WHO WE ARE

Working Together to Create World Class Products

KONI develops, manufactures and sells worldwide specialty high quality hydraulic shock absorbers and suspension systems for street and racing cars, buses, trucks, trailers, railway rolling stock, defense and industrial applications.

In the defense market the demands for even higher standards for safety, durability, performance and stability are universal. That is why we strive to be the leading solution provider globally. Operating on all continents, KONI dampers and suspension systems are supplied to the world markets through a vast number of local distributors. Providing added value to you means that we are connected to your markets and therefore your needs. We deliver anywhere, anytime, worldwide.

As a market leader, we are committed to offering an unmatched service for defense solutions. If we want to exceed your expectations, we need to connect to your business. So we focus on your demands and requirements, whereby working together as a team is the key. We truly believe teamwork and sharing knowledge supports your business and, therefore, ours.

KONI is the shock absorber specialist. For more than a century we have created products that excel in the toughest and the smoothest of conditions. Each KONI shock absorber and ride system is aimed to enrich the user experience; therefore we like to think that our products have a personality of their own. In a way, diversification is our specialization. Cars or bridges, trains or ferris’ wheels, desert racers or army vehicles for the freezing poles: we see opportunities in everything that moves, regardless of the circumstances.

**KONI has proven its expertise by providing dampers for:**
- Passenger Cars
- Classic Cars
- Racing Cars
- 4x4 Vehicles and SUV’s
- Recreational Vehicles
- Railway and Rolling Stock
- Bus, Truck and Trailers
- Other Heavy Duty vehicles and Industrial Applications
KONI is an ITT Company

ITT is a focused multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. Our customers in the energy, transportation and industrial markets depend on us to solve their most critical problems, and we focus on partnering with them to find solutions to their unique challenges. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries. The company has sales in approximately 125 countries. KONI is part of ITT since 1972.

As of 2017, KONI and Axtone are part of the growth platform within ITT. Axtone is an expert in impact energy absorption technology or all types of rail and defense vehicles. As the expert in the field of impact energy absorption and metal springs, Axtone offers its clients products using various technologies. The biggest operators and manufacturers of railway and defense vehicles in the world trust both KONI and Axtone.

For more information, visit www.itt.com
KONI invests heavily in innovation. It is one of our core qualities required to continue to produce highly qualified shock absorbers. In KONI’s vision innovation is the ultimate way to keep improving the world through technology and maintain being a market leader when it comes to bus, truck, and trailer, or recreational and specialty solutions like defense applications.

The research, development and engineering departments of KONI are totally committed to the KONI philosophy of offering the best shock absorber and life expectancy for any application. Contemporary computer supported design technologies, highly trained and motivated personnel and the availability of extended measuring and testing facilities lead to well researched and thoroughly developed new products. All of the new product developments are executed under the regime of the international automotive industry standard ISO TS 16949, which secures that all products fully meet their determined objectives - in every aspect.
SOLUTIONS

Shock Absorbers
KONI’s extensive range of high performance shock absorbers are used on a wide range of commercial and military vehicles requiring high speed off road mobility. Shock absorbers can be offered for both tracked and wheeled vehicles for almost all axle weights and wheel travel.

Rotary Dampers
For hydraulic rotary dampers, KONI has teamed with one of the world’s leading developers of this technology for off road racing and military vehicles; Piedrafita Sport S.L. With Piedrafita’s extensive research and development capability in rotary dampers together with KONI’s industrial capacity and worldwide footprint, means this typically expensive specialist technology can be more readily available to a wider market. Hydraulic rotary dampers offer the highest level of damping capacity together with zero maintenance and high heat dissipation into the vehicle chassis.

Hydroride®
KONI’s Hydroride® systems are a range of high performance suspension products offering better ride and handling for commercial and military vehicles than air springs or coil springs. They combine high performance damping with high pressure nitrogen springs to offer a light-weight, compact, affordable and reliable solution for tracked and wheeled vehicles from 2 to 50 tonnes which are external to the vehicle chassis.

Coil Spring And Dampers
KONI together with our sister company Axtone or our spring supply partners, offer coil spring and damper assemblies for a wide range of commercial and military vehicles. Assemblies can be configured with the same interface as the Hydroride® units for the same axle applications giving the User interchangeability for a family of vehicles depending on the requirement.

Hydraulic Bump Stops
To protect the vehicle axle from crashing into the chassis or sub-frame normally an elastomer stop is adopted. This cushions the blow but still results in very high accelerations for high speed off road vehicles. These high speed impacts can be significantly reduced by adopting one of the KONI range of Hydraulic Bump Stops. This is a proven product adopting compressible fluid formally made by the Jarret Company and now incorporated into ITT Corporation and KONI.
What are the Benefits?

Defense missions worldwide demand the most of both man and materials. To be able to fully rely on the equipment, reliable and competent partners are essential. With our long-lasting experience in the defense business, KONI, as part of ITT, has the competence to support our customers worldwide. Our technologies, R&D and testing capabilities as well as our production facilities enable us to partner with our customers to help them achieve their goals.

New 91 Off High Way Defense Damper
- High tensile strength of 100 kN
- High temperature rating of 180+ Celsius
- High rebound and compression forces > 35 kN
- High hydraulic stiffness, piston 50 mm, piston rod 20 mm
- Tube outside diameter 70 mm
- High velocity rating up to 5 m / s

New 92 Off High Way Defense Damper
- High tensile strength of 200 kN
- High temperature rating of 200+ Celsius
- High rebound and compression forces > 35 kN
- High hydraulic stiffness, piston 50 mm, piston rod 24 mm
- Tube outside diameter 76 and 83 mm
- High velocity rating up to 5 m / s
- Improved heat dissipation over type 91

New 93 Off High Way Defense Damper
- High tensile strength of 200 kN
- High temperature rating of 200+ Celsius
- High rebound and compression forces > 50 kN
- High hydraulic stiffness, piston 67 mm, piston rod 24 mm
- Tube outside diameter 95 or 108 mm
- High velocity rating up to 12 m / s
- Electronically or mechanically controlled damping in development
- Available as mono tube version
HYDRAULIC ROTARY DAMPERS

What are the Benefits?

KONI and Piedrafita rotary damper solutions, leverage on Piedrafita’s proven production solutions and extensive development in the tracked vehicle market.

AR29T is the new generation of Rotary Damper especially designed for heavy vehicles operating in very tough environment. This is the direct evolution of the AR01/AR02 damper with an extended range of use with temperature, load and life time.

The performance of the unit has been shown to remain the same during its whole maintenance free life and exhibits an extremely low friction torque. Use of titanium alloy and high-tensile steel in the design of key parts coupled to a significant weight reduction option for customers looking for high performance - low weight solution.

Main features of the AR29T:

• Maintenance free
• Extremely low friction torque
• Operating temperature: -47°C to 200°C
• Max torque: up to 12 kNm
• No temperature effect on damping characteristic (less than 5% between 20°C and 150°C)
• High frequency response
• Max temperature regulation valve (reduces heat generation if the temperature exceeds a predetermined higher level)
• Blow-off valve opening at high angular speed
• 120,000 hours MTBF
• Fluids in accordance with Def-Stan 01-5 list
High Performance Range of Hydro-Pneumatic Suspension Systems

**Why Hydroride® and why KONI?**
Hydro pneumatic suspension were first patented in the 1930’s and were used extensively by the French car manufacturer Citroën from the 1950’s to the present day. Although this type of technology has been used on light vehicles, its development on heavier vehicles has been slow whereas air spring and metal spring technology has been widely applied. The key reason has been the perceived high cost relative to conventional solutions. KONI with their extensive industrial capability and suspension design experience, has developed a range of Hydroride® solutions to meet the market requirements which will be mass produced in Europe for the world market to exacting standards and high quality.

Hydroride® combines effective damping with a rising rate spring relative to the linear rate of a torsion bar or standard coil spring. Together with tuned damping, the rising rate means that the Hydroride® suspension can absorb more energy as the vehicle travels fast over rough ground without hitting the bump stops resulting in lower shock loads for the vehicle and crew. The spring force can be changed by adjusting the gas pressure allowing different wheel loads to be easily accommodated without having to change any hardware.

For electric trucks and buses, there is a growing requirement for low energy/low weight/low noise and low volume suspensions which a Hydroride® suspension with RHMS can provide. For military markets, weight and volume are equally important to enable the chassis designer to maximize on the payload volume plus the need for RHMS for lowering and raising the vehicle for transportation, stealth and increasing ground clearance.

**Ride Height Management System**
A key additional capability of a Hydroride® suspension system is a Ride Height Management System (RHMS). This enables the vehicle ride height to be changed with the additional of a light weight hydraulic power pack and controller. RHMS are used on buses, trucks and also military vehicles.
What are the Benefits?

- Engineered solutions to meet the Users requirement.
- Spring and damping characteristics tuned for maximum performance.
- Low weight, low cost solutions interfacing effectively with the suspension and chassis.
- Proven range of standard parts used and mass produced across railway, bus, truck and defense markets.

KONI has extensive experience of working with Customers to design effective coil spring and dampers assemblies that can be readily adapted to the suspension and chassis. Axtone provides a wide range of engineered springs for industrial, vehicle and recreational markets. Axtone specializes in hot coiled springs with rods from 14 to 80 mm and up to 450 mm in diameter and 11.5 meter long. Using round peeled, straightened polished bars as raw material is a key advantage and helps ensure our quality is maintained at the highest levels in the market.
HYDRAULIC BUMP STOPS

What are the Benefits?

KONI’s business in Hydraulic Bump Stops originates from the business of the Jarret company which was founded in 1964 and joined the group in 2005 and is specialized in the design and manufacture of energy absorption products.

A design feature of these highly technical products is the use of visco-elastic elastomeric fluids, a technology that is under continuous development and that has been successfully applied for more than fifty years.

The design of Jarret series industrial shock absorber utilizes the unique compression and shear characteristics of specially formulated silicone elastomers.

These characteristics allow the energy absorption and return spring functions to be combined into a single unit without the need for an additional gas or mechanical spring stroke return mechanism.

Advantages:
- Simple design
- High reliability
- High damping coefficient
- Low sensitivity to temperature variances

Applications:
Shock protection for all types of industries including: defense, automotive, railroad, materials handling, marine, pulp/paper, metal production and processing.
RIDE WORK

What are the Benefits?

KONI supports vehicle development across our markets with assistance for ride testing. Feedback from customers who we work with is extremely positive and they are often surprised at the improvements we can demonstrate just by making adjustments to the performance levels. This adds significant value to their programs and helps improve the vehicle in a team environment. To support this activity, we have fully equipped ride-work vans and mobile rigs that incorporate dynos to check settings for suspension units.

Vehicle Tuning
• Addressing specific issues
• Supporting small markets
• Flexible approach
• Significant ride work knowledge base
• We can work on our own to support you faster

For commercial vehicles, there is little opportunity to change the axle system due to cost and time, so the damper becomes the “go to” variable. Typically, we will be involved after the vehicle is completed and end customers are not happy with the overall ride quality or they wish to explore other settings or there is a specific problem to address such as vibration. Our start point is always to drive the vehicle and gain the same experience, then look at how we can improve ride comfort and driver feedback by adjusting blow off rates and blow off stiffness. Relative to changing the chassis or axles or spring rates, changing the damper settings is easily and quick to implement to compare and improve performance.

For the military market, due regard is taken of the variables which can be; tyre stiffness and run flats, vehicle mass including any change of mass, motion ratio applied, center of gravity and inertia, natural frequency of the suspension and the body, anti-roll bars together with springs and dampers or Hydride®. Once completed and approved with the customer, a unique part number is provided with the checked settings from the ride work testing.

Key Providers
• Knowledge
• Experience
• Equipment
• Optional settings
CONTACT AND SUPPORT

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