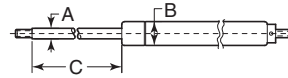




**Fixed Force Gas Springs**



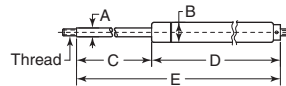
Patented multi-lobe seal significantly reduces gas leakage, tolerates shaft imperfections, vibrations and wide temperature variations. Body is made of heavy gauge steel and shaft is chromium plated steel. All have M6 x 1.0 threads. Three styles of end fittings are available below to fit these gas springs. Must be ordered separately.

Item No.	A	B	C	Compressed Size	Extended Size	P1 Force	Pack Qty.
GAS-151	.24	.59	2.00	5.50	7.50	20	1
GAS-152	.24	.59	2.00	5.50	7.50	40	1
GAS-153	.24	.59	2.00	5.50	7.50	60	1
GAS-154	.24	.59	2.00	5.50	7.50	80	1
GAS-155	.24	.59	2.00	5.50	7.50	100	1
GAS-161	.24	.59	3.15	6.45	9.60	20	1
GAS-162	.24	.59	3.15	6.45	9.60	40	1
GAS-163	.24	.59	3.15	6.45	9.60	60	1
GAS-165	.24	.59	3.15	6.45	9.60	100	1
GAS-171	.24	.59	3.50	8.50	12.00	20	1
GAS-172	.24	.59	3.50	8.50	12.00	40	1
GAS-173	.24	.59	3.50	8.50	12.00	60	1
GAS-175	.24	.59	3.50	8.50	12.00	100	1
GAS-101	.32	.75	3.50	8.40	11.90	20	1
GAS-102	.32	.75	3.50	8.40	11.90	30	1
GAS-103	.32	.75	3.50	8.40	11.90	60	1
GAS-104	.32	.75	3.50	8.40	11.90	90	1
GAS-105	.32	.75	3.50	8.40	11.90	120	1
GAS-111	.32	.75	5.00	10.25	15.25	20	1

Item No.	A	B	C	Compressed Size	Extended Size	P1 Force	Pack Qty.
GAS-112	.32	.75	5.00	10.25	15.25	30	1
GAS-113	.32	.75	5.00	10.25	15.25	60	1
GAS-114	.32	.75	5.00	10.25	15.25	90	1
GAS-115	.32	.75	5.00	10.25	15.25	120	1
GAS-121	.32	.75	6.00	11.00	17.00	20	1
GAS-122	.32	.75	6.00	11.00	17.00	30	1
GAS-123	.32	.75	6.00	11.00	17.00	60	1
GAS-124	.32	.75	6.00	11.00	17.00	90	1
GAS-125	.32	.75	6.00	11.00	17.00	120	1
GAS-131	.32	.75	7.00	12.63	19.63	20	1
GAS-132	.32	.75	7.00	12.63	19.63	30	1
GAS-133	.32	.75	7.00	12.63	19.63	60	1
GAS-134	.32	.75	7.00	12.63	19.63	90	1
GAS-135	.32	.75	7.00	12.63	19.63	120	1
GAS-141	.39	.87	10.00	17.80	27.80	100	1
GAS-142	.39	.87	10.00	17.80	27.80	120	1
GAS-143	.39	.87	10.00	17.80	27.80	150	1
GAS-144	.39	.87	10.00	17.80	27.80	200	1

**Note:** P1 force is extended force Length including end fittings (center to center)

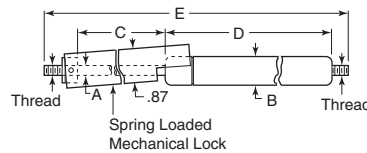
**Adjustable Force Gas Springs**



These adjustable gas springs are the perfect solution for small volume design or replacement applications, as the need to calculate the exact force required is eliminated. Each gas spring is charged at the factory to its maximum force value. Once installed in an application, a simple allen key (included) adjustment can be made to reduce the gas spring force, until the desired application function is reached. Manufactured from specially designed seals, nitrotec finished rods and powder epoxy paint finished tubes for maximum life and service. To order a complete gas spring, select a spring from the table below, then specify which end fittings you need. (Two end fittings per gas spring.)

Item No.	A	Cyl. Dia. B	Stroke C	D	E	Supplied Force Lbs.	Thread Size	Pack Qty.
GAS-1	.23	.59	2.36	3.94	6.30	90	M5 x .8	1
GAS-2	.23	.59	3.94	5.51	9.45	90	M5 x .8	1
GAS-3	.31	.71	3.94	6.46	10.39	146	M6 x 1.0	1
GAS-4	.31	.71	5.91	8.43	14.33	146	M6 x 1.0	1
GAS-5	.31	.71	7.87	10.39	18.27	146	M6 x 1.0	1
GAS-7	.39	.91	11.81	13.39	25.20	270	M8 x 1.25	1

**Econoloc Gas Springs**

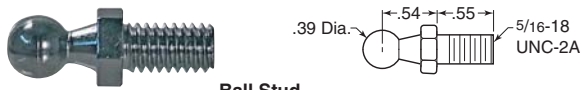


Econoloc gas springs eliminate the need for separate safety rods in critical lift-assist applications. They automatically lock when fully extended, protecting the operator from potential injury in the unlikely event of gas spring failure through overload or misuse. The Econoloc is manually released by applying thumb pressure to the designated area of the locking shroud, allowing the gas spring to compress in a controlled manner. A single Econoloc gas spring can be used in conjunction with GAS-3, 4, and 5 listed above.

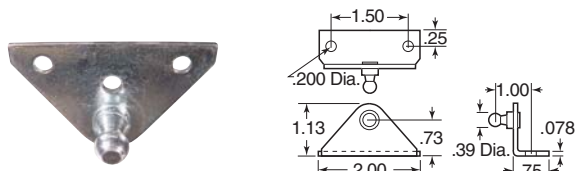
Item No.	A	Cyl. Dia. B	Stroke C	D	E	Supplied Force Lbs.	Thread Size	Pack Qty.
GAS-43	.31	.71	3.94	5.47	10.39	146	M6 x 1.0	1
GAS-44	.31	.71	5.91	7.44	14.33	146	M6 x 1.0	1
GAS-45	.31	.71	7.87	9.41	18.27	146	M6 x 1.0	1



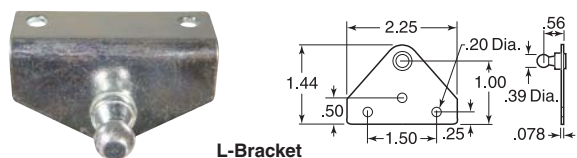
**Gas Springs Mounting Brackets**



**Ball Stud**



**Flat Bracket**



**L-Bracket**

All are zinc plated steel designed for gas springs.

Item No.	Description	Pack Qty.	Item No.	Description	Pack Qty.	Item No.	Description	Pack Qty.
GAS-301	Ball Stud	1	GAS-302	Flat Bracket	1	GAS-303	L-Bracket	1

**Gas Springs Fat Blade End Fittings**



Die cast zinc.

Item No.	A	Pack Qty.
GAS-211	.205 - .210	1
GAS-212	.260 - .265	1
GAS-213	.325 - .330	1
GAS-214	.405 - .410	1

**Metal End Fitting**



Item No.	Description	Max. P1 (Lbs.)	Pack Qty.
GAS-202	Metal End Fitting	200	1

**Air Springs Single Convolute Bellows Type**

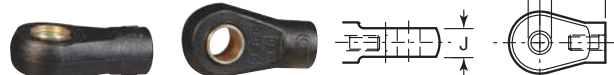


Air springs are used in many applications from scissor lifts to presses, compressors and electronic equipment. As an actuator, air springs provide either linear or angular motion. These air springs offer a favorable stroke-to-compressed height ratio when compared to air cylinders, and can accept a wider variety of actuation media, such as

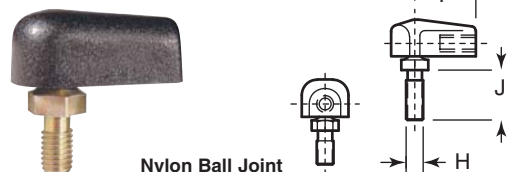
air, water, nitrogen or anti-freeze. Air springs can simultaneously isolate harmful vibrations while regulating load height, as well as allow constant vibration isolation under varying loads. These springs are constructed of fabric-reinforced Wingprene or natural rubber, with corrosion-protected end retainers. Complete installation and operating instructions are enclosed with each air spring. Do not use air springs where load torsion may occur. Springs do not have internal bumpers—do not exceed rated maximum load range. Listed stroke distances are measured from the compressed height of the spring to the overall height at maximum inflation

**Note:** Isolator Load Range is based on 100 psi. To obtain a lower limit (i.e. minimum load at 20 psi) divide the smaller value by 5.

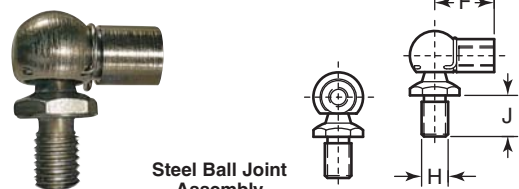
**Gas Springs End Fittings**



**Nylon Eyelet End Fitting**



**Nylon Ball Joint Assembly**



**Steel Ball Joint Assembly**

Item No.	Fits Cyl. Dia.	E mm	F mm	H	J mm	Internal Thread Size	Pack Qty.
<b>Nylon Eyelet End Fitting</b>							
GAS-10	.59	6	17	—	8	M5 x .8	1
GAS-12	.71	8	21	—	10	M6 x 1.0	1
<b>Steel Eyelet End Fitting</b>							
GAS-14	.91	8	21	—	10	M8 x 1.25	1
<b>Nylon Ball Joint Assembly</b>							
GAS-20	.59	—	17	M5 x .8	10	M5 x .8	1
GAS-23	.71	—	17.5	M8 x 1.25	12.5	M6 x 1.0	1
<b>Steel Ball Joint Assembly</b>							
GAS-30	.71	—	18	M8 x 1.25	12	M6 x 1.0	1
GAS-32	.91	—	30	M8 x 1.25	16	M8 x 1.25	1

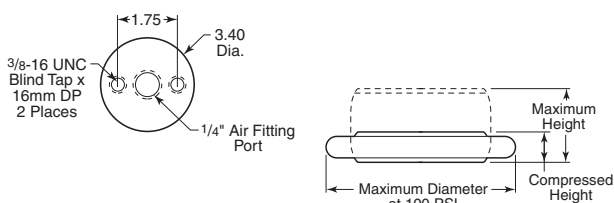
\*GAS-14 is steel

**Gas Spring Plastic End Fitting**



End fittings for gas springs. All are M6 x 1.0 thread.

Item No.	Description	Max. P1 (Lbs.)	Pack Qty.
GAS-201	Plastic End Fitting	150	1



Compressed height of 1.8". Bottom retainer is the same as upper retainer illustrated minus the 1/4" air fitting port.

Item No.	Max. Stroke	Force Lbs. at a Stroke of:			Isolator Load Range	Design Height Range (In.)	Max. Dia. @ 100 psi	Max. Height	Pack Qty.
		1"	2"	Max. Stroke					
AS-100	2.0	1,250	550	550	1,100 - 1,370	2.5 - 3	5.7	3.8	1
AS-101	3.0	1,500	1,200	500	975 - 1,560	2.5 - 4	6.0	4.8	1



Adjustable Shock Absorbers

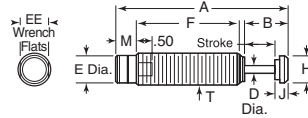
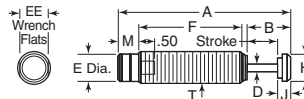


Table with columns: Item No., Ace, Stroke, A, B, D, E, F, H, J, M, T, EE, Effective Weight Lbs., Energy/Cycle In. Lbs., Energy/Hr. In. Lbs./Hr., Pack Qty. Rows include ACE-0035, ACE-0150, ACE-0225, ACE-0600, ACE-0900 in both Inch and Metric units.

Soft Contact/Self-Compensating



Soft contact is suggested when a low initial reaction force is required at impact. Self-compensating is utilized to obtain maximum energy absorption capacity. Both are recommended when a range of loads and impact velocities are encountered in the same application. Temperature range 32 to 150 degree Fahrenheit. Oil type ACE #5.

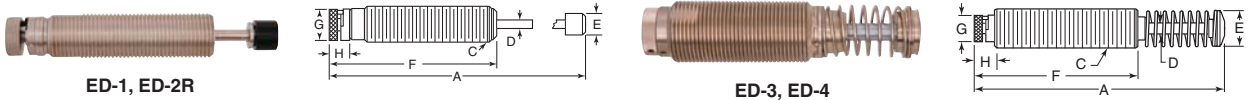
Table with columns: Item No., Ace, Stroke, A, B, D, E, F, H, J, M, T, EE, Effective Weight Lbs. (Soft Contact, Self-Compensating), Energy/Cycle In. Lbs., Energy/Hr. In. Lbs./Hr., Pack Qty. Rows include ACE-1901 through ACE-1907.

# SHOCK ABSORBERS & ACCESSORIES



Determine load weight, impact velocity (in./sec.), propelling force (if any), cycles per hour, and stroke (in.) required. Calculate total energy (in.-lbs.) and total energy per hour (In.-lbs./hr.) to select proper shock.

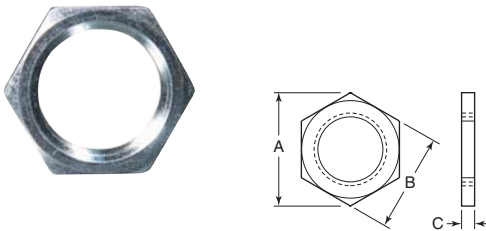
### Small Adjustable Hydraulic Series



Use with pallet stops, air cylinders, rolling doors, and other various manufacturing applications. Standard corrosion resistant nickel plating. Adjustments are made by turning the 180 degree adjustment knob. Adjustments are locked with a setscrew. One hex jam nut supplied with each shock. Additional mounting accessories are available below.

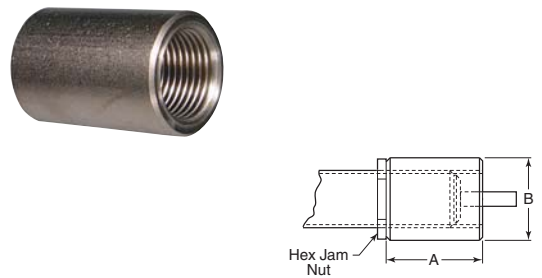
Item No.	Bore Size In.	Stroke inches	Max. In.-Lbs. Per Cycle	Max. In.-Lbs. Per Hour	Max. Shock Force Lbs.	Nominal Coil Spring Force			Max. Propelling Force Lbs.	A	C	D	E	F	G	H	Pack Qty.
						Extension Lbs.	Compression Lbs.										
ED-1	.28	.5	250	284,000	775	1.25	2.75	150	4.35	3/4-16	.190	.50	3.31	.63	.67	1	
ED-2R	.50	1.0	650	622,000	1,000	3.00	6.00	300	5.62	1-12	.250	.62	4.09	.88	.56	1	
ED-3	.63	1.0	1700	808,000	2,500	9.00	13.00	500	6.12	1 1/8-12	.375	1.13	3.81	1.10	.55	1	
ED-4	.63	2.0	3400	986,000	2,500	5.00	13.00	500	8.74	1 1/8-12	.375	1.13	5.43	1.10	.55	1	

### Hex Jam Nuts for Self-Compensating Hydraulic Series



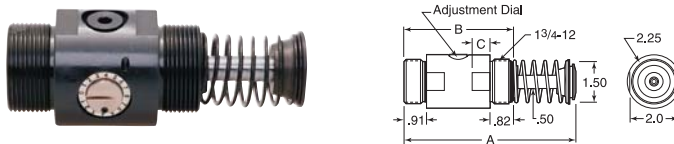
Item No.	A	B	C	Shock Absorber	Pack Qty.
ED-100	1.08	.94	.18	ED-1	1
ED-200	1.30	1.13	.18	ED-2R	1
ED-700	.58	.50	.09	ED-7	1
ED-800	.72	.63	.12	ED-8	1
ED-900	1.01	.88	.31	ED-9	1

### Stop Collars



Item No.	A	B	Shock Absorber	Pack Qty.
ED-101	1.50	1.00	ED-10	1
ED-202	1.75	1.50	ED-11	1
ED-303	2.50	1.69	ED-3, ED-4	1

### Low Profile Adjustable Hydraulic Series



Larger capacity for use in automotive robotics, glass forming equipment, foundry conveyor lines, manufacturing rail carts, and numerous other applications. Recessed 360 degree adjustment setting knob on side of shock absorber for ease of mounting. Mounting accessories available below.

Item No.	Bore Size In.	Stroke inches	Max. In.-Lbs. Per Cycle	Max. In.-Lbs. Per Hour	Max. Shock Force Lbs.	Nominal Coil Spring Force			Max. Propelling Force Lbs.	A	B	C	Pack Qty.
						Extension Lbs.	Compression Lbs.						
ED-5	.75	1	2300	1,120,000	3,000	11.00	15	650	5.69	3.63	.42	1	
ED-6	.75	2	4600	1,475,000	3,000	7.00	15	650	7.69	4.63	.50	1	

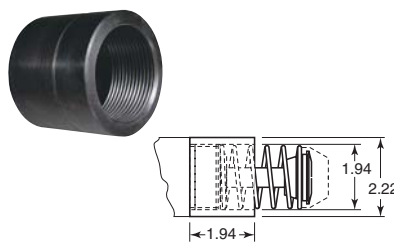
### Lock Ring



For use with shock absorbers shown above.

Item No.	Shock Absorber	Pack Qty.
ED-500	ED-5, ED-6	1

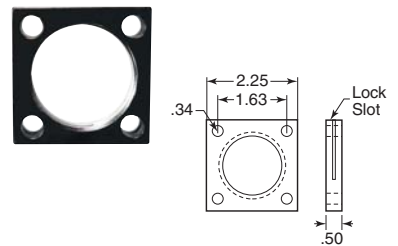
### Stop Collar



For use with shock absorbers shown above.

Item No.	Pack Qty.
ED-505	1

### Square Flange

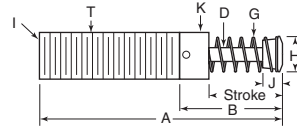


For use with shock absorbers shown above. Use 1/16" bolt.

Item No.	Shock Absorber	Pack Qty.
ED-600	ED-5, ED-6	1



These shock absorbers are fully threaded for ease of installation. Outer body made of steel with black oxide finish. Piston rod is made of high tensile steel, hardened and chrome plated. Rod end button is made of hardened steel with black oxide finish. Return spring is zinc plated. For maximum heat dissipation, do not paint shock absorber. Operating temperature is 10 degrees to 158 degrees Fahrenheit. Oil type is ATF. Lock nut included with each shock absorber.



Self-Compensating

Used to obtain maximum energy absorption capacity. Impact velocity range is 0.5 to 16.5 ft./sec.

Adjustable

Adjustable from either front or rear. Impact velocity range is 0.5 to 16.5 ft./sec.

Low Velocity Adjustable

Adjustable from either front or rear. Impact velocity range is 0.6 to 1.5 ft./sec.

Table with columns: Item No., Ace, Stroke, A, B, D, G, H, I, J, K, T, Effective Weight Lbs., Energy/Cycle In. Lbs., Energy/Hr. In. Lbs./Hr., Pack Qty. Rows include Self-Compensating / Soft Contact, Adjustable, and Low Velocity Adjustable models.

Adjustable Miniature Shock Absorber

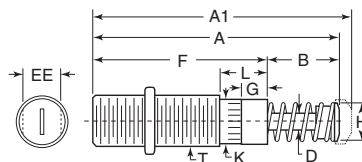


Table with columns: Item No., Ace, Stroke, A, A1, B, D, F, H, K, L, Q, T, EE, Effective Weight Lbs., Energy/Cycle, Energy/Hr., Pack Qty. Row: ACE-AS381 AS3/8X1 1 4.75 5 1.38 0.31 3.37 0.75 0.87 0.93 0.5 1-12 0.88 10 - 1,250 600 600,000 1

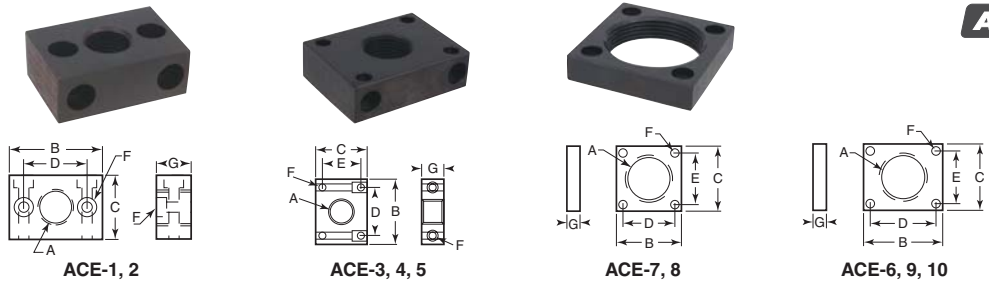


Flanged Stop Collars



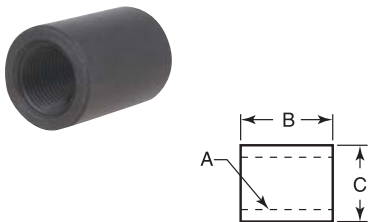
Item No.	Ace	Thread Size	B	C	D	F	G	H	Used With	Pack Qty.
ACE-45	250-0642	1 1/4-12	1.63	1.50	2.50	.88	.25	.282	ACE-3325-1 thru 3350-4, 115	1
ACE-46	250-0072	1 1/4-12	1.50	2.25	3.25	.88	.25	.282	ACE-4525-1 thru 4575-3, 119, 120	1

Mounting Blocks



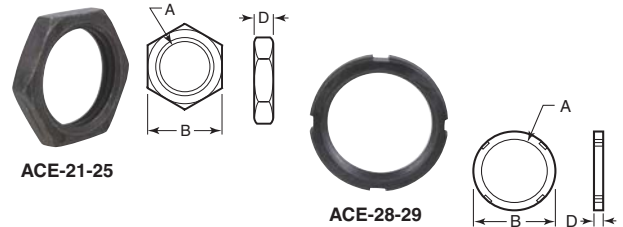
Item No.	Ace	A	B	C	D	E	F	G	Used With	Pack Qty.
ACE-1	250-0306	3/8-32	1.50	1.00	1.00	—	#8-32 Soc. Hd. Screw	.56	ACE-1024, 1025, 1026	1
ACE-2	250-0308	1/2-20	1.50	1.00	1.00	—	#8-32 Soc. Hd. Screw	.56	ACE-0035, 1075	1
ACE-3	250-0318	9/16-18	1.81	1.37	1.38	1.00	#10-32 Soc. Hd. Screw	.62	ACE-1150, 1151, 1152, 1901, 1902, 1903, 1904	1
ACE-4	250-0401	3/4-16	2.00	1.50	1.50	1.12	#10-32 Soc. Hd. Screw	.62	ACE-0225, 2225, 1225, 1226, 1227, 3001, 3002, 3003, 3004	1
ACE-5	250-0402	1-12	2.00	1.50	1.50	1.12	#10-32 Soc. Hd. Screw	.62	ACE-1600, 1601, 1602, 0600, 0900, 2600, 2900, 6501, 6502, 6503, 6504, 9251, 9252, 9253, 9254	1
ACE-6	250-0016	1 1/4-12	2.00	1.50	1.62	1.12	.219	.38	ACE-3325-1 thru 3350-4, 105, 107, 115	1
ACE-7	250-0023	1 1/4-12	2.25	2.25	1.62	1.62	.340	.50	ACE-4525-1 thru 4575-3, 109, 110, 111, 119, 120	1
ACE-8	250-0028	2 1/2-12	3.50	3.50	2.75	2.75	.410	.62	ACE-6450-2, 112, 113, 121	1
ACE-9	250-0633	1 1/8-12	2.00	1.75	1.62	1.12	.219	.38	ACE-106, 108, 116, 118	1
ACE-10	250-0024	1 1/4-12	3.00	2.25	2.38	1.62	.340	.50	ACE-4525-1 thru 4575-3, 107, 108, 111, 115	1

Stop Collars



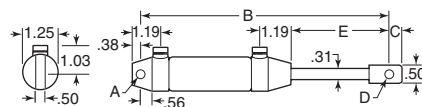
Item No.	Ace	A	B	C	Used With	Pack Qty.
ACE-11	250-0406	3/8-32	.81	.56	ACE-1024, 1025, 1026	1
ACE-12	250-0407	1/2-20	.81	.62	ACE-0035, 1075	1
ACE-13	250-0271	9/16-18	.75	.69	ACE-1150, 1151, 1152, 1901, 1902, 1903, 1904	1
ACE-14	250-0403	3/4-16	1.25	1.00	ACE-0225, 2225, 1225, 1226, 1227, 3001, 3002, 3003, 3004	1
ACE-15	250-0275	1-12	1.75	1.25	ACE-1600, 1601, 1602, 0600, 0900, 2600, 2900, 6501, 6502, 6503, 6504, 9251, 9252, 9253, 9254	1

Lock Nuts



Item No.	Ace	A	B	D	Used With	Pack Qty.
ACE-21	250-0404	3/8-32	.50	.09	ACE-1024, 1025, 1026	1
ACE-22	250-0405	1/2-20	.62	.13	ACE-0035, 1075	1
ACE-23	250-0231	9/16-18	.88	.31	ACE-1150, 1151, 1152, 1901, 1902, 1903, 1904	1
ACE-24	250-0399	3/4-16	1.00	.25	ACE-0225, 2225, 1225, 1226, 1227, 3001, 3002, 3003, 3004	1
ACE-25	250-0400	1-12	1.25	.25	ACE-1600, 1601, 1602, 0600, 0900, 2600, 2900, 6501, 6502, 6503, 6504, 9251, 9252, 9253, 9254	1
ACE-28	250-0631	1 1/8-12	—	.25	ACE-116, 118	1
ACE-29	250-0042	2 1/2-12	—	.37	ACE-121	1

Hydraulic Speed/Feed Controllers



Item No.	Ace	Stroke	A	B	C	D	E	Tension		Compression		Pack Qty.
								Maximum Propelling Force Lbs.	Minimum Force to Operate Through Full Stroke Lbs.	Maximum Propelling Force Lbs.	Minimum Force to Operate Through Full Stroke Lbs.	
ACE-3200	DVC-2	2.00	.25	9.81	.25	.25	2.93	450	9.5	450	9.5	1
ACE-3400*	DVC-4	4.00	.25	13.81	.25	.25	4.93	450	—	375	—	1
ACE-3600*	DVC-6	6.00	.25	17.81	.25	.25	6.93	450	—	300	—	1

\*External mechanical stops required



Request Info

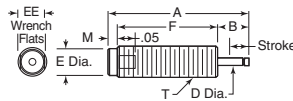
1-800-453-1692

[www.aboveboardelectronics.com](http://www.aboveboardelectronics.com)

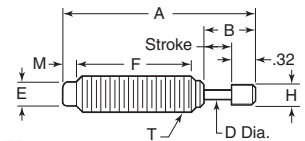




Self-Compensating



ACE-1150 - 1602, 1010, 1011, 1005M - 1601M



ACE-1024 - 1075

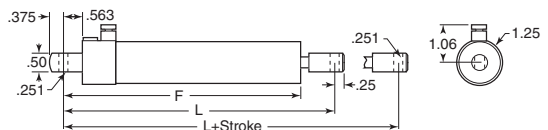
Small size allows for high energy absorption in confined spaces. The self-compensating design accommodates a variety of load conditions. Threaded outer bodies. Temperature range 32-150 degree Fahrenheit. Not compatible with petroleum based fluids. Silicone type oil.

Item No.	Ace	Stroke	A	B	D	E	F	H	M	EE	T	Effective Weight Lbs.	Energy/Cycle In. Lbs.	Energy/Hr. In. Lbs./Hr.	Pack Qty.	
<b>Inch</b>																
ACE-1024*	MC25L	.26	2.27	.57	.13	.33	1.30	.30	.20	—	3/32	1.5 - 5.0	20	200,000	1	
ACE-1025*	MC25	.26	2.27	.57	.13	.33	1.30	.30	.20	—	3/32	4 - 12	20	200,000	1	
ACE-1026*	MC25H	.26	2.27	.57	.13	.33	1.30	.30	.20	—	3/32	10 - 30	20	200,000	1	
ACE-1075*	MC75-3	.40	2.76	.72	.13	.41	1.74	.30	.218	—	1/2-20	6 - 80	75	250,000	1	
ACE-1150	MC150	.50	3.41	.69	.19	.46	2.44	—	.28	525	3/16-18	2 - 22	175	300,000	1	
ACE-1151	MC150H	.50	3.41	.69	.19	.46	2.44	—	.28	525	3/16-18	20 - 200	175	300,000	1	
ACE-1152	MC150H2	.50	3.41	.69	.19	.46	2.44	—	.28	525	3/16-18	150 - 450	175	300,000	1	
ACE-1225	MC225	.50	3.81	.69	.25	.66	2.84	—	.28	632	3/4-16	5 - 55	360	400,000	1	
ACE-1226	MC-225H	.50	3.81	.69	.25	.66	2.84	—	.28	632	3/4-16	50 - 500	360	400,000	1	
ACE-1227	MC225H2	.50	3.81	.69	.25	.66	2.84	—	.28	632	3/4-16	400 - 2,000	360	400,000	1	
ACE-1600	MC600	1.00	5.58	1.24	.31	.89	4.06	—	.28	838	1-12	20 - 300	1200	600,000	1	
ACE-1601	MC600H	1.00	5.58	1.24	.31	.89	4.06	—	.28	838	1-12	250 - 2,500	1200	600,000	1	
ACE-1602	MC600H2	1.00	5.58	1.24	.31	.89	4.06	—	.28	838	1-12	880 - 5,000	1200	600,000	1	
<b>Metric</b>																
ACE-1005M	MC5M1-B	4.1	34.0	8.2	1.5	4.1	21.1	3.3	2.5	—	M5 x 0.5	.22 - 2.0	6	18,000	1	
ACE-1009M1	MC9M1	5.0	36.0	10.0	2.0	5.0	21.1	4.7	2.5	—	M6 x 0.5	1.35 - 7.0	9	18,000	1	
ACE-1009M2	MC9M2	5.0	36.0	10.0	2.0	5.0	21.1	4.7	2.5	—	M6 x 0.5	1.75 - 9.0	9	18,000	1	
ACE-1010	MC10EL	5.0	38.6	10.0	2.0	6.4	21.1	—	4.8	—	M8 x 0.75	.75 - 6.0	11	35,000	1	
ACE-1011	MC-10EH	5.0	38.6	10.0	2.0	6.4	21.1	—	4.8	—	M8 x 0.75	1.5 - 11	11	35,000	1	
ACE-1025M	MC25M	6.6	57.7	14.5	3.3	8.4	33.0	7.6	5.0	—	M10 x 1	1.5 - 5.0	20	200,000	1	
ACE-1026M	MC25MH	6.6	57.7	14.5	3.3	8.4	33.0	7.6	5.0	—	M10 x 1	4 - 12	20	200,000	1	
ACE-1027M	MC25MH-NB	6.6	57.3	14.5	3.3	8.4	33.0	7.6	5.0	—	M10 x 1	10 - 30	20	200,000	1	
ACE-1030M1	MC30M1	8.1	54.0	13.2	2.5	6.5	34.3	6.5	4.1	—	M8 x 1	1.0 - 4.3	31	50,000	1	
ACE-1030M2	MC30M2	8.1	54.0	13.2	2.5	6.5	34.3	6.5	4.1	—	M8 x 1	3.97 - 11.9	31	50,000	1	
ACE-1030M3	MC30M3	8.1	54.0	13.2	2.5	6.5	34.3	6.5	4.1	—	M8 x 1	11.02 - 33.0	31	50,000	1	
ACE-1075M**	MC75M3-880	10.2	67.7	—	3.3	10.4	44.2	—	4.6	—	M12 x 1	6 - 80	75	250,000	1	
ACE-1150M	MC150M	12.7	86.6	17.4	4.8	11.6	62.0	11.9	7.1	6.4	M14 x 1.5	2 - 22	175	300,000	1	
ACE-1150ME	MC150ME	12.7	86.6	17.4	4.8	11.6	62.0	11.9	7.1	6.4	M14 x 1.5	2 - 22	175	300,000	1	
ACE-1151M	MC150MH	12.7	86.6	17.4	4.8	11.6	62.0	11.9	7.1	6.4	M14 x 1.5	20 - 200	175	300,000	1	
ACE-1152M	MC150MH2	12.7	86.6	17.4	4.8	11.6	62.0	11.9	7.1	6.4	M14 x 1.5	150 - 450	175	300,000	1	
ACE-1225M	MC225M	12.7	96.8	17.6	6.3	16.7	72.1	16.7	7.1	8.0	M20 x 1.5	5 - 55	360	400,000	1	
ACE-1227M	MC225MH2	12.7	96.8	17.6	6.3	16.7	72.1	16.7	7.1	8.0	M20 x 1.5	400 - 2,000	360	400,000	1	
ACE-1600M	MC600M	25.4	141.8	30.9	7.9	22.7	103.1	23.0	7.1	9.6	M25 x 1.5	20 - 300	1,200	600,000	1	
ACE-1601M	MC600MLH	25.4	141.8	30.9	7.9	22.7	103.1	23.0	7.1	9.6	M25 x 1.5	250 - 2,500	1,200	600,000	1	

\*Includes button

\*\*880-No button, standard rod

Adjustable Double Acting Hydraulic Series



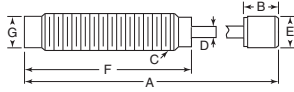
Used in food processing, refrigeration cases, material handling, air cylinders and various other manufacturing applications. Determine required stroke (in.) control direction desired (compression, tension or both) and maximum propelling force in the desired direction to select appropriate shock absorber. Dampening force adjustments are made by rotating adjustment knob 180 degrees. Bore size is .625".

Item No.	Item No.	Stroke Max. Inches	In.-Lbs. Per Cycle	Max. In.-Lbs. Per Hour	Max. Propelling Force Extension Lbs.	Max. Propelling Force Compression Lbs.	F	L	Pack Qty.
—	ED-120	2	1800	650,000	450	450	6.87	7.81	1
ED-13*	ED-130	4	3300	850,000	450	375	8.87	9.81	1
ED-14	ED-140	6	4500	1,050,000	450	300	10.87	11.81	1
ED-150*	ED-15	8	5200	1,250,000	450	200	12.87	13.81	1
—	ED-16	10	6250	1,450,000	450	125	14.87	15.8	1

\*Free flow in tension mode, adjustable in compression mode



Self-Compensating Hydraulic Series

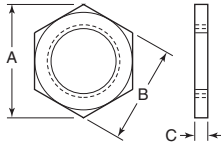
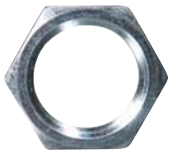


Used with medical equipment, packaging machinery, air cylinders, turnstiles, and various other manufacturing applications. Standard corrosion resistant nickel plating. One hex jam nut included. Additional mounting accessories are available below. All have hydraulic stop at full stroke, therefore it is important to position the shock absorber such that full stroke is used to prevent undesirable bottoming against the positive stop.

Item No.	Bore Size In.	Stroke inches	Max. In.-Lbs. Per Cycle	Max. In.-Lbs. Per Hour	Max. Shock Force Lbs.	Nominal Coil Spring Force		Impact Velocity In./Sec.	Total Energy In./Lbs.	Max. Propelling Force Lbs.	UNF						Pack Qty.	
						Extension Lbs.	Compression Lbs.				A	B	C	D	E	F		G
ED-7A*	.18	.25	25	50,000	200	0.60	1.25	60-125	5-25	45	2.25	.38	3/8-32	.10	.27	1.61	.26	1
ED-7B*	.18	.25	25	50,000	200	0.60	1.25	25-110	5-25	45	2.25	.38	3/8-32	.10	.27	1.61	.26	1
ED-7C*	.18	.25	25	50,000	200	0.60	1.25	10-60	5-25	45	2.25	.38	3/8-32	.10	.27	1.61	.26	1
ED-8A	.28	.62	235	300,000	625	1.00	2.50	20-145	10-190	200	4.22	.47	1/2-20	.16	.44	3.20	.43	1
ED-8B	.28	.62	235	300,000	625	1.00	2.50	10-70	10-160	200	4.22	.47	1/2-20	.16	.44	3.20	.43	1
ED-9A	.28	.62	235	300,000	625	1.00	2.50	20-145	10-190	200	4.22	.47	3/16-18	.16	.44	3.20	.43	1
ED-9B	.28	.62	235	300,000	625	1.00	2.50	10-70	10-160	200	4.22	.47	3/16-18	.16	.44	3.20	.43	1
ED-10A	.44	.87	485	475,000	850	2.00	6.80	20-145	25-400	360	5.13	.47	3/4-16	.19	.50	3.76	.64	1
ED-10B	.44	.87	485	475,000	850	2.00	6.80	5-50	25-350	360	5.13	.47	3/4-16	.19	.50	3.76	.64	1
ED-11A	.50	1	800	622,000	1,250	3.00	6.00	10-145	20-140	500	5.57	.47	1-12	.25	.62	4.04	.89	1
ED-11B	.50	1	800	622,000	1,250	3.00lbs	6.00	10-35	5-40	500	5.57	.47	1-12	.25	.62	4.04	.89	1

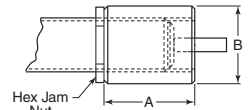
\*Not nickel plated

Hex Jam Nuts for Self-Compensating Hydraulic Series



Item No.	A	B	C	Shock Absorber	Pack Qty.
ED-100	1.08	.94	.18	ED-1	1
ED-200	1.30	1.13	.18	ED-2R	1
ED-700	.58	.50	.09	ED-7	1
ED-800	.72	.63	.12	ED-8	1
ED-900	1.01	.88	.31	ED-9	1

Stop Collars for Self-Compensating Hydraulic Series

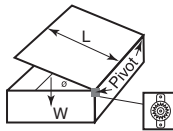


Item No.	A	B	Shock Absorber	Pack Qty.
ED-707*	.75	.58	ED-7	1
ED-808	1.00	.75	ED-8	1
ED-909	1.00	.69	ED-9	1
ED-101	1.50	1.00	ED-10	1
ED-202	1.75	1.50	ED-11	1

\*Hex shape .50 across flats

Rotary Dampers

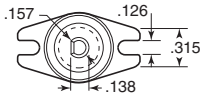
For smooth mechanical motions. Used in VCR loading mechanisms, glovebox doors, window shades, copy machine lids or anywhere controlled rotary motion is needed. Two way damping controls the movement in both directions. Maximum cycle rate is 10 cycles per minute. Nominal torque ratings are measured at 20 RPM and 73 degrees Fahrenheit. Torque is affected by temperature. Calculate nominal torque using the formula shown.



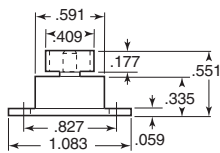
$T = (L/2) \times (W) \times (\cos \theta)$   
 Where: T=Nominal Torque  
 L=Length from pivot to the end of the lid  
 $\theta$ =The angle between the panel and horizontal  
 W=The free weight of the lid



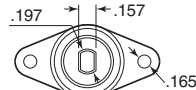
ACE-RD301



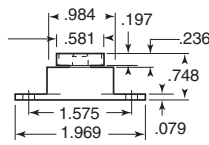
ACE-RD302



ACE-RD501



ACE-RD502

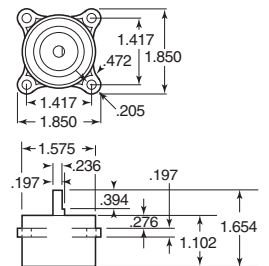


Nominal torque in oz. 4.17  
 Standard spur gear option  
 Gear has 11 involute (full) teeth  
 Module .031  
 Pitch circle diameter .346

Nominal torque in oz. 6.94  
 Gear has 12 involute (full) teeth  
 Module .039  
 Pitch circle diameter .472



ACE-RD203



Nominal torque in lbs. 17.36  
 No gear option

Item No.	Ace	Gear	Pack Qty.	Item No.	Ace	Gear	Pack Qty.	Item No.	Ace	Gear	Pack Qty.
ACE-RD301	RT-C2-301	w/o Gear	1	ACE-RD501	RT-D2-501	w/o Gear	1	ACE-RD203	RT-F2-203	w/o Gear	1
ACE-RD302	RT-C2-301-G1	w/ Gear	1	ACE-RD502	RT-D2-501-G1	w/ Gear	1				