5016

The goals of any suspension builder should be the same. That is to precisely build suspension in a repeatable, and efficient manner. All components must be modified so as to not threaten long-term component integrity. Working on suspension can be a long and tedious process. Practice safe shop techniques, and of course we recommend you let an expert handle it. Do not forget or take lightly that you are responsible for your own safety both in the shop and on the track. So if during your suspension experience you should experience the lose of, but not limited to, life, limb or property damage it all comes down to your responsibility.

Instructions for 5016 Showa shock rebuild and valve installation:

Disassemble shock completely:

Remove spring:

-Spring removal can occur by loosening the preload washers on the shock body buy using a soft drift to loosen the lock spanner and then hand turning the preloading ring. For speed and ease we recommend that a spring compressor be used.

-After spring removal inspect shock for leaks and wear.
-Prepare the shock for easy cleaning and rebuilding by reducing compression and rebound damping to full soft.
-Prior to bottom out cap removal, counter sink the removal holes. This prevents the edges from being distorted.
-Using a large radiuses punch remove the seal cap by driving it off the body gently. Tap from both sides to ease the strain.
-Remove the nitrogen charge.
-Using a seal head driver depress the seal head and expose the circlip
-Using an appropriate circlip remover remove the circlip.
-Remove the compression rod by gently rocking the assembly out of the body, and dump the oil in the piston side of the body.
-Using a bladder driver press the bladder into the body far enough to expose the circlip.
–Remove the circlip and remove the bladder using a removal tool. Dump the oil in the reservoir side of the body.
-Remove the adjuster using the Scotts removal tool. Many times on the RM models and the DRZ have an AL spacer is placed behind the adjuster. Take care not to lose this piece.

Internal component disassembly:

Valving.
-All Showa shocks have a nut that is stamped on the top edge. You must remove this stamp to safely remove the nut. However the stamp retains the needle seat in the top of the shock.

-All Showa shocks must be ground off on an angle. Take care to leave enough nut on the rod to remove, and maintain enough material at the top of shaft to retain the internal jet .
-Prior to grinding the rod take a moment to plug the end of the rod with a dab of grease to prevent chaff from entering the needle valve.
-When grinding the nut off the end of the rod take time to make sure you have setup a suitable holding method that will prevent the nut from chattering on the wheel. Strive to produce a concentric and attractive finish using precise placement and rotations of the shaft. Cover the seal head with a cloth to prevent chaff from entering the seal head.
-Grind the nut starting at the outside edge working towards the center. After a shallow angle grind has been accomplished across the whole nut. Steepen the angle till you have created a cone shaped grind getting closer to parallel as you move towards shaft. Do not grind the top of the nut. Lightly unthread the nut if you begin to experience resistance tighten the nut back down and continue grinding a small portion more.
-Using a debur-polishing wheel finish the nut face and edges.
-Using a valivng skewer unthread the nut and valving and place on a skewer for washing and inspection.
-Radius the shaft as if it was the first thread. After radiusing the first thread debur the internal orifice using a deburing tool. Blow the grease and chaff out using a blast of compressed air.
-Wash your valving out using solvent and compressed air. Lay the valve stacks out in order on a clean surface. I recommend that you write the dimensions down of each washer and its order so if mix something up you can restore it to original spec.

Inspection of parts:
-Clean all components in clean solvent and then dry with compressed air. Lay all parts out on a very clean surface in good light. We recommend SafetyKleen brand solvents as they will not harm components, and provide excellent cleaning.
-Check the piston bore of the shock body for wear by measuring or visually using reflection angle check for low spots, wear, etc. If the body has a wear issue with the hardcoatoing you will see discoloration where the piston has worn through.
-Check the piston band by placing it back on the shaft with a nut and sliding it into the body. The band should compress and provide a significant stiction to the body wall. If it is lose, or moves too freely then the band and o-ring should be replaced. Simply slice the old band off and install new o-ring and band.
-Check the bump rubber for cracks, or disintegration
-Check shaft for chrome wear or imperfections.
-Check seal head for bushing wear, or scoring.
-Check bladder for wear, stresses, or imperfections.
-Check piston for any metal chips pressed into valve face. Using a scotch bright pad polish the face lightly but don’t surface. Most Showa pistons are slightly dished to promote seal. When the piston is surfaced this dish is removed and the shock will not perform exactly as it used to.
-Replace any components that are worn.

Assembly of the Active compression and rebound valving.

-Install the spring retainer, bump rubber, bottom out plate, using a seal bullet, and install a well-greased seal head.
-Install the valving components on the shaft stem add a drop of blue loctite to the threads. Tighten the nut down firmly but do not over or under tighten. If you're revalving build the necessary components and stacks.
-Place the compression aside for a moment.

Installing internal components:
-Place the body tube upside down in a soft-jawed vise. Lightly grease the threads to help prevent any galling during assembly. Grease the threads and o-rings of the adjuster. Turn the adjuster into the body. Once the o-ring has cleared the body tube pour oil into the reservoir side of the body tube to initiate flow through the compression adjuster. Taping on the top of the reservoir with a cupped hand will cause enough pressure to force oil into the body side of the shock. Once you have fluid on the body side lightly tighten the compression adjuster into the body. This rotation will help eliminate air from the body of the adjuster.
-After the adjuster has seated pour more oil into the bladder side of the body. Rotate the bladder as it goes into the body, Oil should spill out over all edges to prevent any air being caught in a pocket.. Place the bladder into position, (With reference to the Schrader position.) install the circlip.
-Charge bladder quickly to 100 PSI or so, then remove 30% of the charge, by holding the Schrader down a second.
-Place your assembled rod into the tube and run it through the travel until you have a minimum amount of air in the circuits and valving. (Some recommend hitting the clevis with a soft mallet but for Showa shocks we typically don't do this.) When bleeding don't pull to quickly on return as you will create a vacuum behind the piston. Also keep the fluid level up in the body tube to prevent the rebound ports to go above the fluid level.
-Once the shock piston has been bleed place the rod near the top of the shock. Add fluid and release the air simutaionsouly. Keep the fluid above the rebound ports, and continue releasing air until you have no charge on the shock bladder. Pull the rod back up to the highest point possible without going above the oil line. Top off with fluid and install the seal head. Release pressure on the bladder as it fills the body with excess oil.
-Install the circlip and bottom out plate. Make sure the plate removal holes are 90 from center so to make them easy to access when servicing shock again. Install using a soft mallet. (We recommend a plastic mallet..)
-Charge the shock with 120PSI of clean air.
-Place the shock up right with the lower mount in you vise. Run the shock through full travel 4-5 times. Check for feel, and inspect all seals for leaks.

Final bleed for bleed bolt equipped shocks (RM's):

-Make sure the rod is fully extended.
-Tighten compression adjuster to full tight. (Peens should align)
-Place the bolt in the position so its internal position is at the highest point.
-Reduce all bladder pressure to zero. (If you want it's best to remove core.. or you can simply hold valve in during bleed, to allow atmospheric pressure to expand bladder to full size.)
-Open bleed bolt and let all extra fluid to run out.
-Reinstall bolt, and Schrader core.
-Charge shock with nitrogen.
-Inspect for any leaks.
-Install spring and set preload.
-Set clickers

Final bleed for non-bleed bolt equipped shocks. (CR's and RM's)

-Make sure the rod is fully extended.
-Place the compression adjuster in the highest position.
-Reduce all bladder pressure to zero. (If you want it's best to remove core.. or you can simply hold valve in during bleed, to allow atmospheric pressure to expand bladder to full size.)
-Open the adjuster and let all extra fluid to run out.
-Reinstall adjuster (tighten till peens line up.), and Schrader core.
-Charge shock with nitrogen.
-Inspect for any leaks.
-Install spring and set preload.
-Set clickers