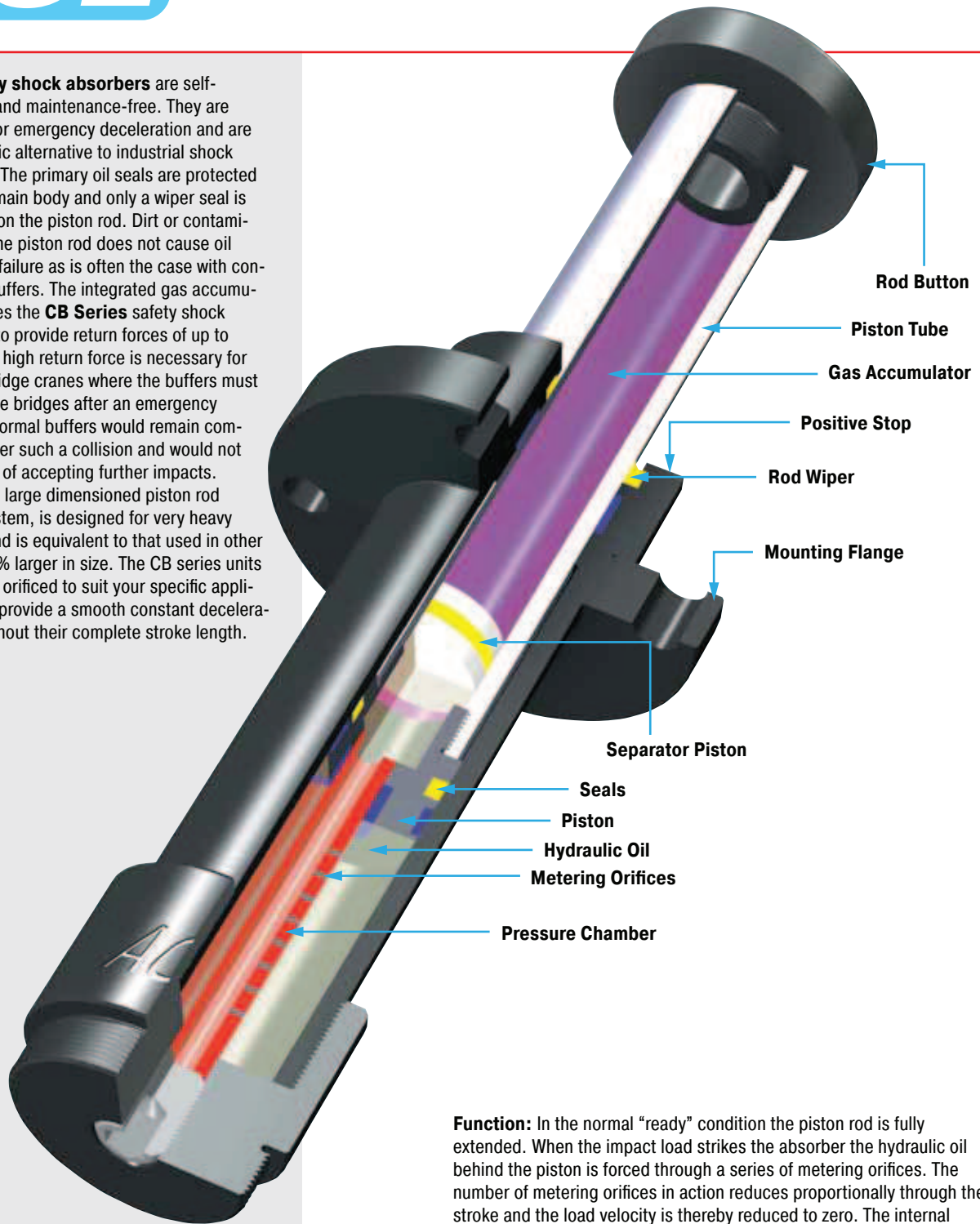


ACE safety shock absorbers are self-contained and maintenance-free. They are designed for emergency deceleration and are an economic alternative to industrial shock absorbers. The primary oil seals are protected inside the main body and only a wiper seal is necessary on the piston rod. Dirt or contamination on the piston rod does not cause oil leakage or failure as is often the case with conventional buffers. The integrated gas accumulator enables the **CB Series** safety shock absorbers to provide return forces of up to 71 kN. This high return force is necessary for multiple-bridge cranes where the buffers must separate the bridges after an emergency collision. Normal buffers would remain compressed after such a collision and would not be capable of accepting further impacts. The robust, large dimensioned piston rod bearing system, is designed for very heavy duty use and is equivalent to that used in other buffers 80 % larger in size. The CB series units are custom orificed to suit your specific application and provide a smooth constant deceleration throughout their complete stroke length.



Function: In the normal “ready” condition the piston rod is fully extended. When the impact load strikes the absorber the hydraulic oil behind the piston is forced through a series of metering orifices. The number of metering orifices in action reduces proportionally through the stroke and the load velocity is thereby reduced to zero. The internal pressure and thus the reaction force (Q) remains constant throughout the entire stroke length. The displaced oil is directed inside the piston rod where a separator piston keeps the oil and the nitrogen gas apart. The integrated gas accumulator, containing low pressure nitrogen, provides the high return force to reset the rod to its extended position and generates the high return forces to comply with crane installations.

Impact velocity range:
0.5 to 4.6 m/s

Material: Steel body with black oxide finish. Piston rod hard chrome plated.

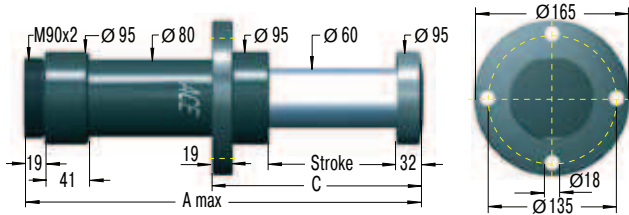
Operating temperature range:
-12 °C to 66 °C

Initial fill pressure: governs the rod return force.

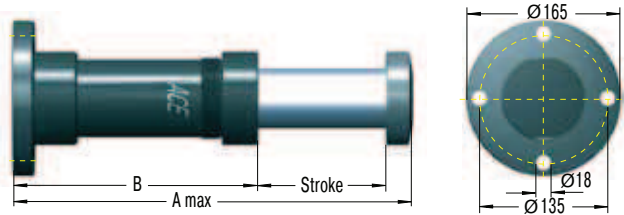
In creep speed: The shock absorber can be pushed through its stroke.



Front Flange -F



Rear Flange -R



Ordering Example

Safety Shock Absorber _____
 Bore Size Ø 63 mm _____
 Stroke 400 mm _____
 EU Compliant _____
 Mounting Style: Front Flange _____
 Identification No. assigned by ACE _____

CB63-400EU-F-X

Please indicate identification no. in case of replacement order

Complete Details Required when Ordering

Moving load m (kg)
 Impact velocity range v (m/s)max.
 Creep speed vs (m/s)
 Motor power P (kW)
 Stall torque factor ST (normal 2.5)
 Number of absorbers in parallel n

or technical data according to formulae and calculations on page 13 to 15.

The calculation and selection of the correct ACE safety shock absorber for your application should be referred to ACE for approval and assignment of unique identification number.

Technical Data

Reacting force Q: At max. capacity rating = **187 kN max.**

Rod return: Nitrogen accumulator (5.6 bar to 5.9 bar)

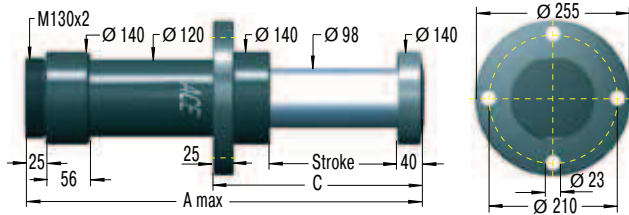
Dimensions and Capacity Chart

Type	Stroke mm	A max	B	C	Max. Energy Capacity W ₃ Nm/Cycle	1 Effective Weight me		Min. Return Force N	Max. Return Force N	Max. Side Load Angle °	Weight kg
						me min. kg	me max. kg				
CB63-100EU	100	420	288	192	16 000	1 510	128 000	1 700	18 500	3.5	12.7
CB63-200EU	200	700	468	292	32 000	3 020	256 000	1 700	24 000	3	16.7
CB63-300EU	300	980	648	392	48 000	4 540	384 000	1 700	27 000	2.5	20.8
CB63-400EU	400	1 260	828	492	64 000	6 050	512 000	1 700	29 000	2	24.8
CB63-500EU	500	1 540	1 008	592	80 000	7 560	640 000	1 700	30 000	1.5	28.8

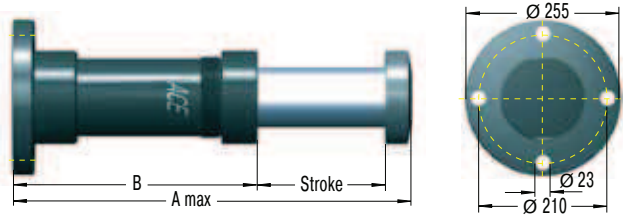
¹ The correct effective weight range for your application will be calculated by ACE and should fall within this band.

Special options: Special oils, special flanges, additional corrosion protection etc. available on request.

Front Flange -F



Rear Flange -R



Ordering Example

Safety Shock Absorber _____ **CB100-400EU-F-X**
 Bore Size Ø 100 mm _____
 Stroke 400 mm _____
 EU Compliant _____
 Mounting Style: Front Flange _____
 Identification No. assigned by ACE _____

Please indicate identification no. in case of replacement order

Complete Details Required when Ordering

Moving load m (kg)
 Impact velocity range v (m/s)max.
 Creep speed vs (m/s)
 Motor power P (kW)
 Stall torque factor ST (normal 2.5)
 Number of absorbers in parallel n

or technical data according to formulae and calculations on page 13 to 15.

The calculation and selection of the correct ACE safety shock absorber for your application should be referred to ACE for approval and assignment of unique identification number.

Technical Data

Reacting force Q: At max. capacity rating = **467 kN max.**

Rod return: Nitrogen accumulator (5.6 bar to 5.9 bar)

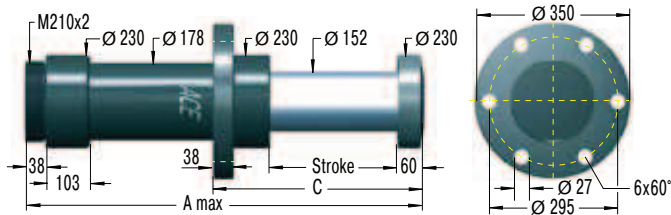
Dimensions and Capacity Chart

Type	Stroke mm	A max	B	C	Max. Energy Capacity W ₃ Nm/Cycle	1 Effective Weight me		Min. Return Force N	Max. Return Force N	Max. Side Load Angle °	Weight kg
						me min. kg	me max. kg				
CB100-200EU	200	735	495	320	80 000	7 560	640 000	4 500	44 000	4	42.5
CB100-300EU	300	1 005	665	420	120 000	11 340	960 000	4 500	56 000	3.5	50.8
CB100-400EU	400	1 275	835	520	160 000	15 120	1 280 000	4 500	65 000	3	59.1
CB100-500EU	500	1 545	1 005	620	200 000	18 900	1 600 000	4 500	71 000	2.5	67.5
CB100-600EU	600	1 815	1 175	720	240 000	22 680	1 920 000	4 500	76 000	2	75.8

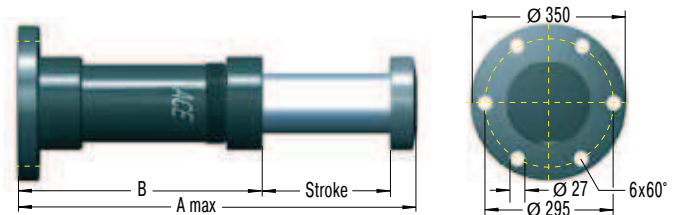
¹ The correct effective weight range for your application will be calculated by ACE and should fall within this band.

Special options: Special oils, special flanges, additional corrosion protection etc. available on request.

Front Flange -F



Rear Flange -R



Ordering Example

Safety Shock Absorber _____ **CB160-400EU-F-X**
 Bore Size Ø 160 mm _____
 Stroke 400 mm _____
 EU Compliant _____
 Mounting Style: Front Flange _____
 Identification No. assigned by ACE _____
Please indicate identification no. in case of replacement order

Complete Details Required when Ordering

Moving load m (kg)
 Impact velocity range v (m/s)max.
 Creep speed vs (m/s)
 Motor power P (kW)
 Stall torque factor ST (normal 2.5)
 Number of absorbers in parallel n

or technical data according to formulae and calculations on page 13 to 15.

The calculation and selection of the correct ACE safety shock absorber for your application should be referred to ACE for approval and assignment of unique identification number.

Technical Data

Reacting force Q: At max. capacity rating = **700 kN max.**

Rod return: Nitrogen accumulator (5.6 bar to 5.9 bar)

Dimensions and Capacity Chart

Type	Stroke mm	A max	B	C	Max. Energy Capacity W ₃ Nm/Cycle	1 Effective Weight me		Min. Return Force N	Max. Return Force N	Max. Side Load Angle °	Weight kg
						me min. kg	me max. kg				
CB160-400EU	400	1 400	940	600	240 000	22 700	1 920 000	11 000	71 000	4	154.6
CB160-600EU	600	2 000	1 340	800	360 000	34 000	2 880 000	11 000	71 000	3	188
CB160-800EU	800	2 600	1 740	1 000	480 000	45 400	3 840 000	11 000	71 000	2	221.3

¹ The correct effective weight range for your application will be calculated by ACE and should fall within this band.

Special options: Special oils, special flanges, additional corrosion protection etc. available on request.