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FORK REBOUND GOLD VALVE INSTALLATION - DIRT WP 4CS

FK code

<IP FRGV 200603.doc> **FRGV 200603** P Thede © 4.17.15 5 pgs

TOOLS REQUIRED: In addition to the tools required for disassembly and assembly. Hi-Strength Loctite, 400 grit (very fine) Sandpaper, Torx T27 Socket, Inch-pound Torque Wrench that can accurately measure 30 in-lbs.

CAUTION: THIS PROCEDURE SHOULD ONLY BE DONE BY A QUALIFIED SUSPENSION TECHNICIAN. IF YOU ARE NOT FAMILIAR WITH THIS PROCEDURE, STOP! CONTACT RACE TECH OR A QUALIFIED SUSPENSION TECHNICIAN.

DISASSEMBLY

D1 **Disassemble the forks** and remove the cartridge.

D2 **Remove the Compression Base Valve**. If you are installing Compression Gold Valves at this time, follow the instructions included in the kit.

D3 When disassembling the forks be sure to keep all components of the left and right leg separate. The left leg has the compression adjuster while the right leg has the rebound.

D4 Coat the thread with heavy grease and r**emove the damping rod from the cartridge.**

D5 Remove the Bottoming Piston. Be careful, the Check Needle is inside the Bottoming Piston. **Both Needles will be removed and not reinstalled. This is key to this installation.**

VALVING

VR1 Select the Rebound and Mid-Valve Valving. Begin **assembling the Rebound Gold Valve**. Starting with the Check Spring, MV Packing Stack, Hi-Speed Mid-Valve Stack, Mid-Valve Crossover (if required) and Lo-Speed Mid-Valve Stack. There are two critical components of the Mid-Valve; the stiffness of the Mid-Valve Stack and the "Float". The Float is THE MOST CRITICAL and is controlled by a combination of the thicknesses of the MV Stack, the MV Packing Stack and the Sleeve Extender Stack.

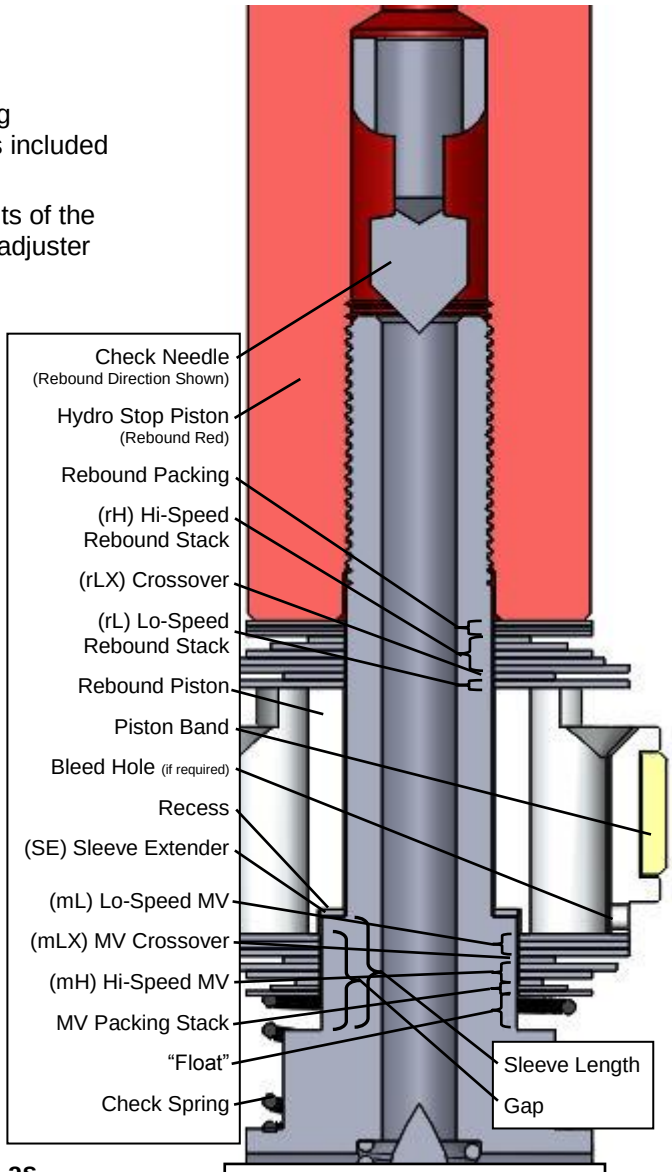
VR2 Install the Rebound Gold Valve with the recess toward the Mid-Valve Stack.

VR3 Select the Rebound Valving Stack. Continue assembly. Install the Lo-Speed Rebound Valving Stack, Lo-Speed Crossover, Hi-Speed Rebound Valving Stack, Rebound Packing Stack and Bottoming Piston.

VR4 **Measure the Exposed Post. This is the distance from the end of the rod to the shims. It must be 10.5 +/- 0.2mm or it can hit the compression valve on hard bottoming. Adjust the rebound packing stack thickness as needed to achieve this.**

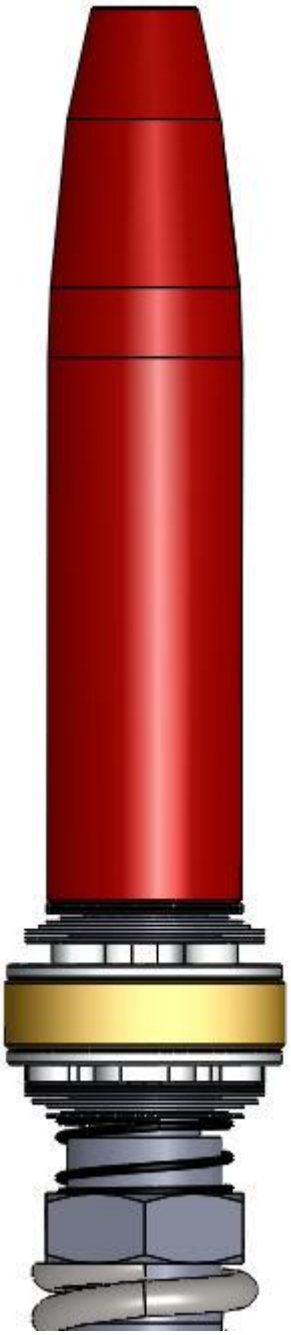
VR5 **Make sure the Check Needle is NOT INSTALLED.** Use Loctite and torque the Bottoming Piston to 30 in-lbs (0.35 kgf-m) using a Torx T27.

IMPORTANT NOTE: Float is critical! There are production tolerances on every component that affects Float. It is best to measure the Float with a Feeler Gauge after the Rebound/Mid-Valve is assembled. Adjust the MV Packing Stack thickness to compensate.



REBOUND and MID-VALVE WP 4CS – Rebound Leg
figure 1

ASSEMBLY – 4CS



A1 *Notice that there is a Bleed Notch (short groove) in the damping rod near the Rebound Valve.* To reduce the risk of damaging the Cartridge Seal, pack the thread with heavy grease before inserting it into the cartridge. **Reinstall the rod** into the cartridge. Screw the Jam Nut/Spring Guide onto the end of the Shaft all the way.

A2 **Check the Fork Spring Preload.** While the cartridge is still out of the fork, install the Fork Cap on the Damping Rod. Extend the Damping Rod gently and measure the distance from the point the spring rests on the end of the Cartridge to the point it rests on the Cap. This is the Set Length. Measure the uninstalled Spring Length. The difference between these two numbers is the Preload (if the spring is longer than the set length). Adjust the number of Preload Washers to get 3 to 5mm of preload.

A3 **REMOVE THE BLUE O-RING FROM THE SEAL HEAD AND LEAVE IT OFF. THIS CONVERTS THE CARTRIDGE TO AN OPEN CHAMBER AND ELIMINATES A PRESSURE BUILD-UP ISSUE. IT REQUIRES SIGNIFICANTLY STIFFER COMPRESSION VALVING SO BE SURE TO CONSULT YOUR DVS.**

A4 **Insert the cartridge into the assembled fork tubes.** Install and tighten the Compression Base Assembly by hand (no air impact). Torque to manufacturers specs.

A5 **Fill the fork with Ultra Slick USF-05 (5w) oil**. Bleed the cartridge by pumping the Damping Rod up and down until all the air bubbles are gone.

A6 With the forks compressed **set the oil level**.

NOTE: WP forks there is no bleed hole in the inner (chrome) tube. These forks 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. Do this 2 times.

A7 Install the Fork Springs. **Make sure the Rebound Adjusting Rod is all the way in the Damping Rod**. Back out the adjuster before installing the cap on the Rod. Use Loctite on the damping rod thread at the Rebound Adjuster.

A8 **Tighten the fork cap and set the rebound adjusters** on the caps to the DVS recommendation. External compression adjusters are available.

A9 **Install the forks on the bike**. When the forks are put on the bike it is very important to align the fork tubes. This is done by first tightening the axle all the way, then the tubes are aligned by pumping the forks up and down with the right-hand axle clamp loose. This will line the tubes up so they won't bind. Finally, tighten the axle clamp.

A10 **If you have any questions** please call Technical Support at 951.279.6655. Feel free to experiment and call if you need us. Have fun!

Rebound and Mid-Valve Valving Selection

WP 4CS DIRT 20mm

Welcome to the wonderful world of Gold Valving. **To obtain your Custom Suspension Settings:**

1. **Log on to www.racetech.com and go to Digital Valving Search (DVS)**
2. **Input your Access Code (on top of page 1) when prompted**
3. **Input your personal specifications**
4. **Print your DVS Custom Suspension Setup Sheet**

If you do not have access to the Internet contact our Technical Support Hotline 951.279.6655 for recommendations. Note: The Access Code is good for one bike, limited-time use.

Once you have your recommended valving settings, build the Mid-Valve Stack.

MID-VALVE EXAMPLE ONLY (see your DVS):

The **Total Mid-Valve Stack** is **mL1002, mLX1010, mH144, MVP30 and SE50**.

Starting from the **recessed** Gold Valve piston face:

Sleeve Length 8 od – 2.60mm long (stock WP)

Sleeve Extender – SE50 – 0.50mm thick

(2) 0.15x8x6 ID
(2) 0.10x8x6 ID

Recess Depth - 1.00mm (std Gold Valve)

Lo-Speed Mid-Valve Stack – mL1002 - 0.20mm thick

(2) 0.10x17x8 ID

Mid-Valve Crossover – mLX1010 - 0.10mm thick

(1) 0.10x10

Hi-Speed Mid-Valve Stack – mH144 - 0.70mm thick

(1) 0.10x15
(1) 0.10x14
(5) 0.10x10

Mid-Valve Packing Stack – MVP80 - 0.80mm thick

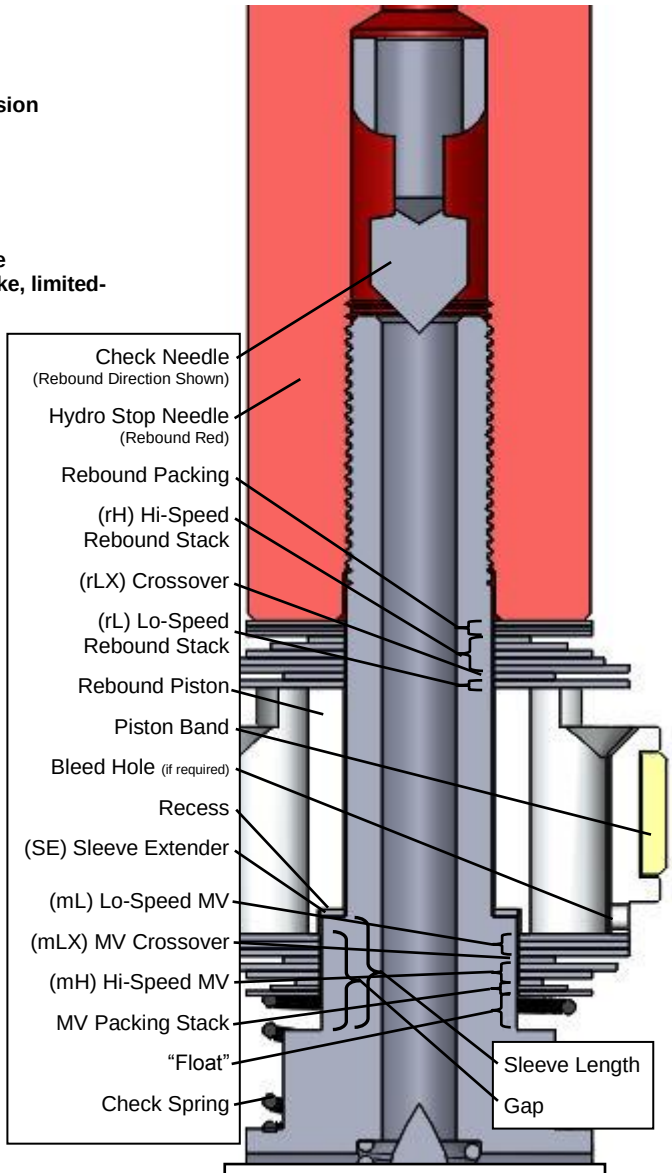
(1) 0.15x12
(1) 0.20x14

Float = Gap – Total Stack Thickness

Sleeve Length (stock WP)	2.60
Sleeve Extender (SE50)	+ .50
Recess (std Gold Valve)	— 1.00
Gap	= 2.10

Lo-speed MV Stack (mL1002)	.20
MV Crossover (mLX1010)	+ .10
Hi-speed MV Stack (mH144)	+ .70
MVP Packing (MVP)	+ .80
Total Stack Thickness	= 1.80

Gap	2.10
Total Stack Thickness	— 1.80
Float (example only - see your DVS)	= .30



REBOUND and MID-VALVE WP 4CS
figure 1

CHECK THE FLOAT WITH A FEELER GAUGE - These calculations have already been done in your recommended DVS Setting. **However, *Float is critical! There are production tolerances on every component that affects Float. It is best to measure the Float with a Feeler Gauge after the Rebound/Mid-Valve is assembled. Adjust the MV Packing Stack thickness to compensate for these errors and create the correct Float.***

FORK MID-VALVE GOLD VALVE CHART - DIRT WP 4CS 20mm

<FMV2017-140222> © R Brown, P Thede (SH08 MV2001)

LO-SPEED MID-VALVE (8mm ID shims) ***STIFFER →***

mL1001	mL1002	mL1003	mL1004	mL1005	mL1006	mL1007	mL1008*	mL1009*	mL1010*
(1).10x17	(2).10x17	(3).10x17	(4).10x17	(5).10x17	(6).10x17	(7).10x17	(8).10x17	(9).10x17	(10).10x17
mL1501*	**mL1502***	**mL1503***	**mL1504***	**mL1505***	**mL1506***	**mL1507***	**mL1508***	**mL1509***	**mL1510***
(1).15x17	(2).15x17	(3).15x17	(4).15x17	(5).15x17	(6).15x17	(7).15x17	(8).15x17	(9).15x17	(10).15x17

LO-SPEED MID-VALVE CROSSOVER (8mm ID shims) ***STIFFER →***

mLX1010	mLX1011*
.10x10	.10x11
mLX1510*	**mLX1511***
.15x10	.15x11

HI-SPEED MID-VALVE (8mm ID shims) ***STIFFER →***

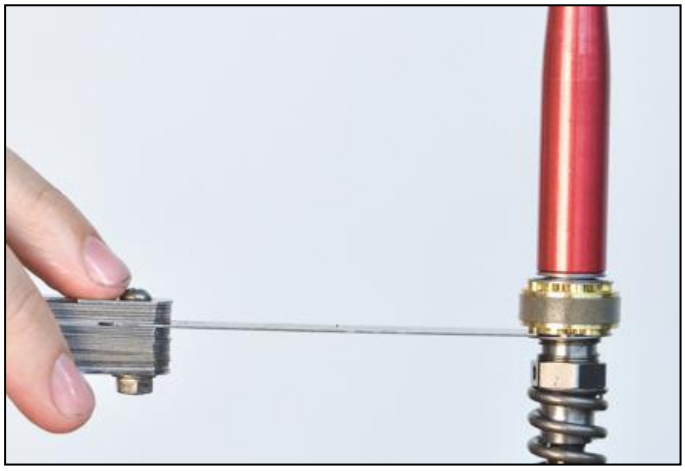
mH131	mH132	mH133	mH134	mH135	mH136	mH137	mH138	mH139	mH140
.15x17	.15x17	.15x17	.15x17	.15x17	.15x17	.15x17	.15x17	.15x17	.15x17
mH141	**mH142**	**mH143**	**mH144**	**mH145**	**mH146**	**mH147**	**mH148**	**mH149***	**mH150***
.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.15x15
.10x11	.10x12	.10x13	.10x14	.10x12	.10x13	.10x13	.10x14	.15x13	.15x13
(5).10x10	(5).10x10	(5).10x10	(5).10x10	.10x11	.10x11	.10x12	.10x13	.15x11	.15x11
				(4).10x10	(4).10x10	.10x11	.10x12	(3).10x10	.15x10
						(3).10x10	.10x11		.10x10
							(2).10x10		

MID-VALVE PACKING (8mm ID shims) ***THICKER →***

MVP30	MVP35	MVP40	MVP45	MVP50	MVP55	MVP60	MVP65	MVP70	MVP75
.10x12	.15x12	(2).10x12	.10x12	(2).15x12	(2).10x12	.10x12	(3).15x12	(2).10x12	.10x12
.20x14	.20x14	.20x14	.15x12	.20x14	.15x12	(2).15x12	.20x14	(2).15x12	(3).15x12
			.20x14		.20x14	.20x14		.20x14	.20x14
MVP80	**MVP85**	**MVP90**	**MVP95**	**MVP100**					
(4).15x12	(2).10x12	.10x12	(5).15x12	(2).10x12					
.20x14	(3).15x12	(4).15x12	.20x14	(4).15x12					
	.20x14	.20x14		.20x14					

MID-VALVE SLEEVE EXTENSION (6mm ID shims) ***LONGER →***

SE10	SE15	SE20	SE25	SE30	SE35	SE40	SE45	SE50	SE55
.10x8x6	.15x8x6	(2).10x8x6	.15x8x6	(2).15x8x6	.15x8x6	(2).15x8x6	(3).15x8x6	(2).15x8x6	(3).15x8x6
			.10x8x6		(2).10x8x6	.10x8x6		(2).10x8x6	.10x8x6
SE60	**SE65**	**SE70**	**SE75**	**SE80**	**SE85**	**SE90**	**SE95**	**SE100**	
(4).15x8x6	(3).15x8x6	(4).15x8x6	(5).15x8x6	(4).15x8x6	(5).15x8x6	(6).15x8x6	(5).15x8x6	(6).15x8x6	
	(2).10x8x6	.10x8x6		(2).10x8x6	.10x8x6		(2).10x8x6	.10x8x6	



CHECK THE FLOAT WITH A FEELER GAUGE - Float is critical! There are production tolerances on every component that affects Float. It is best to measure the Float with a Feeler Gauge after the Rebound/Mid-Valve is assembled. Adjust the MV Packing Stack thickness to compensate for these errors and create the correct Float.

Next build the Rebound Valving Stack.

REBOUND EXAMPLE ONLY (see your DVS):

The **Total Rebound Valving Stack** is rL1004, rLX1010, and rH144.
Starting from the **flat** Gold Valve piston face:

Lo-Speed Stack – rL1004
(4) 0.10x17

Lo-Speed Stack – rLX1010
(1) 0.10x10

Hi-Speed Stack – rH144
(1) 0.10x15
(1) 0.10x13
(1) 0.10x11
(1) 0.10x10
(2) 0.15x9

See the "How To" section of racetech.com for a Step by Step Picture Instruction for this Kit.
>Fork Gold Valve Installation and Fork Rebuild – WP 4CS

FORK REBOUND GOLD VALVE CHART - DIRT 20mm

<FR201702-140222> (SH06 R2003)

LO-SPEED REBOUND (6mm ID shims) ***STIFFER →***

rL1001	rL1002	rL1003	rL1004	rL1005	rL1006	rL1007*	rL1008*	rL1009*	rL1010*
(1).10X17	(2).10X17	(3).10X17	(4).10X17	(5).10X17	(6).10X17	(7).10X17	(8).10X17	(9).10X17	(10).10X17

LO-SPEED REBOUND CROSSOVER ***STIFFER →***

rLX1009*	rLX1010	rLX1011*
.10x9	.10x10	.10x11

HI-SPEED REBOUND ***STIFFER →***

rH141	rH142	rH143	rH144	rH145	rH146	rH147*	rH148*	rH149*	rH150*
.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15	.10x15
.10x13	.10x13	.10x13	.10x13	.10x13	.10x14	.10x13	.10x13	.10x14	.10x14
.10x11	.10x11	.10x11	.10x11	.10x12	.10x13	.10x11	.10x12	.10x13	.10x13
(2).15x8	.10x10	(2).15x9	.10x10	.10x11	.10x12	(2).15x10	.10x11	.10x12	.10x12
	(2).15x8		(2).15x9	.10x10	.10x11		(2).15x10	.10x11	(2).15x11
				(2).15x9	.10x10			(2).15x10	
					(2).15x9				

BLEED HOLE (drill if required) ***SLOWER →***

1.9mm	1.8mm	1.7mm	1.6mm	1.5mm	1.4mm	1.3mm	1.2mm	1.1mm	1.0mm
#48	#50	#51	#52	#53	#54	#55	#56	#57	#60

* SHIMS NOT PROVIDED IN STANDARD KIT (please call) Shim dimensions - (QUANTITY) THICKNESS x DIAMETER in mm

For assistance please contact the Race Tech Technical Support Hotline 951.279.6655.

Step VR4 - **Measure and set the Exposed Post** – this is critical! **It must be 10.5 +/-0.2mm. This one is a little long. Adding a 0.30mm shim would work.**