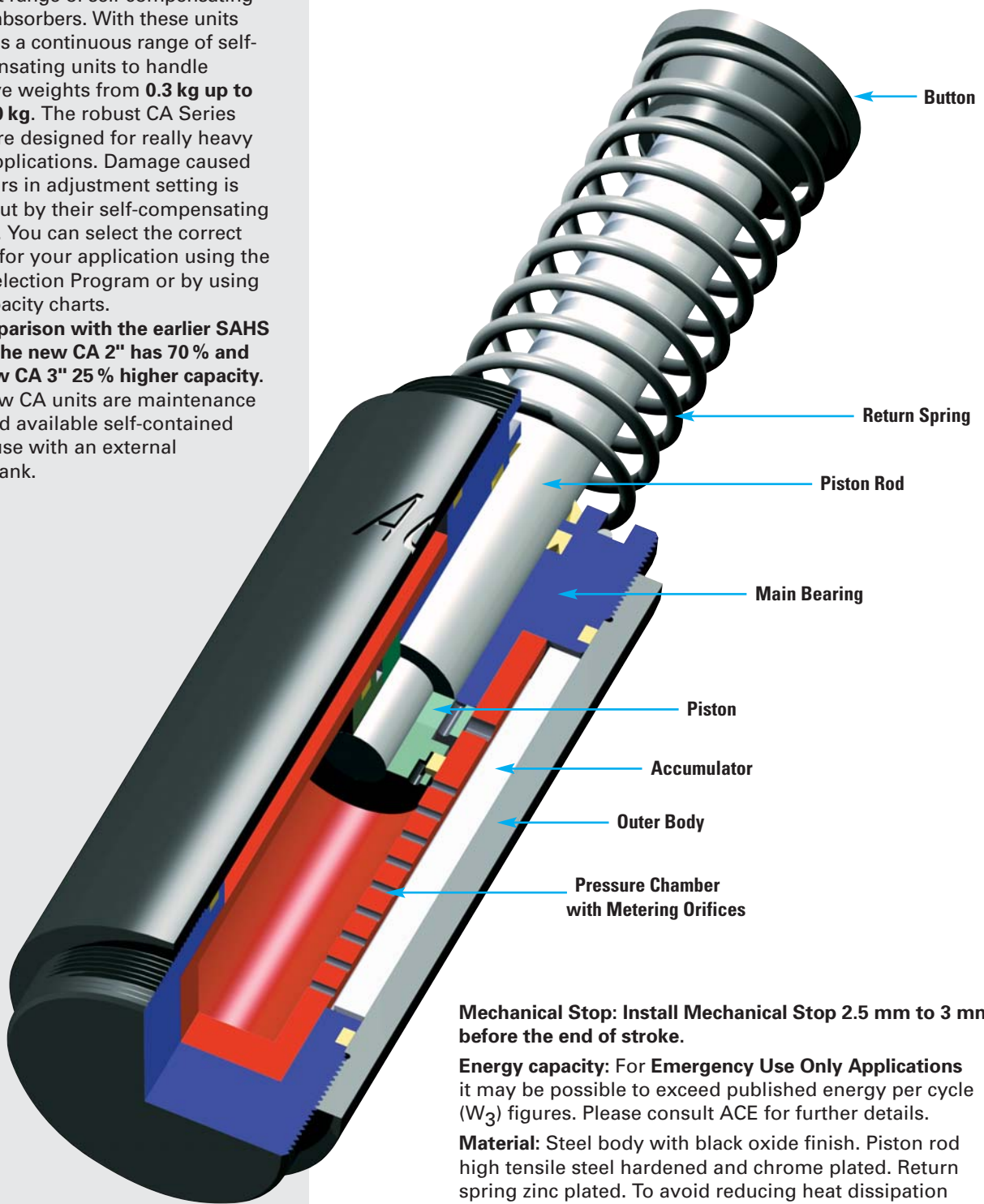


The CA 2 to CA 4 complete the ACE product range of self-compensating shock absorbers. With these units ACE has a continuous range of self-compensating units to handle effective weights from **0.3 kg up to 326 000 kg**. The robust CA Series units are designed for really heavy duty applications. Damage 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.

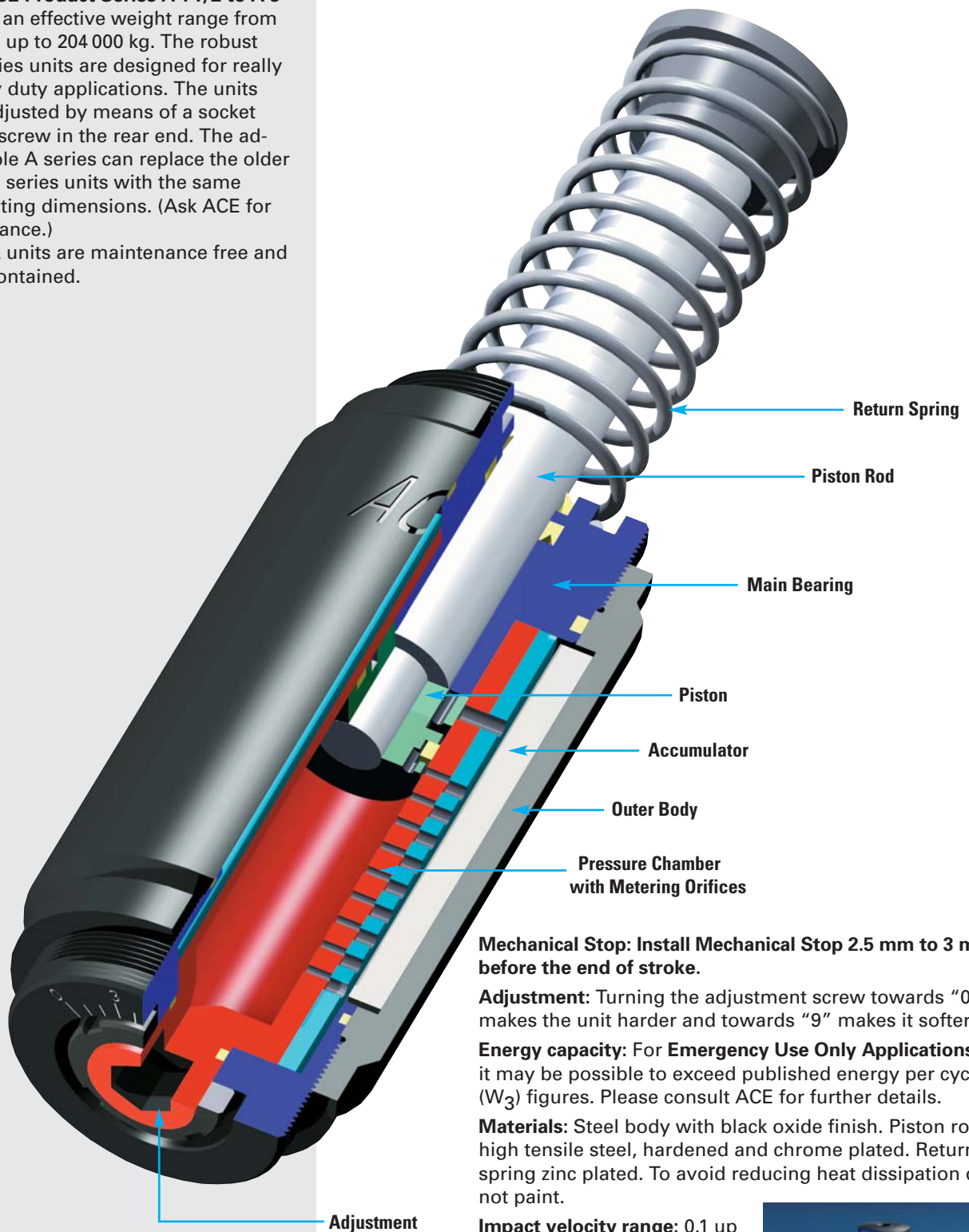
**Operating temperature range:**  
-12°C to +85°C.

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



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.

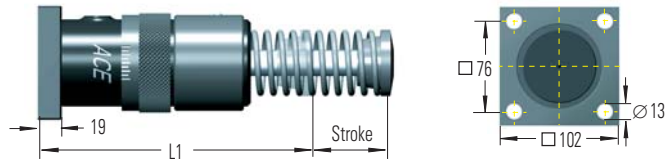
**Operating temperature range:** -12°C to +85°C.

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

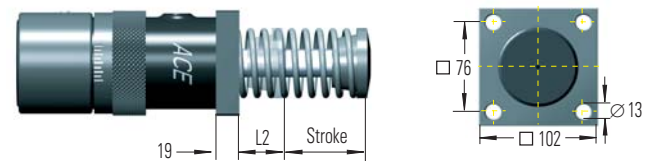


### Mounting Options A 1 1/2 . . .

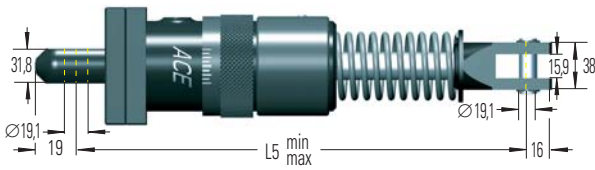
#### Rear Flange -R



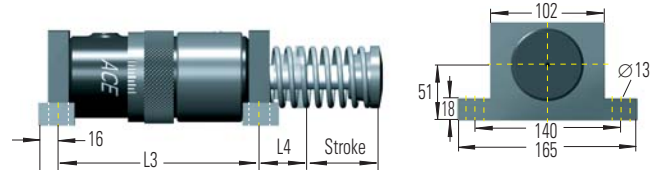
#### Front Flange -F



#### 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  $\phi$  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 o	Weight kg
		**per Cycle W <sub>3</sub>	W <sub>4</sub> 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

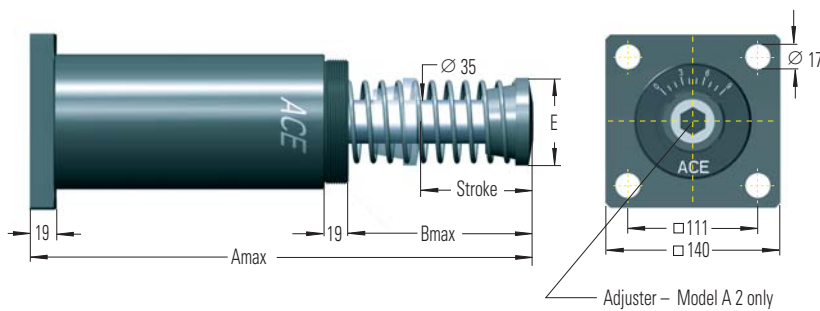
\* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

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

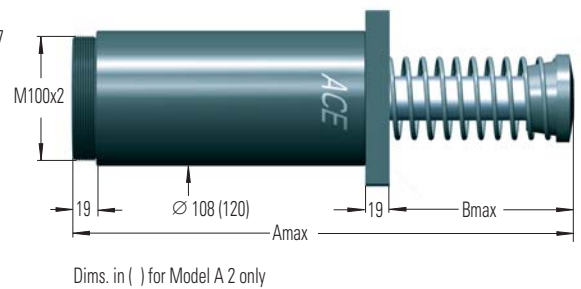
\*\*\* Figures for oil recirculation systems on request

#### Mounting Options CA, A . . .

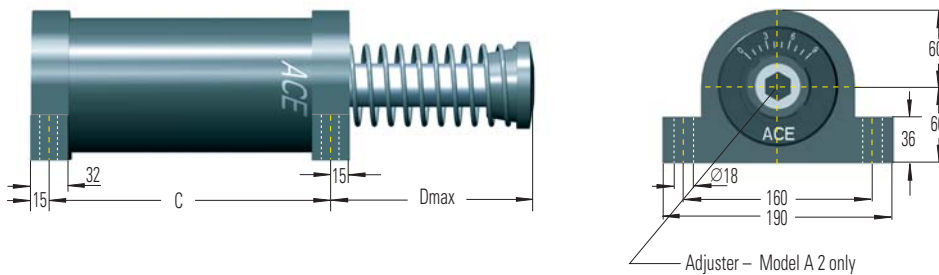
#### Rear Flange -R



#### 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 <sub>3</sub>	Max. Energy Capacity Nm		*Effective Weight me				Return Force N min max	Spring Return Time s	Max. Side-Load Angle o	Weight kg
			W <sub>4</sub> per Hour*** Self-Contained	with Air/Oil Tank	Soft	-1	-2	-3				
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

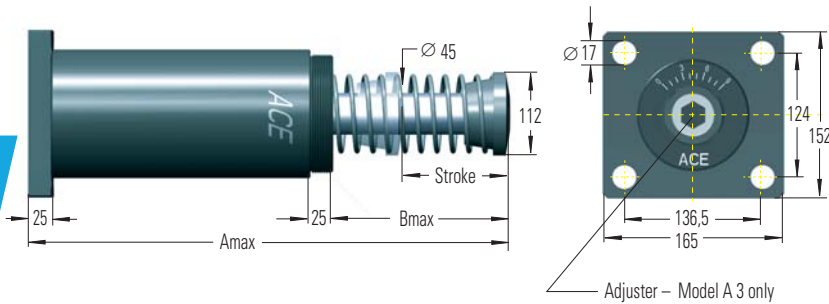
\* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

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

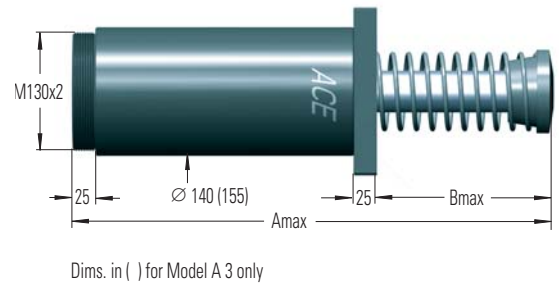
\*\*\* Figures for oil recirculation systems on request

### Mounting Options CA, A . . .

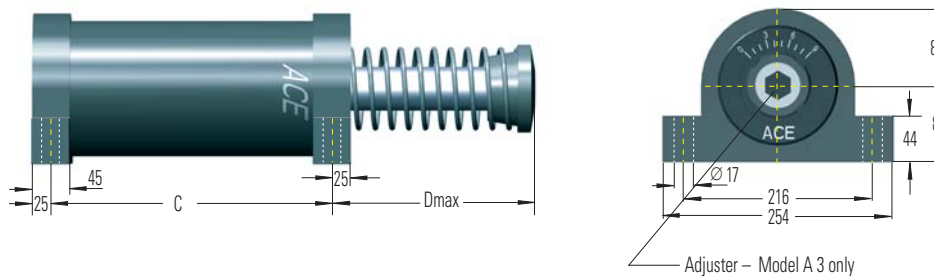
#### Rear Flange -R



#### 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 <sub>3</sub>	Max. Energy Capacity Nm		*Effective Weight me				Return Force N min max	Spring Return Time s	Max. Side-Load Angle °	Weight kg
			W <sub>4</sub> per Hour*** Self-Contained	Hour*** with Air/Oil Tank	Soft		Hard					
					-1 min kg max	-2 min kg max	-3 min kg max	-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

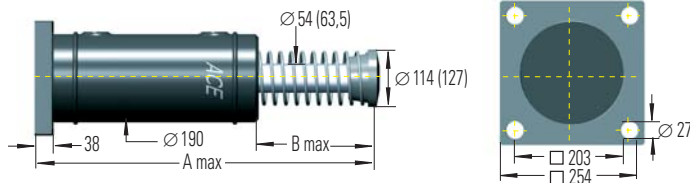
\* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.

\*\* 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

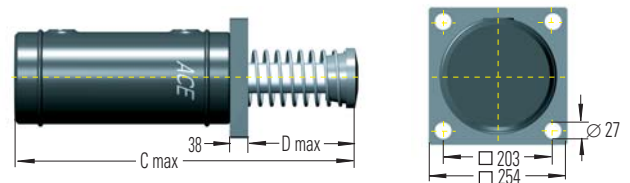
Part Number CA, . . .

#### Rear Flange -R

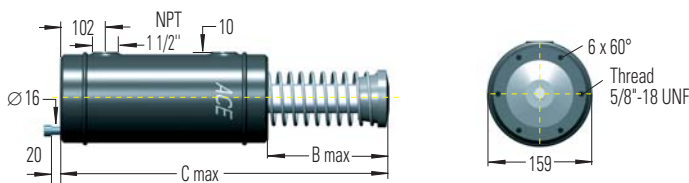


Figures in ( ) for Type CA 4x16

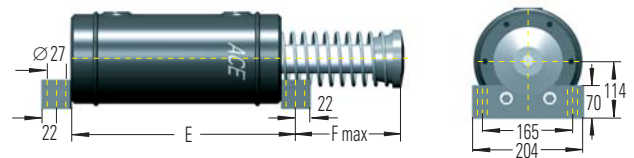
#### Front Flange -F



#### 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 <sub>3</sub>	Max. Energy Capacity Nm			* Effective Weight me			Return Force N	Rod Reset Time s	Weight kg FRP
			Self-Contained	W <sub>4</sub> per Hour with Air/Oil Tank	with Oil Recirculation	Soft -3	Medium -5	Hard -7			
						min kg	max	min kg			
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.