KONI

MOTORSPORTS CATALOG

ITT

Engineered for life

Why KONI? / The ITT Connection

Why KONI?

KONI has been in business for 150 years, involved in automobile dampers since 1932 and has produced adjustable telescopic dampers since 1945. In addition, though known best for cars, KONI also builds shocks for trucks, buses, RVs and railway rolling stock. What this adds up to is well-earned design and manufacturing experience.

As the maker of the industry`s very first adjustable shock absorber, electronic drag racing shocks, and today`s patented FSD (Frequency Selective Damping) street shocks, KONI has long demonstrated that product improvement means product innovation.

As a niche maker of high-performance shocks, KONI is small enough to interact with its customers on a regular basis, even having a Tech Line staffed every working day with KONI technicians, many of whom are car enthusiasts just like you. What this means is that you receive the personal attention missing in most product businesses today.

The ITT Connection

Since 1972 KONI has been part of the global engineering and manufacturing company called ITT, with 40,000 employees worldwide and 2007 sales of $9 billion. They are the world`s premier supplier of fluid pumps, a supplier of sophisticated electronics to military defense and a producer of electronic components for telecommunications, including aerospace and industrial and a maker of motion and flow control products for industrial, marine, leisure and transportation markets.

KONI is part of Motion and Flow Control and is probably the best-known retail brand of all the group`s products. Its nice to know that a small damper manufacturer has the resources and technology of a large company like ITT behind it.

Welcome to the KONI shock family!

Road Racing / Autocross

2822 Mk2

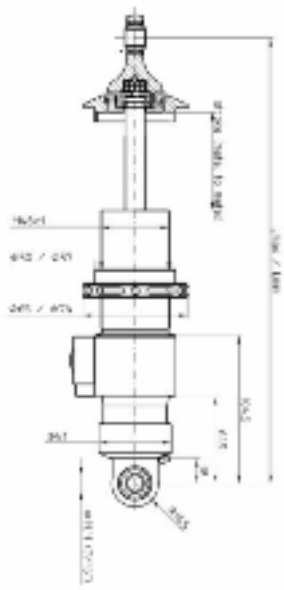
The 2822 Mk2 4-way adjustable damper has been developed to give you the ultimate control over the valving of the damper. Based on the proven technology of the 2812 2-way adjustable damper, the 2822 4-way damper goes further by providing both low and high speed adjustment for compression and rebound. These shocks are also racer rebuildable and revalveable.

DAMPER TYPE

The 2822 series is a double wall, high pressure gas shock absorber. Specifically designed for competition purposes, it is fully adjustable while fitted on the car. It contains two low speed adjusters in top eye assembly and two for high speed damping on the side of the body, both independent for compression and rebound damping. Its precision adjustment mechanism allows the maximum control possible over the damping forces generated.

UNIQUE FEATURES

Also unique to both low as well as high speed damping is that the bump and rebound forces are generated by the piston area and not by rod displacement at all. This creates a very precise control over the damping forces and very little phase lag (hysteresis) due to the lower hydraulic pressures. Besides, it makes a separate reservoir to accommodate the bump adjuster superfluous, and installation simple, lightweight and clean. The high speed adjustment on the 2822 series is fitted on the side of the damper. In combination with the low speed adjustment it will be able to generate 4096 predefined damping curves. This makes the control over the damping forces even more precise.

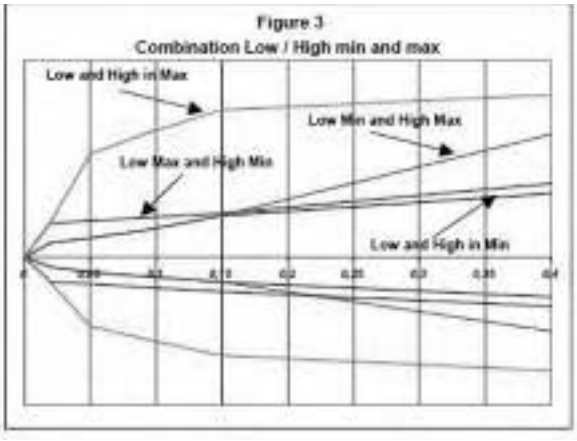


ORDERING INFORMATION

Springs seats are available to work with either 2.0", 2.25" or 2.5" ID springs. Please call for more information.

LENGTHS AVAILABLE

		Type of Mounting Eye						
		#1		#2		#3		
Type Code	Lmax (mm)	Lmin (mm)	Lmax (mm)	Lmin (mm)	Lmax (mm)	Lmin (mm)	Stroke (mm)	Body (mm)
279	279	220	284	225	289	230	59	178
299	299	230	304	235	309	240	69	188
309	309	235	314	240	319	245	74	193
319	319	240	324	245	329	250	79	198
339	339	250	344	255	349	260	89	208
359	359	260	364	265	369	270	99	218
379	379	270	384	275	389	280	109	228



28 Series Introduction

The 28 Series is a line of mono-tube shocks and struts specifically designed for competition purposes, featuring individual external adjustments for compression and rebound forces. The 28 Series earned an impressive worldwide resume ranging from premier series like Formula 1, Champ Car, Indy Racing League, Formula 3, the Grand-Am Koni Challenge series, British and German Touring Cars, etc. down to amateur championships including the SCCA and NASA.

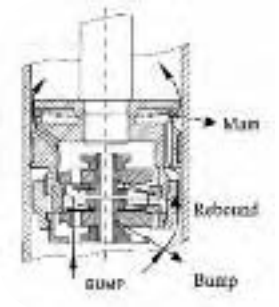
The 28 Series has garnered victories at the world's most prestigious races including the Indy 500, LeMans 24hr, Sebring 12hr and others. The 28 Series is the shock of choice of racing manufacturers including Dallara, and leading teams including Pro-drive.

The 28 series uses an advanced adjustment cartridge that controls the opening and closing of valve loaded ports. Distinct stops (clicks) assure that each port can only be either open or closed. Thus total repeatability of performance is engineered into the damper.

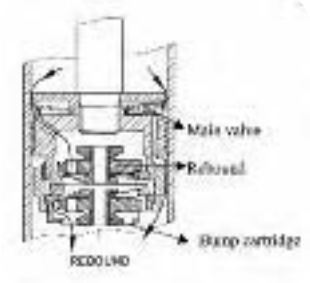
WORKING PRINCIPLES OF 2812 AND 2817

The 2812 MK II is used on formula car and prototype sports racer suspensions. The 2812 LB features a modular design that better accommodates the longer lengths and various attachment styles required for touring car specifications. The 2817 is an inverted mono-tube strut that has been designed to handle the special loadings for a strut style suspension.

The 2812 and 2817 are mono-tube dampers, meaning the damper has only one working tube. When the piston rod is pushed into the body of the damper, it displaces its own volume in oil. To make this possible a part of the damper is filled with nitrogen and separated from the oil by a floating piston. When the piston rod is pushed into the body of the damper, its volume will push down the floating piston a small amount and thereby create more space in the cylinder to accept the incoming piston rod. With movement of the damper, oil will flow through separate cartridges located in the piston. In these cartridges the oil will flow through valve loaded ports. When the oil flows through it creates a pressure drop over the piston which gives a damping force on the piston rod. The use of separate cartridges for the 2812 is a unique and patented KONI feature. The damper forces are generated by the amount of oil flowing through the piston and not the much smaller amount of oil displaced by the piston rod only.



Two cartridges are contained in the main piston, one for bump and one for rebound. They operate totally independent of each other. For both bump and rebound 8 adjustment positions are available. By having all forces generated by the piston itself, the control over the damping forces is very precise. A separate reservoir is not needed to accommodate the bump adjuster. This makes the installation simple, lightweight and clean.



The 2817 series strut uses a "twin guide" installation. The primary guide is fitted to the top of the main cylinder. The secondary guide is fitted to the lowest point of the damper body itself and runs up and down inside the strut housing. Therefore as the strut is compressed, the distance between the two guides increases. This reduces friction and increases strength dramatically under load. Damping adjustments for rebound and compression are made at the bottom of the strut unit.

Road Racing / Autocross

2812 Mk2

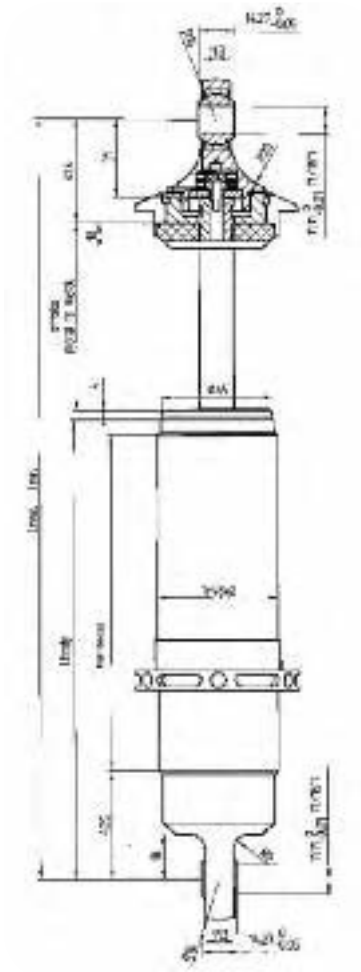
The 2812 MK II Series is a mono-tube damper specifically designed for competition purposes, featuring externally adjustable compression and rebound. This shock can be rebuilt by the racer. Spring seats are available for 2", 2.25" and 2.5" ID springs. The 2812 MK II Series spans 35 different stroke/length combinations. In addition, 3 different top mounting eye lengths are available. A steel cap is available for the upper eye so that custom mounts can be fabricated as well.

For a damper to function properly, it must be the correct length and valving. Regardless of the actual mounting configuration, the basic method for selecting a damper is always the same. Please refer to page 10 for a guide through this process.

NOTE: Always select the longest L min you can accommodate. This ensures the lowest friction plus the best durability. The same eye options are available for the Long Body as the 2812 Mk II as well as ordering on- or off-axis adjuster windows. The bearing in the lower eye is 7/16".

ORDERING INFORMATION

Once the correct length code has been identified, please fill out the order sheet at the back of the catalog. Please call if there are any questions regarding lengths or valvings available.



LENGTHS AVAILABLE

		Type of Mounting Eye						
		#1		#2		#3		
Type Code	Lmax mm	Lmin mm	Lmax mm	Lmin mm	Lmax mm	Lmin mm	Stroke mm	Lbody mm
214	214	185	219	190	224	195	29	139
219	219	190	224	195	229	200	29	144
224	224	190	229	195	234	200	34	144
229	229	195	234	200	239	205	34	149
234	234	195	239	200	244	205	39	149
239	239	200	244	205	249	210	39	154
244	244	200	249	205	254	210	44	154
249	249	205	254	210	259	215	44	159
254	254	205	259	210	264	215	49	159
259	259	210	264	215	269	220	49	164
264	264	210	269	215	274	220	54	164
269	269	215	274	220	279	225	54	169
274	274	215	279	220	284	225	59	169
279	279	220	284	225	289	230	59	174
284	284	220	289	225	294	230	64	174
289	289	225	294	230	299	235	64	179
294	294	225	299	230	304	235	69	179
299	299	230	304	235	309	240	69	184
304	304	230	309	235	314	240	74	184
309	309	235	314	240	319	245	74	189
214	314	235	319	240	324	245	79	189
219	319	240	324	245	329	250	79	194
324	324	240	329	245	334	250	84	194
329	329	245	334	250	339	255	84	199
334	334	245	339	250	344	255	89	199
339	339	250	344	255	349	260	89	204
344	344	250	349	255	354	260	94	204
349	349	255	354	260	359	265	94	209
354	354	255	359	260	364	265	99	209
359	359	260	364	265	369	270	99	214
364	364	260	369	265	374	270	104	214
369	369	265	374	270	379	275	104	219
374	374	265	379	270	384	275	109	219
379	379	270	384	275	389	280	109	224
384	384	270	389	275	394	280	114	224

2812 LB

The 2812 LB works the same as the 2812 MK II Series but utilizes a modular design allowing a much longer damper than our standard 2812 MK II. There are three standard eye configurations available but due to its modular design, these attachments can be easily modified to meet the necessary requirements. Steel caps for both the lower and upper attachments are available to fabricate custom mountings.

We have designed and built applications for a number of vehicles as well, including the 350Z, S2000 and M3s. For a complete listing of these applications, please see pages 8 and 9.

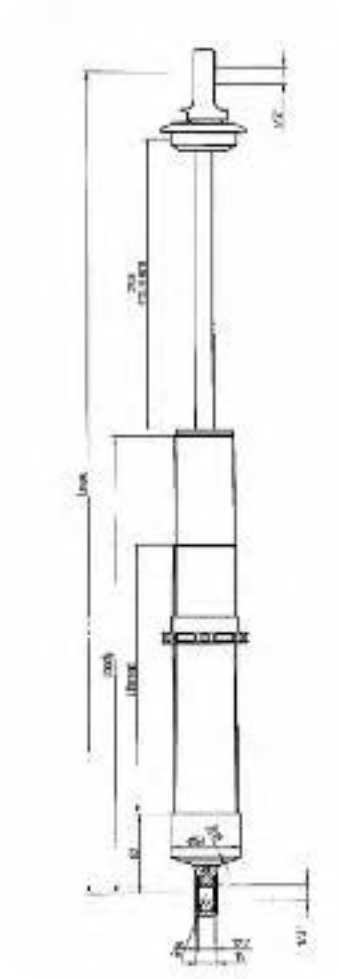
ORDERING INFORMATION

Shock Lengths can be selected from the chart listed here or by custom lengths as needed. Please call for mounting or valving questions. For more information on finding the correct shock length for your application, please refer to page 14.

NOTE: Always select the longest minimum length you can accommodate. This ensures the lowest friction plus the best durability. The same eye options are available for the Long Body as the 2812 Mk II as well as ordering on- or off-axis adjuster windows.

LENGTHS AVAILABLE

	Type of Mounting Eye					
	1" top eye		Steel top			
Type Code	Lmax mm	Lmin mm	Lmax mm	Lmin mm	Stroke mm	Lbody mm
214	233	204	211	182	29	211
219	238	209	216	187	29	216
224	243	209	221	187	34	221
229	248	214	226	192	34	226
234	253	214	231	192	39	231
239	258	219	236	197	39	236
244	263	219	241	197	44	241
249	268	224	246	202	44	246
254	273	224	251	202	49	251
259	278	229	256	207	49	256
264	283	229	261	207	54	261
269	288	234	266	212	54	266
274	293	234	271	212	59	271
279	298	239	276	217	59	276
284	303	239	281	217	64	281
289	308	244	286	222	64	286
294	313	244	291	222	69	291
299	318	249	296	227	69	296
304	323	249	301	227	74	301
309	328	254	306	232	74	306
314	333	254	311	232	79	311
319	338	259	316	237	79	316
324	343	259	321	237	84	321
329	348	264	326	242	84	326
334	353	264	331	242	89	331
339	358	269	336	247	89	336
344	363	269	341	247	94	341
349	368	274	346	252	94	346
354	373	274	351	252	99	351
359	378	279	356	257	99	356
364	383	279	361	257	104	361
369	388	284	366	262	104	366
374	393	284	371	262	109	371
379	398	289	376	267	109	376
403	403	289	381	267	114	381
433	433	309	411	287	124	411
473	473	329	451	307	144	451
513	513	349	491	327	164	491
553	553	369	531	347	184	531
593	593	389	571	367	204	571
633	633	409	611	387	224	611



Road Racing / Autocross

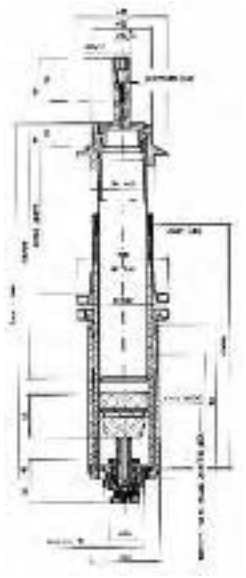
2817

The 2817 are racing dampers designed for strut applications. The 2817 series is a semifinished strut damper where only the mounting brackets need to be added. Some finished applications have been developed and can be found on pages 8 and 9.

The 2817 series uses a "twin guide" installation. The primary guide is fitted to the top of the main cylinder. The secondary guide is fitted to the lowest point of the damper body itself and runs up and down inside the strut housing. Therefore as the strut is compressed, the distance between the two guides increases. This reduces friction and increases strength dramatically under load. Damping adjustments for rebound and compression are made at the bottom of the strut unit.

BRACKET FABRICATION

The 2817 comes with a steel sleeve of 4.5mm thick which is an integral, yet detachable part of its structure. Onto this sleeve a bracket can be welded to attach the strut to the upright of the car. Usually such a bracket will consist of two steel strips, vertically welded parallel to the strut. The distance between the strips, of course, is equal to the thickness of the upright-fitting flange. The thickness of the strips should be approximately 5mm. A TiG welding process is recommended. Cool the area surrounding the weld and beware of overheating the steel 2817 sleeve. The resulting distortion will make it difficult to refit the sleeve over the aluminum casing. If, despite all precautions, the sleeve turns out to be distorted, screw the sleeve onto the casing as far as it will go and then tap around the circumference of the sleeve with a soft faced hammer until the sleeve is free to move.



DROOP LIMITER

A droop limiter can be installed to reduce L max. The limiter length can be increased in steps of 5mm and can be changed by a KONI service center. Please state the required length at the time of ordering.

LENGTHS AVAILABLE

Length Code	L max Dynamic*	L max Static**	L min	Stroke Max	L cylinder
2817A**43** VVV 00	429	429	310	119	251
2817A**47** VVV 00	469	469	330	139	271
2817A**51** VVV 00	509	509	350	159	291
2817A**55** VVV 25	549	549	370	179	311
2817A**59** VVV 25	589	589	390	199	331

* This is the max length allowed under dynamic conditions (see disclaimer on page XX)

** The damper should only reach this length under static (no load) conditions.

DISCLAIMER; At full droop the beam strength of a strut assembly is at its minimum. To warrant sufficient strength and safe operation, a droop limiter is usually installed inside the damper. Unfortunately, the resulting dimensions of the damper do not allow for the combination of a very low ride height and sufficient clearance to remove the wheels when the car is on jacks. As a solution, the droop limiter is sometimes shortened or removed. As a result, the damper can potentially be used outside of its safe operation limits. Under NO circumstance should a dynamic load be allowed to act on the strut assembly when the dampers are at such extended droop.

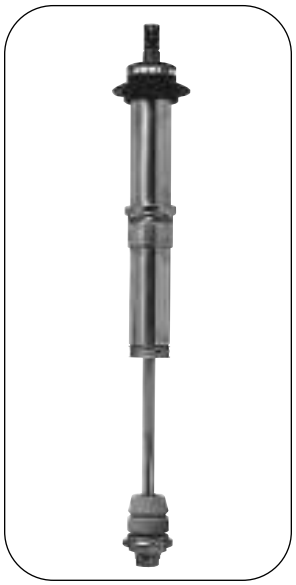
HOW TO DETERMINE THE REQUIRED DAMPER LENGTHS FOR THE 2817/2816

For the following setup, it is assumed that the car is already equipped with dampers.

1. Put the car on a flat level surface. Measure the distance between the upper and lower spring seats.
2. Jack the car up to maximum desired droop. Measure the distance between the upper and lower spring seats.
3. Support the car on jack stands. Remove the wheels, springs and bump rubbers. For convenience, disconnect the sway bars if possible.
4. Now raise the suspension to the point where either the cassis would hit the ground or a suspension component uses up all its available travel. If the factory length struts are being used for measuring, it is necessary to determine if the length of the strut housing will require shortening to achieve the desired bump travel.
5. Subtracting the value found at Step 4 with the value found at Step 2 give the required stroke.
6. Find a 2817/2816 that has this required stroke. Not its L min.
7. Check that this L min fits within the dimension found at Step 4.
8. If the L min is too long, check the next shorter length and determine if the L max will be sufficient.
9. If the L min is too short, check the next longer length. The L max can be shortened by increasing the length of the internal droop limiter of the damper.

2816

The 2816 is a damper for use in strut housings that are designed and fabricated by the customer. The damper is to be used in an inverted "twin guide" installation. In this layout, the primary guide is located at the top of the suspension strut housing. The secondary guide is attached to the damper and moves up and won, relative to the primary guide. This configuration offers the stiffest assembly possible with the lowest friction.



COMPONENTS SUPPLIED BY KONI

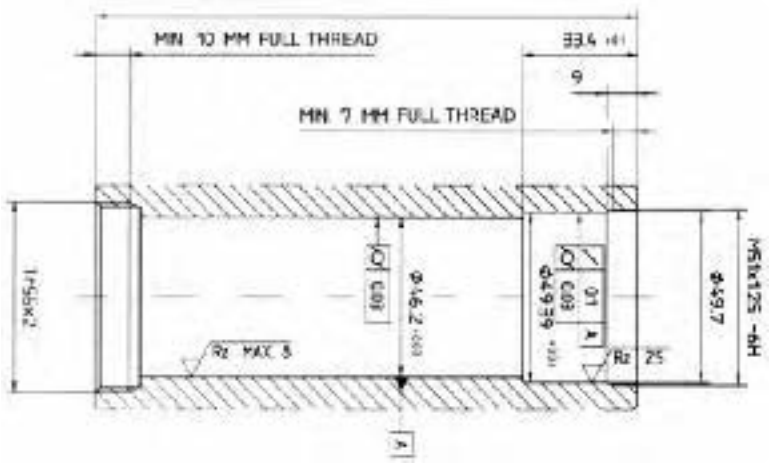
- Fully assembled piston rod attachment, containing the adjuster assembly
- Primary guide bushing and the secondary guide PTFE ring
- Lock nut with integrated dirt scraper

2816 STRUT HOUSING FABRICATION

All dimensional and finish requirements of the damper strut housing are noted in the drawing to the right. For the inside of the cylinder, it is important to achieve the small tolerance and smooth surface finish. Both are vital for low friction and durability.

2816ATT-VVV-DD

This is the generic part number for the 2816 series. TT is the length code, VVV is the valving code and DD is the length of the internal droop limiter.



LENGTHS AVAILABLE

2816 Length Code	L max Dynamic*	L max Static**	L min	Stroke Max	L cylinder
2816A**43** VVV 00	429	429	310	119	251
2816A**47** VVV 00	469	469	330	139	271
2816A**51** VVV 00	509	509	350	159	291
2816A**55** VVV 25	549	549	370	179	311
2816A**59** VVV 25	589	589	390	199	331

* This is the max length allowed under dynamic conditions (see disclaimer on page XX)

** The damper should only reach this length under static (no load) conditions.

TIP: Always select the longest L min you can accommodate. This ensures the lowest friction plus the best durability.

NOTE:

* This is the max length allowed under dynamic conditions (see disclaimer on page 6)

** The damper should only reach this length under static (no load) conditions.

Road Racing / Autocross

28 Series Application Guide

The 28-series of shocks and struts have been developed to work on a number of production based automobiles and used successfully in racing series all over the world. As the official dampers of the Koni Challenge Series, these have been tested and have won at events all over the country. These are developed to give the very best handling for a race track environment, weather it be a track day or a championship event.

Please note that the strut applications have all been developed to work with a camber plate setup and may require other pieces in order to be mounted to the car.

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Make / Model	Year	Front	Rear
Acura			
TSX	04-07	2812LB-1322	2812LB-1329
Integra Type R	97-01	2812LB-1152	2812LB-1164
Integra (excluding) Type R	94-01	2812LB-1152	2812LB-1153
BMW			
3-Series (E46)	99-05	2817-1390 L/R	2812LB-1115
Z4 (excl. M Series)	03-07	2817-1390 L/R	2812LB-1115
Chevrolet			
Cobalt	05-06	2817-1500	2812LB-1364
Corvette (C5)	97-04	2812LB-1023	2812LB-1024
Corvette (C6)	05-07	2812LB-1023	2812LB-1024
Dodge			
SRT4	03-06	2817-1474	2817-1482
Ford			
Mustang	05-07	2817-1494	2812LB-1240
Honda			
Accord	03-07	2812LB-1322	2812LB-1329
Civic / CRX	88	2812LB-1166	2812LB-1164
Civic / CRX	89-91	2812LB-1166	2812LB-1153
Civic	92-95	2812LB-1152	2812LB-1153
Civic	96-00	2812LB-1152	2812LB-1213
Civic	06-07	2817-1502	2812LB-1359
Prelude	92-00	2812LB-1154	2812LB-1155
S2000	00-07	2812LB-1278	2812LB-1279

28 Series Application Guide (continued)

Make / Model	Year	Front	Rear
Mazda			
Miata	90-97	2812LB-1203	2812LB-1204
Miata	99-05	2812LB-1251	2812LB-1252
MX-5	06-07	2812LB-1243	2812LB-1244
RX-8	03-07	2812LB-1226	2812LB-1227
MINI			
Cooper (incl. S)	02-06	2817-1440 L/R	2812LB-1293
Cooper (incl. S)	07	2817-1440 L/R	2812LB-1293
Nissan			
350Z	03-07	2812LB-1216	2812LB-1217
Porsche			
944 (incl. Turbo)	6/85-91	2817-1000	2812LB-1000
996	99-04	2817-1003	2812LB-1003
997	04-07	2817-1004	2812LB-1004
Subaru			
Legacy	05-07	2817-1501	2812LB-1365
Volkswagen			
Golf / GTI / Jetta	85-92	2817-1258	2812LB-1108
Golf / GTI / Jetta	93-97	2817-1258	2812LB-1108
GTI / Jetta / Rabbit	05-07	2817-1431	2812LB-2859

Road Racing / Autocross

3012

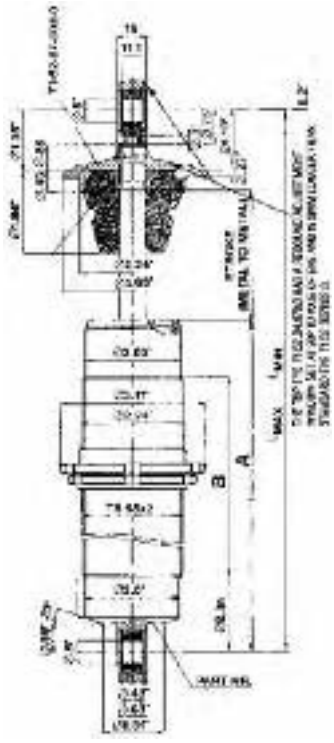
The 3012 series features a threaded aluminum-body, external double adjustability and a high pressure gas mono-tube design, ensuring optimum performance. Our patented mono-tube design allows for independent adjustments to the rebound and compression forces. All damping adjustments are made at the piston, eliminating the additional weight and packaging complications of an external reservoir. The 3012 series offers one of the broadest adjustment ranges in the industry, eliminating the need of constant revalving procedures from track to track.

The rebound adjustment is made at the top of the shock while the compression is made by full extending the shock and turning the rod.

STYLES AVAILABLE

The 3012 series dampers are available in either one of two standardized styles. The part numbers ending in an even number are supplied with the standard eye, which has the rebound adjustment window on axis to the mounting eye. The dampers ending in an odd number are supplied with the rebound adjustment window 90 degrees to the axis of the eye. Please note that the eye supplied with the odd numbered dampers increases the maximum and minimum dimension of the damper 5mm (0.2").

Besides the 3012 shock, there is a steel bodied version, the 3011 series also available. In addition, a rebound only adjustable 3014 series is available in the same lengths. Custom mountings and lengths are also available.



Valving Code	Spring Rates
B16	up to 250 lbs./in.
B23	250-1500 lbs./in.
B53	500-2000 lbs./in.
B83	650-3500 lbs./in.

LENGTHS AVAILABLE

Part Number	Stroke	Max L	Min L	A
1600	50mm	261mm	211mm	165mm
1602	55mm	271mm	216mm	170mm
1604	60mm	281mm	221mm	175mm
1606	65mm	291mm	226mm	180mm
1608	70mm	301mm	231mm	185mm
1610	75mm	311mm	236mm	190mm
1612	80mm	321mm	241mm	195mm
1614	85mm	331mm	246mm	200mm
1616	90mm	341mm	251mm	205mm
1618	95mm	351mm	256mm	210mm
1620	100mm	361mm	261mm	215mm
1622	105mm	371mm	266mm	220mm
1624	110mm	381mm	271mm	225mm
1626	115mm	391mm	276mm	230mm
1628	120mm	401mm	281mm	235mm
1630	125mm	411mm	286mm	240mm
1632	130mm	421mm	291mm	245mm
1634	135mm	431mm	296mm	250mm
1636	140mm	441mm	301mm	255mm
1638	145mm	451mm	306mm	260mm
1640	150mm	461mm	311mm	265mm
1642	155mm	471mm	316mm	270mm
1644	160mm	481mm	321mm	275mm
1646	165mm	491mm	326mm	280mm
1648	170mm	501mm	331mm	285mm
1650	175mm	511mm	336mm	290mm
1652	180mm	521mm	341mm	295mm
1654	185mm	531mm	346mm	300mm
1656	190mm	541mm	351mm	305mm
1658	195mm	551mm	356mm	310mm
1660	200mm	561mm	361mm	315mm
1662	205mm	571mm	366mm	320mm
1664	210mm	581mm	371mm	325mm
1666	215mm	591mm	376mm	330mm
1668	220mm	601mm	381mm	335mm
1670	225mm	611mm	386mm	340mm
1672	230mm	621mm	391mm	345mm

Stroke	Max L	Min L	A
1.97"	10.28"	8.31"	6.50"
2.17"	10.67"	8.50"	6.69"
2.36"	11.06"	8.70"	6.89"
2.56"	11.46"	8.90"	7.09"
2.76"	11.85"	9.09"	7.28"
2.95"	12.24"	9.29"	7.48"
3.15"	12.64"	9.49"	7.68"
3.35"	13.03"	9.69"	7.87"
3.54"	13.43"	9.88"	8.07"
3.74"	13.82"	10.08"	8.27"
3.94"	14.21"	10.28"	8.46"
4.13"	14.61"	10.47"	8.66"
4.33"	15.0"	10.67"	8.86"
4.53"	15.39"	10.87"	9.06"
4.72"	15.79"	11.06"	9.25"
4.92"	16.18"	11.26"	9.45"
5.12"	16.57"	11.46"	9.65"
5.31"	16.97"	11.65"	9.84"
5.51"	17.36"	11.85"	10.04"
5.71"	17.76"	12.05"	10.24"
5.91"	18.15"	12.24"	10.43"
6.10"	18.54"	12.44"	10.63"
6.30"	18.94"	12.64"	10.83"
6.50"	19.33"	12.83"	11.02"
6.69"	19.72"	13.03"	11.22"
6.89"	20.12"	13.23"	11.42"
7.09"	20.51"	13.43"	11.61"
7.28"	20.91"	13.62"	11.81"
7.48"	21.30"	13.82"	12.01"
7.68"	21.69"	14.02"	12.20"
7.87"	22.09"	14.21"	12.40"
8.07"	22.48"	14.41"	12.60"
8.27"	22.87"	14.61"	12.80"
8.46"	23.27"	14.80"	12.99"
8.66"	23.66"	15.0"	13.19"
8.86"	24.06"	15.20"	13.39"
9.06"	24.45"	15.39"	13.58"

8212

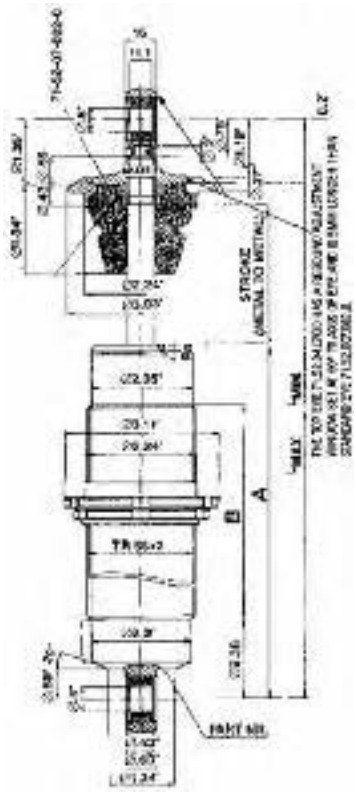
The 8212 series is an aluminum bodied externally double adjustable coil over. It has a twin tube hydraulic construction that is fully rebuildable and the valving can be matched to a wide range of applications. Adjustment of the rebound and compression damping is provided by two controls and may be adjusted independently of one another without removing it from the car. Please note that the mounting angle may not be more than 45 degrees from vertical as otherwise the damper does not function properly.

The 8212 series dampers are available in 7 standard valvings. >

Valving Code	Spring Rates
B1	150-300 lbs./in.
B2	225-450 lbs./in.
B3	275-550 lbs./in.
B6	300-650 lbs./in.
B7	375-750 lbs./in.
B8	400-8000 lbs./in.
B8+	600-2000 lbs./in.

VARIATIONS AVAILABLE

1. Settings for spring rates lighter than those of B1 or heavier than those listed for B8+ can be supplied after discussing your requirements with your KONI dealer.
2. In its standard form, the 8212 series accepts spring with an inside diameter of 2.5". If desired, 2.25" spring seats are available upon request.
3. In applications where the minimum length of the damper is correct, but the desired droop travel is too long an internal rebound stop may be added to achieve the correct dimension. Discuss your needed with your KONI dealer. Custom Lengths are also available.
4. A steel bodied, nickel plated version, the 8211 series, is available offering identical performance with a slight sacrifice in weight. This is an ideal shock for vintage applications that require a steel body shock.
5. A single adjustable version, the 8216 series, is also available with adjustment in rebound damping only.



LENGTHS AVAILABLE

Part Number	Stroke	Max L	Min L	A
1400	68mm	271mm	203mm	165mm
1402	73mm	281mm	208mm	170mm
1404	78mm	291mm	213mm	175mm
1406	83mm	301mm	218mm	180mm
1408	88mm	311mm	223mm	185mm
1410	93mm	321mm	228mm	190mm
1412	98mm	331mm	233mm	195mm
1414	103mm	341mm	238mm	200mm
1416	108mm	351mm	243mm	205mm
1418	113mm	361mm	248mm	210mm
1420	118mm	371mm	253mm	215mm
1422	123mm	381mm	258mm	220mm
1424	128mm	391mm	263mm	225mm
1426	133mm	401mm	268mm	230mm
1428	138mm	411mm	273mm	235mm
1430	143mm	421mm	278mm	240mm
1432	148mm	431mm	283mm	245mm
1434	153mm	441mm	288mm	250mm
1436	158mm	451mm	293mm	255mm
1438	163mm	461mm	298mm	260mm
1440	168mm	471mm	303mm	265mm
1442	173mm	481mm	308mm	270mm
1444	178mm	491mm	313mm	275mm
1446	183mm	501mm	318mm	280mm

Stroke	Max L	Min L	A
2.68"	10.67"	7.99"	6.50"
2.87"	11.06"	8.19"	6.69"
3.07"	11.46"	8.39"	6.89"
3.27"	11.85"	8.58"	7.09"
3.46"	12.24"	8.78"	7.28"
3.66"	12.64"	8.98"	7.48"
3.86"	13.03"	9.17"	7.68"
4.06"	13.43"	9.37"	7.87"
4.25"	13.82"	9.57"	8.07"
4.45"	14.21"	9.76"	8.27"
4.65"	14.61"	9.96"	8.46"
4.84"	15.0"	10.16"	8.66"
5.04"	15.39"	10.35"	8.86"
5.24"	15.79"	10.55"	9.06"
5.43"	16.18"	10.75"	9.25"
5.63"	16.57"	10.94"	9.45"
5.83"	16.97"	11.14"	9.65"
6.02"	17.36"	11.34"	9.84"
6.22"	17.76"	11.54"	10.04"
6.42"	18.15"	11.73"	10.24"
6.61"	18.54"	11.93"	10.43"
6.81"	18.94"	12.13"	10.63"
7.01"	19.33"	12.32"	10.83"
7.20"	19.72"	12.52"	11.02"

Road Racing / Autocross

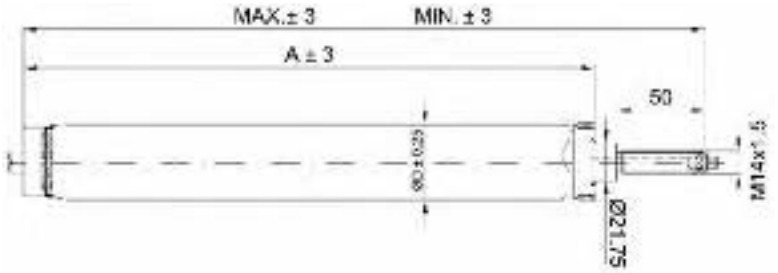
8611 / 8610

8611 SERIES

The 8611 series double adjustable strut insert is a twin-tube hydraulic design that is externally adjustable in both rebound and compression damping. This is an affordable double adjustable option for club racers and autocrossers in North America for vehicles utilizing strut suspensions. The rebound adjuster is adjustable at the top of the strut rod with a knob that is included while the compression adjuster is located at the bottom of the insert. This requires a 1/2" diameter hole to be made in the bottom of the strut housing for access to the adjuster. The 8611 series is not supplied with a threaded locknut to retain the insert into the strut housing. If new locknuts are required for your application, please refer to the chart below to determine which part number you need when placing your order. The 8611-1262RACE and 8611-1263RACE inserts are designed to work with higher spring rate applications and heavier vehicles. Contact the KONI motorsports staff for specific information.

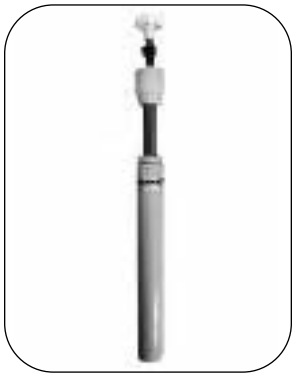
Part Number	Stroke	Max L	Min L	A	D
8611-1256 Race	139mm	520mm	381mm	311mm	45.5mm
8611-1257 Race	143mm	500mm	357mm	290mm	43.5mm
8611-1258 Race	158mm	615mm	457mm	391mm	43.5mm
8611-1259 Race	153mm	540mm	387mm	332mm	43.5mm
8611-1262 Race	153mm	540mm	387mm	332mm	43.5mm
8611-1263 Race	143mm	500mm	357mm	290mm	43.5mm

Stroke	Max L	Min L	A	D
5.47"	20.47"	15.00"	12.24"	1.79"
5.63"	19.69"	14.06"	11.42"	1.71"
6.22"	24.21"	17.99"	15.39"	1.71"
6.02"	21.26"	15.24"	13.07"	1.71"
6.02"	21.26"	15.24"	13.07"	1.71"
5.63"	19.69"	14.06"	11.42"	1.71"



8610 SERIES

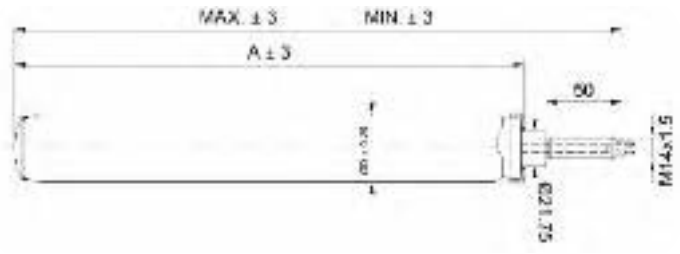
The 8610 series strut cartridge insert fits a variety of road racing and autocross cars. This insert offers externally adjustable rebound damping with unique valving characteristics that have been developed in conjunction with many top racing teams and chassis builders as a single adjustable alternative to the 8611 series. The dampers are supplied with an adapter to fit through a 5/8" bearing/camber plate assembly.



Part Number	Stroke	Max L	Min L	A	D
8610-1436 Race	143mm	500mm	357mm	290mm	43.5mm
8610-1437 Race	153mm	540mm	387mm	332mm	43.5mm

Stroke	Max L	Min L	A	D
5.63"	19.69"	14.06"	11.42"	1.71"
6.02"	21.26"	15.24"	13.07"	1.71"

Thread & Pitch	Part Number
M48 x 1.50	73.25.01.003.1
M48 x 1.00	73.25.01.002.1
M51 x 1.25	73.25.01.006.1
M51 x 1.50	73.25.01.007.1
M52 x 1.50	73.25.00.025.1
52.8WW	73.25.01.011.1



TO DETERMINE THE CORRECT 8611 OR 8610 INSERT FOR YOUR APPLICATION, FOLLOW THESE STEPS.

1. Measure the inside depth and inside diameter of your strut housing.
2. For the KONI insert to be properly installed, the measured depth of your strut housing must be 1-4mm (.04"-.16") shorter than the dimension "A" in the chart below. Also, the inner diameter of the housing must be larger than the dimension "D."
3. In the event that the KONI "A" length is shorter than required, the user must then fabricate a spacer and place it under the KONI insert so as to achieve the proper depth relationship.
4. After the KONI insert with the correct "A" length has been determined, verify that the stroke length will be appropriate for your application.

RACE Series

The RACE series dampers are designed as a bolt in application for those running either in high performance driving events, road racing or autocross. They are externally adjustable in rebound damping and can be adjusted on the car. They are designed to work with the extreme high performance spring rates up to 1000 lbs. with coilover sleeve setups. These shock come with factory style perches but will also work will our coilover sleeve systems on page 30.

Also, these shocks have been shortened to give additional travel in the suspension to work with the lowered ride heights that these cars are running. This gives the cars additional travel and keeps the car from bottoming out. The amounts given in the table below is the amount that the shocks are shorter than the factory length dampers.

Application	Year	Front	Amount Shorter	Rear	Amount Shorter
Acura Integra	94-01	8041 1152 Race	25mm	8041 1153 Race	15mm
Acura Integra Type R	94-01	8041 1152 Race	25mm	8041 1164 Race	15mm
Honda Civic / CRX	89-91	8041 1166 Race	25mm	8041 1164 Race	15mm
Honda Civic / CRX	89-91	8041 1166 Race	25mm	8041 1153 Race	15mm
Honda Civic	92-95	8041 1152 Race	25mm	8041 1153 Race	15mm
Honda Civic	96-00	8041 1152 Race	25mm	8041 1213 Race	15mm
Honda Del Sol	92-97	8041 1152 Race	25mm	8041 1153 Race	15mm
Mazda Miata	90-97	8041 1203 Race	25mm	8041 1204 Race	10mm

HOW TO DETERMINE THE REQUIRED DAMPER LENGTHS

Double eye mounting style: 2812, 3011, 3012, 30 SP8, 8212

A. Prepare the car for making measurements: put it on a flat and level surface, support it on jack stands as such to life the wheels off the ground. Remove the wheels, springs and dampers. Disconnect the anti-roll bars if fitted.

B. Check if the upper and lower mounting eyes of the damper you have selected will clear the attachment points on the car under all normal operating motions.

C. 1. The suspension should now be set at its maximum droop position. Take careful note of which suspension component is limiting the suspension from traveling any further.

2. Lift the suspension just enough to prevent that component from binding.

3. Measure the center to center distance between the upper and lower damper attachment points. This is the open length or Lmax.

4. Refer to the chart that corresponds with the damper that you have selected. Find the Lmax that matches the one you measured. If no exact match can be found, decrease the Lmax to the next available length.

NOTE: All Koni dampers are designed to withstand the loads of limiting suspension droop and it is advisable to make use of this feature.

D. 1. Raise the suspension to the point where the chassis would hit the ground, or a suspension component uses up all of its available travel.

2. Now again measure the distance between the damper mounting points.

3. Check that this figure is greater than the Lmin found at point D1.

4. If this is not the case, decide if you need all of the available droop travel. If not, decrease Lmax to the next available fit and go back to step C4.

Road Racing / Autocross

Road Racing Tech

DETERMINING ROAD COURSE VALVING

If you need assistance in selecting a valving for your application, please have the following information available when you contact your KONI dealer:

- Spring Rates
- Motion Ratios
- Corner Weights

Motion Ratio is the term used to indicate the ratio between wheel movements and damper movements. This ratio is an important factor when the required valving is selected as it determines the piston velocities damper will encounter.

Motion Ratio = Damper Movement/Wheel Movement

This ration is easily measured: assuming the car is without wheels, springs and anti-roll (sway) bars:

- Lower the suspension to its maximum droop position.
- Measure the distance between the damper mounting points.
- Raise the suspension to the minimum ride height position and repeat step 2.
- The mean motion ratio can not be calculated using the formula stated above.

Suggested Adjustment Procedure for Road Course Use

ADJUSTING THE COMPRESSION (BUMP) DAMPING CONTROL

Bump damping controls the unsprung weight of the vehicle (wheels, axles, etc.). It controls the upward movement of the suspension such as hitting a bump in the track. It should not be used to control the downward movement of the vehicle when it encounters dips. Also, it should not be used to control roll or bottoming.

Depending on the vehicle, the ideal bump setting can occur at any point within the adjustment range. This setting will be reached when "side-hop" or "walking" in a bumpy turn is minimal and the ride is not uncomfortably harsh. At any point other than this ideal setting, the "side-hopping' condition will be more pronounced and the ride may be too harsh.

Step 1: Set all four dampers on minimum bump and minimum rebound settings.

Step 2: Drive one or two laps to get the feel of the car.

NOTE: When driving the car during the bump adjustment phase, disregard body lean or roll and concentrate solely on how the car feels over bumps. Also, try to notice if the car "walks" or "side-hops" on a rough turn.

Step 3: Increase bump adjustment clockwise 3 clicks on all four dampers. Drive the car one or two laps. Repeat this step until a point is reached where the car starts to feel hard over bumpy surfaces.

Step 4: Back off the bump adjustment two clicks. The bump control is now set.

NOTE: The back off point will likely be reached sooner on one end of the vehicle than the other. If this occurs, keep increasing the bump on the soft end until it too feels too hard. Then back that side off two clicks. The bump control is now set.

ADJUSTING THE REBOUND DAMPING CONTROL

Once you have found what you feel to be the best bump setting on all four wheels, you are now ready to proceed with adjusting the rebound damping. The rebound damping controls the transitional roll (lean) as when entering a turn. It does not limit the total amount of roll; it does limit how fast this total roll angle is achieved. How much the vehicle actually leans is determined by other things such as spring rate, sway bars, roll center heights, etc.

It should be noted that too much rebound damping on either end of the vehicle will cause an initial loss of lateral acceleration (cornering power) at that end which will cause the vehicle to oversteer or understeer excessively when entering a turn. Too much rebound control in relation to spring rate will cause a condition known as "jacking down." This is a condition where, after hitting a bump and compressing the spring, the damper does not allow the spring to return to a neutral position before the next bump is encountered. This repeats with each subsequent bump until the car is actually lowered onto the bump stops. Contact with the bump stops causes a drastic increase in roll stiffness. If this condition occurs on the front, the car will understeer; if it occurs on the rear, the car will oversteer.

Step 1: With the rebound set on full soft and the bump control set from your testing, drive the car one or two laps, paying attention to how the car rolls when entering a turn.

Step 2: Increase rebound damping three sweeps or 3/4 of a turn on all four dampers and drive the car one or two laps. Repeat this step until the car enters the turns smoothly (no drastic attitude changes) and without leaning excessively. Any increase in the rebound stiffness beyond this point is unnecessary and may in fact be detrimental.

EXCEPTION: It may be desirable to have a car that assumes an oversteering or understeering attitude when entering a turn. This preference, of course, will vary from one driver to another depending on the individual driving style.

Road Racing Tech (continued)

TROUBLESHOOTING HANDLING ISSUE

The following is a guide to try to solve handling problems AFTER the car's initial setup has already been found.

FRONT

Rebound

- **Setting is too Firm** – Can cause the car to "jack down" which can cause the driver to think the car is too firm in compression. Can also cause a lack in grip from the tire not separating from the chassis fast enough and cause the car to push.

- **Setting is too Soft** – Though a soft rebound setting will allow better compliance with the road, the car may feel floaty or excessively oscillate after hitting bumps.

Compression

- **Setting is too Firm** - Can cause the car to feel skittish and lose grip over rough sections of pavement. Can cause outside tire to be loaded too quickly. The car won't stabilize in a turn.

- **Setting is too Soft** – Can cause a corner entry understeer. Can possibly cause excessive suspension movement.

REAR

Rebound

- **Setting is too Firm** – Can cause oversteer on corner entry from rear tires loosing traction. Can also cause the car to "jack down" in the rear.

- **Setting is too Soft** – Can make the car feel like it is diving too much on corner entry. Vehicle may feel floaty or excessively oscillate after hitting bumps.

Compression

- **Setting is too Firm** - Can cause the car feel unstable or loose on rough pavement. Can also cause the car to want to step out when getting back on throttle..

- **Setting is too Soft** – Can cause corner exit understeer and possible excessive suspension movement.

NOTES

1. When changing to firmer springs, the shocks usually need to be set firmer for rebound and softer for compression damping.

2. On rainy or slick tracks, softening the compression damping will help to delay initial loading on the tire which increases grip.

This is a guide for Shock Setup only. Other factors such as the spring rates, sway bars, alignment and tire pressures will also have an affect on the handling of the vehicle.

SPHERICAL BEARING MOUNT AND CAMBER PLATE GUIDE

For applications that use an upper spherical bearing mount, please check the following points for adequate clearance through the entire range of suspension travel.

- Make certain that the mounting hardware does not contact the outer bearing race or the housing that retains the bearing. The mounting hardware includes any nut, washer, or spacers that are use to locate the mounting pin in the bearing.

- Make certain that the retaining clip for the bearing does not contact the piston rod shoulder or mounting hardware.

Any contact at these points can cause excessive side load that could cause damage to the damper or bearing mounting assembly.

Drag Racing

Drag Racing Introduction

90/10 THEORY FALLS BY WAYSIDE

The KONI SPA1 series shock absorber (for drag racing only) is a complete departure from the old "90/10" thinking which is no longer effective in modern drag race competition.

The old thinking was to allow the vehicle front end to rise quickly and stay there to promote as much weight transfer as possible to the rear wheels. This was achieved by virtually no rebound forces ("10") and a great deal of bump forces ("90"). This massive amount of bump force was supposed to hold the front suspension up and maintain that "bite."

Unfortunately the nose-in-the-air position trapped huge volumes of air which ruined any attempt at aerodynamics so E.T.s were not as good as they could have been.

KONI SPA1 series shocks deal with this in several ways. First, they use virtually no bump (compression) damping. Why? To allow the front-end to settle quicker, restoring the nose down attitude that is so essential for cleaner air flow. Second, the rebound (extension) forces are velocity sensitive; that is, they increase at a rate directly proportionate to piston speed.

SO, WHAT DOES THIS MEAN?

On a dry surface with good hookup, the amount of lift generated by initial launch is, of course, very sudden and quite violent. The velocity sensitive nature of the SPA1 reacts instantly (no magic, just good design and tuning) to damp this lift to avoid bogging caused by too much weight transfer. Yes, you can have too much of a good thing.

On the other end of the spectrum, a slick surface would naturally provide less lift and tire shock, so the SPA1 then allows more movement of the front end because the lack of traction initially does not lift the chassis as violently. This "gentle" impulse does not activate the higher speed circuit of the SPA1, so you end up with more front to rear weight transfer and accordingly better bite. Not only that, they have five settings that enable you to tune your chassis.

For KONI rear SPA1 shock, there is a big difference. They still have nearly zero bump (compression) damping but the rebound damping, unlike the fronts, is digressive.

Digressive means they are designed to digress, or "blow off" at high piston speed. Why? Well, if you had the velocity sensitive type setting on the front shocks use, it would be possible to grossly over damp the rear suspension on initial launch, thereby picking up the rear wheels. The rear SPA1 KONI will "blow off' then, and allow proper "unwinding" of the rear suspension.

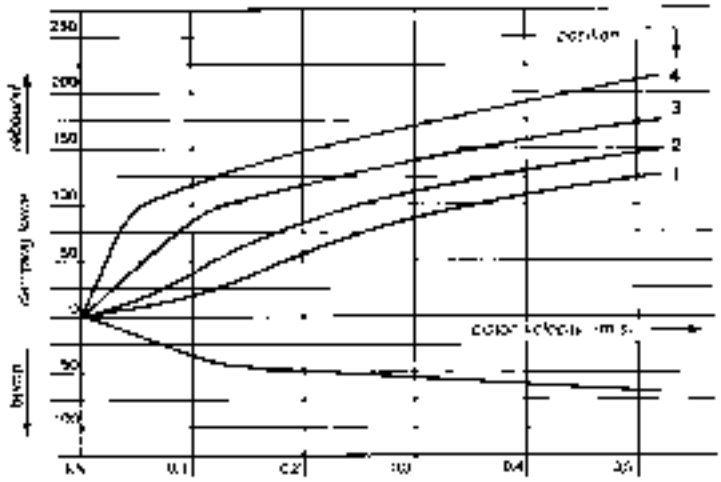
WARNING

KONI Series SPA1 shock absorbers are specifically for use in off highway drag race competition only. If used on public highways, loss of vehicle control and consequent personal injuries may result.

Electric Drag

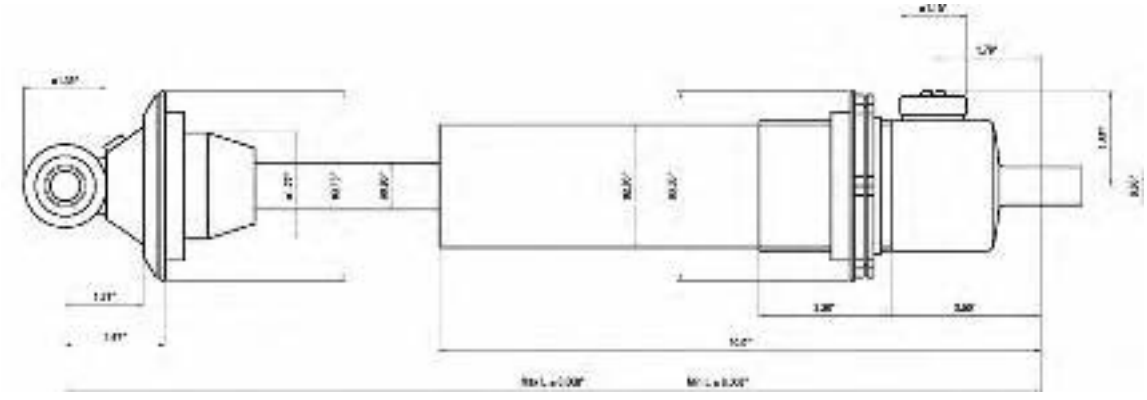
The 12-9000 electric drag racing dampers offer the ultimate in adjustable drag race suspension. Rebound damping forces are adjusted by an electric servo motor located inside the piston rod that can be adjusted with a programmable shock controller. This allows the driver to launch the car with high rebound forces to hold the car down for better bite and then change to a softer setting to offer more compliance to optimize traction. Compression damping is also adjustable manually to one of twelve settings via a screw adjustment at the bottom of the damper.

The spring seats accept a 2.25" I.D. spring or a 2.5" ID spring when used with the included nylon adapters and are installed with 1/2" I.D. spherical bearings. These are complete kits that include the wiring harness and the control box. The SPA11 "Gorilla" valving is available as well which offers higher rebound forces for applications using higher spring rates.



PARTS AVAILABLE

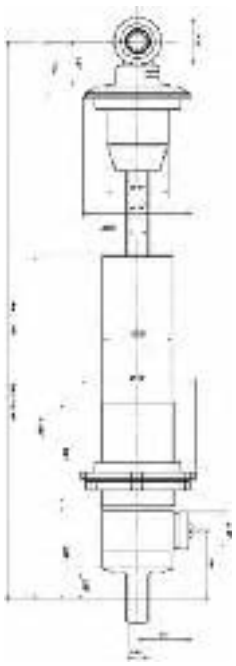
70.29.01.288.0	Upper Spring Seat
8212.29.129	Lower Spring Seat
8212.29.011	Locking Ring
15.29.04.003.0	Nylon 2.25" to 2.5" spring seat adapter
12 9000-2	Electronic Control Box and Harness



Part Number	Stroke	Max Length	Min Length	Spring Length	Ride Height
12 9000	6.57"	19.25"	12.68"	14"	15.96"
12 9000 SPA11	6.57"	19.25"	12.68"	14"	15.96"

Drag Racing

8212/8216 SPA1



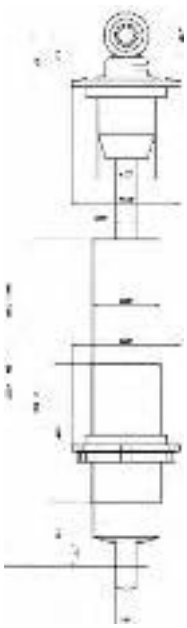
8212

The 8212 SPA1 series of dampers is an aluminum bodied coilover that features externally adjustable rebound and compression damping. Due to its unique valving and wide range of adjustment, this drag racing damper satisfies a wide range of suspension configurations and spring rates. The 8212 SPA1 is fully rebuildable and comes complete with 2.5" I.D. spring hardware and 1/2" I.D. spherical bearings. Custom Lengths can be built to your requirements in our shop.

Part Number	Stroke	Max Length	Min Length	Spring Length	Ride Height
8212 1121 SPA1	5.13"	15.88"	10.75"	10"-12"	13.32"
8212 1126 SPA1	6.00"	17.50"	11.50"	12"	14.50"
8212 1123 SPA1	7.00"	19.50"	12.50"	14"	16.00"

PARTS AVAILABLE

70.29.01.121.0	Upper Spring Seat
8212.29.129	Lower Spring Seat
8212.29.011	Locking Ring
15.29.04.003.0	Nylon 2.25" to 2.5" spring seat adapter
70.34.53.000.0	Bump Rubber



8216

The 8216 SPA1 is an aluminum bodied coilover that is designed for use with 2.5" I.D. springs. These single adjustable drag race dampers are externally adjustable on rebound damping with the compression damping set from the factory. Custom Lengths can also be fabricated in our shop.

Part Number	Stroke	Max Length	Min Length	Spring Length	Ride Height
8216 2027	2.25"	11.26"	8.74"	8"	9.87"
8216 1906 SPA1	4.61"	15.59"	10.98"	10"-12"	13.29"
8216 1907 SPA1	5.44"	17.17"	11.73"	12"	14.45"
8216 1908 SPA1	6.37"	19.13"	12.76"	14"	15.95"

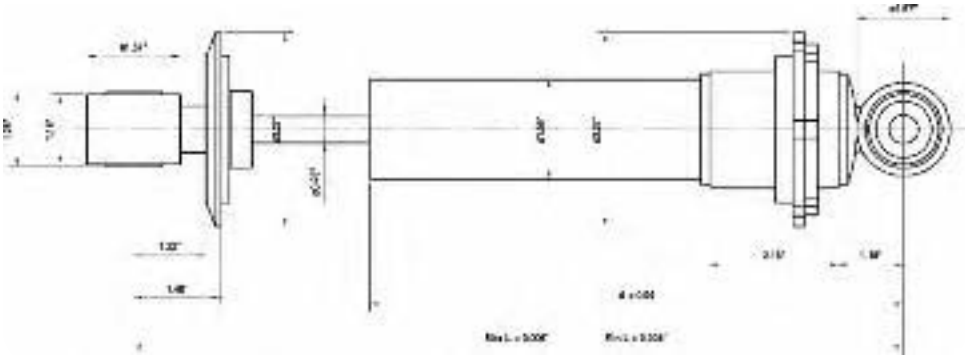
PARTS AVAILABLE

70.29.01.121.0	Upper Spring Seat
8212.29.129	Lower Spring Seat
8212.29.011	Locking Ring
15.29.04.003.0	Nylon 2.25" to 2.5" spring seat adapter
70.34.53.000.0	Bump Rubber

80-2650 SPA1

The 80-2650 SPA1 is an economical steel bodied coilover that is designed for use with 2.5" I.D. springs. These single adjustable dampers are internally adjustable on rebound damping with a fixed compression damping setting. The 80-2650 SPA1 mount has 1/2" I.D. rubber mounting bushings.

Part Number	Stroke	Max Length	Min Length	Spring Length	Ride Height
80 2650 SPA1	5.2"	15.83"	10.63"	12"	13.23"



PARTS AVAILABLE

70.29.01.230.0	Upper Spring Seat
70.29.11.246.0	Lower Spring Seat
70.29.13.002.0	Locking Ring
70.52.21.134.0	Rubber Bushing

Tips for Coilover Shocks

Ride Height – The ride height measurement given in the tables above is the point at the center of stroke for the shock. Ideally, you should be within a half inch above or below this depending on your chassis setup.

Bump Rubber – The bump rubber, or bumpstop as it is also called, can be cut down some depending on if the travel is needed in compression. The bump rubber should not be removed though as this protects the shock from damage. Any trimming done to the bumpstop should be done from the top down. The conical part at the bottom should be left alone as it allows a more progressive stop of the suspension movement.

Spring Seats – The spring seats and threading on the shocks should be kept clean at all times. Dirt and other debris could otherwise lodge into the threads and possibly damage them.

Car Transport – If you trailer your car to the track, it is possible that you are wearing your shocks out faster. If the tires of the car are tied down instead of the chassis, the shock is trying to work to stop the movement the chassis by the trailer. This can cause premature wear of the suspension components.

SPA1 Application Guide

MAKE/MODEL	YEAR	FRONT	REAR
Buick			
Apollo, Skylark	74-79	80 1958 SPA1	80 1661 SPA1
Centurion, Electra, LeSabre	71-76	80 1958 SPA1	Not Available
Century Wagon	73-77	80 1958 SPA1	Not Available
Century, Regal (Exc. Wagons)	70-87	80 1958 SPA1	80 1661 SPA1
Regal, Grand National	78-87	80 1958 SPA1	80 1661 SPA1
Electra, LeSabre (Exc. FWD)	77-85	80 1958 SPA1	80 1661 SPA1
Skylark, Special	68-72	80 1958 SPA1	80 1661 SPA1
Skylark, Special	64-67	Not Available	80 1661 SPA1
Sportwagon	70-72	80 1958 SPA1	80 1661 SPA1
Chevrolet			
Camaro incl. Z-28	82-92	8710 1289 SPA1	Not Available
Camaro incl. Z-28	70-81	80 2108 SPA1	80 2109 SPA1
Camaro W/Mono-Leaf Rear Springs	68-69	80 1914 SPA1	80 1915 SPA1
Camaro W/Multi-Leaf Rear Springs	68-69	80 1914 SPA1	Not Available
Camaro	67	80 1914 SPA1	80 1915 SPA1
Caprice, Impala Sedans, Wagons	77-95	80 1958 SPA1	80 1661 SPA1
Caprice, Impala Sedans, Wagons	66-78	80 1958 SPA1	Not Available
Chevelle, Malibu Sedans	68-85	80 1958 SPA1	80 1661 SPA1
Chevelle, Malibu Sedans, SS-396	64-67	Not Available	80 1661 SPA1
Chevy	55-57	80 2108 SPA1	Not Available
Nova	75-79	80 1958 SPA1	80 1661 SPA1
Chevy II, Nova	68-74	80 1958 SPA1	80 1661 SPA1
Chevy II, Nova	62-67	80 1546 SPA1	80 1915 SPA1
El Camino	68-77	80 1958 SPA1	Not Available
Monte Carlo	70-87	80 1958 SPA1	80 1661 SPA1
Dodge			
Charger	77-81	80 2660 SPA1	Not Available
Charger, Coronet	73-76	80 2660 SPA1	Not Available
Dart, Demon, GTS	63-76	80 1423 SPA1	Not Available
Ford			
Mustang (Exc. IRS) --- Double Adjustable Rear Alternative --- Quad Shock	94-04	Not Available	8041 1186 Sport 8042 1134 Sport 25 1215
Mustang, 8 cyl. --- Double Adjustable Rear Alternative --- Quad Shock	87-93	8710 1272 SPA1	8041 1026 Sport 8042 1026 Sport 25 1215
Mustang, 4 cyl. --- Quad Shock	86-92	Not Available	8041 1026 Sport 25 1215
Mustang w/1.5 in. Lower Rear Bushing (Exc. SVO) --- Quad Shock	79-86	Not Available	8041 1026 Sport 25 1215
Mustang	74-78	80 2660 SPA1	Not Available
Mustang	71-73	Not Available	80 2511 SPA1
Mustang	64-70	80 2510 SPA1	80 2511 SPA1
Pinto Sedan and Wagon	70-80	80 2660 SPA1	Not Available
Mercury			
Capri w/1.5 in. Lower Rear Bushing --- Quad Shock	79-86	Not Available	80 2401 SPA1 25 1215
Cougar	67-70	80 2510 SPA1	Not Available

SPA1 Application Guide (continued)

MAKE/MODEL	YEAR	FRONT	REAR
Oldsmobile			
Cutlass Sedan	68-87	80 1958 SPA1	80 1661 SPA1
Cutlass Vista Cruiser	73-77	80 1958 SPA1	Not Available
Cutlass 442	66-67	Not Available	80 1661 SPA1
Cutlass F-85 (Exc. 442)	64-67	Not Available	80 1661 SPA1
Omega	75-79	80 1958 SPA1	80 1661 SPA1
Plymouth			
Barracuda	64-69	80 1423 SPA1	80 1539 SPA1
Belvedere, Satellite	73-74	80 2660 SPA1	Not Available
Duster/ Valiant	63-76	80 1423 SPA1	80 1539 SPA1
Road Runner	73-75	80 2660 SPA1	Not Available
Pontiac			
Bonneville, Catalina, Parisienne (all)	77-81	80 1958 SPA1	80 1661 SPA1
Bonneville, Catalina, Parisienne (all)	65-76	80 1958 SPA1	Not Available
Can-Am	77	80 1958 SPA1	80 1661 SPA1
Firebird Incl. Trans-Am	82-92	8710 1289 SPA1	Not Available
Firebird Incl. Trans-Am	70-81	80 2108 SPA1	80 2109 SPA1
Firebird	69	80 1914 SPA1	Not Available
Firebird	68	80 1914 SPA1	Not Available
Firebird	67	80 1914 SPA1	80 1915 SPA1
Grand Am	73-77	80 1958 SPA1	80 1661 SPA1
Grand Prix	69-87	80 1958 SPA1	80 1661 SPA1
GTO, LeMans, Tempest Sedans	68-77	80 1958 SPA1	80 1661 SPA1
GTO, LeMans, Tempest Sedans	64-67	Not Available	80 1661 SPA1
LeMans Wagon	73-77	80 1958 SPA1	Not Available
Parisienne Incl. Wagon	83-86	80 1958 SPA1	80 1661 SPA1
Phoenix, Ventura II	75-79	80 1958 SPA1	80 1661 SPA1
Ventura	72-74	80 1958 SPA1	80 1661 SPA1

NOTE: For FWD applications, please check the Sport applications in our Passenger Car and Light Truck Applications.

Drag Racing Stock Length Information

Front Part Number	Mounting Style Top	Mounting Style Bottom	Max. Length	Min. Length
80 2660 SPA1	Pin	Eye	11.69"	8.00"
80 1914 SPA1	Pin	Fork	13.27"	8.62"
80 1958 SPA1	Pin	Fork	13.66"	8.82"
80 2510 SPA1	Fork	2-Stud	14.40"	9.37"
80 2108 SPA1	Pin	Fork	14.84"	9.41"
80 1423 SPA1	Pin	Eye	14.88"	9.50"
80 1546 SPA1	Pin	2-Stud	16.30"	10.00"

See page **XX** for measurement procedures for factory style shocks.

Rear Part Number	Mounting Style Top	Mounting Style Bottom	Max. Length	Min. Length
80 2511 SPA1	Pin	Pin	16.46"	10.12"
80 1915 SPA1	Pin	Eye	19.80"	12.01"
80 2109 SPA1	Fork	Pin	20.47"	12.48"
80 1661 SPA1	Fork	1-Stud	21.18"	12.99"

Drag Racing

Drag Tech

Suggested Adjustment Procedure for Drag Racing Use

STEP 1
Prior to testing make certain that wheelie bars are raised as high as possible while maintaining control and eliminating their influence as much as possible on damper settings. Also install a tie-wrap to the chrome rod of the shock and push down to where it touches the top of the body.

STEP 2
Place all damping controls on minimum. Make a pass in first and second gears in order to determine that the car goes straight. If not, the alignment, tire pressures, etc. should be checked and corrected before proceeding any further. Pay close attention to what occurs during gear change. If the car wheel stands or bounces violently, you should adjust the front dampers first and then the rears.

However, if there is rear tire shake, wheel hop or excessive body separation, adjust the rear shocks first and then the fronts. Check also where the tie-wrap ends up after lauch. If it is buried into the bumpstop, the spring rate may either be too soft, the vehicle set too low or the bumpstop may need to be trimmed (up to 1").

STEP 3:
FRONT DAMPER ADJUSTMENT PROCEDURE
Pay close attention to what is happening to the front end during launch and the first gear change. Your goal is to eliminate all jerking and/or bouncing movements so as to obtain smooth transitions at all times.

Too Light of a damper setting allows violent chassis separation and may even result in jerking the front wheels off the ground during initial launch. Too light a setting also allows the car, during gear change, to bounce off its front rebound travel limiter and then bottom out in a continually oscillating manner.

Too Firm of a damper setting will prevent the tires from easily lifting off the ground and thus providing sufficient weight transfer. During a gear change a firm setting will also cause the chassis to bounce off the tire when the chassis settles down.

Adjust the damper by increasing the rebound damping in 1/4 turn (90 degrees) increments until a smooth transition from launch through gear change has been achieved. If double adjustable KONI's are used, adjust the bump damping in 3 click increments to control the amount and the rate at which the front end settles during gear change. Watch your ET's and, if your times start to get slower, back off the rebound adjustment by 1/4 turn and the bump adjustment by 2 clicks.

STEP 4:
REAR DAMPER ADJUSTMENT PROCEDURE
You should pay close attention to the rear of the car as your goal is to damp the tire movements as firm as the track conditions permit. Remember that the damper controls the amount and the rate ofweight transfer to the tire.

Too Light of a damper setting allows excessive separation between the body and the tire.

Too Firm of a damper setting allows high tire shock and causes extreme flattening of the tire.

Adjust the rear damper in 1/4 (90 degrees) increments of rebound adjustment and, if KONI double adjustable dampers are used, increase the bump adjuster by 3 clicks for each pass. Watch your ET's and if your times start to get slower, reduce the amount of adjustment by 1/4 turn of rebound adjustment and 2 clicks of bump adjustment.

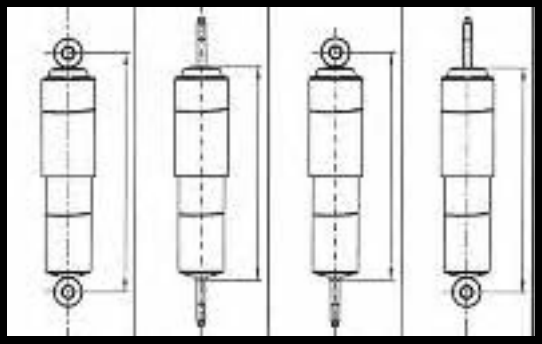
STEP 5
When all adjustments have been completed, reset your wheelie bars as low as possible without hurting your ET's. Once you have completed this procedure, only fine adjustments may be needed in the future due to varying track conditions.

HOW TO MEASURE MAXIMUM / MINIMUM LENGTHS OF FACTORY STYLE SHOCKS

1. **Maximum Length** – fully extend the shock absorber and measure from center of eye(s), including single stud or fork mounts; or in the case of pin or 2-stud mounts, from the start of the pin or 2-stud mount as it emerges from the shock body.

2. **Minimum Length** – completely compress shock absorber and measure.

NOTE: Single stud and fork configurations may be pressed out to allow for an eye style mounting.



Drag Tech (continued)

How to Determine the Correct Shock Absorber Length

Please observe the following guidelines when determining the correct shock absorber length for your vehicle.

1. Preparing the car.

› Place the car on a level surface and remove springs, shock absorbers, bump rubbers and sway bar(s).

2. Determining the Maximum Length

› Raise the car body until the tires are lifted off the ground. Take careful not of which component of the suspension is limiting the suspension from traveling further.

› Measure between the center of the upper and lower shock mounting points. This gives you the desired maximum length shock.

All quality KONI shocks are designed to withstand the loads of limiting the suspension droop travel and it is advisable to take advantage of this feature.

3. Determining the Minimum Length

› Lower the car to the point at which the tub just touches on the pavement, or a tire just touches on the inside of the fender well or some other suspension component.

› Measure between the center of the upper and lower shock mounting points. Now select a KONI shock with a minimum which is shorter than your measured minimum suspension length. By choosing a slightly shorter shock, you protect the shock from bottoming out and causing internal damage.

How To Determine Spring Requirements – General Guidelines

1. Determining Travel.

› It is recommended that there be approximately 3" of compression travel available (including the bumpstop). This means the chassis must be supported by a spring rate that will allow the chassis to be supported 3" upward from the bottoming position.

2. Determining the Vehicle Sprung Weight.

› Establish front and rear weight of the vehicle.

› Establish unsprung weight. This is the weight not support by the springs, **i.e.** tires, wheels, wheelie bars, brakes and half the weight of the shock, spring, driveline and ladder bar or four link. 1/2 the weight is used for some components because their weights are equally shared between spring and unsprung weight.

› Determine Sprung Weight – The weight of the vehicle less the unsprung weight.

3. Spring Rate

Divide the rear sprung weight by 2 to determine the load for each rear corner. Divide the front sprung weight by 2 to determine the load for each front corner. If the load of the rear corners is 330 lbs. each (660 lbs / 2 = 330 lbs.) then divide the 330 lbs by the compression travel needed and you arrive at the base spring rate of 110 lbs. pre inch.

330 lbs. / 3" compression travel = 110 lbs. spring rate

This does not take into account a lever ratio that may be applied to the spring rate.

4. How to run a lighter spring rate.

Because KONI coil-over shocks feature an adjustable spring platform, it is possible to run a lighter spring rate by preloading the spring. For example, with 3" of travel a 95 lb. spring will be 45 lbs. softer than a 110 lb. spring.

110 lbs – 95lbs. = 15 lbs.
15 lbs. x 3 = 45 lbs.

To regain 45 lbs. simply preload the 95 lb. spring by screwing up the bottom adjustable spring platform by 1/2".

1/2" of 95 = 47.5 lbs.

You are now able to support the chassis at the desired ride height but with a softer spring rate, thus allowing more weight transfer to the rear and a better bite.

To preload a spring properly, the difference between free height and compressed height (coil bind position) must be determined and coordinated with the amount of usable shock travel. The spring minimum or coil bind position must not be greater than the amount of shock travel desired.

Oval Track

Oval Introduction

KONI'S SUPERIOR SHOCK

KONI'S Mono-Tube, High Pressure Gas design Damping Solution

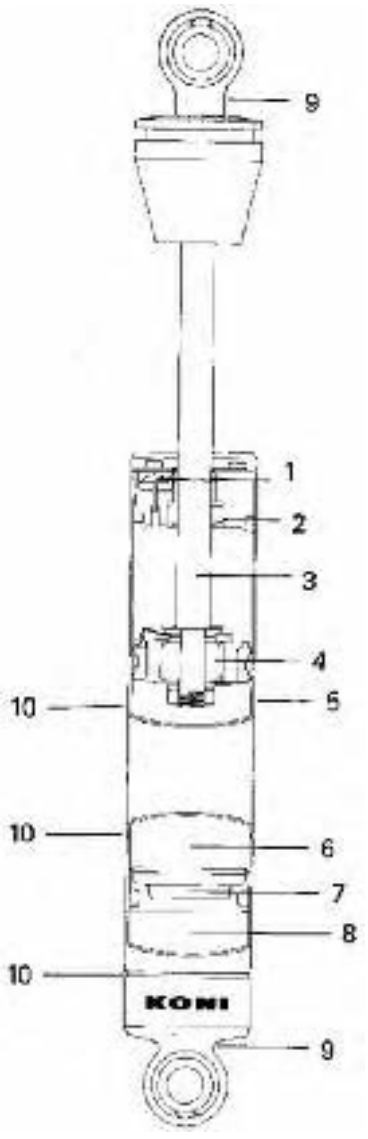
To meet the demands of Oval Track racing KONI has chosen the **Mono-tube, high pressure gas design, which provides no fade valving and enables mounting of the shock absorber upside-down, lowering the unsprung weight of the vehicle.**

KONI'S Mono-Tube design vs. Gas Cell Design

Some other manufacturers place a plastic bag filled with gas inside a hydraulic twin-tube shock absorber, as a means of preventing aeration or free stroke, when the shock absorber is mounted upside-down. In theory this is logical thinking; however, in practice: the plastic bags usually fail, resulting in aeration and reduced performance.

The plastic bags are not heat resistant and float within the shock absorber. **The bags fail prematurely because of the abrasions received as it floats within the cylinder and the high operating temperatures experienced in oval track racing.**

When mounting a shock absorber upside-down, the only shock absorber design that will not fail under the extreme conditions of oval track racing is the mono-tube design. Lacking the engineering and manufacturing sophistications of KONI, other suppliers offer the "gas cell" or plastic bag design.



1. **Adjustment Button.** 4 Position adjustable – KONI's patented adjustment design enables 1 KONI shock to have 4 distinct and separate rebound valvings, by a simple push of a button. This feature allows for tuning of the chassis.

2. **Guide & Seal.** Low friction Viton seal ensures continued peak performance; other gas cell shock designs have been measured at 3 times the friction value of KONI. The KONI guide is made of hardened steel and includes a sintered bushing for long life; other gas cell designs are not hardened, nor include a bushing.

3. **Piston Rod.** Highest tensile strength of any make. KONI rod will withstand 850lbs. of force prior to bending 1% - other competitive rods bend between 625 and 725 lbs. of force. Super Chrome finished and lapped (over 3 times smoother than gas cell design) for continued peak performance and superior seal life.

4. **Piston & Teflon Band.** Large piston diameter (1.81: vs. gas cell design of 1.38") provides a velocity-sensitive valving. The valves on the piston monitor the oil flow and damping forces. The Teflon Band provides low friction value – other gas cell designs contain lower grade rubber O-rings, which damage quickly.

5. **Cylinder Wall.** Precision drawn seamless tubing (other gas cell designs have abrasive seam welds) ensures low friction value .080: thick cylinder wall withstands track abuse.

6. **Damping Fluid.** Highest viscosity value of any make, ensures no fade valving. Mono-tube design also allows for larger volume of oil, increasing ability to withstand high operating temperatures.

7. **Floating Separation Piston.** Separates gas from oil, enabling shock to be mounted in any position, including upside-down.

8. **Gas.** Large volume of nitrogen gas for peak operating performance at high working temperatures, up to 320°F.

9. **Eye Attachments.** Strongest tensile strength of any brand. KONI eye can withstand up to 15,000 lbs. of force, up to 3 times longer than some other brands.

10. **3 Position Coil-Over Snap Ring Grooves**. Various lengths of springs can be fitted because of adjustable spring retainers.

3012 / 3014

The 3012 Series is the ultimate circle track shock. The KONI patented mono-tube design allows for independent adjustments to the rebound and compression forces. The 3012 series offers one of the broadest adjustment ranges in the industry, eliminating the need for constant revalving procedures from track to track. The rebound adjustment is made at the top of the shock while the compression is made by full extending the shock and turning the rod.

NOTE: This shock is available in a steel body known as the 3011 series. A 3014 single adjustable (rebound only) version is also available with either a 3 or 5 bump valve.

Part Number System

3012	5	1 through 6	1 through 9	L or D
Series	Stroke	Bump Valve Range	Rebound Valve Range	Linear or Digressive Valving

5" Aluminum Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3012-51619L	1-6	1-9	10.75	15.75
3012-51619D	1-6	1-9	10.75	15.75
3012-516318D	1-6	3-18	10.75	15.75

6" Aluminum Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3012-61619L	1-6	1-9	12.25	18.25
3012-61619D	1-6	1-9	12.25	18.25
3012-616318D	1-6	3-18	12.25	18.25

7" Aluminum Shock

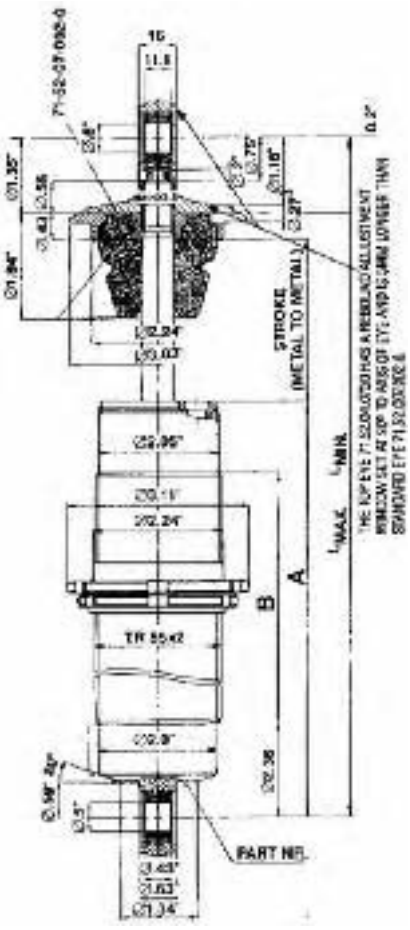
Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3012-71619L	1-6	1-9	12.75	18.25
3012-71619D	1-6	1-9	12.75	18.25
3012-716318D	1-6	3-18	12.75	18.25

8" Aluminum Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3012-81619L	1-6	1-9	14.25	22.25
3012-81619D	1-6	1-9	14.25	22.25
3012-816318D	1-6	3-18	14.25	22.25

9" Aluminum Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3012-91619L	1-6	1-9	14.75	23.75
3012-91619D	1-6	1-9	14.75	23.75
3012-916318D	1-6	3-18	14.75	23.75



PARTS FOR 3012 AND 3014 SERIES

Aluminum 1" Top Eye	3012.52.025
Lower Spring Perch (2.5" ID spring)	8212.29.129
Lower Spring Perch (2.25" ID spring)	3012.29.129
Lock Ring	8212.29.011
Upgrade 1" Teflon Bearing	COM-8T-31
Bearing Snap Ring	1038.50.02.54
3012 Bump Adjuster Tool	1037.74.01.04

Oval Track

30 Series

Our 30 series shock is a single adjustable mono-tube design that can be used on Asphalt or Dirt Applications. There are four distinct rebound adjustments that allow you to adjust the shock to suit your needs, chassis setup and track conditions. It is lightweight, very consistent and affordable.

Part Number System

30	5	3	2 through 5
Series	Stroke	Bump Valve	Rebound Valve Range

5" Steel Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
30-5325	3	2-5	10.75	15.75
30-5436	4	3-6	10.75	15.75

6" Steel Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
30-6325	3	2-5	12.25	18.25
30-6436	4	3-6	12.25	18.25

7" Steel Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
30-7325	3	2-5	12.75	19.75
30-7436	4	3-6	12.75	19.75
30-7514	5	1-4	12.75	19.75
30-7647	6	4-7	12.75	19.75

8" Steel Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
30-8325	3	2-5	14.25	22.25
30-8525	5	2-5	14.25	22.25

9" Steel Shock

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
30-9325	3	2-5	14.75	23.75
30-9436	4	3-6	14.75	23.75
30-9414	4	1-4	14.75	23.75

30 Series Force Velocity Chart

Part Number	Max Length	Min Length	Stroke	Test Velocity (in./sec.)	Compression Force (lbs.)	Rebound Adjustment Position // Forces (lbs.)			
						0	1	2	3
30 5325	15.75"	10.75"	5"	2.05"	20	65	70	95	125
30 6325	18.25"	12.25"	6"	5.16"	40	160	180	225	275
30 7325	19.75"	12.75"	7"	10.32"	60	280	325	390	490
30 8325	22.25"	14.25"	8"	13.00"	70	345	405	495	630
30 9325	23.75"	14.75"	9"	15.49"	80	380	450	550	750
				20.65"	100	510	595	720	935
				26.00"	125	675	790	965	1280
30 5436	15.75"	10.75"	5"	2.05"	45	100	110	120	145
30 6436	18.25"	12.25"	6"	5.16"	65	175	195	225	275
30 7436	19.75"	12.75"	7"	10.32"	90	285	330	385	490
30 9436	23.75"	14.75"	9"	13.00"	110	340	400	470	590
				15.49"	120	395	450	560	710
				20.65"	150	520	605	735	905
				26.00"	180	650	765	900	1180
30 7514	19.75"	12.75"	7"	2.05"	75	50	60	70	85
				5.16"	125	85	90	105	125
				10.32"	180	135	155	180	230
				13.00"	225	155	185	225	280
				15.49"	240	180	215	265	335
				20.65"	305	240	275	335	450
				26.00"	380	310	360	450	565
30 7647	19.75"	12.75"	7"	2.05"	110	115	135	150	185
				5.16"	165	235	255	295	360
				10.32"	220	320	365	435	550
				13.00"	240	370	420	505	650
				15.49"	265	410	485	580	735
				20.65"	310	500	595	710	925
				26.00"	350	575	685	805	1095
30 9414	23.75"	14.75"	9"	2.05"	25	15	20	25	35
				5.16"	60	50	65	75	100
				10.32"	120	100	115	150	200
				13.00"	155	135	155	200	260
				15.49"	175	150	175	225	300
				20.65"	220	220	265	325	420
				26.00"	265	275	330	420	530

KONI Threaded Spring Perch Sleeves and Parts

30 SERIES THREADED SLEEVE & COMPONENTS

(fits most 30 series dampers with 2 1/5" ID springs)

SET INCLUDING: Threaded sleeve, lower spring perch, and upper spring perch — 30.0000

Threaded Sleeve	30.0000.0005
Lower spring perch with locking set screw	30.0000.0006
Upper spring perch	30.0000.0010
Snap Ring	30.0000.0009

Oval Track

Street Stock Application Guide

Buick

Apollo/ Skylark	74-79	8040 1087	8040 1088
Regal/ Grand National	70-87	8040 1087	8040 1088
Skylark	68-72	8040 1087	8040 1088

Chevrolet

Camaro	82-92	8741 1030	8241 1140 Sport
Camaro	70-81	8040 1087	8040 1018
Caprice/ Impala	77-91	8040 1087	8040 1088
Chevelle/ Malibu	64-85	8040 1087	8040 1088
Chevy II/ Nova w/ Multi-Leaf	68-74	8040 1087	8040 1088
Monte Carlo	70-87	8040 1087	8040 1088
Nova	75-79	8040 1087	8040 1088

Ford

Mustang (V8 front brakes only) Quad Shock	87-93	8741 1121 Sport	8041 1026 Sport 25 1215
Mustang (4 cyl.) Quad Shock	87-93	8741 1103	8041 1026 Sport 25 1215
Mustang (Exc. SVO) Quad Shock	85-86	8741 1103	8041 1026 Sport 25 1215
Mustang w/1.5" Lower Rear Bushing (Exc.SVO) Quad Shock	81-84	8741 1103	8041 1026 Sport 25 1215
Mustang, all models	79-80	8741 1103	8041 1026 Sport

Oldsmobile

Cutlass	64-87	8040 1087	8040 1088
Omega	75-79	8040 1087	8040 1088

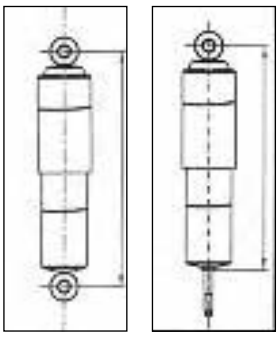
Pontiac

Cam-Am	77	8040 1087	8040 1088
Firebird	82-92	8741 1030	8241 1140 Sport
Firebird	70-81	8040 1087	8040 1018
Grand Am	73-77	8040 1087	8040 1088
Grand Prix	69-87	8040 1087	8040 1088
GTO/ LeMans/ Tempest	64-77	8040 1087	8040 1088
LeMans	78-81	8040 1087	8040 1088
Phoenix/ Ventura II	75-79	8040 1087	8040 1088
Ventura II w/ Multi-Leaf	72-74	8040 1087	8040 1088

Street Stock Specification Chart

Part Number	Mounting Style		Max Length	Min Length
	Upper	Lower	Inches	Inches
8040 1018	Fork	Pin	20 3/8	12 7/16
8040 1087	Pin	Cross Bar	13 3/4	8 7/8
8040 1088	Fork	1-Stud	21 1/8	13 1/16
8041 1026 Sport	Pin	Eye	20 5/16	12 3/8
8241 1140 Sport	Pin	1-Stud	19 5/16	12 1/4

Single Stud and fork configurations may be pressed out to allow for an eye style mounting.



Oval Track Tuning Guide

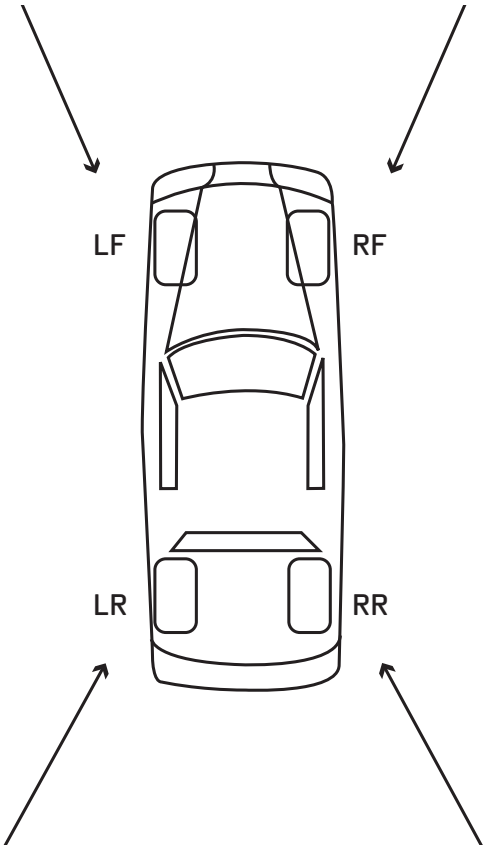
LF
Rebound
› **Set Softer** if the car is Pushing in the Middle of Turn.

› **Set Firmer** if the car is Loose on Exit.

Compression
› **Set Softer** if the car is Pushing in the Middle of Turn. This will have a lesser affect than the Rebound setting.

LR
Rebound
› **Set Softer** if the car is Loose in the Middle or Exit of the Turn. Will also affect Loose condition on Entry.

› **Set Firmer** if the car is Pushing off the Exit. Will also affect Push Condition on Entry.



RF
Rebound
› **Set Softer** if the car is Loose off the Exit or the Middle of the Turn

› **Set Firmer** if the car is Pushing off the Exit or the Middle of the Turn

RR
Rebound
› **Set Softer** if there is a Push off Exit.

› **Set Firmer** if the car is Loose off exit.

Compression
› **Set Softer** if the car is Loose in the Exit or Middle of the Turn.

› **Set Firmer** if there is a Push off the Exit or Middle of the Turn.

(ALL)
Setting both Front shocks Firmer for Rebound will tighten the car up some.
Setting both Rear shocks Firmer will loosen the car up some.

Additional Tips

Adjust only enough rebound into each shock absorber to eliminate the undesirable characteristic. Adjusting too much rebound may mask a handling problem of another sort.

Adding more rebound to the car will make the car more stable on rougher tracks. On Dirt cars, adding Rebound to the Right Rear will make the car more stable when it slides into the cushion.

Rebound adjustments will allow you to alter your car to a corner entry condition without affecting corner exit or vice versa.

Rebound controls the sprung weight of the chassis or weight transfer while Compression damping affects the unsprung weight of the chassis or the tire contact to the racing surface.

Components

Threaded Spring Perch Sleeves and Parts

Threaded coil over spring perches allow vehicles that would normally have fixed location spring perches to gain some of the benefits of racing developed tuning techniques. Performance suspension adjustments such as ride height adjustment and corner weighting or weight jacking can be performed with threaded spring perches. KONI offers several coil over sleeves and individual components to allow both street and race cars these performance benefits. Because different vehicles have differ spring and shock mounting needs and uses, each installer will need to establish which parts are right for that particular application.

The threaded sleeves are designed to mount on fixed platforms or groove located circlips that are perpendicular to the damper body. The threaded sleeves are made of anodized aluminum with threading specially designed for load carrying and self cleaning properties. All lower perches have a nylon tipped locking set screw to positively lock the perch in place without damaging the threads.

Caution should be used in the installation and use of threaded spring perches to be sure not to cause damage to the vehicle from bottoming or topping springs, shocks and suspension parts. KONI cannot be held responsible for modifications or damages caused by the improper use or adjustment of threaded spring perches.

FIG. A

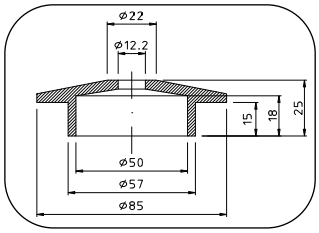
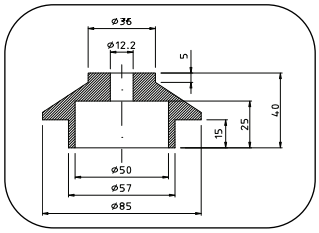


FIG. B



42MM ID THREADED SLEEVES & COMPONENTS

(fits most 80-, 8040-, 8041-, 8042- series dampers with 2 1/4" ID springs)

SET INCLUDING: Threaded sleeve, lower spring perch,and 25mm upper spring perch (figure A)	80.0000.1
SET INCLUDING: Threaded sleeve, lower spring perch, and 40mm upper spring perch (figure B)	80.0000.2
Threaded Sleeve	80.0000.0005
Lower spring perch with locking set screw	80.0000.0006
25 mm upper spring perch (figure A)	80.0000.0007
40 mm upper spring perch (figure B)	80.0000.0008
Nylon 2 1/4" to 2 1/2" ID spring adapters (2 needed)	15.29.04.003.0

50MM ID THREADED SLEEVES & COMPONENTS

(fits all 30-, and most 82-, 8240-, 8241-, 8242-, 87-, 8741- series dampers with 2 1/2" ID springs)

SET INCLUDING: Threaded sleeve, lower spring perch, and 40mm upper spring perch (Figure C)	30.0000.1
40 mm upper spring perch (Figure C)	30.0000.0020
Threaded sleeve	30.0000.0005
Lower spring perch with locking set screw	30.0000.0006

Threaded Spring Perch Sleeves and Parts (continued)

30 SERIES THREADED SLEEVE & COMPONENTS

(fits most 30 series dampers with 2 1/5" ID springs)

SET INCLUDING: Threaded sleeve, lower spring perch, and upper spring perch	30.0000
Threaded Sleeve	30.0000.0005
Lower spring perch with locking set screw	30.0000.0006
Upper spring perch	30.0000.0010
Snap Ring	30.0000.0009

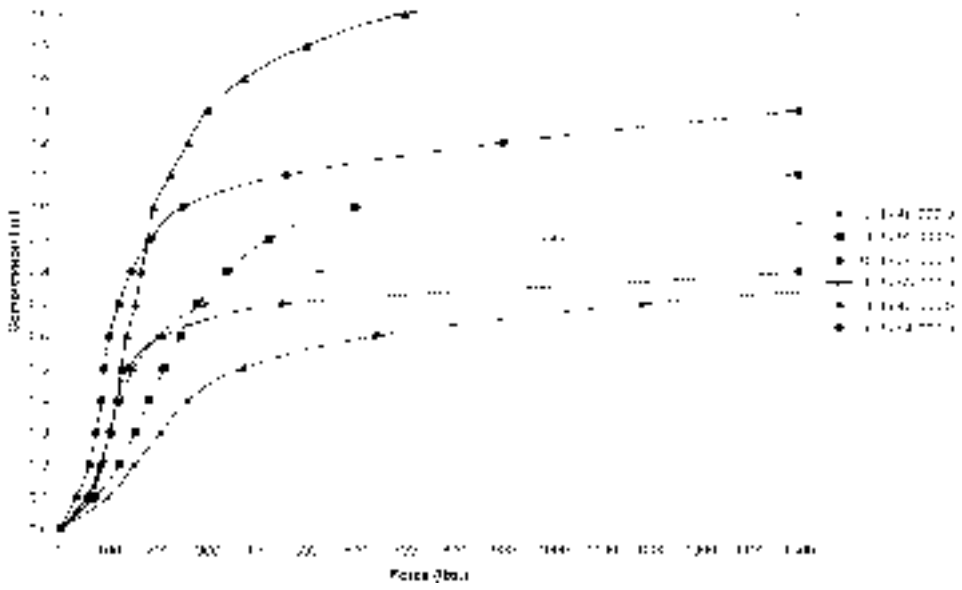
Bump Stops

A KONI cellular polyurethane bump rubber is specially designed to protech the suspension from bottoming. Like a progressive spring, the bump rubber resistance increases the more it is compressed. This not only provides safe and controlled bottoming of the suspension, but also prevents internal damage within the shock from metal to metal contact.

MODIFYING BUMP RUBBERS

The tapered end of the bump rubber helps to provide its progressive nature. If it is neccary to increase shock travel, trim the non-tapered end of the bump rubber.

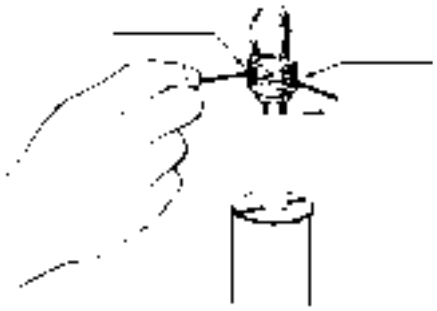
Part Number	Rod Diameter	Length	Characteristic
70.34.05.000.0	12mm	45mm	Linear soft
15.34.20.000.0	12mm	55mm	Progressive soft
72.34.48.000.0	14mm	25mm	Linear soft
71.34.42.000.0	14mm	40mm	Progressive hard
70.34.54.000.0	16-20mm	40mm	Progressive soft
70.34.53.000.0	16-20mm	55mm	Progressive soft
70.34.95.000.0	22-24mm	55mm	Progressive soft



Tech

28 Series

NOTE: Do not place shock absorber in a vice (except at the lower eye).



The rebound and compression adjuster requires a pin with an outside diameter of 1.5mm or a 1.5mm hex key. The adjusters are marked with the letters that are stamped on the mounting eye.

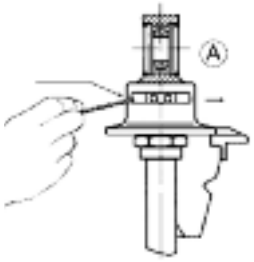
The **Rebound adjuster is marked with an R (rebound)**, is red in color and the closest to the body of the damper. To increase the rebound force, put the adjuster pin next to the minus sign and turn the pin towards the plus sign (left to right).

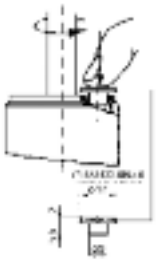
The **Compression adjuster is marked with a B (bump)**, is black in color and is furthest from the body of the damper. To increase the compression force, put the adjuster pin next to the minus sign and turn the pin towards the plus sign (left to right).

The adjusters each have 7 distinct stop (clicks), each of which marks an adjustment position. There are a total of 8 adjustment positions for both the compression and rebound adjusters. There are stops at the minimum and maximum position. **DO NOT FORCE THE ADJUSTER AS DAMAGE MAY RESULT!**

3011 / 3012 Series

NOTE: Do not place shock absorber in a vice (except at the lower eye).





The **Rebound adjuster requires a pin with an outside diameter of 3mm or a 2.5mm Allen key**. To increase the rebound force, put the adjuster pin next to the minus sign and turn the pin towards the plus sign (left to right). This is one sweep of adjustment. From the minimum position there is a total adjustment range of 6-8 sweeps. There are no specific clicks of adjustment to mark the adjustment position and the rebound adjuster can be placed at any position in the adjustment range. **DO NOT FORCE ADJUSTER AS BINDING MAY RESULT!**

The **Compression adjustment is made with the shock fully extended.** The compression adjustment requires tool 1037.74.01.04 or a tool of similar dimension to depress the adjuster button. Hold the shock body where the piston rod emerges from the cylinder. Depress the button fully, and hold it down while adjusting. It may require turning the rod slightly to get the button fully depressed. The adjuster has 10 distinct stops (clicks) each of which marks an adjustment position. To increase the compression force, turn the piston rod counter-clockwise. When finished, release the button and make sure the button fully springs back into position. Otherwise, the correct adjustment will be disturbed.

8212 / 8216 Series

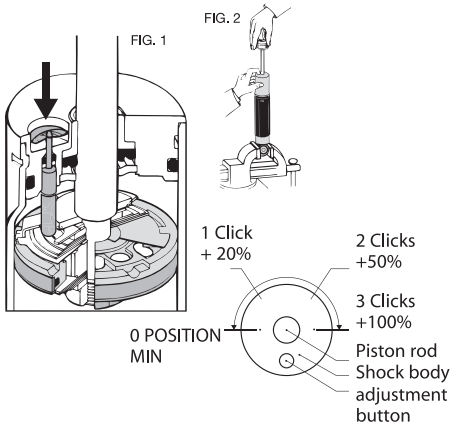
NOTE: Do not place shock absorber in a vice (except at the lower eye).

The **Rebound adjuster requires a pin with an outside diameter of 3mm or a 2.5mm hex key**. To increase the rebound force, put the adjuster pin in the hole next to the minus sign and turn the pin towards the plus sign. This is one sweep of adjustment. The total adjustment range is 7 to 8 sweeps. There are no specific clicks to mark the adjustment position; the rebound adjuster can be placed in any position in the adjustment range.

The **Compression adjuster is available for the 8212 only**. To increase the compression force, turn the lower adjuster clockwise. To decrease the compression force, turn the lower adjuster counter-clockwise. From the minimum, there are 12 distinct stops (clicks) of adjustment.

30 Series

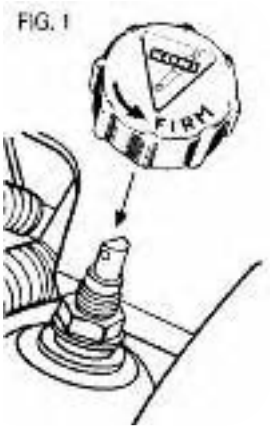
NOTE: Do not place shock absorber in a vice (except at the lower eye).



The **Rebound adjustment is made with the shock fully extended**. First remove the shock absorber from the vehicle. Raise the black plastic dust cap covering the adjuster button. Hold the shock body where the piston rod emerges from the cylinder. Depress the button fully and hold it down while adjusting. The adjuster has 3 distinct stops (clicks), each of which marks an adjustment position. There are a total of 4 adjustment positions. The shock may have been adjusted previously. Check if the shock is in the zero-position by turning the piston rod counter-clockwise until the zero-stop is felt. **DO NOT FORCE.**

To increase the rebound forces, turn the piston rod clockwise. Once the correct adjustment has been reached, release the button and make sure that it full springs back into position before installing the shock again.

8041, 8210, 8241, 8610, 8641, 8710, 8741 Series



These shocks do not need to be removed from the vehicle to be adjusted. Please the adjustment knob included with the shocks onto the adjuster tab on the top of the shock absorber. Turn the adjusting knob clockwise to check if the damper has been previously adjusted. If you feel resistance, DO NOT FORCE, as the shock is in the minimum position.

To increase the **Rebound force, turn the knob counter-clockwise in the direction of the "firm" arrow**. There will be 1.5-3 turns of the adjuster depending on the model. There are no specific clicks to mark the adjustment position; the rebound adjuster can be placed in any position in the adjustment range. When finished, remove the adjusting knob to prevent damage to the adjuster.

80, 82, 86, 8040, 8240 Series

Remove the shock from the vehicle and hold it vertically with the lower mounting attachment in a vice. Fully compress the shock, at the same time turning the dust cover or piston rod slowly counter-clockwise until you feel the adjuster engage into the recess at the bottom of the shock (the foot valve assembly, fig #).

NOTE: Some shock absorbers include a bump rubber concealed under the dust cover. All bumpstops MUST be removed prior to adjusting. Do not forget to re-install after adjusting.

The shock may have been adjusted previously. Therefore, check whether the shock absorber is at the minimum position by keep it compressed and gently turning further counter-clockwise while counting the half turns until a stop is felt. This is the minimum rebound position. To increase the rebound damping, turn the piston rod clockwise. The typical adjustment range is 3-5 half turns. There will be a stop at the maximum rebound position. **DO NOT TRY TO FORCE BEYOND THIS MAXIMUM POSITION!** When finished with the adjustment, extend the shock vertically for at least an inch without turning in order to disengage the adjusting mechanism. The dust cover or piston rod may now be turned freely.