ITT Enidine provides energy absorption and vibration isolation solutions to meet the challenging demands of heavy industries.
ITT Enidine provides energy absorption and vibration isolation solutions to meet the challenging demands of heavy industries.
HI Series

**Heavy Industry Hydraulic Shock Absorbers**

Jarret visco-elastic fluid shock absorbers and springs have been successfully applied in the steel and aluminum industries for over 40 years. Due to the comprehensive capability of the silicone fluid, the bumpers do not require the need for additional internal gas or mechanical springs to return the piston rod to its original position.

Jarret bumpers also provide reliability, low sensitivity to temperature variances and a high damping coefficient.

**Applications:**
- Rolling mill shock separators
- furnace slab bumpers
- Hot strip mill down-color
- Reheat furnace entry end shock absorber
- Ladle transfer cars
- Transportation and stops
- Tensioning devices

HD/HDN Series

**Heavy Duty Hydraulic Shock Absorbers**

ITT Enidine Heavy Duty (HD/HDN) Series large-bore hydraulic shock absorbers protect equipment from large impacts in applications where “softer” deceleration is needed. These applications also require longer bumper stroke lengths, typically used in deviators and automated sidestacker cranes at the end of the rail.

Heavy Duty (HD/DN) Series shock absorbers are available in standard bore diameters up to 6 inches and stroke lengths up to 60 inches. The HDN Series is also available in a variety of mounting configurations that will support both rotary motion applications and linear impact conditions. Optional materials and fluids are available to accommodate extreme environments.

**Applications:**
- Automated stacker crane safety stops
- Ladle transfer cars
- Cab operated bridge cranes
- Shipment to shore container cranes

Polyurethane Bumpers

**High Performance Bumpers**

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40ºC (-40ºF) to +80ºC (176ºF). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**
- Trolley bridge cranes
- Portal cranes
- Railroad cranes
- Gantry cranes
- Large container transport

Wire Rope Isolators

**Shock and Vibration Isolators**

ITT Enidine Wire Rope Isolators are comprised of stainless steel stranded cable, threaded through aluminum alloy rotating bars, crimped and mounted for effective vibration isolation. With their corrosion-resistant, all-metal construction, ITT Enidine Wire Rope Isolators are used for long-term stability, high performance shock and vibration isolators affected by temperature extremes, chemicals, oils, ozone and abrasives.

Individual isolators are capable of supporting loads of up to 3,600 lbs. With proper sizing and selection, these isolators are virtually maintenance free.

**Applications:**
- Isolation of electronic control cabinets on cranes
- Protection of rolled materials in cradles during loading and transport.
- Protection of piping (pipe restraint) from excessive shock and vibration.

Air Springs

**Actuation and Vibration Isolation Air Springs**

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**
- Compressor systems
- Conveyor systems
- Hose equipment
- Lift Tables
- Large material handling equipment

Polyurethane Bumpers

**High Performance Bumpers**

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40ºC (-40ºF) to +80ºC (176ºF). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**
- Trolley bridge cranes
- Portal cranes
- Railroad cranes
- Gantry cranes
- Large container transport

Air Springs

**Actuation and Vibration Isolation Air Springs**

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**
- Compressor systems
- Conveyor systems
- Hose equipment
- Lift Tables
- Large material handling equipment
**Jarret Series**  
Visco-elastic Springs and Bumpers

Jarret visco-elastic fluid shock absorbers and springs have been successfully applied in the steel and aluminum industries for over 40 years. Due to the comprehensive capability of the silicone fluid, the bumpers do not require the need for additional internal gas or mechanical springs to return the piston rod to its original position. Jarret bumpers also provide reliability, low sensitivity to temperature variances and a high damping coefficient.

**Applications:**  
- Rolling mill shaft compensators  
- Furnace slab bumpers  
- Hot strip mill down-coler  
- Reheat furnace entry end shock absorber  
- Ladle transfer cars  
- Transportation and ships  
- Tensioning devices

**HD/HDN Series**  
Heavy Duty Hydraulic Shock Absorbers

ITT Enidine Heavy Duty (HD/HDN) Series shock absorbers protect equipment from large impacts in applications where "softer" deceleration is needed. These applications also require longer bumper stroke lengths, typically used in deviating automated stacker cranes at the end of the rail.

Heavy Duty (HD/HDN) Series shock absorbers are available in standard bore diameters up to 6 inches and stroke lengths up to 60 inches. The HD/HDN Series is also available in a variety of mounting configurations that will support both rotary motion applications and linear impact conditions. Optional materials and fluids are available to accommodate extreme environments.

**Applications:**  
- Automated stacker crane safety stops  
- Ladle transfer cars  
- Coil uncoiler/reevens  
- Large container transfer  
- Ship to shore container cranes

**Polyurethane Bumpers**  
High Performance Bumpers

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40°C (-40°F) to +80°C (176°F). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**  
- Trolley bridge cranes  
- Portal cranes  
- Railroad cranes  
- Gantry cranes  
- Large container transport

**Wire Rope Isolators**  
Shock and Vibration Isolators

ITT Enidine Wire Rope Isolators are comprised of stainless steel strand cable, threaded through aluminum alloy rotating bars, and mounted for effective vibration isolation. With their corrosion-resistant, all-metal construction, ITT Enidine Wire Rope Isolators are very durable and can be employed in the most severe high-performance shock and vibration isolators unaffected by temperature extremes, chemicals, oils, ozone and abrasives.

Individual isolators are capable of supporting loads of up to 3,600 lbs. With proper sizing and selection, these isolators are virtually maintenance free.

**Applications:**  
- Isolation of electronic control cabinets on cranes  
- Protection of rolled materials in cradles during loading and transport.  
- Protection of piping (pipe restraint) from excessive shock and vibration.

**Air Springs**  
Actuation and Vibration Isolation Air Springs

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**  
- Compressor systems  
- Conveyor systems  
- Flow equipment  
- Lift Tables  
- Large material handling equipment

**Polyurethane Bumpers**  
High Performance Bumpers

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40°C (-40°F) to +80°C (176°F). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**  
- Trolley bridge cranes  
- Portal cranes  
- Railroad cranes  
- Gantry cranes  
- Large container transport

**Air Springs**  
Actuation and Vibration Isolation Air Springs

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**  
- Compressor systems  
- Conveyor systems  
- Flow equipment  
- Lift Tables  
- Large material handling equipment

**Polyurethane Bumpers**  
High Performance Bumpers

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40°C (-40°F) to +80°C (176°F). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**  
- Trolley bridge cranes  
- Portal cranes  
- Railroad cranes  
- Gantry cranes  
- Large container transport

**Wire Rope Isolators**  
Shock and Vibration Isolators

ITT Enidine Wire Rope Isolators are comprised of stainless steel strand cable, threaded through aluminum alloy rotating bars, and mounted for effective vibration isolation. With their corrosion-resistant, all-metal construction, ITT Enidine Wire Rope Isolators are very durable and can be employed in the most severe high-performance shock and vibration isolators unaffected by temperature extremes, chemicals, oils, ozone and abrasives.

Individual isolators are capable of supporting loads of up to 3,600 lbs. With proper sizing and selection, these isolators are virtually maintenance free.

**Applications:**  
- Isolation of electronic control cabinets on cranes  
- Protection of rolled materials in cradles during loading and transport.  
- Protection of piping (pipe restraint) from excessive shock and vibration.

**Air Springs**  
Actuation and Vibration Isolation Air Springs

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**  
- Compressor systems  
- Conveyor systems  
- Flow equipment  
- Lift Tables  
- Large material handling equipment

**Polyurethane Bumpers**  
High Performance Bumpers

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline. This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40°C (-40°F) to +80°C (176°F). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**  
- Trolley bridge cranes  
- Portal cranes  
- Railroad cranes  
- Gantry cranes  
- Large container transport

**Wire Rope Isolators**  
Shock and Vibration Isolators

ITT Enidine Wire Rope Isolators are comprised of stainless steel strand cable, threaded through aluminum alloy rotating bars, and mounted for effective vibration isolation. With their corrosion-resistant, all-metal construction, ITT Enidine Wire Rope Isolators are very durable and can be employed in the most severe high-performance shock and vibration isolators unaffected by temperature extremes, chemicals, oils, ozone and abrasives.

Individual isolators are capable of supporting loads of up to 3,600 lbs. With proper sizing and selection, these isolators are virtually maintenance free.

**Applications:**  
- Isolation of electronic control cabinets on cranes  
- Protection of rolled materials in cradles during loading and transport.  
- Protection of piping (pipe restraint) from excessive shock and vibration.

**Air Springs**  
Actuation and Vibration Isolation Air Springs

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 100 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**  
- Compressor systems  
- Conveyor systems  
- Flow equipment  
- Lift Tables  
- Large material handling equipment
**HI Series Heavy Industry Hydraulic Shock Absorbers**

ITT Enduro's Heavy Industry (HI) Series buffers protect heavy machinery and equipment during the transfer of materials and movement of products. The large-bore, high-capacity buffers are individually designed to decelerate moving loads under various conditions and are in compliance with industry mandated safety standards. These buffers are engineered to conform with OSHA, AISE, CMAA and other safety specifications such as DIN and ISO.

The oversized bore area results in optimal energy absorption capabilities and increased internal safety factor. State-of-the-art testing facilities ensure integrity of design and product performance.

**Applications:**
- Control of bridge cranes
- Trolley platforms
- Large container transfer
- Transportation safety stops

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**HD/HDN Series Heavy Duty Hydraulic Shock Absorbers**

ITT Enduro Heavy Duty (HD/HDN) Series shock absorbers are engineered for heavy impact applications where “softer” deceleration is needed. These applications also require longer bumper stroke lengths, typically used in de-laminating automated stacker cranes at the end of the rail.

The enduro Large-bore hydraulic shock absorbers are available in standard bore diameters up to 6 inches and stroke lengths up to 60 inches. The HD/HDN Series is also available in a variety of mounting configurations to support both rotary motion applications and linear impact conditions. Optional materials and fluids are available to accommodate extreme environments.

**Applications:**
- Automated stacker crane safety stops
- Ladle transfer cars
- Coil spander/boom-ends
- Cab supported bridge cranes
- Ship to shore container cranes

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**Polyurethane Bumpers High Performance Bumpers**

The polyurethane bumper is manufactured of expanded polyurethane resin. The special microcellular structure consists of open and closed cells which is resistant to mechanical wear, oil, grease and gasoline.

This proprietary, anti-aging material is self-extinguishing and offers long service and shelf life. This rugged design is suitable for outdoor use at temperatures from -40ºC (-40ºF) to +80ºC (176ºF). A steel safety chain is encased within each bumper and attached to the metallic support.

**Applications:**
- Trolley bridge cranes
- Portal cranes
- Railcar cranes
- Gantry cranes
- Large container transport

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**Wire Rope Isolators Shock and Vibration Isolators**

ITT Enduro Wire Rope Isolators are comprised of stainless steel stranded cable, threaded through aluminum alloy rotating bars, clamped and mounted for effective vibration isolation. With their corrosion-resistant, all-metal construction, ITT Enduro Wire Rope Isolators are for most environmentally stable, high-performance shock and vibration isolators unaffected by temperature extremes, chemicals, oils, ozone and abrasives.

**Applications:**
- Isolation of electronic control cabinets on cranes
- Protection of rolled materials in cradles during loading and transport.
- Protection of piping (pipe restraint) from severe shock and vibration.

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**Air Springs Actuation and Vibration Isolation Air Springs**

Air Springs use compressed air to provide actuation and vibration isolation. The larger air springs are capable of lifting forces in excess of 100,000 lbs. with the use of only 150 psi of air supplied to the unit.

As a vibration isolator, air springs provide the lowest natural frequency in the 3-5 Hz range of any available vibration isolator.

**Applications:**
- Compressor systems
- Conveyor systems
- Flow equipment
- Lift Tables
- Large material handling equipment
ITT Enidine provides energy absorption and vibration isolation solutions to meet the challenging demands of heavy industries.