RACE TECH

FORK G2-R COMPRESSION AND REBOUND GOLD VALVE INSTALLATION - *DIRT 39C/30R SFF AIR*

FK code

TOOLS REQUIRED: (In addition to those required for fork disassembly.) In-lb torque wrench that accurately measures 0 to 50 in-lbs (0.58 kgf-m), Fine flat file, Hi-strength Loctite (included), Metric calipers and micrometer.

NOTE: Setting the air pressures in the "Spring Leg" is critical and MUST be done every time the bike is ridden.

DISASSEMBLY COMPRESSION

D1   This is a SFF (Single Function Fork) Air Spring fork with damping in one leg only. Which leg (left or right) is the damping leg depends on the brand of motorcycle. ***Completely disassemble and clean the damping leg only. If you are unfamiliar with this process, STOP! Do not proceed. Seek out a qualified suspension technician to complete the installation.***

NOTE: Twin-Chamber Forks are slightly different than open cartridges. When removing the damping rod from the cartridge, carefully inspect the thread on the end of the damping rod for sharp edges. **These edges can EASILY tear the shaft seal.** As a precaution dress the sharp edges with a fine file and pack the thread with heavy grease before you slide the damping rod out.

D2   ***Remove the nut***. When disassembling the compression valve for the first time, ***the thread above the nut must be filed off flat***. Lightly deburr the end of the thread.

D3   ***Disassemble the valving stack***. Lay out the pieces in the order they come off the shaft. Clean and inspect all the original parts. Be careful to maintain the original order and orientation of the parts. *(You may need some of the original valving for spacing purposes, do not discard.)*
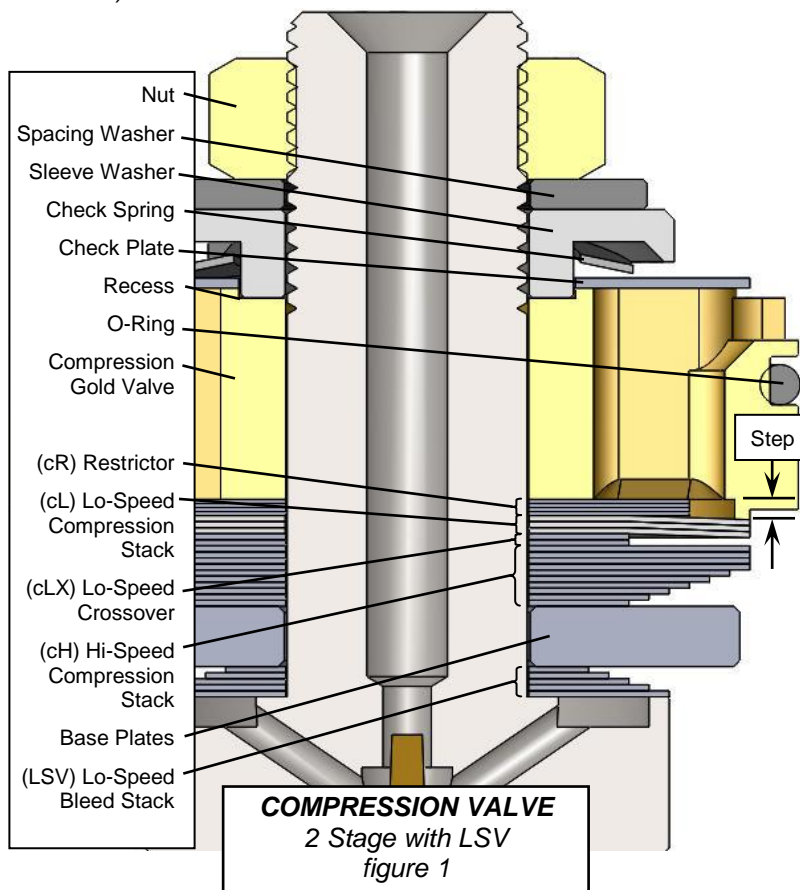
COMPRESSION VALVING

G2-R Theory - There are many ways to setup the valving with G2-Rs. They are made to be preloaded (digressive) or restricted (progressive). This adds a little complexity but makes them extremely versatile.

The Gold Valve piston face has a **1.0mm step** on it. This means if you put on a standard valving stack, without a Restrictor Stack, the shims will be bent 1.0mm without opening. This is called a 1mm preloaded stack. We have found that the best preloads are typically between zero and 0.1mm. The Restrictor Valving Stack thickness adjusts the preload.

'Step'–'Restrictor Stack Height'='Preload'

example. 1.00 – 0.90 = 0.10 preload

The Restrictor Valving serves a second function. Increasing the diameter restricts the flow area of the ports. This increases the damping at high velocities like landing off a jump.

COMPRESSION VALVE
2 Stage with LSV
figure 1

Labels (top to bottom):
Nut
Spacing Washer
Sleeve Washer
Check Spring
Check Plate
Recess
O-Ring
Compression Gold Valve
(cR) Restrictor
(cL) Lo-Speed Compression Stack
(cLX) Lo-Speed Crossover
(cH) Hi-Speed Compression Stack
Base Plates
(LSV) Lo-Speed Bleed Stack
Step

V1　**To obtain custom valving settings visit www.racetech.com, go to Digital Valving Search (DVS), insert your Access Code (printed on the top of the first page), input your personal specifications and print the custom setup information. If you do not have access to the web contact our Technical Support Hotline 951.279.6655 for recommendations. Note: The Access Code is good for one limited-time use.**

There are two types of valving for Gold Valves, *Single Stage and Two Stage*. **Two Stage Valving** is used for softer Motocross as well as Enduro, Hare Scrambles, and Trail. **Single Stage** is used for Motocross, Desert, and Supercross. The feel is firmer and the front end rides higher than Two Stage. You will be asked to choose Single Stage or Two Stage during the DVS process.

VC2　Once you have selected your valving **begin assembling the valve**. **If you have a RT Lo-Speed Valve (LSV) (**particularly useful for SX, AX and aggressive MX**) refer to figure 2 and the last page for the LSV Valving Chart.** The exact configuration may look slightly different. Assemble the LSV according to the DVS Setup sheet. If you don't have a LSV Place the Base Plate on the shaft of the compression valve and refer to figure 1.

➔**NOTE ON RESTRICTOR STACK THICKNESS** - *DVS Setting provide theoretical preloads based on exact production tolerances. In the real world* there are production tolerances on every component. It is best to measure the Total Restrictor Stack Thickness as an assembled stack (make sure everything is clean). Also measure the Step on the compression face of the G2-R Gold Valve. Calculate the actual preload. It may be best to slightly surface the piston face on 400 grit sandpaper on a piece of plate glass to get the correct preload.

VC2a **Single Stage Stacks** - A Single Stage Stack is a two-part stack made up of **a combination of a Lo-Speed Stack and a Hi-Speed Stack with NO Crossover (figure 2)**. Put the valving on the shaft in the order listed, starting with the smallest diameter shim of the Hi-Speed Stack. Then the Lo-Speed Stack gets placed on top of the Hi-Speed Stack. **You will not use a Crossover** but you will use a **Restrictor Valving Stack** installed next to the Gold Valve itself.

VC2b **Two Stage Stacks (figure 1) -** For Two Stage Stacks the total valving stack is made up of **a combination of a Lo-Speed Stack, a Lo-Speed Crossover and a Hi-Speed Stack**. Put the valving on the shaft in the order listed, starting with the smallest diameter shim of the Hi-Speed Stack. Then the Lo-Speed Crossover gets placed on top of the Hi-Speed Stack, then the Lo-Speed Stack. Then the **Restrictor Valving Stack** is installed next to the Gold Valve itself.

VC3　**Place the Gold Valve on the shaft** with the small recess on the piston facing up. Make sure the o-ring is on the Gold Valve.

VC4　**Place the new check valve plate** *(16.7mm ID washer)* **and the wave washer Check Spring on the shaft**. Next install the Sleeve Washer and the stock Nut. **Be sure the Check Plate is free to move on the Sleeve Washer** before you tighten the nut.

VC5　**Check to see the total valve stack thickness is correct. WARNING: *You must be very sure that the nut does not run out of thread onto the straight part of the shaft.* If it does, the nut will not tighten down on the valving. This will cause incorrect operation or else the nut will come off. This is a critical part of the installation.** To get the proper total valve stack thickness you may need to place some of the original shims on the shaft just after the base plate. NOTE: Any shims added must be larger in diameter than the last shim in the stack. **Be sure the nut is fully engaging the thread!**

VC6　*CAUTION! The thread can be damaged without extreme care. To install the nut you must use Loctite. The M12x1.0mm nut must be torqued with a torque wrench to 15 ft-lbs (20 NM), NO MORE! Do not take this step lightly.*

VC7　**Inspect your work**. For two stage stacks, hold the compression stack up to the light and look for the gap at the crossover between the lo-speed and hi-speed stack*.* This gap should be visible, if it isn't, disassemble the stack and look for burrs to surface and/or dirt in the valving. Reassemble and check again.

BUILDING the COMPRESSION VALVING STACK – DIRT 3930GC

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

1. **Log on to www.racetech.com**
2. **Go to Digital Valving Search (DVS)**
3. **Input your Access Code (on top of page 1) when prompted**
4. **Input your personal specifications**
5. **Print your Custom DVS 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 for a limited-time.

Once you have your valving settings, build your compression valving stacks.

Single Stage - made up of a Restrictor Stack, a Lo-Speed Stack and a Hi-Speed Stack – **NO Crossover**.

Two Stage - made up of a Restrictor Stack, a Lo-Speed Stack, a Crossover, and a Hi-Speed Stack.

Example Single Stage (figure 2)*:*

The **Total Compression Valving Stack** is:

Restrictor Valving	**cR10.27**
Lo-Speed	**cL1510**
Crossover	**cLX – none**
Hi-Speed	**cH57**

Starting from the Gold Valve piston face:

Restrictor Valving – cR10.27
   (6) 0.15x27

Lo-Speed Stack – cL1510
   (10) .15x34

Hi-Speed Stack – cH57

   (1) .15x34
   (1) .15x32
   (1) .15x30
   (1) .15x29
   (1) .15x28
   (1) .15x27
   (1) .15x26
   (1) .15x25
   (1) .15x24
   (1) .15x23
   (1) .15x22

> ***Visit www.racetech.com, go to Digital Valving Search (DVS) with your Access Code (from the top of page 1) for your personal computer calculated valving setup!***

Example Two Stage (figure 1)*:*

The **Total Compression Valving Stack** is:

Restrictor Valving	**cR10.27**
Lo-Speed	**cL1510**
Crossover	**cLX1026**
Hi-Speed	**cH57**

Starting from the Gold Valve piston face

Restrictor Valving – cR10.27
   (6) 0.15x27

Lo-Speed Stack – cL1510
   (10) .15x34

Lo-Speed Crossover – cLX1026
   (1) .10x26

Hi-Speed Stack – cH57

   (1) .15x34
   (1) .15x32
   (1) .15x30
   (1) .15x29
   (1) .15x28
   (1) .15x27
   (1) .15x26
   (1) .15x25
   (1) .15x24
   (1) .15x23
   (1) .15x22

OIL LEVEL, EXTERNAL ADJUSTERS, SPRING RATE, and PRELOAD are listed on the DVS on racetech.com.

NOTE: All measurements are metric *(for inches divide by 25.4)*. The valving list starts at the piston face and goes towards the base plate. Valve specs are listed by (QUANTITY) THICKNESS x DIAMETER. A number in parentheses means quantity. If there is no number in parenthesis the quantity is one. Example: (2).15x30 means quantity two, 15 hundredths of a millimeter thick by 30 millimeters in diameter.

RESTRICTOR VALVING   **STIFFER** (Diameter) →

0.00 Preload	cR00.18	cR00.25	cR00.27	cR00.29
0.00	(6).15x18	(6).15x25	(6).15x27	(6).15x29
	(1).10x18	(1).10x18	(1).10x18	(1).10x18
0.05 Preload	cR05.18	cR05.25	cR05.27	cR05.29
0.05	(5).15x18	(5).15x25	(5).15x27	(5).15x29
	(2).10x18	(2).10x18	(2).10x18	(2).10x18
0.10 Preload	cR10.18	cR10.25	cR10.27	cR10.29
0.10	(6).15x18	(6).15x25	(6).15x27	(6).15x29

S T I F F E R ↓

The Restrictor Valving Stack serves 2 purposes. First, its diameter can restrict the port size. Second, its thickness can create preload.

The piston face has a 1.0mm step on it. This means if you put on a standard valving stack the shims is bent 1.0mm without opening. We call this a 1mm preloaded stack. Testing has shown that the best preloads are between zero and 0.10mm. The Restrictor Valving Stack thickness adjusts the preload.

      'Step' – 'Restrictor Stack Height' = 'Preload'

➔Be sure to measure the Total Valving Stack thickness and the actual Step. Adjust as necessary to get the DVS Preload.

FORK GOLD VALVE COMPRESSION CHART - *DIRT SFF 39mm*

<FC393401-141026>© R Brown, P Thede
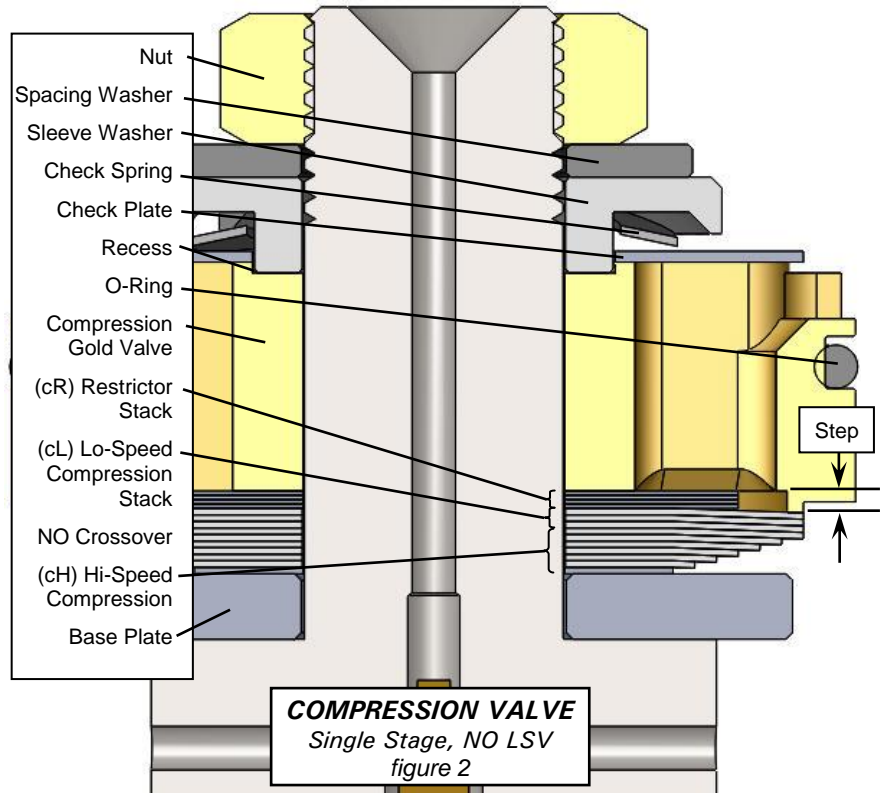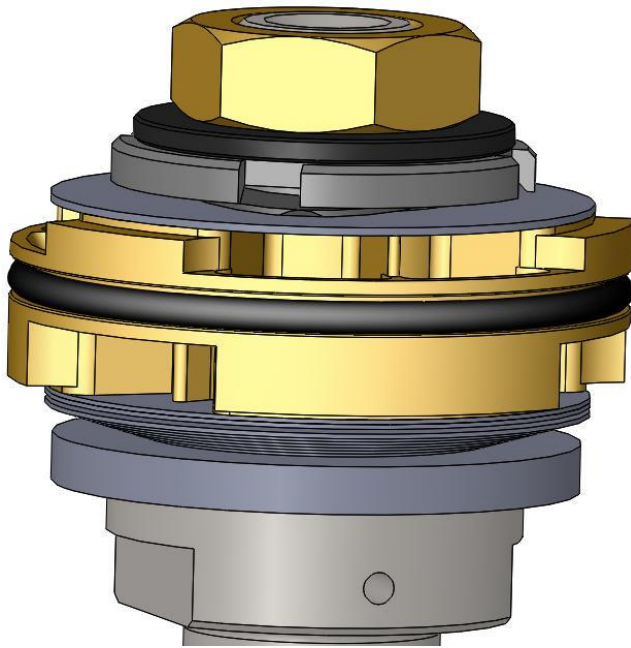
LO-SPEED COMPRESSION   STIFFER →

cL1501	cL1502	cL1503	cL1504	cL1505	cL1506	cL1507	cL1508	cL1509	cL1510
(1).15x34	(2).15x34	(3).15x34	(4).15x34	(5).15x34	(6).15x34	(7).15x34	(8).15x34	(9).15x34	(10).15x34
cL1511	**cL1512**	**cL1513**	**cL1514**	**cL1515**	**cL1516**	**cL1517**	**cL1518**	**cL1519***	**cL1520***
.20x34	.20x34	(2).20x34	(2).20x34	(3).20x34	(3).20x34	(4).20x34	(4).20x34	(5).20x34	(5).20x34
(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34
cL1521*	**cL1522***	**cL1523***	**cL1524***	**cL1525***	**cL1526***	**cL1527***	**cL1528***	**cL1529***	**cL1530***
(6).20x34	(6).20x34	(7).20x34	(7).20x34	(8).20x34	(8).20x34	(9).20x34	(9).20x34	(10).20x34	(10).20x34
(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34	(9).15x34	(10).15x34

LO-SPEED COMPRESSION CROSSOVER   STIFFER →

cLX1022*	cLX1024*	cLX1026*	cLX1028*	cLX1030*
.10x22	.10x24	.10x26	.10x28	.10x30

HI-SPEED COMPRESSION   STIFFER →

cH30*	cH31*	cH32*	cH33*	cH34*	cH35*	cH36*	cH37	cH38	cH39
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34
.15x30	.15x30	.15x30	.15x30	.15x32	.15x32	.15x32	.15x32	.15x32	.15x32
.15x26	.15x26	.15x26	.15x28	.15x30	.15x30	.15x30	.15x30	.15x30	.15x30
.15x22	.15x22	.15x24	.15x26	.15x28	.15x28	.15x28	.15x28	.15x28	.15x28
.15x18	.15x20	.15x22	.15x24	.15x26	.15x26	.15x26	.15x26	.15x26	.15x26
.15x16	.15x18	.15x20	.15x22	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24
	.15x16	.15x18	.15x20	.15x22	.15x22	.15x22	.15x22	.15x22	.15x22
		.15x16	.15x18	.15x20	.15x20	.15x20	.15x20	.15x20	.15x21
			.15x16	.15x18	.15x19	.15x18	.15x19	.15x19	.15x20
				.15x16	.15x18	.15x17	.15x18	.15x18	.15x19
					.15x17	.15x17		.15x17	.15x18
					.15x16				.15x17

Nut
Spacing Washer
Sleeve Washer
Check Spring
Check Plate
Recess
O-Ring
Compression Gold Valve
(cR) Restrictor Stack
(cL) Lo-Speed Compression Stack
NO Crossover
(cH) Hi-Speed Compression
Base Plate

Step

COMPRESSION VALVE
Single Stage, NO LSV
figure 2

cH40	cH41	cH42	cH43	cH44	cH45	cH46	cH47	cH48	cH49
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x33	.15x34	.15x34
.15x32	.15x32	.15x32	.15x32	.15x32	.15x32	.15x32	.15x32	.15x32	.15x32
.15x30	.15x30	.15x30	.15x30	.15x31	.15x30	.15x31	.15x32	.15x30	.15x31
.15x28	.15x28	.15x28	.15x29	.15x30	.15x29	.15x30	.15x31	.15x29	.15x30
.15x26	.15x26	.15x27	.15x28	.15x29	.15x28	.15x29	.15x30	.15x28	.15x29
.15x24	.15x25	.15x26	.15x27	.15x28	.15x27	.15x28	.15x29	.15x27	.15x28
.15x23	.15x24	.15x25	.15x26	.15x27	.15x26	.15x27	.15x28	.15x26	.15x27
.15x22	.15x23	.15x24	.15x25	.15x26	.15x25	.15x26	.15x27	.15x25	.15x26
.15x21	.15x22	.15x23	.15x24	.15x25	.15x24	.15x25	.15x26	.15x24	.15x25
.15x20	.15x21	.15x22	.15x23	.15x24	.15x23	.15x24	.15x25	.15x23	.15x24
.15x19	.15x20	.15x21	.15x22	.15x23	.15x22	.15x23	.15x24	.15x22	.15x23
.15x18	.15x19	.15x20	.15x21	.15x22	.15x21	.15x22	.15x23	.15x21	.15x22
.15x17	.15x18	.15x19	.15x20	.15x21	.15x20	.15x21	.15x22	.15x20	.15x21
	.15x17	.15x18	.15x19	.15x20	.15x19	.15x20	.15x21	.15x19	.15x20
		.15x17	.15x18	.15x19	.15x18	.15x19	.15x20		.15x19
			.15x17	.15x18		.15x18	.15x19		
				.15x17			.15x18		

cH50	cH51	cH52	cH53	cH54	cH55	cH56	cH57	cH58	cH59
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34
.15x33	.15x32	.15x32	.15x33	.15x32	.15x32	.15x33	.15x32	.15x32	.15x33
.15x32	.15x30	.15x31	.15x32	.15x30	.15x31	.15x32	.15x30	.15x31	.15x32
.15x31	.15x29	.15x30	.15x31	.15x29	.15x30	.15x31	.15x29	.15x30	.15x31
.15x30	.15x28	.15x29	.15x30	.15x28	.15x29	.15x30	.15x28	.15x29	.15x30
.15x29	.15x27	.15x28	.15x29	.15x27	.15x28	.15x29	.15x27	.15x28	.15x29
.15x28	.15x26	.15x27	.15x28	.15x26	.15x27	.15x28	.15x26	.15x27	.15x28
.15x27	.15x25	.15x26	.15x27	.15x25	.15x26	.15x27	.15x25	.15x26	.15x27
.15x26	.15x24	.15x25	.15x26	.15x24	.15x25	.15x26	.15x24	.15x25	.15x26
.15x25	.15x23	.15x24	.15x25	.15x23	.15x24	.15x25	.15x23	.15x24	.15x25
.15x24	.15x22	.15x23	.15x24	.15x22	.15x23	.15x24	.15x22	.15x23	.15x24
.15x23	.15x21	.15x22	.15x23	.15x21	.15x22	.15x23		.15x22	.15x23
.15x22	.15x20	.15x21	.15x22		.15x21	.15x22			.15x22
.15x21		.15x20	.15x21			.15x21			
.15x20			.15x20						
.15x19									

cH60	cH61	cH62	cH63	cH64	cH65	cH66	cH67	cH68	cH69
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34
.15x32	.15x32	.15x33	.15x32	.15x32	.15x33	.15x32	.15x32	.15x33	.15x32
.15x30	.15x31	.15x32	.15x30	.15x31	.15x32	.15x30	.15x31	.15x32	.15x30
.15x29	.15x30	.15x31	.15x29	.15x30	.15x31	.15x29	.15x30	.15x31	.15x29
.15x28	.15x29	.15x30	.15x28	.15x29	.15x30	.15x28	.15x29	.15x30	.15x28
.15x27	.15x28	.15x29	.15x27	.15x28	.15x29	.15x27	.15x28	.15x29	.15x27
.15x26	.15x27	.15x28	.15x26	.15x27	.15x28	.15x26	.15x27	.15x28	.15x26
.15x25	.15x26	.15x27	.15x25	.15x26	.15x27	.15x25	.15x26	.15x27	
.15x24	.15x25	.15x26	.15x24	.15x25	.15x26		.15x25	.15x26	
.15x23	.15x24	.15x25		.15x24	.15x25			.15x25	
	.15x23	.15x24			.15x24				
		.15x23							

cH70	cH71	cH72*	cH73*	cH74*	cH75*	cH76*	cH77*	cH78*	cH79*
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34
.15x32	.15x33	.15x33	.15x33	.15x33	.15x32	.15x32	.15x33	.15x33	.15x33
.15x31	.15x32	.15x32	.15x32	.15x32	.15x30	.15x31	.15x32	.15x32	.15x32
.15x30	.15x31	.15x31	.15x31	.15x31	.15x29	.15x30	.15x31	.15x31	.15x31
.15x29	.15x30	.15x30	.15x30	.15x30	.15x28	.15x29	.15x30	.15x30	.15x30
.15x28	.15x29	.15x29	.15x29	2).15x29	.15x27	.15x28	.15x29	.15x29	2).15x29
.15x27	.15x28	.15x28	2).15x28	2).15x28		.15x27	.15x28	2).15x28	2).15x28
.15x26	.15x27	2).15x27	2).15x27	2).15x27				.15x27	.15x27
	.15x26	.15x26	.15x26	.15x26					

cH80*	cH81*	cH82*	cH83*	cH84*	cH85*	cH86*
.15x34	.15x34	.15x34	.15x34	.15x34	.15x34	.15x34
.15x33	.15x33	.15x33	2).15x33	.15x33	.15x33	2).15x33
.15x32	.15x32	2).15x32	2).15x32	.15x32	2).15x32	2).15x32
.15x31	2).15x31	2).15x31	2).15x31	2).15x31	2).15x31	2).15x31
2).15x30	2).15x30	2).15x30	2).15x30	2).15x30	2).15x30	2).15x30
2).15x29	2).15x29	2).15x29	2).15x29	2).15x29	2).15x29	2).15x29
2).15x28	2).15x28	2).15x28	2).15x28	.15x28	.15x28	.15x28
.15x27	.15x27	.15x27	.15x27			

* SHIMS NOT PROVIDED IN STANDARD KIT (please call)   SHIM SIZING: (QUANTITY) THICKNESS x DIAMETER in mm (inches divide by 25.4)

REBOUND VALVE DISASSEMBLY

RD1 **Remove the rebound rod from the cartridge.**
When the damping rod is removed from the cartridge care must be taken so the thread does not cut the shaft seal. Carefully deburr both ends of the thread and pack the thread with grease.

RD2 **Once the rod is removed, lightly file the peening off the end of the shaft that holds on the nut.** Remove the nut and **disassemble the valving stack.** Lightly deburr the end of the thread.

MID-VALVE & REBOUND VALVING

VR1 Select the Rebound and Mid-Valve Valving according to the DVS.

Begin **assembling the Rebound Gold Valve**. Start with the **NEW Sleeve Washer, Sleeve Extender Shims, and new Check Spring. Then install the MV Packing Stack, Hi-Speed Mid-Valve Stack, Mid-Valve Crossover (if required) and Lo-Speed Mid-Valve Stack**.
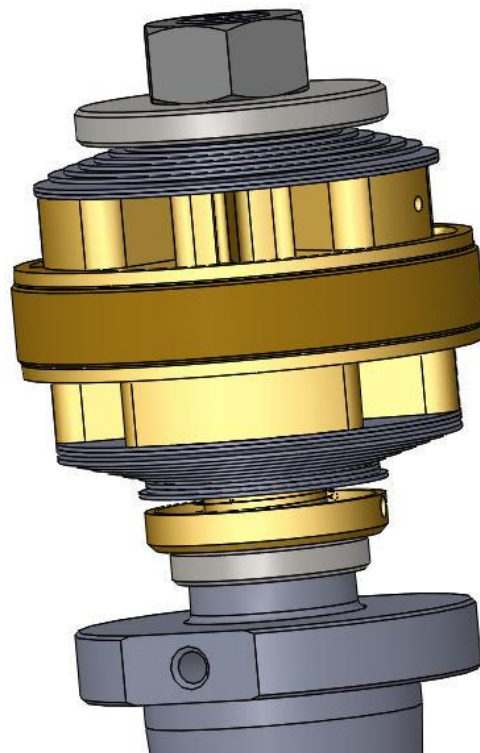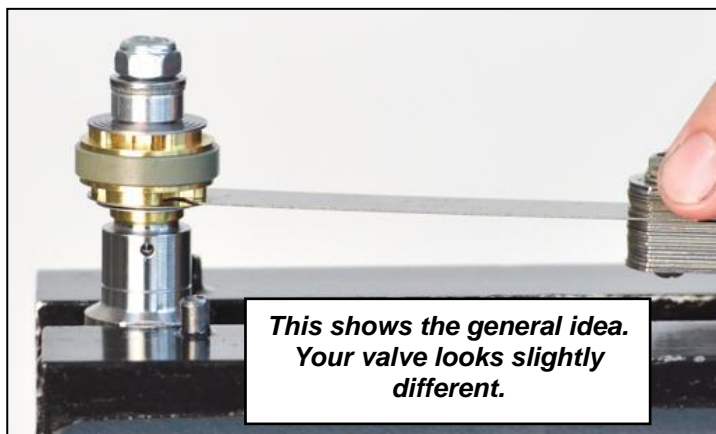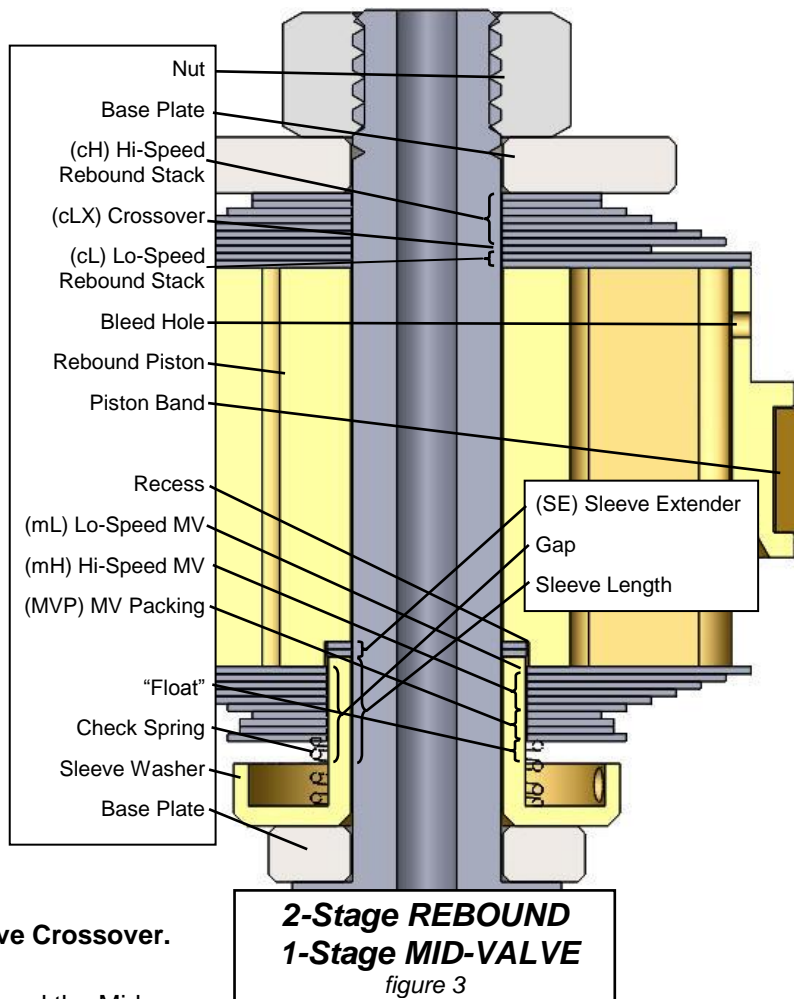
There are two critical components of the Mid-Valve; the stiffness of the Mid-Valve Stack itself and the "Float". The Float is controlled by a combination of the thickness of the Lo-Speed MV Stack, MV Crossover, Hi-Speed MV, the MV Packing Stack and the Sleeve Extender Shims.

NOTE: Many applications use a single stage Mid-Valve. Single Stage does not require a Mid-Valve Crossover. (See figure 3 vs. figure 4)

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

VR3 Select the Rebound Valving. Install the Lo-Speed Rebound Stack, Rebound Crossover (if required) and Hi-Speed Rebound Stack, Base Plate and Nut. As with the compression stack, **make sure you set the correct total stack thickness so the nut has full thread engagement and does not run out of thread** (see step VC5). Use Loctite and torque the nut to 30 in-lbs (.35 kgf-m).

VR4 **Float is critical!** Since there are production tolerances on every component, **it is best to check the Float with a feeler gauge**. Adjust the Packing Stack thickness to compensate.

This shows the general idea. Your valve looks slightly different.

Nut
Base Plate
(cH) Hi-Speed Rebound Stack
(cLX) Crossover
(cL) Lo-Speed Rebound Stack
Bleed Hole
Rebound Piston
Piston Band
Recess
(mL) Lo-Speed MV
(mH) Hi-Speed MV
(MVP) MV Packing
(SE) Sleeve Extender
Gap
Sleeve Length
"Float"
Check Spring
Sleeve Washer
Base Plate

2-Stage REBOUND
1-Stage MID-VALVE
figure 3

BUILDING the MID-VALVE

- DIRT 30
MID-VALVE EXAMPLE ONLY
(see your DVS):

Starting from the __recessed__ Gold Valve piston face:
__Sleeve Length (8 od) – 3.30mm long (RT)__
__Sleeve Extender (6 id) – SE60__
    (4) 0.15x8
__Recess Depth - 1.00mm (std Gold Valve)__
__Lo-Speed Mid-Valve Stack – mL1502 - 0.30mm thick__
    (2) 0.15x26x8 ID
__Mid-Valve Crossover – mLX1015 - 0.10mm thick__
    (1) 0.10x15
__Hi-Speed Mid-Valve Stack – mH28 - 0.70mm thick__
    (1) 0.15x24
    (1) 0.15x22
    (1) 0.15x20
    (1) 0.15x18
    (1) 0.15x16
    (4) 0.15x14
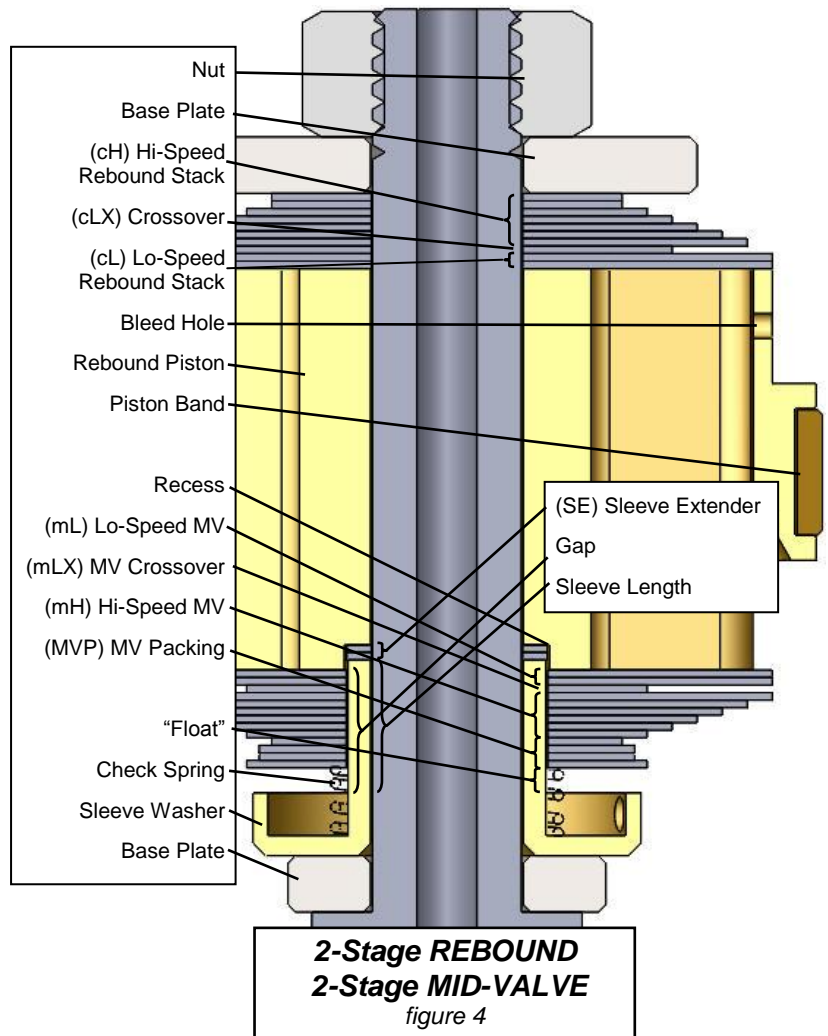*__Mid-Valve Packing Stack–MVP120 -1.20mm thick__*
    (1) 0.10x12
    (6) 0.15x12
    (1) 0.20x14

Float = Gap–Total Stack Thickness

Sleeve Length (RT)	3.30
Sleeve Extender Shims	.60
Recess (std Gold Valve)	— 1.00
Gap	= 2.90

Lo-Speed MV	.30
MV Crossover	.15
Hi-Speed MV	1.35
MVP Packing	+ .70
Total Stack Thickness	= 2.50

Gap	2.90
Total Stack Thickness	— 2.50
Float	= .40

Nut
Base Plate
(cH) Hi-Speed Rebound Stack
(cLX) Crossover
(cL) Lo-Speed Rebound Stack
Bleed Hole
Rebound Piston
Piston Band
Recess
(mL) Lo-Speed MV
(mLX) MV Crossover
(mH) Hi-Speed MV
(MVP) MV Packing
"Float"
Check Spring
Sleeve Washer
Base Plate
(SE) Sleeve Extender
Gap
Sleeve Length

2-Stage REBOUND
2-Stage MID-VALVE
figure 4

CHECK THE FLOAT WITH A FEELER GAUGE -
Float is critical! These calculations have been done in your DVS Setting however ***there are production tolerances on every component. 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 create the correct Float.***

FORK MID-VALVE GOLD VALVE CHART - DIRT 30mm

<FMV302602-141027 © P Thede, R Brown >
LO-SPEED MID-VALVE   8mm ID   STIFFER→

mL1001*	mL1002*	mL1003*	mL1004*	mL1005*	mL1006*	mL1007*	mL1008*	mL1009*	mL1010*
(1).10X26	(2).10X26	(3).10X26	(4).10X26	(5).10X26	(6).10X26	(7).10X26	(8).10X26	(9).10X26	(10).10X26
mL1011*	mL1012*	mL1013*	mL1014*	mL1015*	mL1016*	mL1017*	mL1018*	mL1019*	mL1020*
(11).10X26	(12).10X26	(13).10X26	(14).10X26	(15).10X26	(16).10X26	(17).10X26	(18).10X26	(19).10X26	(20).10X26
mL1501	mL1502	mL1503	mL1504	mL1505	mL1506	mL1507*	mL1508*	mL1509*	mL1510*
(1).15X26	(2).15X26	(3).15X26	(4).15X26	(5).15X26	(6).15X26	(7).15X26	(8).15X26	(9).15X26	(10).15X26
mL1511*	mL1512*	mL1513*	mL1514*	mL1515*	mL1516*	mL1517*	mL1518*	mL1519*	mL1520*
(11).15X26	(12).15X26	(13).15X26	(14).15X26	(15).15X26	(16).15X26	(17).15X26	(18).15X26	(19).15X26	(20).15X26

MID-VALVE CROSSOVER   8mm ID   STIFFER→

mLX1014*	mLX1015	mLX1016*
.10x14	.10x15	.10x16

HI-SPEED MID-VALVE   8mm ID (all stacks 1.35 thick)   STIFFER→

mH21	mH22	mH23	mH24	mH25	mH26	mH27	mH28	mH29	mH30
.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24
.15x20	.15x20	.15x20	.15x22	.15x20	.15x22	.15x22	.15x22	.15x22	.15x22
.15x16	.15x16	.15x18	.15x20	.15x18	.15x20	.15x20	.15x20	.15x20	.15x20
(2).15x12	.15x14	.15x16	.15x18	.15x16	.15x18	.15x18	.15x18	.15x18	.15x18
(4).15x14	(2).15x12	.15x14	.15x16	.15x14	.15x16	.15x16	.15x16	.15x16	.15x17
	(3).15x14	(2).15x12	.15x14	(2).15x13	.15x14	.15x15	(4).15x14	.15x15	.15x16
		(2).15x14	(2).15x12	(2).15x14	(2).15x13	.15x14		(3).15x14	.15x15
			.15x14		.15x14	(2).15x13			(2).15x14

mH31*	mH32*	mH33*
.15x24	.15x24	.15x24
.15x22	.15x22	.15x22
.15x20	.15x20	.15x20
.15x18	.15x18	.15x19
.15x16	.15x17	.15x18
(4).15x15	.15x16	.15x17
	(3).15x15	.15x16
		(2).15x15

MID-VALVE PACKING STACK (MVP)   8mm ID   STIFFER (LESS FLOAT) →

MVP30	MVP35	MVP40	MVP45	MVP50	MVP55	MVP60	MVP65	MVP70	MVP75
.10x15	.15x15	(2).10x15	.10x15	(2).15x15	(2).10x15	.10x15	(3).15x15	(2).10x15	.10x15
.20x17	.20x17	.20x17	.15x15	.20x17	.15x15	(2).15x15	.20x17	(2).15x15	(3).15x15
			.20x17		.20x17	.20x17		.20x17	.20x17

MVP80	MVP85	MVP90	MVP95	MVP100
(4).15x15	(2).10x15	.10x15	(5).15x15	(2).10x15
.20x17	(3).15x15	(4).15x15	.20x17	(4).15x15
	.20x17	.20x17		.20x17

SLEEVE EXTENDER   6mm ID   SOFTER (MORE FLOAT)→

SE10	SE15	SE20	SE25	SE30	SE35	SE40	SE45	SE50	SE55
.10x8	.15x8	(2).10x8	.15x8	(2).15x8	.15x8	(2).15x8	(3).15x8	(2).15x8	(3).15x8
			.10x8		(2).10x8	.10x8		(2).10x8	.10x8

SE60	SE65	SE70	SE75	SE80	SE85	SE90	SE95	SE100	
(4).15x8	(3).15x8	(4).15x8	(5).15x8	(4).15x8	(5).15x8	(6).15x8	(5).15x8	(6).15x8	
(2).10x8	.10x8		(2).10x8	.10x8		(2).10x8	.10x8		

TUNING NOTES

- **Damping depends on vertical wheel velocity, not position in the stroke.**

- **If the forks feel too soft all the way through**, increase compression damping with the external adjuster. If that is not enough, change the compression stack internally.

- **The compression damping adjuster** controls the lowest speed damping and affects the entire range. NOTE: The closer to maximum damping (full clockwise) the more effect one click makes. In other words going from 3 to 2 out has a lot more effect than going from 14 to 13. Adjusters are numbered from all the way clockwise (the slowest or firmest setting).

- **If your valving needs to be stiffer, move to the right on the valving chart.** Moving to the right on the Low Speed Valving Chart will stiffen up low speed damping. This will improve bottoming resistance with minimum increase in harshness. Moving to the right on the High Speed Valving Chart will increase damping overall, making it stiffer through the entire speed range. If the forks are too firm, go the opposite direction, to the left.

- **Spring rate affects ride height, dive and bottoming.** Typical spring preload should be 3–5mm (0.1–0.3").

- **Oil level can drastically alter bottoming resistance and only affects the last part of the travel** (near bottoming). If you like the action but the forks bottom too easily, raise your oil level by 10mm (0.4").

BUILDING the REBOUND STACK - DIRT 30

Single Stage EXAMPLE (see your DVS):

Lo-Speed	rL1006
Crossover	n/a
Hi-Speed	rH115

Starting from the **flat** Rebound Gold Valve piston face:

Lo-Speed Rebound Stack – rL1006
    (6).10x26

Hi-Speed Rebound Stack – rH115
    (1).10x24
    (1).10x22
    (1).10x20
    (1).10x18
    (1).10x16
    (1).10x15
    (2).15x14

Two Stage EXAMPLE (see your DVS):

Lo-Speed	rL1006
Crossover	rLX1015
Hi-Speed	rH115

Starting from the **flat** Rebound Gold Valve piston face:

Lo-Speed Rebound Stack – rL1006
    (6).10x26

Lo-Speed Crossover – rLX1015
    (1).10x15

Hi-Speed Rebound Stack – rH115
    (1).10x24
    (1).10x22
    (1).10x20
    (1).10x18
    (1).10x16
    (1).10x15
    (2).15x14

FORK REBOUND GOLD VALVE CHART - DIRT 30mm

<FR302602-141027> © P Thede, R Brown

LO-SPEED REBOUND　　　　　　　　SLOWER →

rL1001	rL1002	rL1003	rL1004	rL1005	rL1006	rL1007	rL1008	rL1009	rL1010
(1).10x26	(2).10x26	(3).10x26	(4).10x26	(5).10x26	(6).10x26	(7).10x26	(8).10x26	(9).10x26	(10).10x26
rL1011	**rL1012**	**rL1013***	**rL1014***	**rL1015***	**rL1016***	**rL1017***	**rL1018***	**rL1019***	**rL1020***
(11).10x26	(12).10x26	(13).10x26	(14).10x26	(15).10x26	(16).10x26	(17).10x26	(18).10x26	(19).10x26	(20).10x26

LO-SPEED REBOUND CROSSOVER　　　　SLOWER →

rLX1014*	rLX1015	rLX1016*	rLX1017*
.10x14	.10x15	.10x16	.10x17

HI-SPEED REBOUND　　　　　　　　SLOWER →

rH102*	rH103*	rH104*	rH105*	rH106*	rH107*	rH108*	rH109*	rH1010*	rH1011*
.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24
.10x20	.10x20	.10x20	.10x22	.10x20	.10x22	.10x22	.10x20	.10x22	.10x22
.10x16	.10x16	.10x18	.10x20	.10x18	.10x20	.10x20	.10x18	.10x20	.10x20
.10x12	.10x14	.10x16	.10x18	.10x16	.10x18	.10x18	.10x16	.10x18	.10x18
(2).15x10	.10x12	.10x14	.10x16	.10x14	.10x16	.10x16	.10x14	.10x16	.10x16
	(2).15x10	.10x12	.10x14	.10x12	.10x14	.10x14	(2).15x12	.10x14	.10x14
		(2).15x10	.10x12	(2).15x11	.10x12	.10x13		(2).15x12	.10x13
			(2).15x10		(2).15x11	.10x12			(2).15x12
						(2).15x11			
rH112	**rH113**	**rH114**	**rH115**	**rH116**	**rH117**	**rH118**	**rH119**	**rH120***	**rH121***
.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24
.10x22	.10x22	.10x22	.10x22	.10x22	.10x22	.10x22	.10x23	.10x22	.10x22
.10x20	.10x20	.10x20	.10x20	.10x20	.10x20	.10x21	.10x22	.10x20	.10x21
.10x18	.10x18	.10x18	.10x18	.10x18	.10x19	.10x20	.10x21	.10x19	.10x20
.10x16	.10x16	.10x17	.10x16	.10x17	.10x18	.10x19	.10x20	.10x18	.10x19
.10x14	.10x15	.10x16	.10x15	.10x16	.10x17	.10x18	.10x19	.10x17	.10x18
(2).15x13	.10x14	.10x15	(2).15x14	.10x15	.10x16	.10x17	.10x18	.10x16	.10x17
	(2).15x13	.10x14		(2).15x14	.10x15	.10x16	.10x17	(2).15x15	.10x16
		(2).15x13			(2).15x14	.10x15	.10x16		(2).15x15
						(2).15x14	.10x15		
							(2).15x14		
rH122*	**rH123***	**rH124***	**rH125***						
.10x24	.10x24	.10x24	.10x24						
.10x23	.10x22	.10x22	.10x23						
.10x22	.10x20	.10x21	.10x22						
.10x21	.10x19	.10x20	.10x21						
.10x20	.10x18	.10x19	.10x20						
.10x19	.10x17	.10x18	.10x19						
.10x18	(2).15x16	.10x17	.10x18						
.10x17		(2).15x16	.10x17						
.10x16			(2).15x16						
(2).15x15									

* SHIMS NOT PROVIDED IN STANDARD KIT (please call)　　　SHIM SIZING: (QUANTITY) THICKNESS x DIAMETER in mm (inches divide by 25.4)

FORK REASSEMBLY

A1 **Install the damping rod into the cartridge.** Reassemble the forks according to the procedure in your manual. For Twin Chamber Forks the damping rod shaft seal <u>must</u> be protected. Pack the thread with heavy grease before you insert it into the cartridge.

A2 **Fill and bleed the cartridge.** Before installing the compression assembly which includes the reservoir piston and cap make sure the oil level is high enough (100mm (4") down from the top of the cartridge with the damping rod fully extended). When you install the compression assembly it should require quite a bit of force when you push it in with your hand. Once you have tightened the cap, compress the damping rod all the way. This will push out any extra oil from inside to the top of the cartridge. This extra oil should be poured out of the holes in the top of the reservoir. When the damping rod is released it should extend all the way by itself. This indicates that there is enough oil inside the cartridge.

A3 Install the Fork Springs. **Check and set the Fork Spring Preload –** ***See racetech.com, Main How-to Page, Forks***. This is critical that the preload is correct. See the DVS (normally between 3-5mm).

A4 **Reassemble the forks**. Install the Cartridge Assembly and temporarily screw in the fork cap. Invert the fork. Compress the fork so the Damping Rod extends through the bottom of the fork.

A5 Use Loctite on the damping rod thread at the Rebound Adjuster. **The Showa "D" Shaped Rod requires special attention**. Slide the "D" shaped Rebound Adjusting Rod on the Adjuster Bolt into the Damping Rod making sure it goes in all the way and registers on the Needle inside. When you screw on the Adjuster Bolt, hold the Adjusting Screw in one place with a screwdriver. This will keep the "D" Shaped Rod from rounding out.

A6 ***Torque the jam nut to manufacturers specs*** (typically 16 to 21 ft-lbs [21.7 – 28.5 NM). Consult shop manual for specs. Tighten the Adjuster Bolt into the Fork Bottom.

Unscrew the Fork Cap and add the proper oil volume to the outer chamber (consult the DVS). NOTE: The left and right legs have different oil levels. **Tighten the fork cap**.

A7 ***Adjust the compression and rebound adjusters and the oil level*** according to the DVS Setup Sheet.

A8 ***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.

A9 ***If you have any questions*** please call our Technical Support Hotline at 951.279.6655. Feel free to experiment and please call if you need us. Have fun!

LO-SPEED VALVE (LSV) CHART

Note – 2015 KX and RM-Z 450s do not come standard with a LSV. LSVs are valuable for SX, AX and aggressive MX. Available from RT.

<FLSV2612-141025.doc> © P Thede, R Brown
LSV LO-SPEED VALVE CHART – FLSV 2612 – SHOWA 39x12

LSV1	LSV2	LSV3	LSV4	LSV5	LSV6	LSV7	LSV8	LSV9	LSV10
(4).15x19	(4).15x19	(4).15x19	(4).15x19	(4).15x19	(4).15x19	(3).15x19	(3).15x19	(3).15x19	(3).15x19
(4).10x19	(3).10x19	(2).10x19	.10x19		(4).10x19	(3).10x19	(2).10x19	.10x19	

LSV11	LSV12	LSV13	LSV14	LSV15	LSV16	LSV17	LSV18	LSV19	LSV20
.10x26	.10x26	.10x26	.10x26	(2).10x26	.10x26	(2).10x26	(3).10x26	.15x26	.15x26
.10x24	.10x24	.10x25	.10x25	.10x25	.10x25	.10x25	.10x25	.10x26	.15x24
.10x22	.10x22	.10x24	.10x24	.10x24	.10x24	.10x24	.10x24	.10x25	.15x22
.10x20	.10x21	.10x23	.10x23	.10x23	.10x23	.10x23	.10x23	.10x24	15x20
.10x18	.10x20	.10x22	.10x22	.10x22	.10x22	.10x22	.10x22	.10x23	.15x18
.10x16	.10x19	.10x21	.10x21	.10x21	.10x21	.10x21	.10x21	.10x22	(3).15x19
(3).15x19	.10x18	.10x20	.10x20	.10x20	.10x20	.10x20	.10x20	.10x21	
	.10x17	.10x19	.10x19	.10x19	.10x19	.10x19	.10x19	.10x20	
	.10x16	.10x18	.10x18	.10x18	.10x18	.10x18	.10x18	.10x19	
	(3).15x19	.10x17	.10x17	.10x17	(3).15x19	(3).15x19	(3).15x19	.10x18	
		.10x16	(3).15x19	(3).15x19				(3).15x19	
		(3).15x19							

LSV21	LSV22	LSV23	LSV24	LSV25	LSV26	LSV27	LSV28	LSV29*	LSV30*
.15x26	.15x26	.15x26	(2).15x26	(3).15x26	.15x26	(2).15x26	(3).15x26	(4).15x26	(5).15x26
.15x24	.15x24	.15x25	.15x25	.15x25	.15x25	.15x25	.15x25	.15x25	.15x25
.15x22	.15x23	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24	.15x24
.15x21	.15x22	.15x23	.15x23	.15x23	.15x23	.15x23	.15x23	.15x23	.15x23
.15x20	.15x21	.15x22	.15x22	.15x22	.15x22	.15x22	.15x22	.15x22	.15x22
.15x19	.15x20	.15x21	.15x21	.15x21	.15x21	.15x21	.15x21	.15x21	.15x21
.15x18	.15x19	.15x20	.15x20	.15x20	.15x20	.15x20	.15x20	.15x20	.15x20
(3).15x19	.15x18	.15x19	.15x19	.15x19	.15x19	.15x19	.15x19	.15x19	.15x19
	(3).15x19	.15x18	.15x18	.15x18	(3).15x19	(3).15x19	(3).15x19	(3).15x19	(3).15x19
		(3).15x19	(3).15x19	(3).15x19					