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CYLINDER SEAL INSTALLATION - DIRT KYB 28 / 32mm
98-04 YZ / WR and 98-99 CR125

<fkcs_32.doc> **FKCS 32A, FKCS 32B** P Thede © 2.4.14 2 pgs

TOOLS REQUIRED: (In addition to those required for fork disassembly.) In-lb Torque Wrench that accurately measures 0 to 50 in-lbs (0.58 kgf-m), 12 mm Wrench, Fine Flat File, Hi-strength Loctite (included)

SPECIAL TOOLS REQUIRED: Shaft Holding Tool (TFSH 10), Cartridge Tube Holding Tool (TFSH 32) and Cartridge Holding Tool (TFCH 01).

This modification blocks off the flow through the Cylinder Valve and makes the valving much more consistent. Firmer, yet the ride will be plusher as well. **This will affect the valving. You will have to make the Compression Valving softer to compensate for this Cylinder Valve Seal**. NOTE - The Cylinder Valve Seal will work on all 32 mm cartridges when you want to create a positive shaft seal.

DISASSEMBLY (figure 1)

1 **Remove the Cartridge from your front forks. If you are unfamiliar with this process, STOP! Do not proceed. Seek out a qualified suspension technician to complete the installation.**

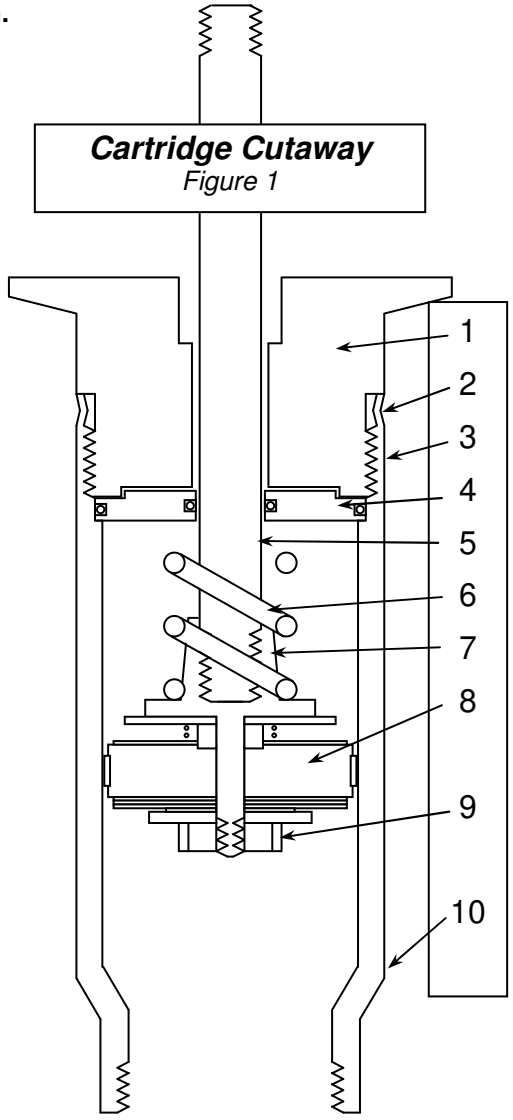
2 **Remove the Seal Head (1)** (the end cap where the spring sits) from the top of the cartridge tube. This can be an extremely tricky operation. **If you are unsure of your ability to perform this operation or you do not have the proper special tools STOP!!! and seek out a qualified technician.**

The Seal Head (1) is threaded into the top of the tube and must be unscrewed. There are four punch marks (2) to insure the Seal Head does not come off in use. Use a 5/32" (4 mm) drill to **carefully drill through the punch marks** on the outer wall. (Do not drill deeper than 2 mm. In fact, if you can avoid drilling through the outer wall completely you will eliminate the possibility of leakage in this area. In other words, drill just enough to make the wall at the punch mark very thin without actually breaking through.)

3 The threads are also Loctited. Hold the Cartridge horizontally on the anvil portion of a vise. Rest the Cartridge Tube on the anvil at the junction of the Tube and the threaded portion of the Seal Head. **Loosen the Loctite on the threads** by tapping on the outer diameter of the tube at this junction (3) with a ball peen hammer. (Another method is to use a Propane torch to gently heat the Loctite to no more than 350 °F or 175 °C) Use TFSH 03 Shaft Holding Tool to hold the cartridge tube where the tube changes diameter from 28 mm to 32 mm near the bottom (10) (where it is strongest). Use TFCH 01 Cartridge Holding Tool to **unscrew the Seal Head**.

4 **Disassemble the Rebound Valving**. To remove the nut (9) grind off the peening that keeps it from being removed. When grinding this peening it is recommended that you grind into the nut approximately 1 mm as the threads usually are smashed and damaged from over-peening at the factory.

Cartridge Cutaway
Figure 1



CYLINDER VALVE SEAL INSTALLATION (figure 1)

5 **Remove the Valve Holder (7) from the Damping Rod (5)**. It is also Loctited onto the Rod. Use the same method of tapping on the outside of the threads as outlined in step 3. (Or you can use a Propane torch.) Use Shaft Holding tool TFSH 10 to hold the shaft being careful not to damage the rod. Optional – To reduce friction polish the Damping Rod with 400 grit (very fine) sandpaper.

6 **Prelube and install the Seal Plate onto the Rod**. Check to see the o-ring and the Rod Seal are properly located on the Cylinder Valve Seal Plate (4).

There are two types of Seal Plates:

1) 98 and earlier has the Top-out Spring Holder on the Seal Plate itself. Use a screwdriver and pry off the original Top-out Spring (6). Install it on the new Cylinder Valve Seal Plate. Install the Seal Plate onto the Rod. (99 model shown in fig 3)
2) For 99–01, the plate is flat. Simply install the Seal Plate onto the Rod with the flat side towards the inside of the Cartridge.

7 **Install the Rebound Valving Holder (7)** onto the Rod (5). Use Loctite 271 (Red - Permanent) and torque it to 25 ft-lbs (34 NM).

MID VALVE MODIFICATION (optional) (figure 2)

Most 1995 and later KYB's utilize a "Mid Valve" located on the Rebound Piston. This actually creates compression damping where the rebound check plate usually is. This works for Supercross and some **very** aggressive pros but is too harsh for most riders. We strongly recommend converting the "Mid Valve" to a standard check plate design.

8 **Install the Rebound Piston (8) and Valving**. **Convert the Mid-Valve to a Standard Check Valve.**

The order of installation on the shaft is: Cupped Washer (11), Sleeve (12), Check Spring (13), new Check Valve Plate (14), Rebound Piston (15) (recess (16) towards check plate), Rebound Valving (17), Base Plate (18) and the new Nut (19). Loctite (271 Permanent) and torque to 48 in-lbs (4 ft-lbs or 0.56 kgf-m). Make sure the Check Valve is free and can move up and down on the sleeve.

NOTE: 99-01 KX 125 & 250 and 01 RM 250s have an o-ring instead of a Check Spring. Use the Check Spring provided to replace the o-ring.

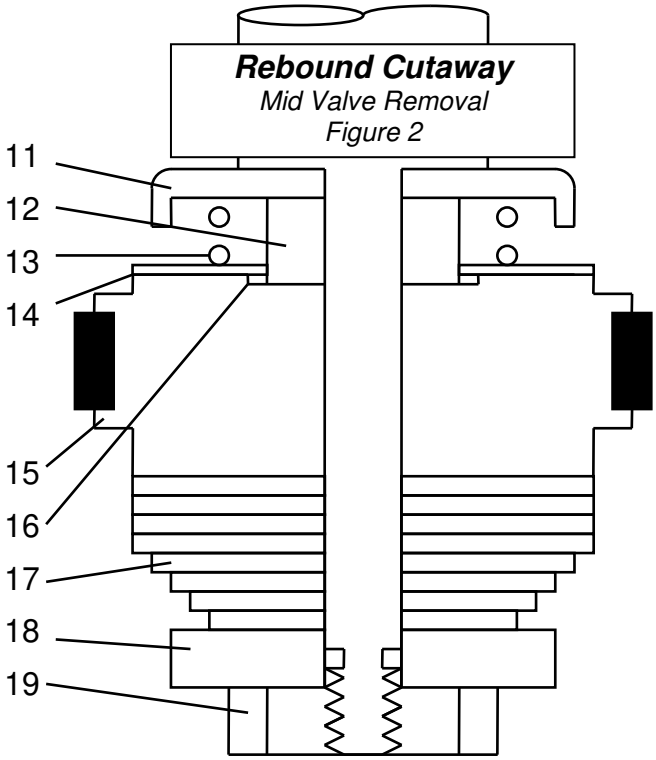
9 **Reassemble the cartridge** making sure everything is clean. Use Loctite 271 on the threads (3) and torque the Seal Head (1) to 43 ft-lbs (58 NM).

REASSEMBLY

10 **Reassemble the forks according to the procedure in your manual**. Torque the compression valve body to manufacturers specs. For most forks this is 43 to 60 ft-lbs (58 - 82 NM). Consult owner's manual for specs. Bleed the cartridge and set the oil level using Ultra Slick US-1 Light (5w).

NOTE: KYB forks without a bleed hole in the inner (chrome) tube require special care to set the oil level. There is a space between the inner and outer tube and without a bleed hole there is no way to know how much oil is in this space. To deal with this situation extend the outer tube all the way before setting the level, this will dump all the oil from this space into the inner tube. This will call for slightly higher oil level settings than the manufacturers recommend.

11 Use Loctite on the damping rod threads at the cap and **torque it to manufacturers specs** (typically 16 to 21 ft-lbs [21.7 – 28.5 NM]). Consult owner's manual for specs.



Rebound Cutaway
Mid Valve Removal
Figure 2

If you have any questions please call our Technical Support Hotline at 951.279.6655.