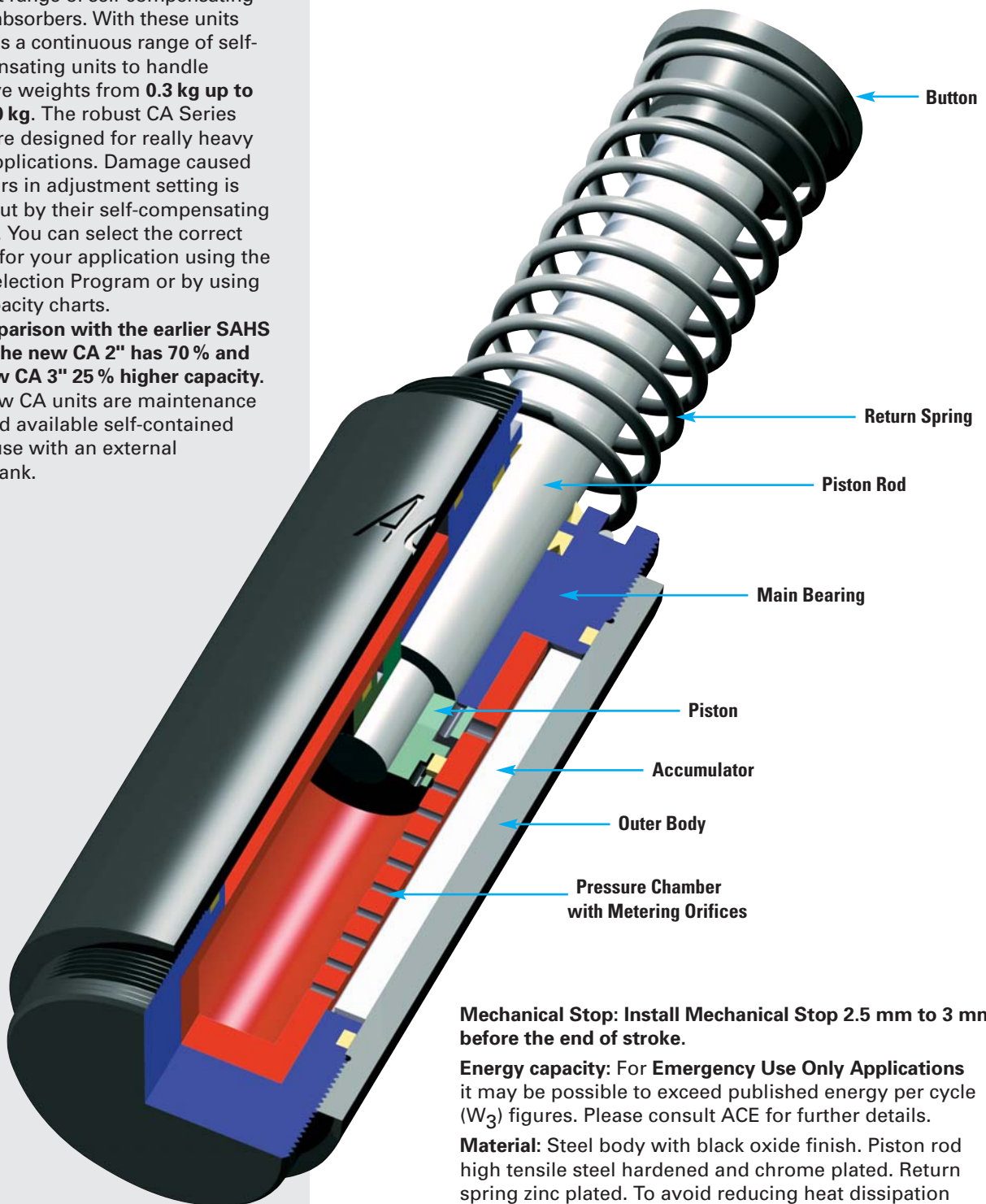


The CA 2 to CA 4 complete the ACE product range of self-compensating shock absorbers. With these units ACE has a continuous range of self-compensating units to handle effective weights from **0.3 kg up to 326 000 kg**. The robust CA Series units are designed for really heavy duty applications. Damage caused by errors in adjustment setting is ruled out by their self-compensating design. You can select the correct model for your application using the ACE Selection Program or by using the capacity charts.

In comparison with the earlier SAHS range the new CA 2" has 70% and the new CA 3" 25% higher capacity. The new CA units are maintenance free and available self-contained or for use with an external air/oil tank.



Mechanical Stop: Install Mechanical Stop 2.5 mm to 3 mm before the end of stroke.

Energy capacity: For **Emergency Use Only Applications** it may be possible to exceed published energy per cycle (W_3) figures. Please consult ACE for further details.

Material: Steel body with black oxide finish. Piston rod high tensile steel hardened and chrome plated. Return spring zinc plated. To avoid reducing heat dissipation do not paint outer body.

Impact velocity range: 0.3 m/s up to 5 m/s.

Oil filling: Automatic
Transmission Fluid viscosity
42 cSt. at 40°C.

Mounting: In any position.

Operating temperature range:
-12°C to +85°C.

On request: Special oils, or for higher or lower impact velocities outside range shown above, or other options please consult ACE.



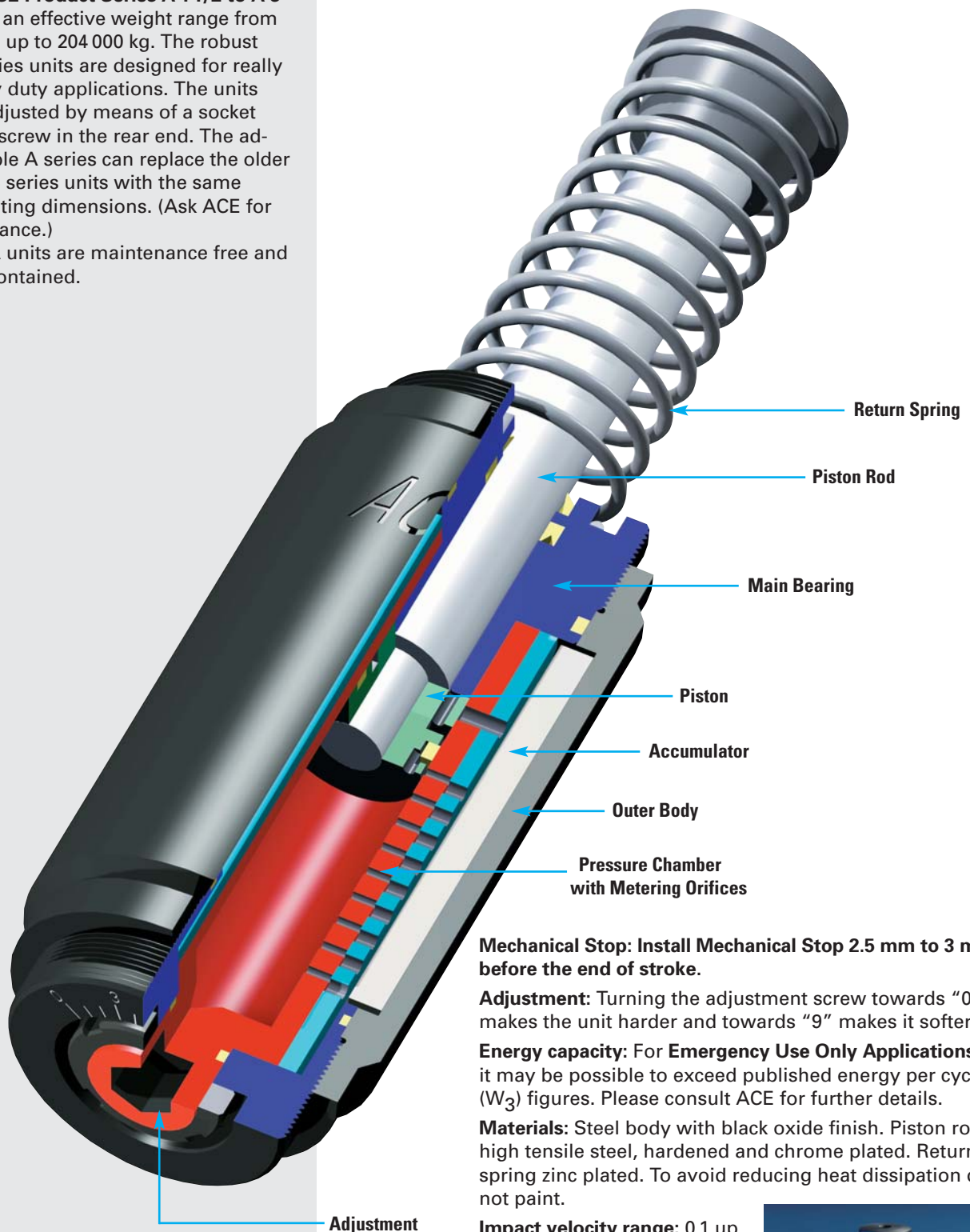


Heavy Industrial Shock Absorbers A 1 1/2 to A 3

Adjustable

The adjustable shock absorbers of the **ACE Product Series A 1 1/2 to A 3** cover an effective weight range from 0.3 kg up to 204 000 kg. The robust A Series units are designed for really heavy duty applications. The units are adjusted by means of a socket head screw in the rear end. The adjustable A series can replace the older SAHS series units with the same mounting dimensions. (Ask ACE for assistance.)

The A units are maintenance free and self-contained.



Mechanical Stop: Install Mechanical Stop 2.5 mm to 3 mm before the end of stroke.

Adjustment: Turning the adjustment screw towards "0" makes the unit harder and towards "9" makes it softer.

Energy capacity: For **Emergency Use Only Applications** it may be possible to exceed published energy per cycle (W_3) figures. Please consult ACE for further details.

Materials: Steel body with black oxide finish. Piston rod high tensile steel, hardened and chrome plated. Return spring zinc plated. To avoid reducing heat dissipation do not paint.

Impact velocity range: 0.1 up to 5 m/s.

Oil filling: HLP 46 viscosity 46cSt. at 40°C.

Mounting: In any position.

Operating temperature range: -12°C to +85°C.

On request: Special oils, or for higher or lower impact velocities outside range shown above, or other options please consult ACE.



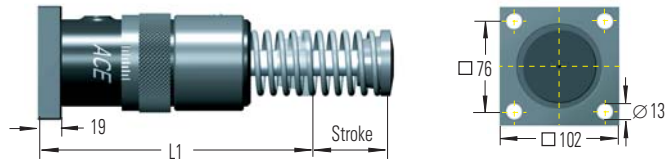


Heavy Duty Industrial Shock Absorbers A 1 1/2

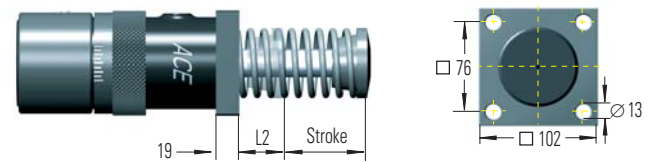
Adjustable, not for Use on New Installations

Mounting Options A 1 1/2 . . .

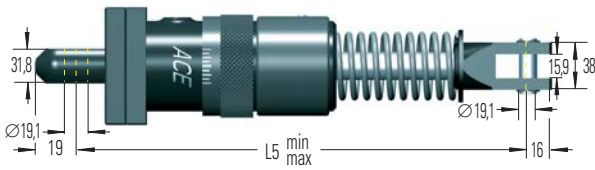
Rear Flange -R



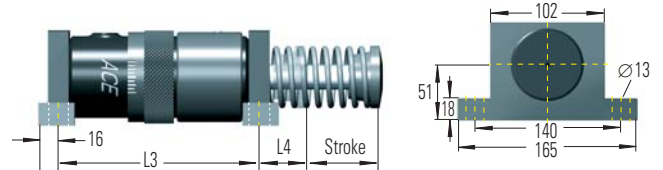
Front Flange -F



Clevis Mounting -C



Foot Mounting -S



Foot Mounting not available on 2" stroke models.

Mechanical Stop: Install Mechanical Stop 2.5 mm to 3 mm before the end of stroke.

Dimensions A 1 1/2

Type	L1	L2	L3	L4	L5
A 1 1/2 x 2	195.2	54.2	-	-	277.8 - 328.6
A 1 1/2 x 3 1/2	233	54.2	170	58.6	316.6 - 405.6
A 1 1/2 x 5	271.5	54.2	208	58.6	354.8 - 481.8
A 1 1/2 x 6 1/2	329	73	246	78	412 - 577

Ordering Example

Adjustable _____ **A 1 1/2 x 2 R**
 Bore Size ϕ 1 1/2" _____
 Stroke Length 2" = 50.8 mm _____
 Rear Flange Mounting _____

Model Type Prefix

- A = self-contained with return spring
(This is standard model)
- 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

Capacity Chart

Type	Stroke mm	Max. Energy Capacity Nm		*Effective Weight me		Return Force N min max	Spring Return Time s	Max. Side-Load Angle ϕ	Weight kg
		per Cycle W ₃	W ₄ per Hour* Self-Contained with Oil Tank						
A 1 1/2 x 2	50	2350	362 000	452 000	195 - 32 000	160 - 210	0.1	5	7.5
A 1 1/2 x 3 1/2	89	4 150	633 000	791 000	218 - 36 000	110 - 210	0.25	4	8.9
A 1 1/2 x 5	127	5900	904 000	1130 000	227 - 41 000	90 - 230	0.4	3	10.3
A 1 1/2 x 6 1/2	165	7700	1180 000	1469 000	308 - 45 000	90 - 430	0.4	2	12

* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

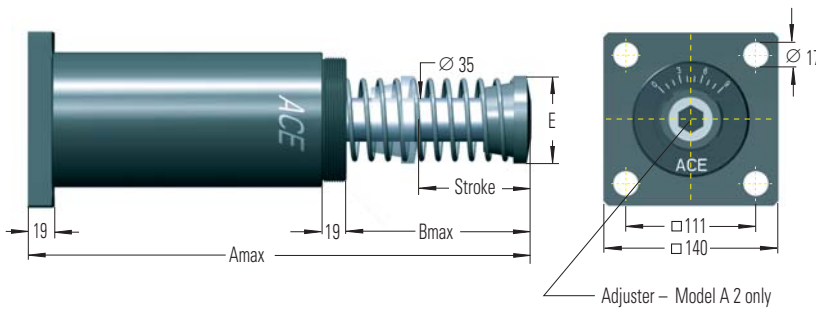
** For **Emergency Use Only** applications it may be possible to exceed these max. capacity ratings. Please consult ACE for further details.

*** Figures for oil recirculation systems on request

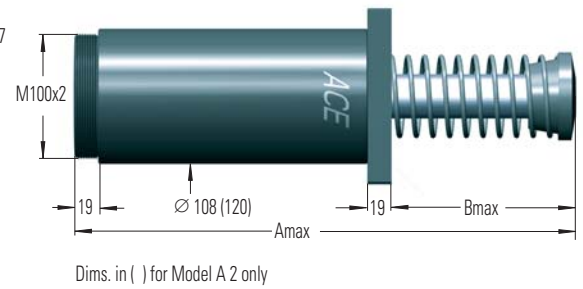


Mounting Options CA, A . . .

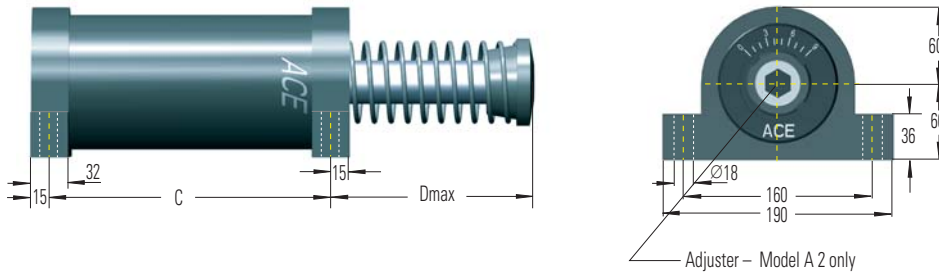
Rear Flange -R



Front Flange -F



Foot Mounting -S100



Dimensions of Clevis Mountings available on request.

NOTE! For replacement of existing SAHS 2" foot mounted units order the old type foot mounting -S2-A.

Dimensions

Type	A max	B max	C	D max	E
2 x 2	313	110	173	125	70
2 x 4	414	160	224	175	70
2 x 6	516	211	275	226	70
2 x 8	643	287	326	302	92
2 x 10	745	338	377	353	108

Ordering Example

CA 2 x 4-3 F
 Self-Compensating _____
 Bore Size 2" _____
 Stroke Length 4" = 102 mm _____
 Effective Weight Range Version _____
 Front Flange Mounting _____

Model Type Prefix

A, CA = self-contained with return spring
 AA, CAA = air/oil return without return spring
 Use only with external air/oil tank
 NA, CNA = self-contained without return spring
 SA, CSA = air/oil return with return spring
 Use only with external air/oil tank

Capacity Chart

Type	Stroke mm	**per Cycle W ₃	Max. Energy Capacity Nm		*Effective Weight me				Return Force N	Spring Return Time s	Max. Side-Load Angle °	Weight kg
			W ₄ per Hour*** Self-Contained	with Air/Oil Tank	Soft		Hard					
					-1 min kg max	-2 min kg max	-3 min kg max	-4 min kg max				
CA 2 x 2	50	3600	1 100 000	1 350 000	700 - 2 200	1 800 - 5 400	4 500 - 13 600	11 300 - 34 000	210 - 285	0.25	3	12.8
CA 2 x 4	102	7 200	1 350 000	1 700 000	1 400 - 4 400	3 600 - 11 000	9 100 - 27 200	22 600 - 68 000	150 - 285	0.50	3	14.8
CA 2 x 6	152	10 800	1 600 000	2 000 000	2 200 - 6 500	5 400 - 16 300	13 600 - 40 800	34 000 - 102 000	150 - 400	0.60	3	16.9
CA 2 x 8	203	14 500	1 900 000	2 400 000	2 900 - 8 700	7 200 - 21 700	18 100 - 54 400	45 300 - 136 000	230 - 650	0.70	3	19.3
CA 2 x 10	254	18 000	2 200 000	2 700 000	3 600 - 11 000	9 100 - 27 200	22 600 - 68 000	56 600 - 170 000	160 - 460	0.80	3	22.8
A 2 x 2	50	3600	1 100 000	1 350 000		250 - 77 000			210 - 285	0.25	3	14.3
A 2 x 4	102	9000	1 350 000	1 700 000		250 - 82 000			150 - 285	0.50	3	16.7
A 2 x 6	152	13500	1 600 000	2 000 000		260 - 86 000			150 - 400	0.60	3	19.3
A 2 x 8	203	19200	1 900 000	2 400 000		260 - 90 000			230 - 650	0.70	3	22.3
A 2 x 10	254	23700	2 200 000	2 700 000		320 - 113 000			160 - 460	0.80	3	26.3

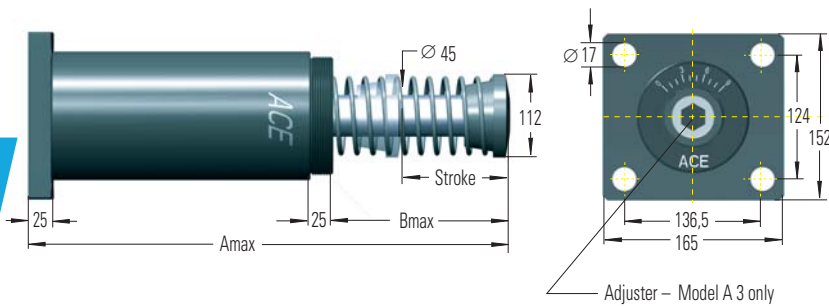
* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

** For **Emergency Use Only** applications it may be possible to exceed these max. capacity ratings. Please consult ACE for further details.

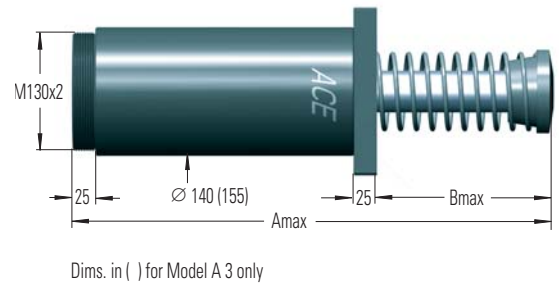
*** Figures for oil recirculation systems on request

Mounting Options CA, A . . .

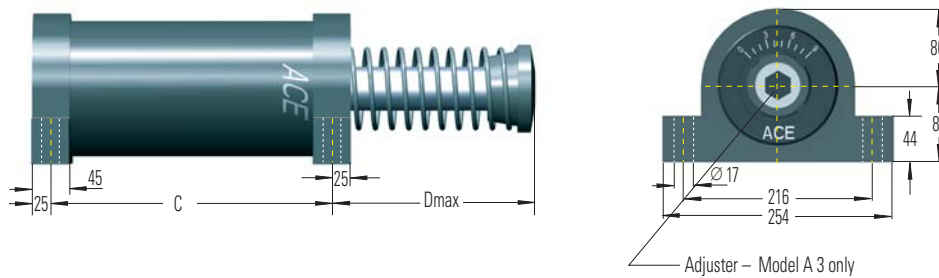
Rear Flange -R



Front Flange -F



Foot Mounting -S130



Dimensions of Clevis Mountings available on request.

NOTE! For replacement of existing SAHS 3" foot mounted units please consult ACE.

SAHS 3" and AHS 3" Interchange dimensions to order

Dimensions

Type	A max	B max	C	D max
3 x 5	502	210	260	216
3 x 8	641	286	337	292
3 x 12	890	433	438	439

Ordering Example

Adjustable **A 3 x 8 R**
 Bore Size 3"
 Stroke Length 8" = 203 mm
 Rear Flange Mounting

Model Type Prefix

- A, CA = self-contained with return spring
- AA, CAA = air/oil return without return spring
Use only with external air/oil tank
- NA, CNA = self-contained without return spring
- SA, CSA = air/oil return with return spring
Use only with external air/oil tank

Capacity Chart

Type	Stroke mm	**per Cycle W ₃	Max. Energy Capacity Nm W ₄ per Hour*** with Self-Contained Air/Oil Tank	*Effective Weight me				Return Force N min max	Spring Return Time s	Max. Side-Load Angle °	Weight kg	
				Soft -1 min kg max	-2 min kg max	-3 min kg max	Hard -4 min kg max					
CA 3 x 5	127	14 125	2 260 000	2 800 000	2 900 - 8 700	7 250 - 21 700	18 100 - 54 350	45 300 - 135 900	270 - 710	0.60	3	28.9
CA 3 x 8	203	22 600	3 600 000	4 520 000	4 650 - 13 900	11 600 - 34 800	29 000 - 87 000	72 500 - 217 000	280 - 740	0.80	3	33.4
CA 3 x 12	305	33 900	5 400 000	6 780 000	6 950 - 20 900	17 400 - 52 200	43 500 - 130 450	108 700 - 326 000	270 - 730	1.20	3	40.6
A 3 x 5	127	15 800	2 260 000	2 800 000	480 - 154 000				270 - 710	0.60	3	32.7
A 3 x 8	203	28 200	3 600 000	4 520 000	540 - 181 500				280 - 740	0.80	3	38.5
A 3 x 12	305	44 000	5 400 000	6 780 000	610 - 204 000				270 - 730	1.20	3	47.6

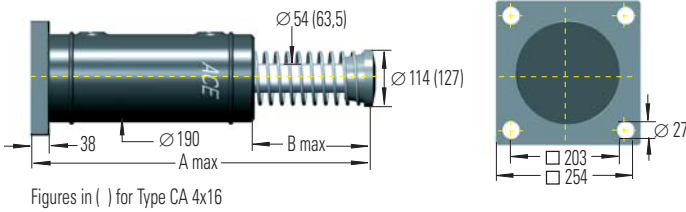
* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

** For Emergency Use Only applications it may be possible to exceed these max. capacity ratings. Please consult ACE for further details.

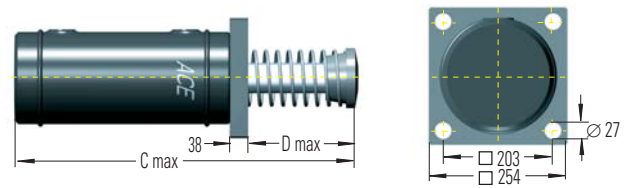
*** Figures for oil recirculation systems on request

Part Number CA, . . .

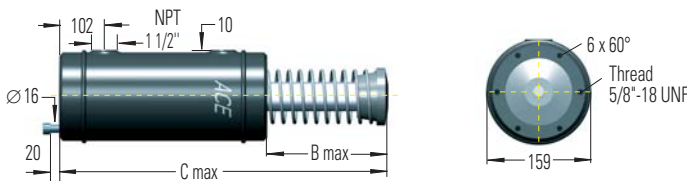
Rear Flange -R



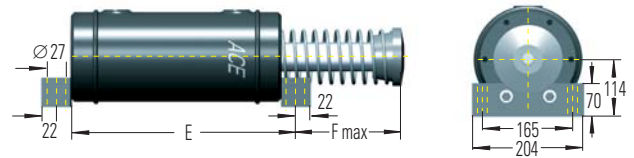
Front Flange -F



6 Tapped Holes (Primary Mounting) -FRP



Side Foot Mounting -S



Dimensions of Clevis Mountings available on request.

Dimensions CA and CSA

Type	A	B	C	D	E	F
4 x 6	716	278	678	240	444	256
4 x 8	818	329	780	291	495	307
4 x 16	1300	608.5	1262.6	569	698	585

Dimensions CAA

Type	A	B	C	D	E	F
4 x 6	666	228	628	190	444	206
4 x 8	767	278	729	240	495	256
4 x 16	1174	482	1136	444	698	460

Ordering Example

Self-Compensating CA 4 x 8-5 R
 Bore Size Ø 4"
 Stroke Length 8" = 203 mm
 Medium Effective Weight Version
 Rear Flange Mounting

Model Type Prefix

- CA = self-contained with return spring
(This is standard model)
- CAA = air/oil return without return spring
Use only with air/oil tank for high energy capacity per hour figures
- CNA = self-contained without return spring
- CSA = air/oil return with return spring
Use only with air/oil tank

Capacity Chart

Type	Stroke mm	**per Cycle W ₃	Max. Energy Capacity Nm			* Effective Weight me			Return Force N	Rod Reset Time s	Weight kg FRP
			Self-Contained	W ₄ per Hour with Air/Oil Tank	with Oil Recirculation	Soft	Medium	Hard			
						-3	-5	-7			
4 x 6	152	47 500	3 000 000	5 100 000	6 600 000	3 500 - 8 600	8 600 - 18 600	18 600 - 42 700	480 - 1 000	1.8	60
4 x 8	203	63 300	3 400 000	5 600 000	7 300 000	5 000 - 11 400	11 400 - 25 000	25 000 - 57 000	310 - 1 000	2.3	68
4 x 16	406	126 500	5 600 000	9 600 000	12 400 000	10 000 - 23 000	23 000 - 50 000	50 000 - 115 000	310 - 1 000	Ask	170

* The effective weight range limits can be raised or lowered to special order.

** For **Emergency Use Only** applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.