

Monotube Shock Rebuild Guide

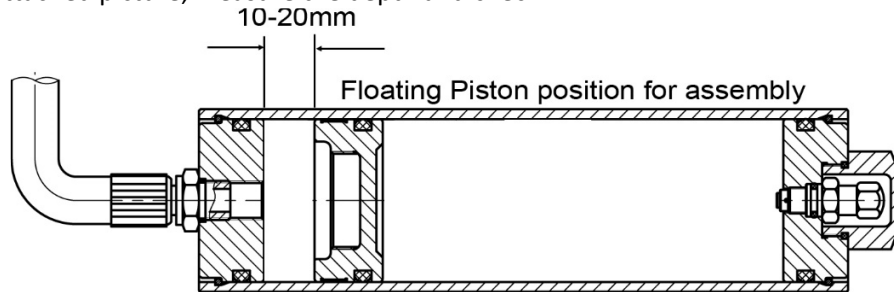


WARNING: Dobinsons shock absorbers are gas charged at extremely high pressure and are extremely dangerous. This guide is a basic guide for rebuilding MRR, MRA and IMS Monotube shocks. Recommended to only be rebuilt by experienced shock absorber rebuilders. It is the rebuilders responsibility to ensure all relevant safety equipment is used and safe work practices are followed.

MRR / MRA Remote Reservoir Shock absorbers

1. Remove dust cap grub screw and un-screw.
2. **DEGASS SHOCK**
3. Push down seal head assembly (can use machine and spacer tubes between eye and seal assembly)
4. Remove circlip with a seal pick. Apply some lubricant into the circlip groove
5. Pull up the rod and seal head assembly together and remove from shock. You can use the machine with screw on ends for pins or clevis and bolt for eyes. It's a good idea to wriggle the shaft as you move it up to help the seal come past the circlip groove.
6. When the main piston is almost out of the shock, remove the top attachment from the machine and then slowly pull the piston up by hand, with your fingers around the wear band so it doesn't fall into the shock
7. Tilt the piston on an angle about 30 or 40 degrees and rotate it around to drain the compression and rebound ports oil back into the shock
8. If replacing oil, hose seals, floating piston seals or reservoir seals (if not skip this step): Empty oil, Remove reservoir schrader valve end cap by pushing in, applying lubricant to the circlip groove and then installing the puller tool and sliding out.
9. Rebuild and change parts as required. If changing the hose banjo fitting o rings, ensure the larger diameter o ring goes toward the body/reservoir.
10. If reservoir has been dismantled perform the following steps. If the reservoir has not been dismantled skip to step 11
 - A). Ensure compression adjusters are fully open. Have the floating piston ready and close by, ensure the floating piston D-Ring is lubricated. Measure the reservoir depth to the inside of the end cap where the hose is. Then subtract the thickness of the floating piston and then subtract 10 -20mm. This is so you can use this measurement position the floating piston so that it has about 10 – 20mm travel left to the hose end of the reservoir as per picture
 - B). Position the shock upright either in the machine or vise and ensure you can hold the reservoir at around the same height as the body and so that there is a surface you can use to sit the hose end of the reservoir on, so you can insert the floating piston.
 - C). Hold the reservoir beside the shock and begin to fill the reservoir, the oil will start to slowly run through into the body – this can be slower on MRA shocks
 - D). The oil will find its level and then fill the reservoir to the reservoir circlip groove.
 - E). Carefully and quickly install the floating piston, pushing it just down below the circlip groove and then lower the reservoir down so the hose is running up to the shock to allow the air bubbles to run from the reservoir through the hose into the body. Give the hose and res a shake

F). with the reservoir still down, push the floating piston further into the reservoir, this should be pushing all the air out into the body, until it is around 10mm from the inner end cap as per the attached picture, measure the depth and check.



11. If the reservoir has not been dismantled, gas the reservoir to push the floating piston against the hose end of the reservoir and then **release the gas pressure**.
12. Fill the shock body so the oil is around 25-50mm from the top
13. Apply lubricant to the circlip groove and D ring on seal assembly
14. Whilst holding the wear band around the piston, install the rod and piston into the body, into the oil and slowly move up and down a few times to bleed the air from the piston, piston and seal head assembly a little into the oil ensuring they have the wear band fitted.
15. With the piston just under the oil move it up and down a few times a small amount to bleed the air out.
16. Top off the oil so it is around 5mm under the circlip groove
17. Slide down the seal head assembly and install the circlip – this will push the floating piston back in the res a little as well as spilling a little bit of oil out the top of the shock body
18. Install the shrader valve end cap onto the res and slowly gas charge to desired PSI per the table below.
19. Check for leaks and clean the oil from the top of the seal assembly, install the dust cap, tighten and install locking grub screw.

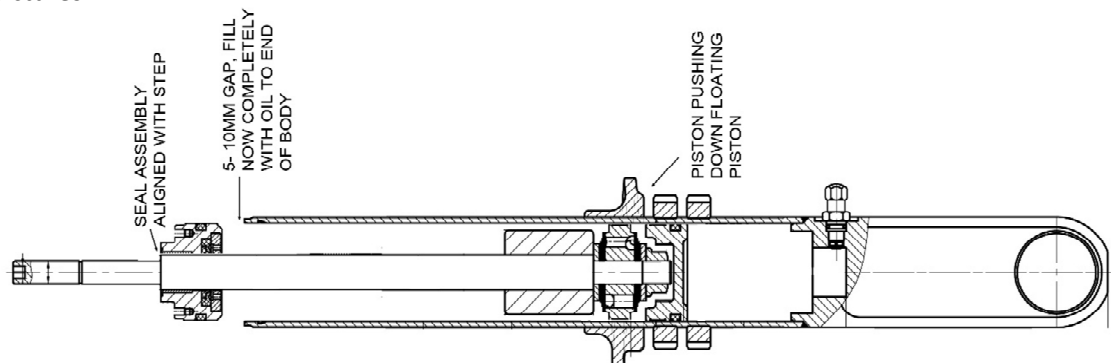
Gas Pressures for MRR/MRA Shock Absorbers

It is recommended to charge to the minimum pressure

Type	Minimum Pressure PSI	Maximum Pressure PSI
MRR with 18mm rod & Soft Compression Damping	150	200
MRR with 18mm rod & Regular / Firm Compression Damping	150	200
MRR with 22mm rod & Soft Compression Damping	130	200
MRR with 22mm rod & Regular / Firm Compression Damping	150	200
MRA with 18mm rod & Soft Compression Damping	130	200
MRA with 18mm rod & Regular / Firm Compression Damping	150	200
MRA with 22mm rod & Soft / Regular Compression Damping	130	200
MRA with 22mm rod & Firm Compression Damping	150	200

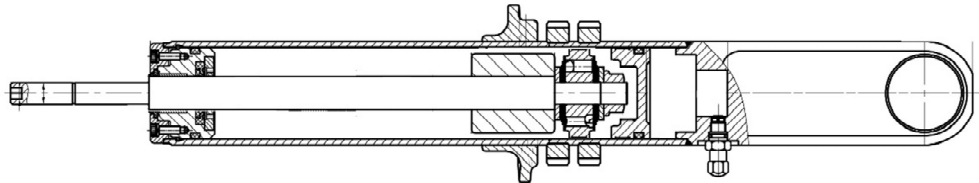
Rebuilding IMS shocks

1. Remove the dust cap grub screw and un screw.
2. **DEGASS SHOCK – Remove cover screw and use needle to de gas. Remove gas valve**
3. Push down seal head assembly (can use machine and spacer tubes between eye and seal assembly)
4. Remove circlip with a seal pick. **Apply some lubricant into the circlip groove**
5. Pull up the rod and seal head assembly together and remove from shock. You can use the machine with screw on ends for pins or clevis and bolt for eyes. It's a good idea to wriggle the shaft as you move it up to help the seal come past the circlip groove.
6. When the main piston is almost out of the shock, remove it from the machine and then slowly pull the piston up by hand, with your fingers around the wear band so it doesn't fall into the shock
7. Tilt the piston on an angle about 30 or 40 degrees and rotate it around to drain the compression and rebound ports oil back into the shock
8. Empty Oil
9. Remove the floating piston- this can be done by placing a thick cloth over the end of the shock and zip tying to the shock body, and then carefully pressuring the gas chamber with compressed air or nitrogen to pop out the floating piston. Take extreme care when doing this.
10. Rebuild and change parts as required.
11. Lubricate the floating piston O ring and the shock body circlip groove.
12. Install floating piston about half way to $\frac{3}{4}$ down the shock body
13. Fill body with oil so the oil is around 50 – 100mm above the floating piston
14. Install the piston rod with the seal assembly installed on the rod – the top of the seal assembly should be pushed against the bottom of the rod end eye, or for pin end shocks it should be parallel with the step in the rod where the first washer goes. This may require screwing the locking ring down onto the seal assembly for eye type shocks. For pin type shocks put a washer on the pin so that it goes down to the step in the shaft and touches the top of the seal assembly. See pictures



15. Push the rod down by pushing on the rod end for eye type shocks, or by pushing on the washer installed in the step above for pin type shocks
16. Push the rod down until it touches the floating piston. Keep pushing down the rod against the floating piston and continue until the bottom of the seal assembly is about 20mm from the top of the shock.
17. Completely fill the shock with oil

18. Push the rod down further until the bottom of the seal assembly is about 1mm from the top of the shock. Use a squirt bottle to top off the oil completely so the shock is completely full.
19. Push the rod assembly down further so the seal assembly enters the body and when the Oring/D-ring is about to enter the shock body. Once the D ring/ O ring on the seal assembly enters the body push down only on the seal assembly and install the circlip. This should finished the shock with the floating piston just a few mm away from the end of the shock at full compression.



20. Install the gas valve and gas to 150 psi