

INSTALLATION INSTRUCTIONS



CORKSPORT HPFP Rebuild Kit

*2007-2013 Mazdaspeed 3, 2006-2007 Mazdaspeed 6,
2007-2012 Mazda CX-7 Turbo*

PART #: GEN-6-998-10

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CORKSPORT HPFP Rebuild Kit


Mazdaspeed 3, Mazdaspeed 6,
Mazda CX-7 Turbo


PRODUCT DESCRIPTION:

While HPFP internals are a common must-have mod for your Mazdaspeed, the rest of your HPFP is basically ignored. We aim to remedy that with the CorkSport HPFP Rebuild Kit for Mazdaspeed 3, Mazdaspeed 6, and Mazda CX-7 Turbo. Included in the kit is a brand new E85 safe O-ring or X-ring for every seal in the HPFP along with replacement stainless steel hardware to get rid of those annoying Torx headed screws. We even include stainless filter baskets to replace your OEM plastic filter baskets and a Torx bit to help with disassembly!


Please let us know your feedback of the by submitting a review at: <https://corksport.com/mazdaspeed-e85-safe-hpfp-o-ring-rebuild-kit.html>

PRE-INSTALLATION NOTES:

 **Make sure your vehicle is completely cooled down prior to starting installation. If you are going to work on you car within an hour or two of having driven it, use a fan to cool off the car.**

 **Use extreme caution while releasing fuel under pressure. Ensure that your work space is well ventilated and that there are no open sparks or flame sources. Have a fire extinguisher on hand for emergencies.**

 **During the HPFP rebuild process, cleanliness is of the utmost importance. Debris inside of the pump may cause pump failure resulting in engine damage.**

 **These instructions were written for reference only and the use of a factory service manual is recommended.**

MATERIALS & TIME:

GENERAL INFO:



Time Est:
3hr



Difficulty:
5/5



CEL:
No



Warranty:
2-Year

TOOLING LIST:

- 10mm Wrench
- 12mm Wrench
- 13mm Wrench
- 17mm Wrench
- 19mm Wrench
- 32mm or Adjustable Wrench
- 9mm Socket
- 10mm Socket
- 12mm Socket
- 13mm Socket
- Deep 18mm Socket
- E8 Reverse Torx Socket
- 1/4" Socket
- 4mm Allen Wrench or Socket
- 5mm Allen Wrench or Socket
- 1/4" or 3/8" drive Ratchet
- Tweezers
- Pick Tool
- Needle Nose Pliers
- Flathead Screwdriver
- Microfiber Towel(s)
- Bench Vise
- Clean Motor Oil
- Brake Cleaner
- Q-Tips

PARTS LIST:

- One (1) CorkSport HPFP Housing O-ring
- One (1) CorkSport Piston Housing Seal Screw O-ring
- One (1) CorkSport Piston X-Ring
- One (1) CorkSport External Spill Valve O-ring
- One (1) CorkSport Internal Spill Valve O-ring
- One (1) CorkSport Fuel Feed/Return O-ring
- One (1) CorkSport Mechanical Damper O-ring
- Two (2) CorkSport Stainless Steel Fuel Feed & PRV Filters
- Four (4) Stainless Steel M5x14mm Socket Cap Screws
- Three (3) Stainless Steel M6x55mm Socket Cap Screws
- One (1) T25 Security Torx Bit
- One (1) #12 Screw

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Check out the CorkSport HPFP Rebuild Kit install video for more information on the install. Search "CorkSport HPFP Rebuild" on the CorkSport YouTube Channel.

DETAILED INSTRUCTIONS:

1. High Pressure Fuel Pump Disassembly

NOTE

These instructions do not cover removal of the HPFP itself. Please follow CorkSport HPFP Internals Install Instructions for information on pump removal at this link: <https://corksport.com/support/instructions/Gen-6-999-WEB.pdf>

- a) Begin by setting up your HPFP in a vise as shown in **Figure 1a**. We use a towel in the vise to prevent damage to our HPFP housing and to catch any fuel spills.
- b) Use a deep 18mm socket to remove the HPFP internals and seal screw from the HPFP housing. The internals/seal screw is shown with **red arrows** in **Figure 1a** and shown removed in **Figure 1b**.



Figure 1a

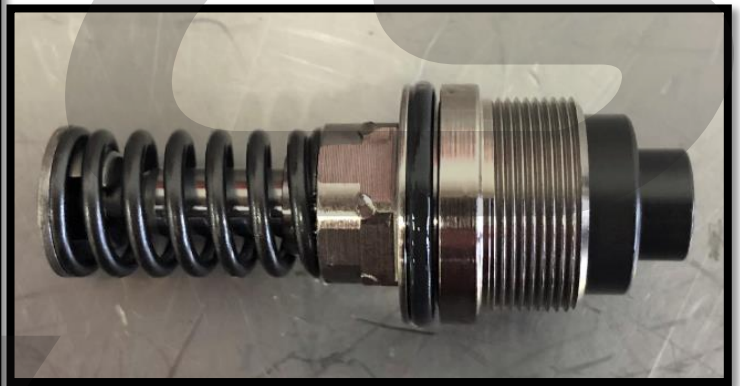


Figure 1b

- c) Then setup your HPFP in a vise as shown in **Figure 1c**.
- d) Use an adjustable wrench or 32mm open end wrench to remove the spill valve assembly. Shown with **red arrows** in **Figure 1c** and removed in **Figure 1d**.



Figure 1c

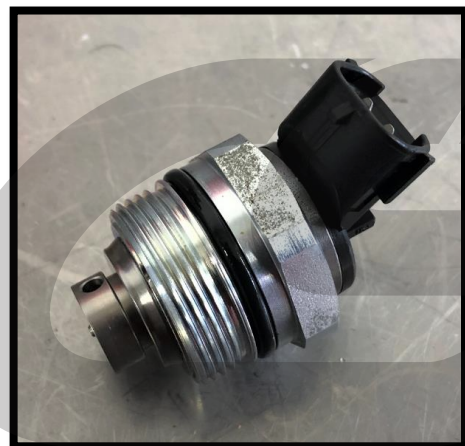


Figure 1d

DETAILED INSTRUCTIONS:**1. High Pressure Fuel Pump Disassembly (continued)**

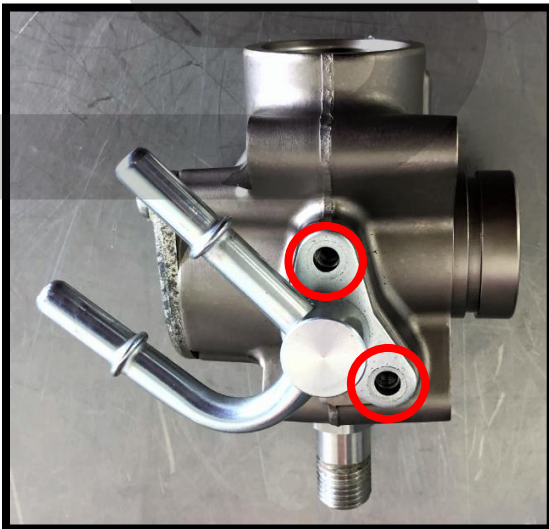
- e) Next remove the three spill valve components inside the HPFP housing. These are easy to lose so we recommend removing them and setting them aside in a safe place for later reinstallation. Shown removed in **Figure 1e**.

**Figure 1e**

- f) Next remove the two T25 security Torx from the fuel feed/return connections. Use the supplied T25 security Torx bit in a 1/4" socket to remove the screws. Locations shown **circled in red** in **Figure 1f**.

! These security Torx can be very difficult to remove. Ensure the supplied bit is fully seated in the Torx before attempting removal. If your screw strips, we recommend grinding a groove in the head of the Torx bolts and using a large flathead screwdriver to remove.

- g) Then remove the fuel feed/return connections from the HPFP housing. Shown removed in **Figure 1g**.

**Figure 1f****Figure 1g**

DETAILED INSTRUCTIONS:**1. High Pressure Fuel Pump Disassembly (continued)**

- h) Next remove the two T25 security Torx from the mechanical damper. Use the supplied T25 security Torx bit in a 1/4" socket to remove the screws. Locations shown circled in red in Figure 1h.



These security Torx can be very difficult to remove. Ensure the supplied bit is fully seated in the Torx before attempting removal. If your screw strips, we recommend grinding a groove in the head of the Torx bolts and using a large flathead screwdriver to remove.

- i) Finally, remove the mechanical damper from the HPFP housing. Set it aside along with the four internal parts of the mechanical damper located in the HPFP housing. All shown removed in Figure 1i.

**Figure 1h****Figure 1i**

DETAILED INSTRUCTIONS:

2. HPFP Housing Cleaning & O-Ring Installation

- a) Remove the OEM HPFP housing O-ring from the outside of the HPFP. Use a pick tool or tweezers to remove this O-ring from the HPFP. Shown with **red arrows** in **Figure 2a**.
- b) The HPFP housing is now stripped down and ready for cleaning. We recommend using brake cleaner and q-tips to remove all the old fuel debris and discoloration. Clean all portions of the HPFP housing carefully to prevent any damage and to ensure you get the housing as clean as you can. **Figure 2b** shows an example of a dirty and brand new pump component for reference on why cleaning is important.
- c) Once satisfied with your cleaning job, locate the CorkSport HPFP Housing O-ring. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with **red arrows** in **Figure 2a**.

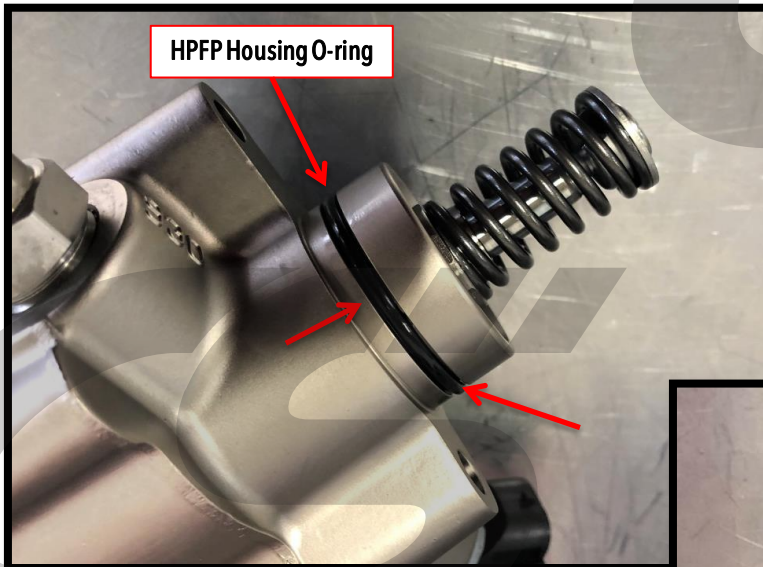


Figure 2a

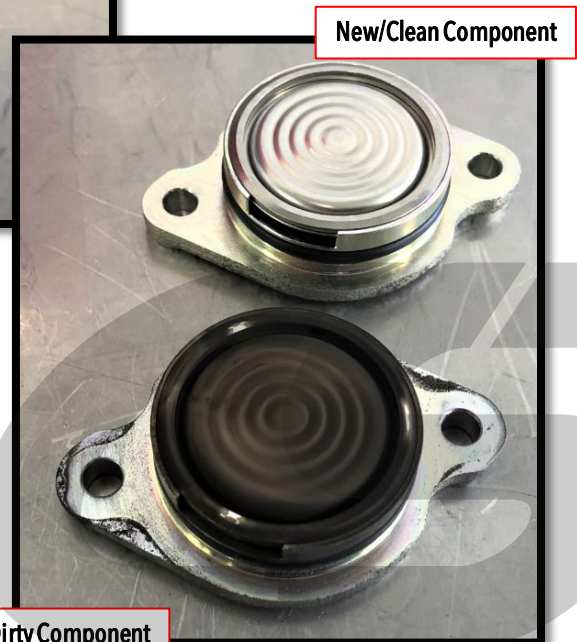


Figure 2b

DETAILED INSTRUCTIONS:

3. Fuel Feed/Return Fitting Cleaning & O-Ring Installation

- a) Remove the OEM fuel feed/return line O-ring from the outside of the feed/return line fitting. Use a pick tool or tweezers to remove this O-ring from the part. Shown with **red arrows** in **Figure 3a**.

! The steps to remove and install the new filter can be difficult. Carefully read through the following steps in Section 3 before beginning the installation process. Damage can occur to the fuel feed/return line fitting if care is not taken during installation.

- b) The OEM filter can be seen in the end of the fuel feed/return line fitting. It is the small brass ring that is visible. Shown in **Figure 3a** with the **blue arrow**.
- c) To remove the OEM filter, thread the supplied #12 screw into the filter 2-3 turns. This will cause the screw to bite into the brass portion of the filter basket. Screw shown in **Figure 3b**.
- d) Using pliers/vice grips on the screw and a slight rocking back and forth motion, pull the OEM filter free from the fuel feed/return component. Use caution to prevent damage to the fuel feed/return fitting. You can also secure the screw in a vise to make it easier to pull the filter free. **Figure 3c** on the next page shows the OEM filter removed.



Figure 3a



Figure 3b

DETAILED INSTRUCTIONS:

3. Fuel Feed/Return Fitting Cleaning & O-Ring Installation (continued)



Figure 3c

- e) Sometimes the filter will come out and leave behind the brass ring in the fuel feed/return fitting. This is shown in **Figure 3d**. If yours came out in one piece, skip to **Step 3h**.
- f) If this happens to you, use insert one jaw of some small needle nose pliers into the brass ring as shown in **Figure 3e**. The pliers only need to be inserted $\sim 1/8"$.
- g) Then pry in the direction shown with **blue arrow** in **Figure 3e** and the brass ring should pop free from the feed/return fitting.

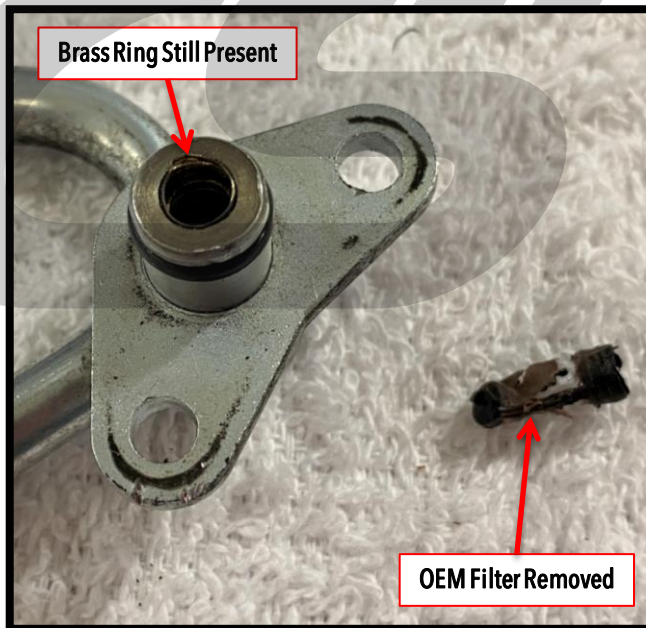


Figure 3d



Figure 3e

DETAILED INSTRUCTIONS:

3. Fuel Feed/Return Fitting Cleaning & O-Ring Installation (continued)

- h) The fuel feed/return fitting is now stripped down and ready for cleaning. We recommend using brake cleaner and q-tips to remove all the old fuel debris and discoloration. Clean all portions of the fuel feed/return fitting carefully to prevent any damage and to ensure you get the fitting as clean as you can. **Figure 2b** on page 7 shows an example of a dirty and brand new pump component for reference on why cleaning is important.

⚠ If your OEM filter came out in multiple pieces, make sure there are no pieces left inside the fitting after cleaning.

- i) Once satisfied with your cleaning job, locate the CorkSport Fuel Filter. It installs with the stainless portion inside the fuel feed/return fitting as shown in **Figure 3f**.
- j) Then, using the plastic end of a screwdriver, gently tap the brass ring of the CorkSport Fuel Filter until it sits flush with the end of the fuel feed/return fitting. This is shown in **Figure 3g**.
- k) Next, locate the CorkSport Fuel Feed/Return Fitting O-ring. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with **red arrows** in **Figure 3h**.

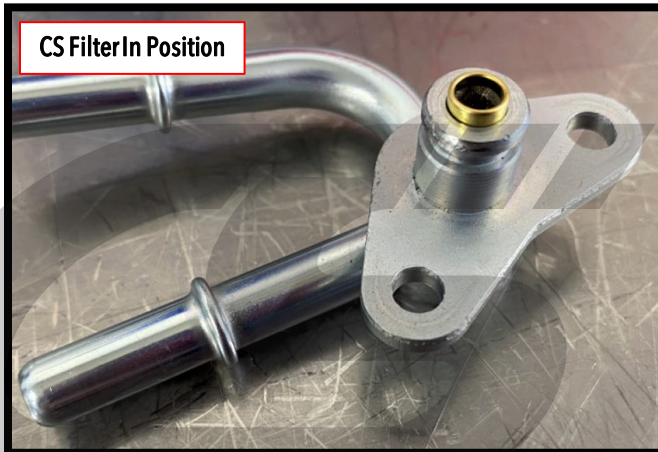


Figure 3f

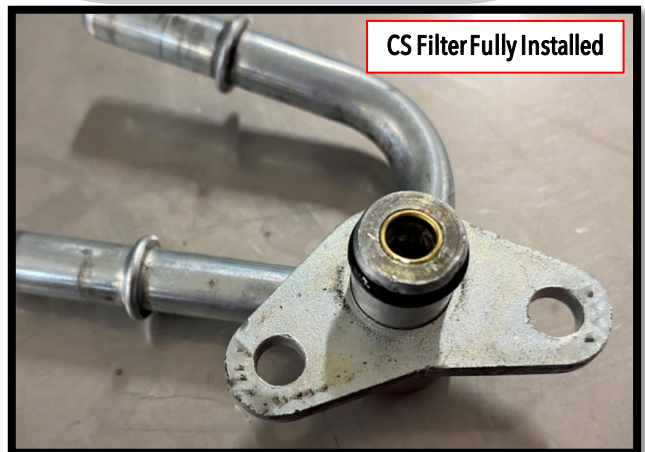


Figure 3g



Figure 3h

DETAILED INSTRUCTIONS:

3. Fuel Feed/Return Fitting Cleaning & O-Ring Installation (continued)

- l) Finally, reattach the fuel feed/return fitting onto your HPFP housing. It will only fit in one orientation. Secure with two of the supplied M5 bolts and a 4mm Allen wrench/socket. Tighten until snug (~5ft-lbs). Shown completed in **Figure 3i**.



Figure 3i

4. Mechanical Damper Cleaning & O-Ring Installation

- a) Remove the OEM mechanical damper O-ring from the outside of the mechanical damper. Use a pick tool or tweezers to remove this O-ring from the part. Shown with **red arrows** in **Figure 4a**.
- b) Separate the three portions of the mechanical damper top by inserting a flathead screwdriver and prying gently in the location shown with a **blue circle** in **Figure 4a**. Once separated, it will look like **Figure 4b**.

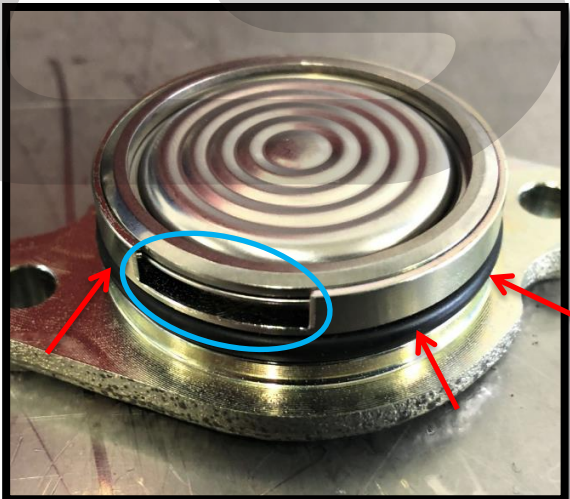


Figure 4a



Figure 4b

DETAILED INSTRUCTIONS:

4. Mechanical Damper Cleaning & O-Ring Installation (continued)

- c) The mechanical damper is now stripped down and ready for cleaning. We recommend using brake cleaner and q-tips to remove all the old fuel debris and discoloration. Clean all portions of the mechanical damper carefully to prevent any damage and to ensure you get the damper as clean as you can. **Figure 2b** on page 7 shows an example of a dirty and brand new pump component for reference on why cleaning is important.
- d) Once satisfied with your cleaning job, reassemble the mechanical damper top. Insert the flat metal disk into the top cap of the damper first, and then the ring to retain the disk. Push around the edges of the ring until it pops into place. **Figure 4b** on the previous page has numbers and an explanation of the order of assembly.
- e) The damper components removed in Step 1h can now be installed back into the HPFP housing in the order explained below and shown in **Figure 4c**.
1. First is the stepped washer. The vertical "lip" of the washer faces away from the pump. It is oriented correctly in **Figure 4c**.
 2. Second is the flat disk.
 3. Third is the metal ring.
 4. Fourth is the wave spring.

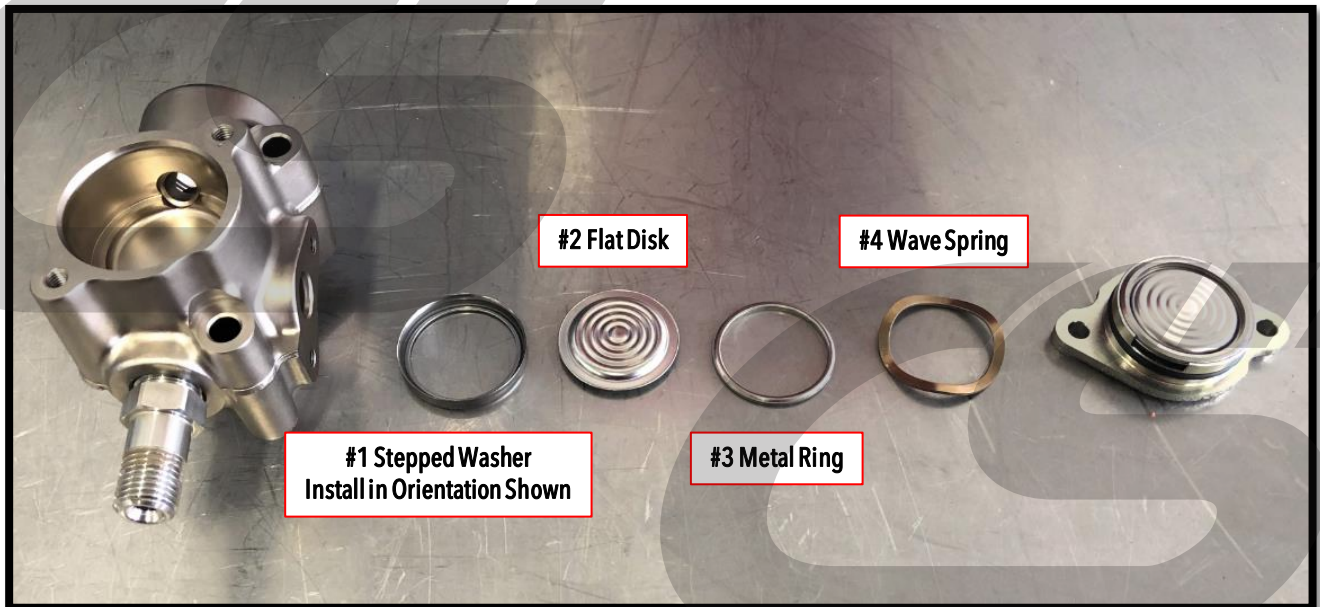
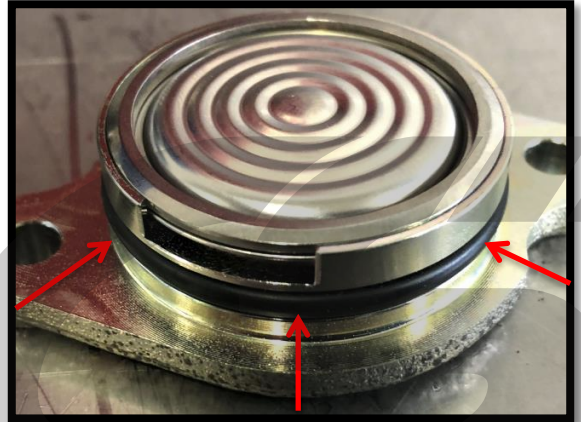


Figure 4c

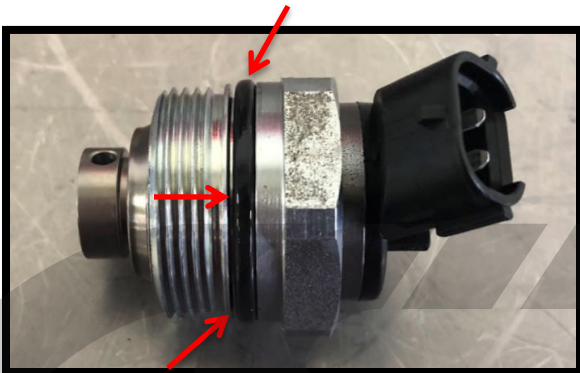
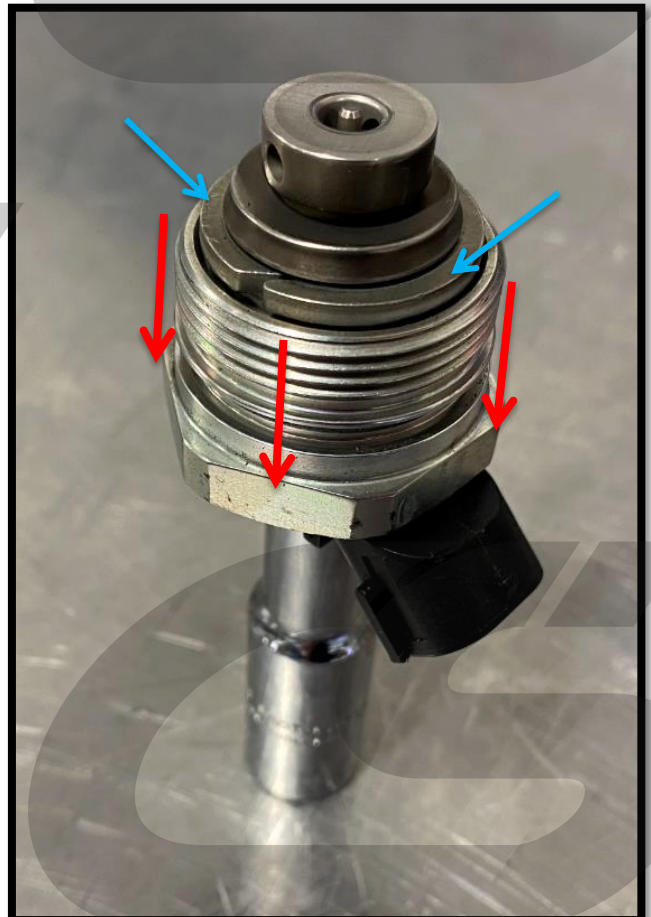
DETAILED INSTRUCTIONS:**4. Mechanical Damper Cleaning & O-Ring Installation (continued)**

- f) Next, locate the CorkSport Mechanical Damper O-ring. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with red arrows in **Figure 4d**.
- g) The assembled mechanical damper top can then be positioned into the HPFP housing. The orientation of the section with the gap must match the orientation shown in **Figure 4e**.
- h) Once positioned, secure with the two remaining supplied M5 bolts. Tighten until snug (~5ft-lbs) using a 4mm Allen wrench/socket. Shown completed in **Figure 4f**.

**Figure 4d****Figure 4e****Figure 4f**

DETAILED INSTRUCTIONS:**5. Spill Valve Cleaning & O-Ring Installation**

- a) Remove the OEM External Spill Valve O-ring from the outside of the spill valve. Use a pick tool or tweezers to remove this O-ring from the spill valve. Shown with **red arrows** in **Figure 5a**.
- b) Next, set a 9mm socket upright on a solid surface.
- c) Position the end of the spill valve onto the socket as shown in **Figure 5b** (this is shown inverted for clarity). **Figure 5c** shows what your setup should look like.
- d) Push down on the outer "nut" of the spill valve in the direction shown with **red arrow** in **Figure 5c** until the center portion moves upwards.
- e) You should then be able to remove the two retainers shown with **blue arrows** in **Figure 5c**.

**Figure 5a****Figure 5b****Figure 5c**

DETAILED INSTRUCTIONS:

5. Spill Valve Cleaning & O-Ring Installation (continued)

- f) With the two retainers removed, push the center of the spill valve free of the outer "nut" in the direction shown with **red arrow** in **Figure 5d**.
- g) Once separated, you spill valve will look like **Figure 5e**.
- h) Remove the OEM Internal Spill Valve O-ring from the spill valve internals. Use a pick tool or tweezers to remove this O-ring from the spill valve. Shown with **red arrows** in **Figure 5e**.

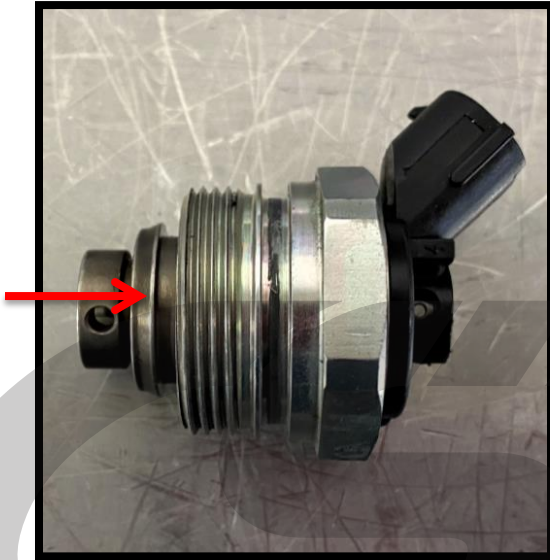


Figure 5d

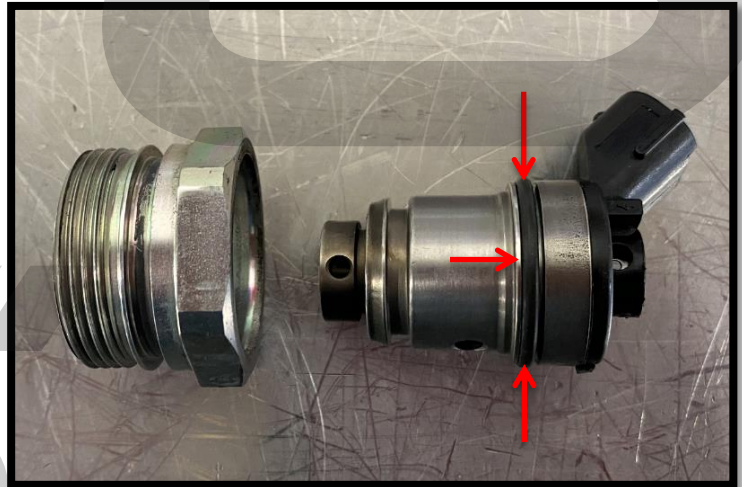
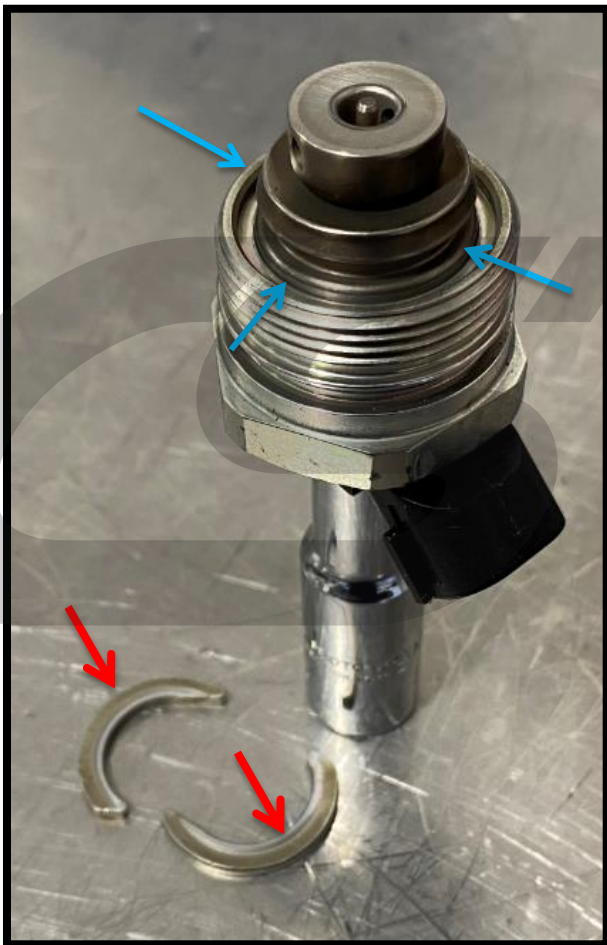
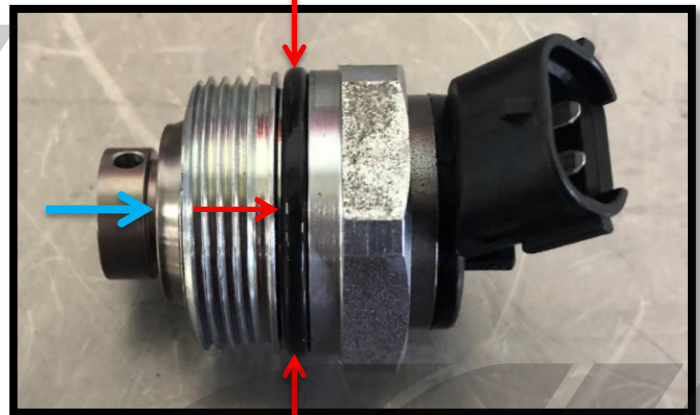


Figure 5e

- i) The spill valve is now stripped down and ready for cleaning. We recommend using brake cleaner and q-tips to remove all the old fuel debris and discoloration. **Avoid the plastic connector when cleaning to prevent chemical damage to this plug.** Clean all metal portions of the spill valve carefully to prevent any damage and to ensure you get the spill valve as clean as you can. **Figure 2b** on page 7 shows an example of a dirty and brand new pump component for reference on why cleaning is important.
- j) Next, locate the **CorkSport Internal Spill Valve O-ring**. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with **red arrows** in **Figure 5e**.

DETAILED INSTRUCTIONS:**5. Spill Valve Cleaning & O-Ring Installation (continued)**

- k) With the internal O-ring installed, the outer "nut" can be reinstalled onto the spill valve. Use the same 9mm socket setup as before to push the outer nut over the new O-ring.
- l) Push the outer "nut" on until there is enough gap to reinstall the keepers, then reinstall the keepers. Keepers shown with **red arrows** in **Figure 5f**. Gap where they are installed shown with **blue arrows** in **Figure 5f**.
- m) Push the center of the spill valve the opposite direction to secure the keepers in place. They may still move around/rotate, but will stay put once the spill valve is installed. For reference, direction to push is shown with **blue arrow** in **Figure 5g**.
- n) Next, locate the **CorkSport External Spill Valve O-ring**. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with **red arrows** in **Figure 5g**.

**Figure 5f****Figure 5g**

DETAILED INSTRUCTIONS:

5. Spill Valve Cleaning & O-Ring Installation (continued)

- o) The spill valve components removed in Step 1e can then be reinstalled in the HPFP housing. The order and orientation is explained below and shown in **Figure 5h** and **Figure 5i**.
1. First is the metal housing with the five holes. Install in the orientation shown in **Figure 5h** and **5i**.
 2. Second is the spring which sits inside the center of the housing with five holes.
 3. Third is the tappet/follower. Install it so it covers the spring and is captive in the metal housing. Correct orientation shown in **Figure 5i**.

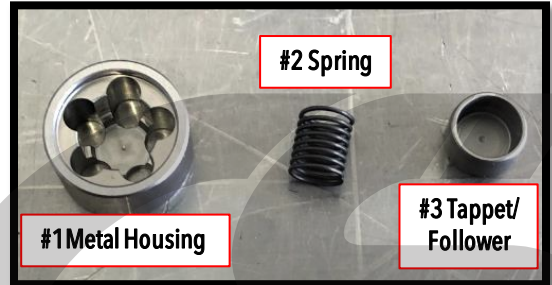


Figure 5h

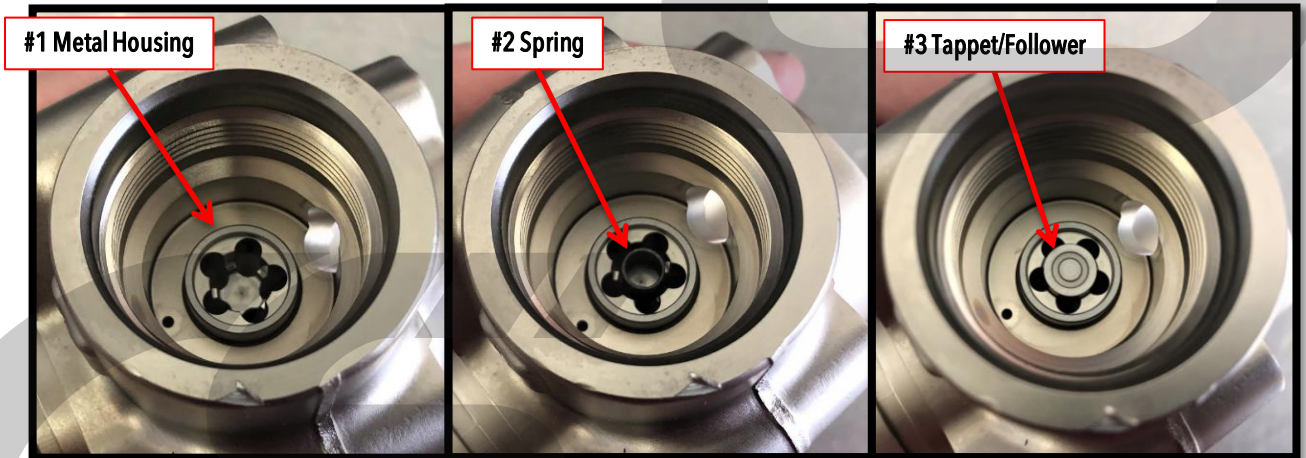


Figure 5i

- p) The spill valve can then be installed into the HPFP housing. Hand tighten, then orient the spill valve electrical plug as shown in **Figure 5j**. (The plug should face away from the mechanical damper)
- q) Finally, tighten the spill valve until snug using a 32mm open end wrench or adjustable wrench. You should still be able to rotate the electrical plug if needed with a little bit of effort.



Figure 5j

DETAILED INSTRUCTIONS:

6. HPFP Internals Cleaning & O-Ring Installation

- a) Remove the OEM Piston Housing Seal Screw O-ring. Use a pick tool or tweezers to remove this O-ring from the seal screw. Shown with **red arrows** in **Figure 6a**.



The next step will vary depending on what HPFP internals you have installed in your HPFP. For **OEM HPFP internals**, follow **Step 6b**. For **CorkSport HPFP Internals**, follow **Steps 6c-6e**. For **AutoTech or similar HPFP internals**, follow **Step 6f-6h**.

- b) **OEM HPFP Internals** : Your piston sleeve should slide off the top of your piston with relative ease by pulling in the direction shown in **Figure 6b** with **red arrow**. Then, your HPFP piston can be removed from your seal screw by pulling in the direction of the **blue arrow** in **Figure 6b**.

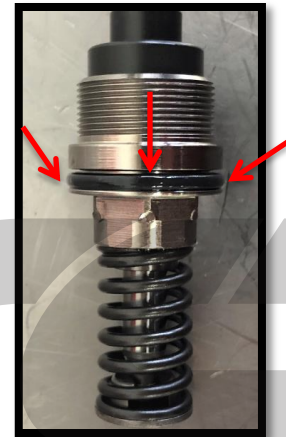


Figure 6a

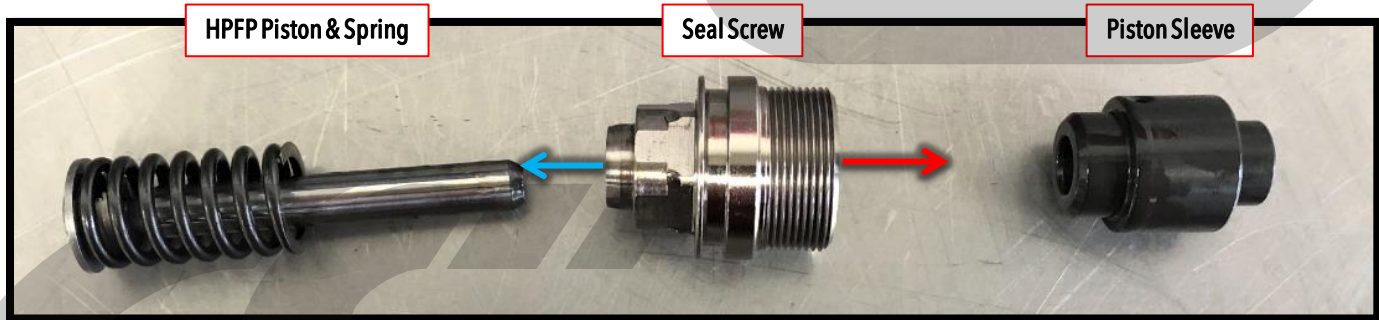


Figure 6b

- c) **CorkSport HPFP Internals** : Your piston sleeve should slide off the top of your piston with relative ease by pulling in the direction shown in **Figure 6c** with **red arrow**. Then, push the piston in the direction shown with the **blue arrow** in **Figure 6c**. This allows access to the tappet in the next step.



Figure 6c

DETAILED INSTRUCTIONS:

6. HPFP Internals Cleaning & O-Ring Installation(continued)

- d) **CorkSport HPFP Internals** : Next you will need to use a flathead screwdriver to carefully pry the tappet upwards on the end of the CS HPFP piston. **Figure 6d** shows a tappet fully installed (left) vs. released (right). **Figure 6e** shows where to pry to release your tappet.

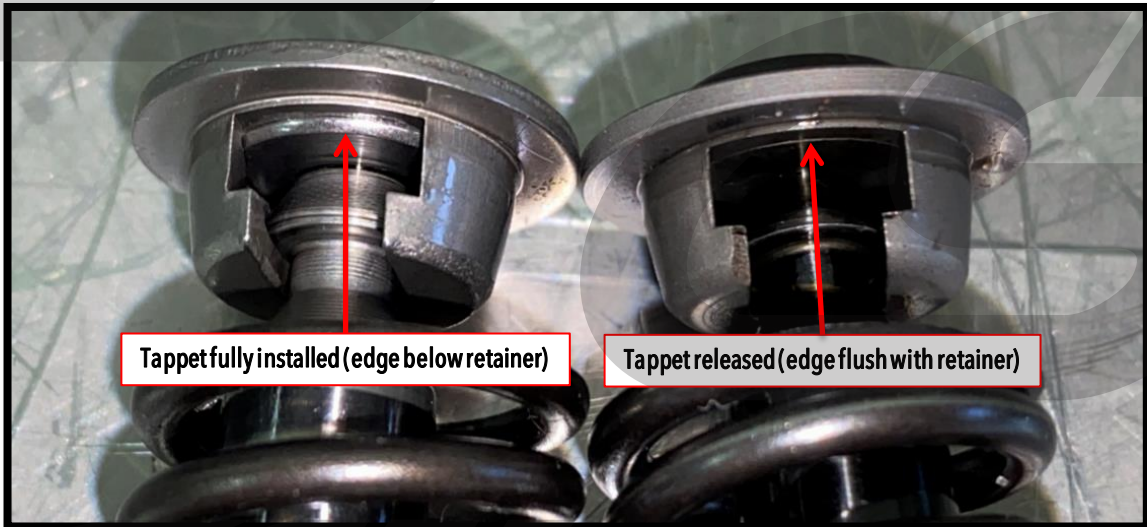


Figure 6d

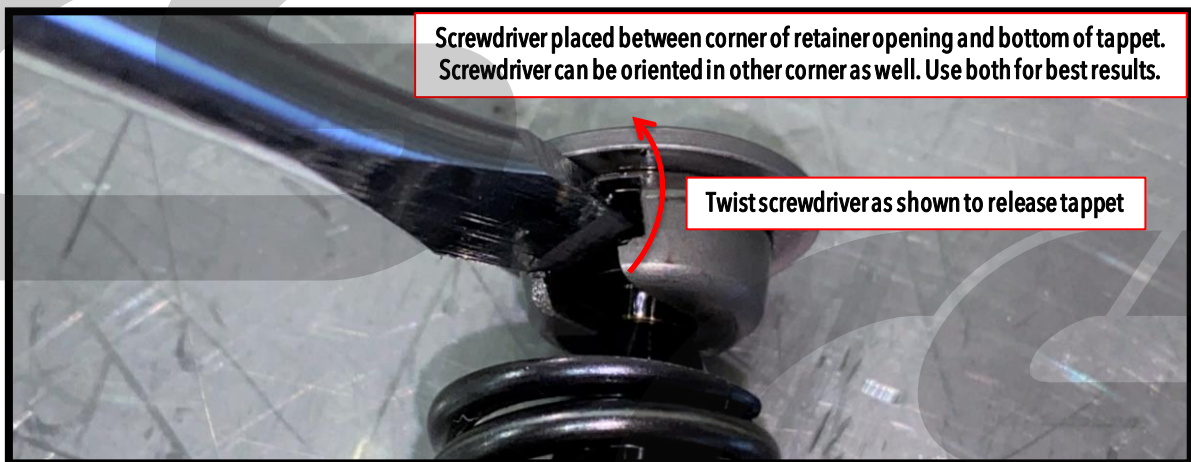


Figure 6e

NOTE Be careful when prying on the tappet/retainer to prevent damage to either components. Watch the CorkSport HPFP Rebuild Kit install video for more clarity.

DETAILED INSTRUCTIONS:

6. HPFP Internals Cleaning & O-Ring Installation(continued)

- e) **CorkSport HPFP Internals** : Once the tappet has been released, you can push it off the end of the piston. Push in the direction shown in **Figure 6f** with the **red arrow**. Then remove the piston from the seal screw by pushing it in the direction shown in **Figure 6f** with the **blue arrow**.

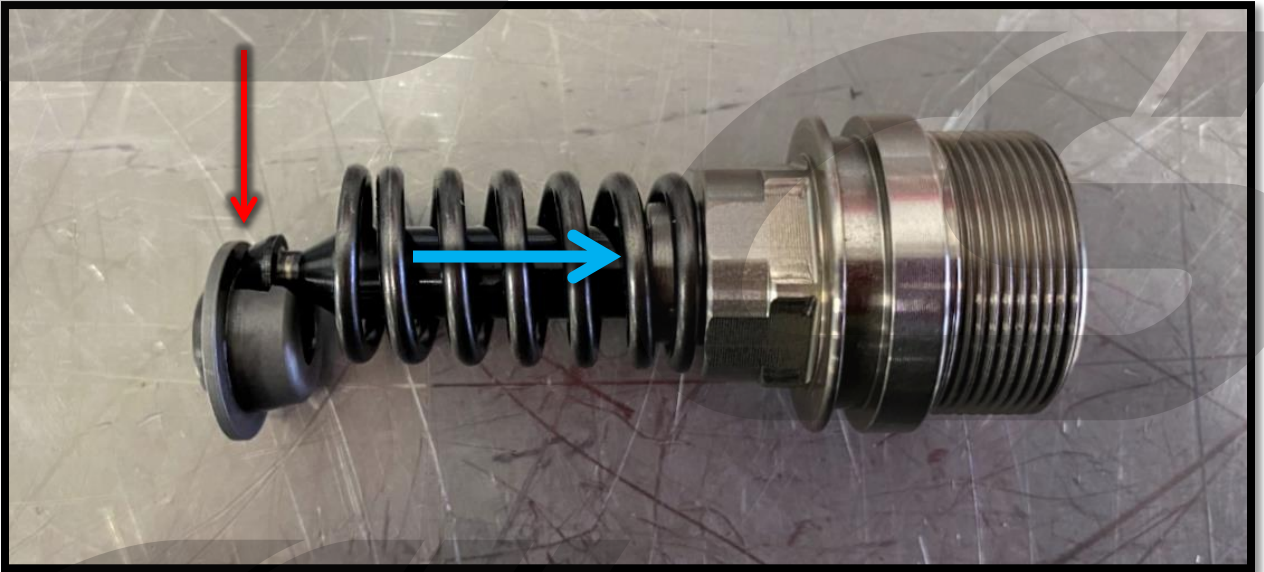


Figure 6f

NOTE We did not have Autotech HPFP internals available at the time of writing these instructions so the instructions are not a perfect representation of the full process. See Autotech documentation for further details.

- f) **Autotech (or similar) HPFP Internals** : Your piston sleeve should slide off the top of your piston with relative ease by pulling in the direction shown in **Figure 6f** with **red arrow**.
- g) **Autotech (or similar) HPFP Internals** : Then compress the spring on your HPFP and the silver retainer to release the "keepers" from the end of the piston. Remove these keepers and then the retainer. Keepers shown with **blue arrow** in **Figure 6f**.
- h) **Autotech (or similar) HPFP Internals** : Once complete, the piston can be removed from the seal screw by pushing in the direction of the **red arrow** in **Figure 6f**.

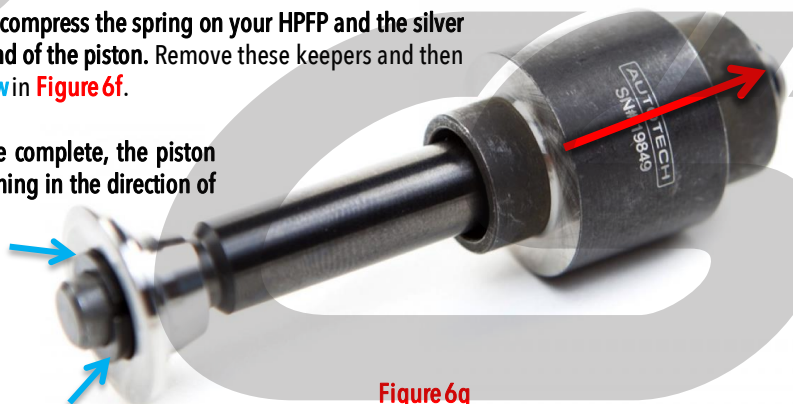


Figure 6g

DETAILED INSTRUCTIONS:**6. HPFP Internals Cleaning & O-Ring Installation(continued)**

- i) Then, locate the OEM Piston X-ring on the inside of the seal screw. Use a pick tool or tweezers to remove this X-ring from the seal screw. Shown with **red arrows** in **Figure 6f**.
- j) The HPFP internals are now stripped down and ready for cleaning. We recommend using brake cleaner and q-tips to remove all the old fuel debris and discoloration. Clean all portions of the HPFP internals carefully to prevent any damage and to ensure you get the internals as clean as you can. **Figure 2b** on page 7 shows an example of a dirty and brand new pump component for reference on why cleaning is important.
- k) Next, locate the **CorkSport Piston X-ring** in the inside of the seal screw. Lubricate this X-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with **red arrows** in **Figure 6h**.

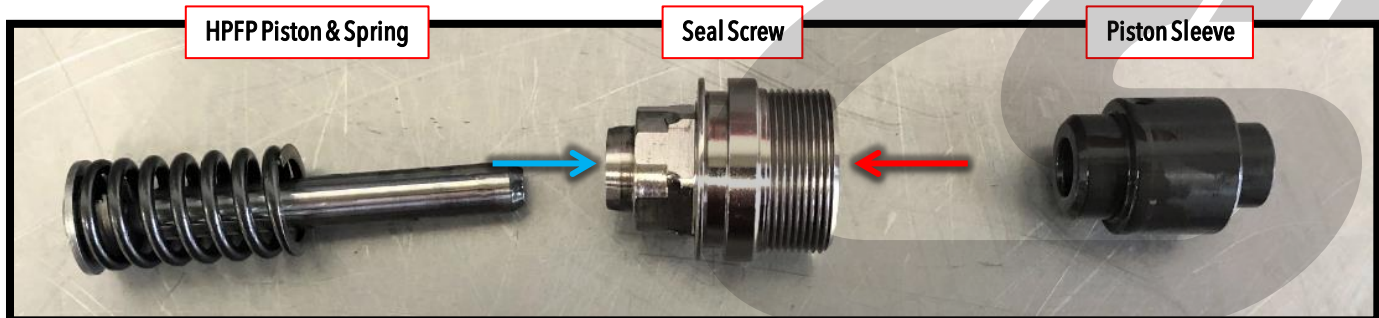
**Figure 6h**

NOTE Installation of the new X-ring can be a little difficult. We recommend using tweezers and/or a small pick tool. Fold the X-ring slightly, insert one side into the groove, hold it in position with your tweezers/pick, and move around the X-ring, pushing it into the groove as you go. Watch the CorkSport HPFP Rebuild Kit install video for more clarity.

NOTE The next step will vary depending on what HPFP internals you have installed in your HPFP. For **OEM HPFP internals**, follow **Step 6i**. For **CorkSport HPFP Internals**, follow **Steps 6m-6q**. For **AutoTech or similar HPFP internals**, follow **Step 6r-6u**.

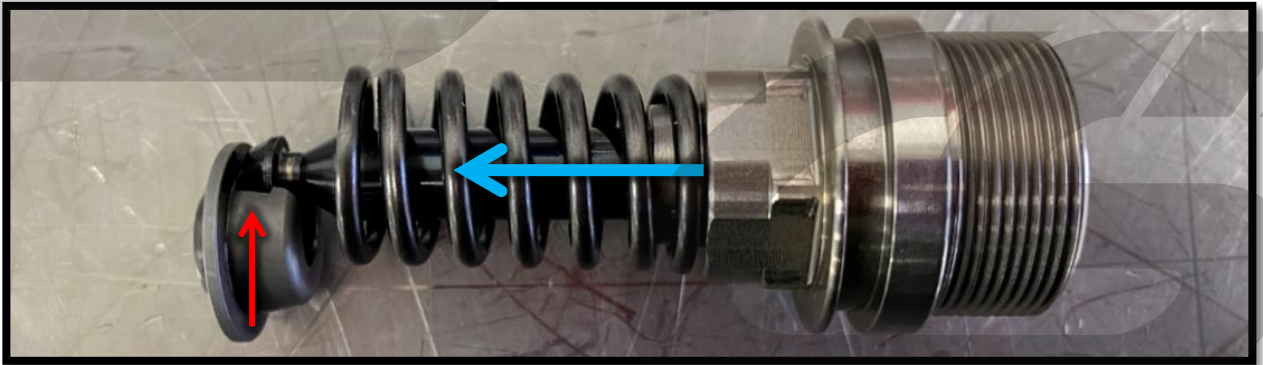
! We strongly discourage reinstalling your HPFP with the OEM internals as the OEM internals do not hold pressure correctly at WOT, especially once your car is modified.

- i) **OEM HPFP Internals** : Lubricate the piston with clean engine oil then slide your HPFP piston into the seal screw in the direction shown with the **blue arrow** in **Figure 6i**. Then, slide your piston sleeve over the top of your piston in the direction shown with the **red arrow** in **Figure 6i**. Ensure the larger end of the piston sleeve faces the seal screw.

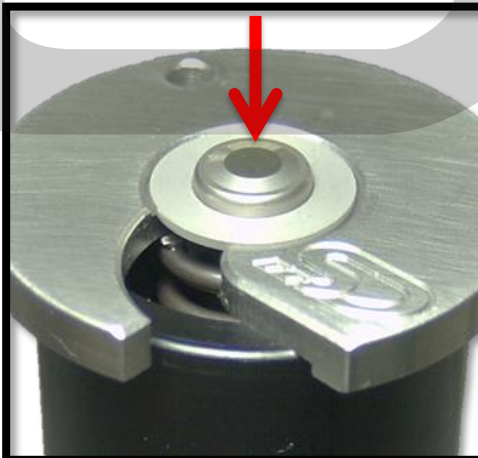
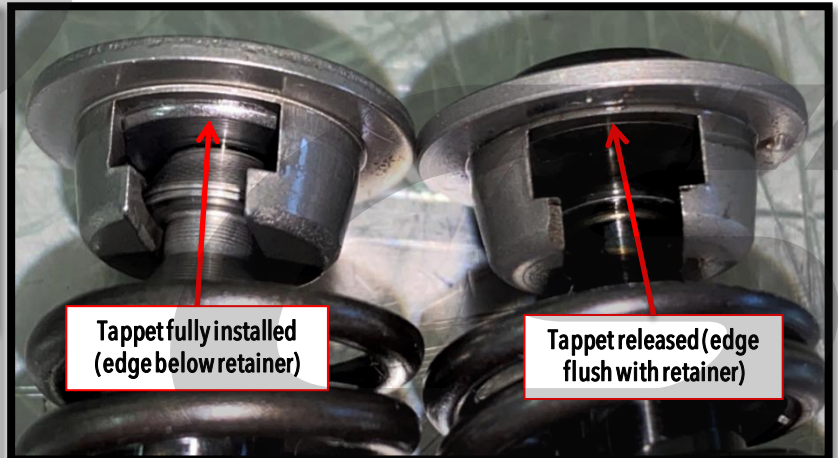
**Figure 6i**

DETAILED INSTRUCTIONS:**6. HPFP Internals Cleaning & O-Ring Installation(continued)**

- m) **CorkSport HPFP Internals** : Lubricate the CS piston with clean engine oil then slide it into the seal screw in the direction shown with the **blue arrow** in **Figure 6j**. Replace the spring, then slide the tappet back onto the end of the piston by pushing in the direction shown in **Figure 6j** with the **red arrow**.

**Figure 6j**

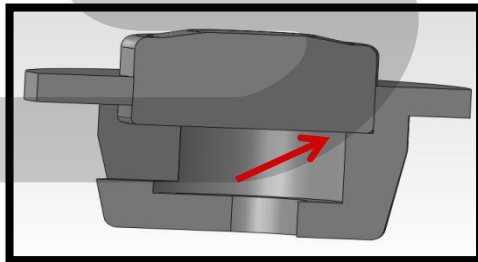
- n) **CorkSport HPFP Internals** : The tappet will now need to be re-seated using the tools that came with your CS HPFP kit. Align the tappet & retainer into the tool as shown in **Figure 6k**. Place the tool on top of the pipe that came with your CS HPFP as shown.
- o) **CorkSport HPFP Internals** : Hit the tappet with the plastic end of a screwdriver to seat it in position. Hit in the direction shown with the **red arrow** in **Figure 6k**.
- p) **CorkSport HPFP Internals** : Hit the tappet until it is fully seated and no longer can be removed from the top of the piston. **Figure 6l** shows a tappet fully installed (left) vs. released (right). **Figure 6m** on the next page shows a cutaway of a fully installed tappet for extra clarity.

**Figure 6k****Figure 6l**

DETAILED INSTRUCTIONS:

6. HPFP Internals Cleaning & O-Ring Installation(continued)

Fully Seated



NOT Fully Seated

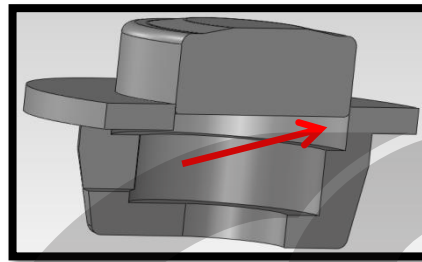


Figure 6m

- q) **CorkSport HPFP Internals** : Slide your piston sleeve over the end of your piston in the direction shown with the **red arrow** in **Figure 6n**. Ensure the larger end of the piston sleeve faces the seal screw.

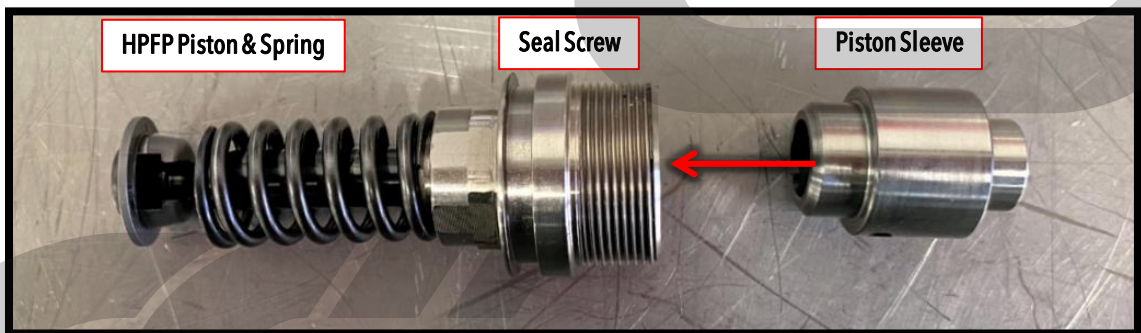


Figure 6n

- r) **Autotech (or similar) HPFP Internals** : Lubricate the AutoTech piston with clean engine oil then slide it into the seal screw in the direction shown with the **red arrow** in **Figure 6o**. Then replace the spring (not shown) onto the end of the piston.
- s) **Autotech (or similar) HPFP Internals** : Then replace the retainer on the end of the piston.
- t) **Autotech (or similar) HPFP Internals** : Next, compress the spring on your HPFP and the silver retainer to allow the "keepers" to be installed on the end of the piston. Keepers shown with **blue arrows** in **Figure 6o**.
- u) **Autotech (or similar) HPFP Internals** : The piston sleeve can then be slid onto the end of the piston in the direction shown with the **red arrow** in **Figure 6o**. Ensure the large end of the piston sleeve faces the seal screw (**Figure 6o is incorrect**)

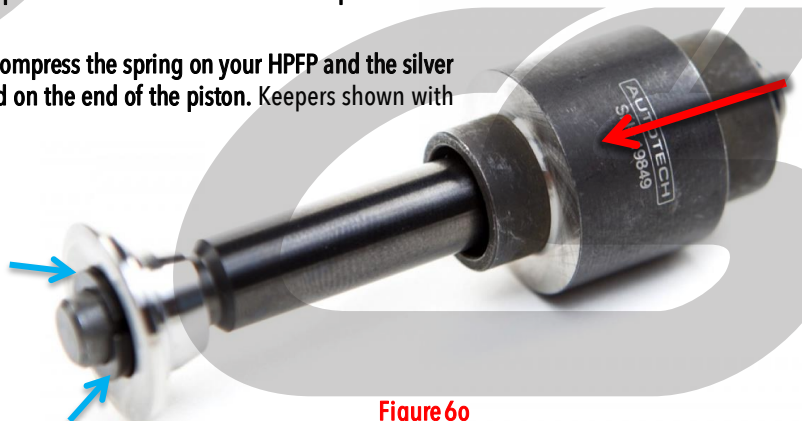


Figure 6o

DETAILED INSTRUCTIONS:

6. HPFP Internals Cleaning & O-Ring Installation(continued)

- v) Next, locate the CorkSport Seal Screw O-ring. Lubricate this O-ring with a small amount of new engine oil and install it where the OEM one was removed. Location shown with red arrows in Figure 6p.
- w) Finally the HPFP internals can be reinstalled into the HPFP housing. Hand thread the seal screw into the HPFP housing cautiously as it can be easy to cross thread. Then tighten the HPFP internals to **40ft-lbs** with a clean 18mm deep socket. Shown completed in Figure 6q.

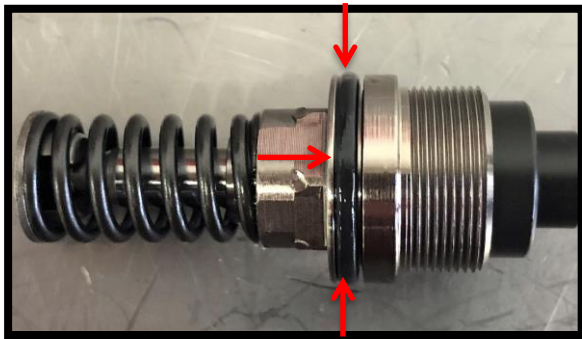


Figure 6p



Figure 6q

- x) The HPFP housing is now rebuilt and can be reinstalled on the vehicle. Use the supplied M6 bolts to secure it to the engine block. Tighten the supplied bolts with a 5mm Allen wrench/socket to **8ft-lbs**.



These instructions do not cover installation of the HPFP itself. Please follow CorkSport HPFP Internals Install Instructions for information on pump installation at this link: <https://corksport.com/support/instructions/Gen-6-999-WEB.pdf>

DETAILED INSTRUCTIONS:

7. PRV Removal & Filter Replacement

NOTE The final section covers a replacement filter in the fuel rail pressure relief valve (PRV). If your car has high mileage, a replacement PRV is a good idea. Mazda OEM part number: L3K9-13-2J0

- First, locate the pressure relief valve.** It is a brass fitting located on the end of the fuel rail on the driver's side of the engine. **Figure 7a** shows the location of the PRV and has some components labeled for your reference.
- Disconnect the fuel line attached to the PRV.** The green/yellow part slides out, then the fuel line can be pulled free from the PRV. Fuel line shown disconnected in **Figure 7a**.
- Then remove the PRV from the fuel rail using a 17mm wrench.**

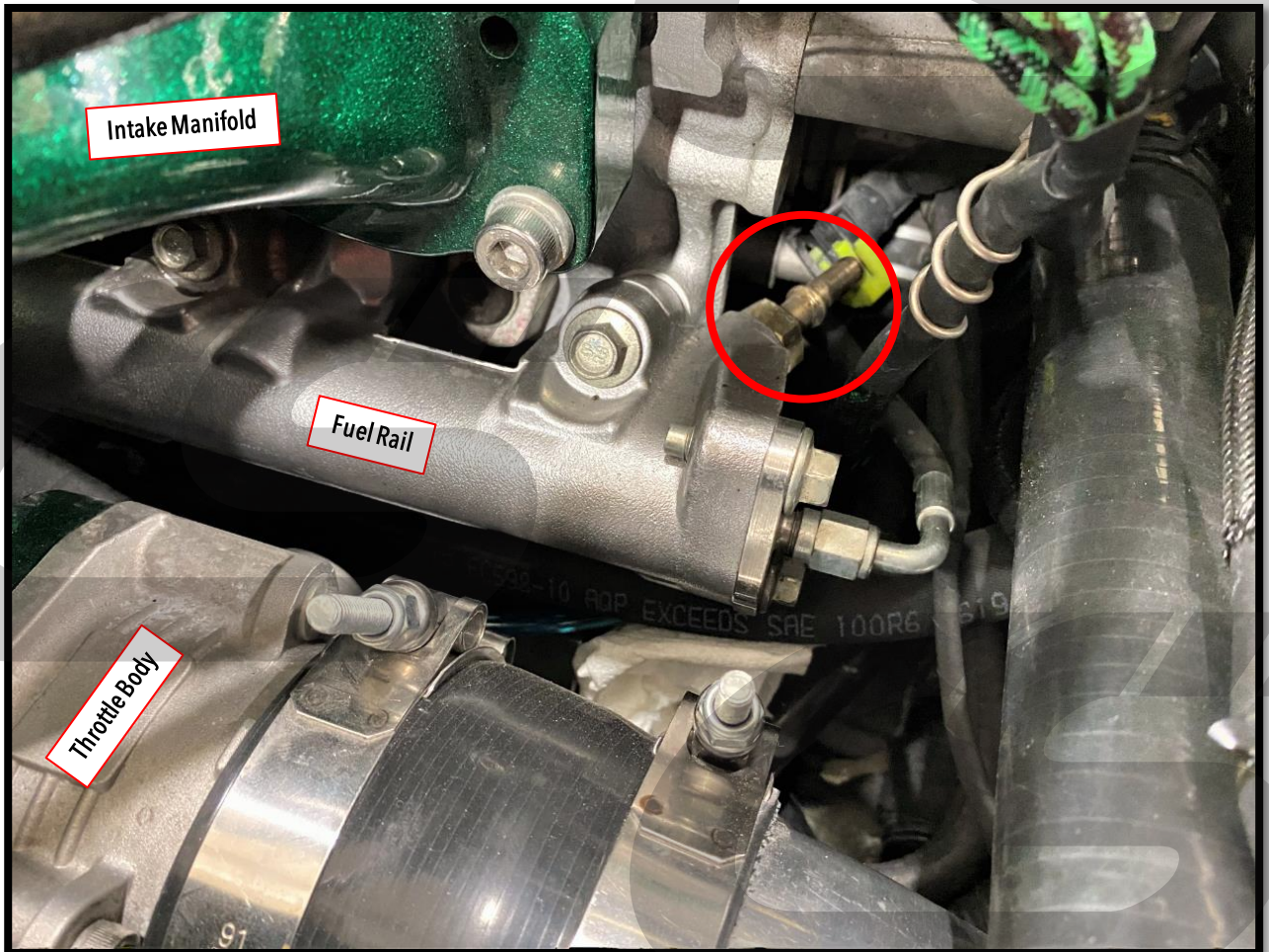
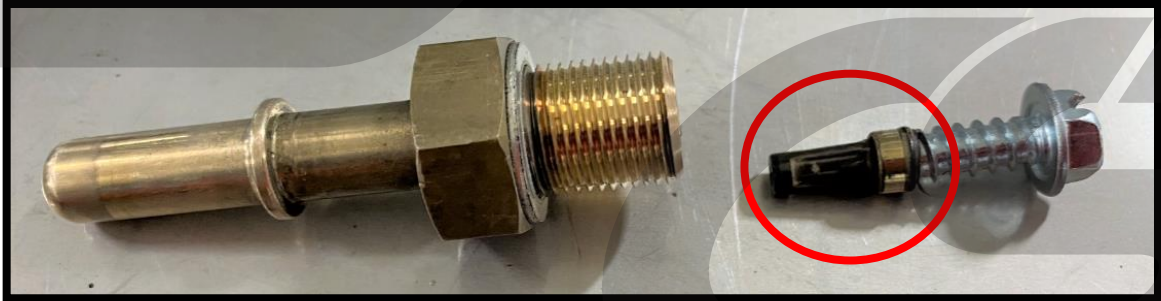


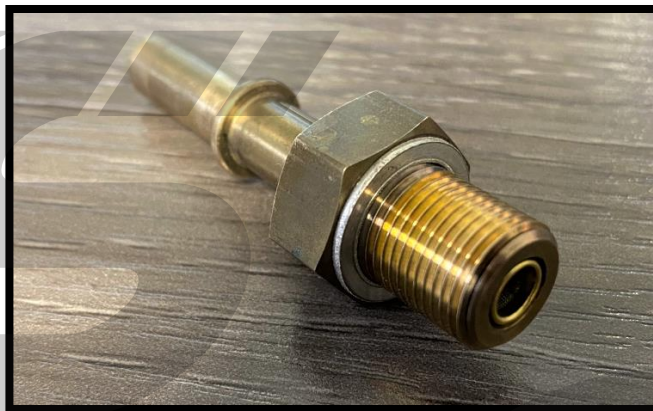
Figure 7a

DETAILED INSTRUCTIONS:**7. PRV Removal & Filter Replacement (continued)**

- d) The filter in the PRV can then be removed following the same steps that were used earlier to remove the filter from the fuel feed/return fitting. It is removed from the threaded side of the PRV. This procedure is Steps 3c-3g on pages 8-9. Filter shown removed from the PRV in **Figure 7b**.

**Figure 7b**

- e) The new CorkSport Filter can then be installed into the PRV. Insert it stainless side first, then tap it into position with the plastic end of a screwdriver. The brass ring will sit flush with the end of the PRV. Completed filter install shown in **Figure 7c**.

**Figure 7c**

- f) Reinstall the PRV into the fuel rail. Tighten the fitting to 12-17ft-lbs.
g) Reconnect the fuel line that was removed from the PRV.



This completes the installation of your CorkSport HPFP Rebuild Kit. Follow the fuel pump priming procedure in the CS HPFP install instructions and check for any leaks. Then, enjoy the clean HPFP and the ability to run E85!

WHAT'S NEXT?

CorkSport Mazdaspeed CST4 Turbocharger

Experience a boost in performance with our drop-in Mazdaspeed CST4 Turbocharger. It easily bolts in and replaces your undersized OEM turbo with NO mechanical modifications other than a HPFP upgrade. The CorkSport turbo supports a range of 250-450 horsepower in your Mazdaspeed. If your Mazdaspeed 3 or Mazdaspeed 6 turbo is worn out or is smoking, you need the CST4. Add the power without the hassle today!

FREE MAP SENSOR



CorkSport HPFP Internals

CorkSport High-Pressure Fuel Pump (HPFP) Internals for both the Mazdaspeed 3 and Mazdaspeed 6 took over 2 years of research and development to bring innovation you can count on in your Speed3 and Speed6. The CorkSport Max Flow Fuel Pump Internals have the best in market hardening surface treatments, high strength coatings, and a machined tolerance. Our Mazdaspeed HPFP Internals will give you the most performance available for your dollar. We make these fuel pumps with precision machining methods, we then treat the surface and coat it for strength, and finally machine the internals again for a perfect fit that provides your Mazdaspeed ultra-high efficiency. Real world application will allow for a greater horsepower capability, safer air/fuel ratios, and never need to worry about fuel supply in your Mazda.



CorkSport Oil Catch Can

Enhance the reliability of your engine, improve performance, and improve fuel economy with the CorkSport Oil Catch Can. By adding an oil catch can, you will increase the longevity of your engine by helping keep unclean crankcase vapors and oil out of the engine's intake. Made of billet aluminum for strength, the CorkSport Oil Catch Can includes everything you need for a complete install. Don't let your Mazda get contaminated by sediment, crankcase vapors, or unclean oil. With the CorkSport Oil Catch Can you will remove unwanted debris that would normally contaminate the intake tract. This allows for cleaner air entering the engine, lower detonation rates and increases longevity.

