

# Series 2822

The 2822 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 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.

**Low speed:** On modern racing cars precise control over the damping forces at low speeds is very important. This in turn means that very small flows of oil have to be controlled. In many racing damper designs, a needle valve is used that tries to achieve this. Such a simple mechanism has many drawbacks. For Koni, repeatability, consistency and ease of use are a must for any racing damper. To achieve this, the 2822 series uses superior and advanced adjustment cartridges that control the opening and closing of valve loaded ports. These two cartridges are contained in the main piston, one for bump and one for rebound. They operate totally independent of each other. For each 8 adjustment positions are available, generating a total of 64 predefined damping curves. Distinct stops (clicks) assure that each port can only be either open or close.

Thus total repeatability of performance is engineered into the damper and the need for calibration on a damper dyno is eliminated.

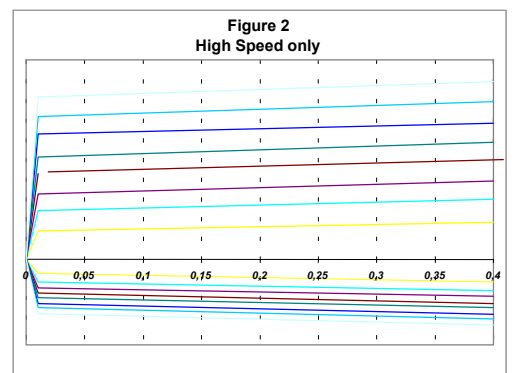
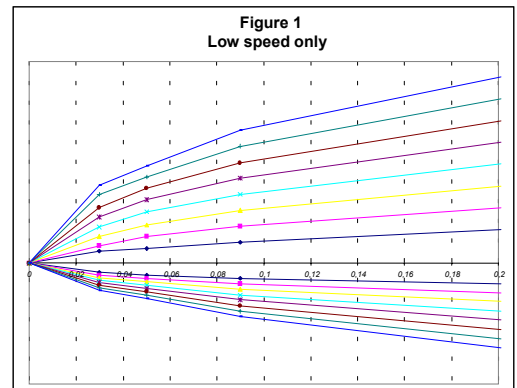
A unique feature is that the low speed damping is created through 2 stages, one by predefined bleed holes and the other one by ports.

**High speed:** With high piston velocities, such as those correlated with rough sections of pavement, the high speed damping becomes important. The suspension needs to be able to move instead of becoming solid due to too much damping. Two cartridges, fitted in the high speed block, control the high speed damping and adjustment. They allow the damper to have an adjustable blow-off force. Also these operate

totally independent of each other and feature 8 positions, all being predefined and having distinct stops. The adjustment range of all four cartridges are wide and divided in equal steps.

Figure 1 shows the damping characteristic in bump and rebound without a high speed blow off.

Figure 2 shows a graph only having a high speed blow off. In the 2822 these two are combined, resulting a graph of which figure 3 is an example.

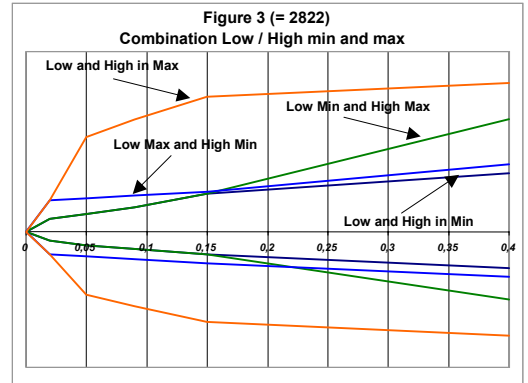


# Series 2822 (continued)

## 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 2.25" or 2.5" ID springs. There are a large number of mounting options available besides the lengths given below as well as valving combinations. Please call for more information.

## Lengths Available

| Type Code | Lmax (mm) | Lmin (mm) | Lmax (mm) | Lmin (mm) | Lmax (mm) | Lmin (mm) | Stroke (mm) | L 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         |

