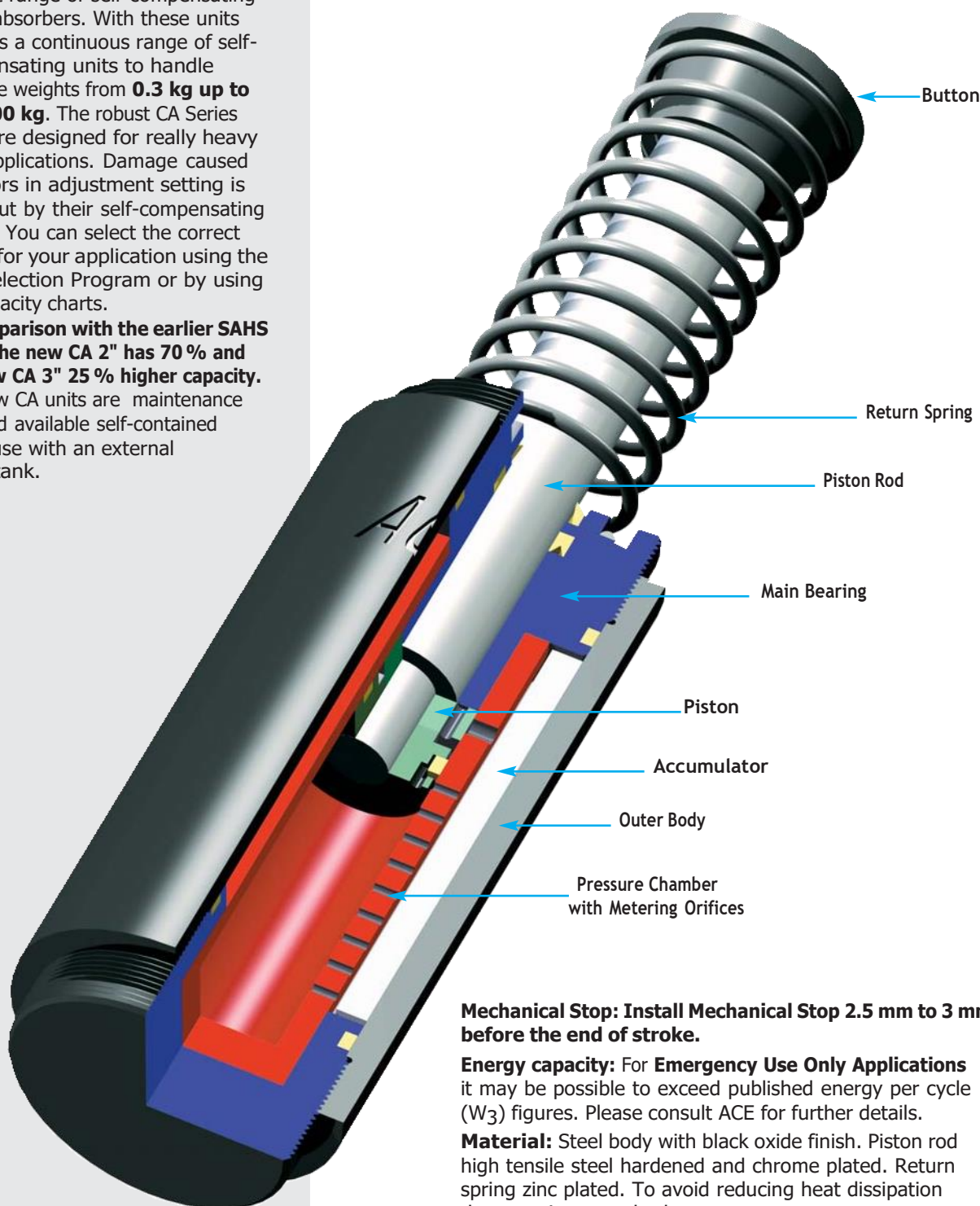


# Heavy Industrial Shock Absorbers CA 2 to CA 4

## Self-Compensating

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.

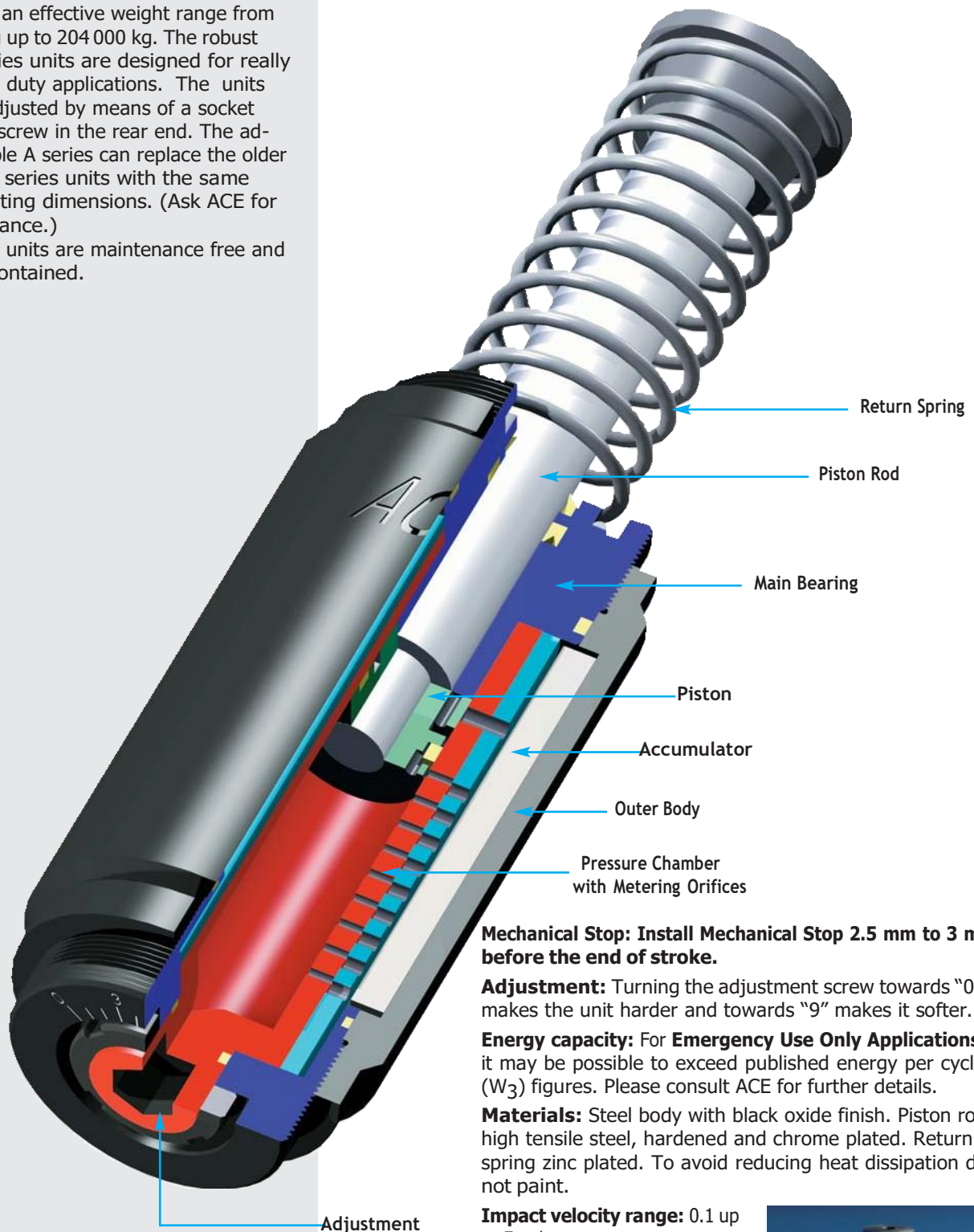
**On request:** Special oils, or for higher or lower impact velocities outside range shown above, or other options please consult ACE.



# 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.

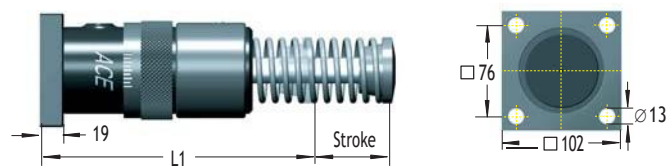


# Heavy Duty Industrial Shock Absorbers A 1 1/2

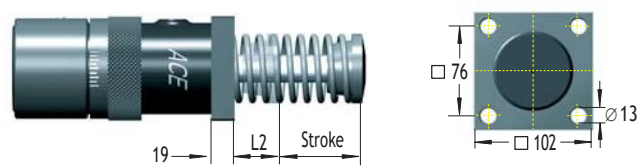
Adjustable, not for Use on New Installations

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

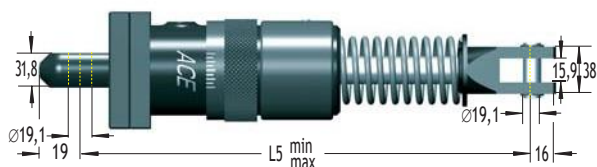
### Rear Flange -R



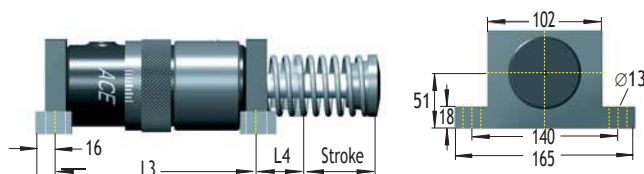
### Front Flange -F



### 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 11/2 x 2	195.2	54.2	-	-	277.8 - 328.6
A 11/2 x 3 1/2	233	54.2	170	58.6	316.6 - 405.6
A 11/2 x 5	271.5	54.2	208	58.6	354.8 - 481.8
A 11/2 x 6 1/2	329	73	246	78	412 - 577

## Ordering Example

Adjustable \_\_\_\_\_  
 Bore Size  $\varnothing$  1 1/2" \_\_\_\_\_  
 Stroke Length 2" = 50.8 mm \_\_\_\_\_  
 Rear Flange Mounting \_\_\_\_\_

**A 11/2 x 2 R**

## 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 $\theta$	Weight kg
		**per Cycle W3	W4 per Hour*** Self-Contained	W4 per Hour*** with Oil Tank					
A 11/2 x 2	50	2350	362 000	452 000	195 - 32 000	160 - 210	0.1	5	7.5
A 11/2 x 3 1/2	89	4150	633 000	791 000	218 - 36 000	110 - 210	0.25	4	8.9
A 11/2 x 5	127	5900	904 000	1130 000	227 - 41000	90 - 230	0.4	3	10.3
A 11/2 x 6 1/2	165	7700	1180 000	1469 000	308 - 45 000	90 - 430	0.4	2	12

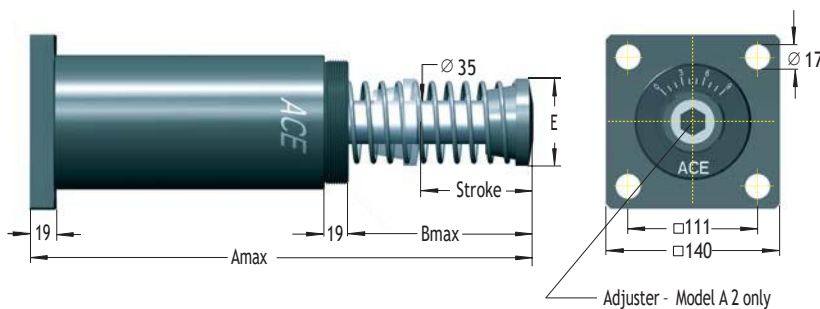
\* Standard effective weight ranges only shown. Please consult ACE if your application falls outside these for alternative range unit.  
 \*\* For **Emergency Use Only** applications it may be possible to exceed these max. capacity ratings. Please consult ACE for further details.  
 \*\*\* Figures for oil recirculation systems on request

# CA 2 and A 2 Series – Heavy Duty Models

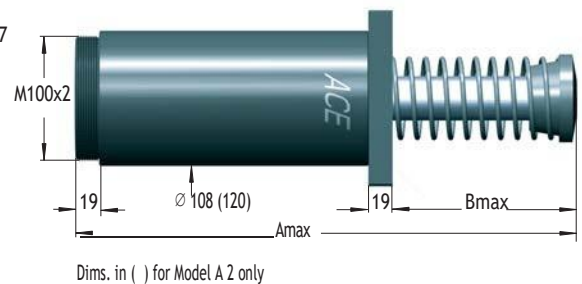
## Self-Compensating and Adjustable

### Mounting Options CA, A . . .

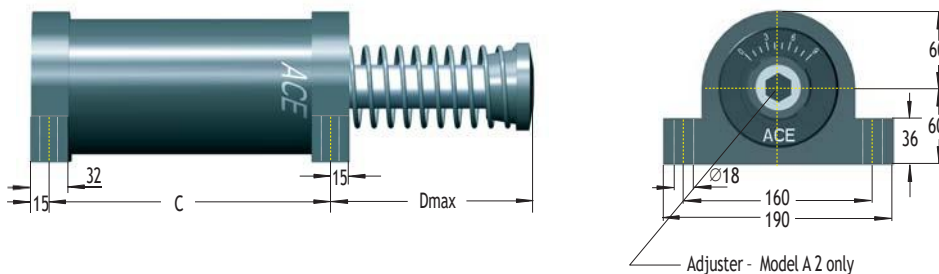
#### Rear Flange -R



#### 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

Self-Compensating ↑  
 Bore Size 2" ↑  
 Stroke Length 4" = 102 mm ↑  
 Effective Weight Range Version ↑  
 Front Flange Mounting ↑

CA 2 x 4-3 F

### 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 W3	Max. Energy Capacity Nm		*Effective Weight me				Return Force N		Spring Return Time s	Max. Side-Load Angle °	Weight kg
			W4 per Hour*** Self-Contained	W11 Air/Oil Tank	Soft	Hard	-1	-2	-3	-4			
CA 2 x 2	50	3600	1 100 000	1 350 000	700 - 2200	1800 - 5400	4500-13600	11300- 34000	210 - 285	0.25	3	12.8	
CA 2 x 4	102	7200	1 350 000	1 700 000	1400 - 4400	3600 -11000	9100 -27200	22600- 68000	150 - 285	0.50	3	14.8	
CA 2 x 6	152	10800	1 600 000	2 000 000	2200 - 6500	5400 -16300	13600 -40800	34000 -102000	150 - 400	0.60	3	16.9	
CA 2 x 8	203	14500	1 900 000	2 400 000	2900 - 8700	7200 -21700	18100 -54400	45300 -136000	230 - 650	0.70	3	19.3	
CA 2 x 10	254	18000	2 200 000	2 700 000	3600 -11000	9100 -27200	22600 -68000	56600 -170000	160 - 460	0.80	3	22.8	
A 2 x 2	50	3600	1 100 000	1 350 000		250 - 77000			210 - 285	0.25	3	14.3	
A 2 x 4	102	9000	1 350 000	1 700 000		250 - 82000			150 - 285	0.50	3	16.7	
A 2 x 6	152	13500	1 600 000	2 000 000		260 - 86000			150 - 400	0.60	3	19.3	
A 2 x 8	203	19200	1 900 000	2 400 000		260 - 90000			230 - 650	0.70	3	22.3	
A 2 x 10	254	23700	2 200 000	2 700 000		320 - 113000			160 - 460	0.80	3	26.3	

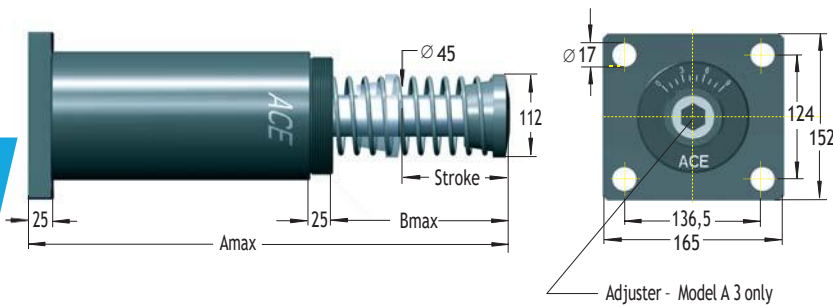


# CA 3 and A 2 Series – Heavy Duty Models

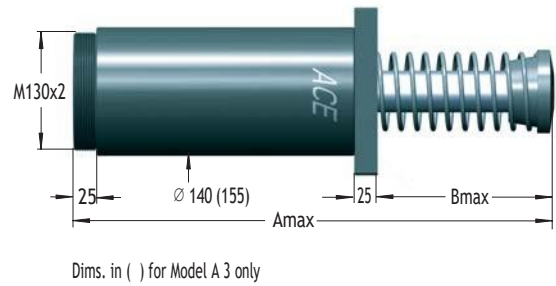
## Self-Compensating and Adjustable

### Mounting Options CA, A . . .

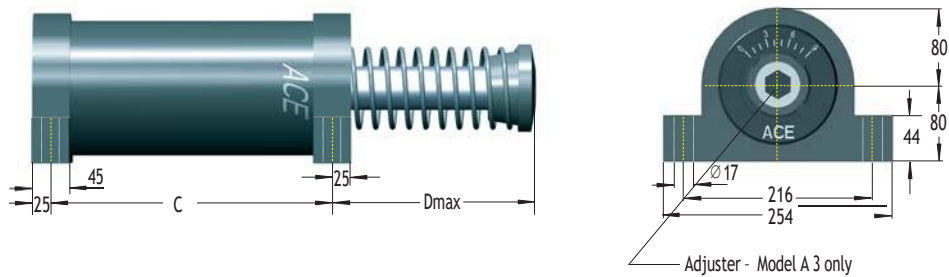
#### Rear Flange -R



#### 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 \_\_\_\_\_  
 Bore Size 3" \_\_\_\_\_  
 Stroke Length 8" = 203 mm \_\_\_\_\_  
 Rear Flange Mounting \_\_\_\_\_

**A 3 x 8 R**

### 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	Spring Return Time s	Max. Side Load Weight kg	Weight kg
			W <sub>4</sub> per Hour*** Self-Contained	with Air/Oil Tank	Soft	-1	-2	-3				
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

