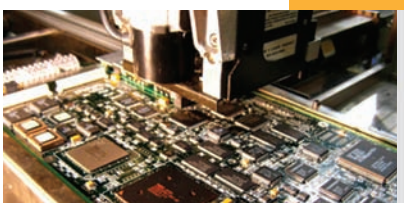
ITT | Koni Enidine

Industrial Gas Springs & Dampers



Engineered for life

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ITT ENIDINE www.enidine.com Email: industrialsales@enidine.com Tech Hot-line: 1-800-852-8508 ext. 111 Fax: 1-716-662-0406

With its world headquarters located in Orchard Park, New York, USA, **ENIDINE Incorporated** 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, Enidine Incorporated continues to strengthen its presence within the marketplace.

Founded in 1966, Enidine Incorporated now has close to 600 employees located throughout the globe in the United States, Germany, France, Japan, China and Korea. 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.

"Enidine is widely recognized as the preferred source for energy absorption and vibration isolation products."

From Original Equipment Manufacturers (OEM) to aftermarket applications, Enidine offers a unique combination of product selection, engineering excellence and technical support to meet even the toughest energy absorption application requirements.

Global Manufacturing and Sales Facilities offer our customers:

- ***Highly Trained Distribution Network***
- ***State-of-the Art Engineering Capabilities***
- ***Custom Solution Development***
- ***Customer Service Specialists***
- ***Multiple Open Communication Channels***

If you are unsure whether one of our standard products meets your requirements, feel free to speak with one of our technical representatives toll-free at **1-800-852-8508**, or contact us via e-mail at **industrialsales@enidine.com.**

Products/Engineering/Technical Support

Enidine continually strives to provide the widest selection of shock absorbers and rate control products in the global marketplace. Through constant evaluation and testing, we bring our customers the most cost effective products with more features, greater performance and improved ease of use.

Gas Spring Guidelines

1. Mount and dismount gas springs according to safety guidelines, as gas springs are not safety parts. To achieve long-life expectancy with reduced fatigue strength, employ sound mounting practices.

2. If gas springs are fitted in applications where failure means risk of health or life, we recommend using additional locking mechanisms. This is a customer responsibility.

3. In FOOD or MEDICAL settings, request food-grade lubricating oils in place of industrial-grade hydraulic fluids, as minor quantities of fluid may leak from gas springs and should not come in contact with food, similar products or with subsoil water.

4. Allow for play in joints. If the mount is subject to vibration, fittings must be secured against loosening.

5. Avoid tilting the piston rod. Long strokes may need additional guidance or specific bearings to avoid bending and tilting. Avoid non-axial forces.

6. Any minor damage, corrosion or paint residue on the piston rod may damage the unit's seal and result in rapid failure. Any product change, adjustment or repair through any third party, without the written consent of Enidine will void any warranty or guarantee.

7. Unless specifically designed for tension loads, gas springs must not be loaded with traction forces.

8. Do not extend or retract gas springs beyond their design specifications.

9. Use unit only within a temperature range of -40°F to 300°F. Contact Enidine if intended use exceeds this range. Do not heat above 300°F.

10. Take into account extreme temperature variances, as it affects extension and compression forces. Force changes approximately 3% per 50°F change in operating temperature.

11. Enidine does not guarantee applications where proposals or drawings do not include parameters or conditions of use. In general, all orders must indicate if springs are used under normal conditions, -40°F to 300°F, or in environments that exceed these conditions (eg: water steam >300°F, chemicals, detergents, etc.).

12. Enidine expects end-users to test gas springs, because it is not possible to simulate or anticipate the complete range of situations where our products may be used.

13. High accelerations or velocities during extension or compression must not overload unit.

14. Store gas springs in a rod-down position to ensure lubrication of seal.

15. For horizontal use, specify Enidine internal floated piston bearing with oil chamber.

16. Mount non-reservoir gas springs rod down because they spend most of their life in a static position.

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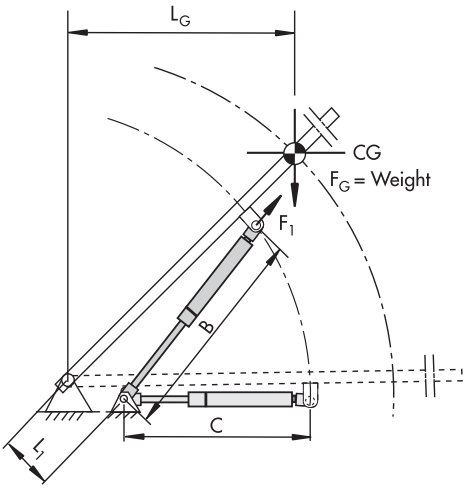
Calculations Used To Determine Required Force F_1 & Minimum Required Stroke Length

Note: Enidine recommends contacting our Technical Help Line for assistance 1-800-852-8508 ext. 111 in selecting the appropriate Gas Spring for your application. Calculations to be used as estimation only.

Min. Stroke $A = B - C$ **Extension Force** $F_1 = \frac{F_G \cdot L_G}{n \cdot L_1} \cdot R$

A:	Stroke of the gas spring	_____IN
B:	Extended length of the gas spring	_____IN
C:	Compressed length of the gas spring	_____IN
F1:	Extension Force of the gas spring	_____LBS
FG:	Weight force of the application in the center of gravity	_____LBS
L1:	Vertical distance bearing/deformation axis F1	_____IN
LG:	Vertical distance bearing/deformation axis FG	_____IN
W:	Weight of the application	_____LBS
n:	Number of gas springs	
R:	Reserve force factor 1.2	1.2



APPLICATION INFORMATION WORKSHEET

Based on the selection illustration below, please give the following information when selecting your gas spring.

Please note dimensions are in: ❑ inches ❑ mm

Center of Gravity (closed position) X1 = _____ Y1 = _____

Handle: (closed position) HX = _____ HY = _____

Opening Angle = _____ degrees

Weight of Door = ❑ lbs. ❑ kg.

Preferred Mounting Location:

Fixed: X3 = _____ Y3 = _____

Moving: X4 = _____ Y4 = _____

❑ Drawings attached

Handle Loads Desired:

To Lift = _____ To Close = _____

Product/Project Name: _____

Estimated Annual Unit Volume: _____

Application Description (environment, cycle life, lift, etc.):

_____

_____

_____

_____

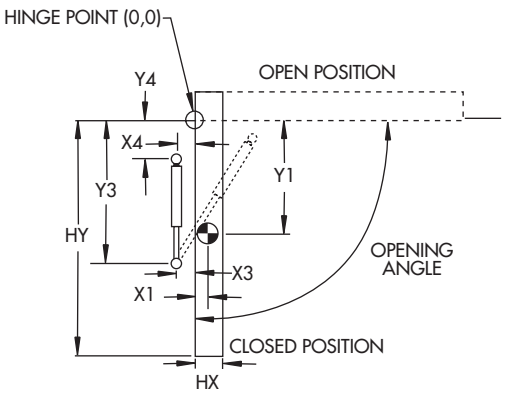
_____

Desired Action: ❑ Autorise ❑ Stay Down/Hold Open ❑ Overcenter ❑ Counterbalance

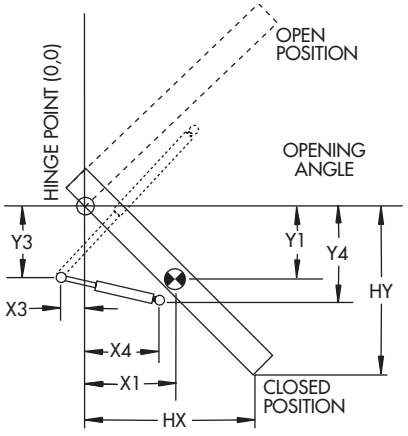
Dampening: ❑ Extension ❑ Compression ❑ Extension & Compression ❑ Heavy ❑ Light

From the drawings below, check the box in front of the example that best matches your application.

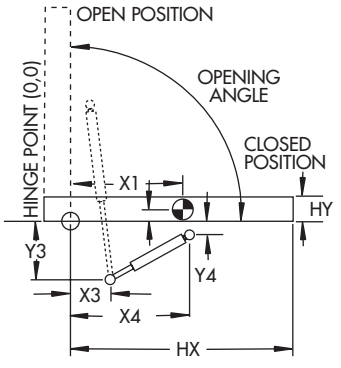
❑ VERTICAL DOOR



❑ OFFSET DOOR



❑ HORIZONTAL DOOR

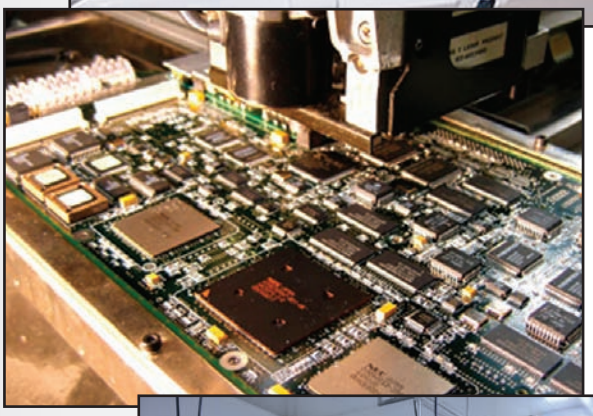


316 Stainless Steel Gas Springs

With 15 years experience, Enidine is now the largest North American manufacturer of stainless steel gas springs and dampers. Enidine has an outstanding reputation for quality, innovative design solutions, exceptional customer service and quick delivery.

Enidine offers a wide variety of 316 stainless steel, adjustable and fixed force gas springs and dampers at competitive market prices.

Quality Marine, Aerospace, Industrial, Food Service and Farm Equipment manufacturers recognize our products and routinely use Enidine Gas Springs as original parts in their product lines.



Typical Applications

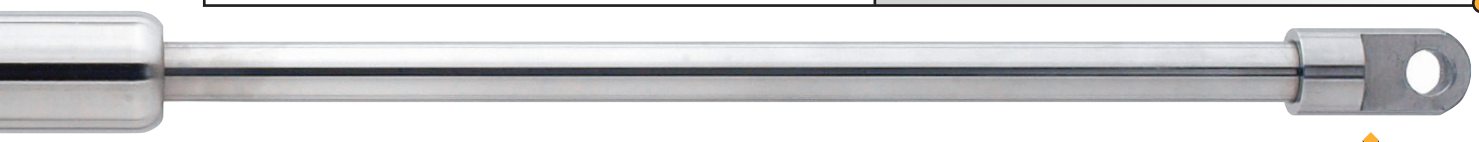
- Automotive and Trucking Equipment
- Food Processing Equipment
- Commercial/Recreational Marine Equipment
- Medical/Pharmaceutical/Semi-conductor
- Business Class Aircraft Interiors/Exteriors
- Commercial Aircraft Interiors/Exteriors
- Naval Equipment/Top-side/Sub-sea
- Defense Weapons Systems
- Military Transport/Vehicles
- Passenger/Locomotive Applications

Gas Springs

Gas Spring End Mounts

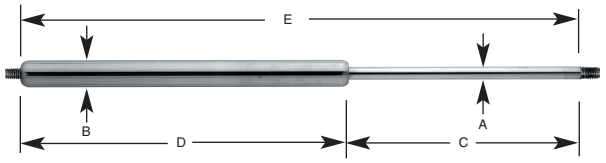
Features and Benefits

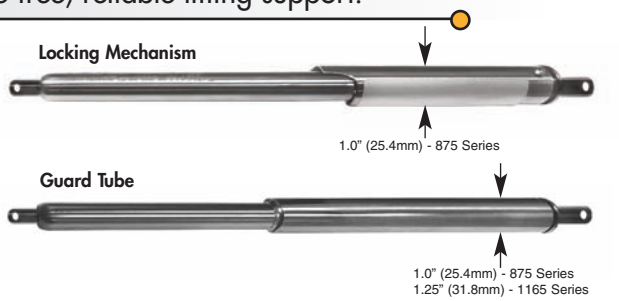
- **Reliable** — Proven life of 125,000 cycles
- **Durable** — Unique Rod Seal & Wiper Design
- **High Quality 316 Stainless Steel**
- **Low Maintenance**
- **Quick Delivery**



Adjustable Gas Springs, Guard Tubes and Locking Springs

High quality 316 stainless steel, adjustable-force gas springs offer a powerhouse of lifting capacity up to 1,200 pounds – no tools required to install, trouble-free, reliable lifting support.





The **Locking Mechanism** accessory mechanically locks the gas spring in the fully extended position providing assurance of safety. Locking mechanisms are available on the 875 Series gas springs. To order add **"09"** to the end of your ordering number.

The **Guard Tube** accessory protects the piston rod from the damage do to incidental impacts. This accessory adds 0.1 inches to the extended length of the gas springs, please review the "E" dimension. Guard Tubes are available on the 875 and 1165 series gas springs. To order add **"08"** to the end of your ordering number.

875 Series

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*Required Force	Base P/N	*[1] End Mounts	
										Cyl End	Rod End
0.375 (9.5)	0.875 (22.2)	2.0 (50.8)	4.75 (120.6)	6.75 (171.4)	8 mm	20-240 (87-1045)	GS102A		2A2A		
		4.0 (101.6)	6.75 (171.4)	10.75 (273)			GS104		2A2A		
		6.0 (152.4)	8.75 (222.2)	14.75 (374.6)			GS106		2A2A		
		8.0 (203.2)	10.75 (273)	18.75 (476.2)			GS108		2A2A		
		10.0 (254)	12.75 (323.8)	22.75 (577.8)			GS1010A		2A2A		
		12.0 (304.8)	14.75 (374.6)	26.75 (679.4)			GS1012		2A2A		
		14.0 (355.6)	16.75 (425.4)	30.75 (781)			GS1014		3A2A		
		16.0 (406.4)	18.75 (476.2)	34.75 (882.6)			GS1016		3A2A		

1165 Series

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*Required Force	Base P/N	*[1] End Mounts	
										Cyl End	Rod End
0.562 (14.3)	1.165 (29.6)	2.0 (50.8)	6.00 (152.4)	8.00 (203.2)	10 mm	75-500 (334-2224)	GS142A		2B3B		
		4.0 (101.6)	8.00 (203.2)	12.00 (304.8)			GS144		2B3B		
		6.0 (125.4)	10.00 (254)	16.00 (406.4)			GS146		2B3B		
		8.0 (203.2)	12.00 (304.8)	20.00 (508)			GS148		2B3B		
		10.0 (254)	14.00 (355.6)	24.00 (609.6)			GS1410A		2B3B		
		12.0 (304.8)	16.00 (406.4)	28.00 (711.2)			GS1412		3B3B		
		14.0 (355.6)	18.00 (457.2)	32.00 (812.8)			GS1414		3B3B		
		16.0 (406.4)	20.00 (508)	36.00 (914.4)			GS1416		3B3B		
		20.0 (508)	24.00 (609.6)	44.00 (1117.6)			GS1420		3B3B		
		24.0 (609.6)	28.00 (711.2)	52.00 (1320.8)			GS1424		3B3B		

1750 Series

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*Required Force	Base P/N	*[1] End Mounts	
										Cyl End	Rod End
0.875 (22.225)	1.75 (44.45)	8.0 (203.2)	12.75 (328.8)	20.75 (527.05)	5/8-11	200-1200 (900-5338)	GS228		3B4B		
		12.0 (304.8)	16.75 (425.4)	28.75 (730.25)			GS2212		4B4B		
		16.0 (406.4)	20.75 (527.05)	36.75 (933.45)			GS2216		4B4B		
		20.0 (508)	24.75 (628.65)	44.75 (1136.65)			GS2220		4B4B		
		24.0 (609.6)	28.75 (730.25)	52.75 (1339.85)			GS2224		4B4B		
		30.0 (762)	34.75 (882.65)	62.75 (1593.85)			GS2230		4B4B		

Ordering Number Example: GS102A352A2AB1B209

- 875 with 2" Stroke
- 35 lbs. F1
- Base Number
- U1EFSS13M095 Cylinder End Mount
- M6BESS328013 Rod End Mount
- Locking Mechanism Accessory

* Required Force (F1) must be within the catalog limits and in increments of 10 lbs. (45N).

*[1] Threaded End Only Designator: E

Notes:
1. Product length tolerance is ± .08 in. (2mm).
2. Force tolerance is + 5% of the nominal force.
3. Maximum piston speed is approximately 12 in./sec. (.3m/sec). Fast operation rates lead to excessive heat build-up resulting in internal seal damage.
4. Gas springs are filled with oil and are under pressure. Please dispose of properly.
5. Contact Enidine factory for modified standards or for engineered specials that meet your exact needs.

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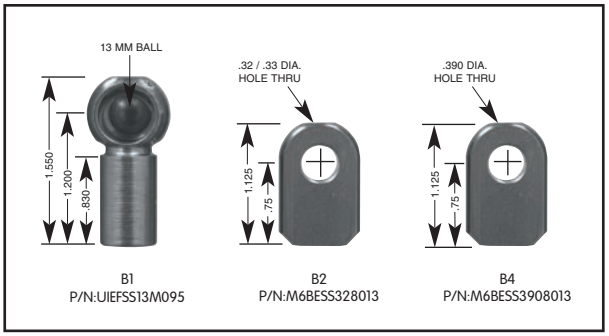
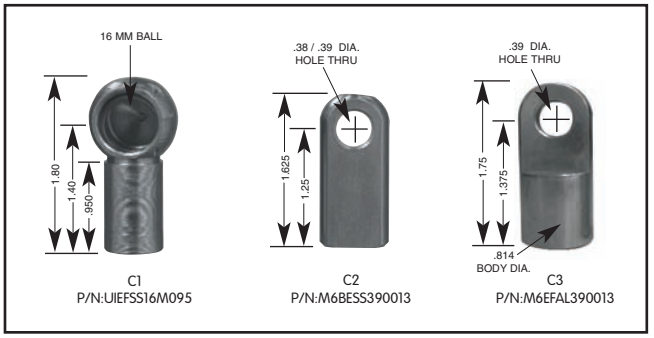
Adjustable Gas Spring Series End Mounts

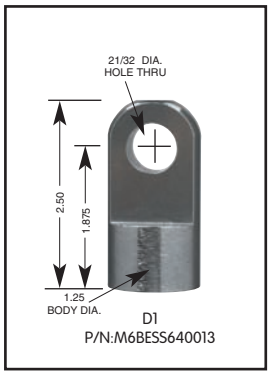
875 Series End Mounts



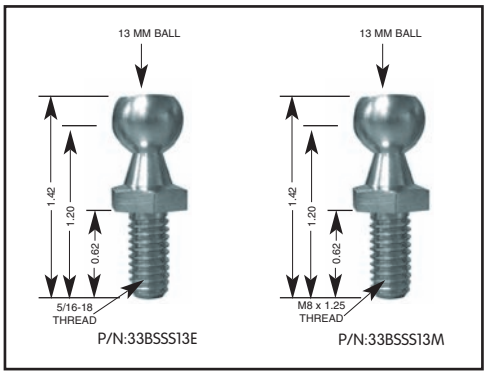
1165 Series End Mounts



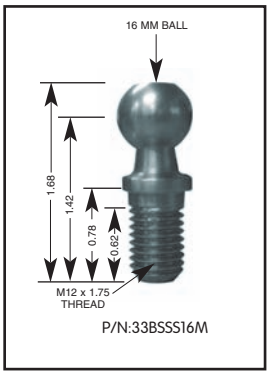
1750 Series End Mounts



875 Ball Stud Mounts



1165 Ball Stud Mounts



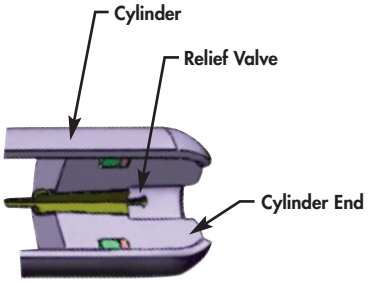
Bleed Kit

Once you release gas from your gas spring, you can't go back! Attaching a kit lets you monitor how much you're releasing as you do it. Each kit contains a pressure gauge, manifold, and fittings to connect to your gas spring. Instructions are included.

875 Series Bleed Kit P/N: GSBK875

1165 Series Bleed Kit P/N: GSBK1165

1750 Series Bleed Kit P/N: GSBK1750



Fittings Only

875 Series Fitting P/N: GSBKADPT875

1165 Series Fitting P/N: GSBKADPT1165

1750 Series Fitting P/N: GSBKADPT1750

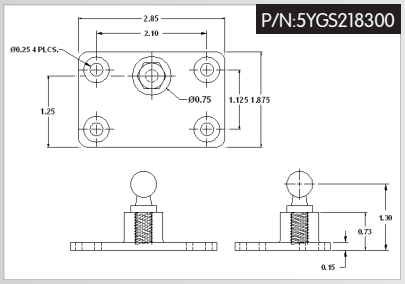
Adjustable Gas Spring Brackets

Enidine offers a variety of brackets for 875 & 1165 Series Gas Springs.
All brackets are made from high quality stainless steel.

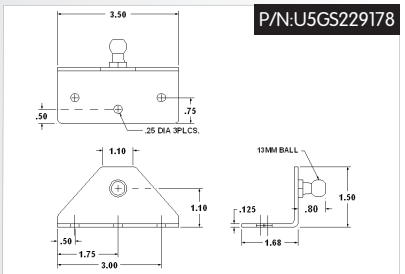
Adjustable Gas Spring Bracket Specifications

875 Brackets

P/N:5YGS218300

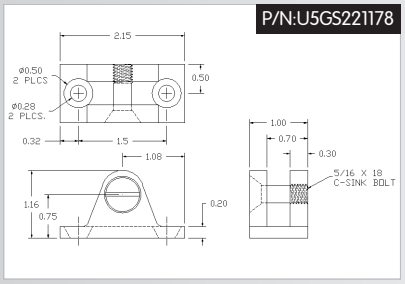


P/N:U5GS229178



Also Available in Zinc: P/N:U5GS22229Z178

P/N:U5GS221178



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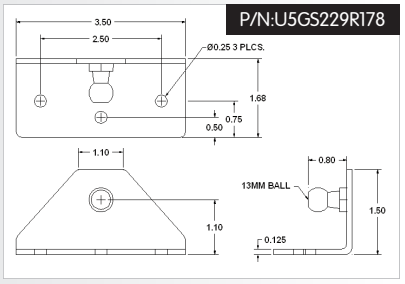

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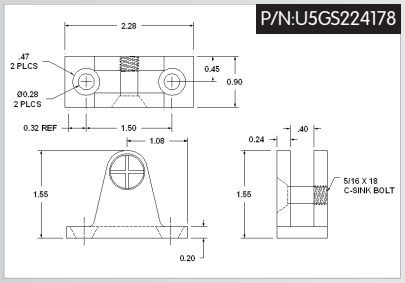

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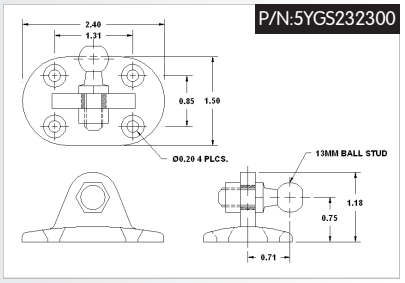

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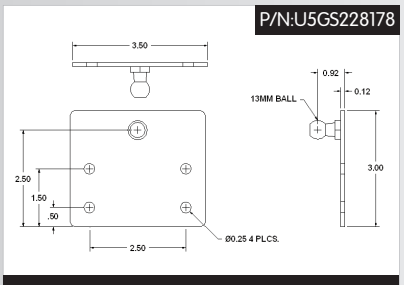
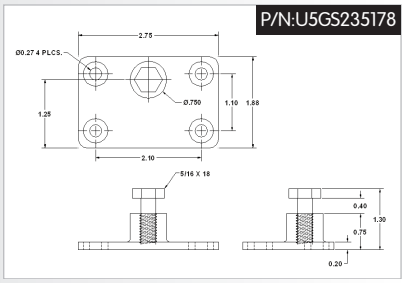


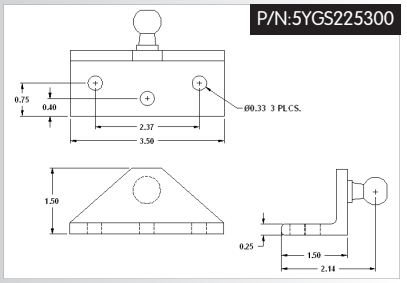
Also Available in Zinc: P/N:U5GS228Z178

P/N:U5GS235178



1165 Brackets

P/N:5YGS225300



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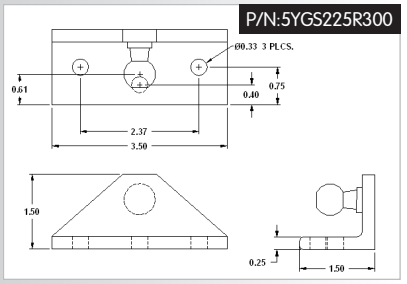

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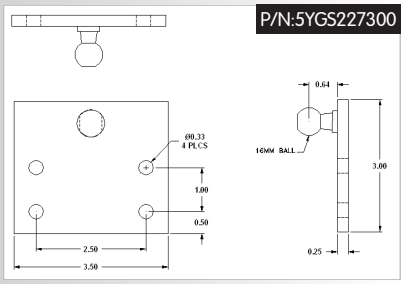

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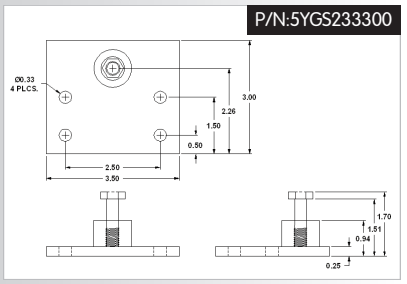

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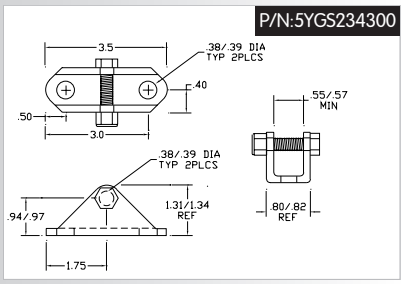
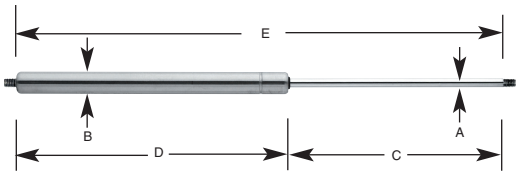


Fixed Force Gas Springs and Locking Springs

High Quality 316 Stainless Steel Fixed Force Gas Springs are self-contained pneumatic devices capable of producing very large forces. Used in opening or closing apparatus either by a vertical or horizontal travel for lifting, counterbalancing and motion control of doors, hatches, safety lids, hoods, cargo doors and access panels.

- Extreme duty; tested range: -40°F to 300°F



The **Locking Mechanism** accessory mechanically locks the gas spring in the fully extended position providing assurance of safety. Locking mechanisms are available on the 750 Series gas springs. To order add **"09"** to the end of your ordering number.

625 Series

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*1 Required Force	Base P/N	*2 End Mounts	
										Cyl End	Rod End
		2.25 (57.2)	3.75 (95.25)	6.0 (152.4)			GS62		1A1A		
		3.0 (76.2)	5.5 (139.7)	8.5 (215.9)			GS63		1A1A		
		4.0 (101.6)	6.5 (165.1)	10.5 (266.7)			GS64		1A1A		
0.250	0.625	6.0 (152.4)	7.5 (190.5)	13.5 (342.9)	M 6X1	5-90	GS66		1A1A		
(6.35)	(15.9)	7.0 (177.8)	8.5 (215.9)	15.5 (393.7)		(22-400)	GS66L		1A1A		
		7.5 (190.5)	9.8 (248.9)	17.0 (431.8)			GS67		2A1A		
		8.0 (203.2)	10.5 (266.7)	18.5 (469.9)			GS68		2A1A		

Note: See page 11 for Series End Mounts and Ball Stud Mounts.

750 Series

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*1 Required Force	Base P/N	*2 End Mounts	
										Cyl End	Rod End
		2.25 (57.2)	3.75 (95.25)	6.0 (152.4)			GS82		*1A1A		
		3.0 (76.6)	5.5 (139.7)	8.5 (215.9)			GS83		*1A1A		
		4.0 (101.6)	6.5 (165.1)	10.5 (266.7)			GS84		*1A1A		
		6.0 (152.4)	7.5 (190.5)	13.5 (342.9)		10-150	GS86		*1A1A		
0.312	0.75	7.0 (177.8)	8.5 (215.9)	15.5 (393.7)	M 6X1	(44-667)	GS86L		*1A1A		
(7.92)	(19.1)	7.5 (190.5)	9.5 (241.3)	17.0 (431.8)			GS87		*2A1A		
		8.0 (203.2)	10.5 (266.7)	18.5 (469.9)			GS88		*2A1A		
		9.6 (243.8)	11.9 (302.3)	21.5 (546.1)			GS810S		*2A1A		
		11.0 (279.4)	13.5 (342.9)	24.5 (622.3)			GS810		*2A1A		

* FOR 750 Series models requiring F1 of 100 lbs or over base number changes to 2A1A and 3A1A accordingly.

*1 Required Force (F1) must be within the catalog limits and in increments of 10 lbs. (45N).

*2 Threaded End Only Designator: E

Ordering Number Example: GS810S1003A1AA2A109

- 750 with 9.6" Stroke
- 100 lbs. F1
- Base Number
- U1HEF10M095 Cylinder End Mount
- UIEFC10M095 Rod End Mount
- Locking Mechanism Accessory

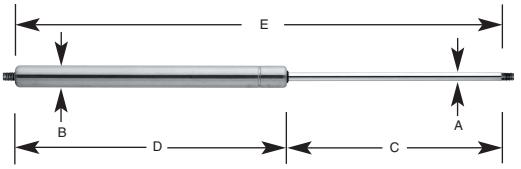
Notes:

1. Product length tolerance is ± .08 in. (2 mm).
2. Force tolerance is + 5% of the nominal force.
3. Maximum piston speed is approximately 12 in. /sec. (.3 m/sec). Fast operation rates lead to excessive heat build-up resulting in internal seal damage.
4. Gas springs are filled with oil and are under pressure. Please dispose of properly.
5. Contact Enidine factory for modified standards or for engineered specials that meet your exact needs.

Fixed Force Tension Gas Springs

High Quality 316 Stainless Steel Fixed Force Tension Gas Springs are self-contained, pneumatic devices capable of producing very large forces. Used in opening or closing apparatus either by a vertical or horizontal travel for lifting, counterbalancing and motion control of doors, hatches, safety lids, hoods, cargo doors and access panels.

- Extreme duty; tested temperature range: -40°F to 300°F



400 Series Tension Springs

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	End Mount Thread	F1 FORCE lbs. (N)	BUILD YOUR ORDERING NUMBER				
							Model & Stroke Code	*Required Force	Base P/N	*1 End Mounts	
										Cyl End	Rod End
		2.0 (50.8)	5.9 (149.8)	7.9 (200.6)			TS42A		S5A1A		
		3.0 (76.2)	7.9 (200.6)	10.9 (276.8)			TS43		S5A1A		
		4.0 (101.6)	9.9 (251.5)	13.9 (353.1)			TS44		S5A1A		
0.312	0.75	6.0 (152.4)	13.9 (353.1)	19.9 (505.5)	M 6X1	10-85	TS46		S5A1A		
(7.92)	(19.1)	7.0 (177.8)	15.9 (403.9)	22.9 (581.7)		(45-380)	TS46L		S5A1A		
		8.0 (203.2)	17.9 (454.7)	25.9 (657.9)			TS48		S5A1A		
		10.0 (254)	21.9 (556.3)	31.9 (810.3)			TS410A		S5A1A		

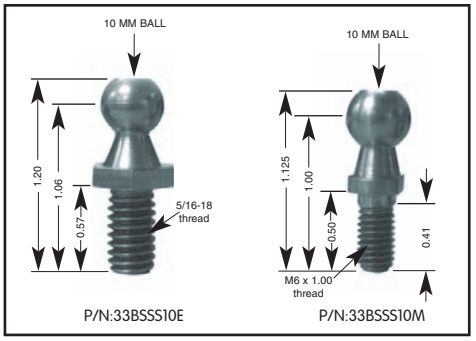
Ordering Number Example: TS410A50S5A1AA2A1

- TS410A — 400 Series with 10.0" Stroke
- 50 — 50 lbs. F1
- S5A1A — Base Number
- A2 — U1HEF10M095 Cylinder End Mount
- A1 — UIEFC10M095 Rod End Mount

* Required Force (F1) must be within the catalog limits and in increments of 10 lbs. (45N).
*1 Threaded End Only Designator: E

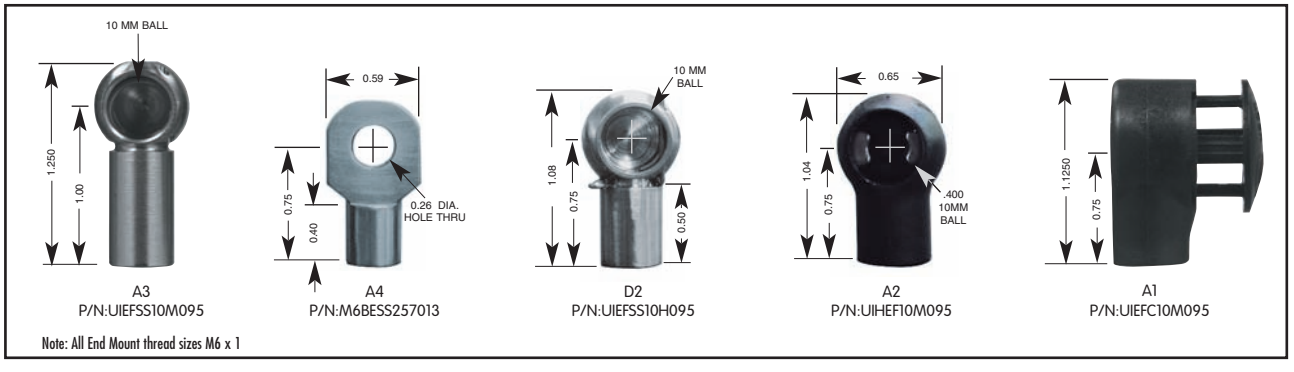
Fixed Force Gas Springs and Damper End Mounts

400, 625, 700 and 750 Ball Stud Mounts



P/N:33BSSS10E P/N:33BSSS10M

400, 625, 700 and 750 Series End Mounts



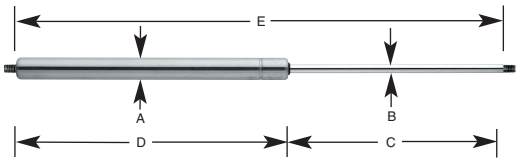
Note: All End Mount thread sizes M6 x 1

Extension Dampers: controlled damping speed while rod extends out of the cylinder.

Compression Dampers: controlled damping speed while rod compresses into the cylinder.

Dual-rate Dampers: equal amount of damping speed in both directions.

Dampers can be custom designed to match specific applications. Call Enidine factory for details.



700 Series Extension Dampers

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	Thread	Max Propelling Force lbs. (N)	BUILD YOUR ORDERING NUMBER		
							Model & Stroke Code	*End Mounts	
								Cyl End	Rod End
		2.25 (57.2)	3.75 (95.3)	6.0 (152.4)			ED7202A1A		
		3.0 (76.2)	5.6 (142.2)	8.6 (218.4)			ED73038A1A		
		4.0 (101.6)	6.6 (176.9)	10.6 (269.2)			ED74047A1A		
0.25	0.75	6.0 (152.4)	7.6 (193)	13.6 (345.4)	M 6X1	85	ED76053A1A		
(6.35)	(19.1)	7.0 (177.8)	8.6 (218.4)	15.6 (392.2)		(380)	ED76L061A1A		
		7.5 (190.5)	9.6 (243.8)	17.1 (434.3)			ED77067A1A		
		8.0 (203.2)	10.6 (269.2)	18.6 (472.4)			ED78075A1A		

700 Series Compression Dampers

A Rod Dia. in. (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	Thread	Max Propelling Force lbs. (N)	BUILD YOUR ORDERING NUMBER		
							Model & Stroke Code	*End Mounts	
								Cyl End	Rod End
		2.25 (57.2)	3.75 (95.3)	6.0 (152.4)			CD7202A1A		
		3.0 (76.2)	5.6 (142.2)	8.6 (218.4)			CD73038A1A		
		4.0 (101.6)	6.6 (176.9)	10.6 (269.2)			CD74047A1A		
0.25	0.75	6.0 (152.4)	7.6 (193)	13.6 (345.4)	M 6X1	85	CD76053A1A		
(6.35)	(19.1)	7.0 (177.8)	8.6 (218.4)	15.6 (392.2)		(380)	CD76L061A1A		
		7.5 (190.5)	9.6 (243.8)	17.1 (434.3)			CD77067A1A		
		8.0 (203.2)	10.6 (269.2)	18.6 (472.4)			CD78075A1A		

700 Series Dual Direction Dampers

A Rod Dia. In (mm)	B Body Dia. in. (mm)	C Stroke in. (mm)	D Compressed Length in. (mm)	E Extended Length in. (mm)	Thread	Max Propelling Force lbs. (N)	BUILD YOUR ORDERING NUMBER		
							Model & Stroke Code	*End Mounts	
								Cyl End	Rod End
		1.85 (46)	4.15 (105.4)	6.0 (152.4)			DD7202A1A		
		2.6 (66.0)	6.0 (152.4)	8.6 (218.4)			DD73038A1A		
		3.6 (91.4)	7.0 (177.8)	10.6 (269.2)			DD74047A1A		
0.25	0.75	5.6 (142.2)	8.0 (203.2)	13.6 (345.4)	M 6X1	85	DD76053A1A		
(6.35)	(19.1)	6.6 (167.6)	9.0 (228.6)	15.6 (392.2)		(380)	DD76L061A1A		
		7.1 (180.3)	10.0 (254)	17.1 (434.3)			DD77067A1A		
		7.6 (193.0)	11.0 (279.4)	18.6 (472.4)			DD78075A1A		

* Threaded End Only Designator: E

Ordering Number Example: CD7202A1AA2A1

- A1 — UIEFC10M095 Rod End Mount
- A2 — U1HEF10M095 Cylinder End Mount
- CD7202A1A — 700 Series Compression Damper with 2.25″ Stroke

Note: See page 11 for Series End Mounts and Ball Stud Mounts.

Fixed Force Gas Springs and Damper Stainless Steel Brackets

400, 625, 700 and 750 Brackets

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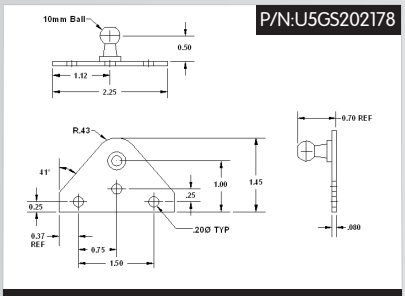

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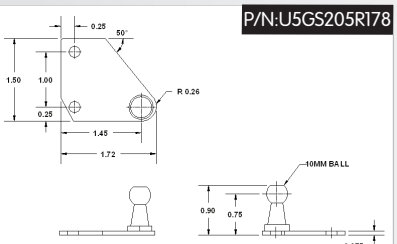
Also Available in Black Powder coat: P/N:U5GS202B178

P/N:U5GS205R178



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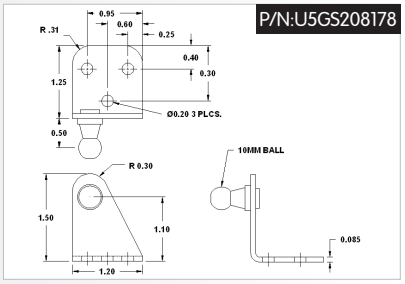

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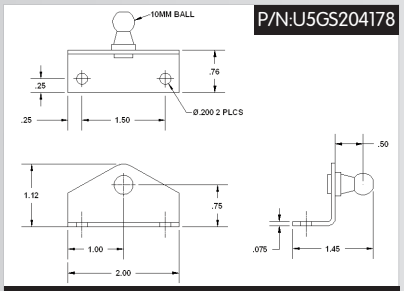

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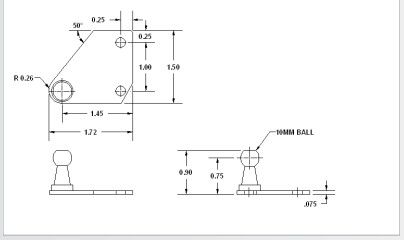
Also Available in Black Powder Coat: P/N:U5GS204B178

P/N:U5GS205L178



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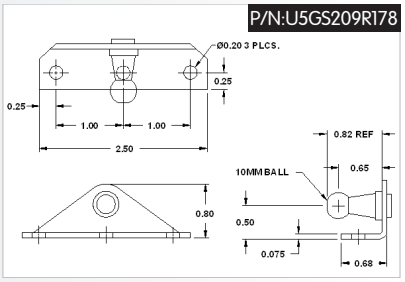

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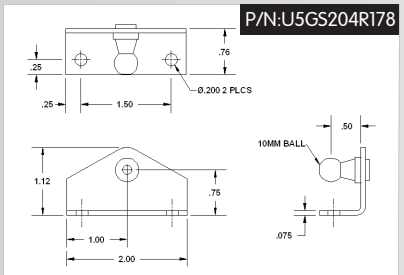

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Also Available in Black Powder coat: P/N:U5GS204RB178

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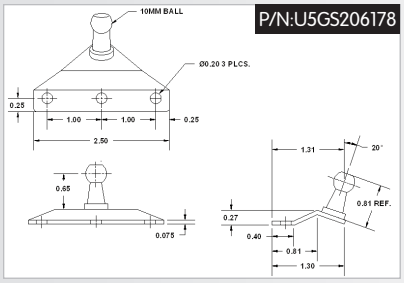

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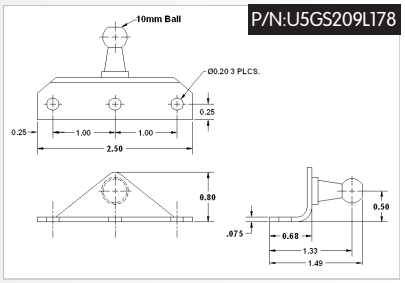

400, 625, 700 and 750 Brackets cont.

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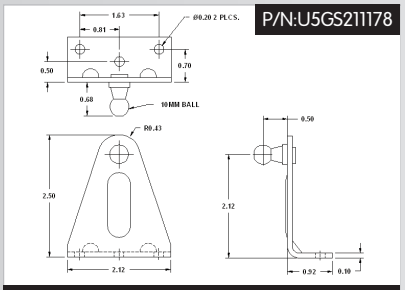

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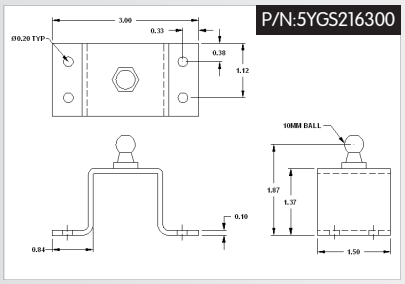
Also Available in Black Powder coat: P/N:U5GS204RB178

P/N:5YGS216300



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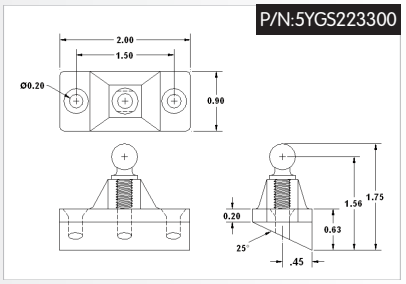

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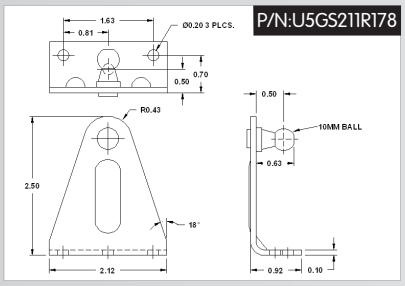

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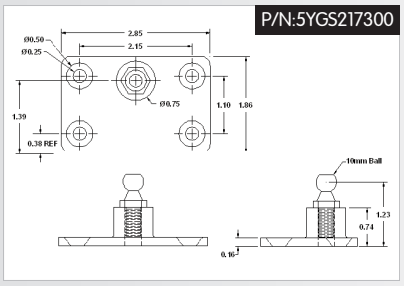

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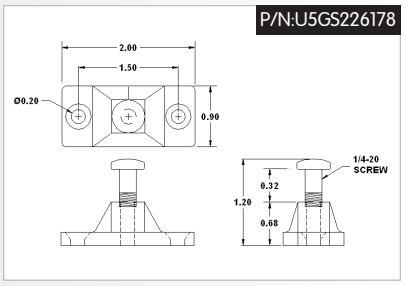

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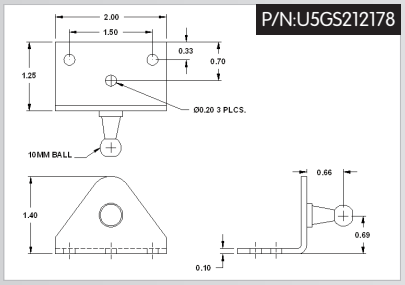

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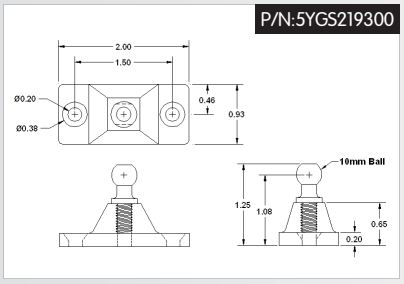

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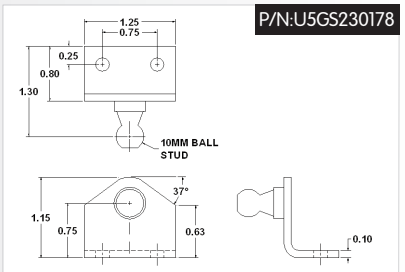

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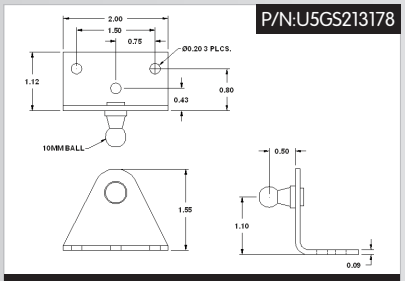

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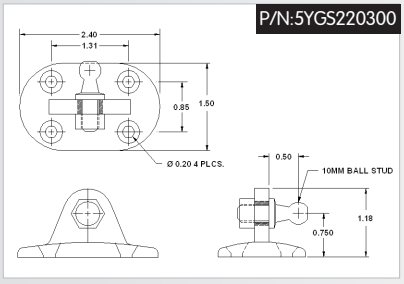

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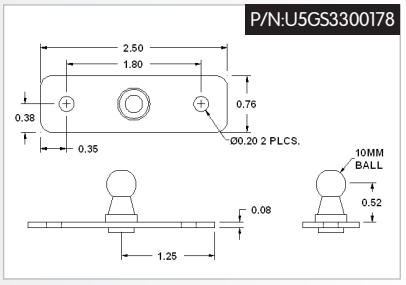

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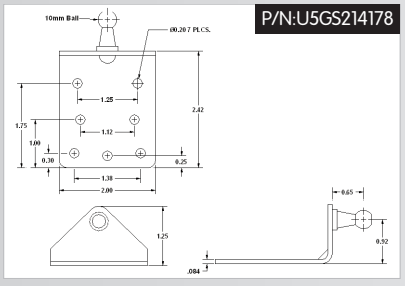

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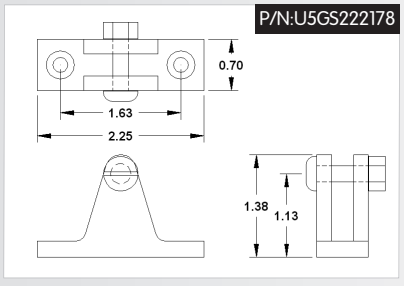


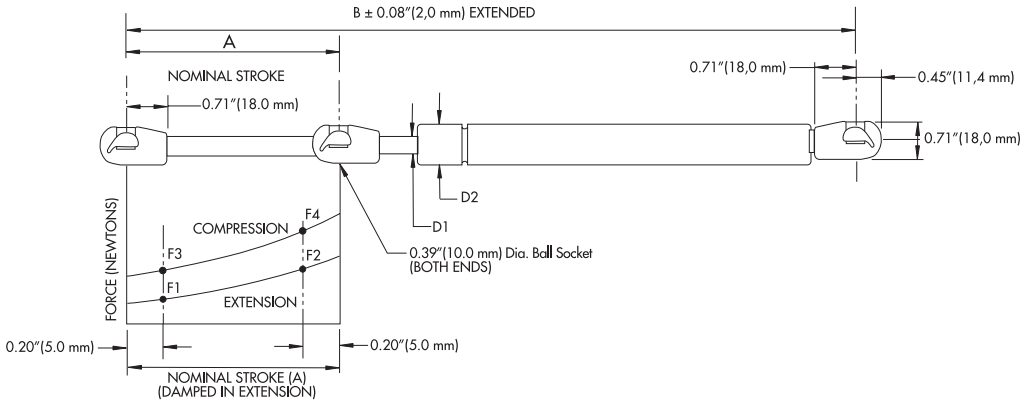
Carbon Steel Gas Springs

Enidine's Carbon Steel Gas Springs offer optimum weight compensation and force support in lifting, moving and adjusting type applications. Our wide range of standard product allows Enidine to offer different strokes and force variations to meet all of your application requirements.

To obtain optimum service life of an Enidine Carbon Steel Gas Spring you should always mount the piston rod pointing down to ensure lubrication of the guide and seal system. Never apply a twisting or lateral force to the gas spring. Enidine offers a series of mounting brackets to assist in limiting any undesirable twist or lateral forces.

Typical Applications

- Machine Guards
- Food Processing Equipment
- Deli Case Displays
- Ergonomic Office Equipment
- Keyboard and Monitor Positioning
- Medical Diagnostic Equipment
- Construction, Recreational, and Agricultural Vehicles
- Material Handling Lift Equipment
- Amusement Rides and Entertainment Equipment



6 X 15 Carbon Steel - Fixed Force Gas Spring

D1 in. (mm)	D2 in. (mm)	A Stroke in. (mm)	B Extended Length in. (mm)	F1 Min/Max Force N (lbs.)	Enidine Base Part No.
.24 (6)	.60 (15)	2.36 (60)	7.68 (195)	50 - 400 (11 - 90)	GS6444IK
		3.15 (80)	9.25 (235)		GS6449IM
		3.94 (100)	10.83 (275)		GS6458IL
		4.72 (120)	12.40 (315)		GS6462II
		5.91 (150)	14.76 (375)		GS6467IK

8 X 18 Carbon Steel - Fixed Force Gas Spring

D1 in. (mm)	D2 in. (mm)	A Stroke in. (mm)	B Extended Length in. (mm)	F1 Min/Max Force N (lbs.)	Enidine Base Part No.
.31 (8)	.71 (18)	2.36 (80)	9.66 (245)	100 - 600 (23 - 135)	GS752614
		3.94 (100)	11.22 (285)		GS752673
		4.72 (120)	12.80 (325)		GS752754
		6.30 (160)	15.95 (405)		GS752819
		7.87 (200)	19.09 (485)		GS752886
		9.84 (250)	23.03 (585)		GS752940

10 X 22 Carbon Steel - Fixed Force Gas Spring

D1 in. (mm)	D2 in. (mm)	A Stroke in. (mm)	B Extended Length in. (mm)	F1 Min/Max Force N (lbs.)	Enidine Base Part No.
.39 (10)	.87 (22)	7.87 (200)	19.01 (483)	150 - 1150 (34 - 259)	GS3543VH
		9.84 (250)	23.03 (585)		GS3563VW
		11.81 (300)	26.97 (685)		GS2675NM
		13.78 (350)	30.90 (785)		GS2685NG
		15.75 (400)	34.84 (885)		GS2694NF

Ordering Part Number Example:
6 x 15 60mm stroke 150N Carbon Gas Spring

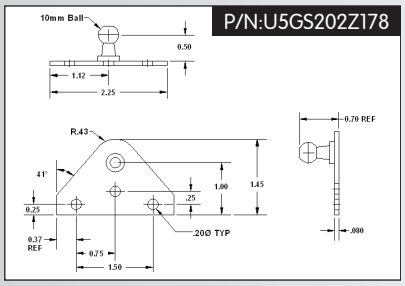
* Required F1 must be within the catalog limits and in increments of 50N (11lbs.)

Notes:
1. Carbon Steel Gas Springs are charged in Newtons vs. Lbs.
2. F_1 Tolerance:
   6x15 = ± 20N
   8x18 = ± 30N
   10x22 = ± 40N
3. Maximum piston speed is approximately 12 in. /sec. (.3 m/sec). Fast-operation rates lead to excessive heat build-up resulting in internal seal damage.
4. Gas springs are filled with oil and are under pressure. Please dispose of properly.
5. Contact Enidine factory for modified standards or for engineered specials that meet your exact needs.

Brackets and Bracket Specifications for Carbon Steel

Mounting Brackets

P/N:U5GS202Z178



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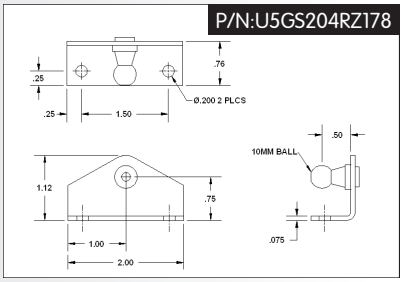

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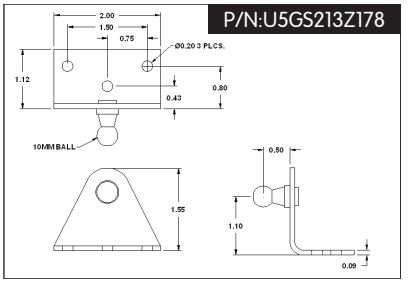

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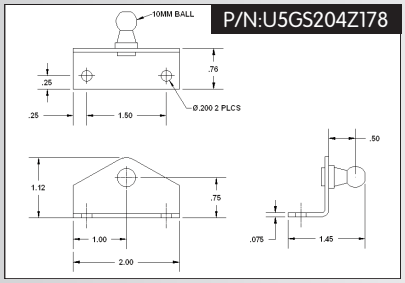

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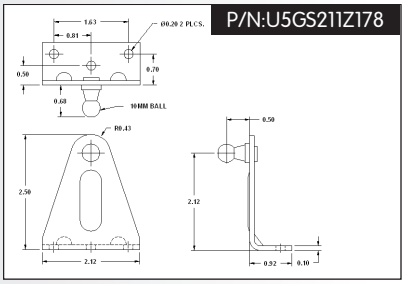

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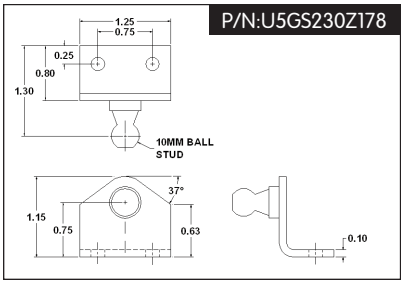

Carbon Steel Gas Spring with Mounting Brackets

How does a gas spring work?

Enidine Gas Springs are self-contained, pneumatic devices capable of producing very large forces (5 to 1,200 lbs.) from a compacted piece. A typical gas spring consists of a shaft connected to a piston head, which moves within a cylinder. The cylinder contains nitrogen at high pressure. The piston has an orifice which allows gas pressure to pass through and act equally on both sides. It is the pressure acting on the shaft cross-sectional area which provides the spring its force.

Should a gas spring be mounted rod up or rod down?

Shaft down is the preferred orientation for mounting a gas spring. Optimum design permits the support to be oriented shaft down through its entire actuation.

To achieve damping or cushion at the end of the gas spring's stroke, the piston assembly inside of the gas spring must travel through oil at the end of the stroke. This oil will pool at the low point of the cylinder. Additionally, the rod seal has maximum life when it is constantly lubricated by the internal oil volume. This reduces seal wear and helps to prevent corrosion.

Should a damper be mounted shaft up or shaft down?

The type of damping designed into the unit determines the mounting orientation of a damper. Extension and compression dampers require specific orientations.

Extension dampers should be mounted shaft down to provide consistent damping for the full stroke. If mounted with the shaft pointing up, the unit may experience inconsistent damping or no damping at all.

Compression dampers should be mounted shaft up to provide consistent damping for the full stroke. If mounted with the shaft pointing down, the unit may experience inconsistent damping or no damping at all. Lubrication of the seal is not a problem due to the high volume of oil contained in a damper.

How does temperature affect the life and performance of gas springs?

Temperature affects gas springs in two ways. As the temperature of the gas spring changes, the internal pressure also changes. As internal pressure changes, so does the output force.

Very high or very low temperatures can adversely affect the gas spring's ability to retain its gas charge. At very high temperatures, the permeability of the seal increases and gas molecules may diffuse through the seal more quickly. Enidine Gas Springs can support and perform reliably at temperatures ranging from -40°F to 300°F.

What is the expected life of a gas spring?

When calculating the approximate life of a gas spring, one must first determine how much force the support can lose before the user considers the support too weak in the application. The time it takes to lose this amount of force is considered to be the life of the gas spring.

All gas springs lose output force over time. The rate at which force loss occurs varies greatly by application. Factors which affect the rate of force loss include size of the support, orientation, number of cycles, ambient temperature, vibration and the geometry of the application. Considering all of the variables, it is very difficult to estimate life accurately without actual testing of the application. Gas springs manufactured at Enidine have surpassed 125,000 strokes in a certified test lab environment.

Enidine reserves the right to change products without notice.

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