Heavy Industrial Shock Absorbers

Effective shock absorption for heavy loads

The heavy industrial shock absorbers from ACE top off the company's offerings in damping technology. This ACE category gives Designers a choice between self-compensating and adjustable machine elements.

Whichever design is chosen, this type of shock absorber impresses with its robustness and operational readiness wherever heavy loads need to be reliably stopped on-the-spot and at a precise point.

The CA4 models can absorb up to 1,120,000 in/lbf (126,500 Nm) of energy. The series of heavy duty, self-compensating "CA" types are equally suitable for use as an emergency stop as are the adjustable types with the designations "A". The range of effective loads covered is increased considerably for this purpose.

Heavy Industrial Shock Absorbers

CA2 to CA4

Page 102

Self-Compensating
Deceleration of heavy loads
Portal systems, Machines and plants, Conveyor systems, Crane systems,

A1 1/2 to A3

Page 106

Adjustable
Deceleration of heavy loads and progressive adjustment
Portal systems, Machines and plants, Conveyor systems, Crane systems

Rugged and powerful

Gently stops heavy loads with high precision

Also ideal for emergency stop utilization

Safe, reliable production

Maintenance-free and ready-to-install

Special versions available

CA2 to CA4

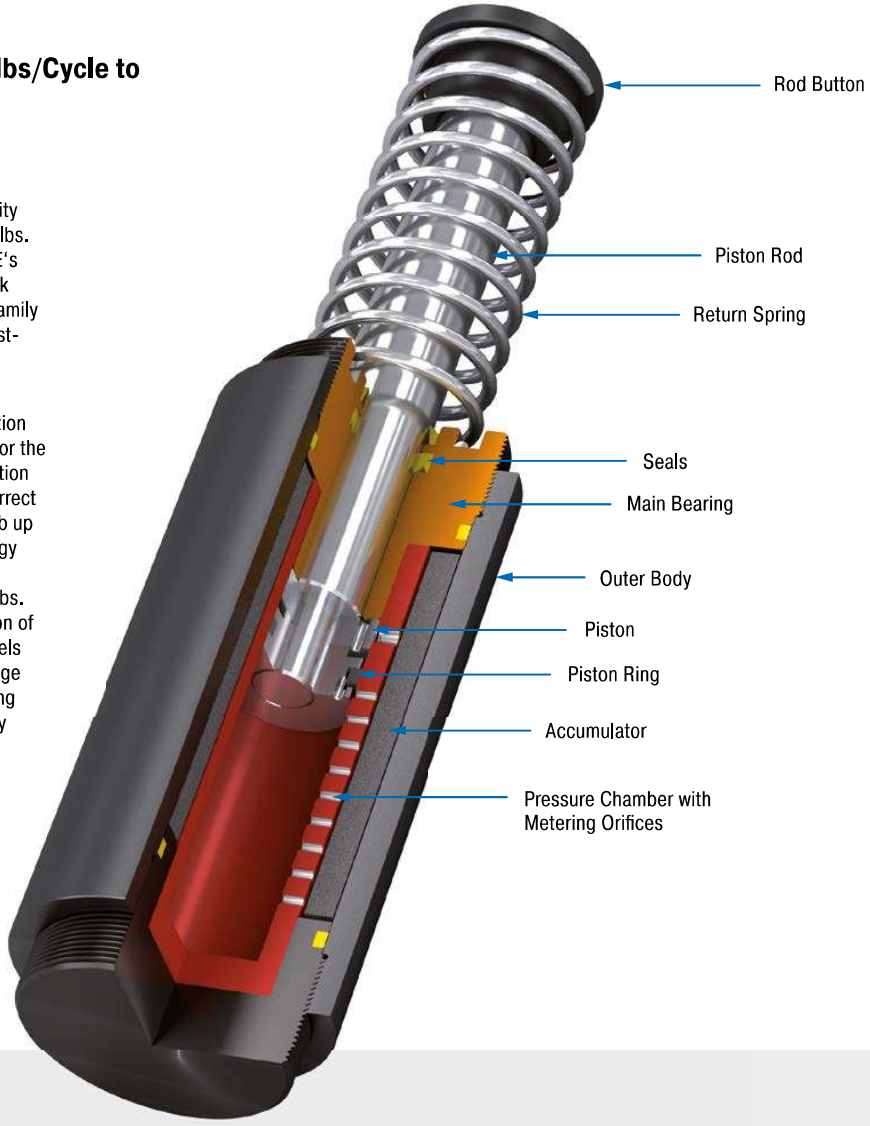
Deceleration of heavy loads

Self-Compensating
Energy capacity 21,000 in-lbs/Cycle to 1,120,000 in-lbs/Cycle
Stroke 2 in to 16 in

Powerful: The weight of these high capacity absorbers are between 28.2 lbs and 322 lbs. (12.8 and 146 kg). They complement ACE's product range of self-compensating shock absorbers. All models from this product family are designed for applications where robustness and large energy absorption are important.

ACE uses our proprietary custom calculation program to design each shock absorber for the specific customer application. Customization helps reduce the risk of crashes and incorrect product sizing. The CA models can absorb up to 1,119,620 in-lbs (126,500 Nm) of energy and can be used in the area of effective weights between 1,543 lbs and 718,707 lbs. (700 kg and 326,000 kg). The combination of being extremely solid, absorbing high levels of energy and having a large damping range makes them invaluable. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

These heavy duty self-compensating industrial shock absorbers are primarily used in heavy industrial engineering e.g. on lift bridges and steel structures or for damping sluice systems.



Technical Data

Energy capacity: 21,000 in-lbs/Cycle to 1,120,000 in-lbs/Cycle

Impact velocity range: 1 ft/sec to 16.5 ft/sec. Other speeds on request.

Operating temperature range: 10 °F to 150 °F. Other temperatures on request.

Mounting: In any position

Positive stop: External positive stops 0.10" to 0.12" before the end of stroke provided by the customer.

Material: Outer body: Steel corrosion-resistant coating; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated steel

Damping medium: Automatic Transmission Fluid (ATF)

Application field: Portal systems, Machines and plants, Conveyor systems, Crane systems, Loading and lifting equipment, Shelf storage systems, Heavy load applications, Swivel units

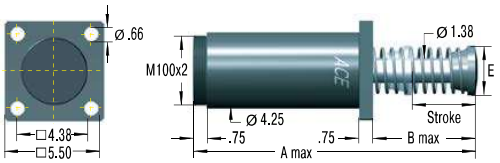
Note: For emergency use only applications and for continous use it is possible to exceed the published max. capacity ratings. In this case, please consult ACE.

Safety information: External materials in the surrounding area can attack the seal components and lead to a shorter service life. Please contact ACE for appropriate solution suggestions. Do not paint the shock absorbers due to heat emission.

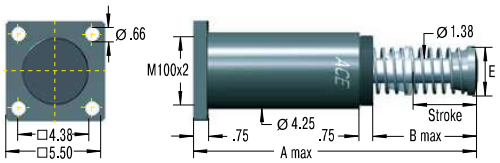
On request: Special oils, nickel-plated, increased corrosion protection or other special options are available on request.

Issue 04.2018 – Specifications subject to change

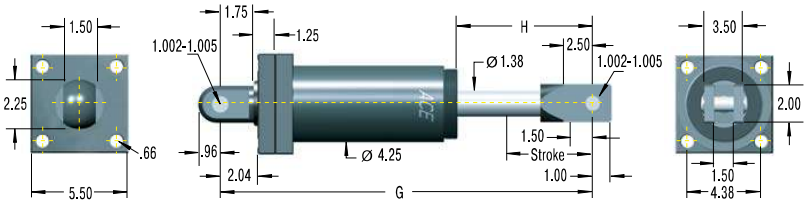
CA2-F Front Flange



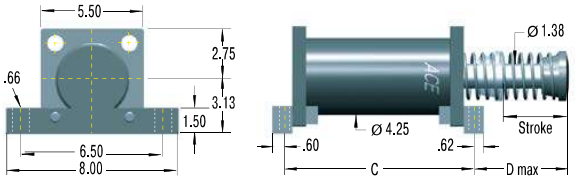
CA2-R Rear Flange



CA2-C Clevis Mount



CA2-S 2" Bore Foot Mount



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

CA: Self-contained with return spring, self-compensating

Special Models

CAA: Air/Oil return without return spring. Use only with external air/oil tank.

CNA: Self-Contained without return spring

CSA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **CA2x4F-3**

- Self-Compensating
- Bore Size ⌀ 2"
- Stroke Length 4" (102 mm)
- Front Flange Mounting
- Effective Weight Range Version

Dimensions

TYPES	Stroke inch	A max. inch	B max. inch	C inch	D max. inch	E inch
CA2X2	2.00	12.37	4.37	9.28	3.74	2.73
CA2X4	4.00	16.37	6.31	11.28	5.74	2.73
CA2X6	6.00	20.37	8.37	13.28	7.74	2.73
CA2X8	8.00	25.37	11.37	15.28	10.74	3.63
CA2X10	10.00	29.37	13.37	17.28	12.74	4.25

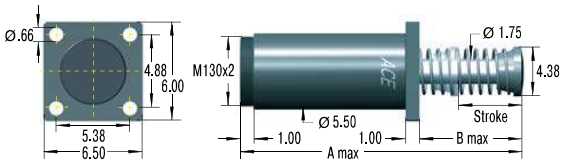
Performance

	Max. Energy Capacity			Effective Weight							
TYPES	[1] E_3 in-lbs/cycle	[2] E_4 in-lbs/h	[2] E_4 with Air/Oil Tank in-lbs/h	[3] We min. lbs	[3] We max. lbs	Hardness	Return Force min. lbs	Return Force max. lbs	Return Time s	Side Load Angle max. °	Weight lbs
CA2X2-1	32,000	9,600,000	12,000,000	1,600	4,800	-1	48	63	0.25	3	28.2
CA2X2-2	32,000	9,600,000	12,000,000	4,000	12,000	-2	48	63	0.25	3	28.2
CA2X2-3	32,000	9,600,000	12,000,000	10,000	30,000	-3	48	63	0.25	3	28.2
CA2X2-4	32,000	9,600,000	12,000,000	25,000	75,000	-4	48	63	0.25	3	28.2
CA2X4-1	64,000	12,000,000	15,000,000	3,200	9,600	-1	34	63	0.50	3	32.6
CA2X4-2	64,000	12,000,000	15,000,000	8,000	24,000	-2	34	63	0.50	3	32.6
CA2X4-3	64,000	12,000,000	15,000,000	20,000	80,000	-3	34	63	0.50	3	32.6
CA2X4-4	64,000	12,000,000	15,000,000	50,000	150,000	-4	34	63	0.50	3	32.6
CA2X6-1	96,000	14,400,000	18,000,000	4,800	14,400	-1	34	90	0.60	3	37.3
CA2X6-2	96,000	14,400,000	18,000,000	12,000	36,000	-2	34	90	0.60	3	37.3
CA2X6-3	96,000	14,400,000	18,000,000	30,000	90,000	-3	34	90	0.60	3	37.3
CA2X6-4	96,000	14,400,000	18,000,000	75,000	225,000	-4	34	90	0.60	3	37.3
CA2X8-1	128,000	16,800,000	21,000,000	6,400	19,200	-1	51	144	0.70	3	42.6
CA2X8-2	128,000	16,800,000	21,000,000	16,000	48,000	-2	51	144	0.70	3	42.6
CA2X8-3	128,000	16,800,000	21,000,000	40,000	120,000	-3	51	144	0.70	3	42.6
CA2X8-4	128,000	16,800,000	21,000,000	100,000	300,000	-4	51	144	0.70	3	42.6
CA2X10-1	160,000	19,200,000	24,000,000	8,000	24,000	-1	35	101	0.80	3	50.3
CA2X10-2	160,000	19,200,000	24,000,000	20,000	60,000	-2	35	101	0.80	3	50.3
CA2X10-3	160,000	19,200,000	24,000,000	50,000	150,000	-3	35	101	0.80	3	50.3
CA2X10-4	160,000	19,200,000	24,000,000	125,000	375,000	-4	35	101	0.80	3	50.3

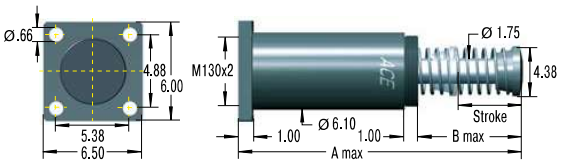
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] Figures for oil recirculation systems on request.
[3] The effective weight range limits can be raised or lowered to special order.

ACE Controls Inc. · 23425 Industrial Park Dr. Farmington · US-48335 Michigan · T +1 800-521-3320 · F +1 248-476-2470 · shocks@acecontrols.com · www.acecontrols.com

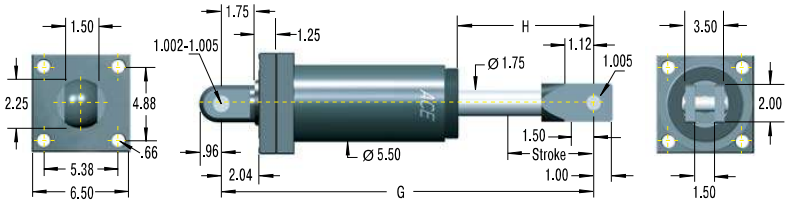
CA3-F Front Flange



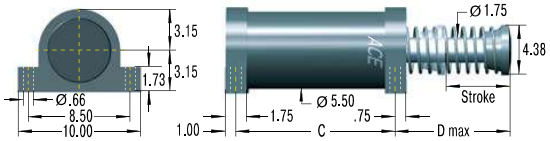
CA3-R Rear Flange



CA3-C Clevis Mount



CA3-S Foot Mount



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

CA: Self-contained with return spring, self-compensating

Special Models

CAA: Air/Oil return without return spring. Use only with external air/oil tank.

CNA: Self-Contained without return spring

CSA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **CA3x5-3F**

- Self-Compensating
- Bore Size Ø 3"
- Stroke Length 5" = 127 mm
- Effective Weight Range Version
- Front Flange Mounting

Dimensions

TYPES	Stroke inch	A max. inch	B max. inch	C inch	D max. inch
CA3X5	5.00	19.31	8.31	9.95	8.81
CA3X8	8.00	25.31	11.31	12.95	11.81
CA3X12	12.00	35.09	17.09	16.95	17.59

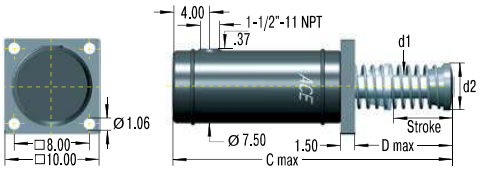
Performance

	Max. Energy Capacity			Effective Weight							
TYPES	[1] E_3 in-lbs/cycle	[2] E_4 in-lbs/h	[2] E_4 with Air/Oil Tank in-lbs/h	[3] We min. lbs	[3] We max. lbs	Hardness	Return Force min. lbs	Return Force max. lbs	Return Time s	Side Load Angle max. °	Weight lbs
CA3X5-1	125,000	20,000,000	25,000,000	6,400	19,200	-1	59	156	0.6	3	63.7
CA3X5-2	125,000	20,000,000	25,000,000	16,000	48,000	-2	59	156	0.6	3	63.7
CA3X5-3	125,000	20,000,000	25,000,000	40,000	120,000	-3	59	156	0.6	3	63.7
CA3X5-4	125,000	20,000,000	25,000,000	100,000	300,000	-4	59	156	0.6	3	63.7
CA3X8-1	200,000	32,000,000	40,000,000	10,240	30,720	-1	62	162	0.8	3	73.6
CA3X8-2	200,000	32,000,000	40,000,000	25,600	76,800	-2	62	162	0.8	3	73.6
CA3X8-3	200,000	32,000,000	40,000,000	64,000	192,000	-3	62	162	0.8	3	73.6
CA3X8-4	200,000	32,000,000	40,000,000	160,000	480,000	-4	62	162	0.8	3	73.6
CA3X12-1	300,000	48,000,000	60,000,000	15,360	46,080	-1	60	160	1.2	3	89.5
CA3X12-2	300,000	48,000,000	60,000,000	38,400	15,200	-2	60	160	1.2	3	89.5
CA3X12-3	300,000	48,000,000	60,000,000	96,000	288,000	-3	60	160	1.2	3	89.5
CA3X12-4	300,000	48,000,000	60,000,000	240,000	720,000	-4	60	160	1.2	3	89.5

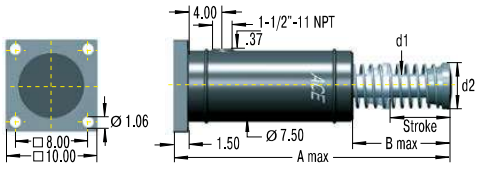
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] Figures for oil recirculation systems on request.
[3] The effective weight range limits can be raised or lowered to special order.

ACE Controls Inc. · 23425 Industrial Park Dr. Farmington · US-48335 Michigan · T +1 800-521-3320 · F +1 248-476-2470 · shocks@acecontrols.com · www.acecontrols.com

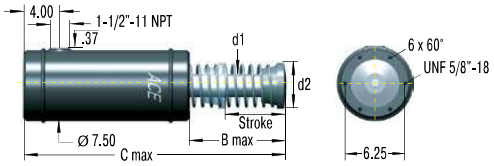
CA4-F Front Flange



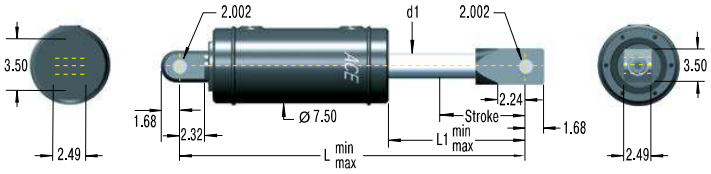
CA4-R Rear Flange



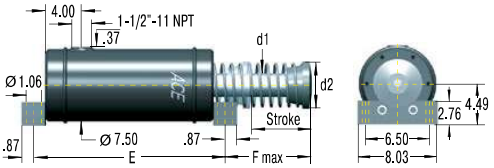
CA4-FRP 6 Tapped Holes Primary Mounting



CA4-C Clevis Mount



CA4-S Foot Mount



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

CA: Self-contained with return spring, self-compensating

Special Models

CAA: Air/Oil return without return spring. Use only with external air/oil tank.

CNA: Self-Contained without return spring

CSA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **CA4x8R-5**

- Self-Compensating
- Bore Size ⌀ 4"
- Stroke Length 8" (203 mm)
- Rear Flange Mounting
- Effective Weight Range Version

Dimensions

TYPES	Stroke inch	A max. inch	B max. inch	C max. inch	D max. inch	d1 inch	d2 inch	E inch	F inch
CA4X6	6.00	28.21	10.96	26.71	9.46	2.12	4.50	17.50	10.09
CA4X8	8.00	32.21	12.96	30.71	11.46	2.12	4.50	19.50	12.09
CA4X16	16.00	51.21	23.96	49.71	22.46	2.50	5.00	27.50	23.09

Performance

	Max. Energy Capacity				Effective Weight						
TYPES	[1] E_3 in-lbs/cycle	E_4 in-lbs/h	E_4 with Air/Oil Tank in-lbs/h	E_4 with Oil Recirculation in-lbs/h	[2] We min. lbs	[2] We max. lbs	Hardness	Return Force min. lbs	Return Force max. lbs	Return Time s	Weight lbs
CA4X6-3	420,000	27,000,000	45,000,000	58,400,000	8,000	19,000	-3	108	222	1.8	132.3
CA4X6-5	420,000	27,000,000	45,000,000	58,400,000	19,000	41,000	-5	108	222	1.8	132.3
CA4X6-7	420,000	27,000,000	45,000,000	58,400,000	41,000	94,000	-7	108	222	1.8	132.3
CA4X8-3	560,000	30,000,000	50,000,000	64,600,000	11,000	25,000	-3	71	222	2.3	149.9
CA4X8-5	560,000	30,000,000	50,000,000	64,600,000	25,000	55,000	-5	71	222	2.3	149.9
CA4X8-7	560,000	30,000,000	50,000,000	64,600,000	55,000	125,000	-7	71	222	2.3	149.9
CA4X16-3	1,120,000	50,000,000	85,000,000	109,800,000	22,000	50,000	-3	71	222	ask	321.9
CA4X16-5	1,120,000	50,000,000	85,000,000	109,800,000	50,000	110,000	-5	71	222	ask	321.9
CA4X16-7	1,120,000	50,000,000	85,000,000	109,800,000	110,000	250,000	-7	71	222	ask	321.9

[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

[2] The effective weight range limits can be raised or lowered to special order.

ACE Controls Inc. · 23425 Industrial Park Dr. Farmington · US-48335 Michigan · T +1 800-521-3320 · F +1 248-476-2470 · shocks@acecontrols.com · www.acecontrols.com

A1 1/2 to A3

Deceleration of heavy loads and progressive adjustment

Adjustable

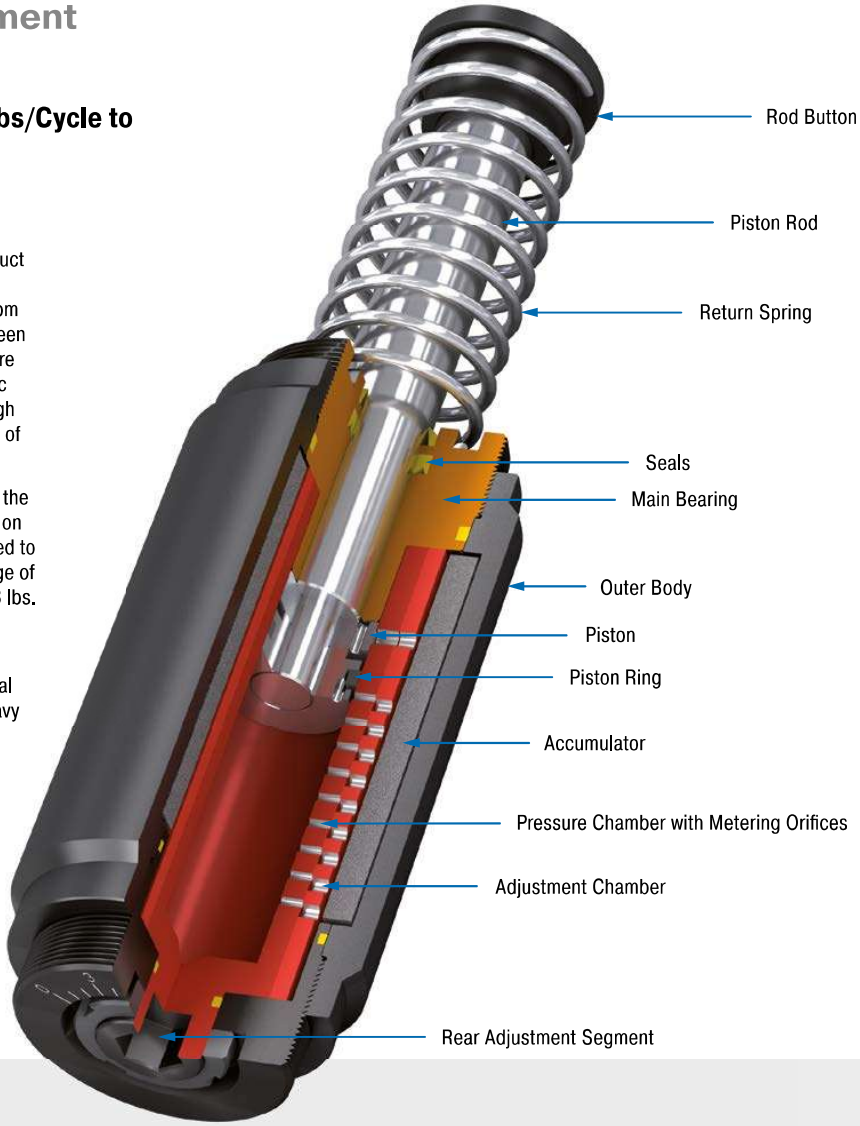
Energy capacity 21,000 in-lbs/Cycle to 390,000 in-lbs/Cycle

Stroke 2.00 in to 12.00 in

Strong and adjustable: Also in ACE's product range of units are adjustable heavy duty industrial shock absorbers. The models from the A1 1/2 to A3 range, which weigh between 16.6 lbs and 105.8 lbs (7.55 and 48 kg), are extremely robust, ready-to-install hydraulic machine components with impressively high energy absorption levels and a wide range of damping rates.

Their special aspect is the flexibility, as all the absorbers can be adjusted using a socket on the absorber base and be perfectly adapted to the application. The A models cover a range of effective weights from 0.66 lbs to 449,743 lbs. (0.3 to 204,000 kg) and can absorb up to 389,433 in-lbs. (44,000 Nm) energy.

These heavy duty, adjustable ACE industrial shock absorbers are the first choice in heavy duty applications and generally in heavy industrial maching design when the usage data has not been exactly determined.



Technical Data

Energy capacity: 21,000 in-lbs/Cycle to 390,000 in-lbs/Cycle

Impact velocity range: 0.5 ft/sec to 15 ft/sec. Other speeds on request.

Operating temperature range: 10 °F to 150 °F. Other temperatures on request.

Mounting: In any position

Positive stop: External positive stops 0.10" to 0.12" before the end of stroke provided by the customer.

Adjustment: Hard impact at the start of stroke, adjust the ring towards 9. Hard impact at the end of stroke, adjust the ring towards 0.

Material: Outer body: Steel corrosion-resistant coating; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated steel

Damping medium: Automatic Transmission Fluid (ATF)

Application field: Portal systems, Machines and plants, Conveyor systems, Crane systems, Loading and lifting equipment, Impact panels, Heavy load applications, Swivel units, Shelf storage systems

Note: For emergency use only applications and for continous use it is possible to exceed the published max. capacity ratings. In this case, please consult ACE.

Safety information: External materials in the surrounding area can attack the seal components and lead to a shorter service life. Please contact ACE for appropriate solution suggestions. Do not paint the shock absorbers due to heat emission.

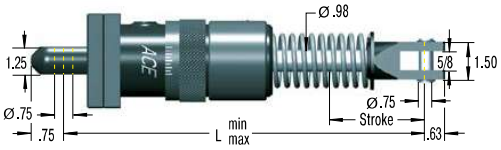
On request: Special oils, nickel-plated, increased corrosion protection or other special options are available on request.

Issue 04.2018 – Specifications subject to change

A1 1/2-F Front Flange

A1 1/2-R Rear Flange

A1 1/2-C Clevis Mount



A1 1/2-S Foot Mount

The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

A: Self-contained with return spring, adjustable

Special Models

AA: Air/Oil return without return spring. Use only with external air/oil tank.
NA: Self-contained without return spring
SA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **A1½x2R**

Adjustable
Bore Size ⌀ 1½"
Stroke Length 2" (50.8 mm)
Rear Flange Mounting

Dimensions

TYPES	Stroke inch	L min. inch	L max. inch	L1 inch	L2 inch	L3 inch	L4 inch
A11/2X2	2.00	10.94	12.94	7.69	2.13	-	-
A11/2X31/2	3.50	12.46	15.97	9.19	2.13	6.69	2.31
A11/2X5	5.00	13.97	18.97	10.69	2.13	8.19	2.31
A11/2X61/2	6.50	16.22	22.72	12.94	2.88	9.69	3.06

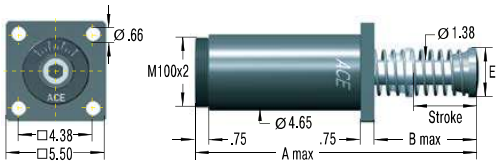
Performance

	Max. Energy Capacity			Effective Weight						
TYPES	[1] E_3 in-lbs/cycle	[2] E_4 in-lbs/h	[2] E_4 with Air/Oil Tank in-lbs/h	[3] We min. lbs	[3] We max. lbs	Return Force min. lbs	Return Force max. lbs	Return Time s	Side Load Angle max. °	Weight lbs
A11/2X2	21,000	3,200,000	4,000,000	430	70,000	34.9	47.6	0.10	5	16.6
A11/2X31/2	36,750	5,600,000	7,000,000	480	80,000	25.4	47.6	0.25	4	19.6
A11/2X5	52,500	8,000,000	10,000,000	500	90,000	20.7	52.5	0.40	3	20.6
A11/2X61/2	68,250	10,400,000	13,000,000	680	100,000	20.7	97.4	0.40	2	26.3

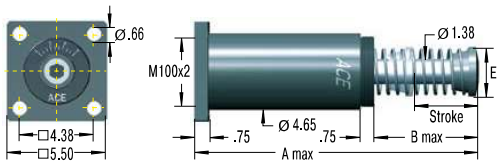
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] Figures for oil recirculation systems on request.
[3] The effective weight range limits can be raised or lowered to special order.

ACE Controls Inc. · 23425 Industrial Park Dr. Farmington · US-48335 Michigan · T +1 800-521-3320 · F +1 248-476-2470 · shocks@acecontrols.com · www.acecontrols.com

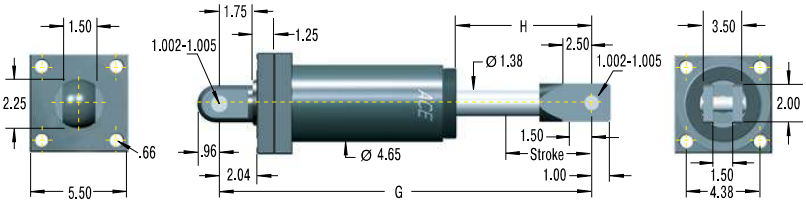
A2-F Front Flange



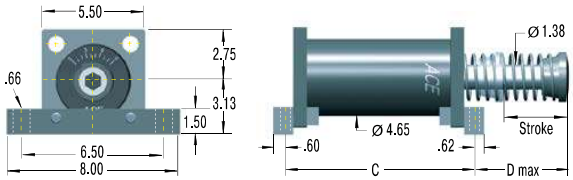
A2-R Rear Flange



A2-C Clevis Mount



A2-S 2" Bore Foot Mount



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

A: Self-contained with return spring, adjustable

Special Models

AA: Air/Oil return without return spring. Use only with external air/oil tank.

NA: Self-contained without return spring

SA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **A2x6-R**

Adjustable

Bore Size Ø 2"

Stroke Length 6" = 152 mm

Rear Flange Mounting

Dimensions

TYPES	Stroke inch	A max. inch	B max. inch	C inch	D max. inch	E inch
A2X2	2.00	12.37	4.37	9.28	3.74	2.73
A2X4	4.00	16.37	6.31	11.28	5.74	2.73
A2X6	6.00	20.37	8.37	13.28	7.74	2.73
A2X8	8.00	25.37	11.37	15.28	10.74	3.63
A2X10	10.00	29.37	13.37	17.28	12.74	4.25

Performance

	Max. Energy Capacity			Effective Weight						
TYPES	[1] E_3 in-lbs/cycle	[2] E_4 in-lbs/h	[2] E_4 with Air/Oil Tank in-lbs/h	[3] We min. lbs	[3] We max. lbs	Return Force min. lbs	Return Force max. lbs	Return Time s	Side Load Angle max. °	Weight lbs
A2X2	32,000	9,600,000	12,000,000	560	170,000	48	63	0.25	3	31.5
A2X4	80,000	12,000,000	15,000,000	560	180,000	34	63	0.50	3	36.9
A2X6	120,000	14,400,000	18,000,000	570	190,000	34	90	0.60	3	42.6
A2X8	170,000	16,800,000	21,000,000	580	200,000	51	144	0.70	3	49.2
A2X10	210,000	19,200,000	24,000,000	720	250,000	35	101	0.80	3	57.8

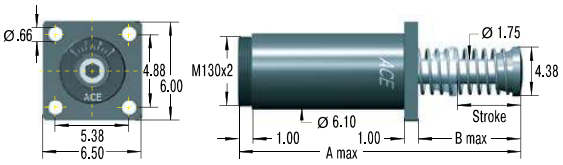
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

[2] Figures for oil recirculation systems on request.

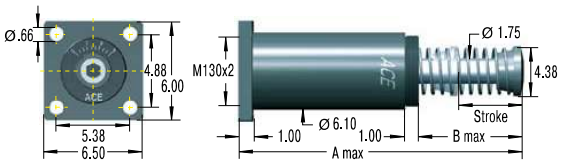
[3] The effective weight range limits can be raised or lowered to special order.

Issue 04.2018 – Specifications subject to change

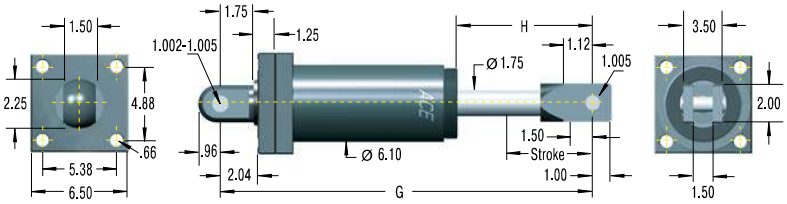
A3-F Front Flange



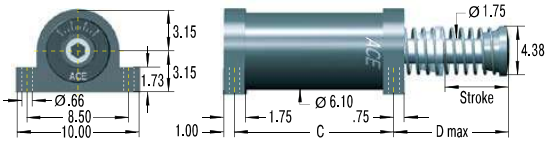
A3-R Rear Flange



A3-C Clevis Mount



A3-S Foot Mount



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

A: Self-contained with return spring, adjustable

Special Models

AA: Air/Oil return without return spring. Use only with external air/oil tank.
NA: Self-contained without return spring
SA: Air/Oil return with return spring. Use only with external air/oil tank.

Ordering Example **A3x8R**

Adjustable
Bore Size Ø 3"
Stroke Length **8"** (203 mm)
Rear Flange Mounting

Dimensions

TYPES	Stroke **inch**	A max. **inch**	B max. **inch**	C **inch**	D max. **inch**
A3X5	5.00	19.31	8.31	9.95	8.81
A3X8	8.00	25.31	11.31	12.95	11.81
A3X12	12.00	35.09	17.09	16.95	17.59

Performance

	Max. Energy Capacity			Effective Weight						
TYPES	[1] E_3 **in-lbs/cycle**	[2] E_4 **in-lbs/h**	[2] E_4 with Air/Oil Tank **in-lbs/h**	[3] We min. **lbs**	[3] We max. **lbs**	Return Force min. **lbs**	Return Force max. **lbs**	Return Time **s**	Side Load Angle max. °	Weight **lbs**
A3X5	140,000	20,000,000	25,000,000	1,050	340,000	59	156	0.6	3	72.1
A3X8	250,000	32,000,000	40,000,000	1,200	400,000	62	162	0.8	3	84.9
A3X12	390,000	48,000,000	60,000,000	1,350	450,000	60	160	1.2	3	105.8

[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] Figures for oil recirculation systems on request.
[3] The effective weight range limits can be raised or lowered to special order.

ACE Controls Inc. · 23425 Industrial Park Dr. Farmington · US-48335 Michigan · T +1 800-521-3320 · F +1 248-476-2470 · shocks@acecontrols.com · www.acecontrols.com

Air/Oil Tanks
for industrial shock absorbers

For high cycle rates and extreme temperatures with limited mounting space

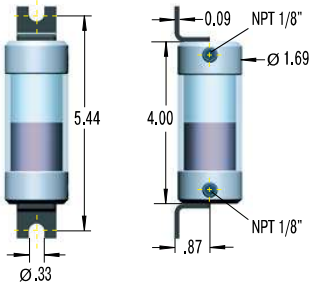
Shock absorbers convert the introduced energy into heat. The more frequently a shock absorber is stressed per hour, the hotter the oil volume becomes over time. If the requirements placed on the impact frequency of a shock absorber are especially high, use of an air-oil tank is the solution.

Thanks to increased oil volume and resulting heat dissipation, the upper limit of the possible hourly energy capacity of the shock absorber increases significantly.

In addition, the air-oil tank provides an opportunity for controlled piston return if no permanent return force through an integrated spring in the shock absorber is desired.

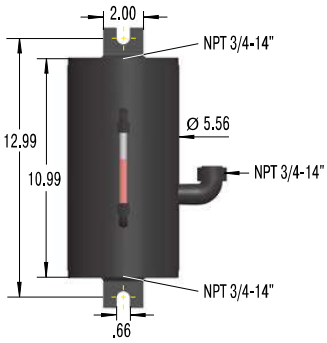
Air/Oil Tanks AO

AO1
Oil capacity 0.6 oz.
Material: Aluminium caps



AO3
Oil capacity 12.5 oz.
Material: Steel

AO6
Oil capacity 88 oz.
Material: Steel



Detail drawings on request

Technical Data

Operating pressure: Max. 8 bar (116 psi)
Operating temperature range: 176 °F
Damping medium: ATF-Oil 42 cSt at 104 °F
Mount air/oil tank higher than shock absorber. Bleed all air from system before operating.

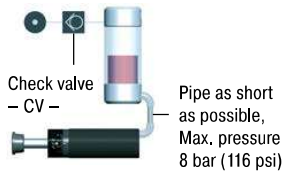
Safety instructions: Exhaust tank before carrying out service. Check valve holds pressure!

Suggested air/oil tanks in accordance with E_4 ratings

Issue 04.2018 – Specifications subject to change

Connection Examples

1

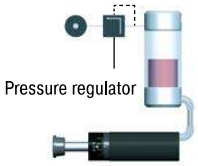


Piston rod returns immediately to extended position when load moves away. Operation without main air supply possible for short periods.

2

Return stroke may be sequenced by pneumatic valve at any desired time. No return force until valve energised.

3

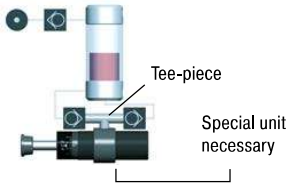


Return force can be adjusted by pressure regulator. Ensure safe minimum pressure to return shock absorber.

4

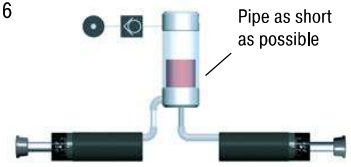
Spring return with air/oil tank. No air supply connected. Note: Will extend return time.

5



Oil recirculation circuit for extreme high cycle rates. Warm oil is positively circulated through air/oil tank for increased heat dissipation.

6



Connection of two shock absorbers to one air/oil tank is possible. Use next larger size tank. Combination with examples 2, 3 and 5 possible.

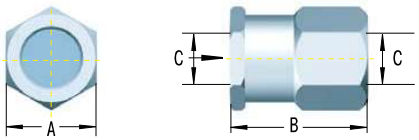
Selection Chart Air/Oil Tanks

	With Tank Example 1 to 4		With Recirc. Circuits Example 5 to 6		Min. Conn. Pipe Ø	Thread Sizes for Connection to Air/Oil Tank	
Shock Absorber Type	Tank	Check Valve	Tank	Check Valve	inch	Thread Bottom	[2] Thread Side
MCA, MAA, MLA33...	AO1	CV1/8	AO3	CV1/4	0.16	[1] 1/8-27 NPTF inside	1/8-27 NPTF inside
MCA, MAA, MLA45...	AO1	CV1/8	AO3	CV3/8	0.24	1/8-27 NPTF inside	1/8-27 NPTF inside
MCA, MAA, MLA64...	AO3	CV1/4	AO6	CV3/4	0.31	1/4-18 NPTF inside	1/4-18 NPTF inside
CAA, AA2...	AO6	CV3/4	AO82	CV3/4	0.59	–	–
CAA, AA3...	AO6	CV3/4	AO82	CV3/4	0.75	–	–
CAA4...	AO82	CV3/4	AO82	CV3/4	1.50	–	–

AO82 and connection accessories: Details on request
[1] adapted
[2] on request (add suffix -PG/-P)

Check Valves CV

Through an oil circuit fresh oil is drawn in from the industrial shock absorber and warm oil is pumped off (see example 5). To obtain this function, ACE offers suitable check valves of the CV series.



Technical Data

Operating pressure: 20 bar (290 psi)
Operating temperature range: 203 °F
Suitable for: Oil, air, water
Material: Aluminium

Check Valves – Dimensions

TYPES	A inch	B inch	C
CV1/8	0.75	0.94	1/8-27 NPT
CV1/4	1.14	1.30	1/4-18 NPT
CV3/8	1.14	1.30	3/8-18 NPT
CV1/2	1.61	1.57	1/2-14 NPT
CV3/4	1.89	2.32	3/4-14 NPT