Marzocchi Roco WC Coil Rebuild:

INTRODUCTION

This guide will show you how to take apart, service and rebuild a Marzocchi Roco WC coil shock. The procedures covered include

- **Disassembling the shock**
- **Cleaning and inspecting the internals**
- **Replacing Internal O-Rings**
- **Reassembling**
- **Final Bleeding**

MODELS COVERED

The shock used is a 2011 model, but the procedure is the same for all Roco WC Coils from 200 to 2011, the only difference between them is that the 2006 model has a steel shaft and the others have alloy shafts.

The guide should also provide a solid foundation for the Roco TST R Coil and the Coil R (With external IFP Chamber). The TST R compression system is designed to be interchangeable with the HSCV in the WC, simply remove one and reinstall the other. The Coil R will be near identical, minus the compression internals.

DISCLAMER:

Unlike other brands of shocks, the Marzocchi Roco series is designed to be user serviceable, hence working on the shock shouldn't void any remaining warranty, however, this wont apply to damaged caused during the repair, be careful with the tools and ensure not to round off parts or slip with the spanner and damage the shaft.

I AM NOT RESPONSIBLE FOR ANY DAMAGE CAUSED TO YOUR SHOCK, BIKE, PERSONA, SURROUNDINGS OR OTHER'S, YOU PERFORM THIS REPAIR AT YOUR OWN RISK. THE REPAIR WORKS IF YOU USE COMMON SENSE WHEN PERFORMING THIS REPAIR AND TAKE YOUR TIME. BASIC MECHANICAL INCLINATION IS NEEDED TO PERFORM THIS REPAIR, IF YOU DAMAGE YOUR SHOCK, YOU WILL HAVE TO PAY FOR REPAIR.

A PROPANE TORCH IS REQUIRED TO HEAT CERTAIN PARTS OF THE SHOCK TO SOFTEN INTERNAL LOCTITE. BE VERY GENTLE WITH THE HEAT, ONLY HEAT UNTIL HOT TO TOUCH.

WARNING!

Read all instructions twice before commencing work to ensure you fully understand its procedures.

Preliminaries:

TOOL LIST:

- 18mm Spanner or shifter
- 27mm Spanner or shifter
- Blue Loctite medium thread lock
- Bench vice
- O-Ring/Dental picks
- Clean Rags
- Clean Work bench
- Oil Drip Pan
- Small Breaker Bar
- 2.5mm Allen Key

PARTS LIST:

- Suspension Oil, stock oil weight is 5wt
- Seal kit

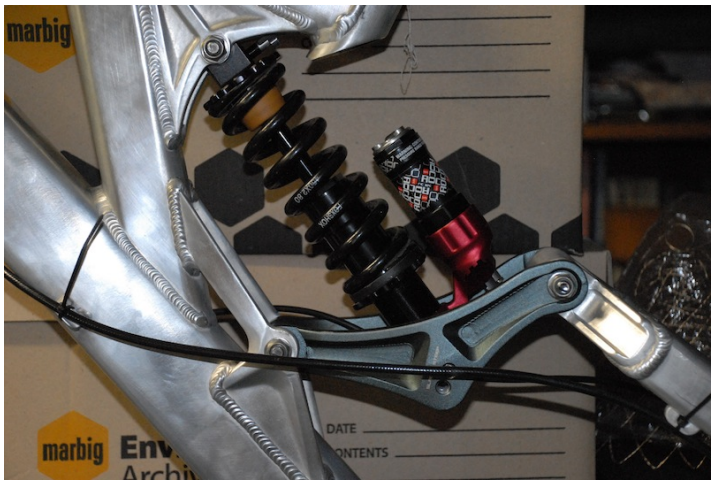
Kits can be purchase through me on my Ebay account, MTBMechanics, or from Marzocchi directly, however these kits direct from Marzocchi can be expensive as they include a brand nev piston. I was quoted at $120 AUD for one of these kits. Also included however in the kit is a new dust wiper and main seal. Unlike a Fox DHX, the main seal is a special quad ring seal. However these rarely need to be replaced unless your shock is gushing from the main shaft. I am currentl sourcing replacements for these items (minus the piston). Otherwise a local Engineering or Autc supply store should be able to provide you with the necessary o-rings

Note:

Main Quad ring can be removed using a 14mm Allen key on the retaining ring after the dust seal is removed. I have not sourced replacements for these yet so it is not covered in this version of the guide, but will be included in future releases

Bleed procedure does not take use of the bleed screw and syringe, however it shall be included in future releases once I have refined the technique. The bleed procedure covered will give a proper bleed if done with care and slowly

Repair Guide:





1. Remove the shock from the frame; it will be different for every bike, so if you don't know how to remove your shock, put the tools down NOW.
2. Assemble your tools together.





3. Remove the Rebound Adjuster using a 2.5mm allen key
4. Remove the Compression Adjuster using a 2.5mm allen key





5. Deflate the IFP Chamber
6. Using a shifter or a 27mm wrench, undo the piston shaft end cap, be careful not to slip wit the shifter/spanner and damage the shaft





7. Carefully remove the piston assembly, allow oil to drain, then place aside
8. Drain oil in main chamber into a container





9. Return Shock body to vice, then carefully undo IFP Chamber end cap using 27mm spanner or shifter
10. Remove cap and place aside



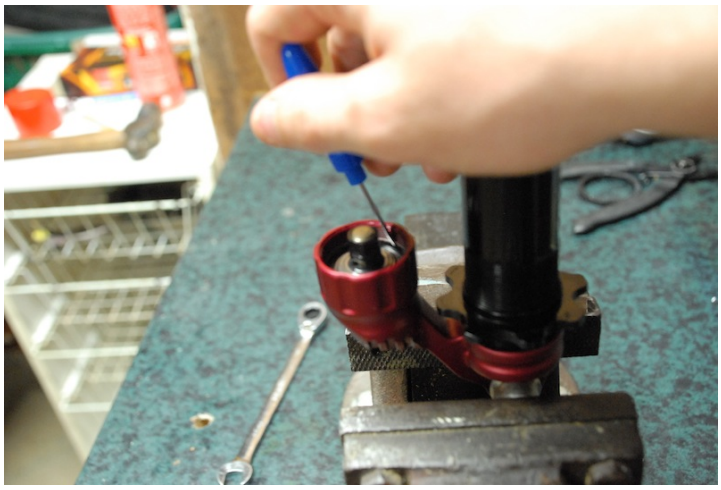


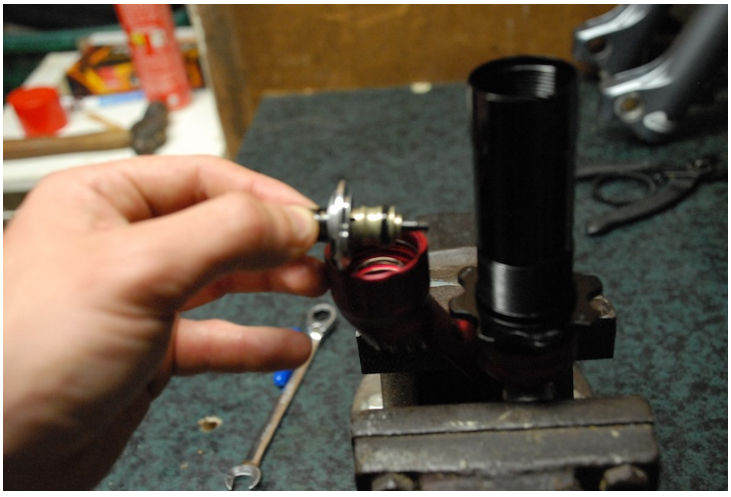
11. Using shifter or spanner, undo the IFP Chamber
12. Remove chamber



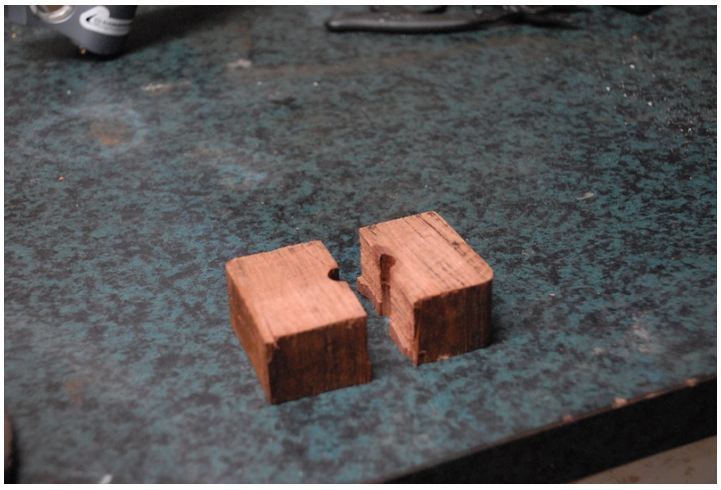


13. Press the IFP out of the chamber and set aside
14. Drain remaining oil form HSCV valve





15. Using a sharp pick, carefully remove the o-ring seated on the HSCV
16. With the o-ring removed, pull out the HSCV, and set it aside





17. Drill a 12mm hole into a block of hardwood, the cut in half to create shaft clamps. (Wood must be a hardwood)
18. Clamp the shaft in the clamps in a vice, the GENTLY heat with a propane torch to soften Loctite. ONLY HEAT UNTIL HOT TO TOUCH!
    (Tip: Spraying Isopropyl Alcohol on the clamping surface of the shaft clamps will greatly



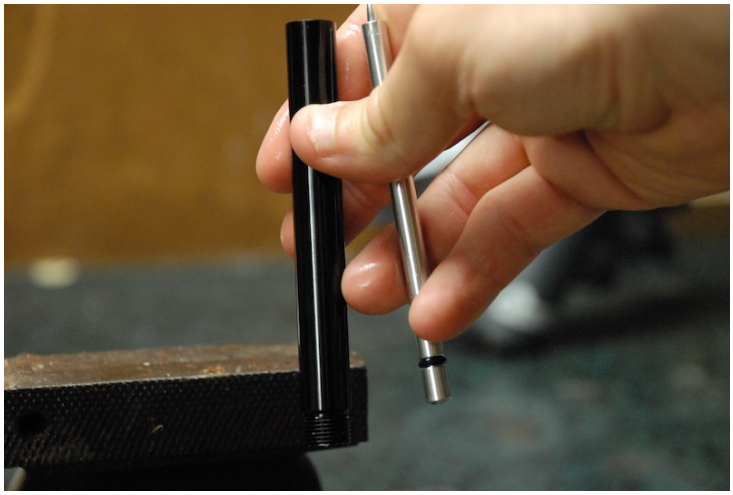
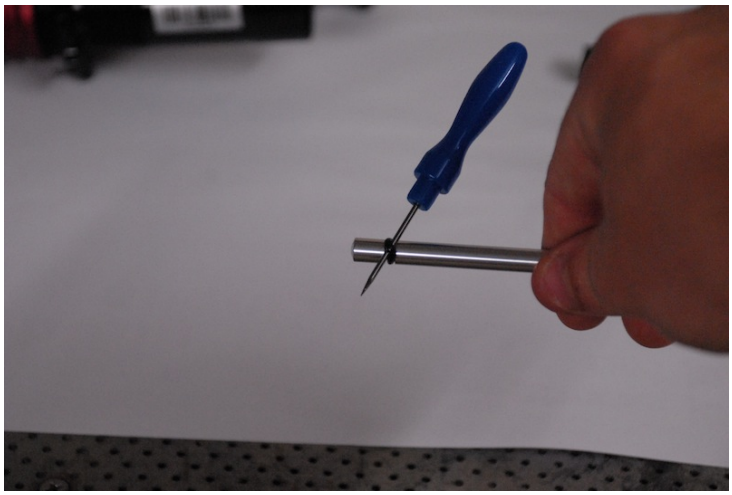

19.Using 18mm ring spanner, undo the piston bolt
20.Carefully remove the piston/shim assembly, being carefully no to muck up the shims




21.Remove shaft seal housing assembly and set aside
22. Flip the shaft over in the clamps, then GENTLY heat the base of the rebound eyelet until hot to touch



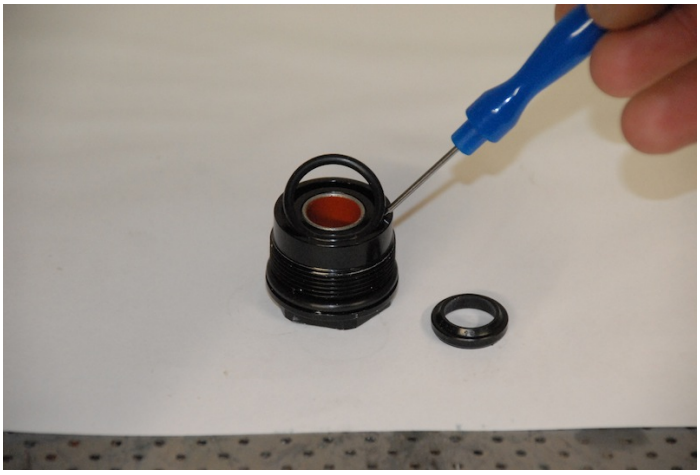

23.Place a long allen key or breaker bar in the eyelet, and unscrew the eyelet
24.Remove the eyelet and place aside

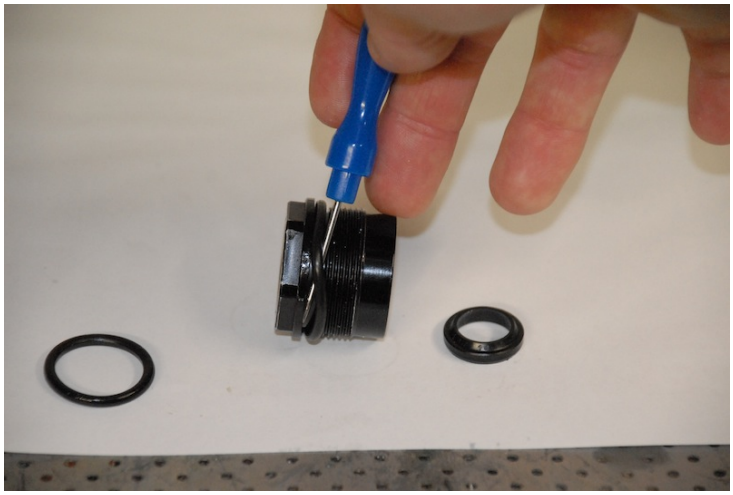
25.Press the Rebound needle out of the shaft
26.Using a sharp pick, carefully remove the rebound needle o-ring



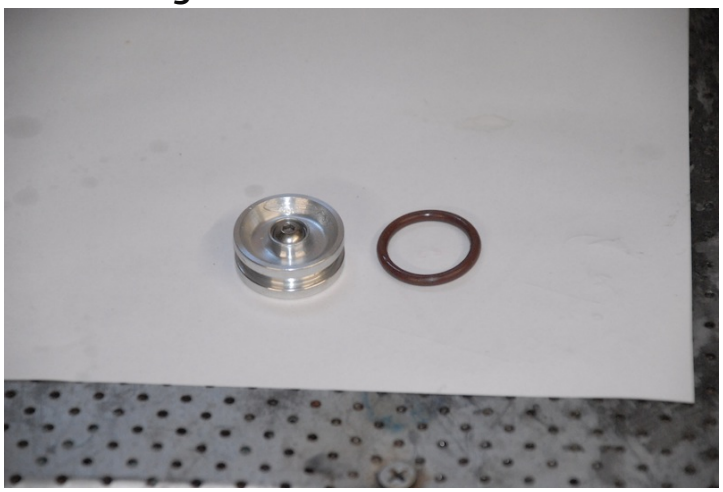

27.Replace the Rebound needle, making sure its properly seated in the groove
28.Using a open ended spanner, carefully remove the dust wiper

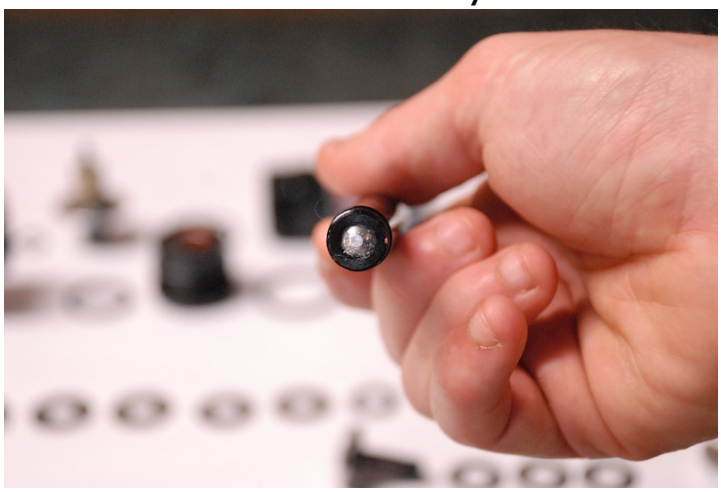
29.Clean the inside of the dust wiper and the internal shaft seal
30.Using a sharp pick, remove the bottom out o-ring from the base of the shaft seal housing



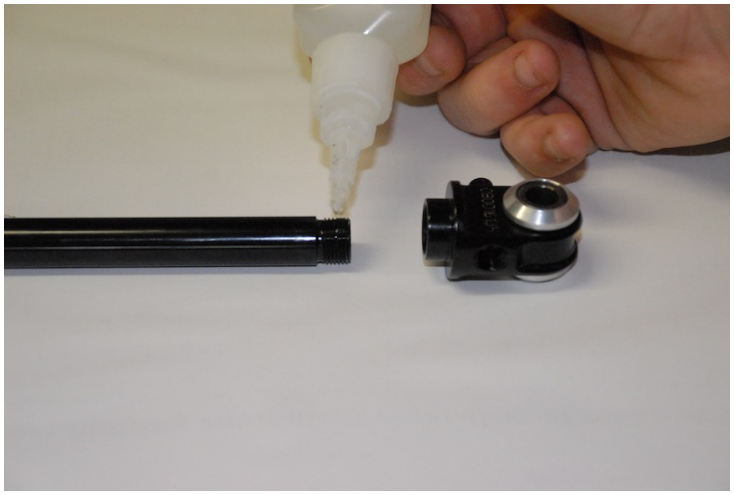

31. Remove the seal at the base of the shaft seal housing
32. With all 3 seals removed, replace the o-rings and press the dust wiper back into the housing



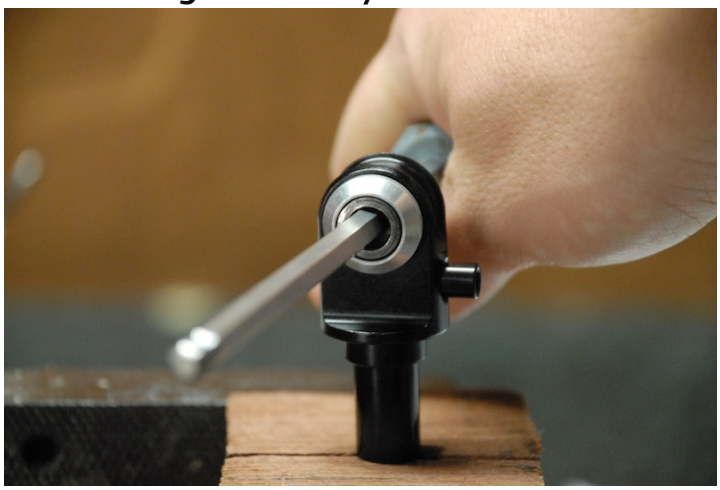

33. Remove the IFP o-ring, replace with a new one
34. You have now successfully disassembled the Roco WC




35. Lightly grease the rebound needle with suspension grease, then reinsert back into shaft
36. Ensure all dry Loctite has been cleaned from the threads inside the eyelet



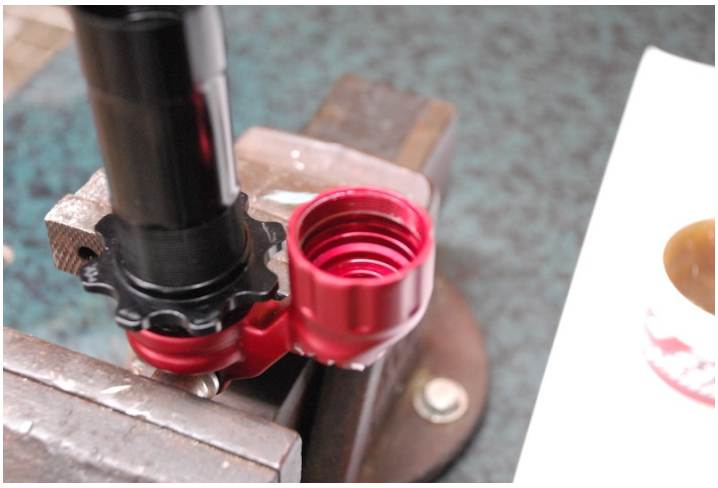

37. Place a small drop of medium strength blue Loctite on the base of the threads on the shaft ensure it does not drip onto the base of the rebound needle
38. Hand tighten the eyelet onto the shaft



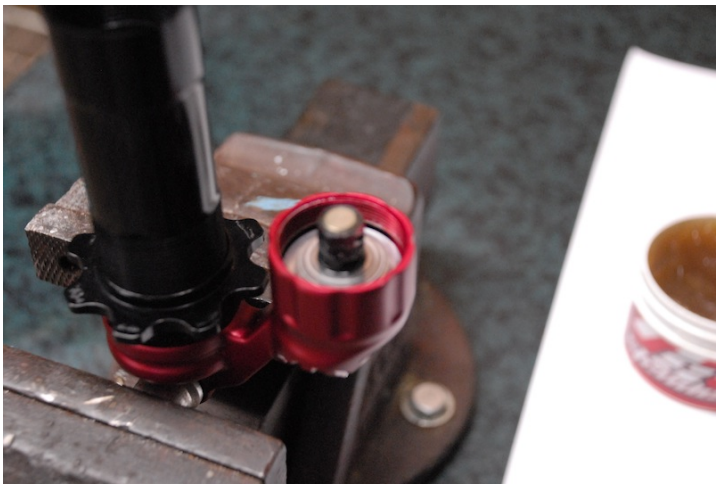

39. Return the Shaft to the shaft clamps, using a allen key/Breaker bar, tighten up the eyelet
40. Grease the internal seal and the inside of the wiper with suspension grease, the reinsert it onto the shaft, taking care not to force it, forcing may cause damage to the shaft, seals or bushing on the inside of the housing




41. Place a small drop of Loctite on the tip of the threads of the piston
42. Flip the shaft in the clamps, and using a 18mm spanner or wrench, retighten the piston assembly. Only tighten till snug, over tightening will crush the shim stack, prevent the shock from rebound and compressing correctly

43. The shaft and piston assemblies have now been rebuild
44. Return the main body of the shock to the vice

45. Reinstall the HSCV spring into the base of the shock bridge, ensure the wider part of the spring goes in first
46. Reinstall the HSCV assembly into the bridge




47. Reinstall a new o-ring into the groove above the HSCV assembly, ensuring that it is correctly seated in the groove
48. Replace the o-ring on the threaded end of the IFP chamber





49. Ensure that a high quality synthetic racing suspension oil is used, stock oil is 5 wt
50. Fill both the main chamber and the IFP chamber with the oil, ensure to fill one side first and allow it to bleed through to the other chamber first




51. Place a rag at the base of the shock, and place the IFP with the bleed screw removed into the chamber. Use caution, as oil will shoot through the bleed hole. Make sure that oil is at the brim of the chamber, then insert piston into the main chamber
52. Using a spanner or shifter, tighten the piston assembly, taking care not to slip with the too and damaging the shaft




53. Wipe the excess oil from the main chamber
54. Using a measuring device, press the IFP into the chamber, use caution, as oil will shoot ou of the bleed hole. The IFP depth on Roco's is between 35mm and 40mm. A shallower deptl will give a more progressive stroke, a deeper depth will give a more linear stroke





55. With the IFP inserted, reinstall the bleed screw, drain the excess oil from the chamber, reinstall the chamber end cap and reinflate the IFP chamber to between 170-210 psi
56. Reinstall the adjusters, clean shock of excess oil and cycle the shock to ensure smooth operation. Test all adjusters to ensure correct function
57. Congratulations, you have successfully rebuilt your Roco
58. SUCCESS = BEER! ☺

Troubleshooting:

Answers to common problems:

1. **Q.) Shock will not compress or rebound, or is very slow and sticky**
   A.) - Check that piston bolt is not over tightened, over tightening will crush shim stack and prevent proper operation.
   - Oil used is to thick, use thinner oil
   - Loctite has seeped into rebound needle, check and clean rebound needle
   - Check that main dust seal is installed correctly and greased

2. **Q.) Oil leaks from shock**
   A.) - O-ring was damaged during assembly, inspect and replace if needed
   - O-ring was not installed correctly; check all o-rings for correct installation
   - Inspect shock for damage on sealing surfaces, any significant scratches or gouges will either have to be filled with o-ring sealant or replace

3. **Q.) Shock extends very quickly, rebound has no effect and leaks from adjuster**
   A.) – Ensure that piston has not been installed upside down
   – Ensure that rebound needle is correctly inserted and has o-ring installed

4. **Q.) Compression/Rebound stroke feels different, but same Wt oil used**
   A.) - Shim stack has likely been altered, consult below chart for stock stack

5. **Q.) Shock has "Squelching" noise's during compression/rebound stroke**
   A.) – Shock has become aerated, repeat bleed procedure

Shim Tuning Tips:

PERFORM AT YOUR OWN RISK!!

- **When altering shims on the main piston, the total number and thickness of the shims combined must not change**
- **The following chart shows the stock configuration of a Roco WC, use this for reference during tuning or if the shim stack was mucked up during rebuilding**

Compression shim stack	Qty	Rebound shim stack	Qty
22mm x 0.15mm thick	2	18mm x 0.15mm thick	3
20mmx 0.15mm thick	2	11mm x 1.5mm thick	1
19mm x 0.15mm thick	2	-	-
17mm x 0.15mm thick	1	Piston bolt shim	-
15mm x 0.15mm thick	1	16mm x 0.15mm thick	1
11mm x 0.15mm thick	6-9	Cir-clip	-
Top Out Washer	1	-	-

Acknowledgments:

This guide was compiled by me; Nick_M2r on December 22nd 2010
I hope you found it useful and please leave feedback on the threads
I shall read all constructive critisim and update accordingly in future versions of this guide
Happy Trails!

Version 1