Double Barrel Service Instructions
Cane Creek R&D

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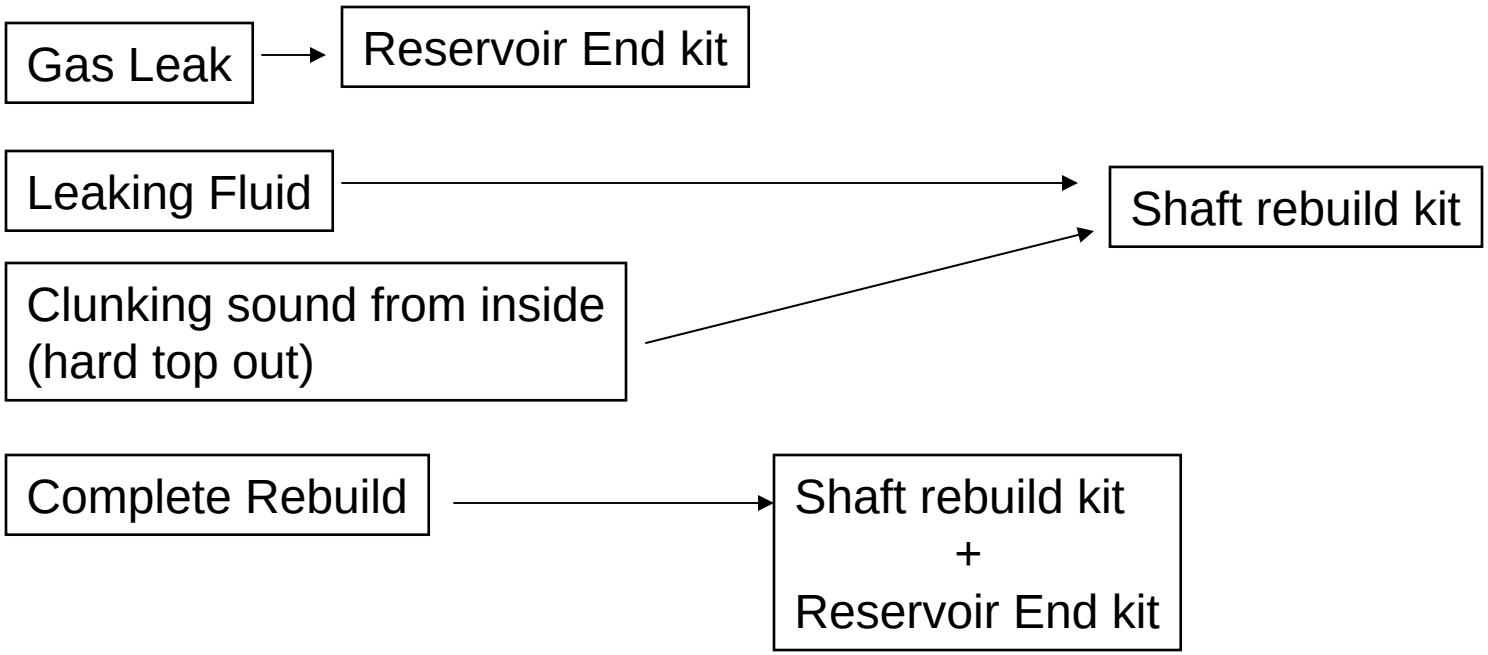
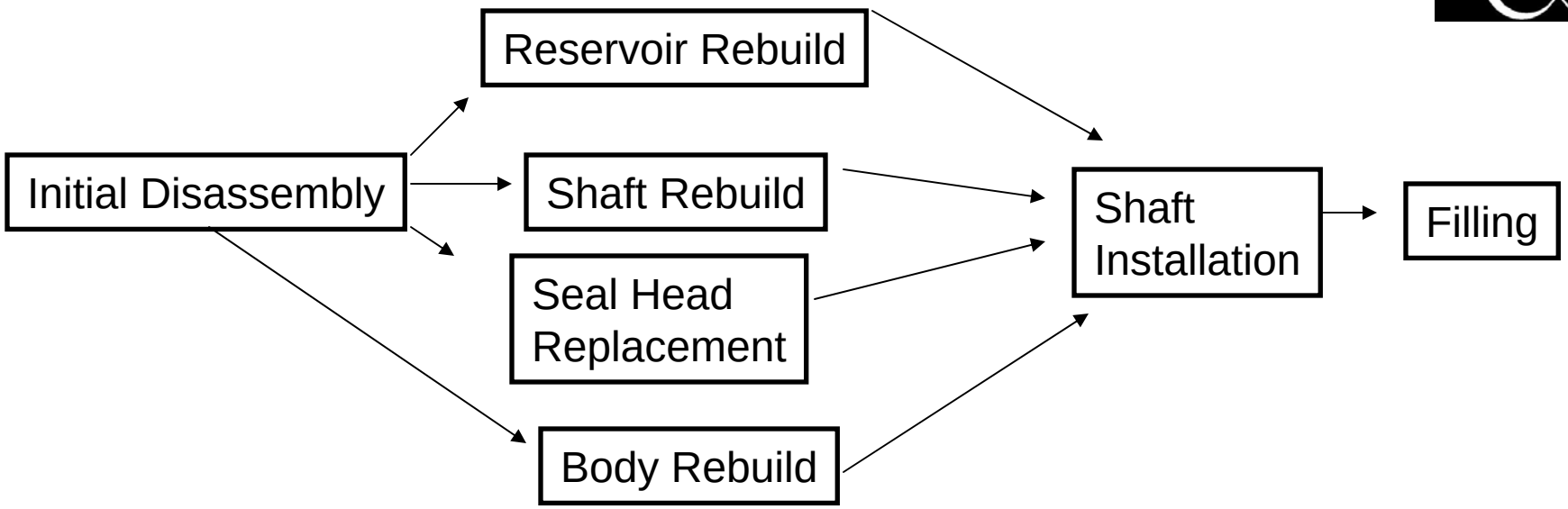
Diagnosis for Parts Needed



Work Flow



General Maintenance includes:

1. Reservoir Rebuild
2. Seal Head Replacement
3. Shaft Rebuild
4. Body Rebuild
5. Filling

Initial Disassembly

1. Tools Needed
   - Safety Torx wrench (TR20)
   - Seal Head Tool (Ohlins #1761-02)
   - IFP wrench (Ohlins #0720-03)
   - Circlip wrench (Ohlins #0715-01)
   - Gas Fill Assembly (Ohlins #1781-01)
2. Remove spring from damper if necessary
3. Depressurize reservoir
   i. Remove Safety Torx bolt and o-ring from reservoir end (Safety Torx TR20)
   ii. Insert needle through rubber plug and thread needle into reservoir end (Ohlins #1781-01)
   iii. Depress valve in pressure needle to release Nitrogen from reservoir
   iv. Thread handle into reservoir end and push reservoir end into reservoir (Ohlins #0720-03)
   v. Remove circlip (Ohlins #0715-01)
      - Cane Creek recommends a sharp tool and Ohlins circlip wrench
   vi. Remove reservoir end from reservoir
4. Remove Seal Head from shock body (Ohlins #1761-02)
5. Remove shaft assembly from shock body
6. Drain shock oil from shock body

Initial Disassembly Complete

Initial Disassembly Pictures

Remove Torx Screw

Drain pressure from reservoir

Depress reservoir end into reservoir

Remove circlip

Remove reservoir end

Initial Disassembly Pictures

Extend shaft and remove seal head
Note: Pin spanner shown is not Ohlins tool, but is equivalent to Ohlins #1761-02

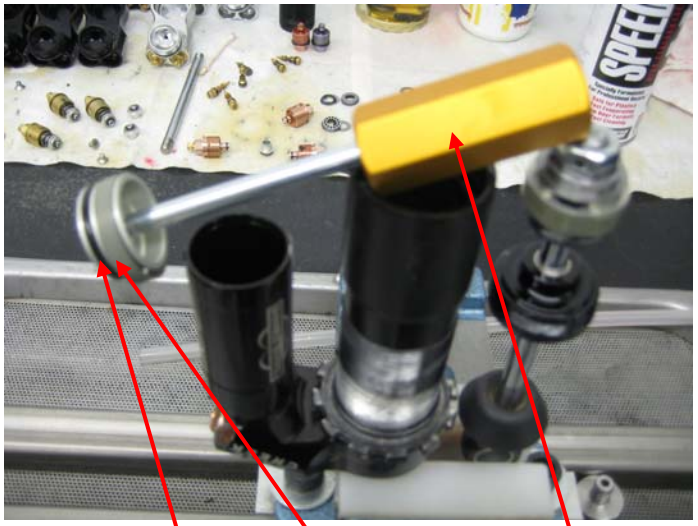
Reservoir Rebuild

Rebuild the reservoir to fix a gas leak

1. Tools needed
   - IFP wrench (Ohlins #0720-03)
   - Strap wrench
2. Parts needed
   - Reservoir End kit (Cane Creek #DB19006)
3. Fluids Needed
   - Loctite 271
4. Remove the IFP from the reservoir (Ohlins #0720-03)
5. Remove the reservoir from the cylinder head (strap wrench)
6. Replace the reservoir o-ring after coating it with thin layer of grease
   i. O-ring – 23.52 x 1.75 (Cane Creek #.DB11107)
7. Replace reservoir and tighten with strap wrench
8. Replace the IFP piston ring and o-ring. Grease the o-ring prior to installation.
   i. O-ring – 21.00 x 2.00 (Cane Creek #.DB11106)
   ii. Piston Ring – (Cane Creek #.DB11113)
9. Insert the IFP piston back into the reservoir (Ohlins #0720-03)

Reservoir Rebuild Complete

Reservoir Rebuild Pictures



IFP o-ring

IFP glide ring

IFP wrench

Strap wrench

Reservoir o-ring

Reservoir end

Fill plug

Body rebuild

1. Tools needed
   - Inner Tube Remover (Cane Creek #.DBT008)
   - Strap Wrench
   - Seal Head Tool (Ohlins #1761-02)
2. Parts needed
   - Shaft rebuild kit (Cane Creek #DB19007)
3. Fluids Needed
   - Loctite 271
4. Use the Inner Tube Remover (Cane Creek #.DBT008) to pull the inner tube out of the outer tube
5. Use strap wrench to remove outer tube from cylinder head. A small amount of Loctite 271 (Red) is used during assembly, so it will take some torque to loosen the outer tube.
6. Remove both o-rings from the cylinder head.
7. Remove the o-ring from the seal head
7. Replace the o-rings in the cylinder head and on the seal head after applying a light coat of grease to each
   - Cylinder head o-rings
     i. Outer tube – 32.5 x 1.5
     ii. Inner tube – 28.0 x 1.5
   - Seal head o-ring - 26.7 x 1.78
8. Apply thin coat of grease to top edge of outer tube and a thin bead of Red Loctite (Loctite 271) to the threads on the outer tube, approximately 5mm from the end.
9. Install outer tube in cylinder head using strap wrench to tighten. Ensure there are no burrs on the edge that will contact the o-ring. Use emory cloth to deburr if necessary.

Body Rebuild Complete

Body Rebuild Pictures

Pull out inner tube

Tool to remove inner tube

Strap wrench on outer tube

Cylinder head o-rings

Deburr and grease edge

Apply Loctite bead here

Seal Head Replacement

1. Tools Needed
   - Shaft Vise (Cane Creek #.DBT009)
   - Heat gun
   - Large adjustable wrench
2. Parts Needed
   - Shaft Rebuild Kit (Cane Creek #DB19007)
3. Fluids Needed
   - Loctite 271
4. Place shaft assembly in shaft vise and clamp shaft vise in vise. A lot of torque is needed to tighten the vise enough to keep the shaft from spinning in the shaft vise
5. Use heat gun to heat the end eye which will loosen the Loctite bond
6. Use the adjustable wrench to remove the end eye from the shaft.
7. Wipe away any Loctite residue from the shaft threads
8. Remove bottom out bumper, seal head, and top out bumper from shaft.
9. Replace the top out bumper on the shaft
10. Grease the install sleeve and place it over the threads on the shaft
11. Use a Q-tip to apply a thin layer of grease to the seal and bushing inside the seal head
12. Gently slide the seal head over the insertion sleeve being careful not to damage the seal inside the seal head. Note: Cane Creek changed the seal head design to have a larger diameter at the top out bumper contact face. This helps prevent damage to the top out bumper. Replace all old style seal heads.
13. Lightly grease the seal head o-ring (26.7x1.78) and install it onto the seal head
14. Replace the bottom out bumper
15. Apply Red Loctite to end eye threads and install end eye on shaft. Torque to 120 in-lb.

Seal Head Replacement Complete

Seal Head Replacement Pictures

Shaft in shaft vise

Heat gun used to free Loctite

Remove end eye with adjustable wrench

Install sleeve

Bottom out bumper
Seal head
Top out bumper

New style

Old style

Shaft Rebuild

- Rebuild Shaft / Retune Main Piston

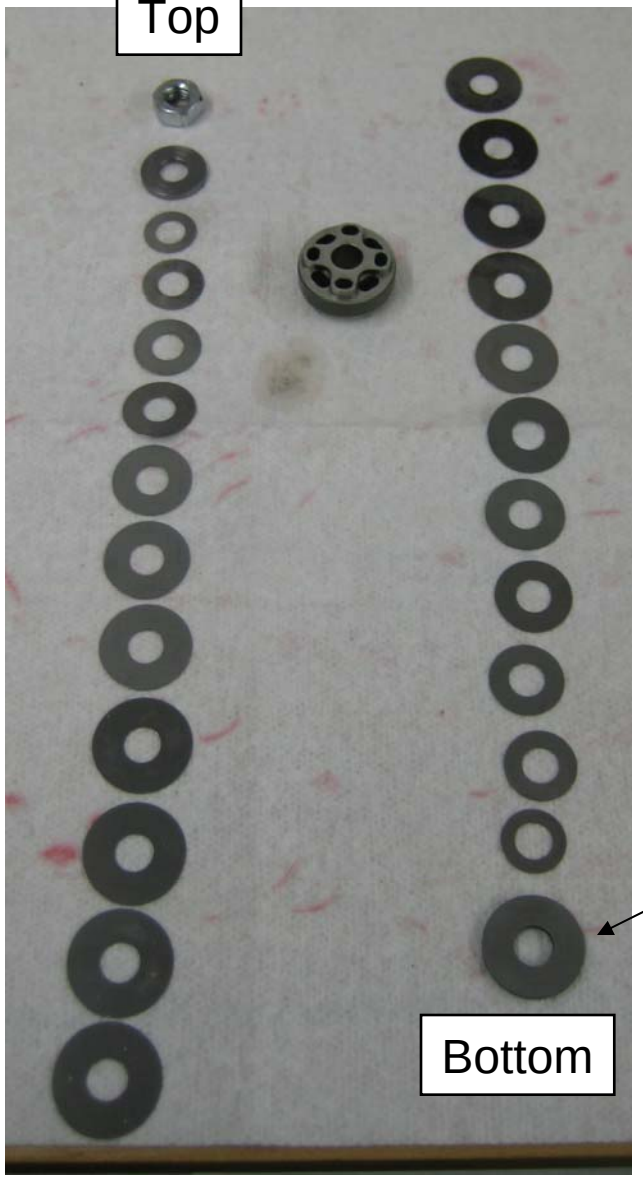
1. Tools Needed
   - Shaft Vise (Cane Creek #.DBT009)
   - 13mm wrench
   - Torque wrench with 13mm socket
2. Parts Needed
   - Shaft rebuild kit (Cane Creek #DB19007)
3. If only piston seals are being replaced:
   i. Remove glide ring and o-ring from piston
   ii. Replace piston o-ring and glide ring after applying light coat of grease to each
      - O-ring – 20.00 x 1.00 (Cane Creek #.DB11117)
      - Piston Ring – (Cane Creek #.DB11113)
4. If shaft is being replaced and/or main piston is being revalved:
   i. Place shaft assembly in shaft vise and clamp shaft vise in vise. A lot of torque is needed to tighten the vise enough to keep the shaft from spinning in the shaft vise
   ii. Remove nut at top of shaft
   iii. Remove washers, shims, and piston as necessary.
   iv. Inspect piston for significant wear. Replace piston as necessary. See part number list for appropriate part number since there are several pistons available.
   v. Stock main piston shim arrangement is shown in the following pictures
   vi. Reinstall parts noting the following:
      - groove in face of stop washer must fit over shaft circlip
      - Piston is directional. Smaller ports face up.
   vii. Use new shaft nut and torque shaft nut to 120 in-lb.
   viii. Go to Step 3

Shaft Rebuild Complete

Shaft Rebuild Pictures

Remove shaft nut

Correct piston orientation



Standard shim arrangement

Shaft Installation

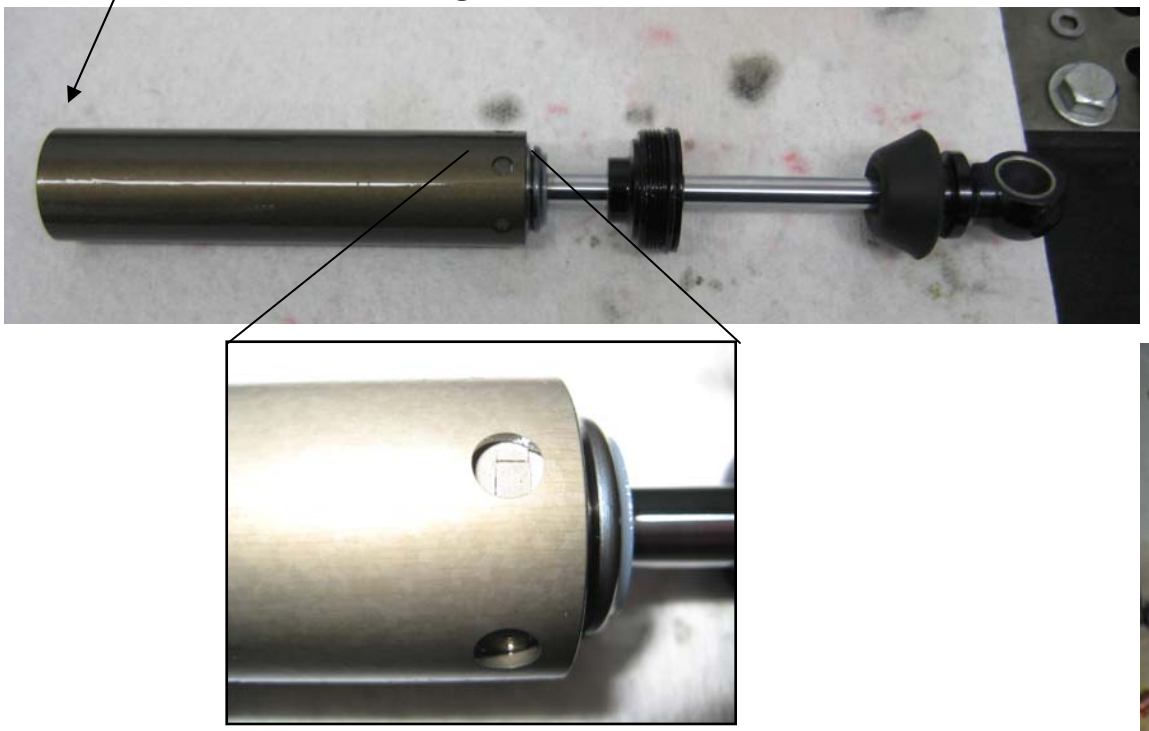
Installing Shaft

1. Tools needed
   - Seal Head Tool (Ohlins #1761-02)
2. Parts needed
   - Seal head o-ring (included with all seal and rebuild kits)
3. Lightly grease glide ring on main piston
4. Pinch glide ring together on main piston and slide shaft assembly into inner tube. The through holes in the inner tube can be used to ensure the glide ring is seated properly in the piston. Leave most of the shaft assembly outside the inner tube
5. Lightly grease outer diameter of inner tube at end that will engage the o-ring in the cylinder head. Ensure there are no burrs on the edge that will contact the o-ring. Use emory cloth to deburr if necessary
6. Insert the inner tube and shaft assembly into the cylinder head, ensuring it seats into o-ring
7. Replace the o-ring on the seal head (26.7x1.78) after lightly greasing it (this may have already been done in a prior procedure)
8. Thread seal head into outer tube and tighten snugly with seal head tool (Ohlins #1761-02)
9. Cycle shaft in and out several times to ensure smooth operation

Shaft Installation Complete

Shaft Installation Pictures

Deburr this edge



Slide shaft assembly into inner tube as shown, verifying the glide ring is properly seated

Install into outer tube

Filling

Fill shock after assembly

1. Tools needed
   - Safety Torx wrench (TR20)
   - IFP wrench (Ohlins #0720-03)
   - IFP setting tool (Ohlins #0720-02)
   - IFP setting adaptor (Cane Creek #.DBT007)
   - Circlip wrench (Ohlins #0715-01)
   - Gas Fill Assembly (Ohlins #1781-01)
   - Oil Fill Machine (Ohlins #1840-01)
   - M4 Oil Fill Adaptor (Ohlins #1820-04)
2. Fluids needed
   - **Ohlins Shock Absorber Fluid – 14,0 cSt at 40°C – Ohlins Part # 01306-10**
3. Turn all the adjusters on the cylinder head All Out (minimum damping) to minimize the pressure necessary to fill the shock.
4. **Set IFP height to 5mm**
   i. Insert IFP setting adaptor into reservoir
   ii. Install the reservoir circlip
   iii. Thread IFP setting tool into IFP
   iv. Push IFP all the way to cylinder head and pull IFP setting adaptor up until it contacts the circlip
   v. Slide adjustable ring down IFP setting tool until it contacts the IFP setting adaptor, then lock the adjustable ring to the shaft
   vi. Pull the IFP until a 5mm gap exists between the IFP setting adaptor and the adjustable ring
   vii. Lock the shaft IFP setting tool shaft to the IFP setting adaptor with the wing nut
5. Lightly grease the small o-ring (4.5 x 1.5) and install it around the M4 Oil Fill Adaptor and thread it into the cylinder head
6. Fill the shock according to the instructions on the filling machine. Make sure to push the shock shaft into the shock during the vacuum process. Use **Note: Cane Creek requires vacuum filling for authorized service.**
7. After filling remove shock from the fill machine and top off oil if necessary in the fill hole.
   - It helps to plug the adaptor with your finger when unthreading so the oil in the adaptor can be used to top off
8. Install the safety Torx screw into the cylinder head making sure the small o-ring is still in place. DO NOT over-tighten, the threads in the cylinder head are easy to strip
9. Unthread the IFP setting tool from the IFP and remove it. Then remove the circlip and the IFP setting adaptor from the reservoir
10. Using the IFP wrench, install the reservoir end into the reservoir with the threaded hole is facing out. Make sure there is a light coating of grease on the reservoir end prior to installation. Every seal kit and rebuild kit contains a replacement o-ring for the reservoir end.
11. Install the circlip into the reservoir and seat the reservoir end on the circlip. Remove the IFP wrench
12. Insert the needle from the gas fill assembly through the plug in the reservoir and thread the needle housing into the reservoir. **Use Nitrogen to pressurize the reservoir to 6-7bar.**
13. Remove the needle from the reservoir. A small amount of Nitrogen will leak out when the needle is removed.
14. Grease and insert the small o-ring (4.5 x 1.5) into the counterbore of the threaded hole in the reservoir end and then install the safety Torx screw.
15. Cycle the shock several times to ensure no oil is leaking and that the shaft returns when compressed.

Filling Complete

Filling pictures

IFP Setting Tool with Cane Creek Adaptor

IFP Setting Tool installed

Cane Creek Adaptor with circlip installed

Set IFP depth at 5mm from cylinder head

M4 Oil Fill Adaptor

Part Number List

Application	Description	Part Number	Price	Notes
Seal Kits				
	Adjuster seal kit	.DB19005	$10.00	
Common Rebuild kits				
	Reservoir End kit	DB19006	$13.72	Contains Reservoir seal kit and reservoir end - use if reservoir end and/or fill plug damaged
	Shaft rebuild kit	DB19007	$25.63	Contains all parts necessary to rebuild an entire shaft - use if shock has harsh top out, if bump rubber is worn, or main piston leakage is suspected -includes seal head replacement kit -includes tube seals -includes bump rubber
FSAE Rebuild kits				
	FSAE Adjuster	DB19008	$35.03	Contains all parts necessary to rebuild 1 FSAE adjuster - use if leakage occuring from external adjuster
Bike Rebuild Kits				
	Comp Adjuster	DB19009	$29.89	Contains all parts necessary to rebuild 1 bike compression adjuster - use if leakage occuring from external adjuster
	Reb Adjuster	DB19010	$29.89	Contains all parts necessary to rebuild 1 bike rebound adjuster - use if leakage occuring from external adjuster
Note: A complete overhaul will require: - Reservoir end kit - Shaft rebuild kit BIKE - 1 Comp Adjuster rebuild kit - 1 Reb Adjuster rebuild kit FSAE - 2 FSAE adjuster rebuilt kits				

Tool List

Vendor	Part	Vendor Part Number	Cane Creek Part Number
Ohlins			
	Circlip removal wrench	0715-01	
	IFP/Reservoir End wrench	0720-03	
	IFP setting tool	0720-02	
	Gas Fill Assembly	1781-01	
	Seal Head Spanner	1761-02	
	Oil Fill Machine	1840-01	
	M4 Oil fill adaptor	1820-04	
Cane Creek			
Cylinder Head			
	Spherical bearing Installer		.DBT002
	Spherical Bearing Remover		.DBT003
	Valve Seat Driver		.DBT004
Adjusters			
	End Piece Assembly Block		.DBT005
	End Piece Pin driver		.DBT006
General			
	IFP setter adaptor		.DBT007
	Inner Tube Remover		.DBT008
	Shaft Vice		.DBT009
Roto Clip			
	Circlip installer for Poppet	A-310	
Off the Shelf			
	Safety Torx wrench	TR20	
	10mm socket driver		
	Slotted screw driver		
	13mm torque wrench		

Fluids List

1. Loctite 271 (red)
2. Ohlins Shock Absorber Fluid – 14,0 cSt at 40°C
    - Ohlins Part# 01306-10