

# 2012 Monarch Plus Service Manual

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# SRAM LLC Warranty

## Extent of Limited Warranty

SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required.

## Local law

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

- a. Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).
- b. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

## Limitations of Liability

To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third party supplies be liable for direct, indirect, special, incidental, or consequential damages.

## Limitations of Warranty

This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM technical installation manual. The SRAM installation manuals can be found online at [sram.com](http://sram.com), [rockshox.com](http://rockshox.com), [avidbike.com](http://avidbike.com), [truvativ.com](http://truvativ.com), [zipp.com](http://zipp.com), or [quarq.com](http://quarq.com).

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

## Wear and tear parts are identified as:

- |  |  |                      |
|--|--|----------------------|
| • Dust seals   | • Brake sleeves                              | • Bottomout pads     |
| • Bushings   | • Brake pads                                 | • Bearings           |
| • Air sealing o-rings  | • Chains                                     | • Bearing races      |
| • Glide rings  | • Sprockets                                  | • Pawls              |
| • Rubber moving parts  | • Cassettes                                  | • Transmission gears |
| • Foam rings   | • Shifter and brake cables (inner and outer) | • Spokes             |
| • Rear shock mounting hardware and main seals                      | • Handlebar grips                            | • Free hubs          |
| • Upper tubes (stanchions)   | • Shifter grips                              | • Aero bar pads      |
| • Stripped threads/bolts (aluminium, titanium, magnesium or steel) | • Jockey wheels                              | • Corrosion          |
|  | • Disc brake rotors                          | • Tools              |
|  | • Wheel braking surfaces                     | • Batteries          |

This warranty shall not cover damages caused by the use of parts of different manufacturers.

This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

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# **SAFETY FIRST!**

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing RockShox products.

Protect yourself! Wear your safety gear!

# EXPLODED VIEW- MONARCH PLUS REAR SHOCK ASSEMBLY



- A. Air can valve
- B. Rebound adjuster
- C. Compression lever
- D. Compression assembly
- E. Reservoir
- F. IFP (Internal Floating Piston)
- G. IFP reservoir cap
- H. IFP reservoir valve cap
- I. Reservoir cap retaining ring
- J. Top out bumper

- K. Damper body eyelet
- L. Main piston
- M. Damper shaft
- N. Seal head/air piston
- O. Shaft eyelet
- P. High volume air sleeve
- Q. Air can
- R. Sag indicator o-ring
- S. Damper body
- T. Damper bleed screw

## ROCKSHOX SUSPENSION SERVICE

We recommend that you have your RockShox suspension serviced by a qualified bicycle mechanic. Servicing RockShox suspension requires knowledge of brake components as well as the special tools and fluids used for service.

For exploded diagram and part number information, please refer to the Spare Parts Catalog available on our web site at [sram.com](http://sram.com).

For order information, please contact your local SRAM distributor or dealer.

Information contained in this publication is subject to change at any time without prior notice. For the latest technical information, please visit our website at [sram.com](http://sram.com).

## MOUNTING HARDWARE AND BUSHING SERVICE

Prior to servicing your rear shock, you will first need to remove it from your bicycle frame according to your bicycle manufacturer's instructions. Once your shock is removed from your bicycle, you will need to remove the mounting hardware before performing any service.

### NOTICE

When you clamp the rear shock eyelets into a vise, use aluminum soft jaws to prevent damage to the eyelets.

## PARTS AND TOOLS FOR MOUNTING AND BUSHING SERVICE

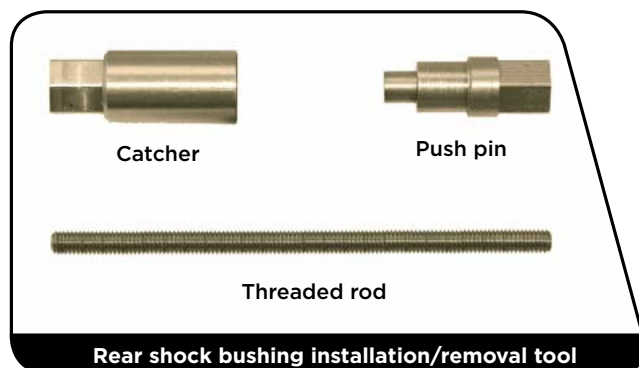
- Safety glasses
- Nitrile gloves
- Apron
- Clean, lint-free rags
- Suspension specific grease
- Bench vise with aluminum soft jaws
- SRAM rear shock bushing removal/installation tool
- Adjustable wrench
- 13 mm open end wrench

## MOUNTING HARDWARE REMOVAL

Some mounting hardware is easily removed using only your fingers. Try to remove the end spacers with your fingernail, then push the bushing pin out of the bushing. If this works, move on to the next section, [Eyelet Bushing Replacement](#).

If you are unable to remove your mounting hardware using your fingers, use the SRAM rear shock bushing installation/removal tool.

*Images in the following steps are of Vivid Air, but are applicable to Monarch Plus.*



- 1** Thread the small end of the push pin onto the threaded rod until the rod is flush or slightly protrudes from the hex-shaped end of the push pin.



- 2** Insert the threaded rod through the shock eyelet until the push pin rests against the bushing pin. Thread the large, open end of the catcher along the rod until it rests on the end spacer.



- 3** Clamp the catcher in a vise or hold it secure with a 13 mm open end or adjustable wrench. Use a second 13 mm wrench to thread the push pin along the rod until it stops against the end spacer. Unthread the push pin from the threaded rod and remove the end spacer from that side.



**4** Reinstall the push pin onto the threaded rod and hand thread it along the rod until it rests against the bushing pin (inside the shock eyelet bushing).

Use a 13 mm wrench to thread the push pin along the rod until it stops against the shock eyelet.



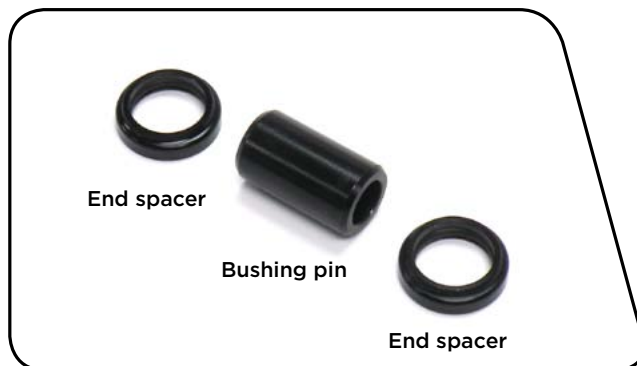
**5** Unthread the catcher from the threaded rod.

Remove the end spacer from the threaded rod and the bushing pin from the catcher.

Remove the push pin and threaded rod from the shock.

Set the mounting hardware aside until you have finished servicing your shock.

Repeat for the other eyelet.





## EYELET BUSHING REPLACEMENT

To replace damaged or worn out bushings, use the RockShox rear shock bushing installation and removal tool.

- 1** Insert the threaded rod through the shock eyelet until the base of the push pin rests against the bushing.  
Thread the large, open end of the catcher onto the rod until it rests on the shock eyelet.



- 2** Clamp the catcher in a vise or hold it secure with a 13 mm wrench.  
Use a second 13 mm wrench to thread the push pin along the rod until the push pin rests against the shock eyelet.



- 3** Unthread the catcher from the threaded rod. Remove the tool from the shock eyelet and discard the old bushing.  
Repeat for the other eyelet.

- 4** Apply a small amount of grease to the outside of the new bushing.



**5** Position the shock eyelet and bushing between the soft jaws of a vise. Slowly turn the vise handle to begin pressing the bushing into the shock body.

**To prevent damage to the shock, position the eyelet in the vise so that the adjustment knobs are clear of the vise jaws.**

**Check the alignment of the bushing as it enters the eyelet. If the bushing starts to enter the eyelet at an angle, remove the bushing from the eyelet, regrease the bushing, and repeat this step until the bushing enters the eyelet straight.**



**6** Continue to press the bushing until it is completely seated in the eyelet.

Remove the shock from the vise and repeat the installation process for the other bushing and eyelet.



## MOUNTING HARDWARE INSTALLATION

Some mounting hardware is easily installed using only your fingers. Press the bushing pin into the shock eyelet bushing until the pin protrudes from both sides of the eyelet an equal amount. Next, press an end spacer, large diameter side first, completely onto each end of the bushing pin. If this works, you have completed mounting hardware and bushing service.

If you are unable to install your mounting hardware using your fingers, use the SRAM rear shock bushing installation and removal tool.

- 1** Thread the small end of the push pin onto the threaded rod until the push pin is flush or slightly protrudes from the hex-shaped end of the push pin.



- 2** Insert the threaded rod through the bushing pin then through the shock eyelet so that the bushing pin is positioned between the push pin and the shock eyelet.



- 3** Thread the large end of the catcher onto the rod from the opposite side of the shock eyelet until the rod rests against the shock eyelet.

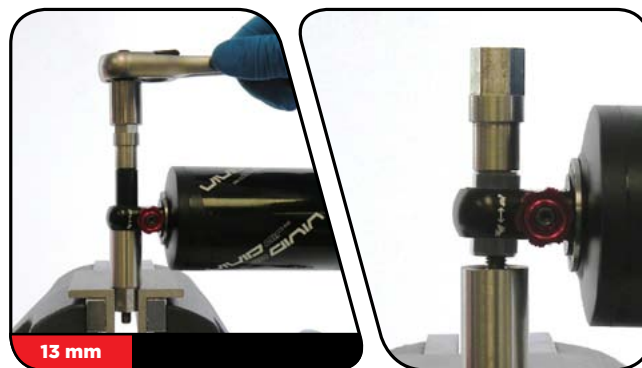


- 4** Clamp the catcher in a vise or hold it secure with a 13 mm wrench.

Use a second 13 mm wrench to thread the push pin along the rod until it pushes the bushing pin into the shock eyelet bushing.

Continue to thread the push pin until the bushing pin protrudes from both sides of the eyelet an equal amount.

*You may need to unthread the catcher slightly to check the bushing pin spacing.*



- 5** Unthread the catcher from the threaded rod and remove the tool from the shock eyelet.

- 6** Position the end spacer with the large end facing the shock eyelet. Use your fingers to push the end spacer onto each end of the bushing pin.



## MONARCH PLUS SERVICE

Prior to servicing your rear shock, you will first need to remove it from your bicycle frame according to your bicycle manufacturer's instructions. Once your shock is removed from your bicycle, be sure to remove the shock mount hardware (see the [Mounting Hardware And Bushing Service](#) section).

## PARTS AND TOOLS NEEDED FOR MONARCH PLUS SERVICE

- Safety glasses
- Nitrile gloves
- Apron
- Clean lint-free rags
- Oil pan
- Bench vise
- Aluminum soft jaws
- 13, 17, and 27 mm open end wrenches
- Adjustable wrench
- Torque wrench
- T10 TORX® bit socket and 10 mm socket
- 13, 17, and 27 mm crowfoot sockets
- T10 TORX wrench
- 5 inch socket extension
- Pick
- Schrader valve core tool
- SRAM shaft clamp tool
- Shock pump
- Monarch air fill adapter
- Maxima® Maxum4 Extra 15w50 lube
- RockShox 3wt suspension fluid
- Parker® O-Lube grease
- Isopropyl alcohol
- Blue threadlock

## SAFETY INSTRUCTIONS

Always wear safety glasses and nitrile gloves when working with suspension fluid.

Place an oil pan on the floor underneath the area where you will be working on the shock.

## AIR CAN REMOVAL

- 1 Turn the rebound adjuster counter-clockwise (toward the rabbit) until it stops.

Count each detent click as you turn the adjuster and record the number of clicks to assist with post-service set up.

**RC3 Only:** Set the compression lever to the MIN setting



- 2** Check and record your current air pressure setting to assist with post-service set up.

Remove the air can valve cap. Use a small hex to depress the Schrader valve and release all air pressure from the air can. Use a Schrader valve tool to remove the valve core.

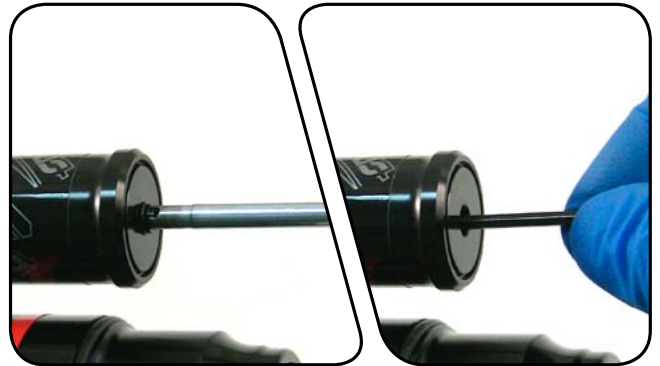


- 3** Use a Schrader valve tool to remove the IFP reservoir valve cap.

Use a small hex wrench to depress the Schrader valve and release all air/nitrogen pressure from the IFP reservoir.

Once the pressure has been released, depress the Schrader valve a second time. If the Schrader valve is able to move, the shock has been completely depressurized.

**If the Schrader valve does not move at all, the shock is still pressurized and will need to be sent to an authorized RockShox service center for further service.**



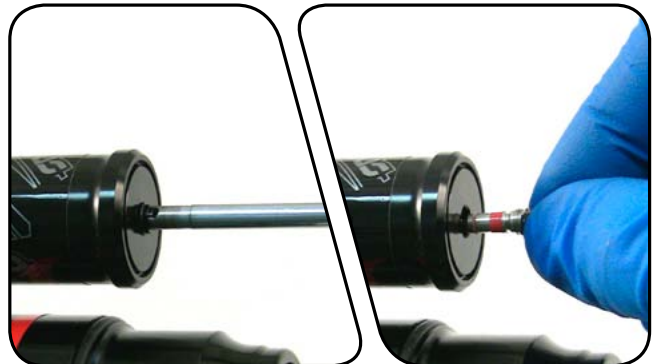
### **! CAUTION- EYE HAZARD**

Verify all pressure is removed from the shock before proceeding. Failure to do so can cause the shock body to separate from the air can eyelet at a high velocity. Wear safety glasses.

Do not remove the damper body bleed screw from the damper body eyelet until instructed to do so. Removing the damper body bleed screw while the shock is pressurized will result in fluid being forcefully ejected from the bleed port. Wear safety glasses.



- 4** Use a Schrader valve tool to remove the valve core.





**5** Clamp the shaft eyelet into a bench vise, with the shock positioned horizontally.

**To prevent damage to the shock, use aluminum soft jaws and position the eyelet in the vise so that the adjustment knobs are clear of the vise jaws.**



**6** If the shock is collapsed so that a minimal amount of damper body is visible, there is still air pressure in the air can. Insert a rag through the damper body eyelet. This will prevent the air can from forcefully ejecting from the shock upon disassembly.



#### **CAUTION- EYE HAZARD**

Disassembly of a pressurized air can may cause suspension fluid or debris to forcefully eject from the shock. Wear safety glasses.



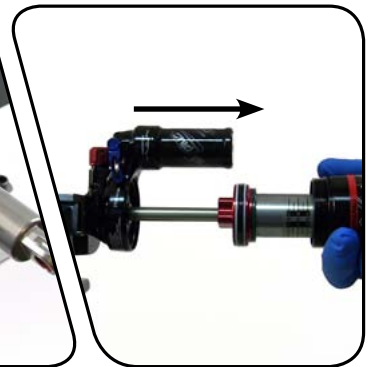
**7** Use a strap wrench to remove the air can. Wrap the strap around the section of the air can furthest from the air can eyelet. Turn the wrench counter-clockwise to unthread the air can.

Once it is completely unthreaded, slowly pull the air can along the damper body to remove it.

**Do not place the strap wrench on the air can decal.**

**For high volume air cans:** Grip the lower portion of the can; otherwise, the high volume sleeve will rotate independent of the air can, preventing the air can from unthreading.

*Vacuum pressure will increase as you pull the air can along the damper body, then suddenly release as the end of the can comes over the damper body eyelet.*



## AIR CAN SERVICE

- 1** Use your fingers to remove the outer o-ring located below the air can threads.  
Use a rag to wipe the threads clean, apply a small amount of Parker® O-Lube grease to the new o-ring, and install it.



- 2** Use a pick to pierce the air can dust wiper and o-ring located inside the dust wiper seal gland. Push or pull to remove them, paying attention to the orientation of these parts for reinstallation.

**Do not scoop or dig the seals out as this may damage the seal gland.**



- 3** Use your finger or a pick to pull or push the step bushing ring out of the air can.

Use a pick to remove the back-up ring from the air can.

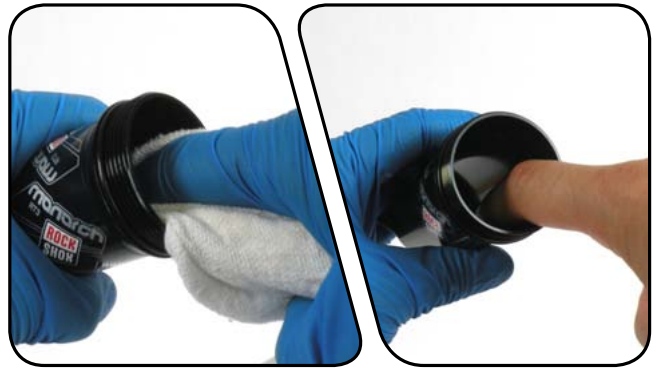




- 4** Spray isopropyl alcohol inside the air can and wipe it with a clean rag. Remove a glove and use your finger to inspect the inside and outside of the air can for scratches, dents, or other surface deformations. Replace the air can if it is scratched or damaged.

*All air cans have a small dimple, as seen from the exterior of the can, that you should feel during inspection. This is normal.*

*In addition, high volume air cans have small port hole to the high volume sleeve that you should feel. This is normal.*



- 5** Install the new step bushing ring, o-ring, back-up ring, and dust wiper seal.

Orient the new step bushing ring, step side down. Install the step bushing ring by inserting one end into the air can, then pushing the remainder of the ring into the can, so that it rests on the bottom of the second deepest gland.



- 6** Apply a small amount of Parker® O-Lube grease to the air can o-ring. Install it into the second deepest gland, so that it rests on top of the step bushing.



- 7** Install the air can back-up ring into the same gland, so that it rests between the o-ring and the top of the gland.



- 8** Orient the new dust wiper seal step side up. Install it into the dust wiper seal gland at the top of the air can.



- 9** Spray isopropyl alcohol on the air can threads and eyelet body threads and wipe them with a clean rag.

- 10** Apply a small amount of Parker® O-Lube grease to the step bushing ring, o-ring, back-up ring, and dust wiper seal.



## **11 For High Volume Air Cans Only:**

Remove the retention o-ring from the high volume sleeve. Firmly grip the high volume sleeve and slide it off of the air can.

Use your fingers to remove the high volume sleeve o-rings, clean the seal glands, and apply Parker® O-Lube to the new seals, then reinstall.

Spray isopropyl alcohol inside the high volume sleeve and wipe it with a clean, lint-free rag.

Evenly spread just enough Parker O-Lube to make the inside of the sleeve slippery. This stops the o-rings from rolling as the sleeve slides over them.

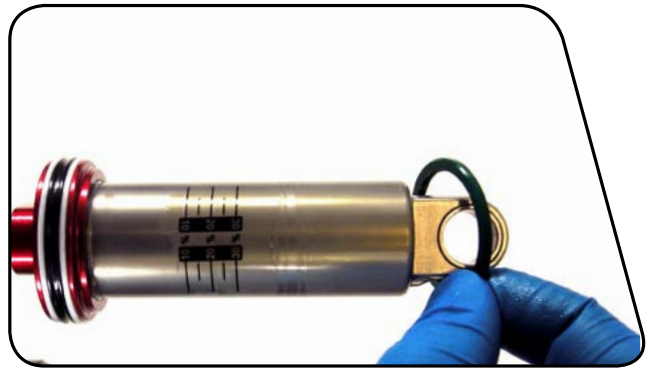
Slide the air sleeve onto the air can.

Reinstall the high volume sleeve retention o-ring into the o-ring groove outside of the air can.



## DAMPER BODY SERVICE

- 1** Remove the top out bumper from the damper body.



- 2** Remove the shock from the vise. Turn the shock over and clamp the damper body eyelet into the vise, so the shock is vertical.

**Use aluminum vise soft jaws to protect the damper eyelet when clamped.**



- 3** Use a 17 mm open end wrench to loosen and remove the seal head/air piston assembly from the damper body.

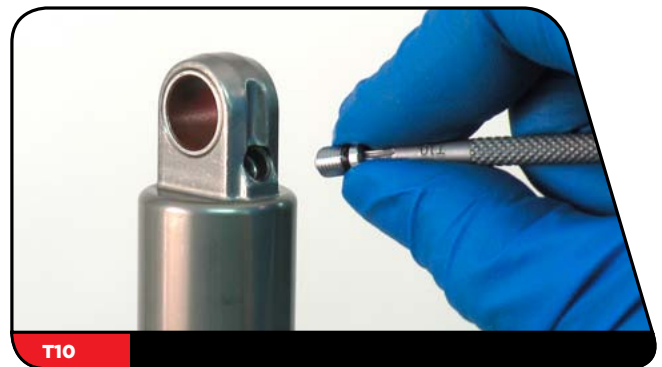
*Fluid will spill from the assembly.*



- 4** Remove the damper body from the vise and pour the fluid into the oil pan.



- 5** Use a T10 TORX® to remove the damper body bleed screw from the damper body eyelet.



- 6** Use a pick to remove the o-ring on the bleed screw. Apply Parker® O-Lube to the new o-ring and reinstall the bleed screw.



**7** Use your fingers to remove and replace the seal head/air piston quad ring seal and glide rings. Apply a small amount of Parker® O-Lube to the new seals.

Install the new quad ring seal between the two new back-up rings.



**8** Spray isopropyl alcohol on the shaft assembly and shaft clamp, wipe it with a clean rag.

**9** Use the SRAM shaft clamp tool to clamp the seal head/air piston into a vise with the piston extended vertically.

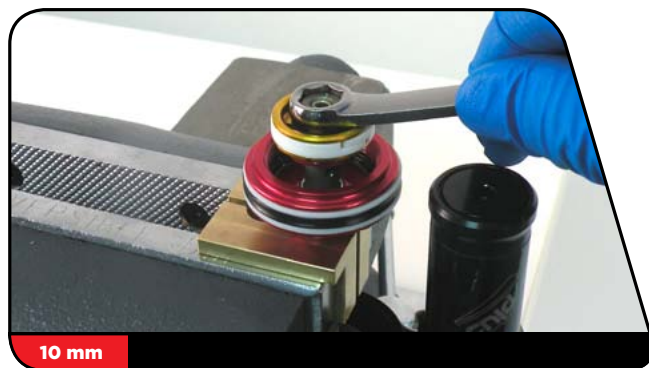


**10** Remove and replace the glide ring located on the main piston.

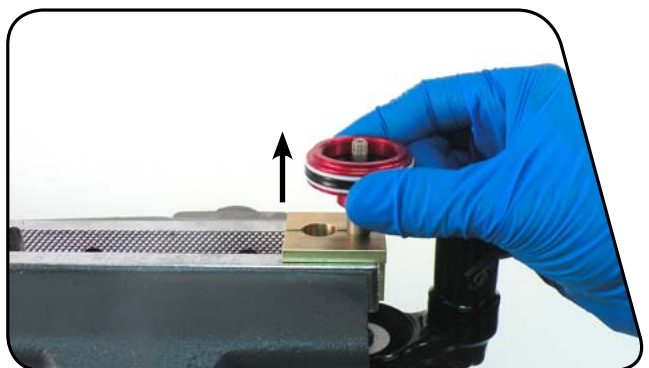




- 11** Use a 10 mm wrench to unthread the piston nut. Remove the main piston assembly.  
Keep all the parts together and set aside.

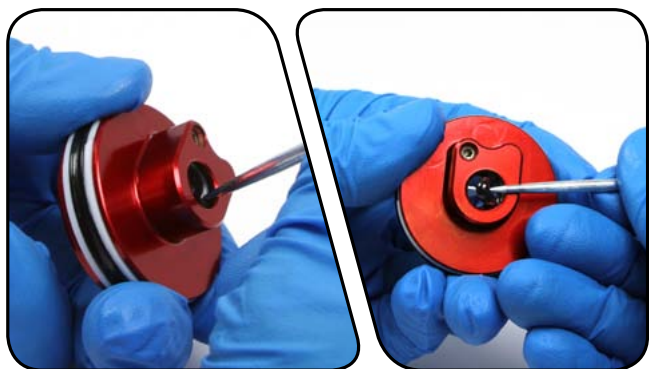


- 12** Pull up on the seal head/air piston to remove it from the damper shaft.

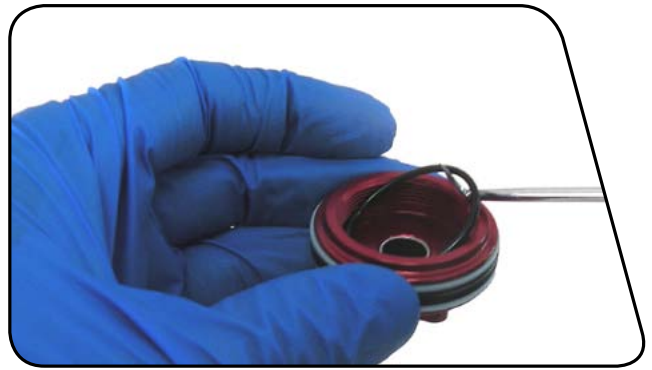


- 13** Use a pick to remove the seal head/air piston o-ring, located in the interior of the seal head.

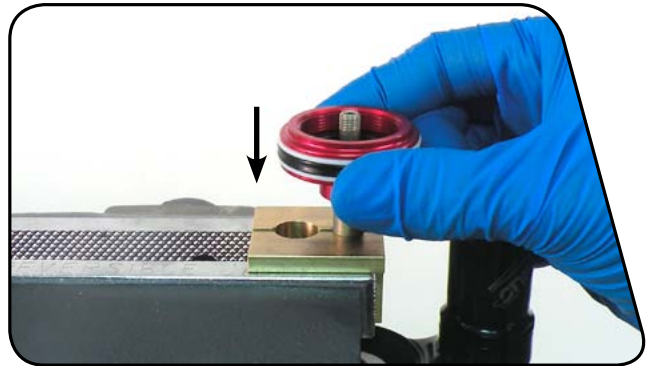
Apply a small amount of Parker® O-Lube to the new o-ring and install it.



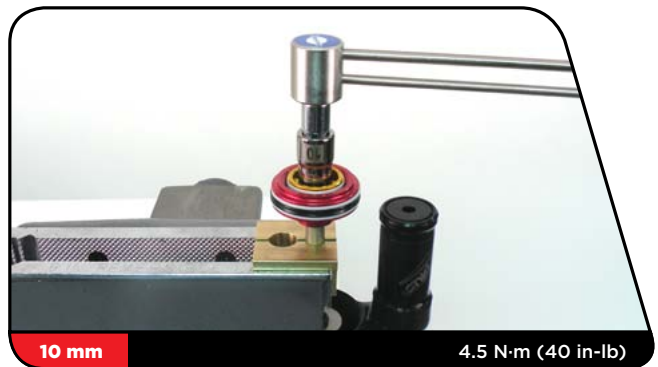
- 14** Use a pick to remove the inner o-ring, located at the base of the threads in the seal head/air piston.
- Apply Parker O-Lube to the o-ring and install it.
- When using a pick to remove o-rings, do not scratch the seal head/air piston. Scratches may cause fluid to leak.**



- 15** Install the seal head/air piston onto the damper shaft with the seal head threads oriented upward.



- 16** Thread the main piston, by hand, onto the damper shaft.
- Use a torque wrench with a 10 mm socket to tighten it to 4.5 N·m (40 in-lb).



- 17** Remove the shaft assembly from the vise and set it aside.

- 18** Spray isopropyl alcohol on the inside and outside of the damper body and wipe it with a clean rag. Remove a glove and use your finger to inspect the inside and outside of the damper body for scratches, dents, or other surface deformations. If any deformations are found, the damper body will need to be replaced.

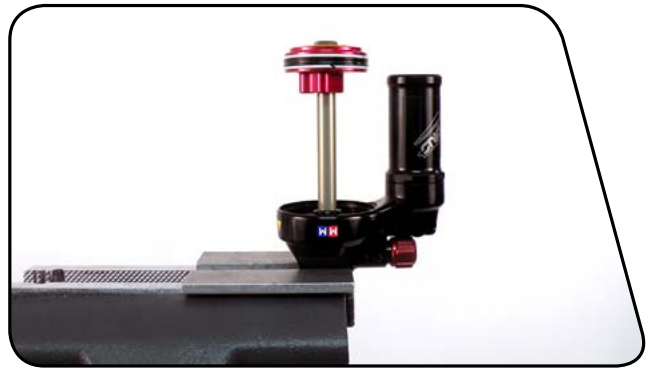




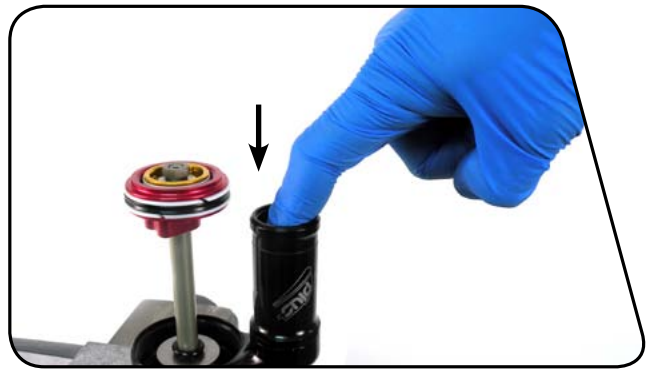
## IFP RESERVOIR SERVICE

- 1** Clamp the shaft eyelet into the bench vise, so the shock is vertical.

Use aluminum vise soft jaws to protect the shaft eyelet when clamped.



- 2** Use your finger to push the IFP reservoir cap into the reservoir until it stops.



- 3** Use the Schrader valve tool to pry the retaining ring out of the groove in the IFP reservoir.

Angle the tip of a Schrader valve tool inward, opposite the split in the retaining ring, and push down as you aim toward the center of the reservoir.



- 4** Thread the shock pump into the Monarch air fill adapter, then thread the adapter into the IFP reservoir cap. Pull up on the pump to remove the cap from the reservoir. Unthread the reservoir cap from the adapter and set it aside.



- 5** Use your fingers to remove and replace the reservoir cap o-ring.



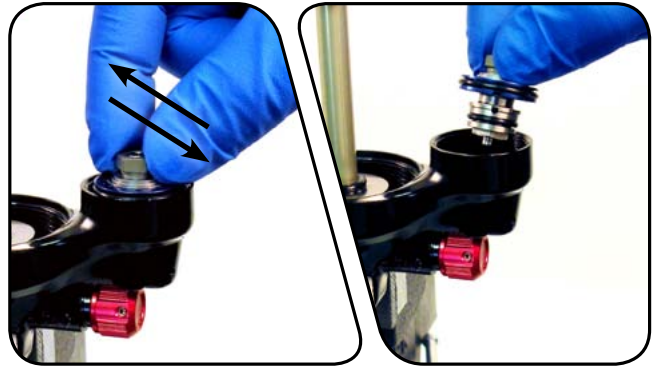
- 6** Use a 27 mm open end wrench to unthread the reservoir from the shock body.

*Fluid will spill from the reservoir and/or shaft assembly.*

When removing the reservoir from the shock body, it is possible that the compression assembly will dislodge from the shock body and come out with the reservoir. Use your fingers to pull the compression assembly out of the reservoir and set it aside.



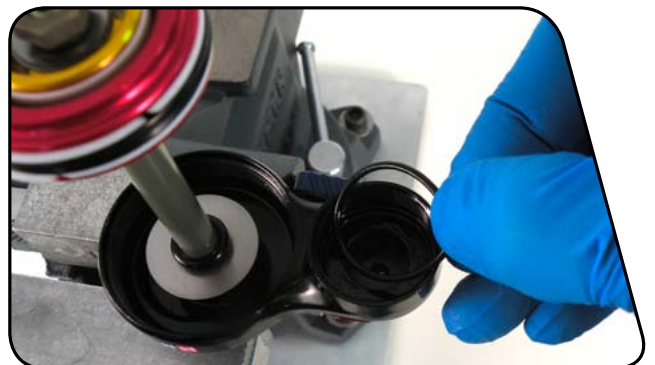
- 7** If the compression assembly is still installed in the shock body, use your fingers to pull on the piston nut while rocking it from side to side to remove the compression assembly from the shock body.



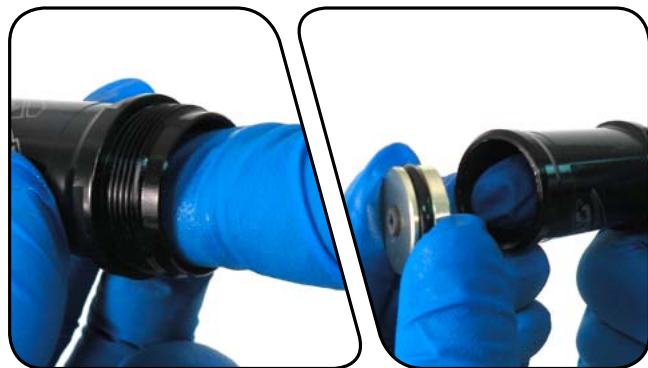
- 8** Use your fingers to remove the compression assembly o-rings. Apply Parker® O-Lube to the new o-rings and install.



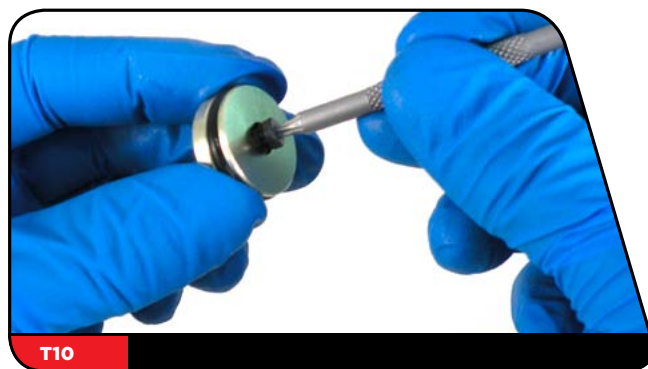
- 9** Use your fingers to remove the o-ring located at the base of the threads inside the shaft eyelet. Apply Parker® O-Lube to the new o-ring and install.



- 10** Use your fingers to push the IFP (Internal Floating Piston) out of the non-threaded side of the reservoir.



- 11** Use a T10 TORX® to remove the IFP bleed screw.



- 12** Use a pick to remove and replace the o-ring on the IFP bleed screw.

Set the bleed screw aside.



- 13** Use your fingers to remove the IFP o-ring.  
Apply a small amount of Parker® O-Lube to the the new o-ring and install.



- 14** Press the IFP, with the flat side facing out, into the non-threaded side of the reservoir.  
Push the IFP into the reservoir to a depth of 35 mm.



- 15** Apply a small amount of Parker® O-lube grease to the compression assembly o-rings and reservoir o-ring.  
Insert the compression assembly, nut side first, into the threaded side of the reservoir. Push the compression assembly into the reservoir until it stops.



**16** Thread the reservoir into the shock by hand. Use a torque wrench with a 27 mm crowfoot socket to tighten the reservoir to 8.4 N·m (75 in-lb).

Remove the shaft assembly from the vise.

**To achieve an accurate torque reading, install the crowfoot onto the torque wrench at a 90° angle to the handle.**





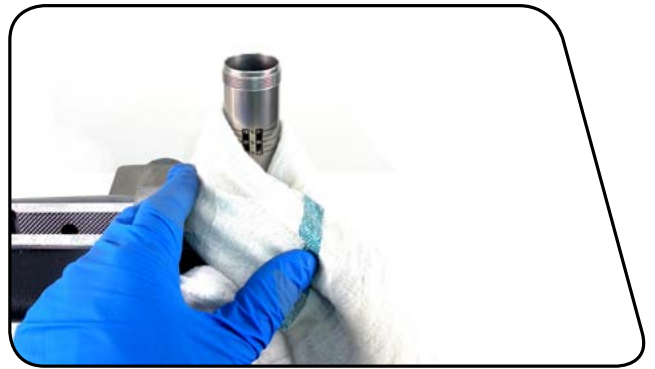
## SHOCK ASSEMBLY AND BLEED PROCEDURE

**1** Clamp the damper body eyelet into the vise, so the damper body is vertical.

**Use aluminum vise soft jaws to protect the damper eyelet when clamped.**



**2** Wrap a clean rag around the damper body.



**3** Pour RockShox 3wt suspension fluid into the damper body until it is level with the top. Use your finger to remove any bubbles from the surface of the fluid.



- 4** Check that both the gate and the rebound adjusters are set to their minimum settings.

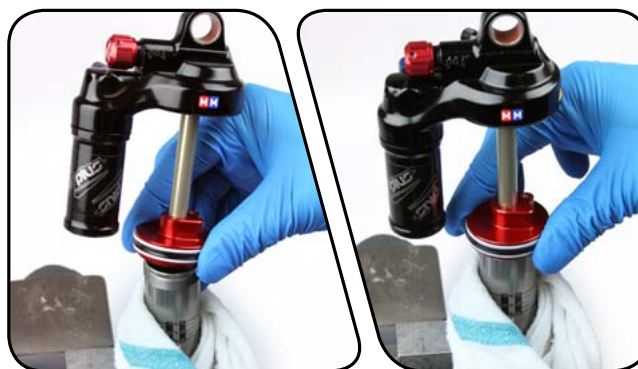
Slide the seal head/air piston until it stops at the end of the damper shaft.



- 5** Install the seal head/air piston onto the damper body. While holding only the seal head/air piston, thread it completely onto the damper body.

*Fluid will drip from the reservoir during seal head/air piston installation.*

**Do not hold the shaft eyelet or damper shaft while inserting. It will move the piston/shaft assembly, causing too much fluid to displace out of the damper body.**



- 6** Use a torque wrench with a 17 mm crowfoot socket to tighten the seal head/air piston to 28.2 N·m (250 in-lb).

**To achieve an accurate torque reading, install the crowfoot onto the torque wrench at a 90° angle to the handle.**





- 7** Remove the shock from the vise. Turn the shock over and clamp the shaft eyelet into the vise, so the shock is vertical.
- Use aluminum vise soft jaws to protect the shaft eyelet when clamped.**



- 8** Slowly push the damper body downward. Fluid will begin to fill the reservoir through the IFP bleed port. Continue to push down until the damper body stops.

**! CAUTION- FACE AND EYE HAZARD**

Do not look directly into the reservoir as you push on the damper body. If you attempt to cycle the fluid in the damper too quickly, fluid will forcefully be ejected from the reservoir into your face and eyes. Wear safety glasses.

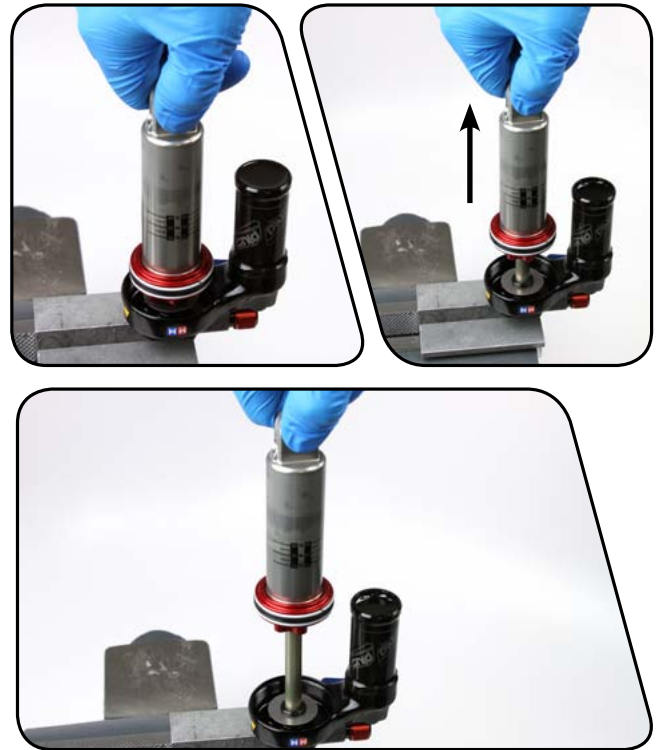


- 9** Pour additional RockShox 3 wt suspension fluid into the reservoir until it is level with the top of the reservoir.



**10** Slowly pull up on the damper body until it stops. This will cycle fluid from the reservoir back into the damper body and purge air bubbles from the system.

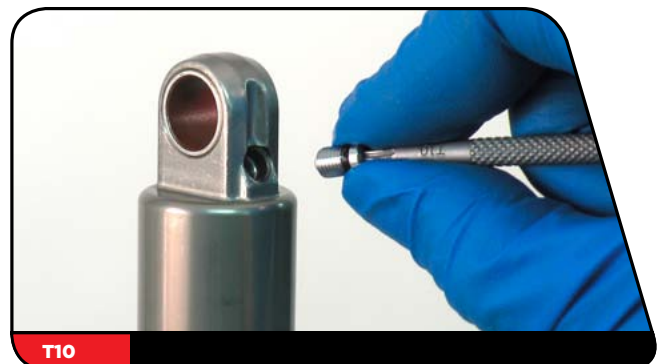
Repeat the previous three steps until no more air bubbles emerge from the IFP bleed port.



**11** Use a T10 TORX® to reinstall the IFP bleed screw into the IFP. The bleed screw should be submerged in oil.



**12** Use a T10 TORX to remove the damper body bleed screw from the damper body eyelet.



**13** Wrap a clean rag around the damper body.



**14** Slowly push down on the damper body to purge air bubbles through the bleed port in the damper body eyelet. Once there are no more air bubbles, stop pushing on the damper body. Reinstall the damper body bleed screw.

**If the damper body is all the way down and air bubbles are still present, then reinstall the damper bleed screw, remove the IFP bleed screw and repeat steps 9-14.**

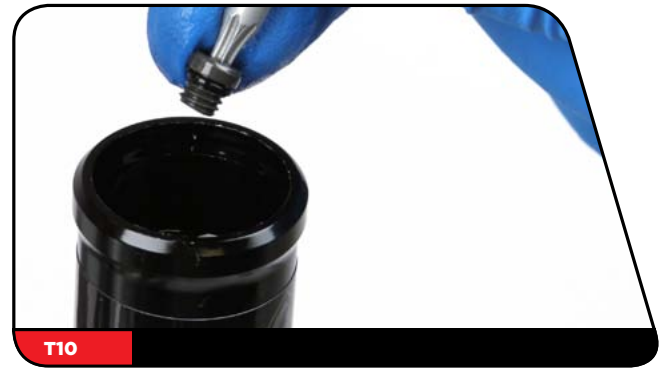


**15** Use a T10 TORX® to install the damper body bleed screw into the damper body eyelet. Use a torque wrench with a T10 TORX socket to tighten the bleed screw to 1.1 N·m (10 in-lb). Wipe the excess fluid from the damper body with a clean rag.

*A small amount of fluid will drip out of the port as the screw is threaded in.*



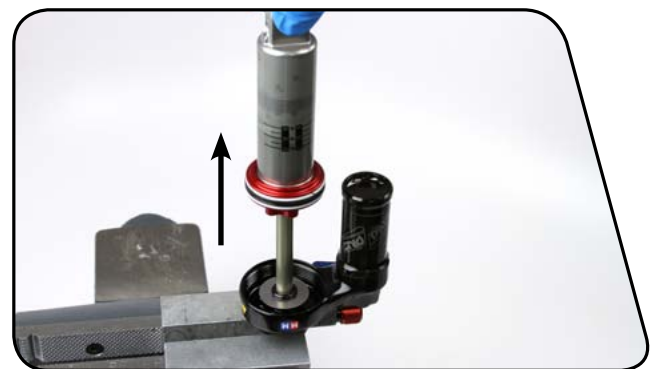
**16** Use a T10 TORX to remove the IFP bleed screw.



**17** Pour additional suspension fluid into the reservoir until it is level with the top of the reservoir.



**18** Slowly pull up on the damper body until it stops.

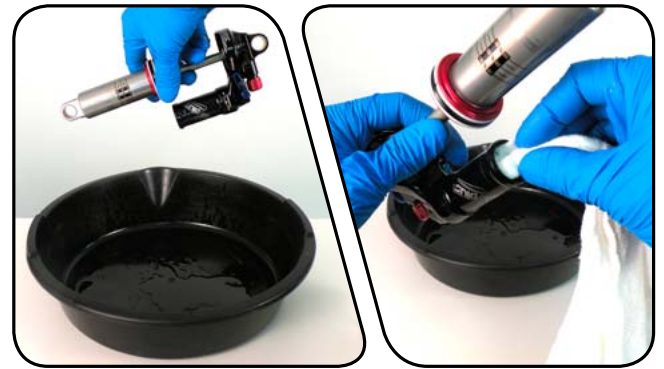


**19** Use a T10 TORX® to reinstall the bleed screw into the IFP and tighten until the IFP begins to spin.

The bleed screw should be submerged in oil.



**20** Remove the shock from the vise. Pour the remaining fluid out of the reservoir, then wipe out the reservoir with a clean rag.



**21** Clamp the shaft eyelet into the vise so the shock is vertical.



- 22** Use the Schrader valve tool to install a new Schrader valve into the reservoir top cap.



- 23** Apply a small amount of grease to the reservoir cap o-ring. Push the reservoir cap into the reservoir with the flat side of the cap facing outward, until the cap is just beyond the retaining ring groove.

*Keep the reservoir cap square with the reservoir as you install it so that it doesn't bind.*



- 24** Place one end of the reservoir cap retaining ring into the retaining ring groove in the reservoir, then push around on the ring until it is seated in the groove.





**25** Thread the Monarch air fill adapter/shock pump into the reservoir top cap. Pull up on the pump until the top cap rests against the retaining ring.

Once the top cap is resting against the retaining ring, firmly pull up on the adapter to ensure that the retaining ring is seated in the groove.



**26** Use the shock pump to pressurize the damper body to 17.2 bar (250 psi).

**Once you have pressurized the shock, remove the Monarch air fill adapter from the air fill port before removing it from the shock pump. Separating the pump from the adapter first will allow all of the air to escape from the shock.**

*If you have the proper fill equipment, you may substitute air with nitrogen.*



**27** Use a Schrader valve tool to install the reservoir valve cap.



**28** Spray the damper assembly with isopropyl alcohol and wipe it with a clean rag.

## AIR CAN INSTALLATION

- 1** Install the top out bumper onto the damper body.



- 2** Spray the air can threads with isopropyl alcohol and wipe it with a clean rag.

- 3** Apply a small amount of Maxima® Maxim4 to the air can outer o-ring.

**Do not get any grease on the air can threads.**



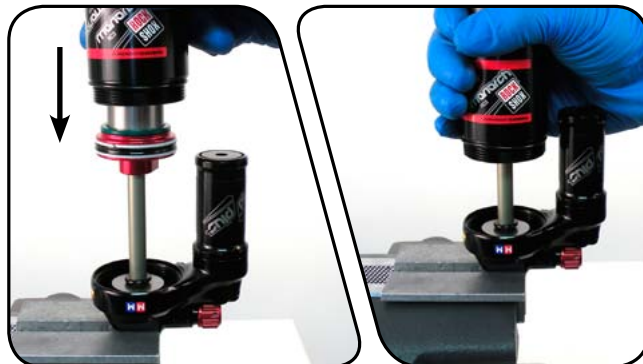
- 4** Apply a small amount of blue threadlock to the air can threads.  
**Do not get any threadlock on the o-ring; it will prevent the o-ring from sealing properly.**





**5** Apply Parker® O-Lube to the air can and the seal head/air piston seals.

**6** Position the threaded side of the air can over the damper body eyelet. Firmly press the air can down onto the seal head/air piston and damper body until the seal head/air piston is inserted into the air can.



**7** Remove the shock from the vise. Turn it over and clamp the damper body eyelet back into the vise, so the shock is vertical.

**Use aluminum vise soft jaws to protect the damper eyelet when clamped.**



**8** Pour 0.3 mL of Maxima® Maxum4 Extra 15w50 lube into the air can.

**Do not overfill the air can. Too much lube in the air can will limit the travel, cause leakage, and result in poor shock performance.**



- 9** Insert a 5 inch socket extension through the shaft eyelet, and compress the damper. Push the air can up until the threads engage, turn the air can or the eyelet- whichever is easiest- until the threads engage. Continue holding the air can and twist the eyelet until the air can is snug.

**Do not allow the air can outer o-ring to get pinched between the eyelet body and the air can.**

Use isopropyl alcohol and a clean rag to clean the outside of the air can.

**High volume air cans only:** Grip the lower portion of the can. Otherwise the high volume sleeve will rotate independent of the air can preventing tightening of the air can.



- 10** Stabilize the air can with a strap wrench to prevent it from rotating. Use a torque wrench with a 13 mm crowfoot socket to tighten the air can to 16.9 N·m (150 in-lb).

*Ensure the outside of the air can is free from fluid. This allows a better grip when tightening the shock eyelet body onto the air can.*



- 11** Use a Schrader valve tool to install a new Schrader valve into the air can valve.



**12** Use a shock pump to inflate the shock to the desired air pressure, then install the valve cap.



**13** Remove the shock from the vise. Spray isopropyl alcohol on the entire shock and wipe it with a clean rag.

**14** Install the sag indicator o-ring.



**15** Reinstall the shock mounting hardware (see the [Mounting Hardware and Bushing Service](#) section).

**This concludes the service for your Monarch Plus shock.**

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