



Shock Repair Guide



Series
310-401XX
and
310-402XX



Special Precautions!



BE SURE TO READ AND FOLLOW ALL PRECAUTIONS LISTED BELOW PRIOR TO BEGINNING WORK ON YOUR SHOCKS.

1. Integra Shocks are nitrogen gas charged for proper operation. **Discharge the nitrogen gas in the unit** prior to working on your shock. **Failure to do so could cause serious injury or death.**
2. Keep hands clean and free of dirt, dust, or other loose debris that could become lodged in the tiny passages located in the damper.
3. Rebuilding of your dampers can be done at the track. Be sure to perform any rebuilds in an enclosed space where dirt and dust are at a minimum.
4. Clean any oil spills from the floor immediately to reduce the chance of a slip or fall.
5. Always use safety glasses to reduce the chances of serious eye injury.
6. Be cautious when working over the damper when the nitrogen gas has not been discharged.
7. Read complete manual prior to beginning any work in your shocks.



Part #
310-30202

Kit Contents

The following parts are supplied with your Integra shocks valving kit:

- Valve disc storage case
- Misc. valve discs
- Bleed discs
- Spare piston bands
- Spare rod seals
- Spare rod guide seals
- Spare end cap seals
- Spare floating piston seals
- Spare nitrogen fill valves
- Spare poppet parts

Part #
310-30202



Integra Shock Tools

1. **Overflow ring** Part # 310-30313
2. **Rod guide Wrench** Part # 310-30312
3. **Shock Vise** Part # 310-30204
4. **Set of rod clamps** Part # 310-30206
5. **Floating piston locator** Part # 310-30207
6. **Body Clamp** Part # 310-30311



Tools You Will Need

You will need to have the following additional tools/equipment to re-valve our dampers:

1. **Nitrogen tank.** The tank can be purchased at a local gas supply store. A small 40 lb. tank will likely last you for a full season.
2. **350 PSI pressure regulator.** Be sure that the regulator is compatible with the nitrogen gas.
3. **High pressure hose** to interface with pressure regulator and the charging valve assembly
4. **0-6" calipers** with English (imperial) units of measurements
5. **Torque wrench** with a minimum of 216 in-lb. capacity
6. **1/2" socket** for above torque wrench
7. **11/16" open-end wrench**
8. **1/2" boxed end wrench**
9. **Charging valve assembly**
10. **Assorted drill bits** - .025" dia., .031" dia., .040" dia., .055" dia., .062" dia., .076" dia., and .094" dia.
11. **Paint strainers**
12. **Tire valve core removal tool**
13. **Bicycle style tire pump**
14. **Graduated Cylinder**



A1
Discharge nitrogen gas prior to disassembly



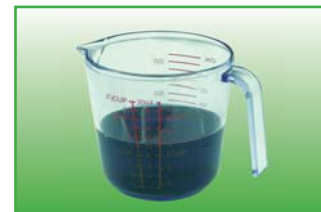
A2
Clamp the body of the shock



A3
Loosen the rod guide and slowly remove the head assembly



A4
Place head assembly on low lint paper towel



A5
Place oil into a measuring cup

Disassembly

- Clean the exterior of the shock prior to disassembly.
- **Discharge nitrogen gas prior to disassembly (A1).**
- Clamp the body of the shock (rod end up) **(A2)** using the Integra Shock Vise (part # 310-30204). Alternately, you can use a standard vise, using body clamps (part # 310-30311, purchased separately). Do not over-tighten clamps. Permanent deformation of the tube will occur if the clamps are over-tightened.
- Be sure the rod is completely extended.
- Using the rod guide wrench provided, loosen the rod guide and slowly remove the head assembly **(A3)**.
- Place the head assembly you have just removed on a clean, low lint paper towel **(A4)**.
- Pour the oil into a measuring cup, or similar graduated cylinder. Use a paint strainer to ensure that any large, foreign particles are removed from the oil **(A5)**.

B

Valving The Head Assembly **B**

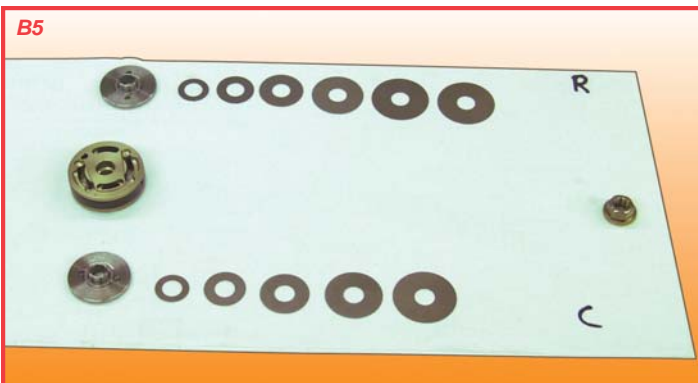
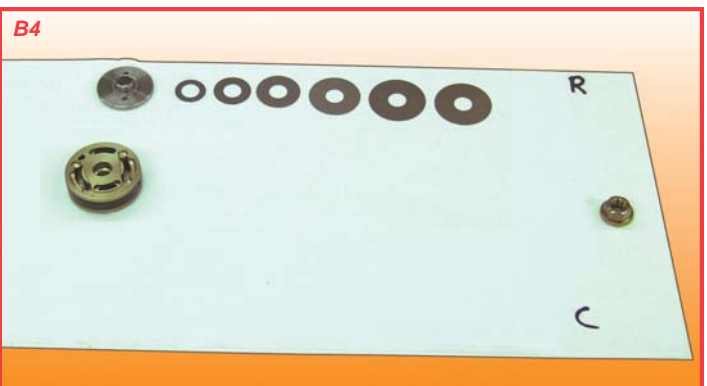
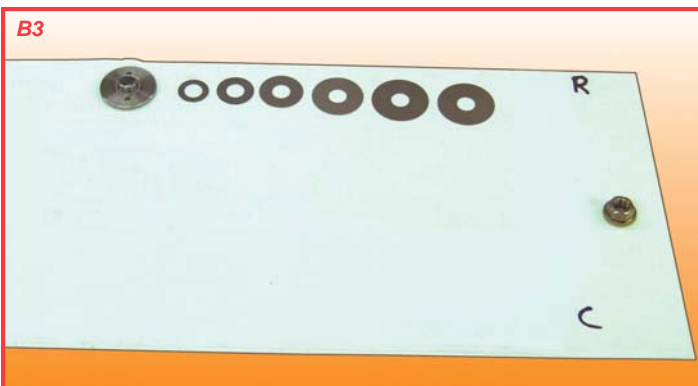


B1
Clamp
the head
assembly
into the vice



B2
Remove
piston
nut
and washer
from the head
assembly

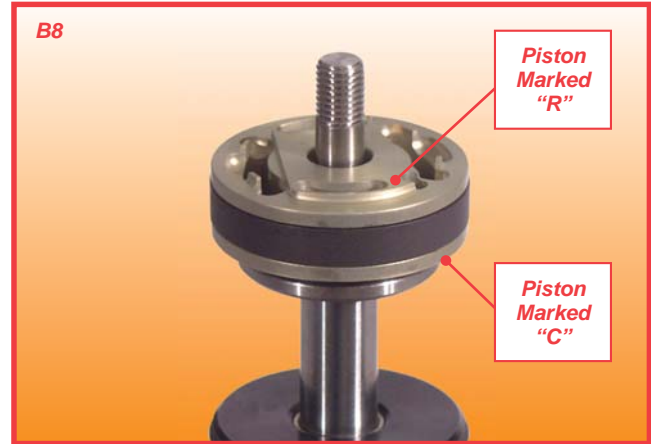
1. Clamp the head assembly in the vice **(B1)**.
2. Set up a clean, low lint paper towel on the bench next to the vice.
3. Using a marker, label the upper right hand corner of the paper towel with an "R" (rebound) and the lower right hand corner of the paper towel with a "C" (compression).
4. Using a 1/2" boxed end wrench, remove the piston nut and washer from the head assembly **(B2)**. Place the nut and washer between the "R" and "C" on the paper towel.
5. Remove the rebound disc travel limiter along with the rebound disc stack.
6. Remove all of the discs from the travel limiter & set the rebound disc travel limiter directly across from the "R" on the paper towel **(B3)**.
7. Remove the piston and place on the paper towel across from the piston nut and washer **(B4)**.
8. Remove the compression travel limiter along with the disc stack from the rod.
9. Remove all of the discs from the travel limiter & set the compression disc travel limiter directly across from the "C" on the paper towel **(B5)**.
10. Using dial calipers, carefully measure each shim's diameter and thickness. For rebuilds, replace each shim with same size new shim. For revalving, refer to Valve Code Sheet. *Note: .594 OD x .020 shim is constant, and remains on travel limiter at all times.
11. Remove shims from paper towel **(B6)**.
12. Place the new rebound valve discs on the paper towel directly across from the "R", and the new compression discs directly across from the "C". Put the discs in order from top to bottom starting with the disc that will be placed closest to the face of the disc travel limiter **(B5)**.



13. Stack the compression discs onto the disc travel limiter. Place the disc stack/travel limiter on the piston rod. **(B7)**.
14. Place the piston on top of the compression stack. Be sure to orient the piston properly. Face the piston side marked with a "C" towards the compression valve stack. **(B8)**
15. Stack the rebound discs onto the rebound disc travel limiter. Place the disc stack/travel limiter on top of the piston. **(B9)**
16. Place the piston washer and nut on the piston rod, **(B10)** and torque to 216 in-lbs. (18 Ft-lbs.).
17. Remove the head assembly from the vice.



Stack compression discs onto disc travel limiter



Place piston onto the compression stack



Stack rebound discs onto rebound disc travel limiter & place on piston



Place piston washer & nut on piston rod



Assembly C

- Be sure all seals are lubricated with O-ring lube prior to assembling the unit.
- Once the head assembly has been completely built, the damper can be assembled as follows:

1. Clamp the body of the shock in the vice.

NOTE:



When setting the floating piston to the proper height, be sure not to use a high volume pressure source such as an air compressor or compressed air bottle.



SERIOUS INJURY COULD OCCUR !!!!!!!

2. Using the floating piston height tool, set the floating piston to the proper setting. Remove valve core from tank valve. Use a bicycle style tire pump to “bump” the floating piston approximately half way up into the tube. Set the floating piston height tool for the proper damper length. See chart for proper setting.

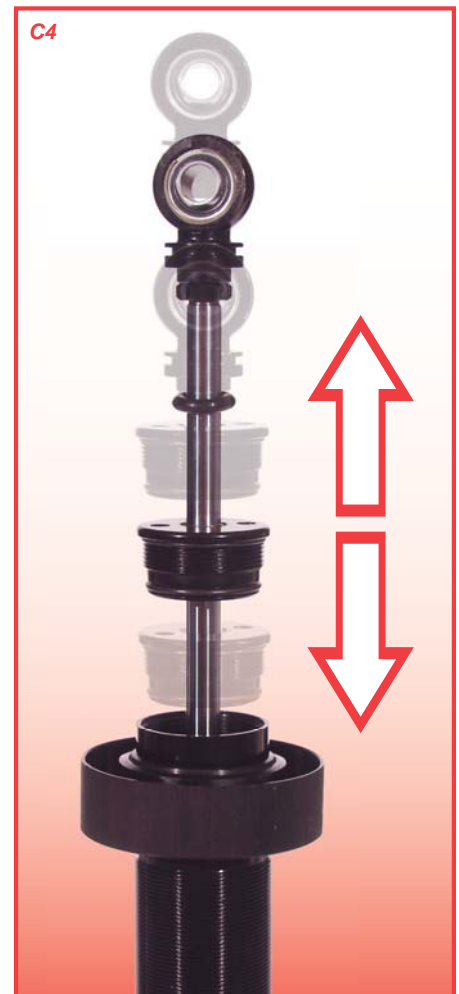
NOTE:

Be sure not to use a hard device to measure or adjust the floating piston height, as this may cause scratches in the I.D. of the shock body that could alter the proper performance of the shock.

3. Seat the tool fully into the floating piston from the top of the disassembled shock body. (C1)

Body Length	Distance from top of tube to Center of floating piston
9"	10 5/8"
8"	9 13/16"
7"	8 15/16"
6"	8"
5"	7 1/8"

4. Press the tool into the shock body until the floating piston reaches the proper height. Reinstall the valve core into the tank valve. (C1)
5. Pull the rod guide approximately half way down the piston rod (C2).
6. Fill shock body with oil to the bottom of the internal threads (C3).
7. Slowly install the head assembly into the shock body. Allow time for the air below the piston assembly to “bleed” past.
8. Stroke the head assembly until the air below the piston has completely vented to the top of the shock body. Be sure the floating piston does not move. (C4)





C5

Assembly **C** (Continued)

9. Slide the rod guide down the shaft into the shock body. Be sure to keep the piston submerged in oil the entire time.
10. Tighten the rod guide into the shock body with the rod in the fully extended position. Do this slowly so that the air below the rod guide has an opportunity to escape past the threads **(C5)**.
11. Compress the rod to verify full travel, and to be certain the floating piston has not moved during assembly. (If floating piston has moved, piston rod will not fully compress into shock body.)



D

D1

Damper Recharging **D**

Once the damper has been completely reassembled and the rod guide properly tightened, the damper must be charged with nitrogen gas:

1. Be sure the valve on top of the nitrogen tank is closed. Secure the charging valve assembly to the nitrogen tank/regulator.
2. Back the pressure regulator on the nitrogen tank completely off.
3. Compress the rod into the damper completely.
4. Open the valve on the top of the nitrogen tank to approximately 200 PSI.
5. Back the wing nut all the way off (counter clockwise) on the inflation unit (part # 310-30310).
6. Screw the inflation unit onto the damper fill valve. Do not over tighten. Tighten the valve assembly only enough to eliminate any air leakage **(D1)**.
7. Turn the wing nut clockwise until it stops. This will push in the valve core of the Schrader valve and allow gas to enter the shock.
8. Pressurize the shock to the desired pressure through the valve stem on the inflation unit. *****use nitrogen gas only*** (D2)**
9. Back the wing nut all the way off (counter clockwise) on the inflation unit.
10. Remove inflation unit from the shock. ***** You may hear a small amount of gas escape when the unit is removed from the shock. If the wing nut was completely backed off, this is gas that was stored in the unit and will not affect the setting. *****
11. Compress the rod to verify full travel in the damper without interference. The pressure inside the damper should extend the rod without any assistance.



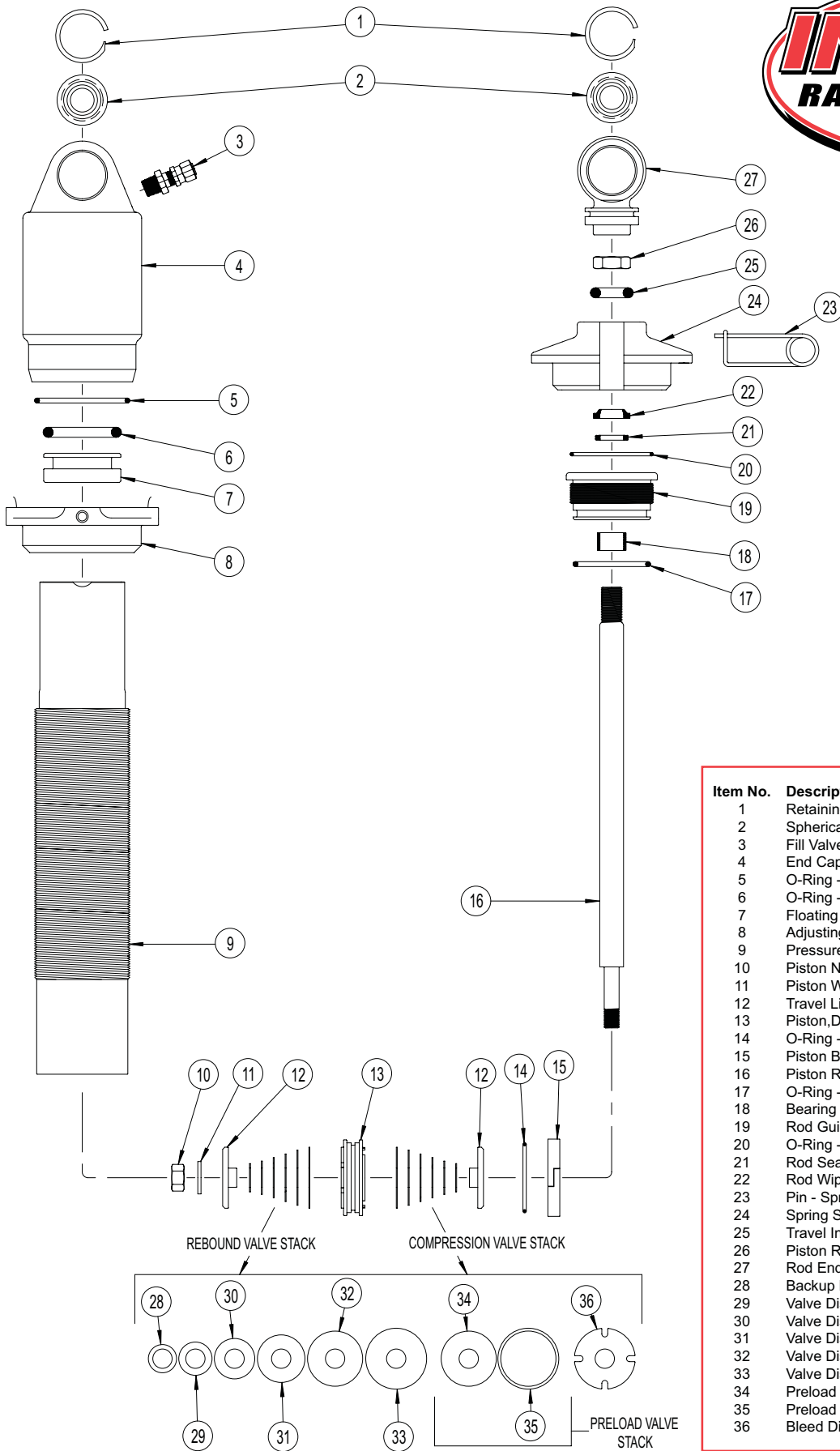
D2

IF YOU HAVE ACCESS TO A DAMPER DYNAMOMETER,
BE SURE TO TEST THE DAMPER FOR PROPER OPERATION.



Shock Parts

To order parts, call
 Integra / Port City Racing
 (800) 472-2464



Item No.	Description	Part No.
1	Retaining Ring - Spherical Bearing	310-30328
2	Spherical Bearing - .500" I.D.	310-30327
3	Fill Valve - N2	310-30337
4	End Cap	310-30301
5	O-Ring - End Cap	310-30212
6	O-Ring - Floating Piston	310-30213
7	Floating Piston	310-30334
8	Adjusting Nut	310-30298
9	Pressure Tube-(5",6",7",8" & 9")	Specify
10	Piston Nut	310-30216
11	Piston Washer	310-30217
12	Travel Limiter - Disk	310-30335
13	Piston,Digressive,Linear,High Flow Linear	Specify
14	O-Ring - Piston Band Energizing	310-30215
15	Piston Band	310-30214
16	Piston Rod(5",6",7",8" & 9")	Specify
17	O-Ring - Rod Guide Primary	310-30211
18	Bearing - DU	310-30300-1
19	Rod Guide	310-30300
20	O-Ring - Rod Guide Secondary	310-30210
21	Rod Seal - Quad Ring	310-30209
22	Rod Wiper	310-30208
23	Pin - Spring Seat Retainer	310-30200-4
24	Spring Seat	310-30299
25	Travel Indicator - Compression	310-30218
26	Piston Rod Jam Nut	310-30338
27	Rod End Housing	310-30402
28	Backup Disk	310-MVD594020
29	Valve Disk - .70" O.D.	310-MVD7010
30	Valve Disk - .85" O.D.	310-MVD85010
31	Valve Disk - 1.00" O.D.	310-MVD1010
32	Valve Disk - 1.16" O.D.	310-MVD116010
33	Valve Disk - 1.28" O.D.	310-MVD128010
34	Preload Pilot Disk	310-MVD116010
35	Preload Ring Disk	310-PR128010
36	Bleed Disk	310-BD4-004



Shock Rebuild Parts

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Integra's complete line of parts makes it easy for you to rebuild and repair your shocks.
 All Integra shocks are •Owner Serviceable •Repairable •Revalvable

SHOCK VISE



DESCRIPTION	PART #	PRICE
Shock Vise	310-30204	\$169.95
Shock Vise Bench Mount	310-30205	\$39.95

INTEGRA SHOCK VALVING KIT



DESCRIPTION	PART #	PRICE
Shock Valving Kit	310-30202	\$315.00

INTEGRA SHOCK OIL



DESCRIPTION	PART #	PRICE
Shock Oil	310-30900-1	\$9.95

INFLATION UNIT



DESCRIPTION	PART #	PRICE
Inflation Unit	310-30310	\$82.50

BODY CLAMP



DESCRIPTION	PART #	PRICE
Shock Body Clamp	310-30311	\$49.99

WRENCH



DESCRIPTION	PART #	PRICE
Rod Guide Wrench	310-30312	\$27.99

OVER FLOW RING



DESCRIPTION	PART #	PRICE
Over Flow Ring	310-30313	\$38.50

SPANNER WRENCH



DESCRIPTION	PART #	PRICE
C/O Nut Spanner Wrench	310-30314	\$15.95

PISTON VISE



DESCRIPTION	PART #	PRICE
Piston Vise	310-30329	\$39.95

BASE VALVE TOOL

• Allows valve changing of base valve without removal from pressure tube



DESCRIPTION	PART #	PRICE
Base Valve Tool	310-30901	\$49.95

BASE VALVE SNAP RING SLEEVE

• For installation of snap ring without damaging pressure tube



DESCRIPTION	PART #	PRICE
Snap Ring sleeve	310-30331	\$29.95

FLOATING PISTON LOCATOR



DESCRIPTION	PART #	PRICE
Floating Piston Locator	310-30207	\$43.99

FLOATING PISTON TOOL

• Used for air bleeding double adjustable shocks



DESCRIPTION	PART #	PRICE
Floating Piston Tool	310-30330	\$39.99

PISTON ROD CLAMP



DESCRIPTION	PART #	PRICE
Piston Rod Clamp	310-30206	\$39.99

Standard Monotube Valving
1/25/07

XXX2	XXX3	XXX3-5	XXX3-6	XXX3-7	XXX4	XXX4.5	XXX5	XXX5-3	XXX5.5	XXX6	XXX96-2	XXX7
Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound	Rebound
.006-.700	.008-.700	.006-.700	.012-.700	.012-.700	.010-.700	.010-.700	.006-.700	.008-.700	.006-.700	.012-.700	.006-.700	.012-.700
.006-.850	.008-.850	.006-1.16	.012-.0850	.012-.850	.010-.850	.010-.850	.006-1.16	.008-.850	.006-1.16	.012-.850	.006-1.000	.012-.0850
.006-1.000	.008-1.000	.010-1.16	.012-1.000	.012-1.000	.0008-1.000	.010-1.000	.010-1.16	.008-1.000	.010-1.16	.012-1.000	.006-1.28	.012-1.000
.006-1.16	.010-1.16	.010-1.16	.012-1.16	.012-1.16	.012-1.16	.012-1.16	.010-1.16	.008-1.16	.012-1.16	.012-1.16		.012-1.16
.006-1.28	.008-1.28	.012-1.28	.010-1.16	.015-1.28	.012-1.28	.008-1.16	.012-1.28	.008-1.28	.012-1.28	.010-1.16		.010-1.16
		.012-1.28	.012-1.28	.010-1.28	.008-1.28	.012-1.28	.012-1.28		.012-1.28	.012-1.28		.015-1.28
		.006-1.28	.008-1.28			.008-1.28	.006-1.28		.006-1.28	.008-1.28		.010-1.28
Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston	Piston
LHF-.094	LHF-.094	LHF-.040	LHF-.031	LHF-.031	LHF-.076	LHF-.055	LHF-.040	LHF-.040	LHF-.031	LHF-.031	LHF-.062	LHF-.031
Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression
.006-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.006-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.006-1.28	.008-1.28	.012-1.28
.0006-1.16	.008-1.16	.006-1.16	.008-1.000	.008-1.000	.006-1.16	.008-1.16	.010-1.16	.010-1.16	.012-1.16	.015-1.28	.015-1.28	.012-1.28
.006-1.000	.006-1.000	.008-1.000	.008-.700	.008-.700	.008-1.16	.010-1.000	.010-1.000	.010-1.000	.010-1.000	.010-1.16	.010-1.16	.012-1.16
.006-.850	.008-.850	.008-.700			.010-1.000	.010-.850	.010-.850	.010-.850	.010-.850	.010-1.000	.010-1.000	.012-1.000
.006-.700	.008-.700				.008-.850	.010-.700	.010-.700	.010-.700	.010-.700	.010-.850	.010-.850	.012-.850
					.008-.700					.010-.700	.010-.700	.012-.700
XXX96-2	XXX98-0	XXX98-2	XXX9-1	XXX1-14								
Rebound	Rebound	Rebound	Rebound	Rebound								
.006-.700	.004-1.28	.006-1.28	.004-1.28	.015-.700								
.006-1.000	.006-1.000	.006-1.000	.006-1.000	.015-.850								
.006-1.28		.006-.700		.015-1.000								
				.015-1.16								
				.015-1.28								
				(.010-1.16 .020PR)								
				.020-1.28								
Piston	Piston	Piston	Piston	Piston								
LHF-.062	LHF-.031	LHF-.031	LHF-.031	L-	LHF-.031	LHF-.031	LHF-.031	LHF-.031	LHF-.031	LHF-.031	LHF-.031	LHF-.031
Compression	Compression	Compression	Inverted Piston	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression	Compression
.006-1.28	.020-1.28	.020-1.28	Compression	.004-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28	.008-1.28
.015-1.28	.015-1.16	.015-1.16	.015-1.28	.006-1.000	.015-1.28	.015-1.28	.015-1.28	.015-1.28	.015-1.28	.015-1.28	.015-1.28	.015-1.28
.010-1.28	.012-1.000	.012-1.000	.012-1.16									
.010-1.00	.012-.850	.012-.850	.012-1.000									
.010-.850	.012-.700	.012-.700	.012-.850									
.010-700			.012-.700									

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