

Rev.	Date	ECN No.	Comment	Title
0	6/9/2016	E-1103	Initial Release	Reservoir Installation
1	3/20/2018	E-1147	Increase 19 holes to 0.173"	
2	8/27/2018	E-1152	Increase Upper Oil	
3	10/31/2018	E-1158	Compression Valve Holes	

Procedure

- 1 Skip to step 14.2 if strut and reservoir were purchased assembled.
- 2 **Important!** Vent upper chamber pressure.
- 3 Remove upper cap. Use a nylon strap wrench to hold lower cap while unscrewing upper cap with a large wrench, or 5/8" rod inserted through the spherical bearing. *Oil will leak from seams of shell (aluminum cylinder) when upper cap is loosened.*
 - 3.1 Optional: If desired, you can remove the filler valve from the upper cap and plug the hole with a 1/8 NPT pipe plug.
- 4 Drain upper oil. *You can reuse the oil if it is not contaminated.*
- 5 Remove compression valve from top of inner steel cylinder and replace with the new valve and springs provided if your struts are being upgraded to integral or remote reservoirs.
 - 5.1 Struts with or without piggyback reservoirs use the standard 3-hole compression valve. Center hole is 0.500", three outer holes are 0.148", three stiff springs.
 - 5.2 Struts with the large integral or remote reservoir use a special compression valve and weaker springs. Valve should have a 0.618" center hole, and six 0.136" outer holes.
- 6 Remove the 19 brass bypass tubes by unscrewing from upper cap. These will no longer be used. Drill all 19 holes to 0.173" diameter if not already that size.
- 7 Clean all O-ring sealing surfaces thoroughly.
- 8 Make sure the steel inner cylinder did not come unscrewed from the lower cap during disassembly—*there should be no gap between the cylinder flange and the aluminum lower cap. Tighten firmly if needed.*
- 9 Lubricate the new O-rings and place into the proper grooves.
- 10 Replace the shell with the 2" shorter shell provided in the kit.

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- 11 Extend strut to full extension.
- 12 With strut fully extended, add Spectro 5.0w oil to the upper chamber inner steel cylinder according to the oil fill chart.
- 13 Install new compression valve with its three springs.
- 14 Install Reservoir Assembly
 - 14.1 Install Shell, then Reservoir Plate, then Upper Cap. Be sure to place an O-ring at each joint.
 - 14.2 For remote reservoir, seal all pipe threads with Teflon tape.
 - 14.3 **Important!** Remote reservoir must be oriented vertical to 60° from vertical.
 - If vertical, filler valve and adjustment knob must be on bottom end.
 - If mounted on angle, filler valve must be on high side of adjustment knob with adjustment knob at low end of reservoir, pipe fitting on high end.
- 15 Tighten upper cap firmly enough to seal, but do not tighten completely; you might need to rotate and align the reservoir.
- 16 Install strut onto vehicle. Swing the reservoir assembly to a position where it will not interfere with chassis and wheel movement when suspension is cycled through its stroke.
 - 16.1 If there is too much movement of the strut on its spherical bearings you can add rubber washers between the 1" wide upper cap tab and the frame mounts. You can also cut 3/4" heater hose into short pieces, purchased from any auto parts store.
- 17 With the upper cap bolted and secured to the vehicle mounting position, tighten lower cap with a nylon strap wrench until it stops rotating. Confirm that the reservoir is still in its proper position and tight enough that it will not rotate.
- 18 Leak test! Pressurize the upper chamber and spray strut with soapy water to inspect for leaks.
- 19 Pressurize lower chambers, then upper chambers as needed.

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20 Adjust compression damping by rotating knob on bottom of reservoir to any of 24 positions. A good starting point is backed off 12 clicks from full clockwise.

20.1 Counter-clockwise: Faster compression.

20.2 Clockwise: Slower compression.

21 Spring rate is tuned by adding or removing oil from the upper chamber.

21.1 If spring rate is too soft, you can add oil (see chart).

21.2 If spring rate is too stiff, you can remove oil (see chart).

21.3 To remove oil, vent upper pressure, remove one of the five plugs from the reservoir end cap. Oil will drain faster if you slowly compress the strut while draining.

21.4 To add oil, vent upper pressure, remove filler valve core from the filler valve stem in the reservoir end cap. Attach a bottle and hose filled with the desired amount of oil to be added to the filler valve stem. Squeeze the bottle while extending the strut to pull the oil into the strut. When finished, reinstall the filler valve core.

Recommended Oil Fill – Upper Chamber/Reservoir

(Spectro 5w suspension fluid, or equivalent)

Stroke Length	Recommended Oil CCs	Allowable Addition (+)	Allowable Removal (-)
8"	420	40	110
10"	550 (600 RZR Rear)	60	140
12"	650	80	170
14"	750	100	200
16"	850	120	230
18"	950	140	260
20"	1050	160	290

END