WEAR™Pipe Restraint
Vibration Isolator

ENIDINE

ITT

ENGINEERED FOR LIFE

With its world headquarters located in Orchard Park, New York, USA, ITT ENIDINE Inc. is a world leader in the design and manufacture of standard and custom energy absorption and vibration isolation product solutions within the Industrial, Aerospace, Defense, Marine and Rail markets. Product ranges include shock absorbers, gas springs, rate controls, air springs, wire rope isolators, heavy industry buffers and emergency stops. With facilities strategically located throughout the world and in partnership with our vast global network of distributors, ITT Enidine continues to strengthen its presence within marketplace.

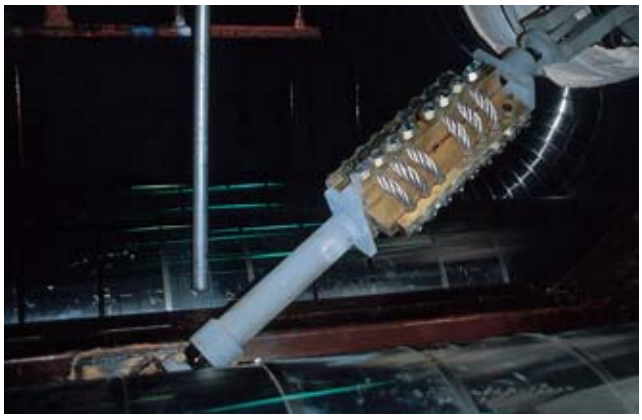
Founded in 1966, ITT Enidine now has close to 400 employees located throughout the globe in the United States, Germany, France, Japan and China. With a team of professionals in engineering, computer science, manufacturing, production and marketing our employees provide our customers the very best in service and application solutions.

ITT Control Technologies at a Glance

ITT is a vibrant part of the global economy. We are a high-technology engineering and manufacturing company with approximately 8,000 employees operating in 15 countries. Our portfolio of businesses is aligned with enduring, global growth drivers, and our employees bring extraordinary focus to meeting the needs of the people who buy and use our products and services in all the markets we serve.

As part of our strategy to make the customer central to everything we do the Control Technologies and Energy Absorption value centers have combined. Both have strong ties to aerospace and industrial customers. The larger combined organization will optimize common relationships, core technologies, engineering strength and global scale to offer greater value for their common customers in terms of quality, cost and delivery.

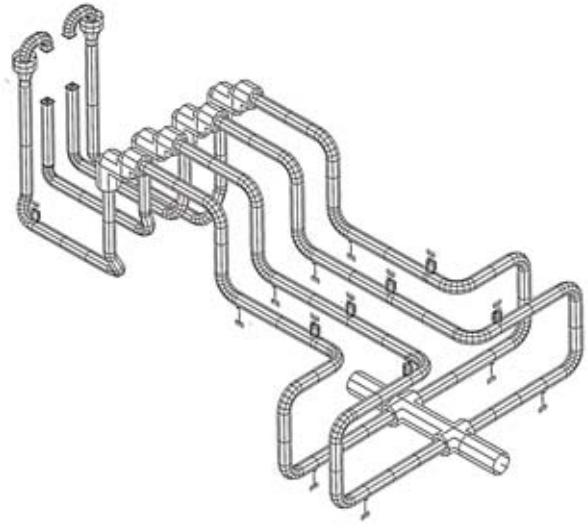
ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for growing industrial end-markets in energy infrastructure, electronics, aerospace and transportation. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, NY, with employees in more than fifteen countries and sales in more than 125 countries. The company generated 2011 revenues of approximately $2.1 billion. For more information, visit www.itt.com.



WEAR™ (Wire Energy Absorbing Rope) pipe restraints are uniquely packaged wire rope isolators designed to protect structures from steady state vibration and isolate them from seismic and dynamic loads. These new generation energy absorbing restraints feature simple construction. There are no oils, seals or complex moving parts required to perform their function. The design has eliminated the problems often associated with hydraulic or mechanical restraints which are complex and prone to failure.

The Wire Rope Isolator, which is the basic element of the technology has been successfully used by the military for more than 25 years. As a result, it conforms to government and military quality control requirements. The restraint is thus exempt from surveillance testing. In-place visual inspection is all that is required to assure operability.

The WEAR™ can be provided with a wide range of piping accessories and can be supplied to ISO 9001, Mil-Q, Mil-I, B31.1 or ASME Section III subsection NF.



Auto pipe analysis available upon request.

Options Available

Various end connections are available to meet existing hardware such as Bergen Paterson, Basic Engineers, PSA, Grinnel and others. For sizing or specific application information, call your local representative or Enidine directly.

Typical Applications

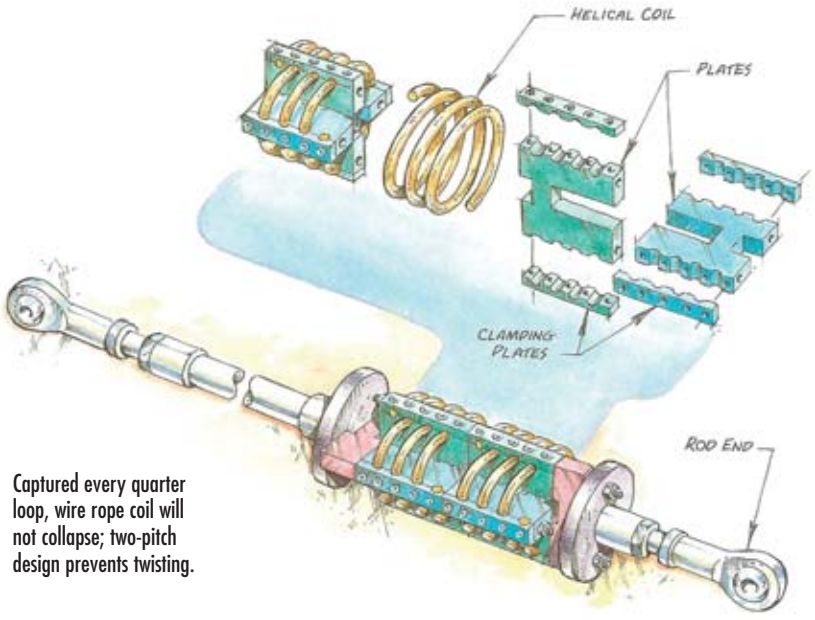
- Pipe Restraint
- Hydraulic Transients
- Power Generating Plants
- Chemical Plants
- Seismic Restraints
- Steady State Vibration
- Nuclear Plants
- Refineries
- Structural Vibration
- Wind Loading
- Pulp and Paper Mills

WEAR™ Benefits

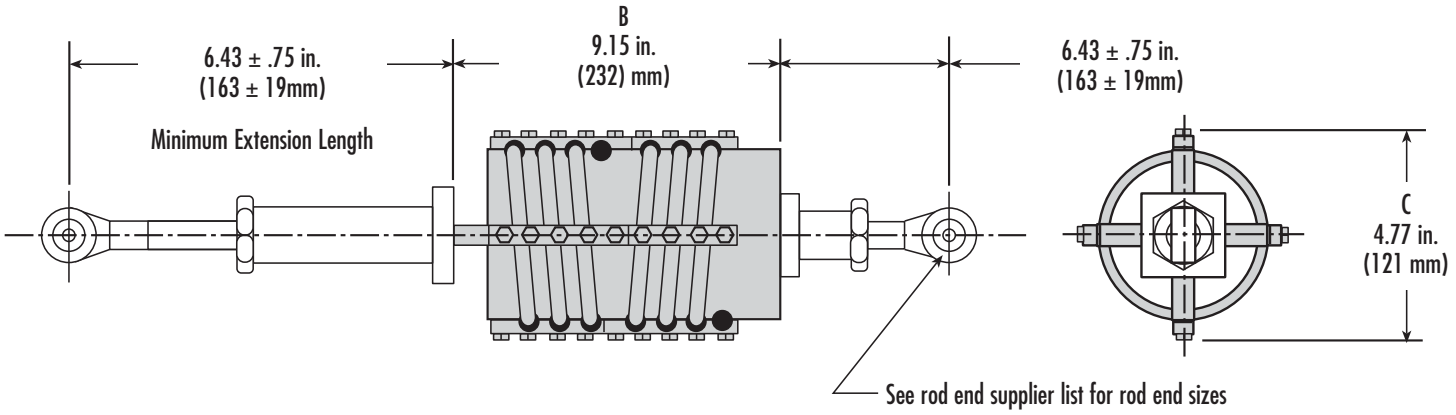
- Repeatable
- Environmentally Stable
- Low Structural Loading
- Dissipate Energy
- Wide Operating Temperature Range
- Proven Technology
- Simple Construction
- Corrosion Resistant
- High Cycle Fatigue Life
- No Maintenance

Environmental Conditions

Normal Temperature:	-40º to 200º F/-40º to 100º C
Faulted Temperature:	-40º to 350º F/-40º to 175º C
Humidity:	100% RH
Radiation:	1 x 10^9 RAD
Pressure:	-14.7 psi to 100 psi
	0 atm to 7 atm



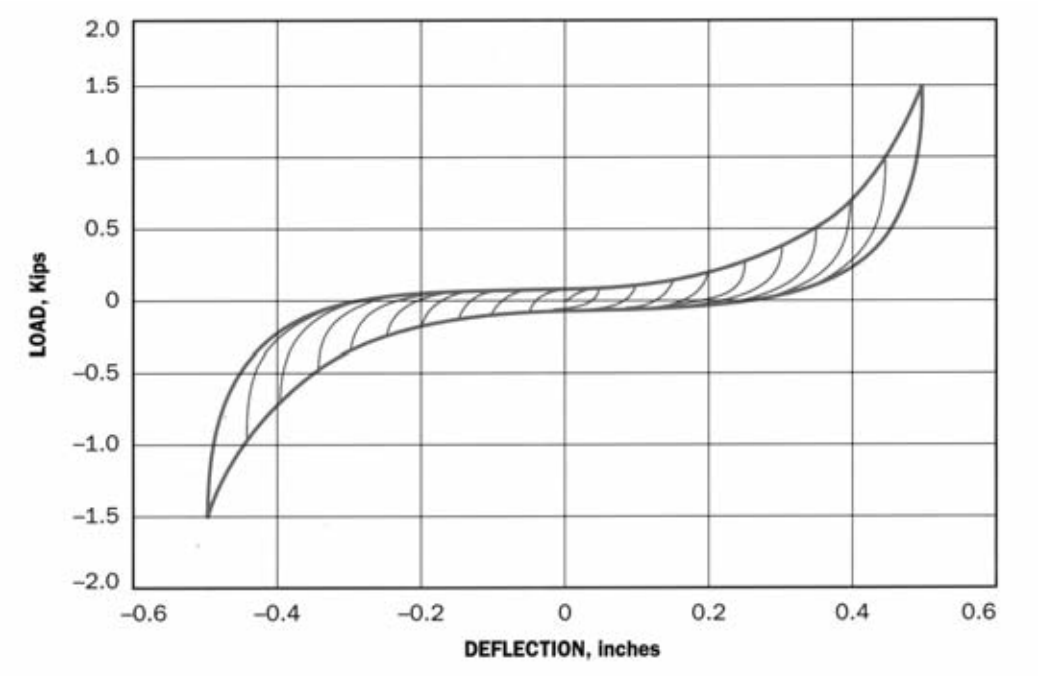
Captured every quarter loop, wire rope coil will not collapse; two-pitch design prevents twisting.



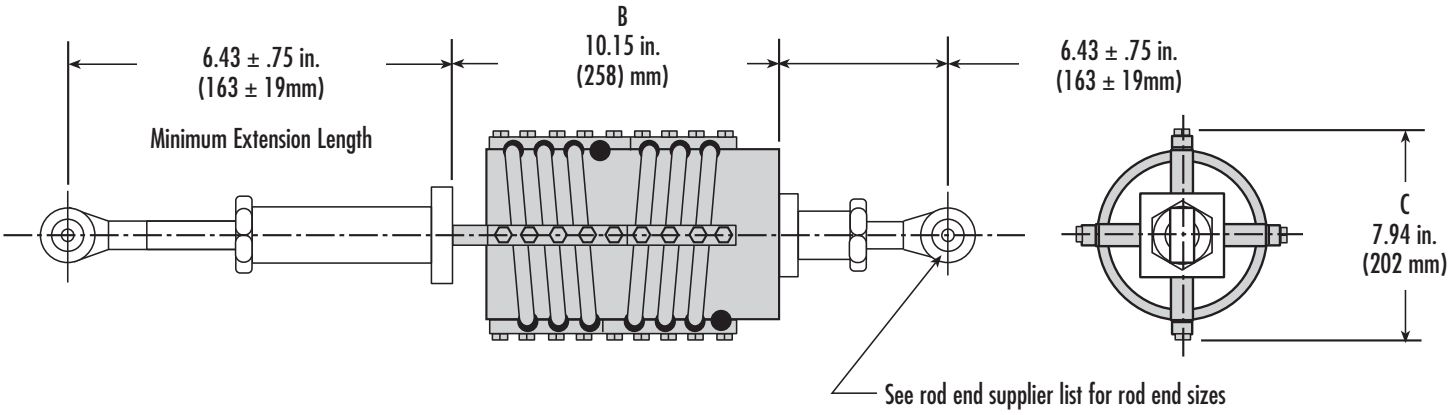
Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	15.5 lbs. 0.2 lbs./in.	7,0 kg. 0,04 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	1.2 Kips/in. 3.0 Kips/in.	210 N/mm 525 N/mm
Stroke	Maximum:	± 0.5 in.	± 12,7 mm

Load vs. Deflection



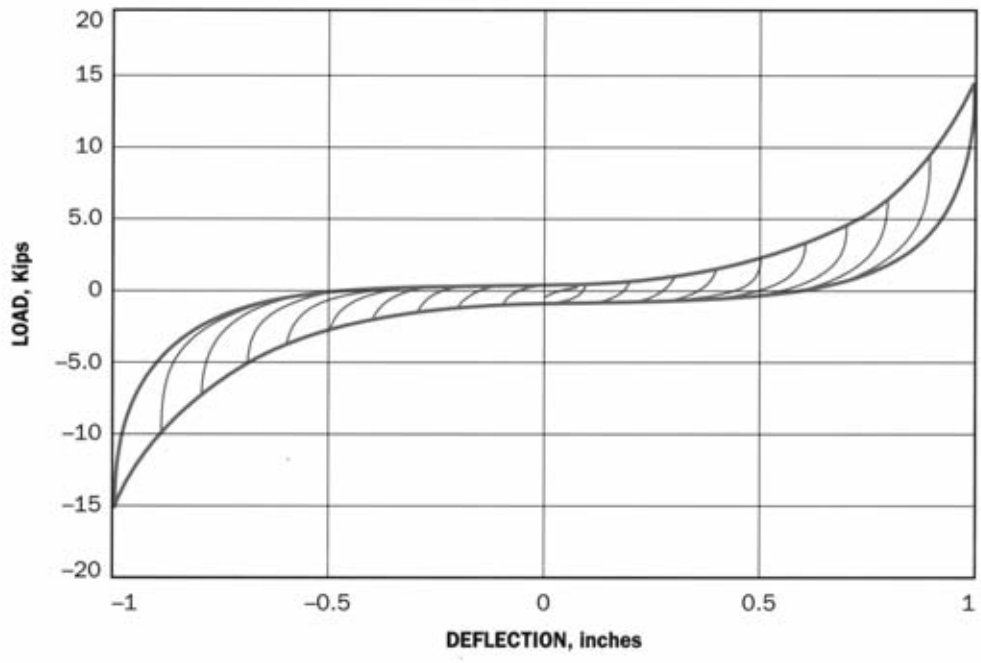
Specifications are subject to change without notice. Metric Data and/or actual curve simulations with dimensional data provided upon request.
Contact your local distributor.



Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	15.5 lbs. 0.2 lbs./in.	7,0 kg. 0,04 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	0.6 Kips/in. 1.5 Kips/in.	105 N/mm 263 N/mm
Stroke	Maximum:	± 1.0 in.	± 25,4 mm

Load vs. Deflection



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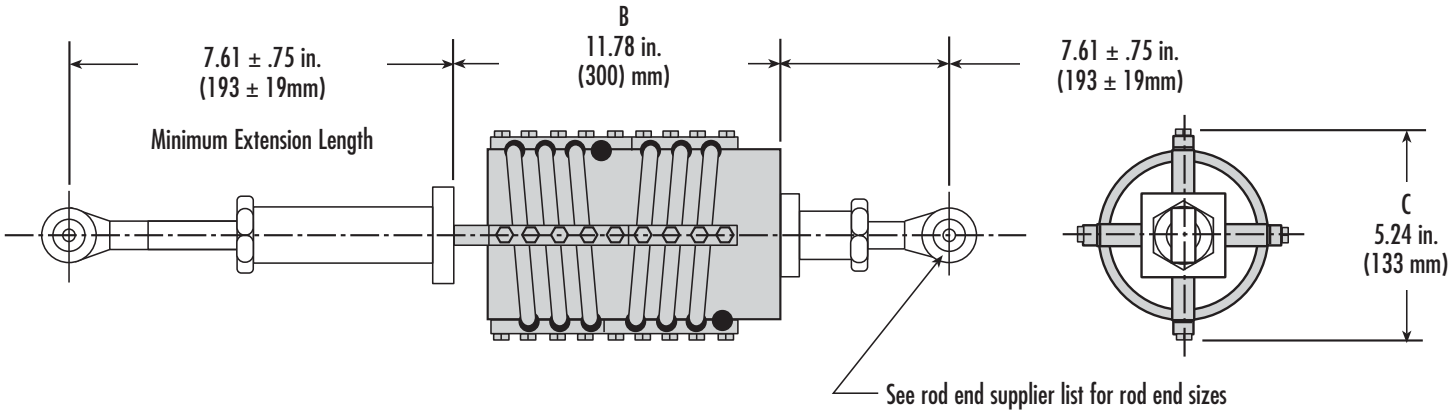
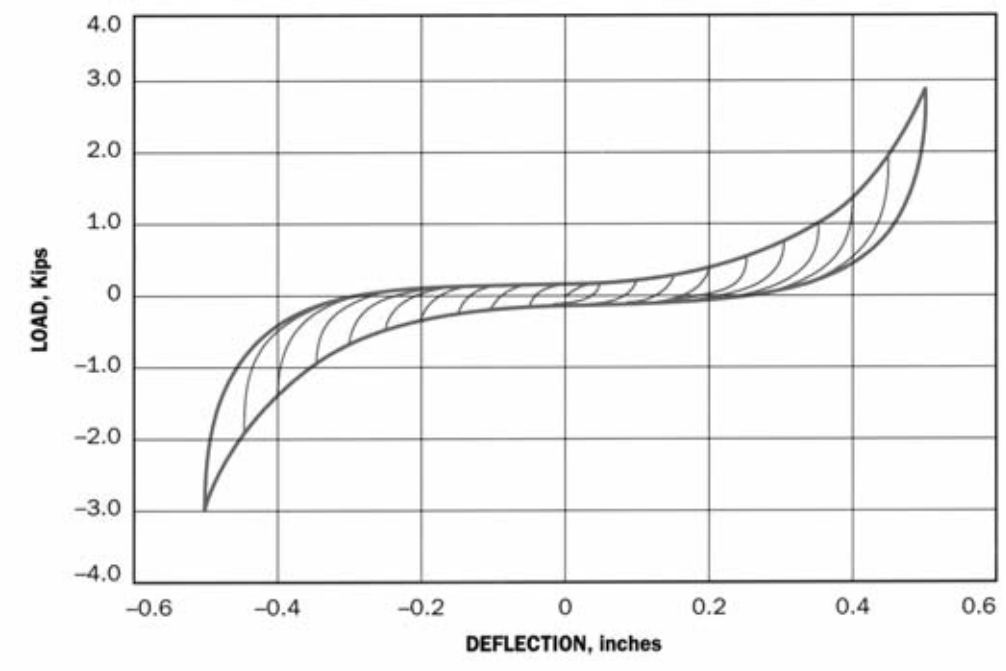


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	32.0 lbs. 0.3 lbs./in.	14,5 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	2.4 Kips/in. 6.0 Kips/in.	420 N/mm 1050 N/mm
Stroke	Maximum:	± 0.5 in.	± 12,7 mm

Load vs. Deflection



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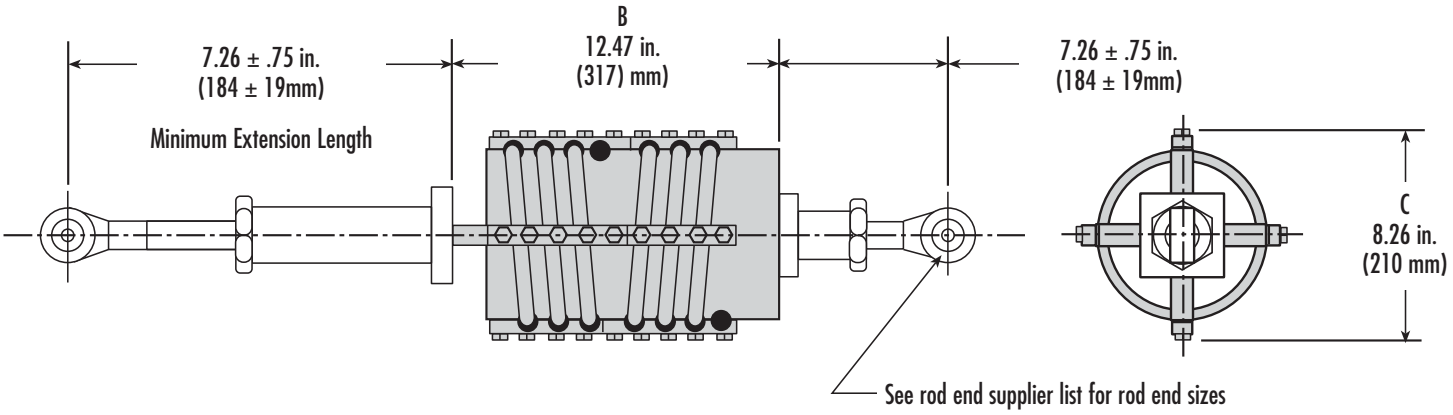
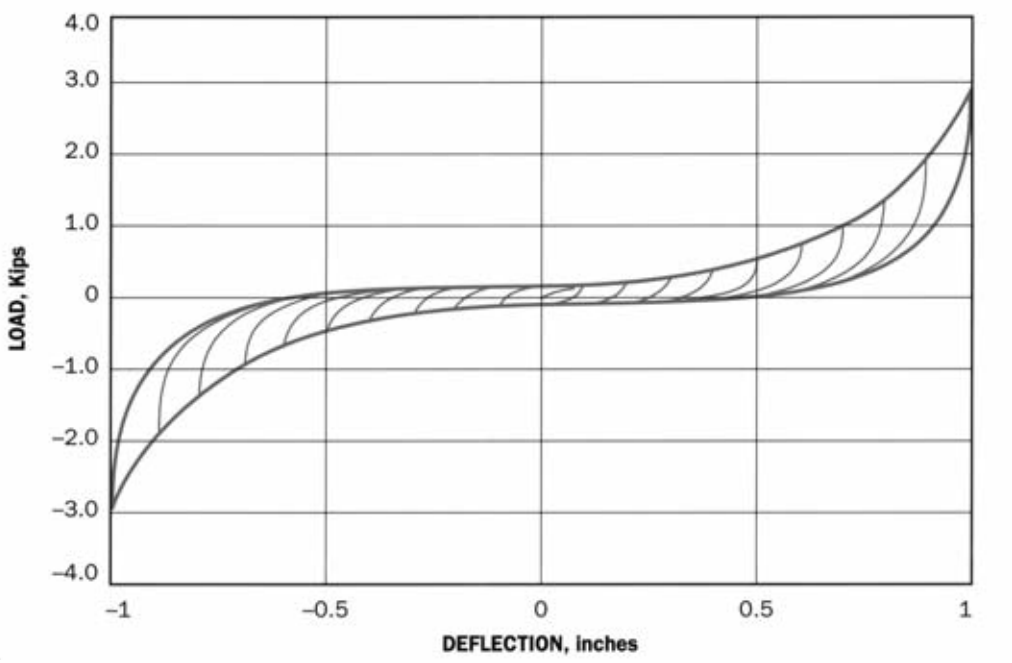


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	48.5 lbs. 0.3 lbs./in.	22,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	1.2 Kips/in. 3.0 Kips/in.	210 N/mm 525 N/mm
Stroke	Maximum:	± 0.5 in.	± 25,4 mm

Load vs. Deflection



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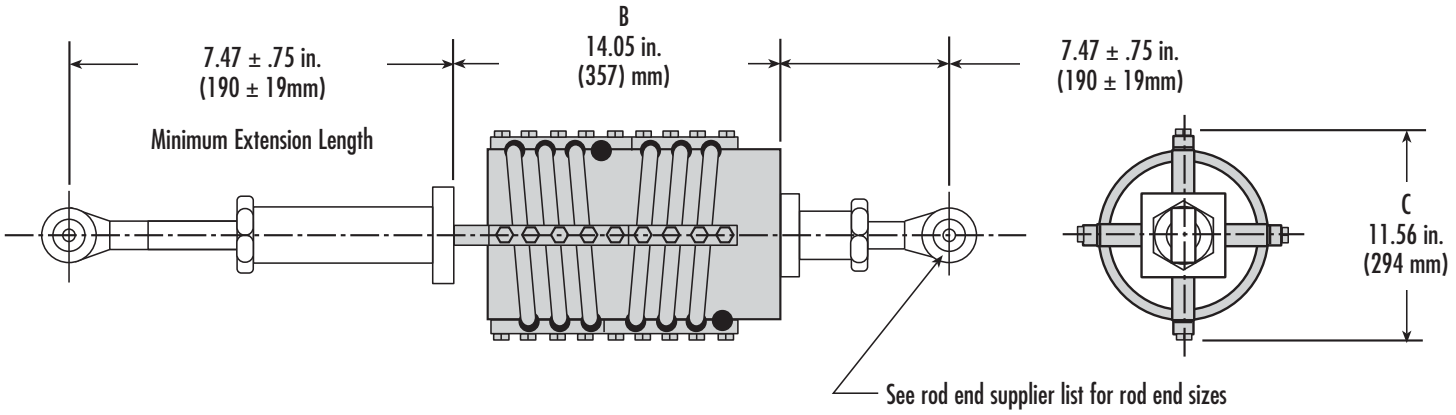
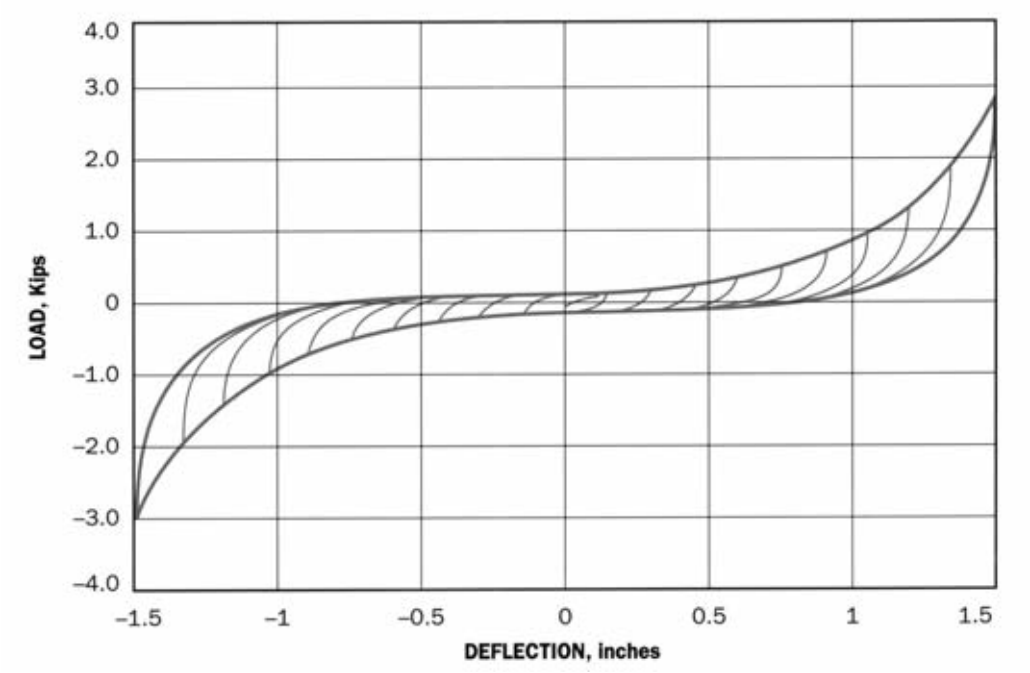


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	73.0 lbs. 0.3 lbs./in.	7,0 kg. 0,04 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	0.8 Kips/in. 2.0 Kips/in.	140 N/mm 350 N/mm
Stroke	Maximum:	± 0.5 in.	± 38,1 mm

Load vs. Deflection



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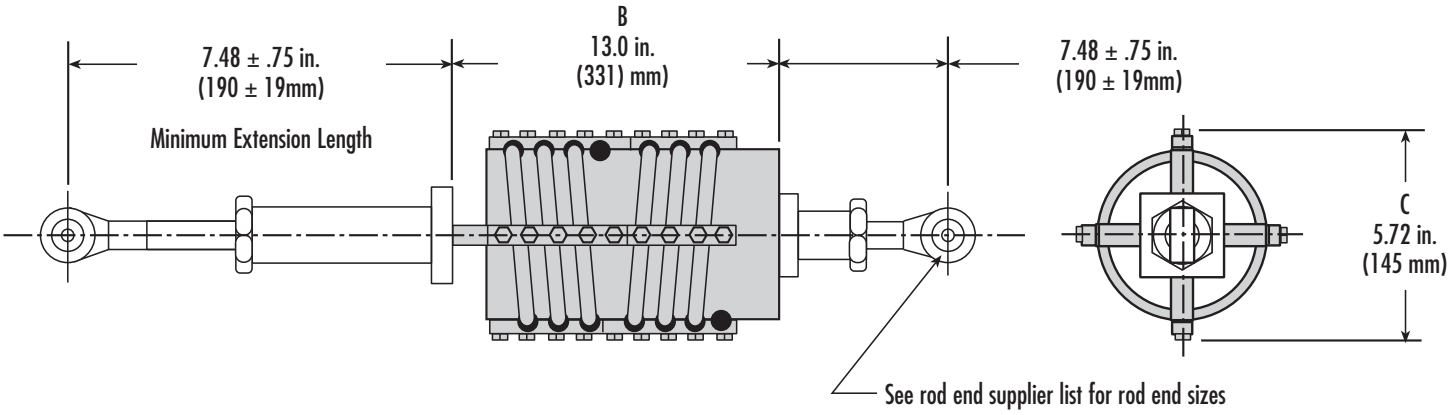
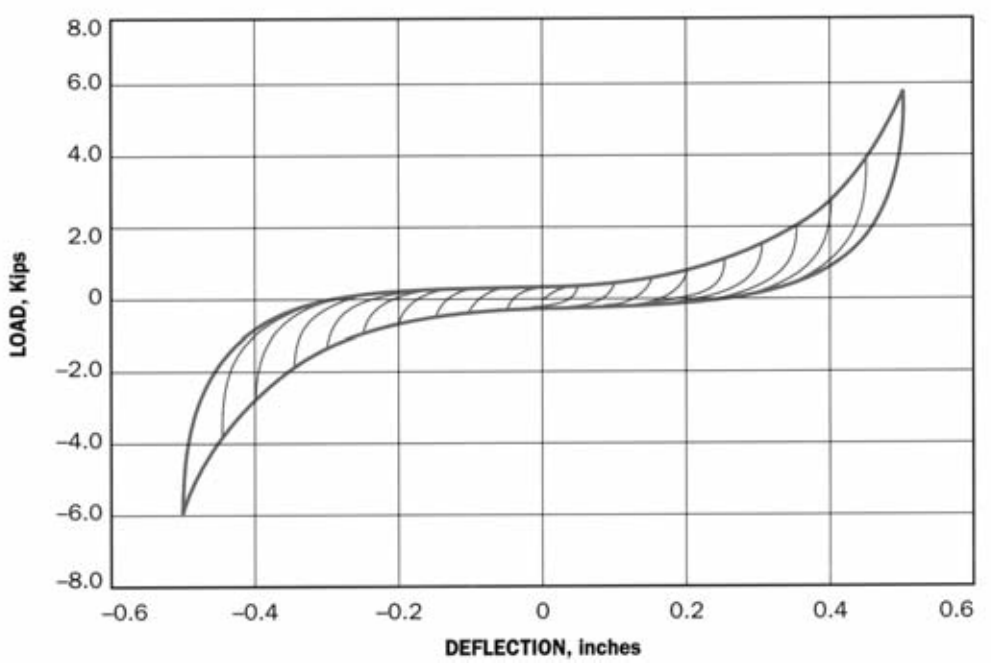


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	44.0 lbs. 0.3 lbs./in.	20,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	4.8 Kips/in. 12.0 Kips/in.	840 N/mm 2100 N/mm
Stroke	Maximum:	± 0.5 in.	± 12,7 mm

Load vs. Deflection



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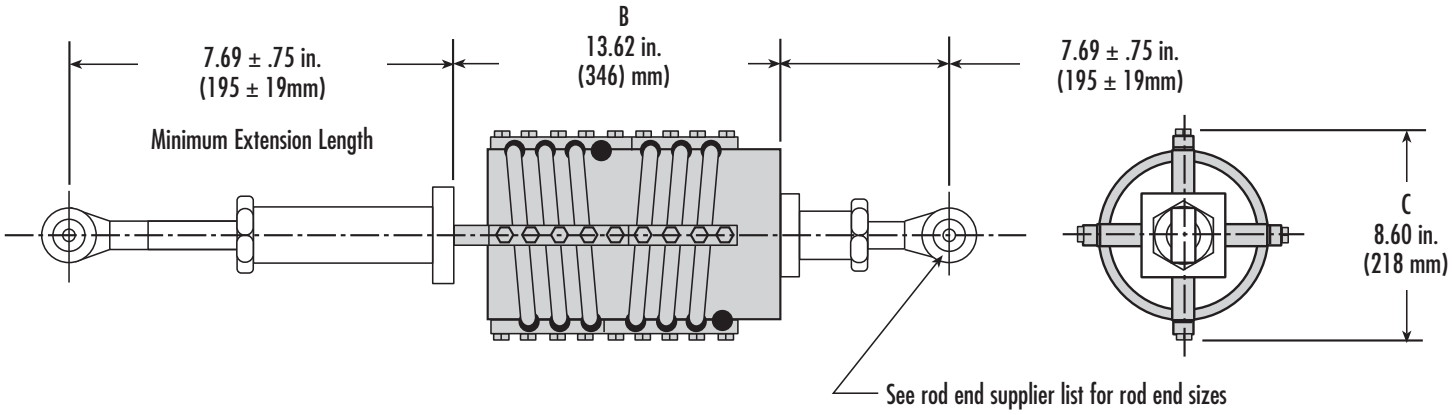
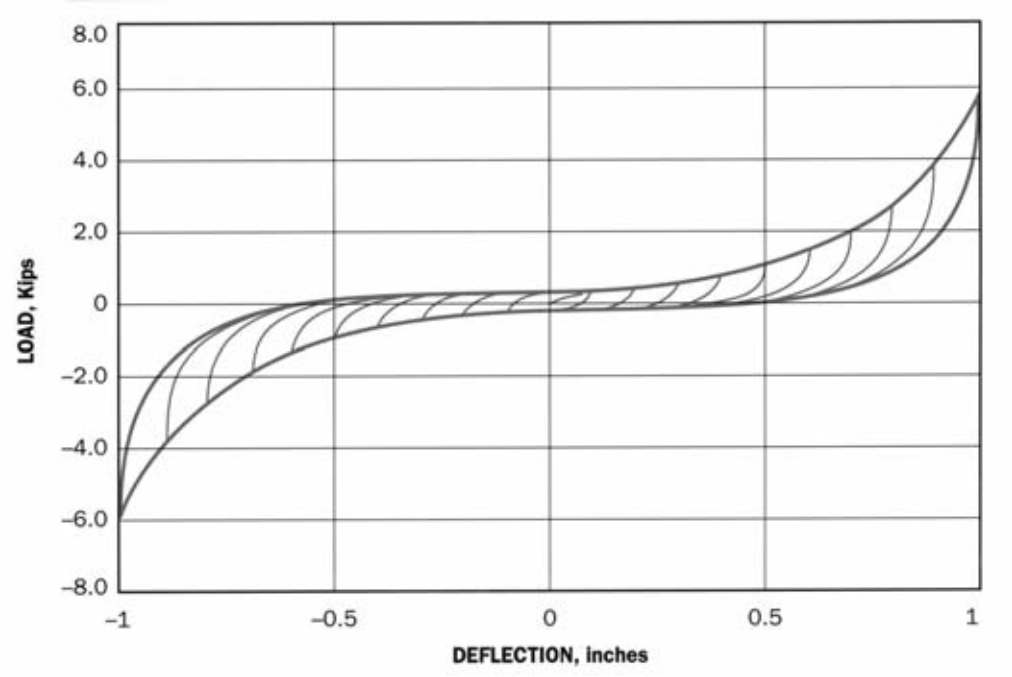


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	67.0 lbs. 0.3 lbs./in.	31,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	2.4 Kips/in. 6.0 Kips/in.	420 N/mm 1050 N/mm
Stroke	Maximum:	± 1.0 in.	± 25,4 mm

Load vs. Deflection



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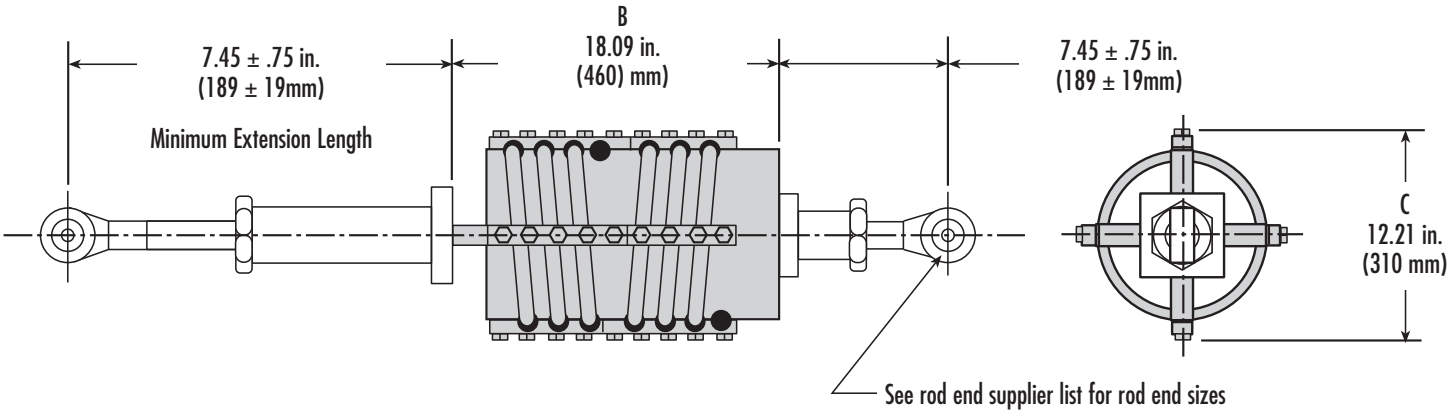
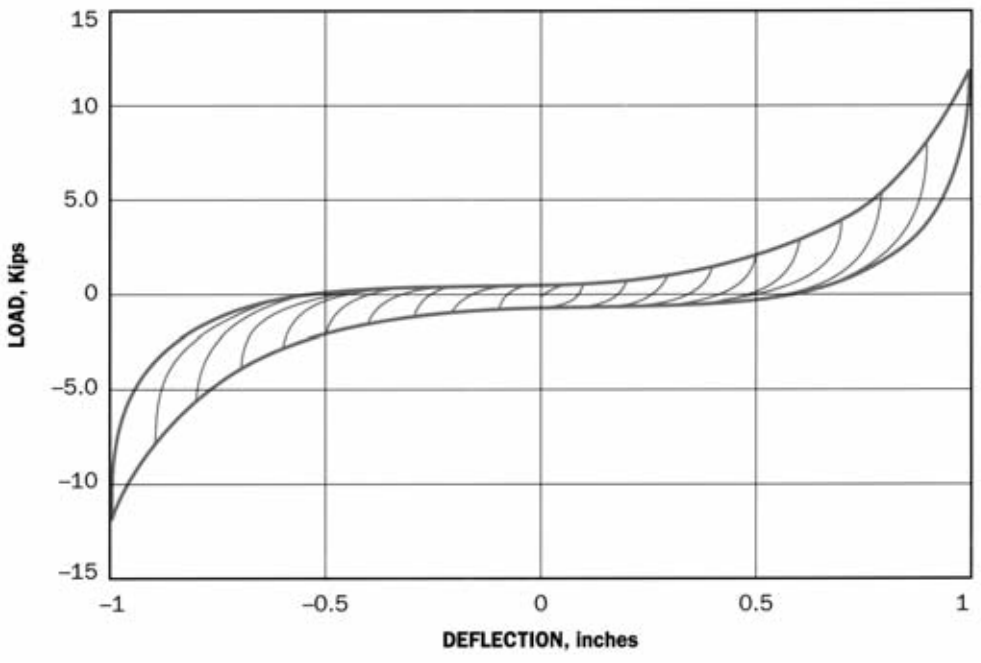


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	120.0 lbs. 0.3 lbs./in.	54,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	1.6 Kips/in. 4.0 Kips/in.	280 N/mm 700 N/mm
Stroke	Maximum:	± 1.5 in.	± 38,1 mm

Load vs. Deflection



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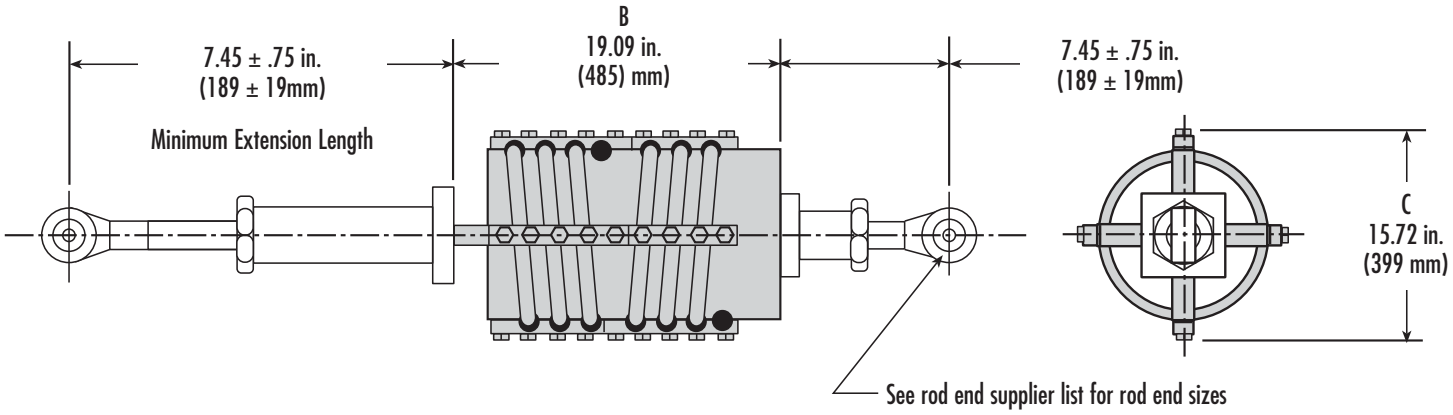
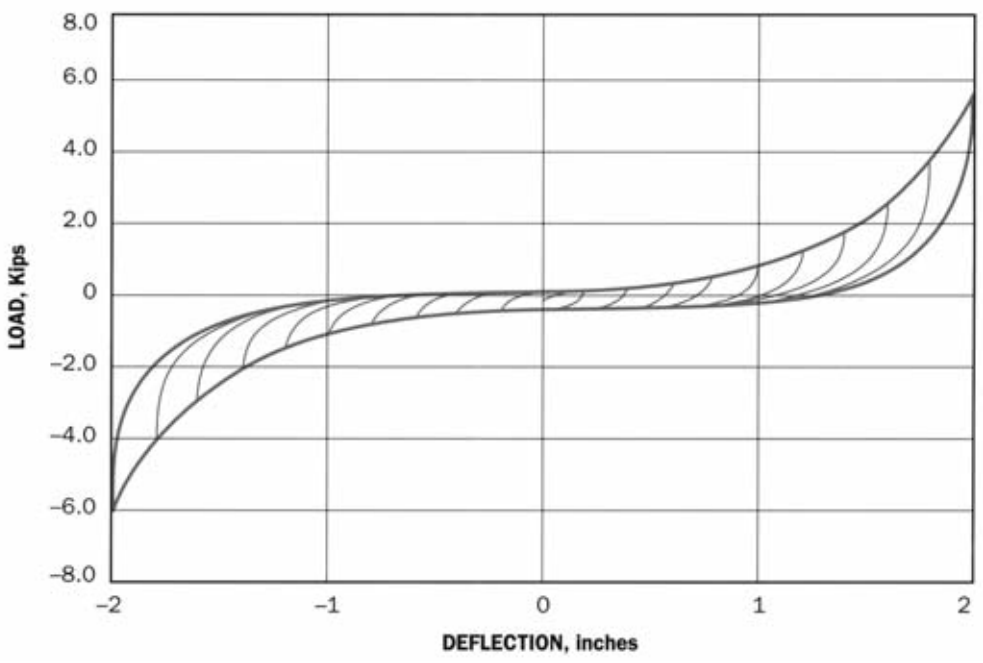


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	160.0 lbs. 0.3 lbs./in.	73,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	1.2 Kips/in. 3.0 Kips/in.	210 N/mm 525 N/mm
Stroke	Maximum:	± 2.0 in.	± 50,8 mm

Load vs. Deflection



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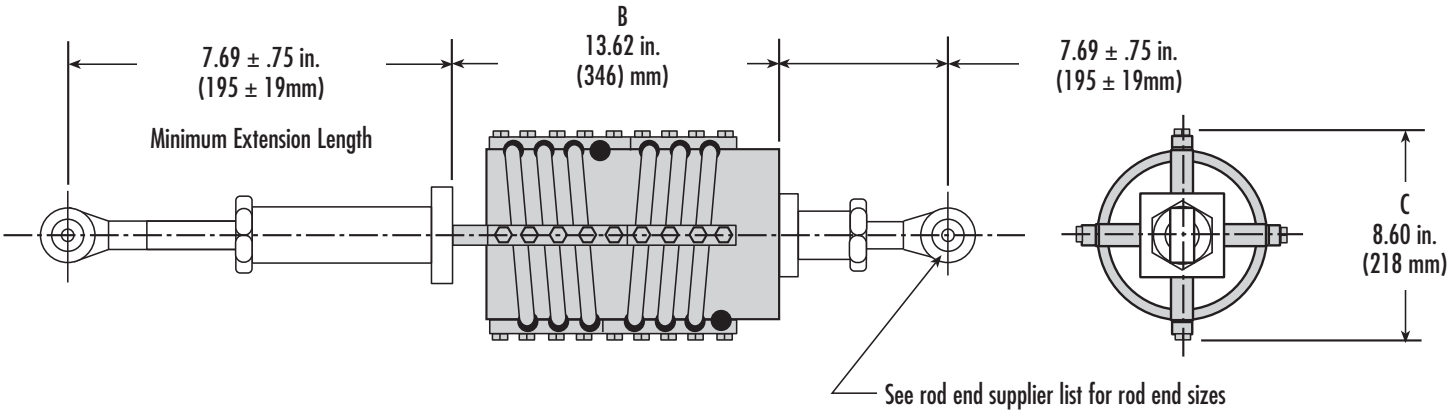
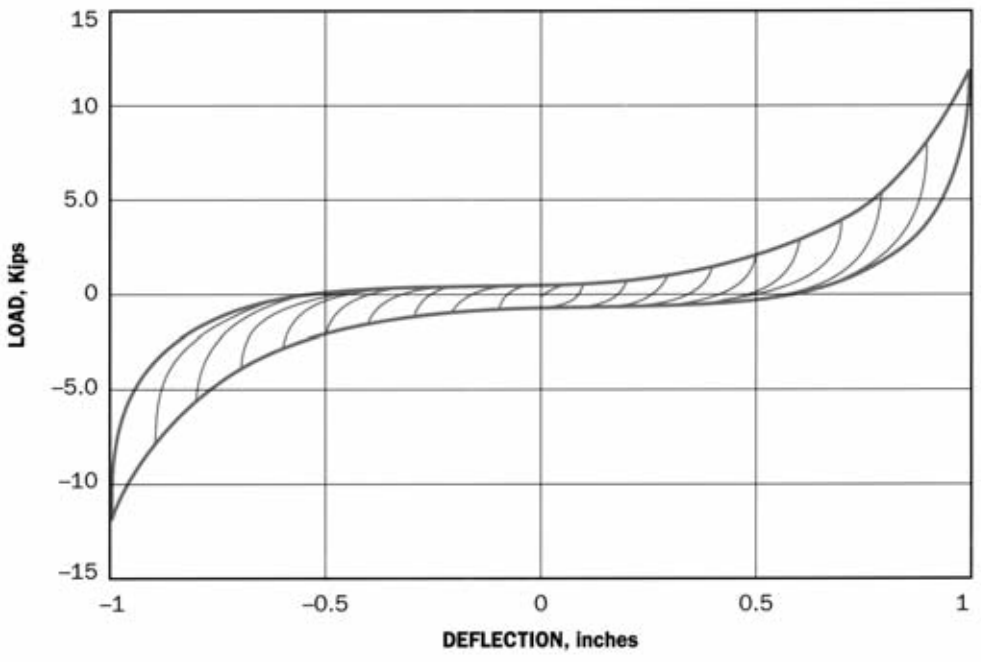


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	67.0 lbs. 0.3 lbs./in.	31,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	2.4 Kips/in. 6.0 Kips/in.	420 N/mm 1050 N/mm
Stroke	Maximum:	± 0.5 in.	± 12,7 mm

Load vs. Deflection



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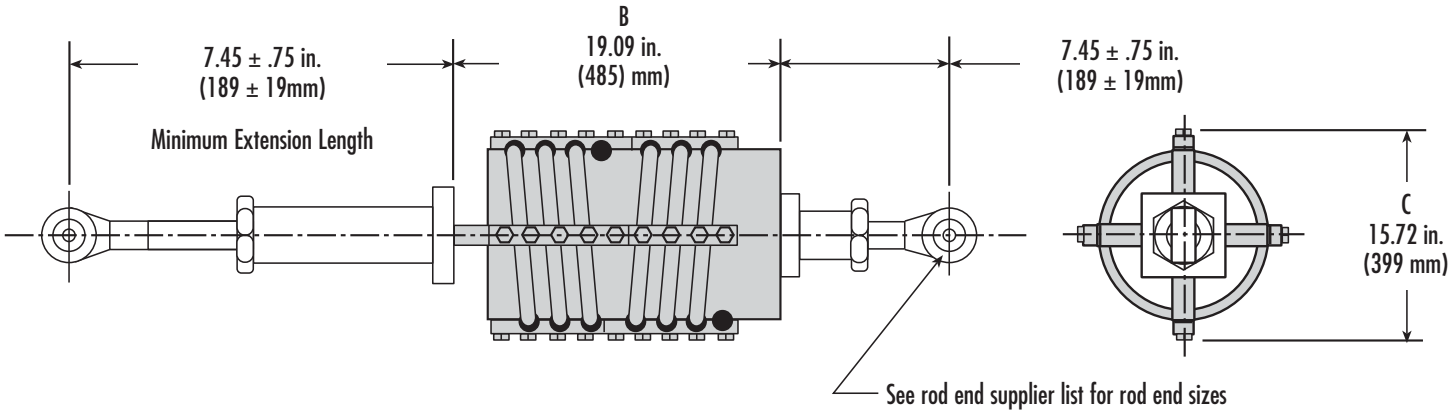
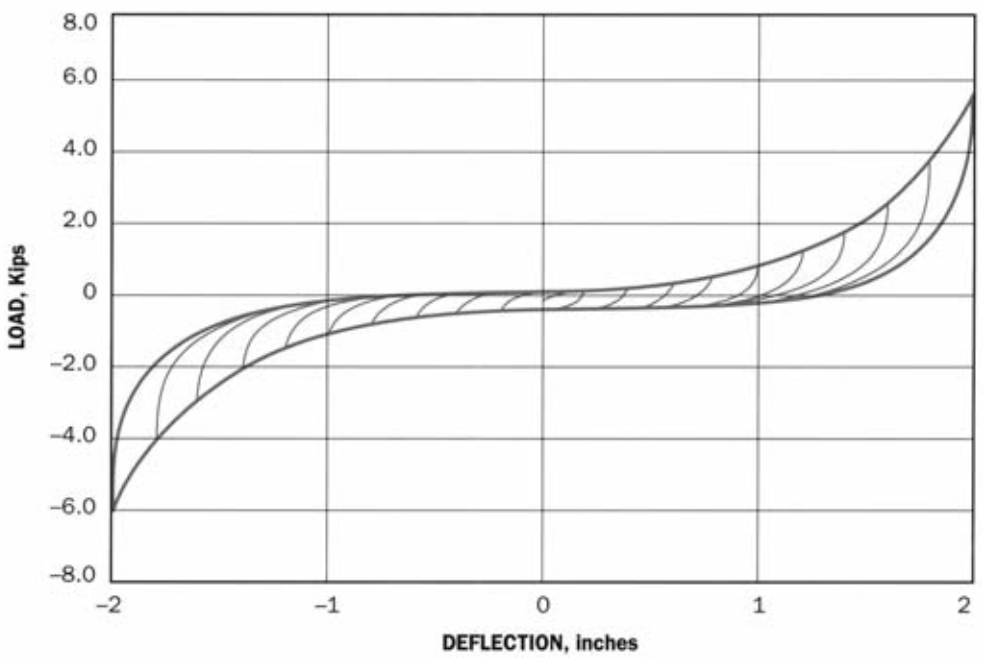


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	160.0 lbs. 0.3 lbs./in.	73,0 kg. 0,05 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	1.2 Kips/in. 3.0 Kips/in.	210 N/mm 525 N/mm
Stroke	Maximum:	± 2.0 in.	± 50,8 mm

Load vs. Deflection



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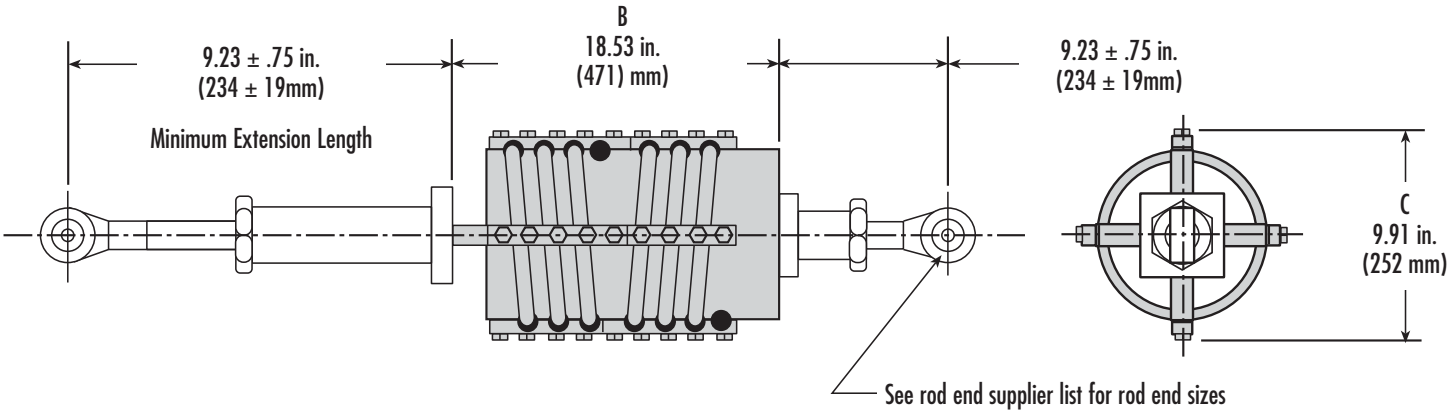
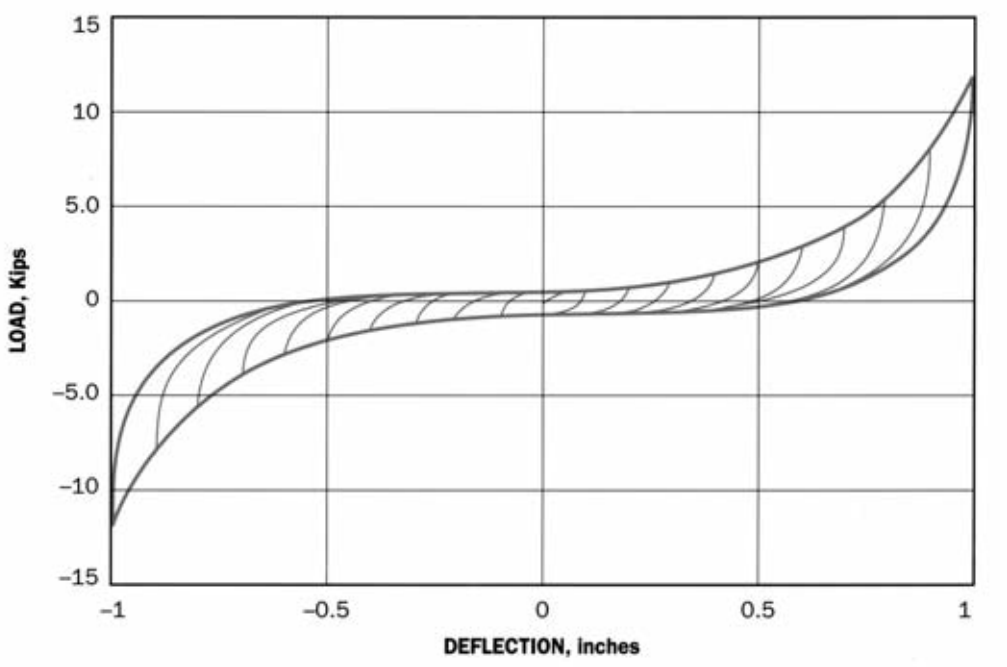


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	135.0 lbs. 0.4 lbs./in.	61,0 kg. 0,07 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	4.8 Kips/in. 12.0 Kips/in.	840 N/mm 2100 N/mm
Stroke	Maximum:	± 1.0 in.	± 25,4 mm

Load vs. Deflection



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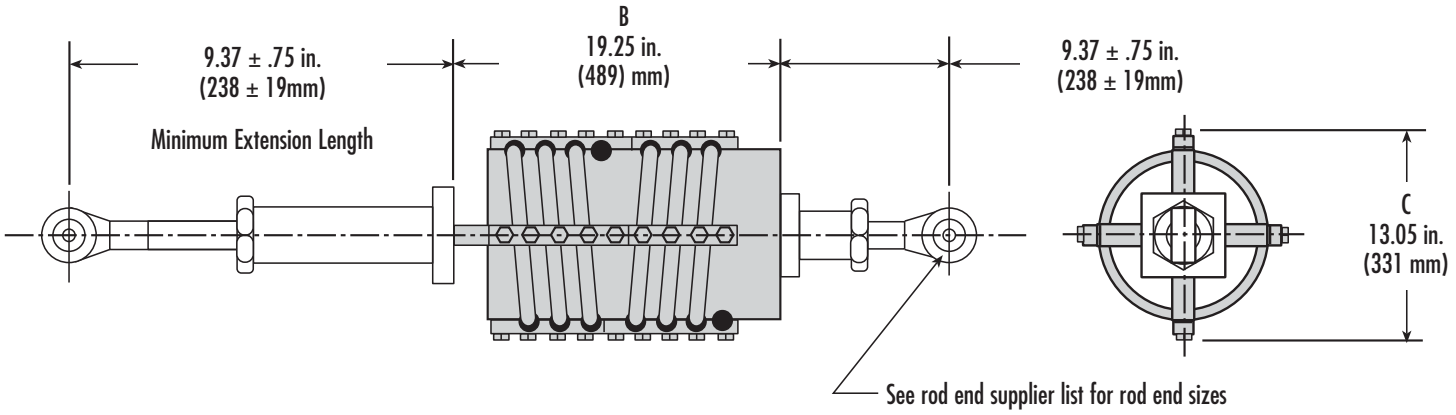
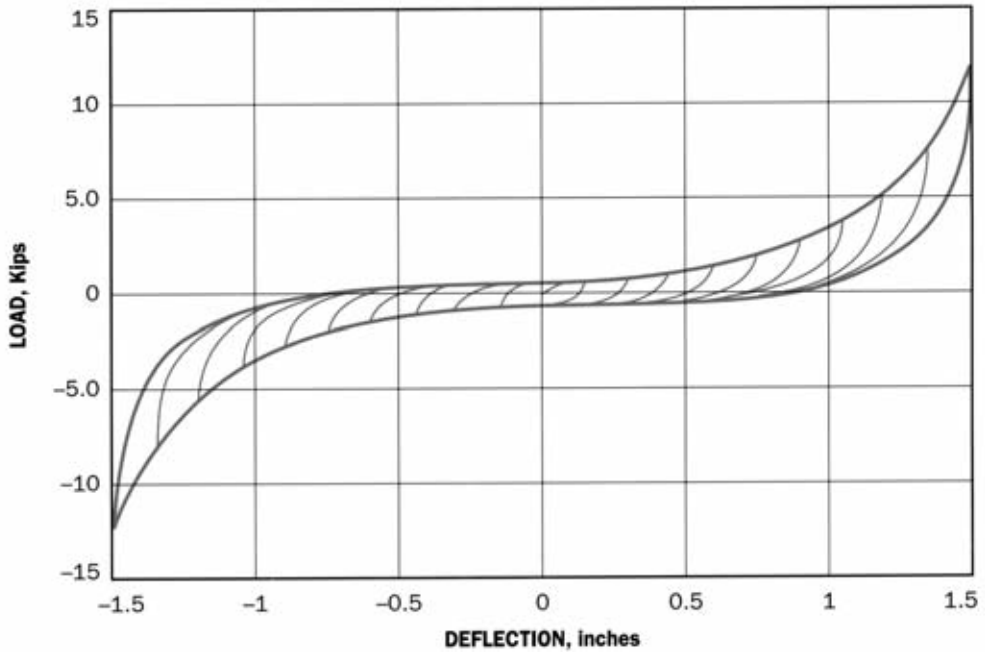


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	187.0 lbs. 0.4 lbs./in.	85,0 kg. 0,07 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	3.2 Kips/in. 8.0 Kips/in.	560 N/mm 1400 N/mm
Stroke	Maximum:	± 1.5 in.	± 38,1 mm

Load vs. Deflection



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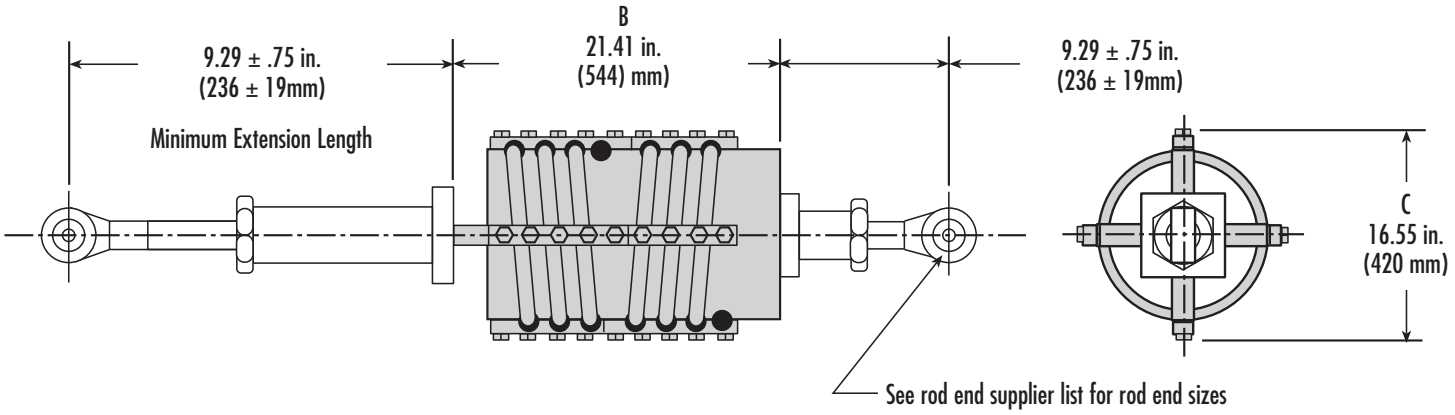
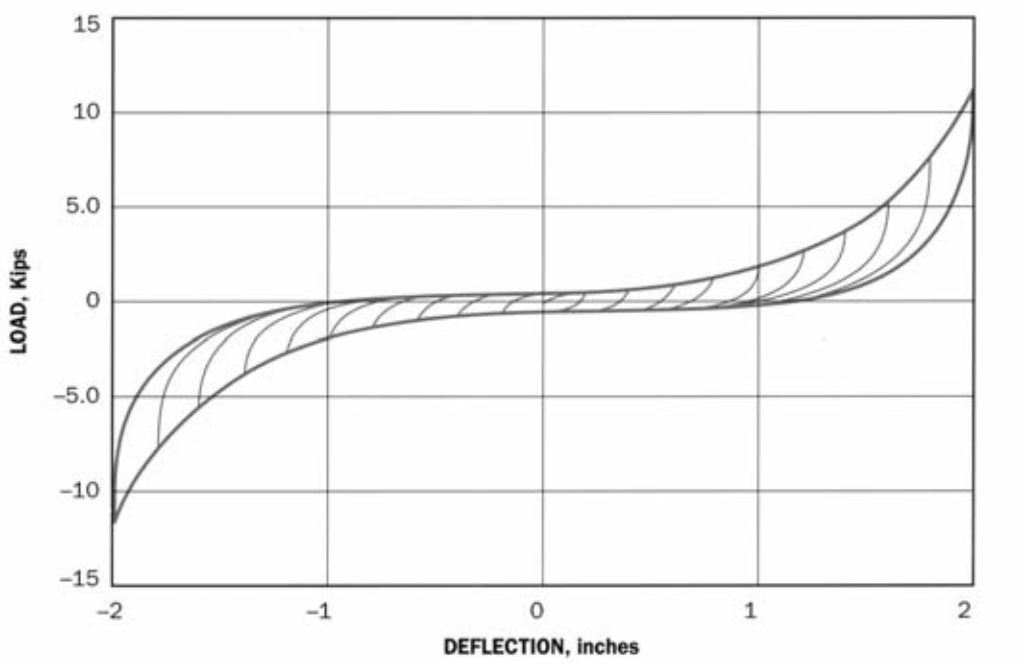


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	260.0 lbs. 0.4 lbs./in.	118,0 kg. 0,07 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	2.4 Kips/in. 6.0 Kips/in.	420 N/mm 1050 N/mm
Stroke	Maximum:	± 2.0 in.	± 50,8 mm

Load vs. Deflection



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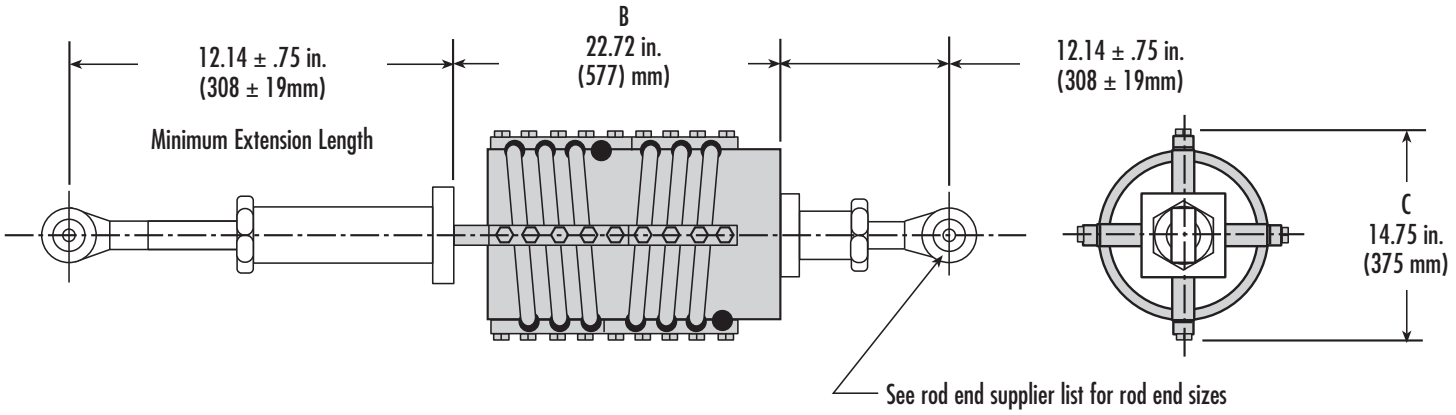
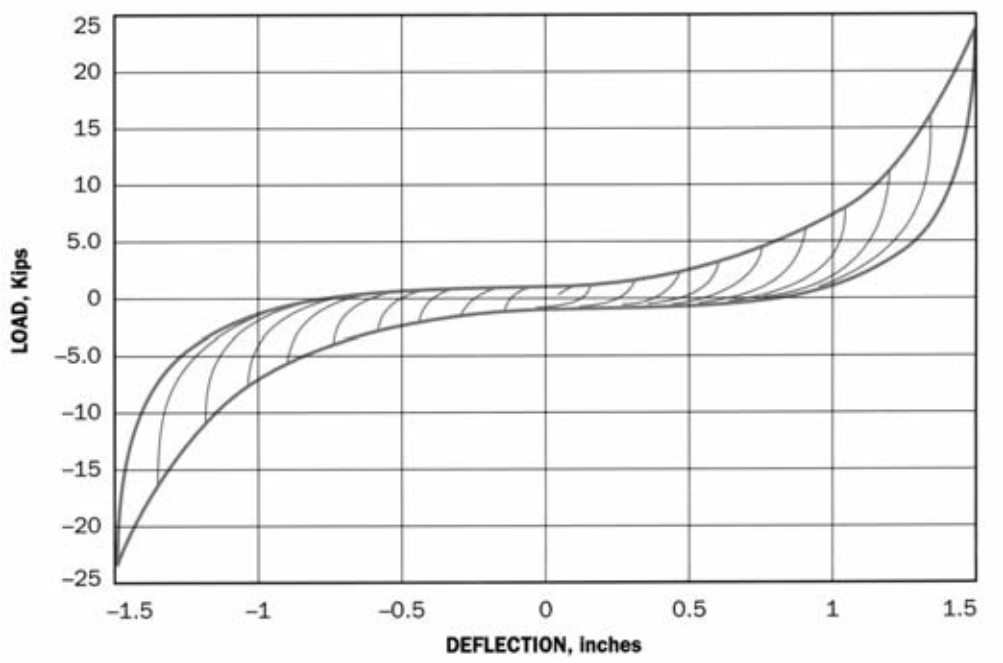


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	332.0 lbs. 1.0 lbs./in.	151,0 kg. 0,02 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	6.4 Kips/in. 16.0 Kips/in.	1120 N/mm 2800 N/mm
Stroke	Maximum:	± 1.5 in.	± 38,1 mm

Load vs. Deflection



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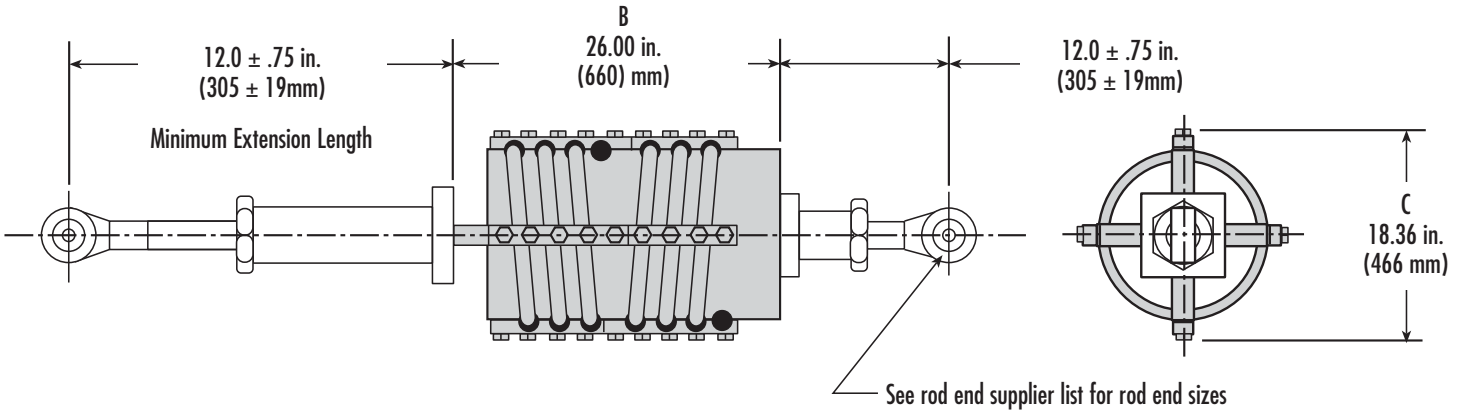
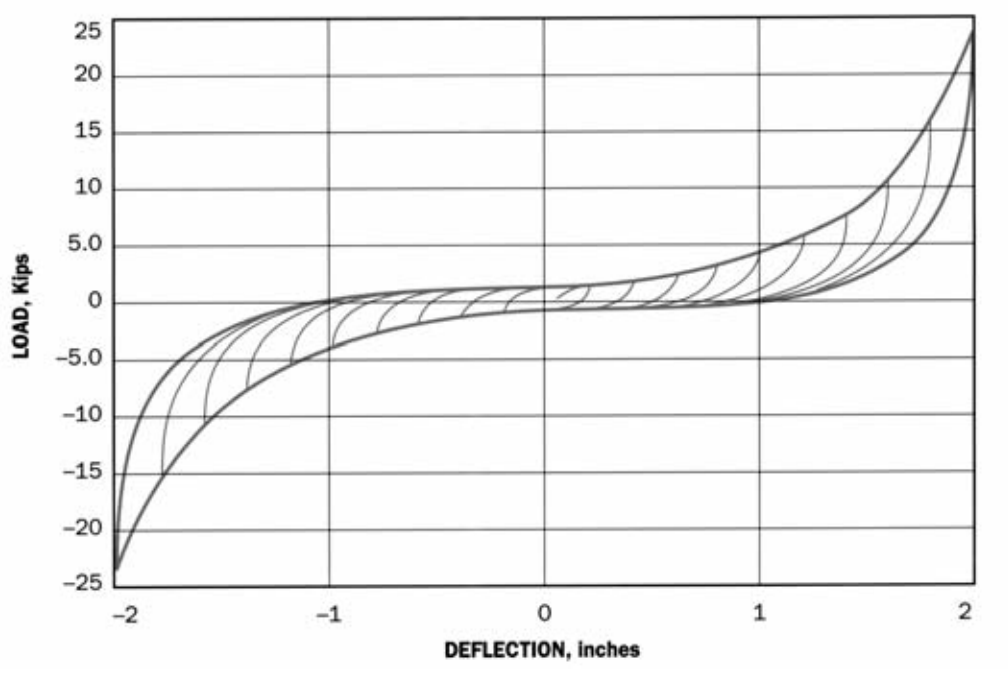


Specifications

Unit Weight	Total Minimum Weight: Additional Weight per Extension Length:	446.0 lbs. 1.0 lbs./in.	202,0 kg. 0,02 kg/cm
Damping	At 100% Stroke: At 10% Stroke:	10 ± 5% 20 ± 5%	
Spring Rate	Mid-Stroke: Max-Stroke:	4.8 Kips/in. 12.0 Kips/in.	840 N/mm 2100 N/mm
Stroke	Maximum:	± 2.0 in.	± 50,8 mm

Load vs. Deflection



Specifications are subject to change without notice. Metric Data and/or actual curve simulations with dimensional data provided upon request.
Contact your local distributor.

Notes

Notes

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