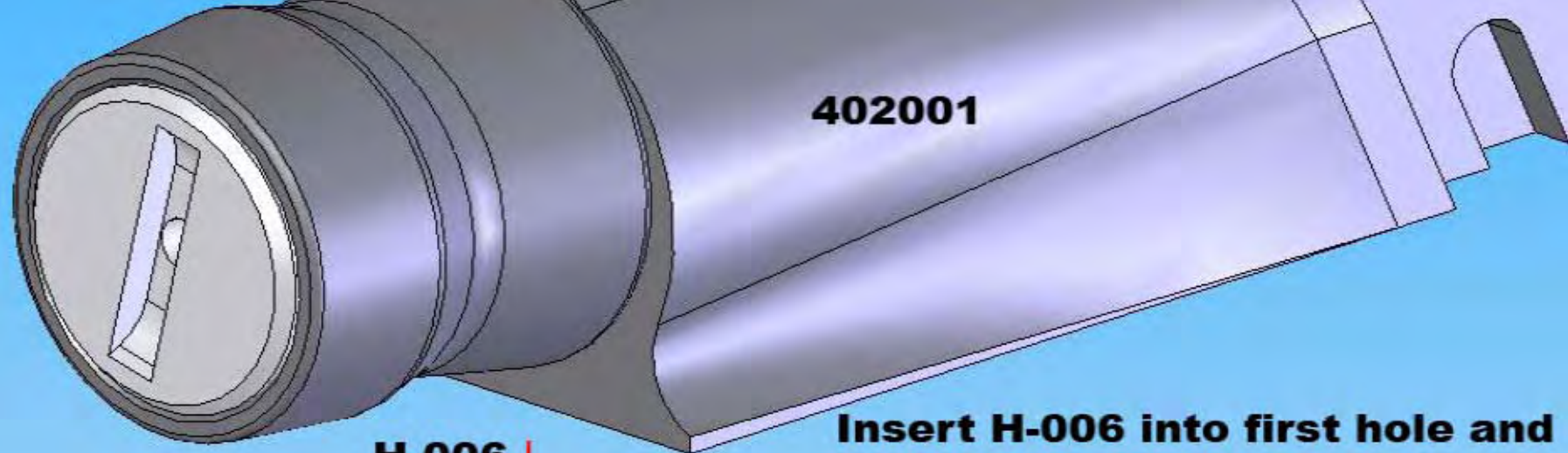
**Grease O-rings with lithium grease.**

**Slide LP regulator into main receiver (402001).  
Make sure that spring (982073) slides over  
valve cup (402018).**





**Piece should look like this.**

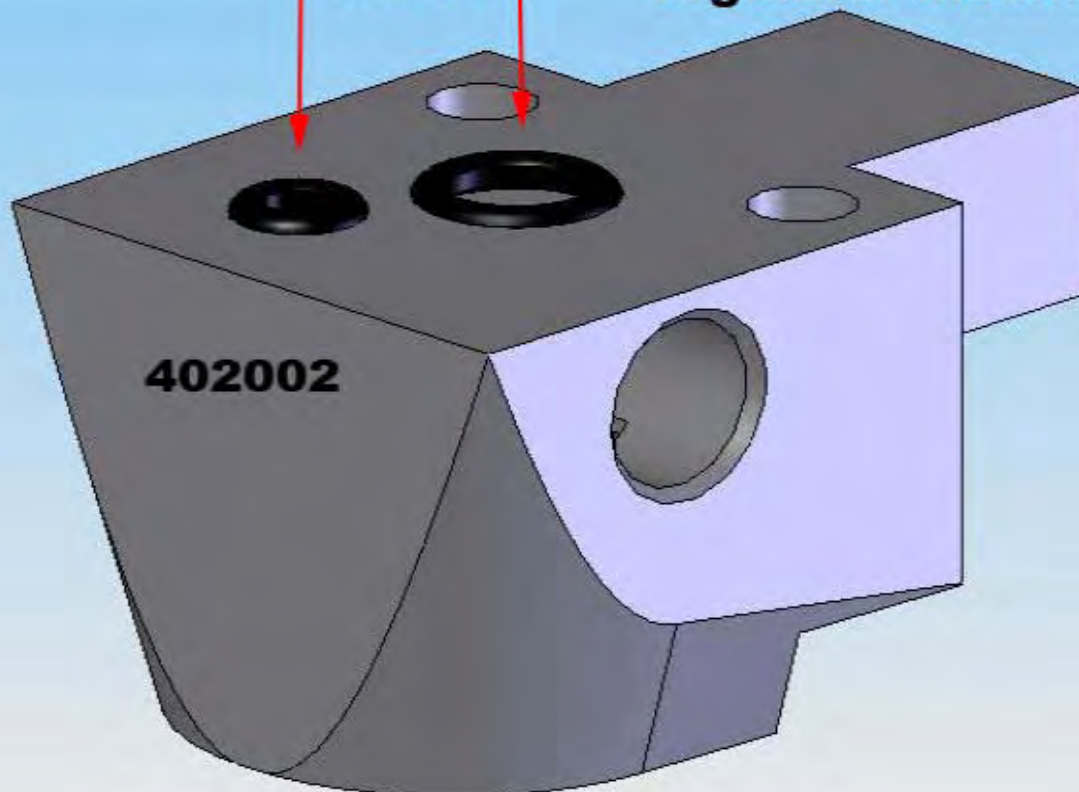


**402001**

**H-006**

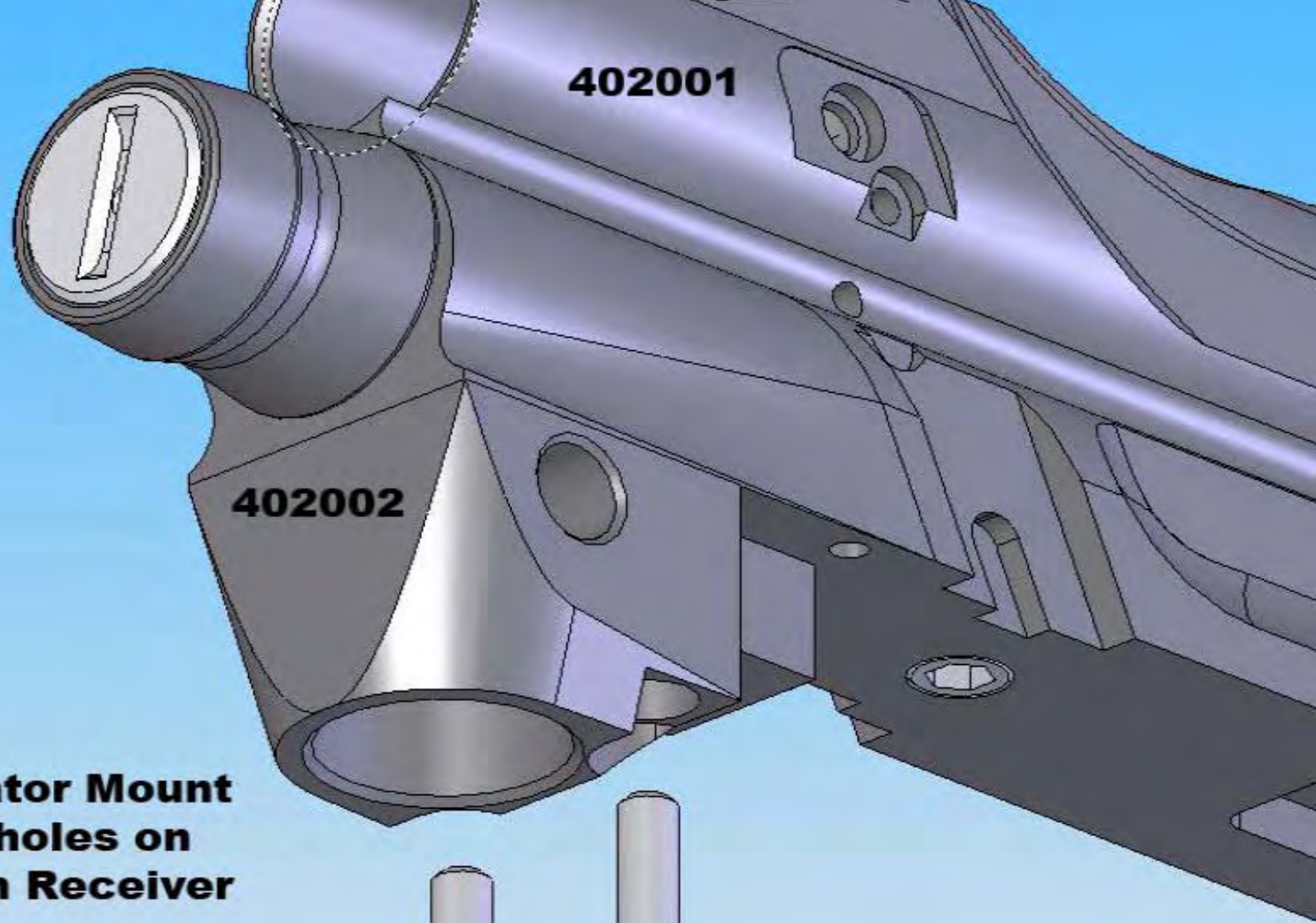
**H-010**

**Insert H-006 into first hole and  
H-010 in second hole in  
regulator mount (402002).**



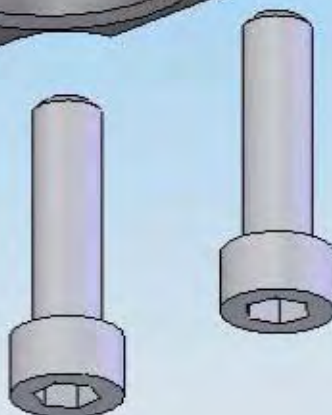
**402002**



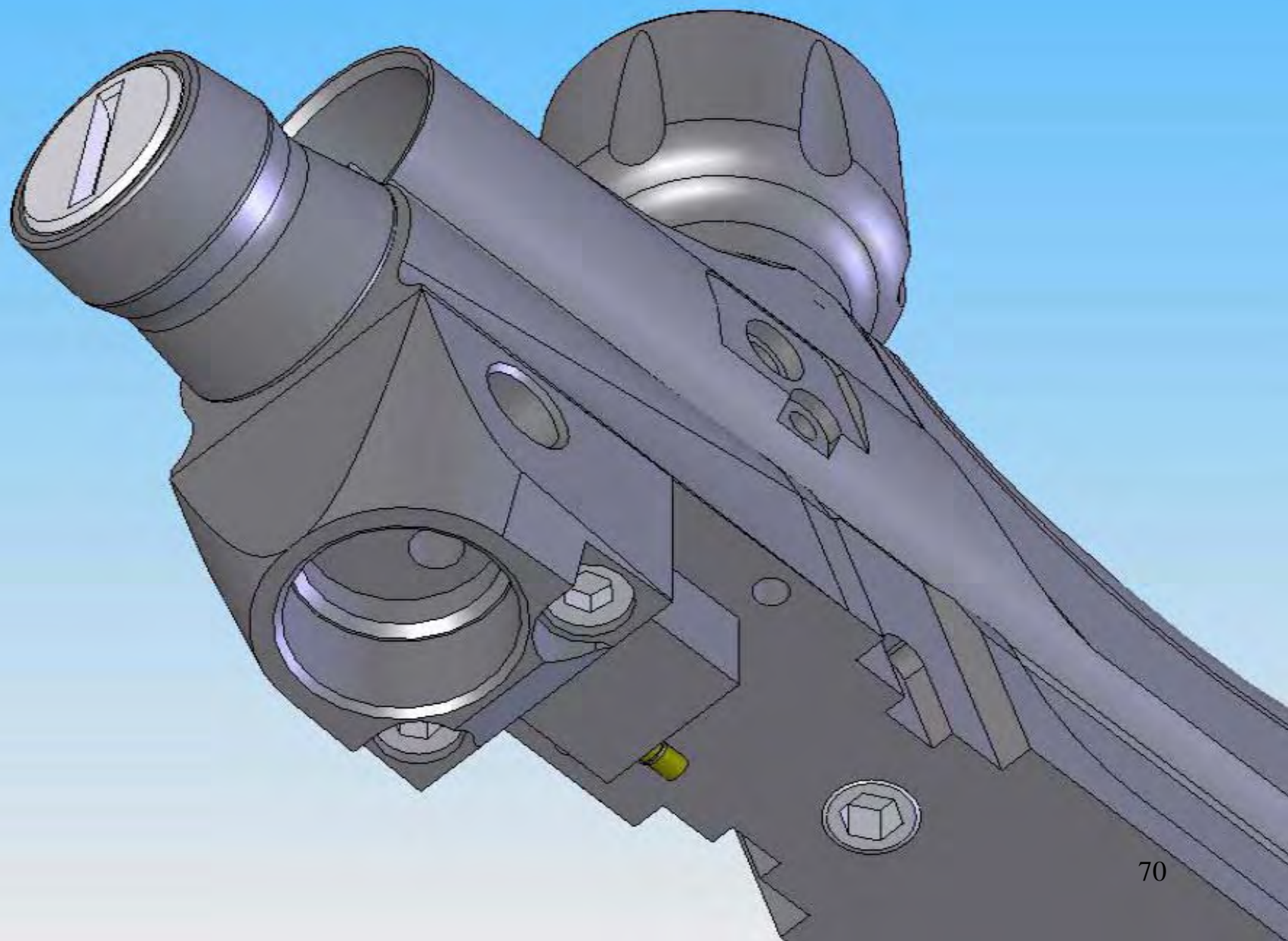


**Line up Regulator Mount (402002) with holes on bottom of Main Receiver (402001).**

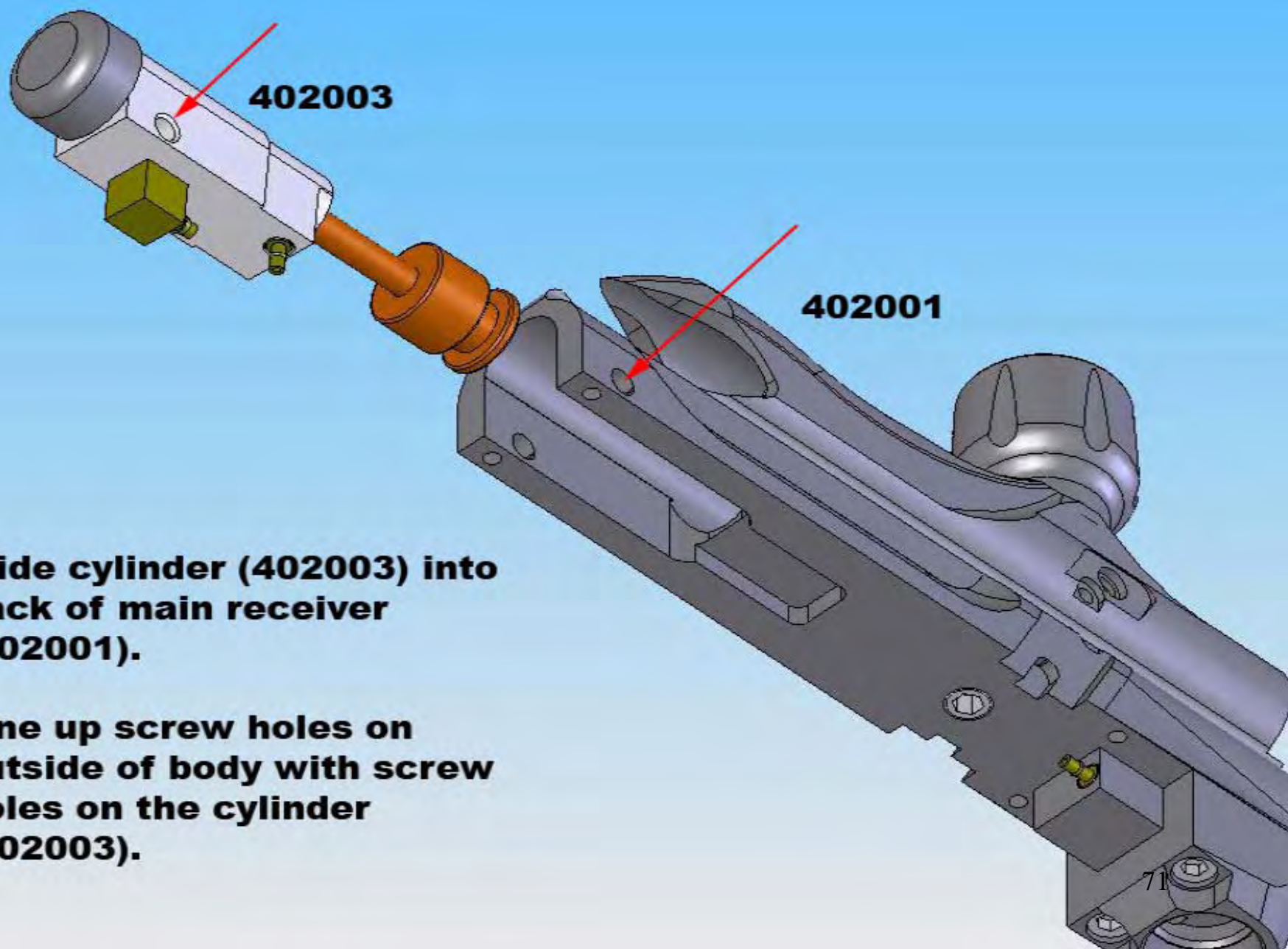
**Screw onto receiver with 2 10-32x3/4 SHCS.**



**Piece should look like this.**

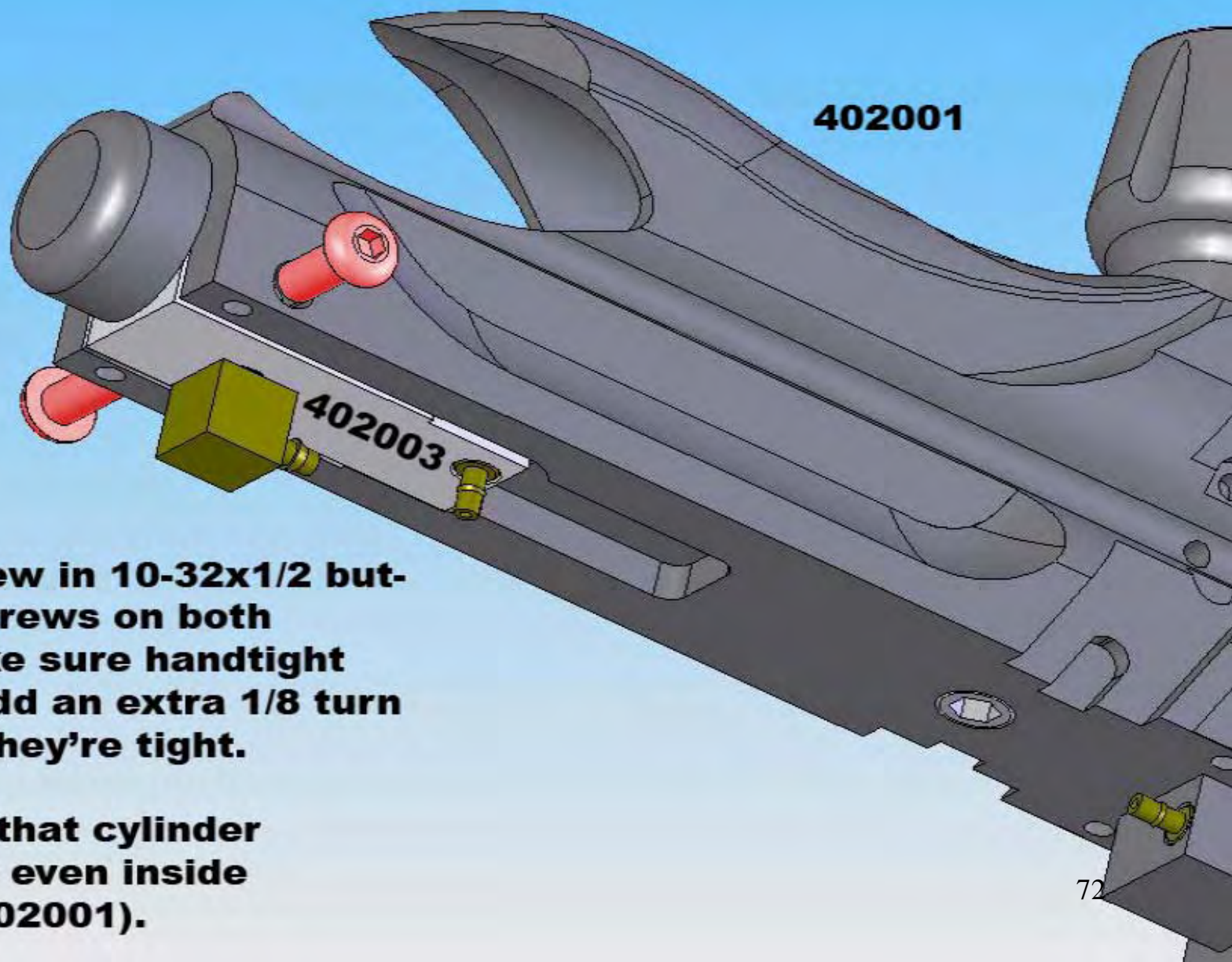






**Slide cylinder (402003) into back of main receiver (402001).**

**Line up screw holes on outside of body with screw holes on the cylinder (402003).**

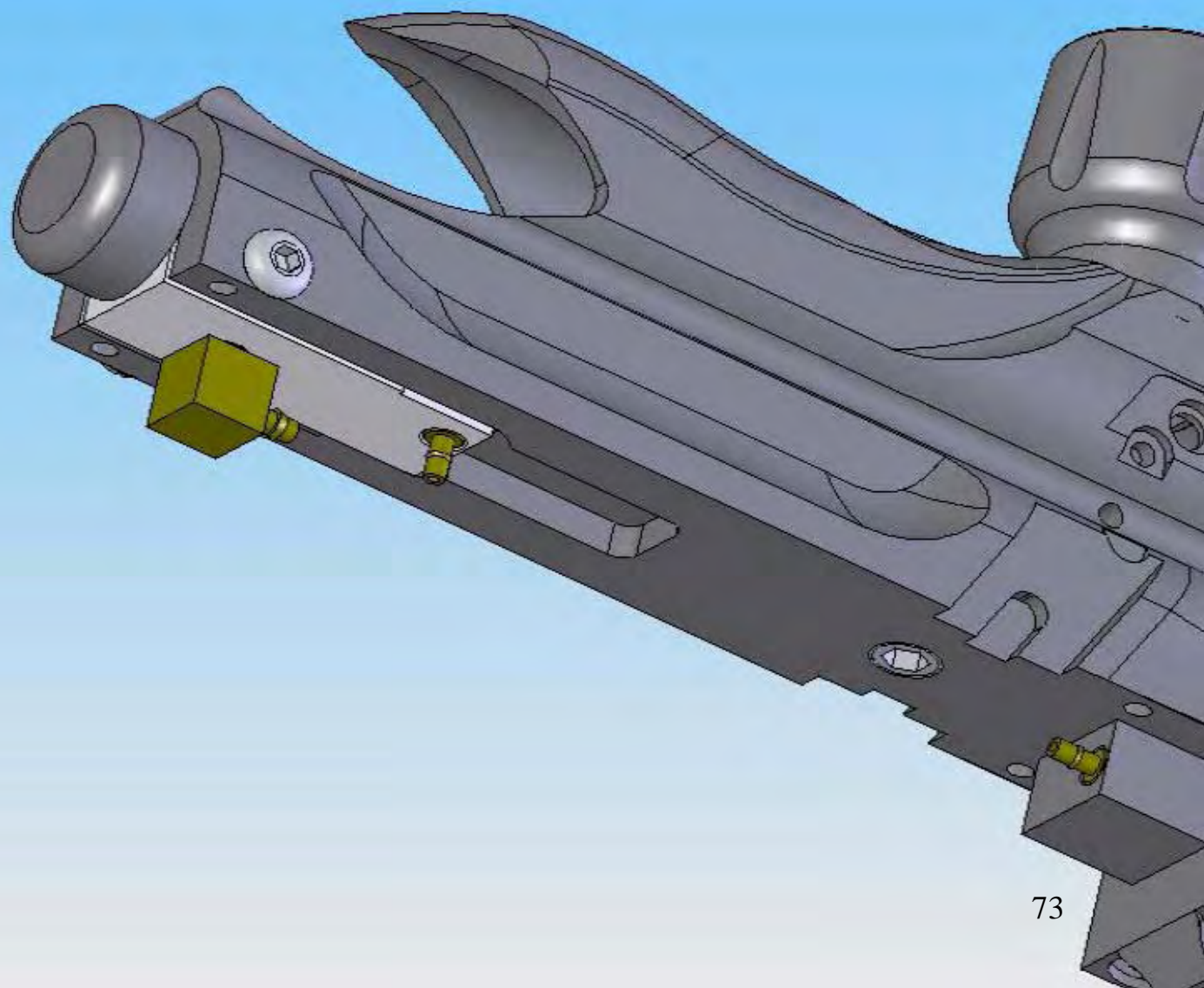


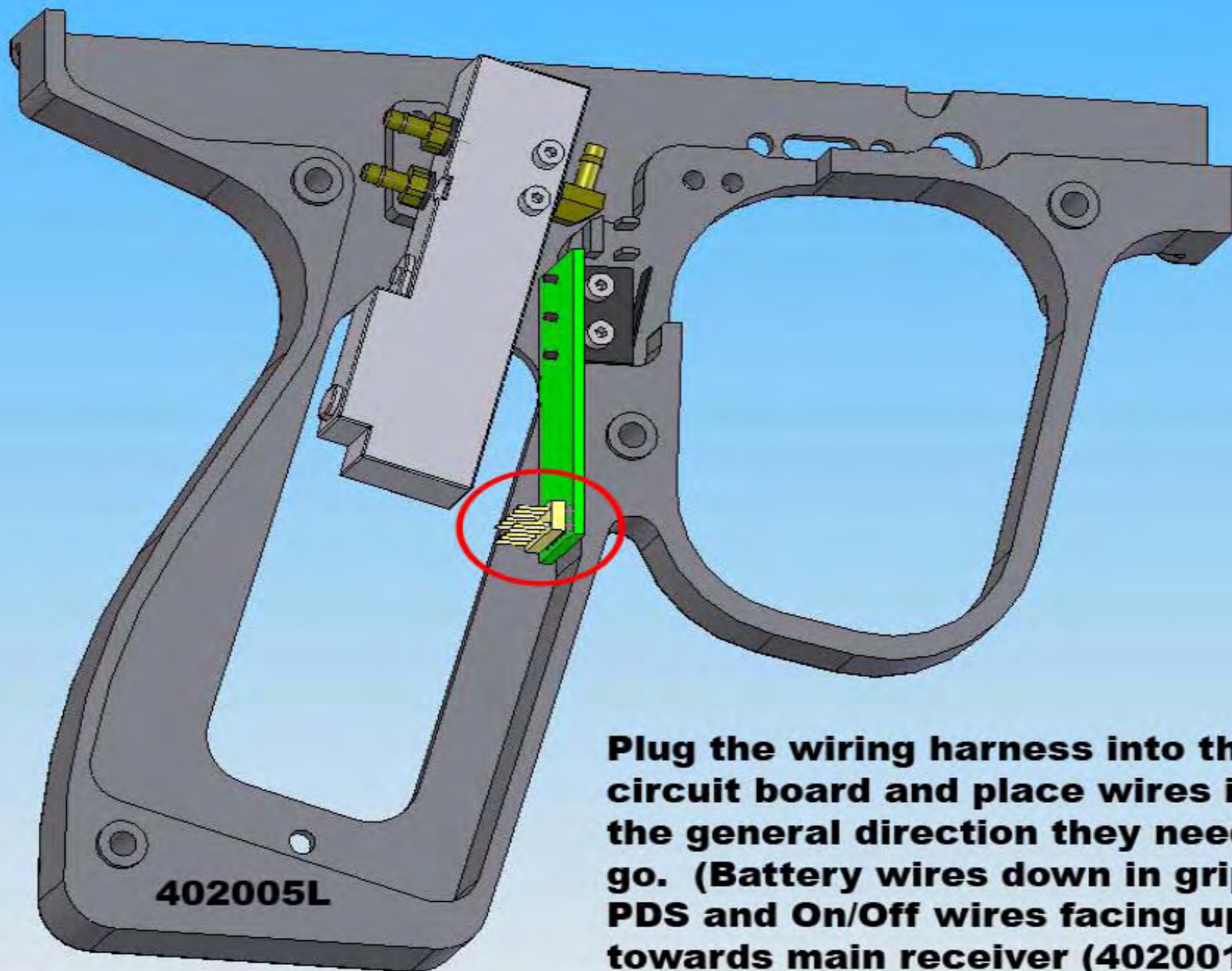
**Evenly screw in 10-32x1/2 buttonhead screws on both sides. Make sure handtight and then add an extra 1/8 turn to ensure they're tight.**

**Make sure that cylinder (402003) is even inside receiver (402001).**



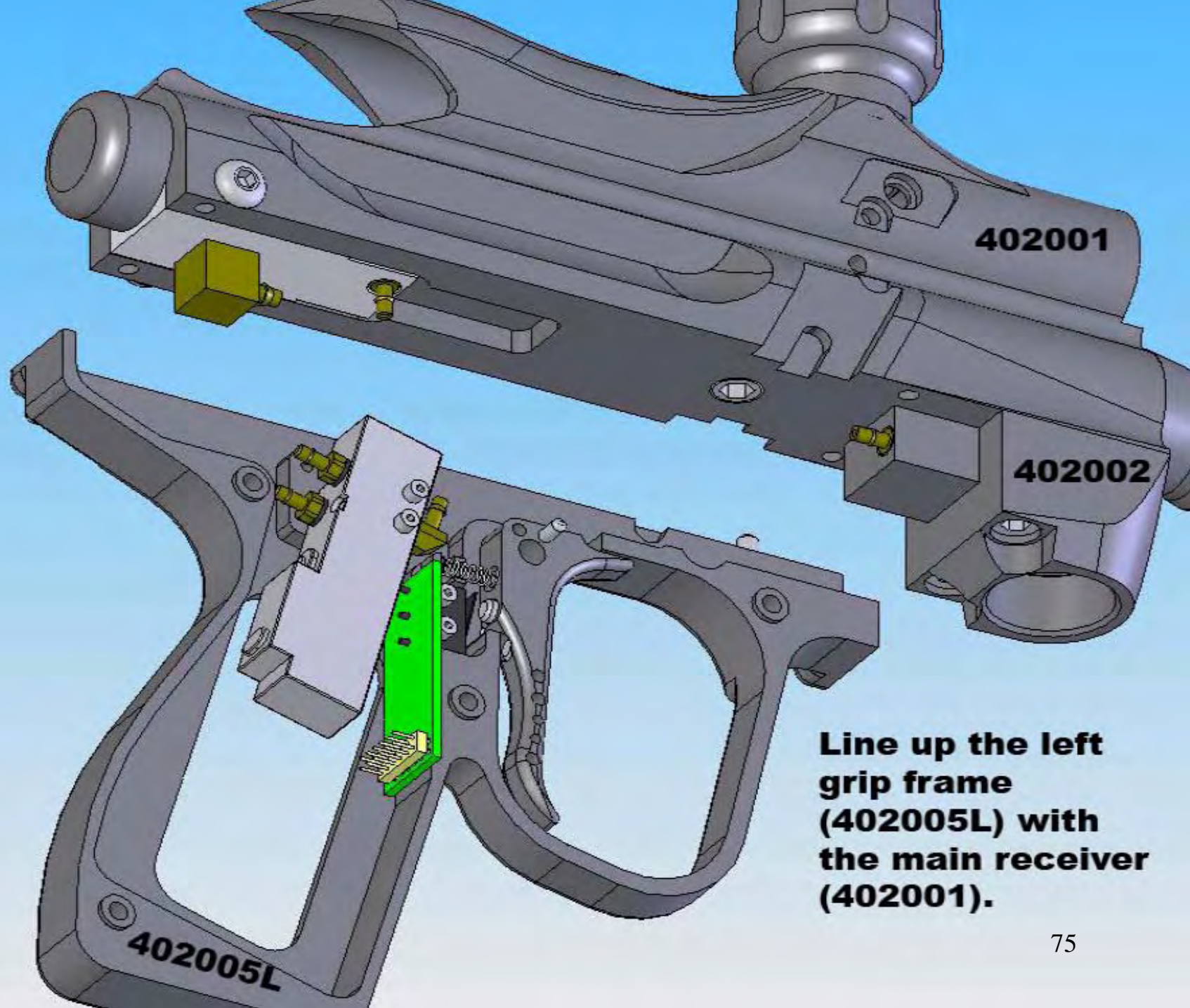
**Piece should look like this.**



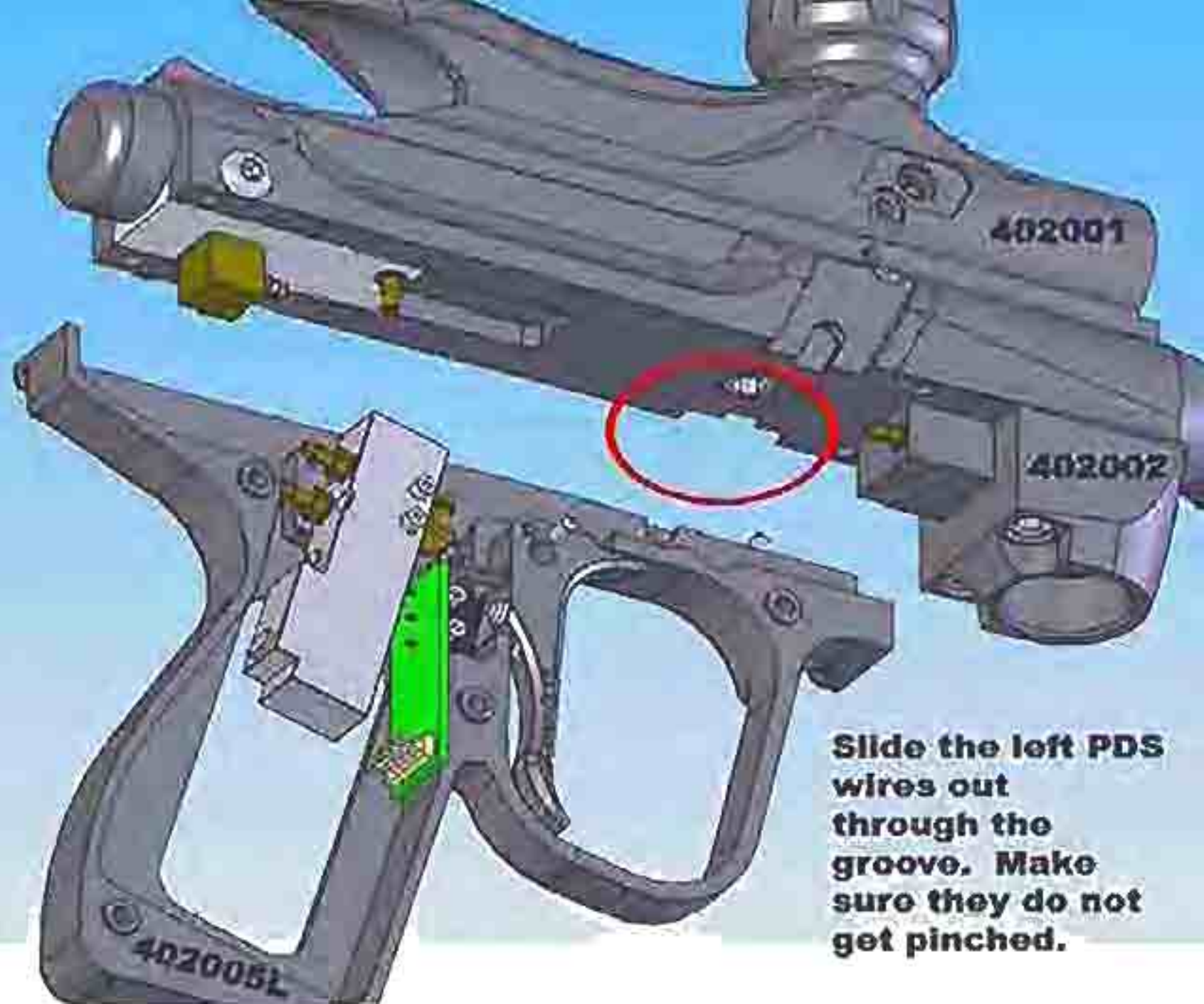


**Plug the wiring harness into the circuit board and place wires in the general direction they need to go. (Battery wires down in grip, PDS and On/Off wires facing up towards main receiver (402001)).**



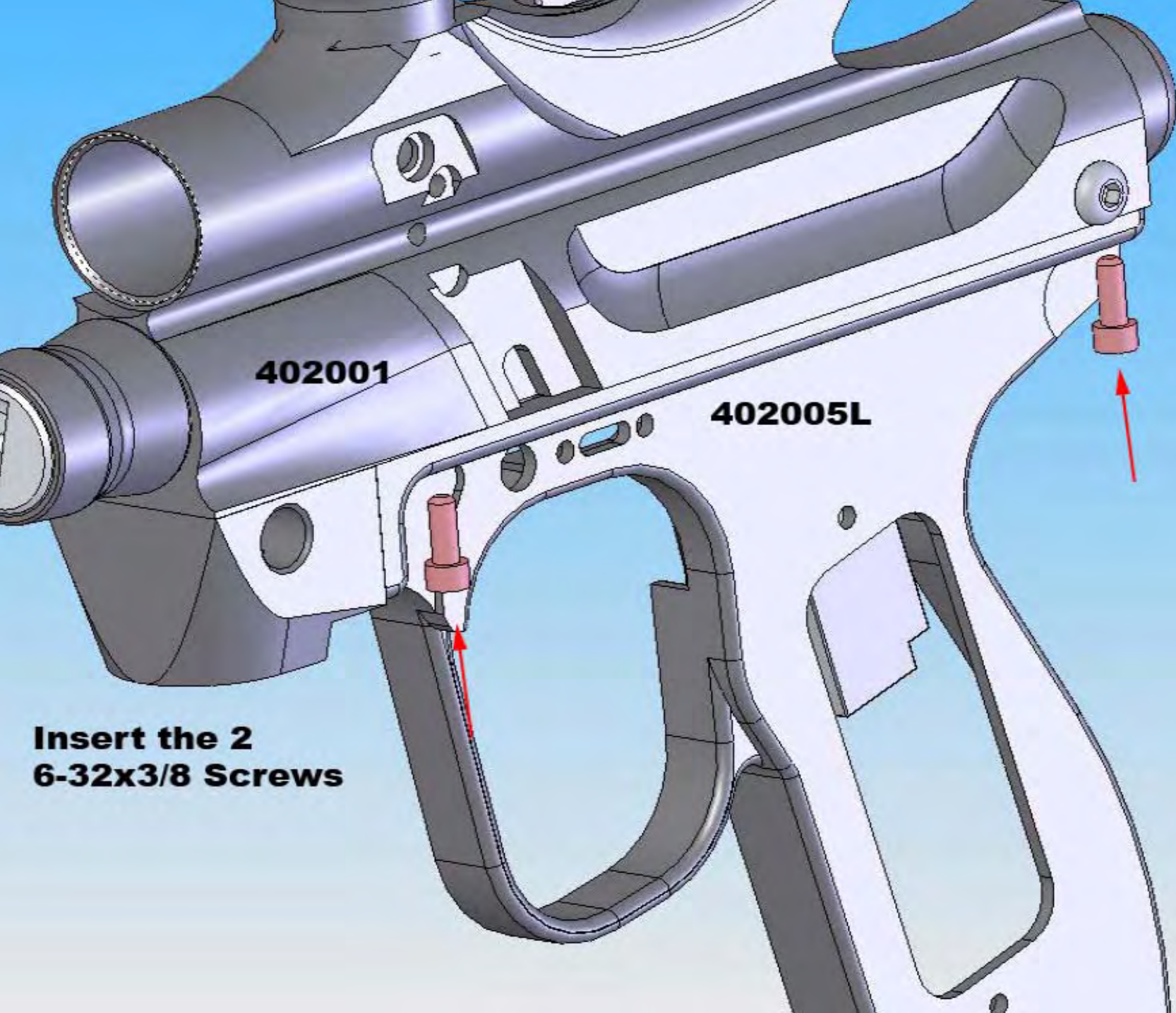


**Line up the left  
grip frame  
(402005L) with  
the main receiver  
(402001).**



**Slide the left PDS wires out through the groove. Make sure they do not get pinched.**

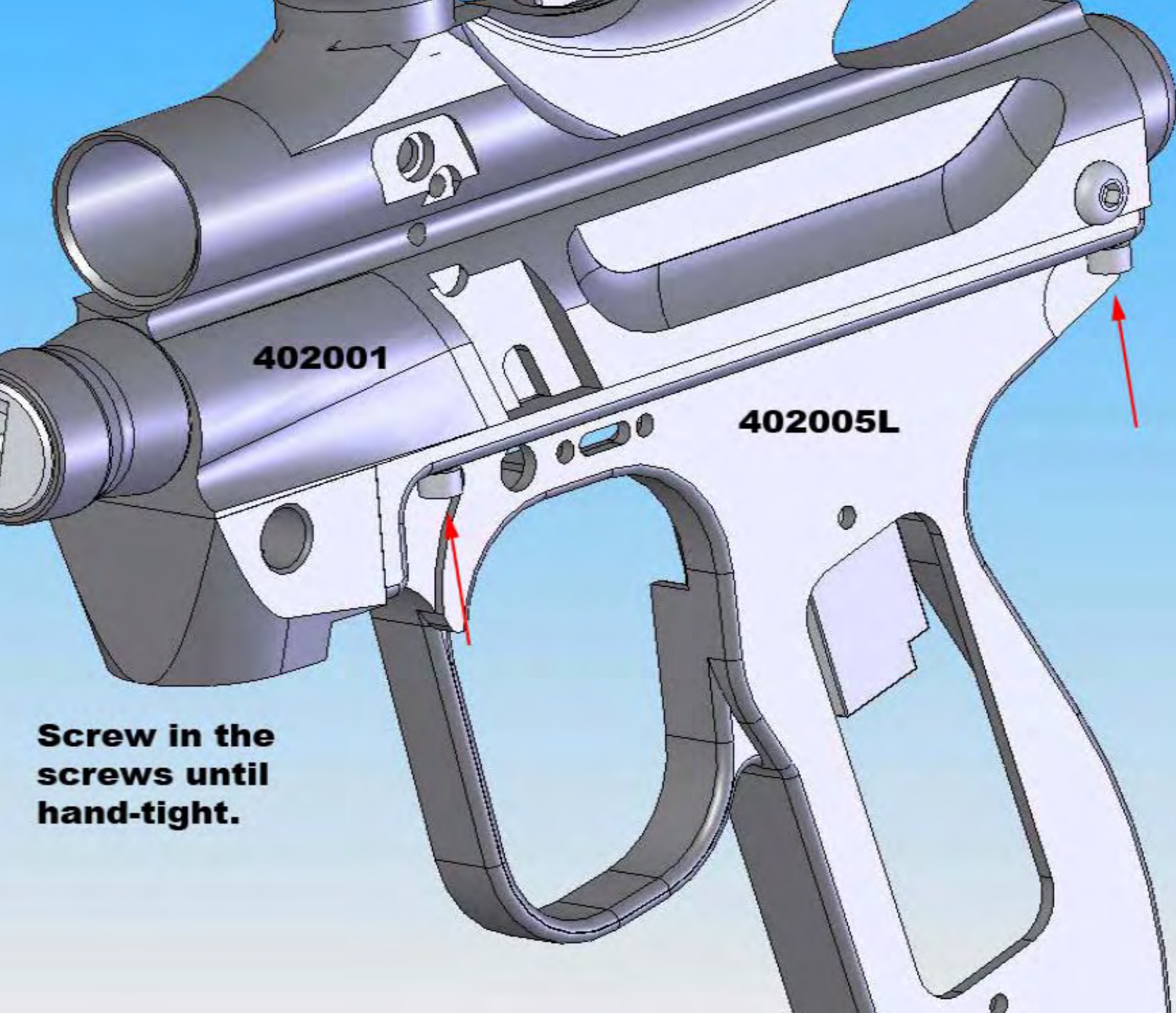




**402001**

**402005L**

**Insert the 2  
6-32x3/8 Screws**

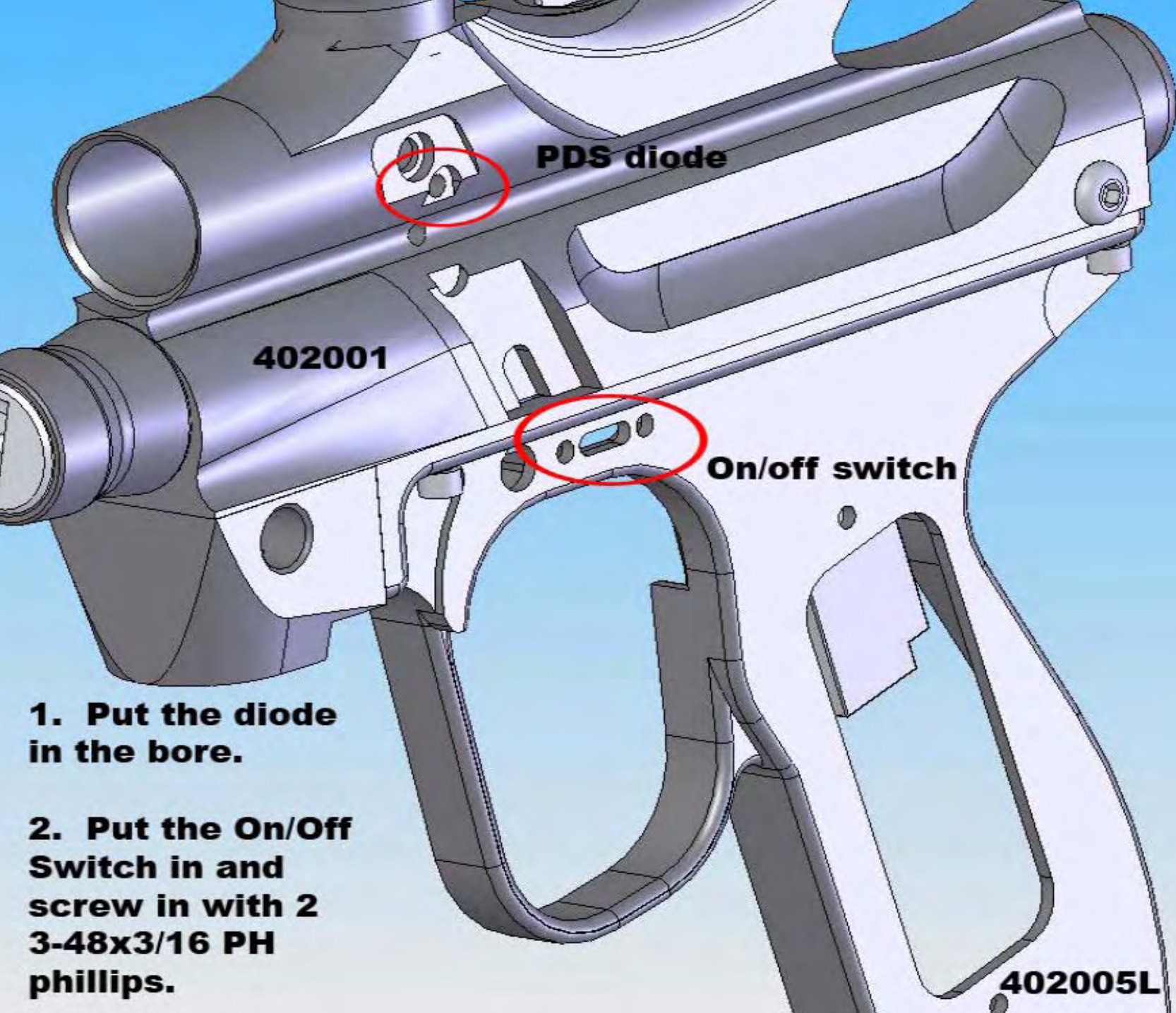


**402001**

**402005L**

**Screw in the  
screws until  
hand-tight.**





**PDS diode**

**402001**

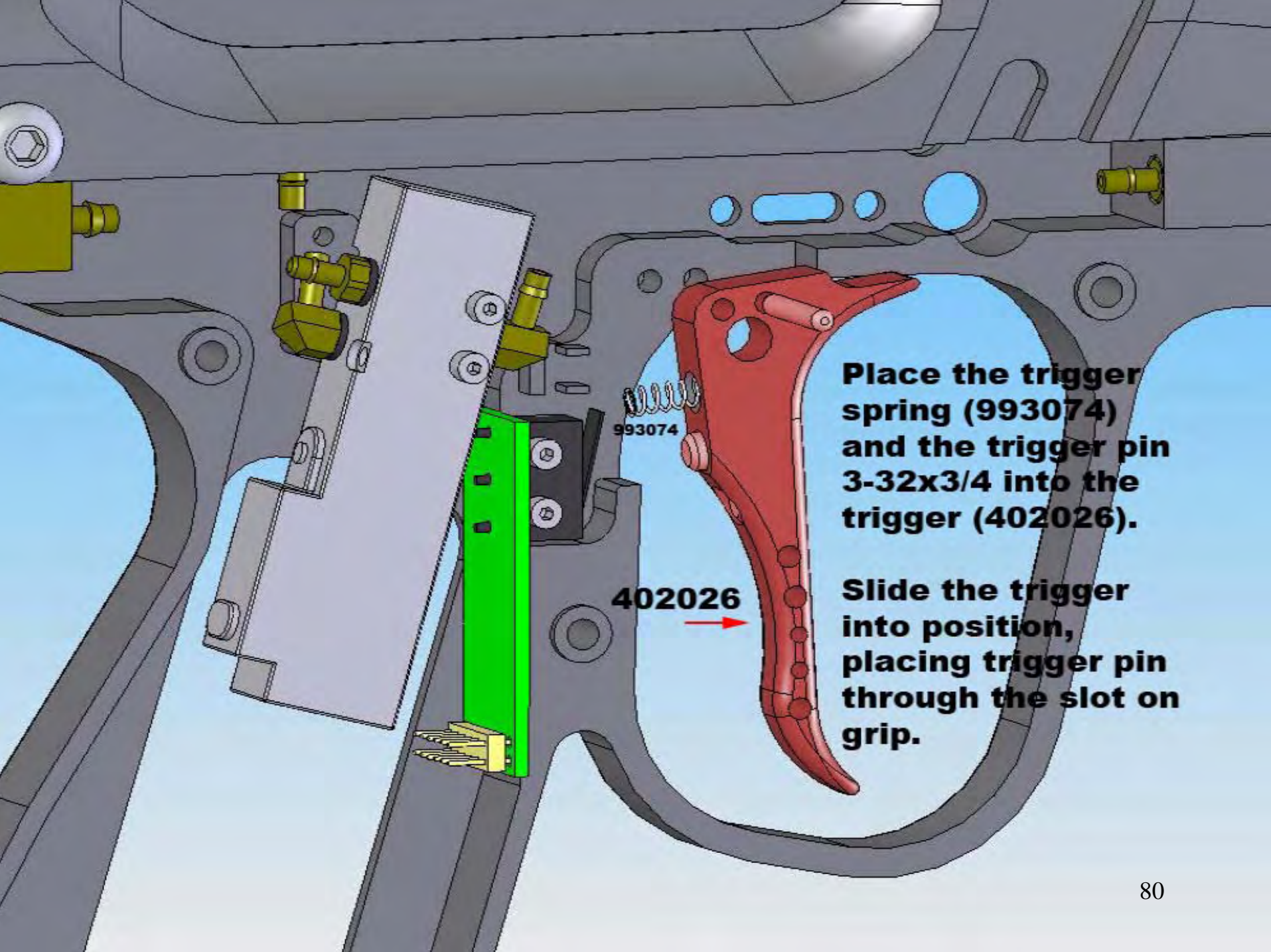
**On/off switch**

**1. Put the diode  
in the bore.**

**2. Put the On/Off  
Switch in and  
screw in with 2  
3-48x3/16 PH  
phillips.**

**402005L**

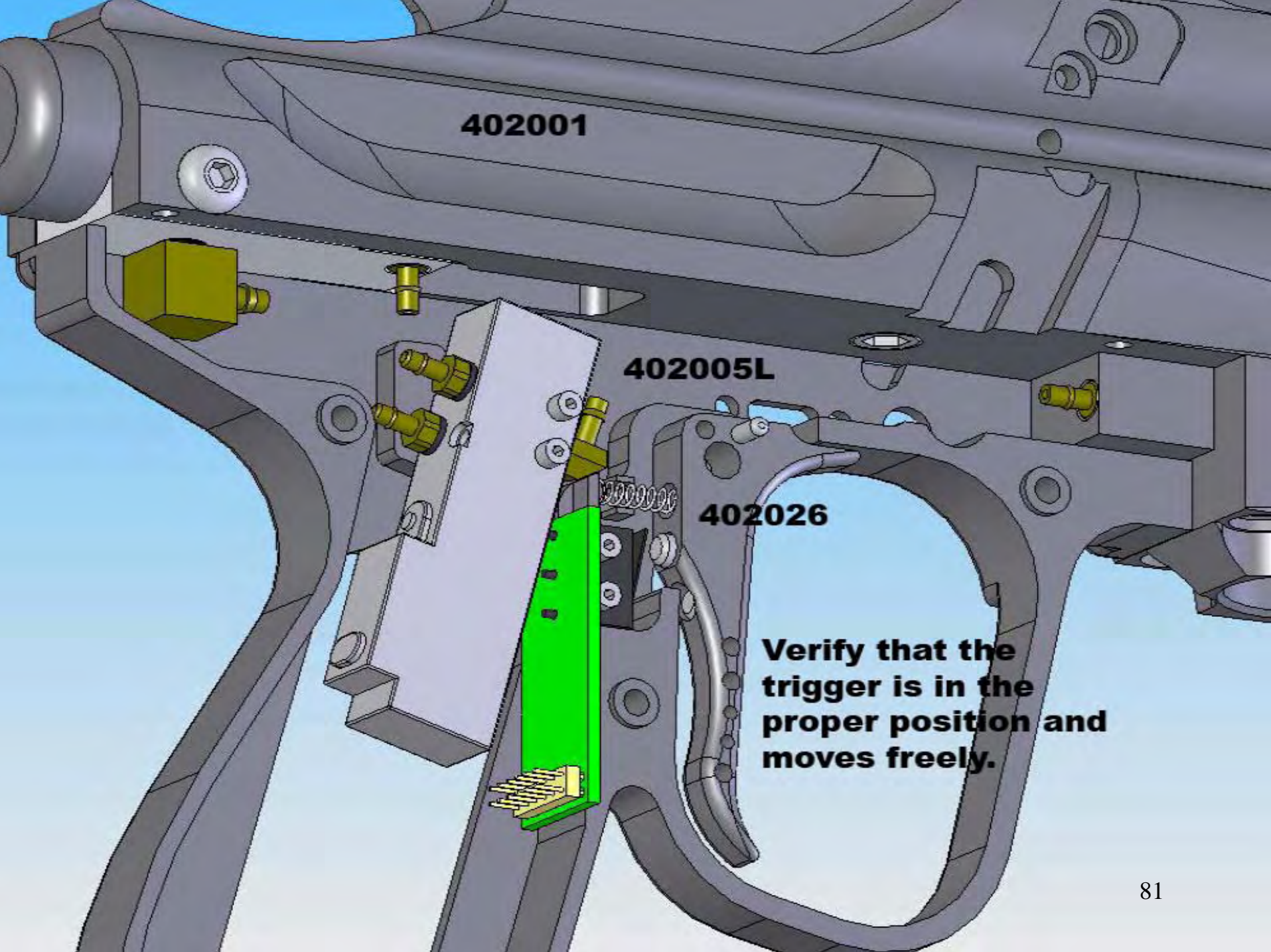




**Place the trigger spring (993074) and the trigger pin 3-32x3/4 into the trigger (402026).**

**Slide the trigger into position, placing trigger pin through the slot on grip.**



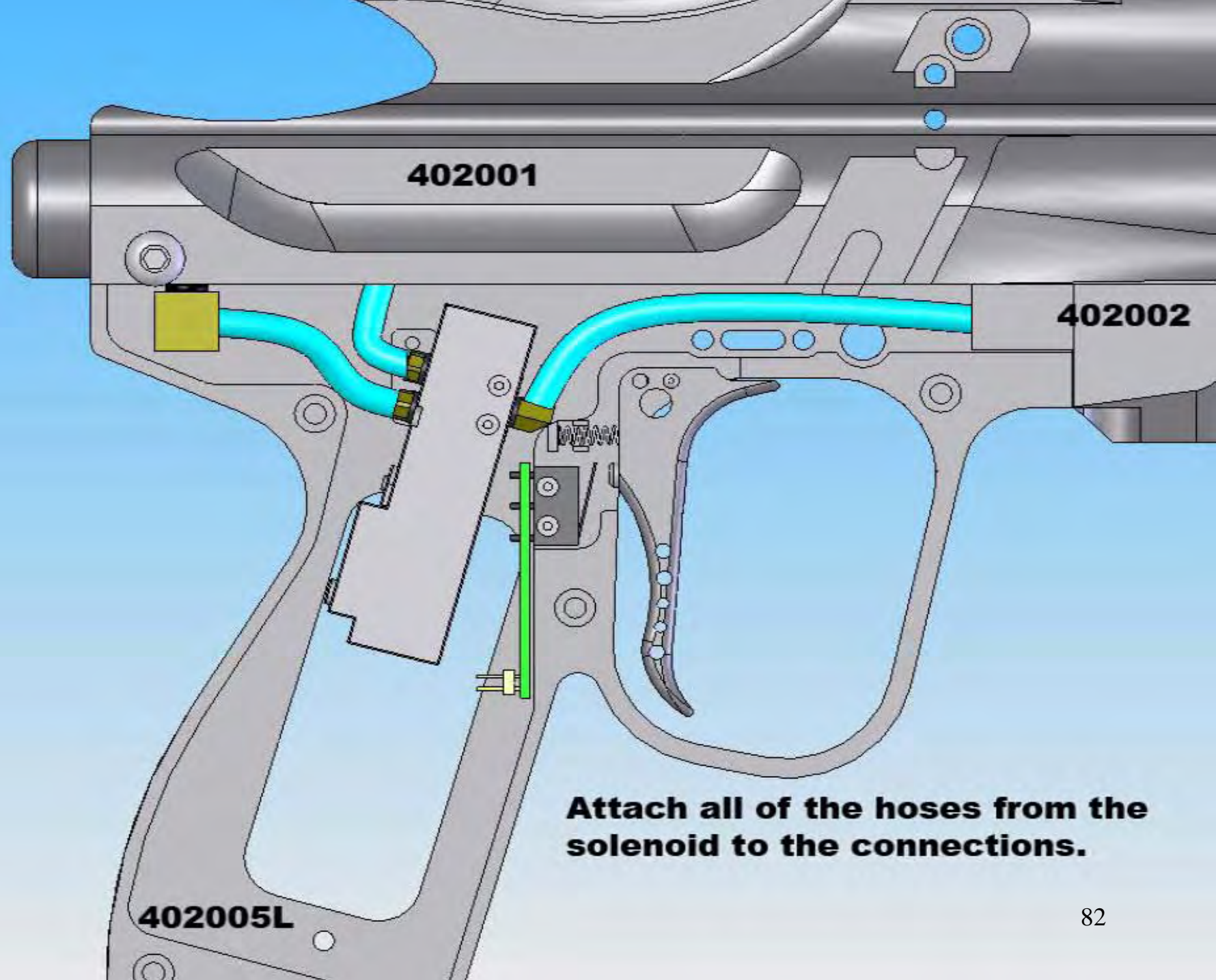


**402001**

**402005L**

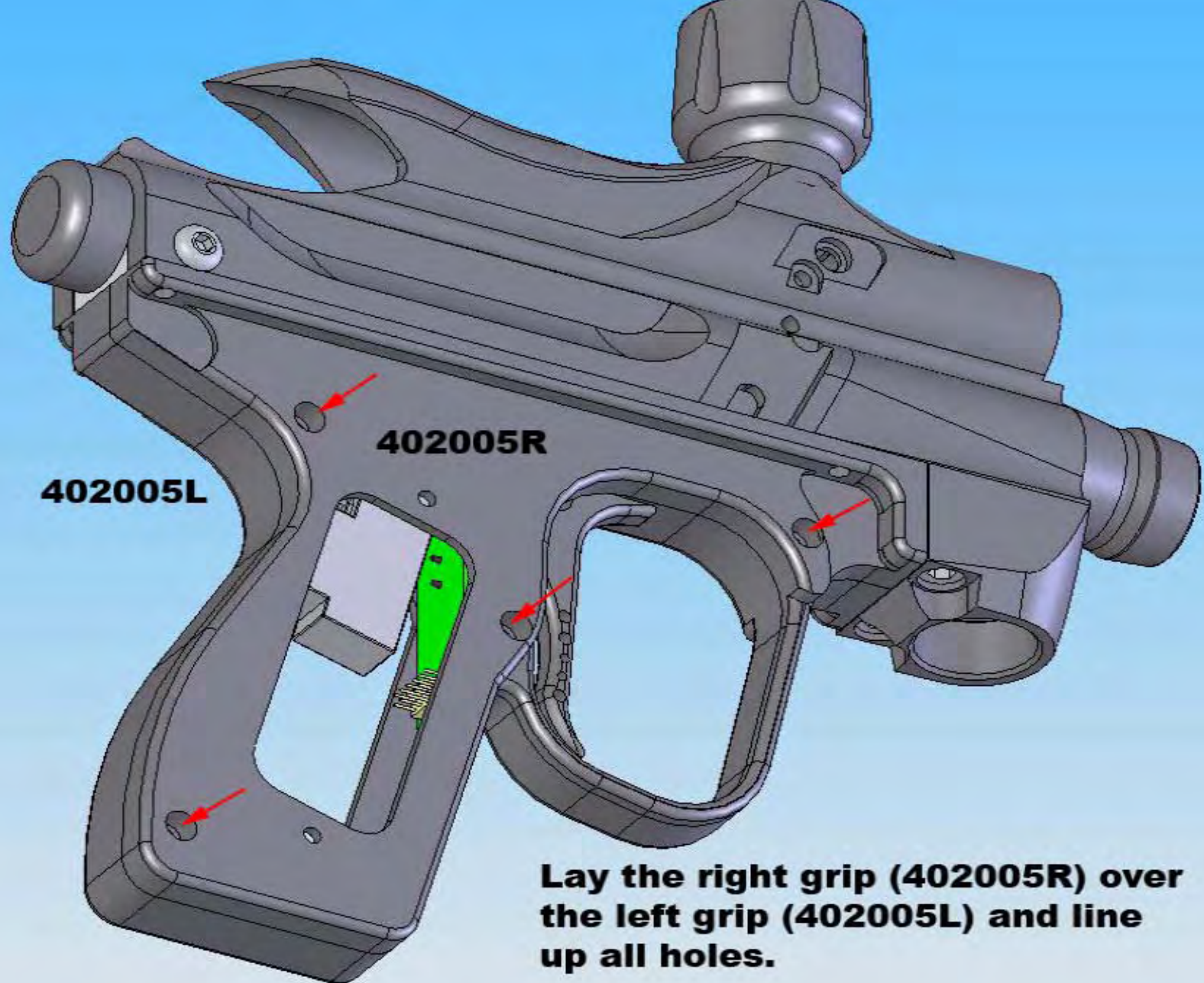
**402026**

**Verify that the  
trigger is in the  
proper position and  
moves freely.**



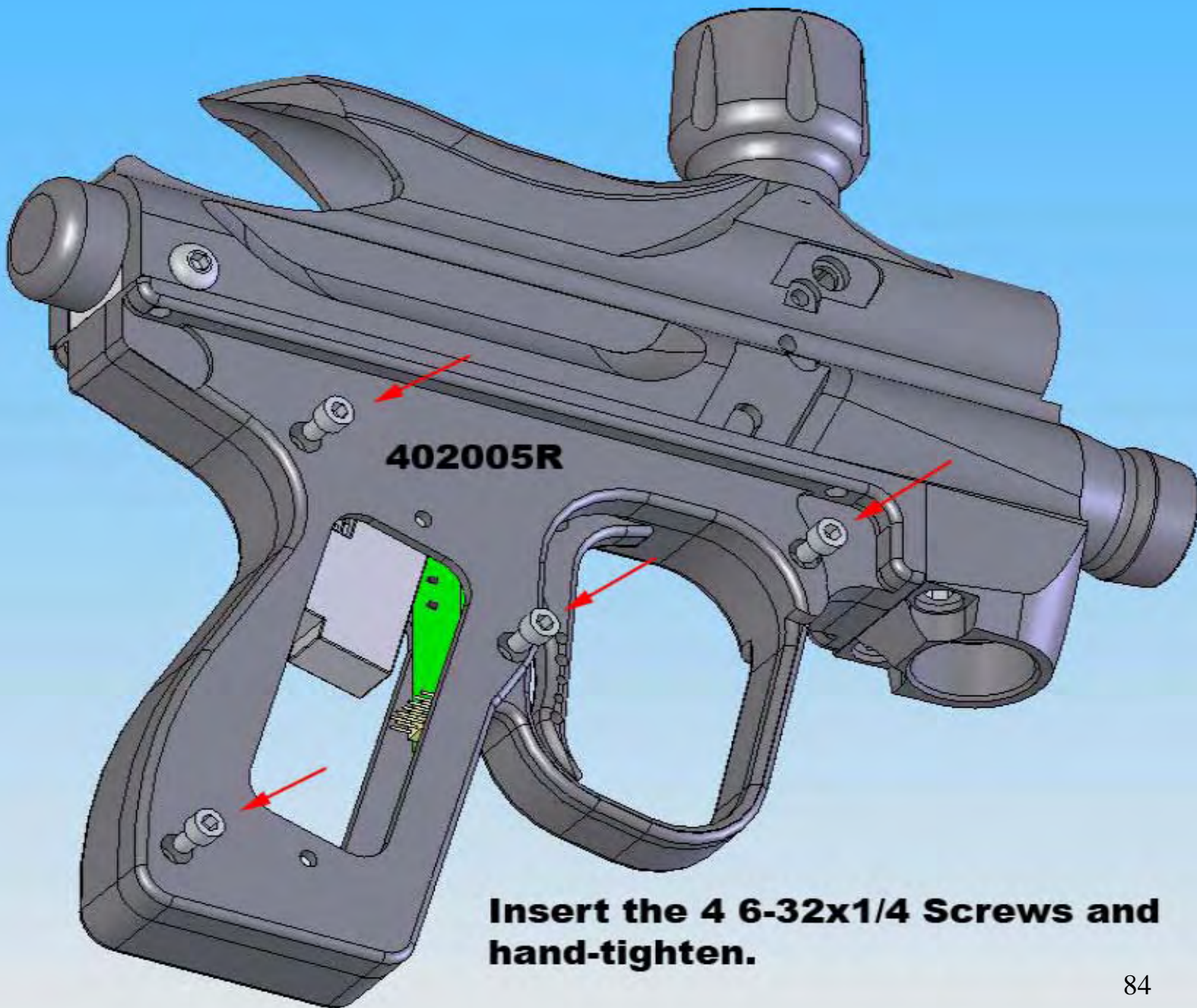
**Attach all of the hoses from the solenoid to the connections.**

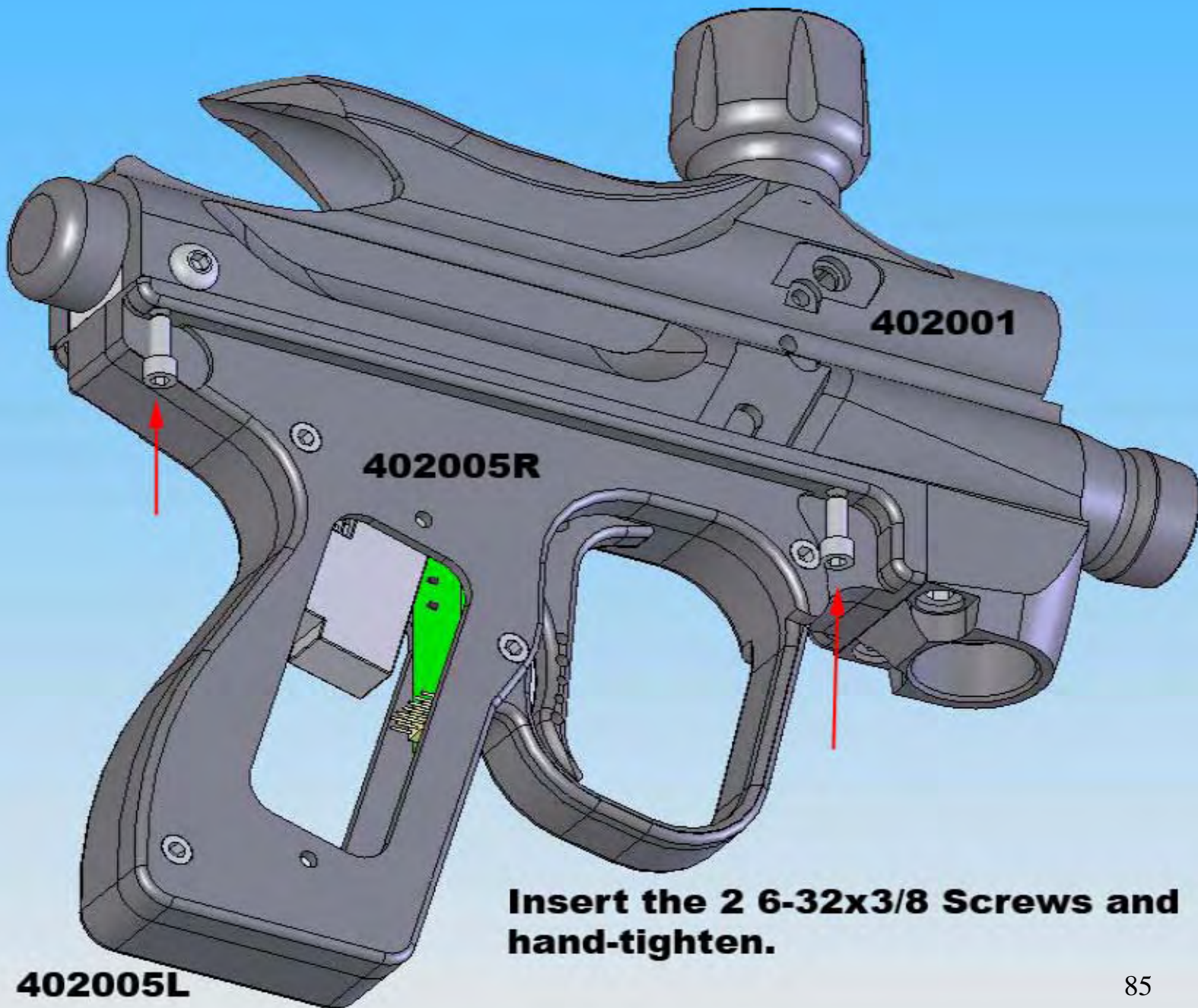




**Lay the right grip (402005R) over the left grip (402005L) and line up all holes.**





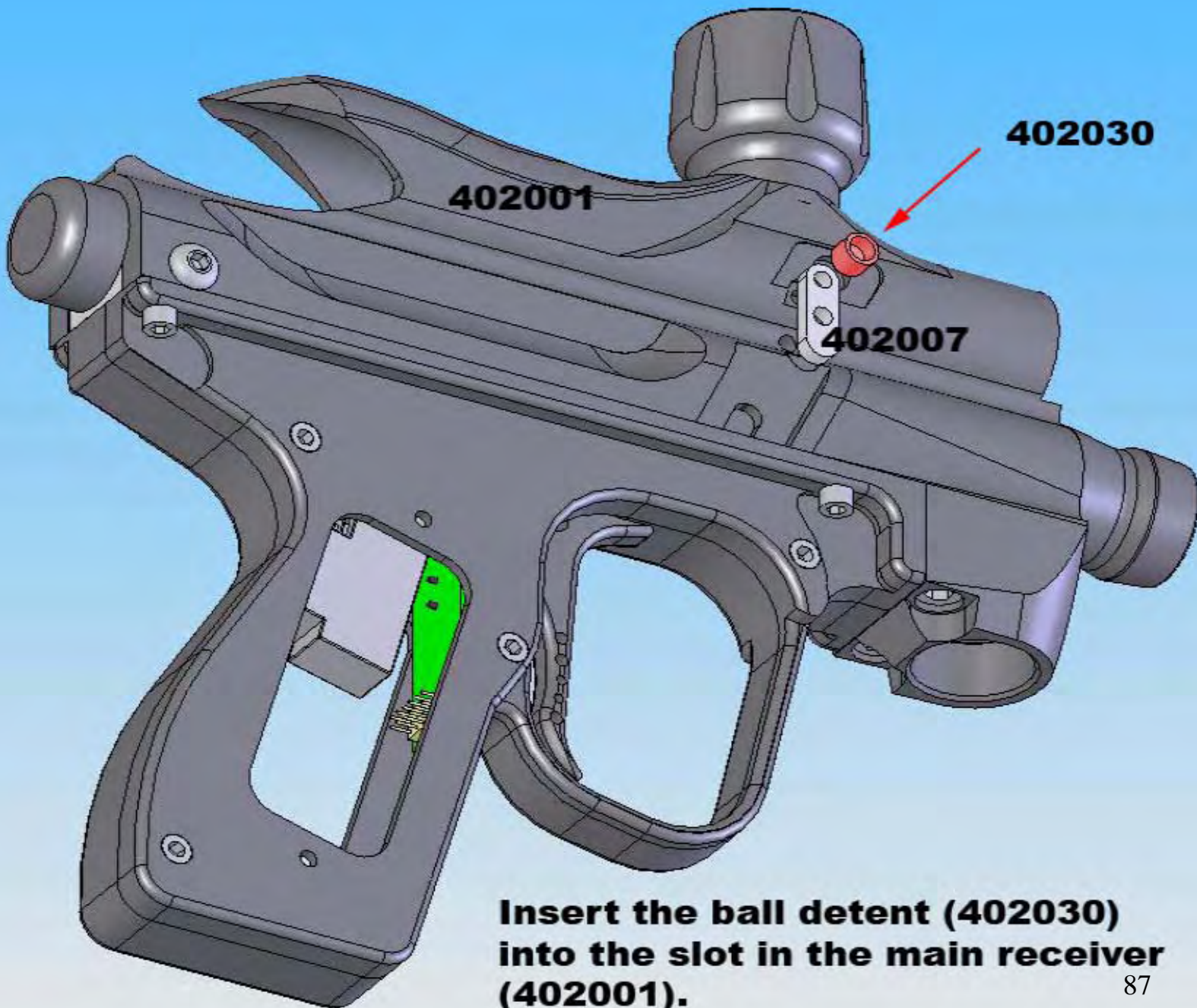




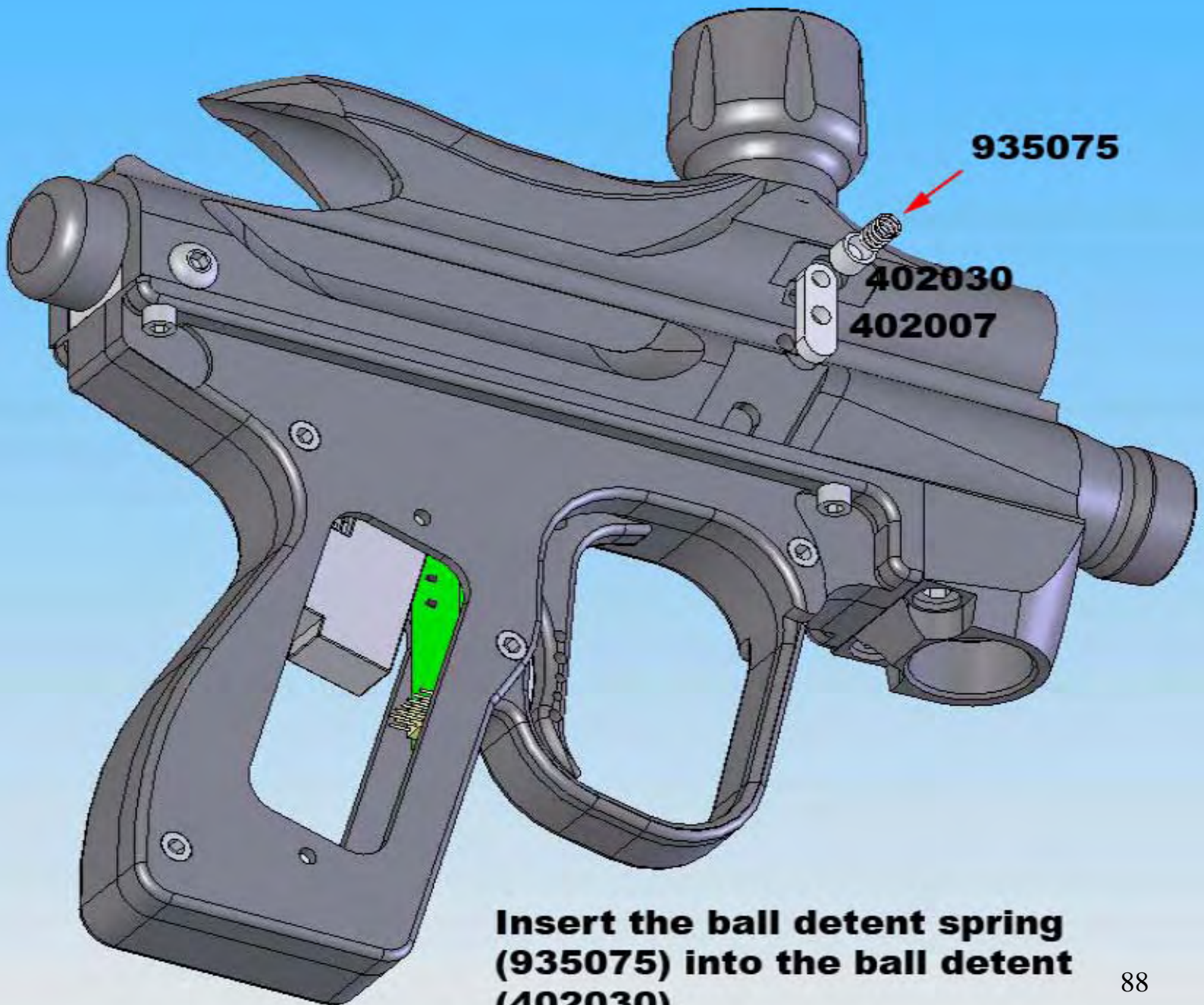


**Place the diode on the wiring harness into the eye casing (402007). Place the eye casing (402007) into the groove in the main receiver (402001).**





**Insert the ball detent (402030)  
into the slot in the main receiver  
(402001).**



**Insert the ball detent spring  
(935075) into the ball detent  
(402030).**



**Place the eye cover (402006) over the top, ensuring that no wires are pinched and the screw holes line up.**

**402001**

**402006**

**Wires in groove.**



**Insert the 6-32x5/8  
buttonhead into the  
slot and hand-  
tighten.**

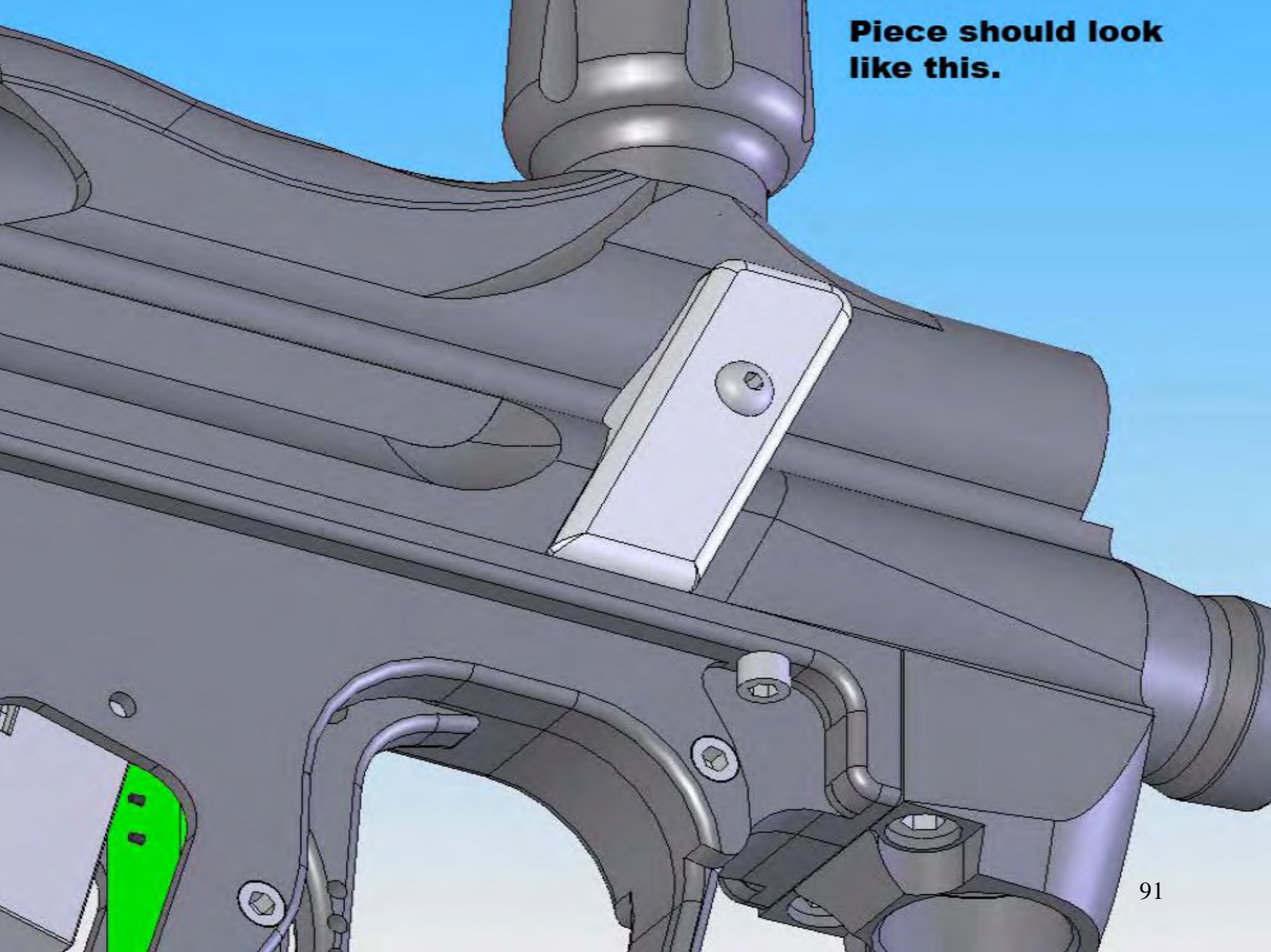
**402001**

**402006**

**402005R**

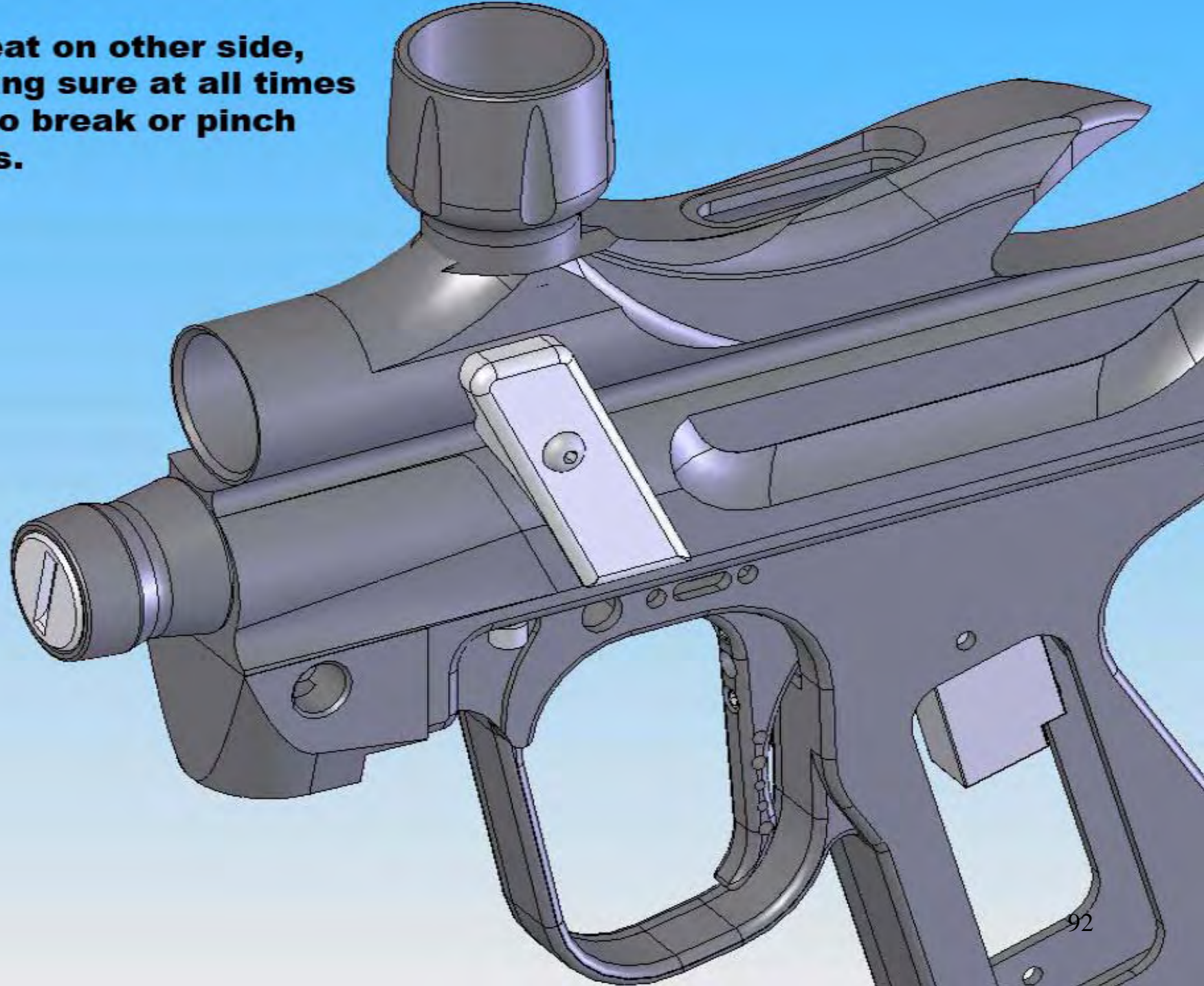
**402002**

**Piece should look like this.**

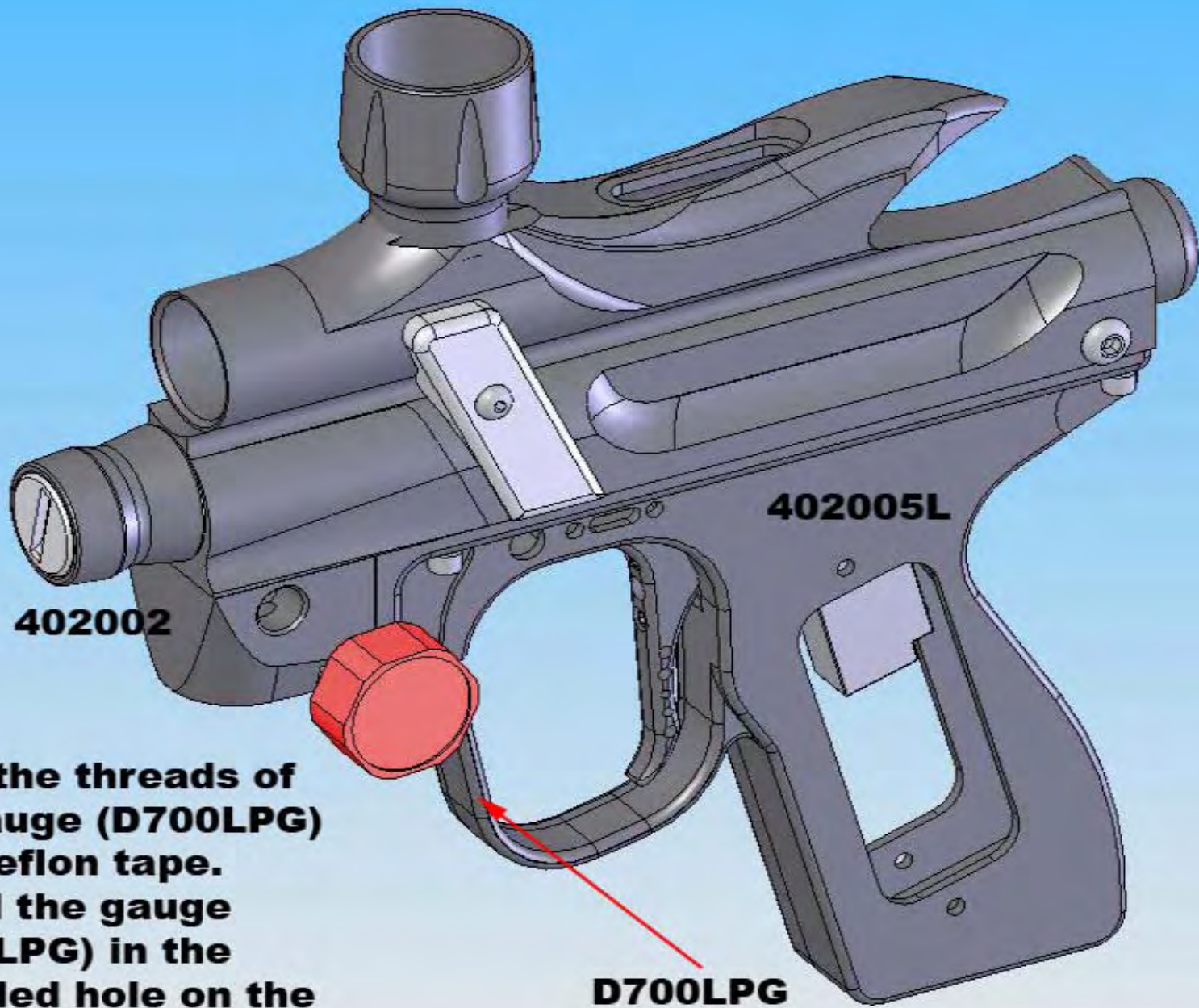




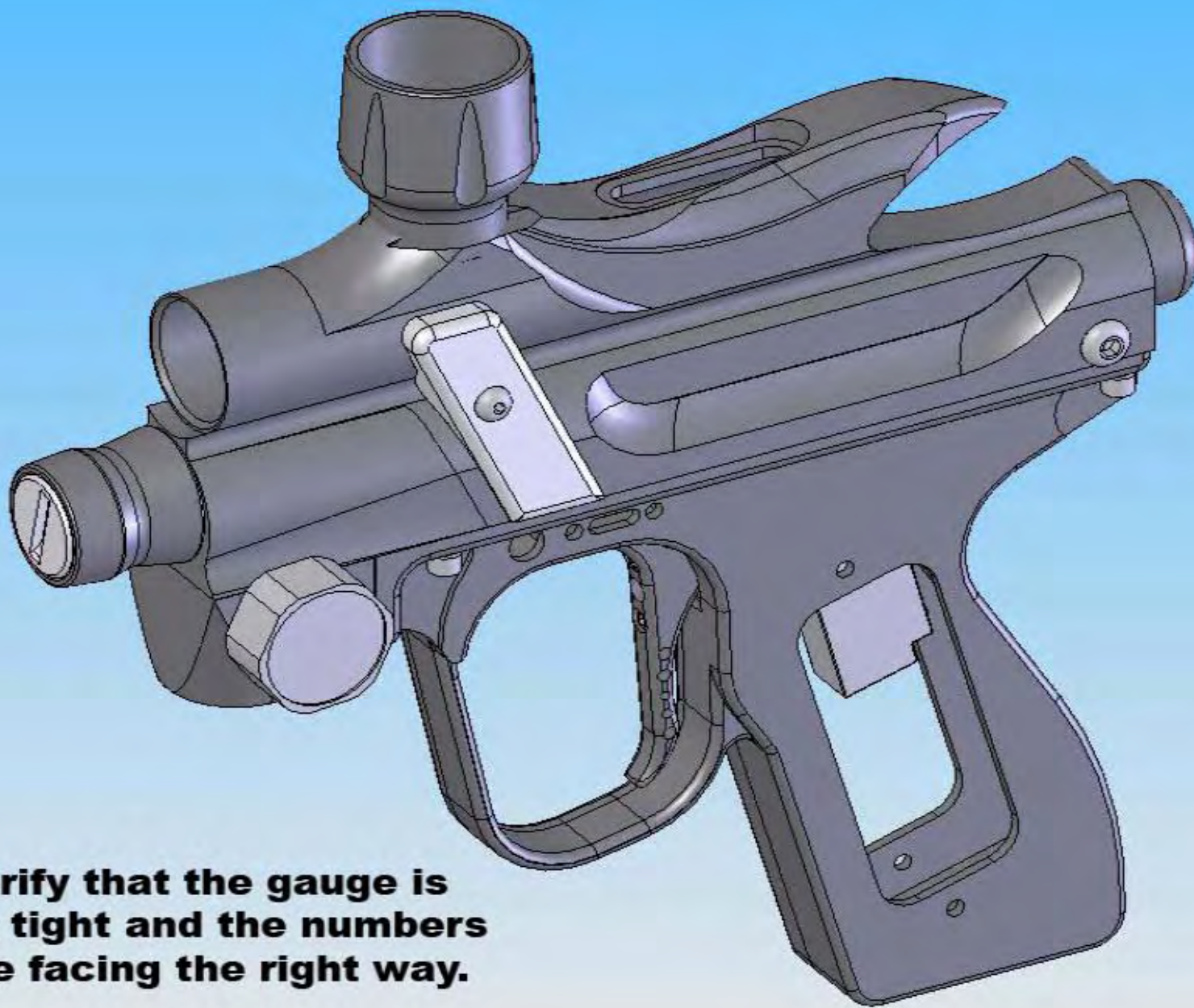
**Repeat on other side,  
making sure at all times  
not to break or pinch  
wires.**







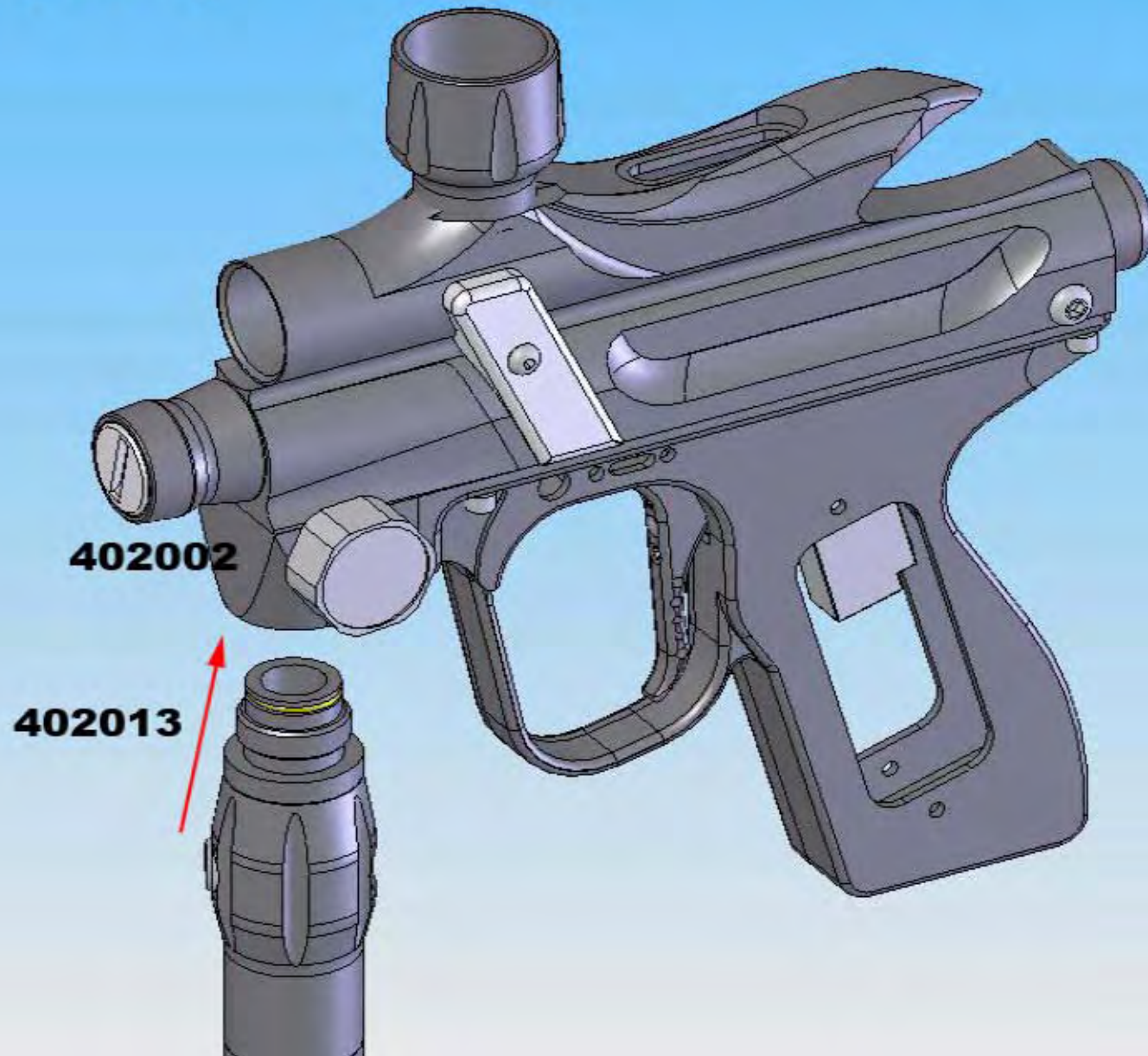
**Wrap the threads of the gauge (D700LPG) with teflon tape. Install the gauge (D700LPG) in the threaded hole on the left hand side of the regulator mount (402002).**



**Verify that the gauge is on tight and the numbers are facing the right way.**



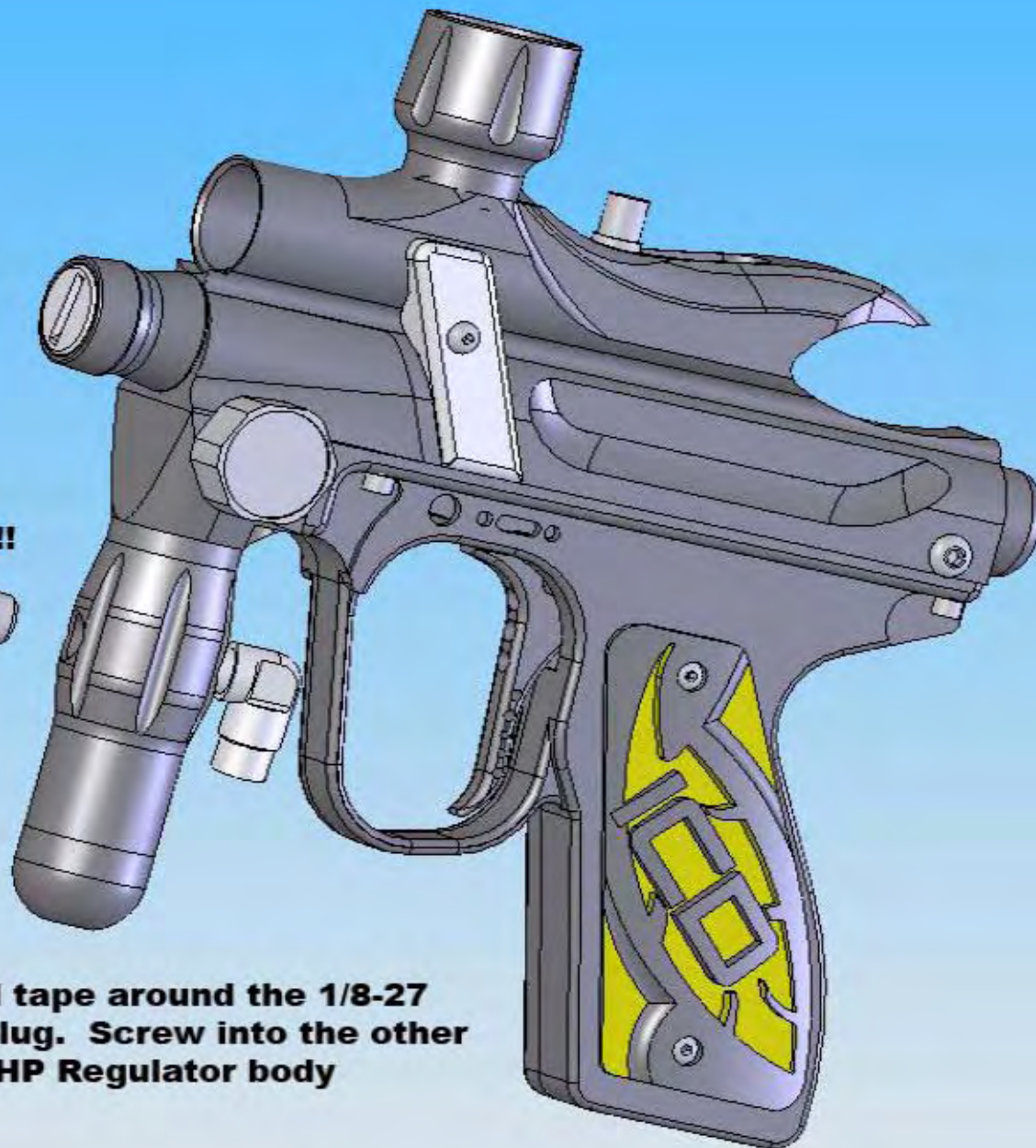
**Lightly lubricate the H-015 UR o-ring on the HP regulator top (402013). Screw the HP regulator top (402013) into the regulator mount (402002).**







**Screw in the macroline fitting on the side closest to the left or rear of the marker.**



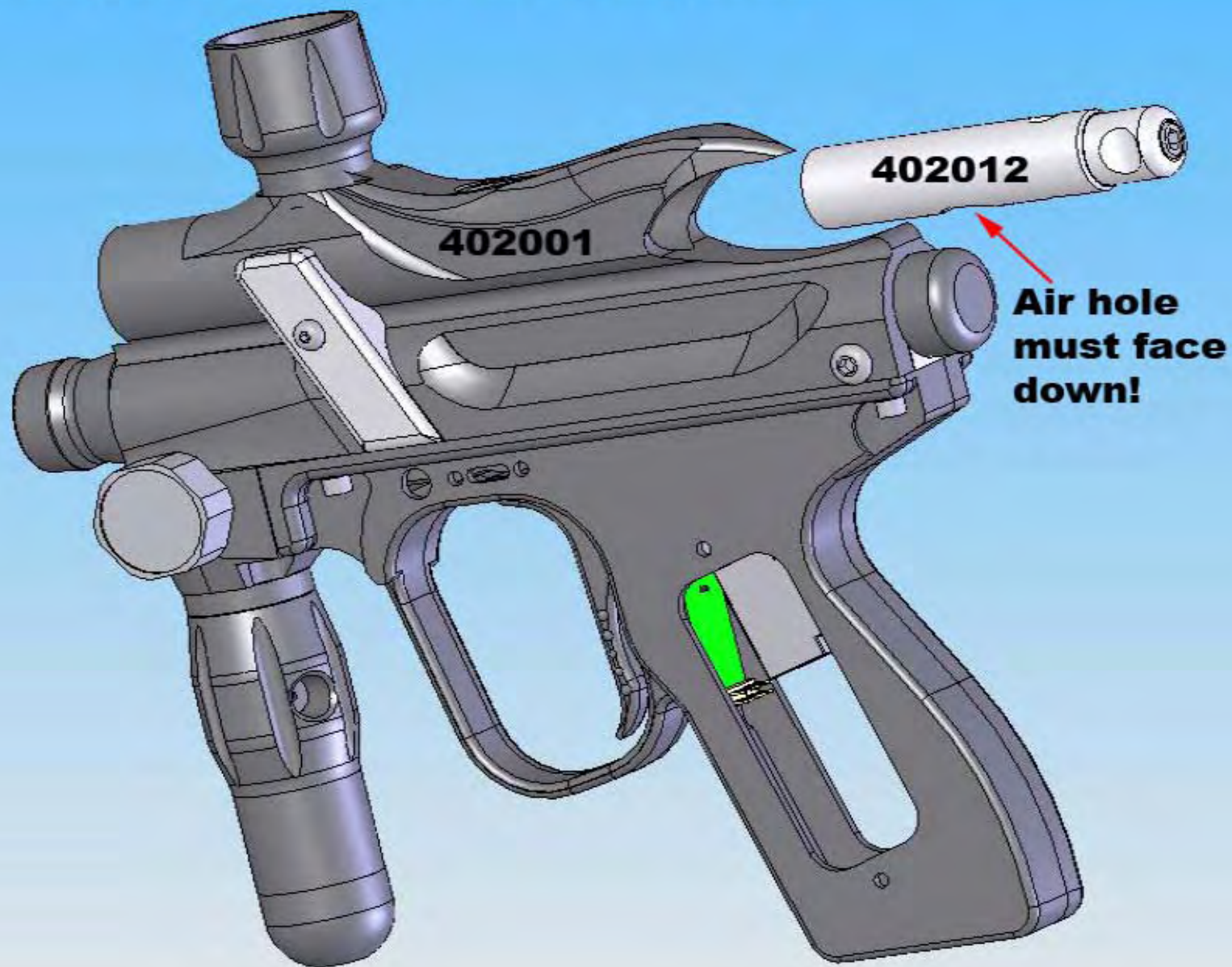
**Thread Tape!!**

**Wrap thread tape around the 1/8-27  
NPTF pipe plug. Screw into the other  
hole on the HP Regulator body  
402014.**

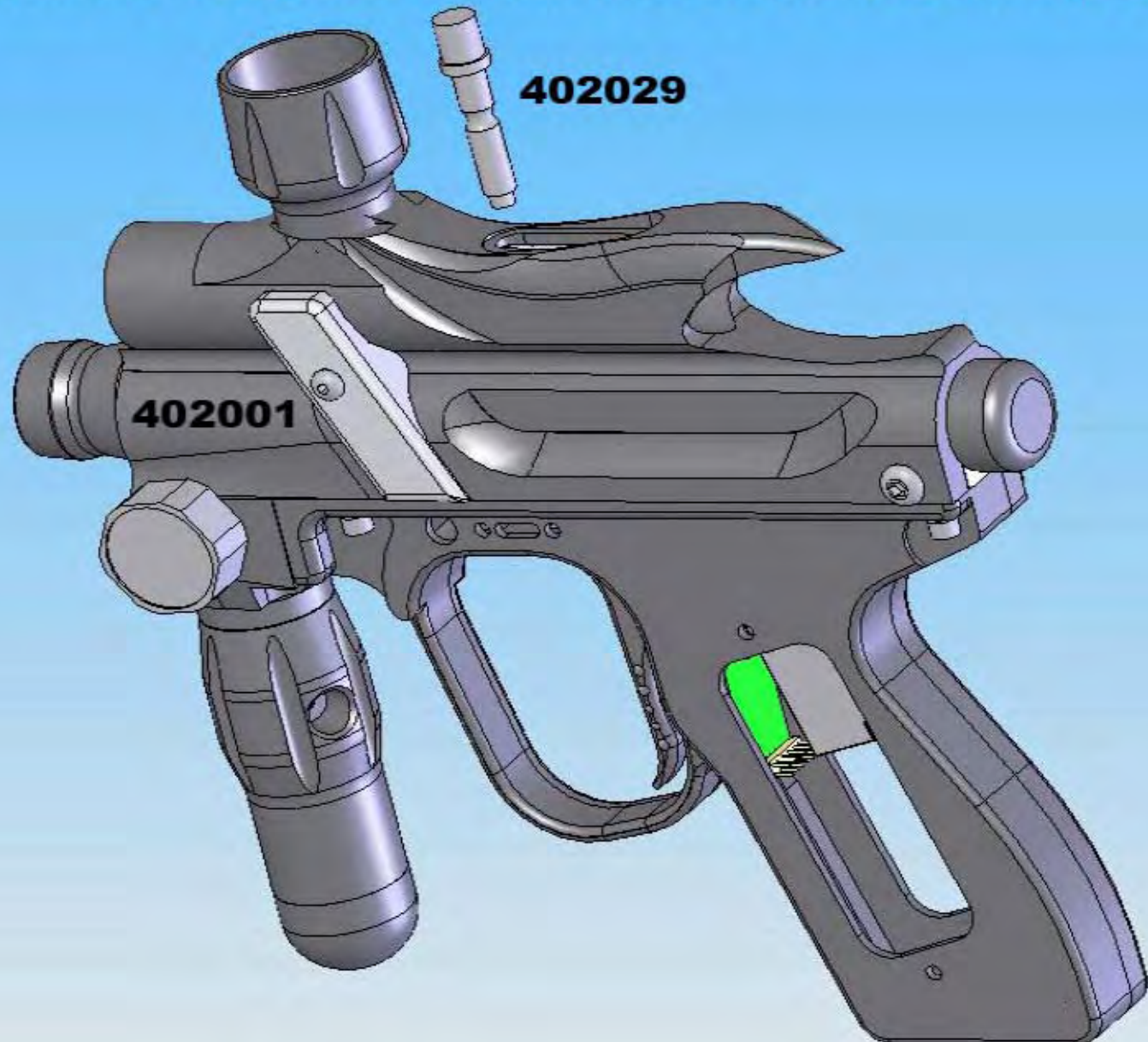




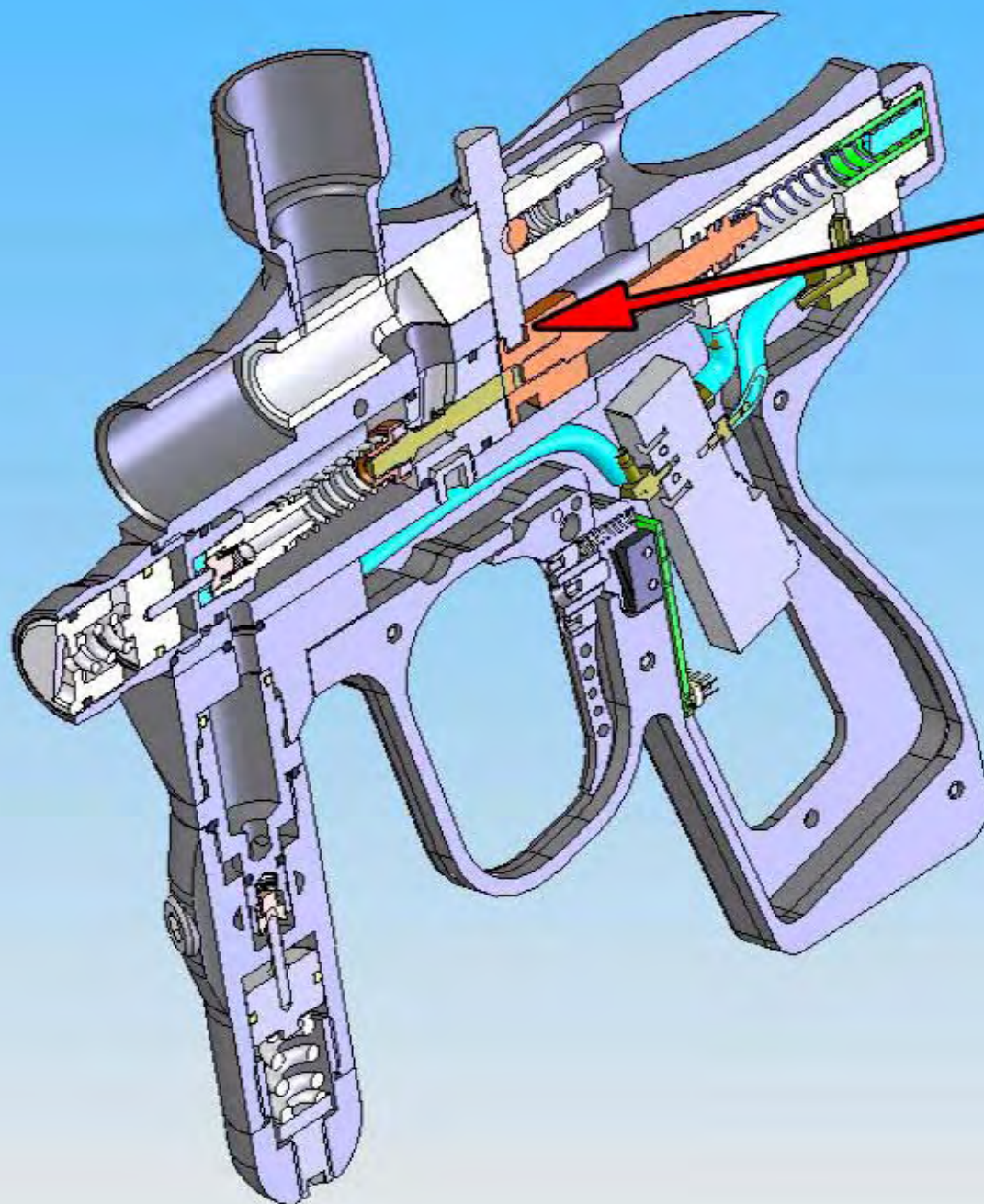
**Slide the bolt (402012) into the upper bore of the main receiver (402001). Verify that the air hole is facing down.**



**Line up the slot in bolt (402012) with the hammer (402021).  
Insert the link pin (402029) all the way through. Slide the bolt  
back and forth the verify the link pin (402029) is installed properly.**





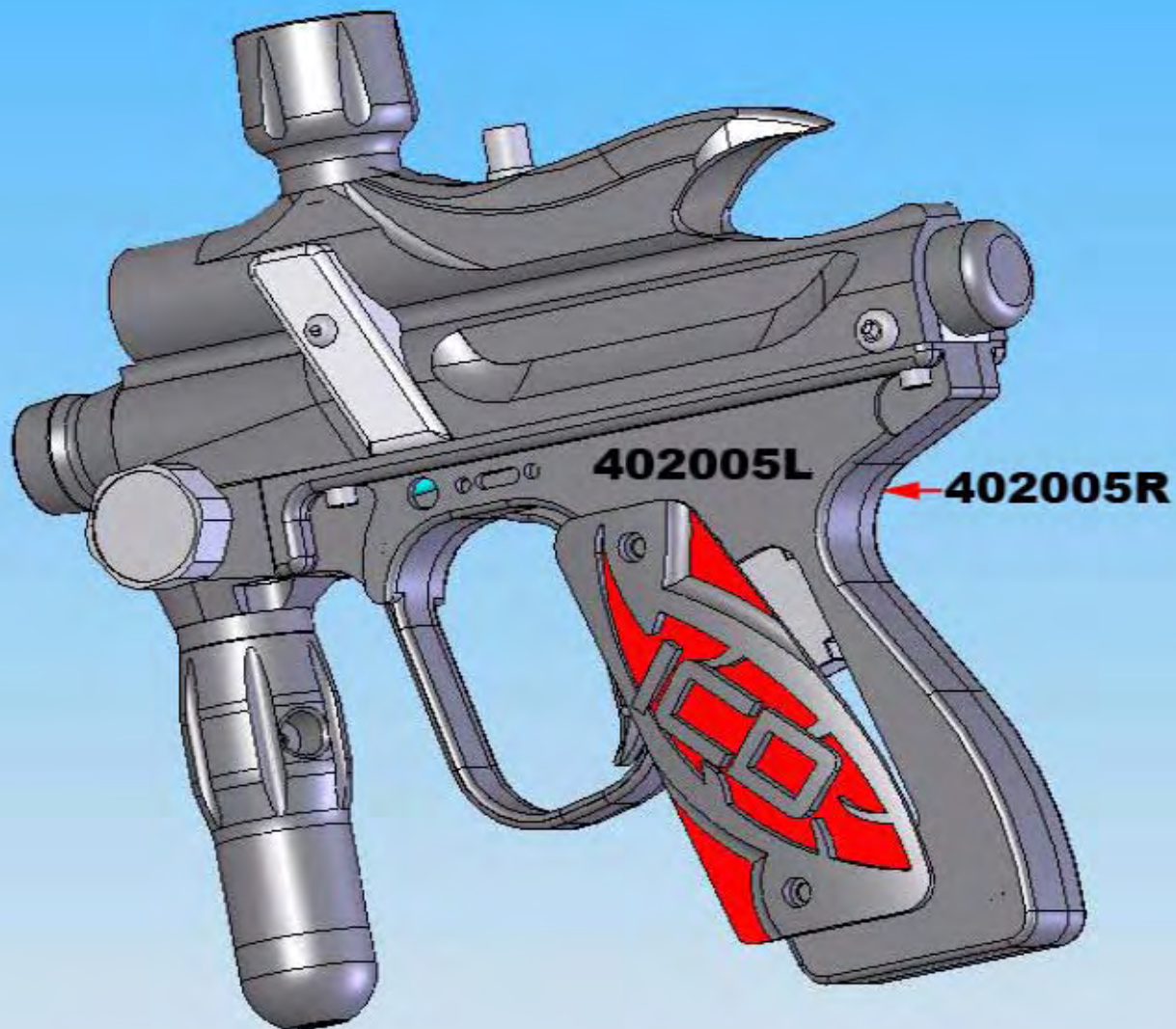


**The link pin  
(402029)  
must fit inside  
the groove on  
the hammer  
(402021).**



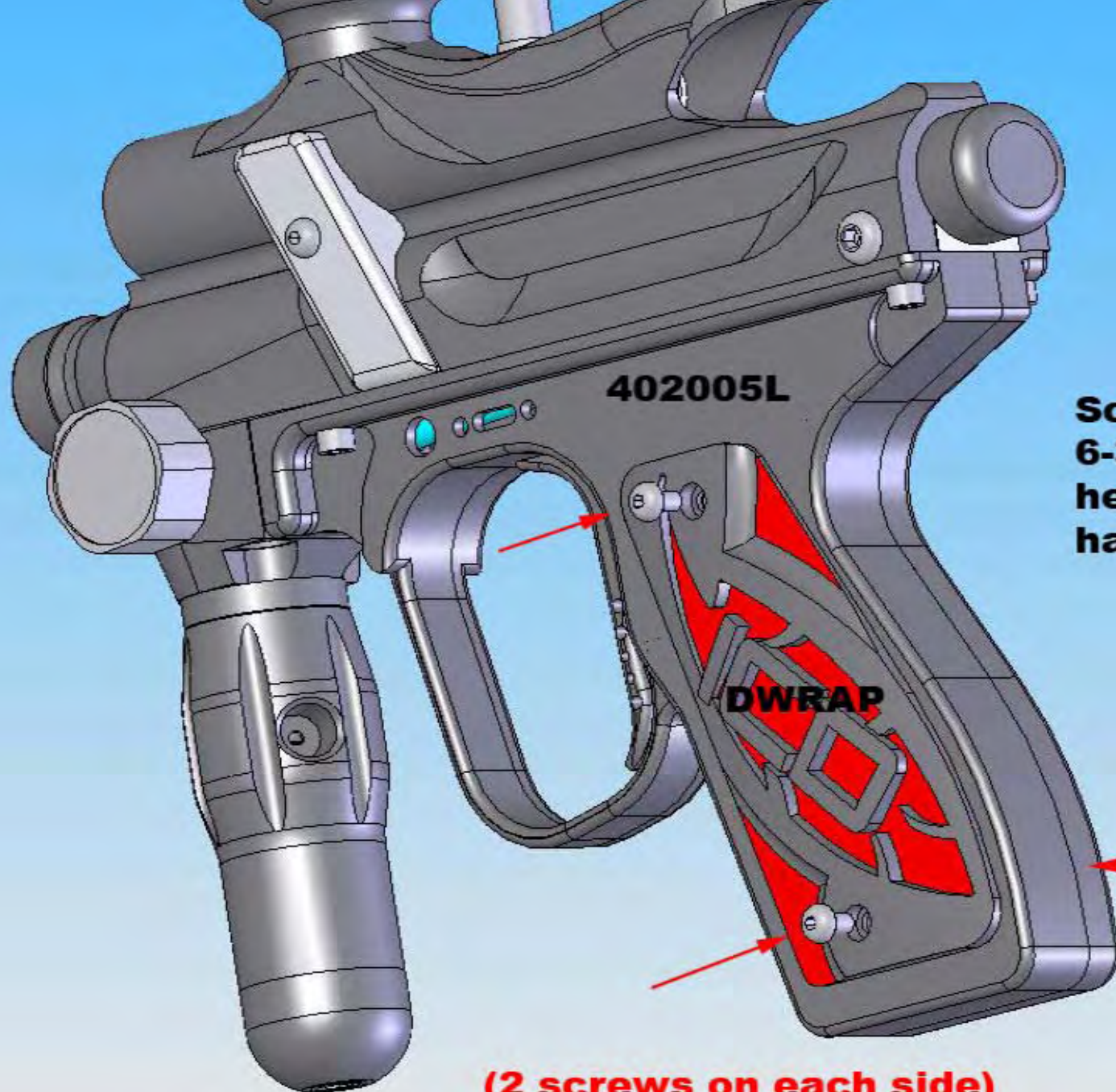


**The piece should look like this.**



**Put the grip panels (DWRAP) in place and line screw holes. Verify that no wires are sticking out.**





**Screw in the 4  
6-32x1/4 Button-  
head screws  
hand-tight.**

**402005R**

**(2 screws on each side)**



# Testing Procedures

- Screw in the barrel 402010 and make sure it threads in smoothly.
- Connect battery to the terminal inside grip
- Air up Marker with 850 psi gas
  - Set High Pressure regulator to 250-300 psi
  - Turn on marker
  - Adjust low pressure regulator to about 90 psi by screwing in adjustment screw until you hear a small leak coming from the back. Unscrew the screw  $\frac{1}{4}$  turn.
- Shoot marker and chrono at 280 fps.
  - Look for irregularities in velocity or regulated pressure. If so, the marker is no good.
  - Look and listen for leaks. If there are leaks, the marker is no good.
  - Shoot marker fast and make sure the bolt springs back and forth properly and does not jam.
  - Verify that all parts are screwed on tight.
  - Make minor adjustments to trigger screws if necessary for contacting micro-switch.

# Testing Procedures

- Rest marker for a period and then start shooting again.
  - Verify that the regulators do not climb or drop in pressure. If they do, marker is no good.
  - Recheck for leaks
- Turn off air supply and then re-apply gas.
  - Make sure regulators climb back to previous set pressures and that they do not climb or drop. If they do, the marker is no good.
  - Recheck for leaks
  - Verify chrono speed is still at 280 fps.
- If marker passes these test, it is satisfactory.
  - Disconnect battery and replace grip panel.
  - Clean outside of marker and inspect for good finish.
  - Unscrew barrel and package marker. Package should contain barrel, marker, manual, and a kit containing 1 ¼ in. macroline elbow, 5 inches of hose, a H-010 UR o-ring, a 5/64 allen wrench, a 5/32 allen wrench, and a 3/32 allen wrench.