KONI is world famous for being a leader in adjustable damper technology. This reputation is deserved because of the utmost care that KONI puts into quality – in both design and manufacturing – ensuring the highest repeatable performance, lap after lap. All through the KONI manufacturing process is evidence of quality; produced from the finest materials, surfaces are machined to the narrowest tolerances, strict ISO 9000 quality-control standards, and at the end of assembly every single damper is 100% dyno-tested to assure optimum performance.

8040
Single Adjustable Twin Tube

30
Single Adjustable Mono-Tube

3014
Single Externally Adjustable Mono-Tube

3012
Double Adjustable Mono-Tube

KONI INDEX

CHOOSING THE OPTIMUM DAMPER FOR YOUR VEHICLE

All hydraulic shock absorbers work by the principle of converting kinetic energy (movement) into thermal energy (heat). For that purpose, fluid in the shock absorber is forced to flow through restricted outlets and valve systems, thus generating hydraulic resistance.

A telescopic shock absorber (damper) can be compressed and extended; the so called bump stroke and rebound stroke.

Telescopic shock absorbers can be subdivided into:

1. Twin-tube dampers, available in hydraulic and gas-hydraulic configuration.

2. Mono-tube dampers, also called high pressure gas shocks.

TWIN-TUBE SHOCK ABSORBERS (fig. A)

The main components are:

- outer tube, also called reservoir tube (6)
- inner tube, also called cylinder (5)
- piston (2) connected to a piston rod (1)
- bottom valve, also called footvalve (7)
- piston rod guide (3)

How Does a Twin-Tube Shock Absorber Work?

Bump stroke.
When the piston rod is pushed in, oil flows without resistance from below the piston through the outlets A, B, C, and D and the non-return valve (19) to the area above the piston. Simultaneously, a quantity of oil is displaced by the volume of the rod entering the cylinder. This volume of oil is forced to flow through the bottom valve into the reservoir tube filled with air (1 bar) or nitrogen gas (4-8 bar). The resistance, encountered by the oil on passing through the footvalve, generates the bump damping.

Rebound stroke.
When the piston rod is pulled out, the oil above the piston is pressurized and forced to flow through the piston. The resistance, encountered by the oil on passing through the piston, generates the rebound damping. Simultaneously, some oil flows back, without resistance, from the reservoir tube (6) through the footvalve to the lower part of the cylinder to compensate for the volume of the piston rod emerging from the cylinder.

MONO-TUBE SHOCK ABSORBER (fig. B)

The main components are:

- (pressure) cylinder, also called housing
- piston (2) connected to a piston rod (1)
- floating piston, also called separating piston (15)
- piston guide (3)

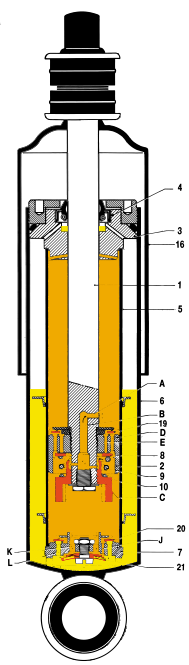
How Does a Mono-Tube Shock Absorber Work?

Bump stroke.
Unlike the twin-tube damper, the mono-tube shock has no reservoir tube. There is still a need to store the oil that is displaced by the rod when entering the cylinder. This is achieved by making the oil capacity of the cylinder adaptable. Therefore the cylinder is not completely filled with oil; the lower part contains (nitrogen) gas under 12-30 bar. Gas and oil are separated by the floating piston (15).

When the piston rod is pushed in, the floating piston is also forced down by the displacement of the piston rod, thus slightly increasing pressure in both gas and oil section. Also, the oil below the piston is forced to flow through the piston. The resistance encountered in this manner generates the bump damping.

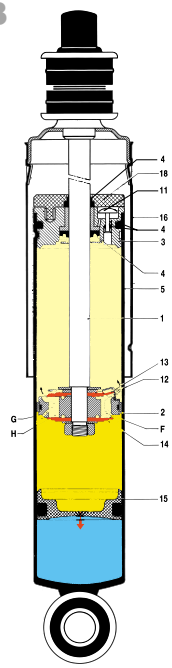
Rebound stroke.
When the piston rod is pulled out, the oil between piston and guide is forced to flow through the piston. The resistance encountered in this manner generates the rebound damping. At the same time, part of the piston rod will emerge from th cylinder and the free (floating) piston will move upwards.

A



TWIN TUBE HYDRAULIC

B



MONO-TUBE HIGH PRESSURE GAS

KONI SHOCK ABSORBER COMPONENTS:

1	Piston rod
2	Piston
3	Piston rod guide
4	Piston rod seal
5	Inner Cylinder
6	Reservoir tube
7	Foot valve
8	Bypass valve
9	Bypass spring
10	Adjusting nut
11	Adjusting knob
12	Adjusting detent
13	Compression valve assembly
14	Rebound valve assembly
15	Floating piston
16	Dust cover
17	Adjusting rod
18	Dust cap
19	Non return valve
20	Non return valve
21	Valves

A, B, C, D, E, F, G, H, J, K and L Various orifices

STREET STOCK SHOCKS

The KONI 8040 Series Street Stock Shocks are the most versatile shocks on the market. The rebound adjustable feature allows you to tune your car to all track conditions, whether you are on dirt or asphalt. All applications utilize O.E. style mounting for easy installation. Custom fabrications for double adjustable conversions are also available, as well as import applications.

MAKE / YEAR & MODEL		PART NUMBER FRONT	PART NUMBER REAR
BUICK			
74-79	Apollo/Skylark	8040-1087	8040-1088
70-87	Regal/Grand National	8040-1087	8040-1088
CHEVROLET			
70-81	Camaro	8040-1087	8040-1018
77-91	Caprice/Impala	8040-1087	8040-1088
64-85	Chevelle/Malibu	8040-1087	8040-1088
70-87	Monte Carlo	8040-1087	8040-1088
75-79	Nova	8040-1087	8040-1088
FORD			
85-86	Mustang (Exc. SVO)	8741-1103 Sport	8040-1126 Sport
	Quad Shock	–	25-1215
81-84	Mustang w/ 1-1/2" Lower Rear		
	Bushing (Exc. SVO)	8741-1103 Sport	8040-1126 Sport
	Quad Shock	–	25-1215
79-80	Mustang, all models	8741-1103 Sport	8040-1026 Sport
OLDSMOBILE			
64-87	Cutlass	8040-1087	8040-1088
75-79	Omega	8040-1087	8040-1088
PONTIAC			
70-81	Firebird	8040-1087	8040-1088
73-77	Grand Am	8040-1087	8040-1088
69-87	Grand Prix	8040-1087	8040-1088
78-81	LaMans	8040-1087	8040-1088
75-79	Phoenix/Ventura II	8040-1087	8040-1088

WHY MONO-TUBE?

To meet the demands of Oval Track Racing, KONI has chosen the Mono-tube gas charged design. This technology provides no fade valving and enables mounting of the shock absorber upside-down, lowering the unsprung weight of the vehicle.

Key Features:

- LARGE 46mm DIAMITER PISTON (velocity sensitive)
- LIGHT WEIGHT (single wall body / fewer internal parts)
- CONSISTANT (separate gas chamber / no fade valving)
- NEW LOW GAS PRESSURE (BETTER DRIVER FEEL)

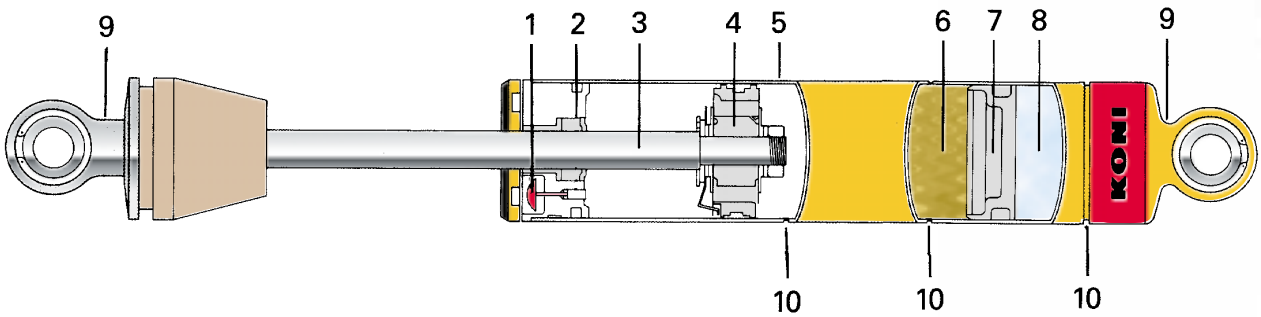
Other manufacturers' "gas cell" bag. These bags fail prematurely, causing shock fade.

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 850 lbs. 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 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 tract 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 stronger than some other brands.

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

Our **30 series shock** is a single adjustable mono-tube design. There are four distinct rebound adjustments that allow you to adjust the shock to suit your needs, chassis set up, and track conditions. It is lightweight, very consistent, and affordable.

For Asphalt Or Dirt Applications

NEW 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
30-8436	4	3-6	14.25	22.25
30-8414	4	1-4	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
30-9425	4	2-5	14.75	23.75
30-9525	5	2-5	14.75	23.75

KONI 3014 SERIES *ALUMINUM / THREADED BODY / EXTERNAL ADJUSTABLE*

The NEW **3014 series** shock is the premier rebound adjustable damper in the industry. The 3014 can be adjusted without removing anything from the car, just simply turn the adjuster wheel to the desired position and it's set. This low gas pressure mono-tube has a rebound adjustment range that covers a number 1 through 9 valve and can be ordered with a choice of two compression valves.

- *New Oval Track Damper*
- *Low Gas Pressure*
- *Adjust Without Removing*

NEW PART NUMBER SYSTEM

3014 - 5 3 1 through **9**

Series | Stroke | Bump Valve | Rebound Valve Range

5" ALUMINUM SHOCK

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3014-5319	3	1-9	10.75	15.75
3014-5519	5	1-9	10.75	15.75

6" ALUMINUM SHOCK

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3014-6319	3	1-9	12.25	18.25
3014-6519	5	1-9	12.25	18.25

7" ALUMINUM SHOCK

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3014-7319	3	1-9	12.75	19.75
3014-7519	5	1-9	12.75	19.75

8" ALUMINUM SHOCK

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3014-8319	3	1-9	14.25	22.25
3014-8519	5	1-9	14.25	22.25

9" ALUMINUM SHOCK

Part Number	Bump Valving	Rebound Valving	Min. Length	Max. Length
3014-9319	3	1-9	14.75	23.75
3014-9519	5	1-9	14.75	23.75

KONI

3012 SERIES *ALUMINUM / THREADED BODY / DOUBLE ADJUSTABLE*

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.

NOTE: This shock is also available in a steel body known as the 3011 series.

NEW PART NUMBER SYSTEM

3012 - 5 1 through **6** **1** through **9**

Series · Stroke · Bump Valve Range · Rebound Valve Range

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	19.75
3012-71619D	1-6	1-9	12.75	19.75
3012-716318D	1-6	3-18	12.75	19.75

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

TYPICAL LATE MODEL SET-UP:

7" Aluminum or Steel Shock

Part Number	Bump Valving	Rebound Valving
3012-716318D	1-6	3-18

9" Aluminum or Steel Shock

Part Number	Bump Valving	Rebound Valving
3012-91619D	1-6	1-9

TYPICAL MODIFIED SET-UP:

7" Aluminum or Steel Shock

Part Number	Bump Valving	Rebound Valving
3012-71619L	1-6	1-9

9" Aluminum or Steel Shock

Part Number	Bump Valving	Rebound Valving
3012-91619L	1-6	1-9

TUNING TIP

Left Front

Increase rebound setting on LF if car rolls on RR during corner exit.

Softening the front rebound will allow the front to transfer more weight, for slow slick tracts.

Stiffening the front rebound will create a more stable platform on high speed tracks.

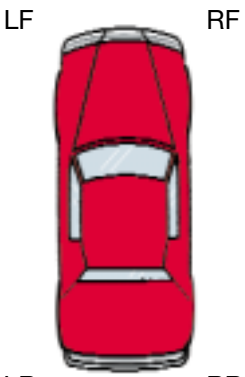
To control loose or tight conditions on corner exit, alter the split between LF/RF rebound. More rebound on the LF than the RF will tighten the car up.

Left Rear

Increase rebound setting on LR if car rolls on RR or RF during corner entry.

Softening the LR rebound will tighten the car on corner entry.

Stiffening the rebound on the LR will loosen the car on corner entry.



Right Front

If car rolls on RF during corner entry, increase rebound setting on LR.

Softening the front rebound will allow the front to transfer more weight, for slow slick tracks.

Stiffening the front rebound will create a more stable platform on high speed tracks.

To control loose or tight conditions on corner exit, alter the split between LF/RF rebound. More rebound on the LF than the RF will tighten the car up.

Right Rear

If car rolls on RR during corner exit, increase rebound on LF.

On a rough track with a cushion, stiffening the RR rebound will make the car more stable when you slide into the cushion.

HELPFUL HINTS

Here are a few quick tips to help you understand what the compression and rebound forces control when you are making shock adjustments.

1. **Compression:**
This force controls the unsprung weight of the chassis or the tire contact to the racing surface (e.g. wheel, brakes, lower control arms.)

2. **Rebound:**
This force controls the sprung weight of the chassis or weight transfer (e.g. chassis, engine, driver, etc.)


8040 Series

STANDARD ADJUSTABLE
80, 82, 86, 8040, 8240 Series

1. Remove the shock absorber from the vehicle and hold it vertically with the lower mounting attachment in a vise.
2. Fully compress the shock absorber, at the same time turning the dust cover or piston rod slowly counter-clockwise, until you feel the adjuster engage into the recesses of the foot valve assembly. (fig. 1)

NOTE: *Some shock absorbers include a bump rubber concealed under the dust cover and this must be removed prior to adjusting. Do not forget to re-install after adjusting.*

3. The shock may have been adjusted previously. Therefore, check whether the shock absorber is in the unadjusted position by keeping it compressed and gently turning further counter-clockwise while counting the half turns until a stop is felt. This is the minimum rebound position.
4. To increase the rebound damping, turn the piston rod clockwise. The typical adjustment range is 3-5 half turns. (fig. 2)
5. Extend the shock absorber vertically for at least 3/8î without turning in order to disengage the adjusting mechanism. The dust cover or piston rod may now be turned freely.


fig. 1


fig. 2

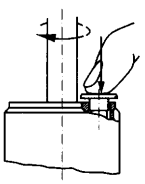
30 Series

30 SERIES

The adjustment is made with the shock fully extended.

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

1. Remove the shock absorber from the vehicle.
2. 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.
3. The adjuster has 3 distinct stops (clicks), each of which marks an adjustment position. There are a total of 4 adjustment positions.
4. 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!



5. To increase rebound damping, turn the piston clockwise.
6. While the button is depressed, do not turn the piston rod further, otherwise correct adjustment will be disturbed. Release the button and make sure that the adjusting button springs fully back into position. As soon as the button is back in position, the piston rod may be turned freely.

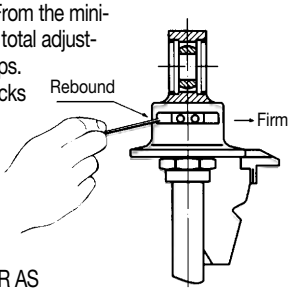
3012 Series

3011/3012/3014

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

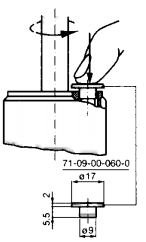
Rebound Adjustment

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



Compression Adjustment

The adjustment is made with the shock fully extended.

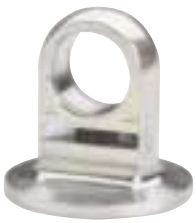


1. The compression adjustment requires tool 1037.74.01.04 or a tool of similar dimension to depress the adjuster button.
2. Hold the shock body where the piston rod emerges from the cylinder. Depress the button fully, and hold it down while adjusting.
3. The adjuster has 10 distinct stops (clicks), each of which marks an adjustment position.
4. The shock may have been adjusted previously. Check if the shock is in the zero-position by turning the piston rod clockwise until the zero-stop is felt-DO NOT FORCE!
6. To increase compression damping, turn the piston rod counter-clockwise.
7. While the button is depressed, do not turn the piston rod further, otherwise correct adjustment will be disturbed. Release the button and make sure that the adjusting button springs fully back into position. As soon as the button is back in position, the piston rod may be turned freely.

30 SERIES THREADED SLEEVES & COMPONENTS

(fits all 30 series dampers with 2.5 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



Aluminum 1" top eye
71.52.07.002.0

Lower spring perch (3012 & 3014)
82.12.29.129

Lock ring (3012 & 3014)
82.12.29.001

Upgrade 1" teflon bearing
COM-8T-31

Bearing snap ring
1038.50.02.54

3012 bump adjuster tool
1037.74.01.04

KONI BUMP RUBBERS

A Koni cellular polyurethane bump rubber is specially designed to protect 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 necessary to increase shock travel, trim the non-tapered end of the bump rubber.

Part Number	Rod Diameter	Length	Characteristic
72.34.48.000.0 (Short)	14mm	25mm	Linear soft
71.34.42.000.0 (Long)	14mm	45mm	Progressive hard

The Ultimate Asphalt Damper!

Our 28 series shock utilizes the same technology that the IRL and Formula 1 teams demand. Why not take advantage of this proven design on a track near you!

The 28 Series are mono-tube dampers specifically designed for competition purposes, featuring externally adjustable compression and rebound. The precision adjustment mechanism allows for maximum control possible over the damping forces generated. In modern racing applications damper sensitivity, repeatability, and ease of use are a must. To achieve this, the 28 series uses a superior and advanced adjustment mechanism operated by closing or opening valve-loaded ports. By having all damping forces generated at the piston, the control over the damping forces is very precise. A separate reservoir is not needed to accommodate the bump adjuster. This makes for a compact and simple installation.

Due to the uniqueness of this damper, please call to discuss application and valving.

KONI SERVICE CENTER

KONI operates a full service shock absorber service center to provide complete testing, fabrication, restoration, and revalve capabilities. The facility includes services for automotive, motorsports, heavy duty bus and truck, railway and industrial applications.

DYNO TESTING – All KONI dampers are dynamometer tested when they are manufactured, however, racing dampers should be dyno tested periodically to ensure optimum performance. KONI offers dyno services utilizing the latest technology in computer operated multi- and single speed dynos.

REBUILD – KONI dampers, in most cases, are fully rebuildable. Vintage street and racing shocks can be refurbished to like-new condition including paint and decals.

REVALVE – In cases where the original KONI valving may not be optimal for modified vehicles, the valving may be altered to match upgraded suspension requirements. KONI has developed specific valvings for motorsports applications including autocross, drag ricing, oval track racing and road course racing.

REGAS SERVICE AVAILABLE – The KONI Service Center can adjust the gas pressure on our older 30 series shock absorbers to match the pressure now being used in our new 30 series shocks.

SPECIAL APPLICATION CONVERSIONS – The KONI Service Center can perform a variety of special modifications including shortened and extended lengths, double and external adjustability and special mounting configurations. Contact the KONI Service Center with your special requirements.

OTHER KONI AUTHORIZED REBUILD FACILITIES – In addition to the KONI Service Center, there are two KONI authorized rebuild facilities in North America. Both utilized KONI trained technicians and KONI parts. They are TrueChoice in Hilliard, OH (800-388-8783) and Pro Parts West in Canoga Park, CA (818-348-5385).

HOW TO DO BUSINESS WITH THE KONI SERVICE CENTER

Call KONI at 859-586-4100, Service Center hours are 7:30 a.m. to 4:00 p.m. EST. Dampers should be sent to: KONI North America, Attn: Service Center, 1961 A International Way, Hebron, KY 41048. Please include a note with a description of the services required and your name, address and daytime telephone number.

Turn-Around Time: Normal turn-around time is two to three weeks from date of receipt but it is sometimes subject to seasonality so please call KONI in advance to determine your projected availability date. If faster delivery time is required (example: 3 working days), there will be a 50% overtime surcharge.

Terms: Without exception all shocks must be sent to KONI freight prepaid. Method of payment will be VISA or MasterCard.

Costs: Contact KONI at 859-586-4100 for current prices on services.

MOBILE SERVICE FACILITIES – KONI operates mobile service units complete with dyno testing and rebuilding facilities for Research and Development and motorsports support.