

MC5 to MC75

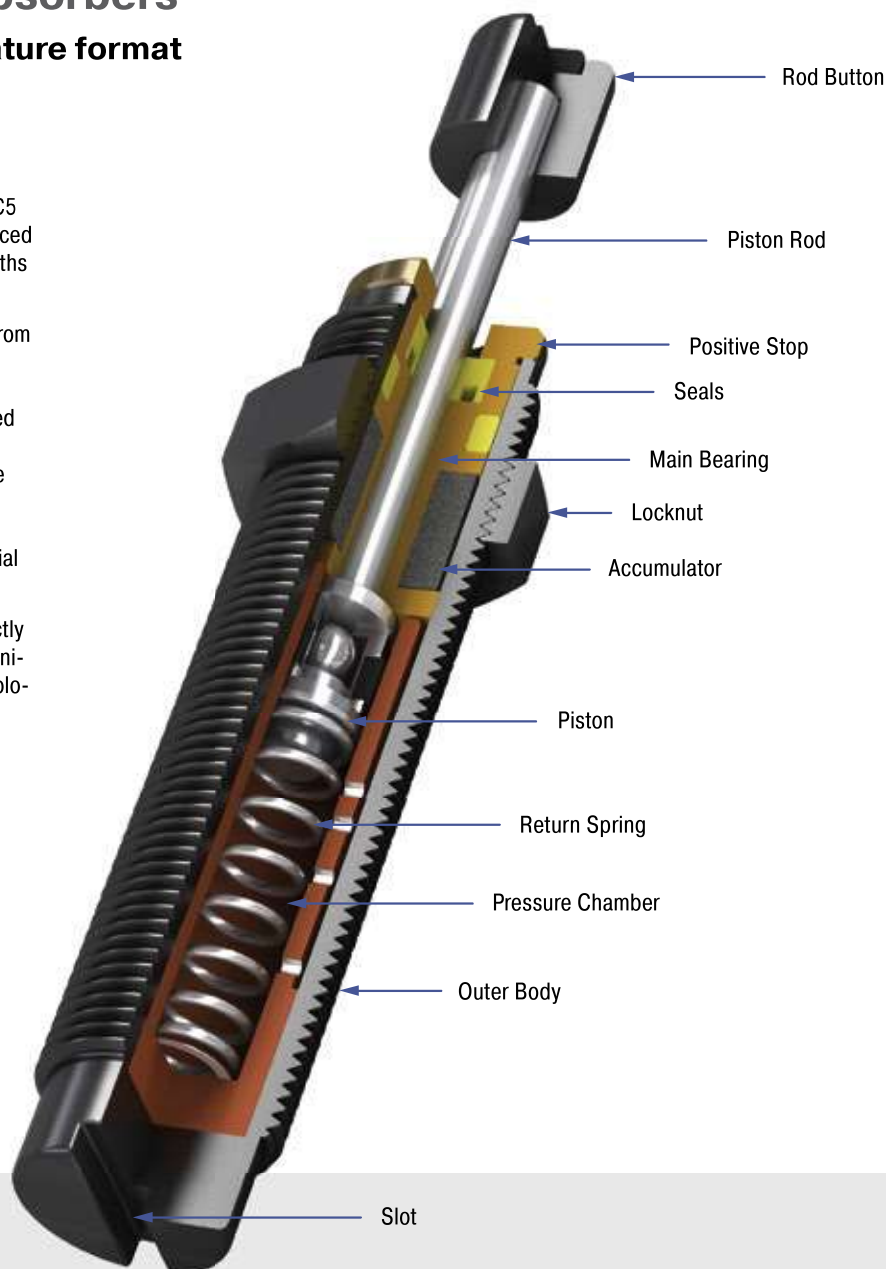
Miniature Shock Absorbers

Shock absorbers in miniature format

Ideal for compact, efficient designs: The MC5 to 75 series impresses users with their reduced dimensions and their very short overall lengths and low resetting forces after braking.

The outer body of each damper, produced from one solid piece, are filled with temperature stable oil, offer a continuous thread incl. a supplied lock nut and also have an integrated positive stop. These hydraulic machine elements from ACE, are ready for immediate installation and are maintenance-free. A comprehensive range of energy absorption with a wide range of effective weight potential are further benefits in these miniature units.

These miniature shock absorbers are perfectly suited to use in applications such as mechanical engineering, medical and electro-technology and robotics.



Technical Data

Energy capacity: 0.68 Nm/Cycle to 9 Nm/Cycle

Impact velocity range: 0.15 m/s to 4 m/s

Operating temperature range: -10 °C to +66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Accessories: Steel corrosion-resistant coating; Piston rod: Hardened stainless steel; Rod end button: Steel, MC25 and MC75: Elastomer Insert; Locknut: Steel, MC5 and MC9: Aluminium

Damping medium: Oil, temperature stable

Application field: Miniature slides, Pneumatic cylinders, Handling modules, Copiers

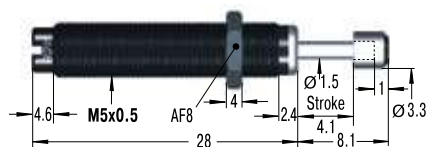
Note: If precise end position datum is required consider use of the stop collar type AH.

Safety instructions: 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: Increased corrosion protection. Special finishes. Models without rod end button also available on request.

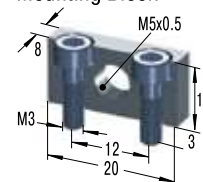
Self-Compensating

MC5EUM

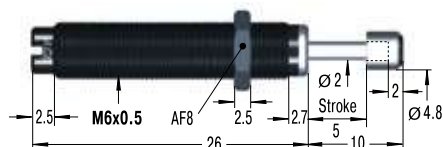


MB5SC2

Mounting Block

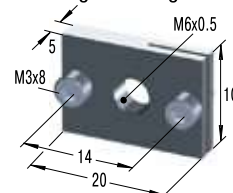


MC9EUM



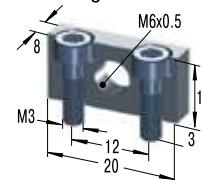
RF6

Rectangular Flange

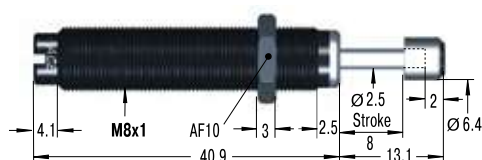


MB6SC2

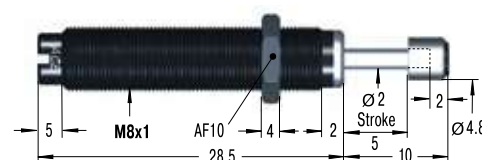
Mounting Block



MC30EUM for use on new installations

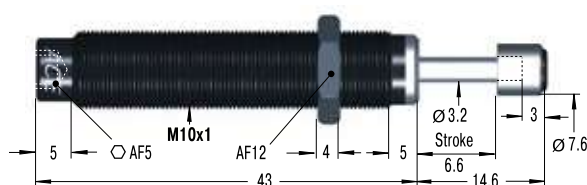


MC10EUM still available in future



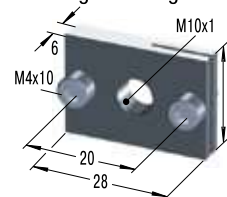
M8x0.75 also available to order

MC25EUM



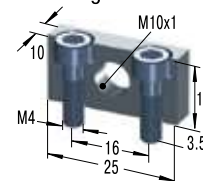
RF10

Rectangular Flange

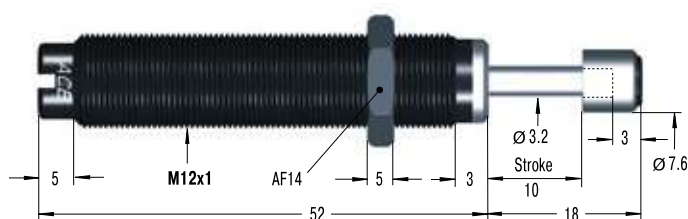


MB10SC2

Mounting Block

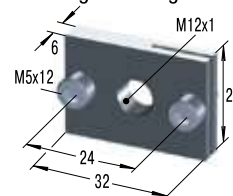


MC75EUM



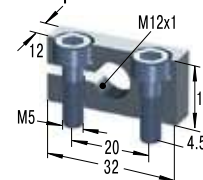
RF12

Rectangular Flange



MB12

Clamp Mount



Additional accessories, mounting, installation ... see from page 36.

Performance

	Max. Energy Capacity		Effective Weight		Side Load Angle				
TYPES	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	Return force min. N	Return force max. N	Return time s	max. °	Weight kg
MC5EUM-1-B	0.68	2,040	0.5	4.4	1	5	0.2	2	0.003
MC5EUM-2-B	0.68	2,040	3.8	10.8	1	5	0.2	2	0.003
MC5EUM-3-B	0.68	2,040	9.7	18.7	1	5	0.2	2	0.003
MC9EUM-1-B	1	2,000	0.6	3.2	2	4	0.3	2	0.005
MC9EUM-2-B	1	2,000	0.8	4.1	2	4	0.3	2	0.005
MC10EUM-L-B	1.25	4,000	0.3	2.7	2	4	0.6	3	0.010
MC10EUMH-B	1.25	4,000	0.7	5	2	4	0.6	3	0.010
MC25EUM-L	2.8	22,600	0.7	2.2	3	6	0.3	2	0.020
MC25EUM	2.8	22,600	1.8	5.4	3	6	0.3	2	0.020
MC25EUMH	2.8	22,600	4.6	13.6	3	6	0.3	2	0.020
MC30EUM-1	3.5	5,600	0.4	1.9	2	6	0.3	2	0.010
MC30EUM-2	3.5	5,600	1.8	5.4	2	6	0.3	2	0.010
MC30EUM-3	3.5	5,600	5	15	2	6	0.3	2	0.010
MC75EUM-1	9	28,200	0.3	1.1	4	9	0.3	2	0.030
MC75EUM-2	9	28,200	0.9	4.8	4	9	0.3	2	0.030
MC75EUM-3	9	28,200	2.7	36.2	4	9	0.3	2	0.030
MC75EUM-4	9	28,200	25	72	4	9	0.3	2	0.030

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

MC150 to MC600

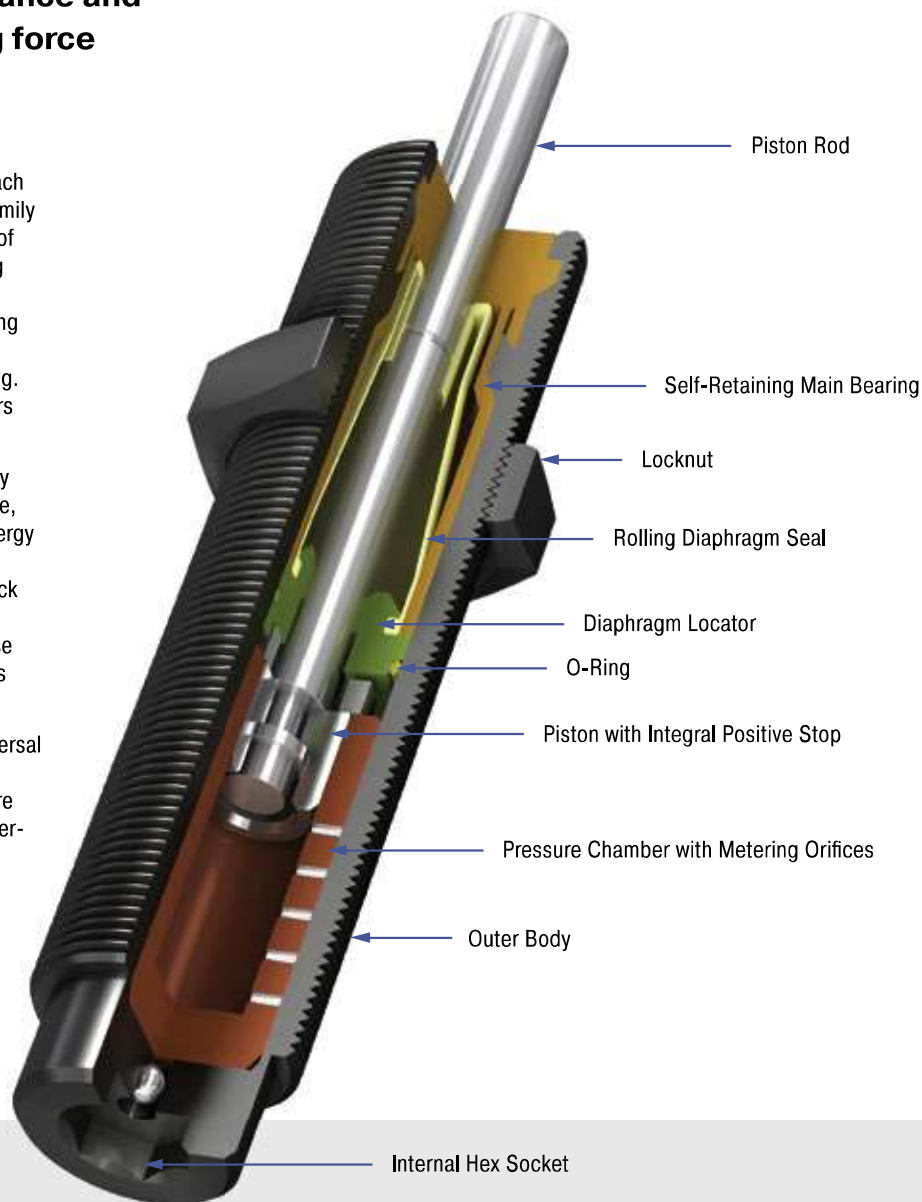
Miniature Shock Absorbers

Exceptionally high endurance and with the lowest resetting force

Tried-and-tested and durable: Due to a hermetically sealed rolling diaphragm in each absorber, the MC150 to MC600 product family is suitable for an exceptional high lifetime of use with up to 25 million cycles. The rolling diaphragm technology perfected by ACE ensures complete separation of the damping fluid from the surrounding air. This makes direct installation in a pressure chamber e.g. as end stop damping in pneumatic cylinders up to approx. 7 bar possible.

The rolling diaphragm also benefits the very low return forces of these maintenance-free, ready-to-install absorbers. Progressive energy capacities, with a wide range of effective weight potential make these miniature shock absorbers, complete with an integrated positive stop a winner. Furthermore, the use of a side load adapter allows impact angles of up to 25°.

Miniature shock absorbers capable of universal mounting even inside a cylinder and also available in stainless steel options. They are often used in mechanical and plant engineering, and a multitude of other applications.



Technical Data

Energy capacity: 20 Nm/Cycle to 136 Nm/Cycle

Impact velocity range: 0.06 m/s to 6 m/s. Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Accessories: Steel corrosion-resistant coating; Main bearing: Plastic; Piston rod: Hardened stainless steel (1.4125, AISI 440C); Rolling diaphragm: EPDM

Damping medium: Oil, temperature stable

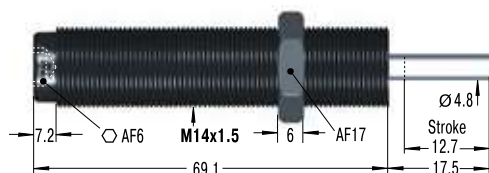
Application field: Linear slides, Pneumatic cylinders, Swivel units, Handling modules

Note: If precise end position datum is required consider use of the stop collar type AH.

Safety instructions: External materials in the surrounding area can attack the rolling seal and lead to a shorter service life. Please contact ACE for appropriate solution suggestions. Suitable for use in pressure chambers up to 7 bar.

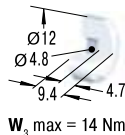
On request: Increased corrosion protection. Special threads or other special options.

MC150EUM

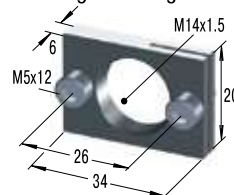


M14x1 also available to special order

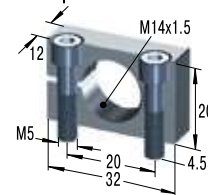
PP150 Nylon Button



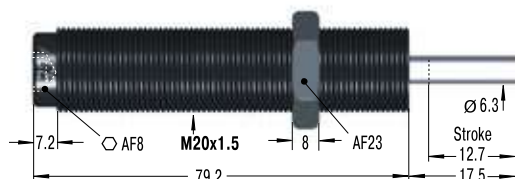
RF14 Rectangular Flange



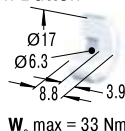
MB14 Clamp Mount



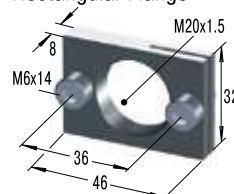
MC225EUM



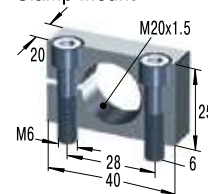
PP225 Nylon Button



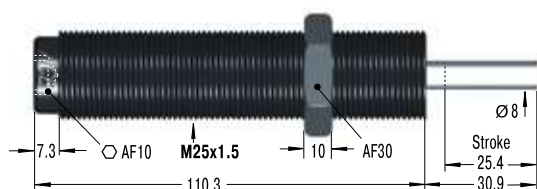
RF20 Rectangular Flange



MB20 Clamp Mount

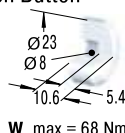


MC600EUM

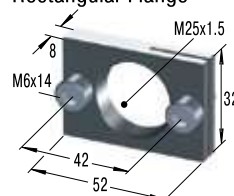


M27x3 also available to special order

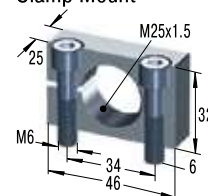
PP600 Nylon Button



RF25 Rectangular Flange



MB25 Clamp Mount



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight					Side Load Angle	
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	Return force min. N	Return force max. N	Return time s	max. °	Weight kg
MC150EUM	20	34,000	0.9	10	3	8	0.4	4	0.06
MC150EUMH	20	34,000	8.6	86	3	8	0.4	4	0.06
MC150EUMH2	20	34,000	70.0	200	3	8	0.4	4	0.06
MC150EUMH3	20	34,000	181.0	408	3	8	1.0	4	0.06
MC225EUM	41	45,000	2.3	25	4	9	0.3	4	0.15
MC225EUMH	41	45,000	23.0	230	4	9	0.3	4	0.15
MC225EUMH2	41	45,000	180.0	910	4	9	0.3	4	0.15
MC225EUMH3	41	45,000	816.0	1,814	4	9	0.3	4	0.15
MC600EUM	136	68,000	9.0	136	5	10	0.6	2	0.26
MC600EUMH	136	68,000	113.0	1,130	5	10	0.6	2	0.26
MC600EUMH2	136	68,000	400.0	2,300	5	10	0.6	2	0.26
MC600EUMH3	136	68,000	2,177.0	4,536	5	10	0.6	2	0.26

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

MC150-V4A to MC600-V4A

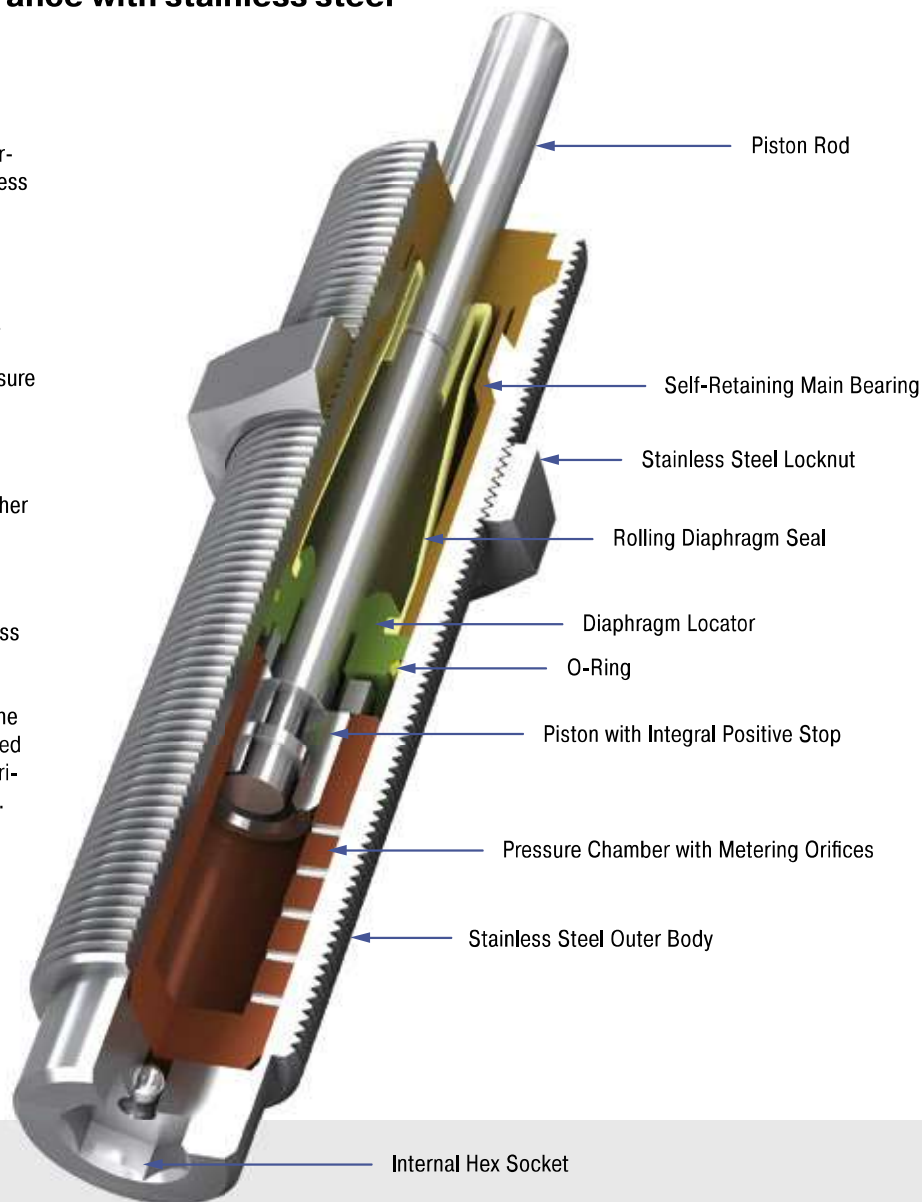
Miniature Shock Absorbers

Exceptionally high endurance with stainless steel corrosion protection

Brilliant in every respect: These high performance miniature shock absorbers in stainless steel are based on the MC150 to MC600 product family and its proven damping technology. This means that these special absorbers offer all of the benefits of the MC standard units such as the proven ACE rolling diaphragm technology for maximum service life and direct installation in a pressure chamber with up to approx. 7 bar.

Thanks to perfectly progressive maximum energy absorption and effective weight potential, their use is augmented even further by the outer body and a complete range of accessories made of stainless steel (material 1.4404).

Miniature shock absorbers made of stainless steel are mainly used in medical and electro-technology, but also in shipbuilding, packaging and chemicals industry and in the food processing. For the latter, they are filled with a special oil in order to fulfil the authorisation conditions (NSF-H1) for this market.



Technical Data

Energy capacity: 20 Nm/Cycle to 136 Nm/Cycle

Impact velocity range: 0.06 m/s to 6 m/s.
Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Locknut, Accessories: Stainless steel (1.4404, AISI 316L); Main bearing: Plastic; Piston rod: Hardened stainless steel (1.4125, AISI 440C); Rolling diaphragm: EPDM

Damping medium: Oil, temperature stable

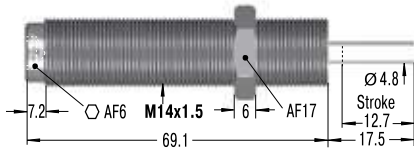
Application field: Clean room areas, Pharmaceutical industry, Medical technology, Food industry

Note: If precise end position datum is required consider use of the stop collar type AH.

Safety instructions: External materials in the surrounding area can attack the rolling seal and lead to a shorter service life. Please contact ACE for appropriate solution suggestions. Suitable for use in pressure chambers up to 7 bar.

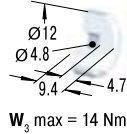
On request: Special oil with food approval. Special threads or other special options available on request.

MC150EUM-V4A



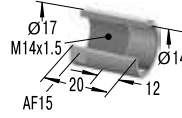
PP150

Nylon Button



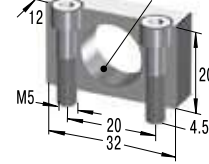
AH14-V4A

Stop Collar



MB14SC2-V4A

Mounting Block

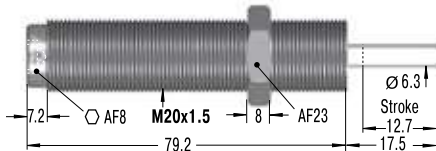


KM14-V4A

Locknut

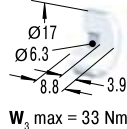


MC225EUM-V4A



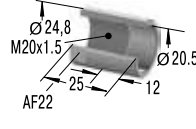
PP225

Nylon Button



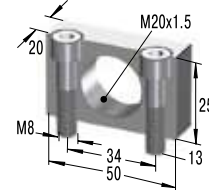
AH20-V4A

Stop Collar



MB20SC2-V4A

Mounting Block

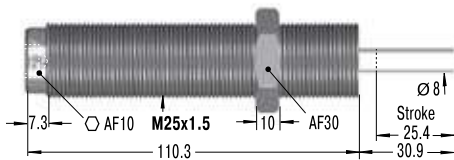


KM20-V4A

Locknut

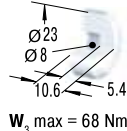


MC600EUM-V4A



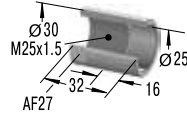
PP600

Nylon Button



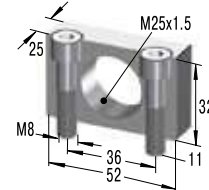
AH25-V4A

Stop Collar



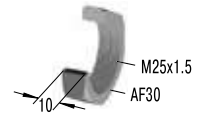
MB25SC2-V4A

Mounting Block



KM25-V4A

Locknut



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight		Return force min. Return force max. Return time				Weight
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	N	N	s	¹ Side Load Angle max. °	
MC150EUM-V4A	20	34,000	0.9	10	3	5	0.4	4	0.06
MC150EUMH-V4A	20	34,000	8.6	86	3	5	0.4	4	0.06
MC150EUMH2-V4A	20	34,000	70.0	200	3	5	0.4	4	0.06
MC150EUMH3-V4A	20	34,000	181.0	408	3	5	1.0	4	0.06
MC225EUM-V4A	41	45,000	2.3	25	4	6	0.3	4	0.15
MC225EUMH-V4A	41	45,000	23.0	230	4	6	0.3	4	0.15
MC225EUMH2-V4A	41	45,000	180.0	910	4	6	0.3	4	0.15
MC225EUMH3-V4A	41	45,000	816.0	1,814	4	6	0.3	4	0.15
MC600EUM-V4A	136	68,000	9.0	136	5	9	0.6	2	0.26
MC600EUMH-V4A	136	68,000	113.0	1,130	5	9	0.6	2	0.26
MC600EUMH2-V4A	136	68,000	400.0	2,300	5	9	0.6	2	0.26
MC600EUMH3-V4A	136	68,000	2,177.0	4,536	5	9	0.6	2	0.26

¹ For applications with higher side load angles please contact ACE.

PMC150 to PMC600

Miniature Shock Absorbers

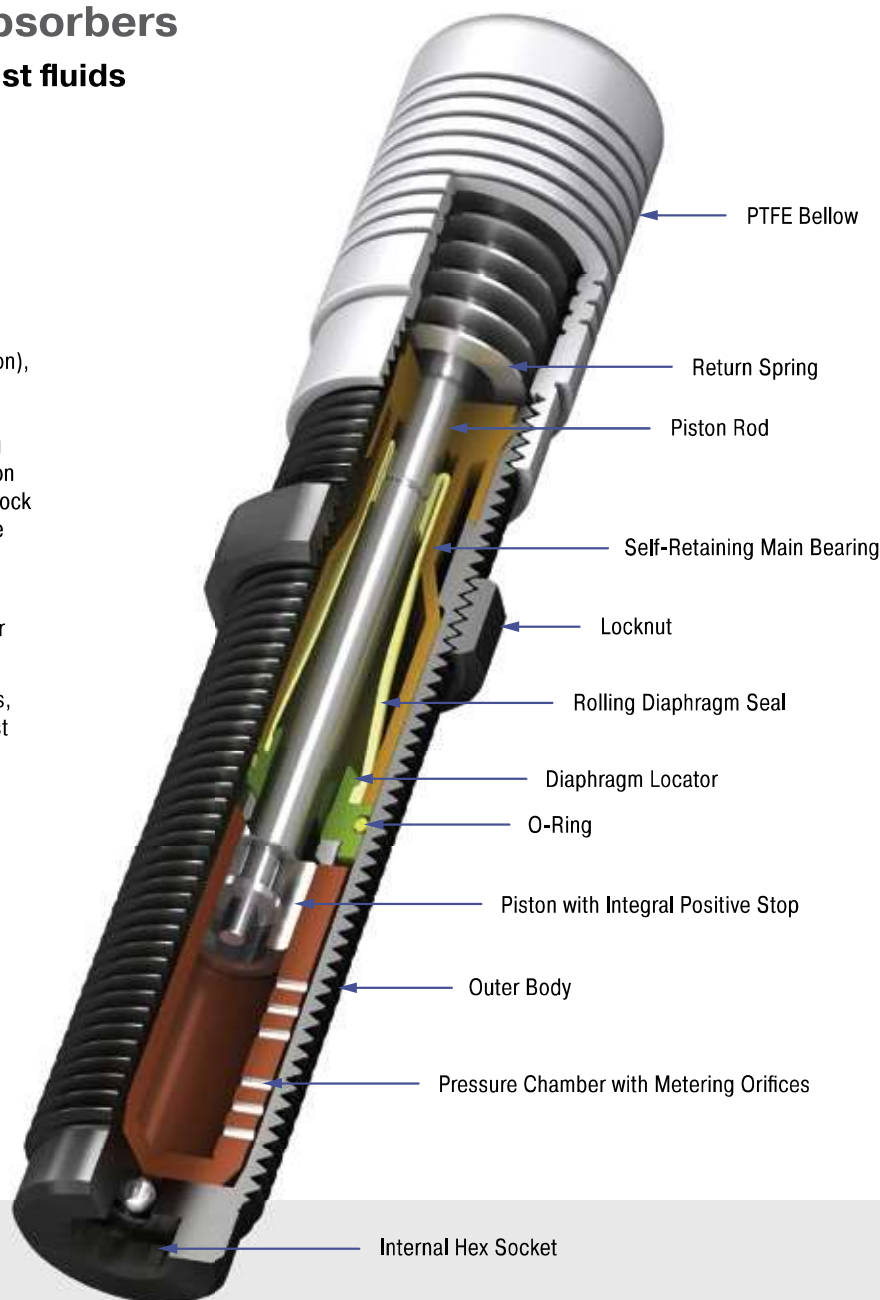
Reliable protection against fluids

Hermetically sealed: The shock absorbers from the ACE Protection series PMC have a compact, perfectly sealed cap as a special feature.

This protection bellows, made of PTFE (Teflon), safely encapsulates the proven ACE rolling diaphragm from the outside environment. Aggressive cutting, lubricating and cleaning agents don't stand a chance and the function of the maintenance-free, ready-to-install shock absorber is retained. They are also available in full stainless steel.

The PMC series is a good alternative to the SP type air bleed collar if no compressed air is available on the machine or system.

Reliable protection against aggressive fluids, these miniature shock absorbers are the first choice everywhere where conventional dampers wear out too quickly, eg. As in machining centers or other applications of mechanical engineering.



Technical Data

Energy capacity: 20 Nm/Cycle to 136 Nm/Cycle

Impact velocity range: 0.06 m/s to 6 m/s.
Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Steel corrosion-resistant coating; Main bearing: Plastic; Piston rod: Hardened stainless steel (1.4125, AISI 440C); Bellow: PTFE, steel insert: Stainless steel (1.4404/1.4571, AISI 316L/316Ti); Rolling diaphragm: EPDM

Damping medium: Oil, temperature stable

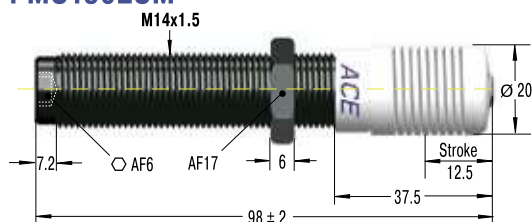
Application field: Finishing and processing centres, Clean room areas, Pharmaceutical industry, Medical technology

Note: Final preliminary test must be done on the application.

Safety instructions: The volume of the hermetically sealed PTFE bellows is displaced by volume compensation of the rolling diaphragm seal.

On request: Special accessories available on request.

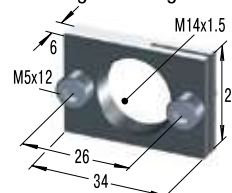
PMC150EUM



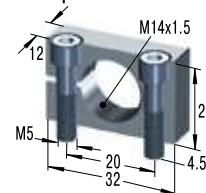
KM14 Locknut



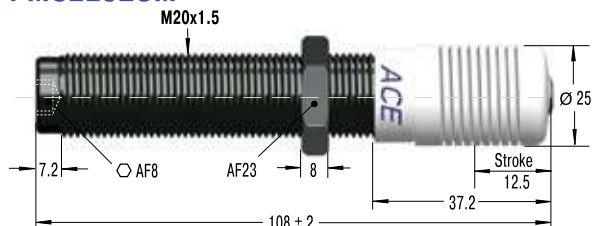
RF14 Rectangular Flange



MB14 Clamp Mount



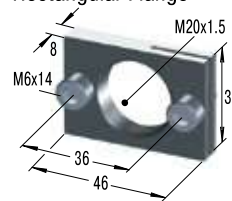
PMC225EUM



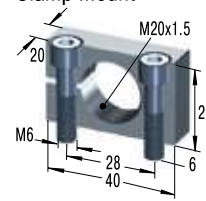
KM20 Locknut



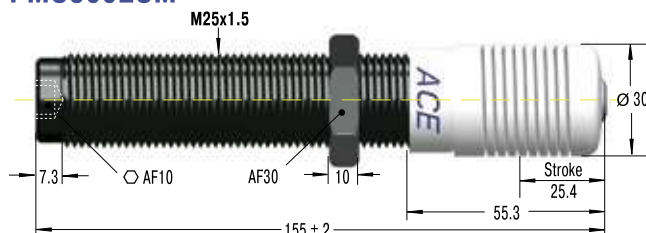
RF20 Rectangular Flange



MB20 Clamp Mount



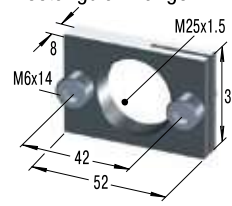
PMC600EUM



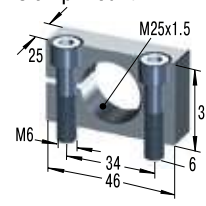
KM25 Locknut



RF25 Rectangular Flange



MB25 Clamp Mount



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight		Return force min.	Return force max.	Return time	Side Load Angle	
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg				max. °	Weight kg
PMC150EUM	20	34,000	0.9	10	5	60	0.4	4	0.08
PMC150EUMH	20	34,000	8.6	86	5	60	0.4	4	0.08
PMC150EUMH2	20	34,000	70.0	200	5	60	0.4	4	0.08
PMC150EUMH3	20	34,000	181.0	408	5	60	1.0	4	0.08
PMC225EUM	41	45,000	2.3	25	5	65	0.3	4	0.17
PMC225EUMH	41	45,000	23.0	230	5	65	0.3	4	0.17
PMC225EUMH2	41	45,000	180.0	910	5	65	0.3	4	0.17
PMC225EUMH3	41	45,000	816.0	1,814	5	65	0.3	4	0.17
PMC600EUM	136	68,000	9.0	136	5	85	0.6	2	0.32
PMC600EUMH	136	68,000	113.0	1,130	5	85	0.6	2	0.32
PMC600EUMH2	136	68,000	400.0	2,300	5	85	0.6	2	0.32
PMC600EUMH3	136	68,000	2,177.0	4,536	5	85	0.6	2	0.32

PMC150-V4A to PMC600-V4A

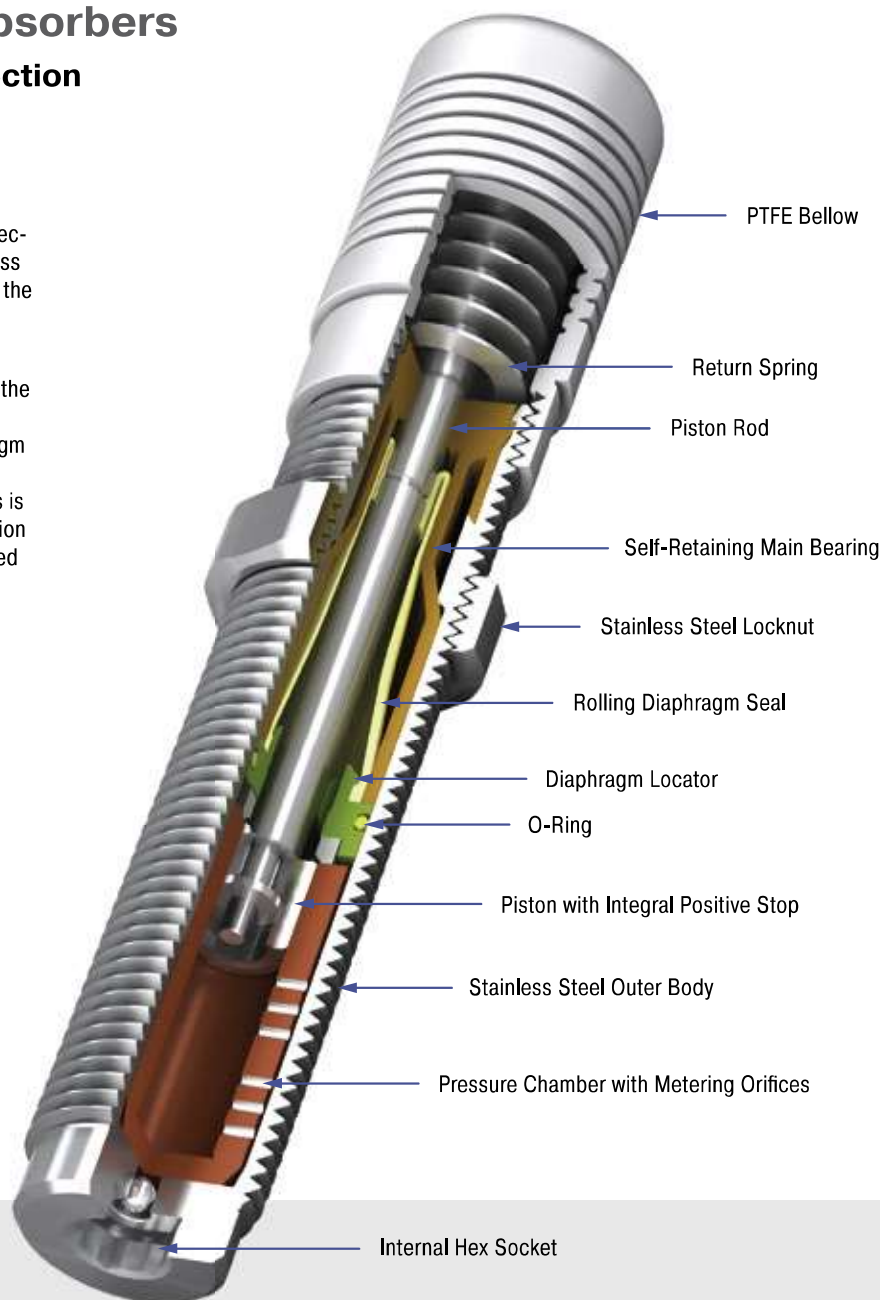
Miniature Shock Absorbers

Optimum corrosion protection

Hermetically sealed and rustproof: The Protection series PMC is also available in a stainless steel design. This is of particular interest to the food and packaging industries.

Their main special feature is the compact, totally sealed bellow between the body and the cap made of PTFE (Teflon). This protection safely encapsulates the ACE rolling diaphragm from the outside environment. Aggressive fluids don't stand a chance. The PMC series is an excellent alternative if the accessory option of the SP type air bleed collar cannot be used due to a lack of compressed air.

The PMC series miniature shock absorbers, produced from stainless steel, are primarily suitable for use in the food industry, but are also wherever an elegant look is important e.g. in shipbuilding.



Technical Data

Energy capacity: 20 Nm/Cycle to 136 Nm/Cycle

Impact velocity range: 0.06 m/s to 6 m/s.
Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Stainless steel (1.4404, AISI 316L); Main bearing: Plastic; Piston rod: Hardened stainless steel (1.4125, AISI 440C); Bellow: PTFE, steel insert: Stainless steel (1.4404/1.4571, AISI 316L/316Ti); Rolling diaphragm: EPDM

Damping medium: Oil, temperature stable

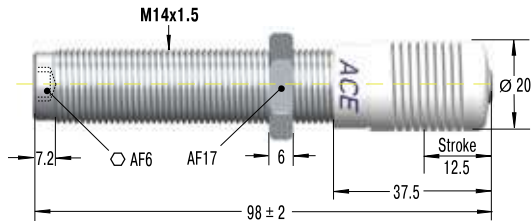
Application field: Finishing and processing centres, Clean room areas, Pharmaceutical industry, Medical technology

Note: Final preliminary test must be done on the application.

Safety instructions: The volume of the hermetically sealed PTFE bellows is displaced by volume compensation of the rolling diaphragm seal.

On request: Special accessories available on request.

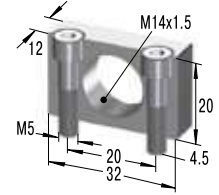
PMC150EUM-V4A



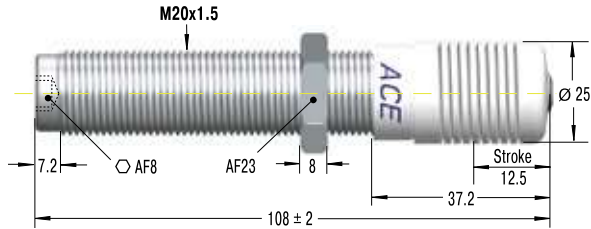
KM14-V4A Locknut



MB14SC2-V4A Mounting Block



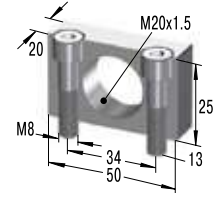
PMC225EUM-V4A



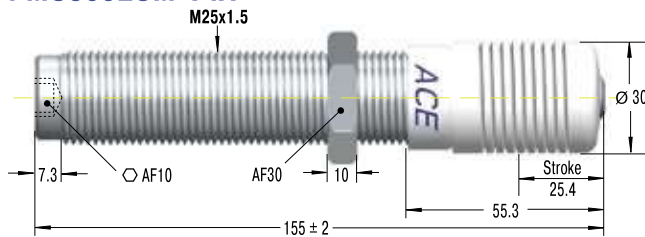
KM20-V4A Locknut



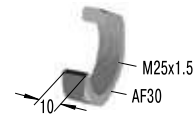
MB20SC2-V4A Mounting Block



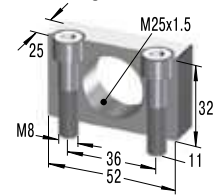
PMC600EUM-V4A



KM25-V4A Locknut



MB25SC2-V4A Mounting Block



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight		Return force min. N	Return force max. N	Return time s	Side Load Angle max. °	Weight kg
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg					
PMC150EUM-V4A	20	34,000	0.9	10	5	60	0.4	4	0.08
PMC150EUMH-V4A	20	34,000	8.6	86	5	60	0.4	4	0.08
PMC150EUMH2-V4A	20	34,000	70.0	200	5	60	0.4	4	0.08
PMC150EUMH3-V4A	20	34,000	181.0	408	5	60	1.0	4	0.08
PMC225EUM-V4A	41	45,000	2.3	25	5	65	0.3	4	0.17
PMC225EUMH-V4A	41	45,000	23.0	230	5	65	0.3	4	0.17
PMC225EUMH2-V4A	41	45,000	180.0	910	5	65	0.3	4	0.17
PMC225EUMH3-V4A	41	45,000	816.0	1,814	5	65	0.3	4	0.17
PMC600EUM-V4A	136	68,000	9.0	136	5	85	0.6	2	0.32
PMC600EUMH-V4A	136	68,000	113.0	1,130	5	85	0.6	2	0.32
PMC600EUMH2-V4A	136	68,000	400.0	2,300	5	85	0.6	2	0.32
PMC600EUMH3-V4A	136	68,000	2,177.0	4,536	5	85	0.6	2	0.32

SC190 to SC925

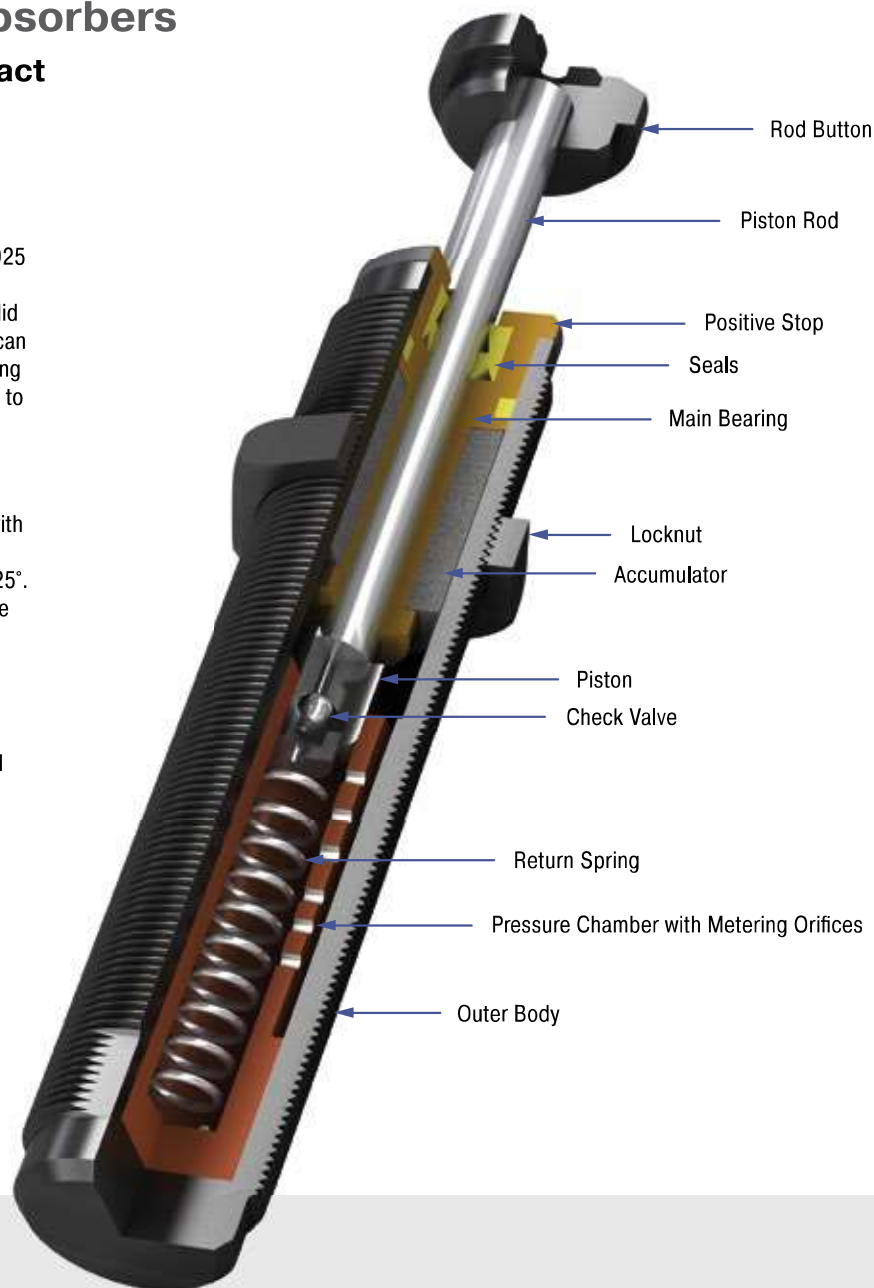
Miniature Shock Absorbers

Long stroke and soft impact

Ideal for soft damping: The SC found in the model code from the ACE series SC190 to 925 stands for 'soft contact'. These miniature shock absorbers manufactured from one solid piece are designed in such a way that they can be setup with a linear or a progressive braking curve. The soft damping character is thanks to the special, long strokes producing smooth deceleration and low reaction forces.

These maintenance-free, ready-to-install hydraulic machine elements are equipped with an integrated positive stop. The use of side load adapter allows impact angles of up to 25°. Thanks to the designed overlapping effective weight ranges, these dampers cover an effective load range of below 1 kg to more than 2,000 kg!

The miniature shock absorbers from the SC190 to 925 series are used in mechanical engineering and primarily in the areas of handling and automation.



Technical Data

Energy capacity: 25 Nm/Cycle to 110 Nm/Cycle

Impact velocity range: 0.15 m/s to 3.66 m/s. Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Accessories: Steel corrosion-resistant coating; Piston rod: Hardened stainless steel

Damping medium: Oil, temperature stable

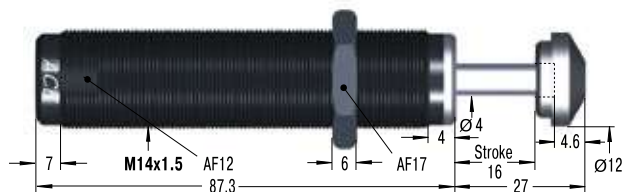
Application field: Linear slides, Pneumatic cylinders, Handling modules, Machines and plants

Note: If precise end position datum is required consider use of the stop collar type AH.

Safety instructions: 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.

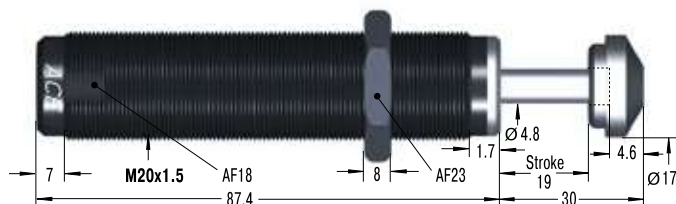
On request: Nickel-plated or weartec finish (seawater resistant) or other special finishes available to special order. Models without rod end button.

SC190EUM; 0 to 4



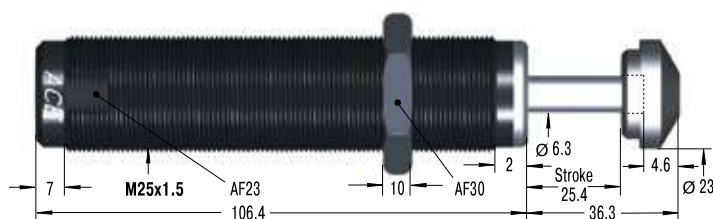
M14x1 and M16x1 also available to special order

SC300EUM; 0 to 4



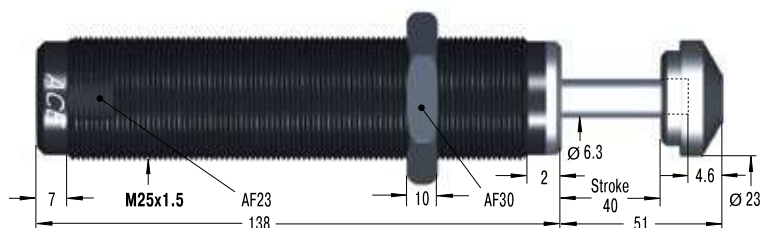
M22x1.5 also available to special order

SC650EUM; 0 to 4

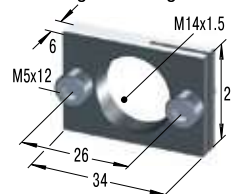


M26x1.5 also available to special order

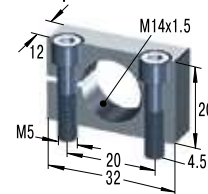
SC925EUM; 0 to 4



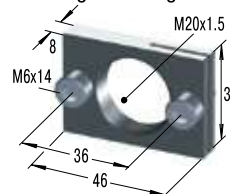
RF14 Rectangular Flange



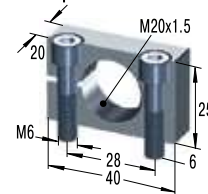
MB14 Clamp Mount



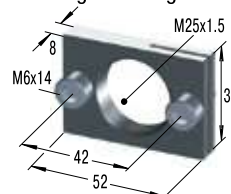
RF20 Rectangular Flange



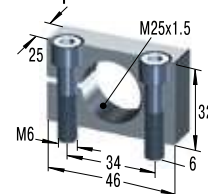
MB20 Clamp Mount



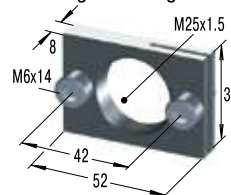
RF25 Rectangular Flange



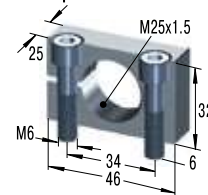
MB25 Clamp Mount



RF25 Rectangular Flange



MB25 Clamp Mount



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight									
	W ₃ Nm/cycle	W ₄ Nm/h	Soft-Contact		Self-Compensating		Hardness	Return force min. N	Return force max. N	Return time s	Side Load Angle max. °	Weight kg
			me min. kg	me max. kg	me min. kg	me max. kg						
SC190EUM-0	25	34,000	-	-	0.7	4	-0	4	9	0.25	5	0.08
SC190EUM-1	25	34,000	2.3	6	1.4	7	-1	4	9	0.25	5	0.08
SC190EUM-2	25	34,000	5.5	16	3.6	18	-2	4	9	0.25	5	0.08
SC190EUM-3	25	34,000	14	41	9.0	45	-3	4	9	0.25	5	0.08
SC190EUM-4	25	34,000	34	91	23.0	102	-4	4	9	0.25	5	0.08
SC300EUM-0	33	45,000	-	-	0.7	4	-0	5	10	0.10	5	0.11
SC300EUM-1	33	45,000	2.3	7	1.4	8	-1	5	10	0.10	5	0.11
SC300EUM-2	33	45,000	7	23	4.5	27	-2	5	10	0.10	5	0.11
SC300EUM-3	33	45,000	23	68	14.0	82	-3	5	10	0.10	5	0.11
SC300EUM-4	33	45,000	68	181	32.0	204	-4	5	10	0.10	5	0.11
SC650EUM-0	73	68,000	-	-	2.3	14	-0	11	32	0.20	5	0.31
SC650EUM-1	73	68,000	11	36	8.0	45	-1	11	32	0.20	5	0.31
SC650EUM-2	73	68,000	34	113	23.0	136	-2	11	32	0.20	5	0.31
SC650EUM-3	73	68,000	109	363	68.0	408	-3	11	32	0.20	5	0.31
SC650EUM-4	73	68,000	363	1,089	204.0	1,180	-4	11	32	0.20	5	0.31
SC925EUM-0	110	90,000	8	25	4.5	29	-0	11	32	0.40	5	0.39
SC925EUM-1	110	90,000	22	72	14.0	90	-1	11	32	0.40	5	0.39
SC925EUM-2	110	90,000	59	208	40.0	227	-2	11	32	0.40	5	0.39
SC925EUM-3	110	90,000	181	612	113.0	726	-3	11	32	0.40	5	0.39
SC925EUM-4	110	90,000	544	1,952	340.0	2,088	-4	11	32	0.40	5	0.39

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

SC²25 to SC²190

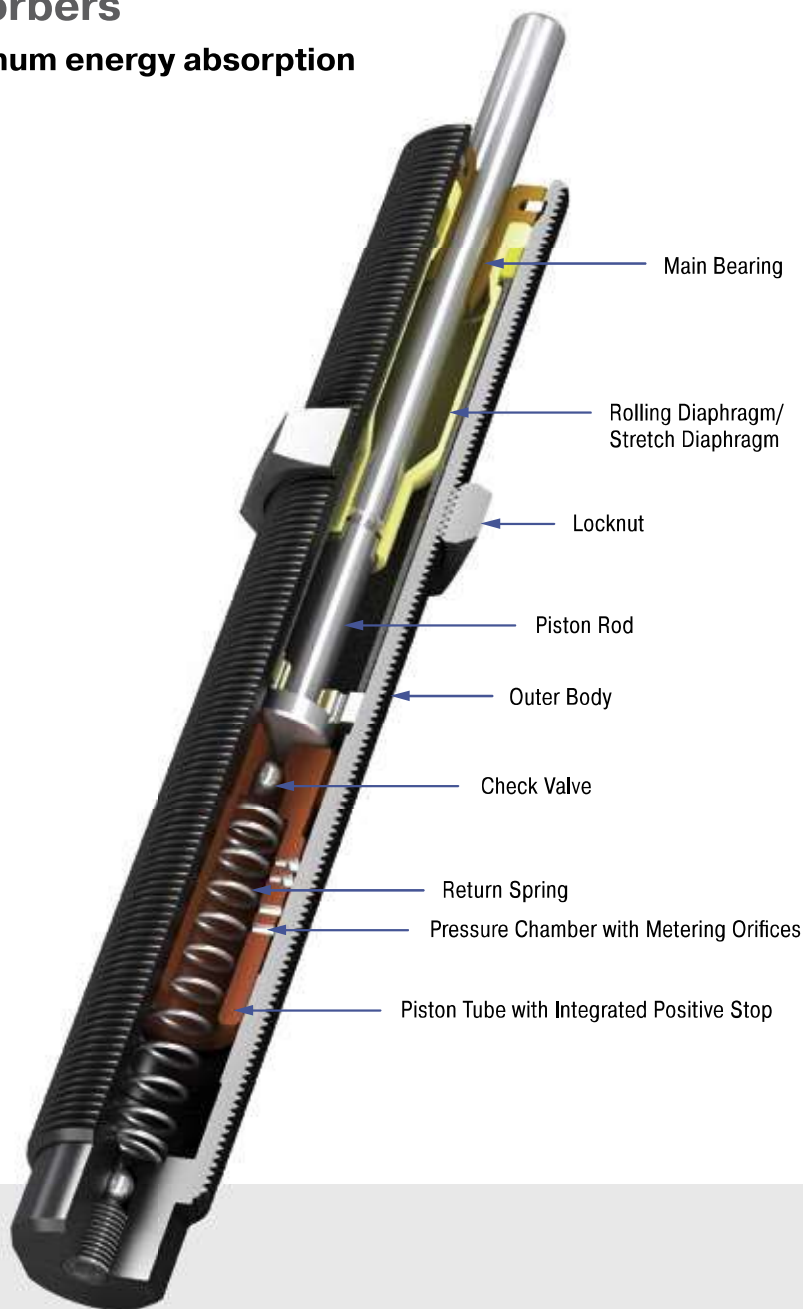
Miniature Shock Absorbers

Piston tube design for maximum energy absorption

Soft damping, but enormous capacity: The range of 'soft contact' absorbers SC²25 to 190 extends from thread size M10 to M14 and covers effective weight ranges of 1 kg to 1,550 kg. All models are characterised by high energy absorption and they also unite the piston tube technology with the diaphragm seal perfected by ACE. This enables direct installation as end position damping in pneumatic cylinders at 5 to 7 bar or applications where deceleration needs to take place close to the pivot point.

They are maintenance-free, have an integrated positive stop and are mountable in any position. The option of a side load adapter allows impact angles of up to 25°.

Thanks to their robust design and their durability, these miniature shock absorbers can be used for a wide range of applications. Designers mainly use them for pick and place systems, pneumatic rotary modules and in automation applications.



Technical Data

Energy capacity: 10 Nm/Cycle to 31 Nm/Cycle

Impact velocity range: 0.1 m/s to 5.7 m/s.
Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Accessories: Steel corrosion-resistant coating; Piston rod: Hardened stainless steel; Rolling diaphragm: SC²190: EPDM; Stretch diaphragm: SC²25 and SC²75: Nitrile

Damping medium: Oil, temperature stable

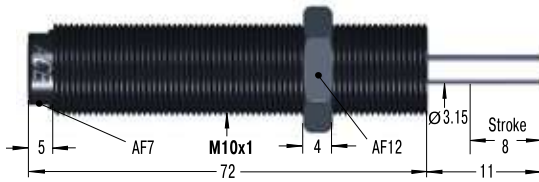
Application field: Linear slides, Pneumatic cylinders, Swivel units, Handling modules

Note: If precise end position datum is required consider use of the stop collar type AH.

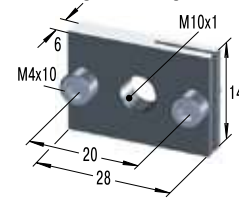
Safety instructions: External materials in the surrounding area can attack the rolling and stretch seals and lead to a shorter service life. Please contact ACE for appropriate solution suggestions.

On request: Increased corrosion protection. Special finishes.

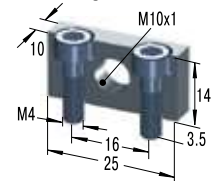
SC25EUM; 5 to 7



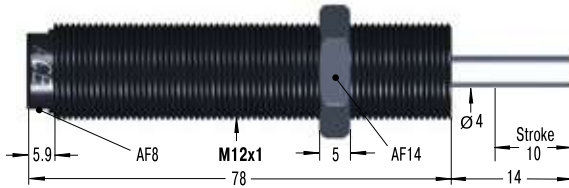
RF10 Rectangular Flange



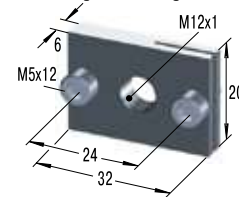
MB10SC2 Mounting Block



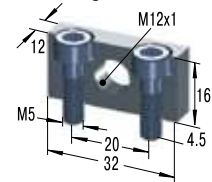
SC75EUM; 5 to 7



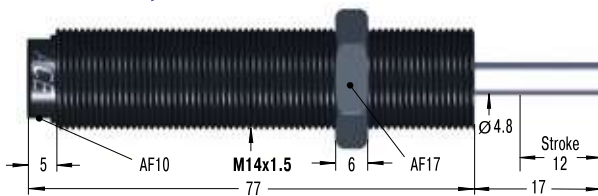
RF12 Rectangular Flange



MB12SC2 Mounting Block

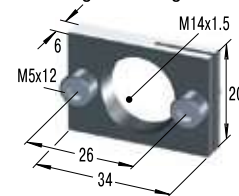


SC190EUM; 5 to 7

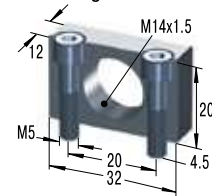


M14x1 also available to special order

RF14 Rectangular Flange



MB14SC2 Mounting Block



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight			Side Load Angle				
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	Hardness	Return force min. N	Return force max. N	Return time s	max. °	Weight kg
SC25EUM-5	10	16,000	1	5	-5	4.5	14	0.3	2	0.027
SC25EUM-6	10	16,000	4	44	-6	4.5	14	0.3	2	0.027
SC25EUM-7	10	16,000	42	500	-7	4.5	14	0.3	2	0.027
SC75EUM-5	16	30,000	1	8	-5	6.0	19	0.3	2	0.045
SC75EUM-6	16	30,000	7	78	-6	6.0	19	0.3	2	0.045
SC75EUM-7	16	30,000	75	800	-7	6.0	19	0.3	2	0.045
SC190EUM-5	31	50,000	2	16	-5	6.0	19	0.4	2	0.060
SC190EUM-6	31	50,000	13	140	-6	6.0	19	0.4	2	0.060
SC190EUM-7	31	50,000	136	1,550	-7	6.0	19	0.4	2	0.060

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

SC²300 to SC²650

Miniature Shock Absorbers

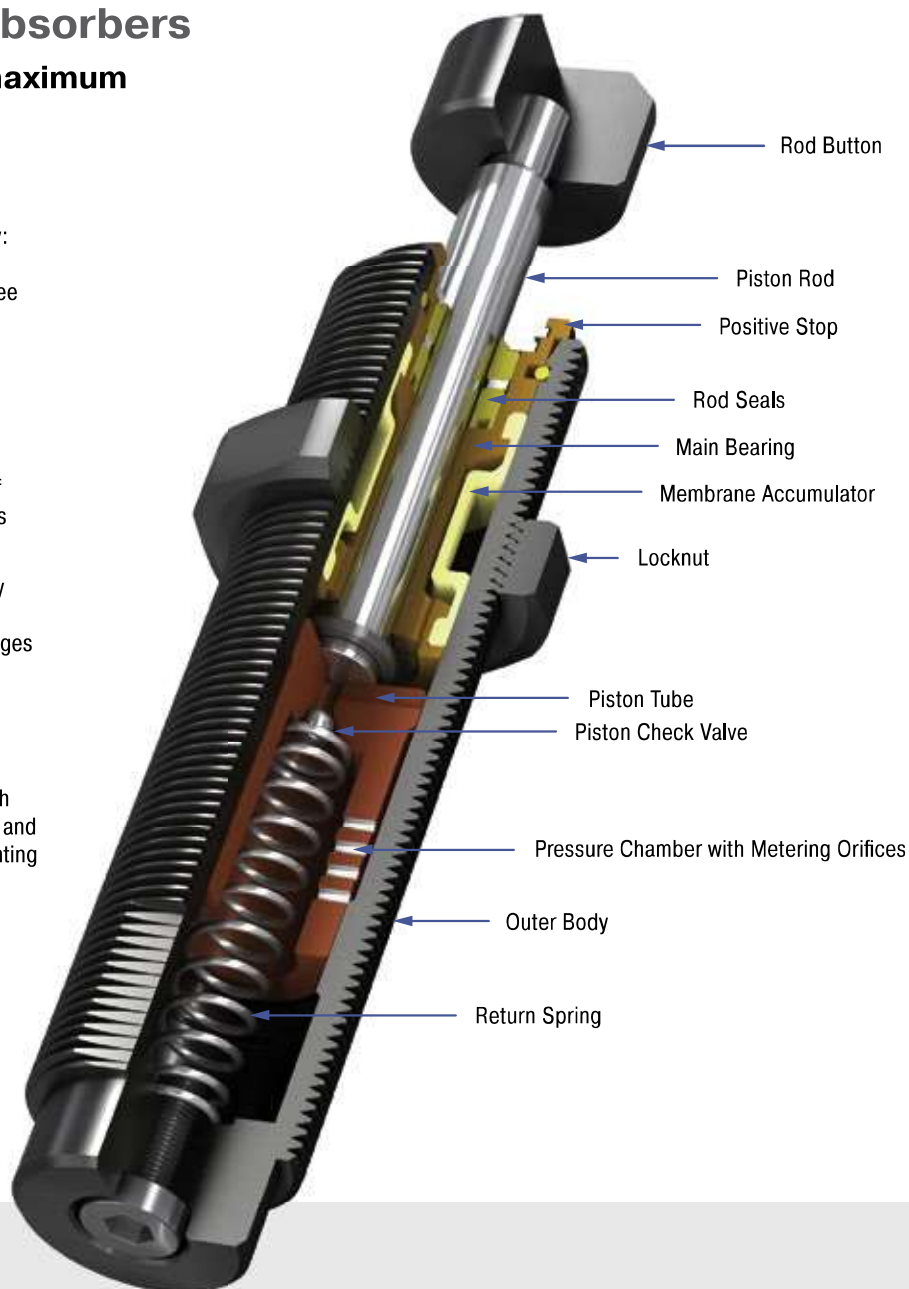
Piston tube design for maximum energy absorption

Added safety with accumulator technology:

The larger 'soft contact' models from the SC²300 to 650 are available with up to three times the energy absorption compared to similar sizes of standard shock absorbers SC190 to 925, due to the ACE piston tube speciality. Furthermore, the membrane accumulator serves as a compensation element for the oil displaced in the shock absorber and replaces the standard use of absorber materials. This increases process safety even further.

The absorbers, which are perfect for rotary modules for example, are available in progressively stepped effective weight ranges with an integrated positive stop. They are maintenance-free and ready for direct installation. The side load adapter option allows impact angles of up to 25°.

These miniature shock absorbers offer high performance levels with a long service life and are particularly popular for handling, mounting very close to pivots and automation tasks.



Technical Data

Energy capacity: 73 Nm/Cycle to 210 Nm/Cycle

Impact velocity range: 0.09 m/s to 3.66 m/s. Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Steel corrosion-resistant coating; Piston rod: Hardened stainless steel; Accessories: Hardened steel and corrosion-resistant coating

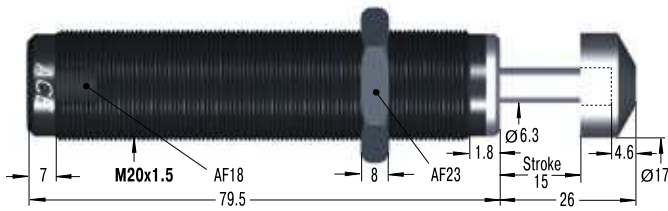
Damping medium: Oil, temperature stable

Application field: Turntables, Swivel units, Robot arms, Linear slides

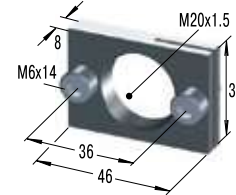
Note: If precise end position datum is required consider use of the stop collar type AH.

On request: Increased corrosion protection. Special finishes.

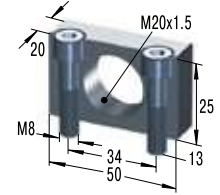
SC300EUM; 5 to 9



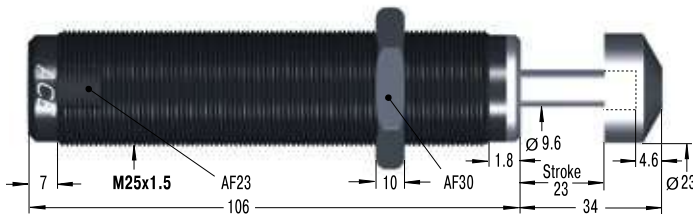
RF20 Rectangular Flange



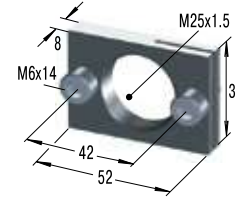
MB20SC2 Mounting Block



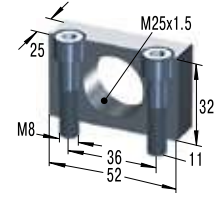
SC650EUM; 5 to 9



RF25 Rectangular Flange



MB25SC2 Mounting Block



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight			Side Load Angle				
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	Hardness	Return force min. N	Return force max. N	Return time s	max. °	Weight kg
SC300EUM-5	73	45,000	11	45	-5	8	18	0.2	5	0.164
SC300EUM-6	73	45,000	34	136	-6	8	18	0.2	5	0.164
SC300EUM-7	73	45,000	91	181	-7	8	18	0.2	5	0.164
SC300EUM-8	73	45,000	135	680	-8	8	18	0.2	5	0.164
SC300EUM-9	73	45,000	320	1,950	-9	8	18	0.2	5	0.164
SC650EUM-5	210	68,000	23	113	-5	11	33	0.3	5	0.340
SC650EUM-6	210	68,000	90	360	-6	11	33	0.3	5	0.340
SC650EUM-7	210	68,000	320	1,090	-7	11	33	0.3	5	0.340
SC650EUM-8	210	68,000	770	2,630	-8	11	33	0.3	5	0.340
SC650EUM-9	210	68,000	1,800	6,350	-9	11	33	0.3	5	0.340

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

MA30 to MA900

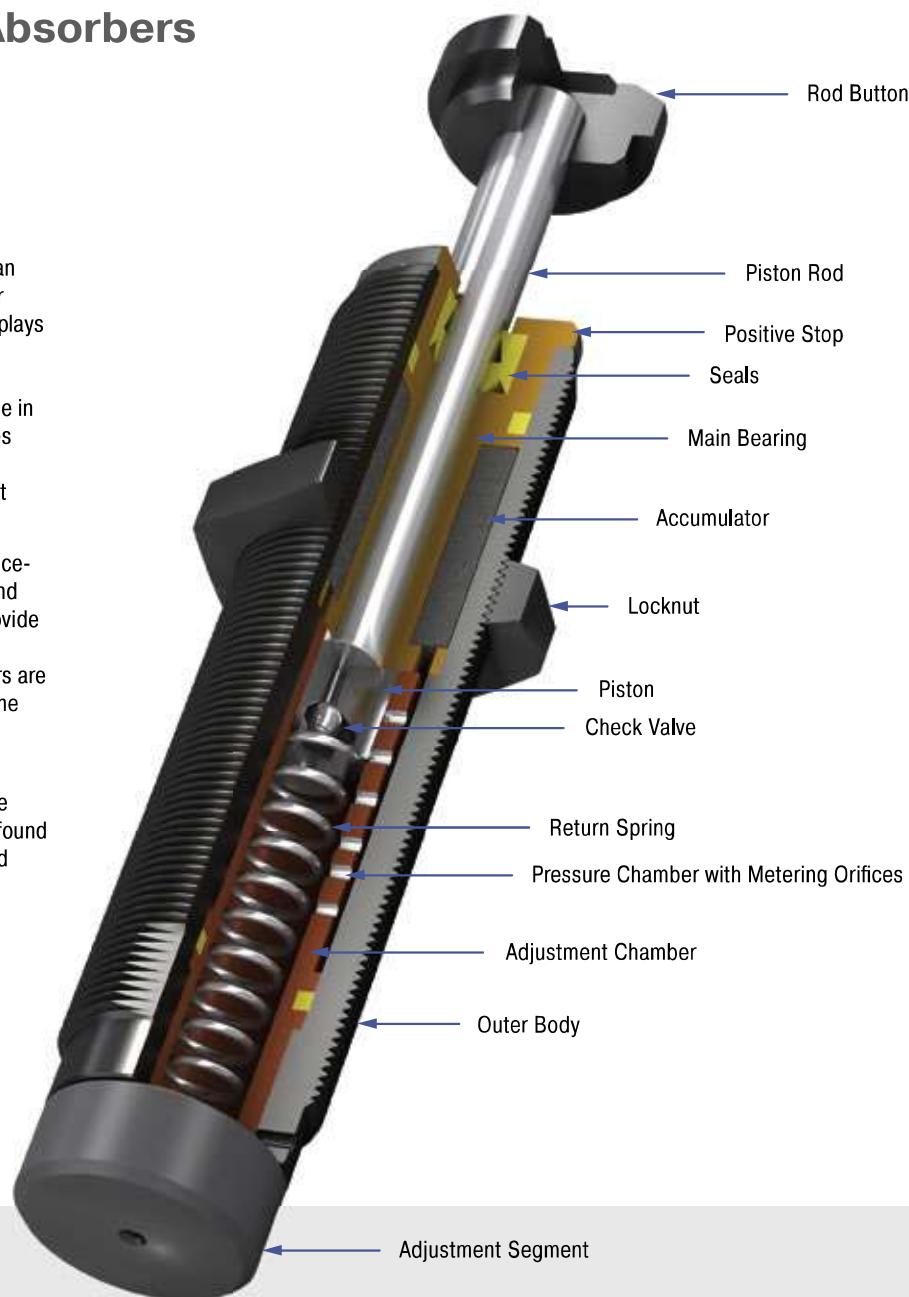
Miniature Shock Absorbers

Stepless adjustment

Exact adjustment: The miniature shock absorbers from the MA30 to 900 series can be adjusted and precisely adapted to your requirements. For example, the MA150 displays the rolling diaphragm technology from the MC150 to 600 series and offers all of the advantages of this technology, such as use in pressure chambers. Thanks to long strokes (including 40 mm on the MA900) lower reaction forces result, which provide a soft damping characteristic.

All variations of these units are maintenance-free, ready-to-install machine elements and have an integrated positive stop. They provide the best service where application data changes, where the calculation parameters are not clear or where maximum flexibility in the possible usage is required.

The adjustable miniature shock absorbers from ACE can be used to meet precisely the customer's application and are therefore found everywhere in mechanical engineering and many other applications.



Technical Data

Energy capacity: 3.5 Nm/Cycle to 100 Nm/Cycle

Impact velocity range: 0.15 m/s to 4.5 m/s. Other speeds on request.

Operating temperature range: 0 °C to 66 °C

Mounting: In any position

Positive stop: Integrated

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

Material: Outer body, Accessories: Steel corrosion-resistant coating; Piston rod: Hardened stainless steel

Damping medium: Oil, temperature stable

Application field: Linear slides, Pneumatic cylinders, Swivel units, Handling modules

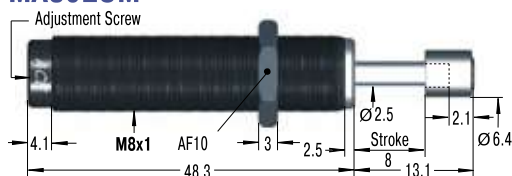
Note: If precise end position datum is required consider use of the stop collar type AH. Shock absorber is preset at delivery in a neutral position between hard and soft.

Safety instructions: External materials in the surrounding area can attack the rolling diaphragm seal and lead to a shorter service

life. Please contact ACE for appropriate solution suggestions.

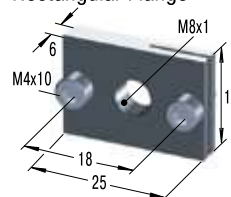
On request: Nickel-plated or other special options available to special order. Models without rod end button.

MA30EUM



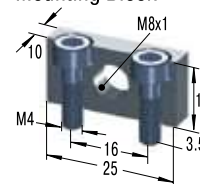
RF8

Rectangular Flange

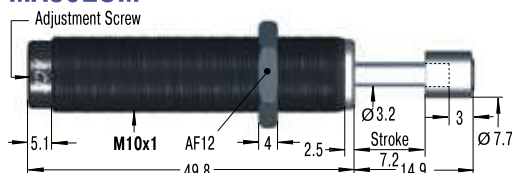


MB8SC2

Mounting Block

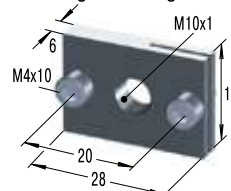


MA50EUM



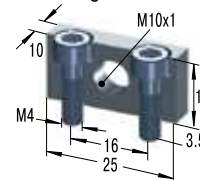
RF10

Rectangular Flange

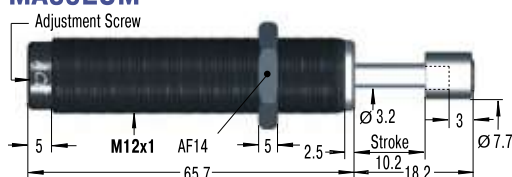


MB10SC2

Mounting Block

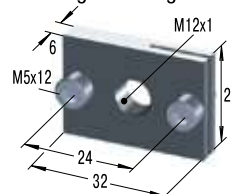


MA35EUM



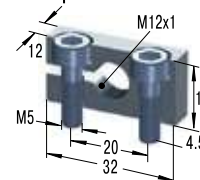
RF12

Rectangular Flange

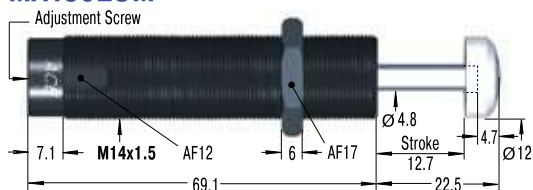


MB12

Clamp Mount



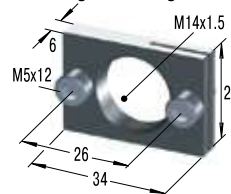
MA150EUM



M14x1 also available to special order

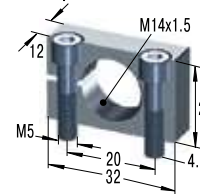
RF14

Rectangular Flange

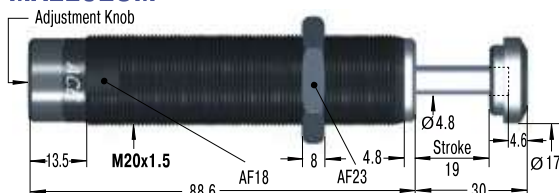


MB14

Clamp Mount

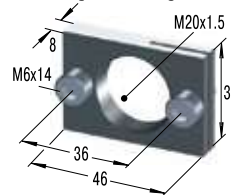


MA225EUM



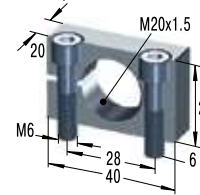
RF20

Rectangular Flange

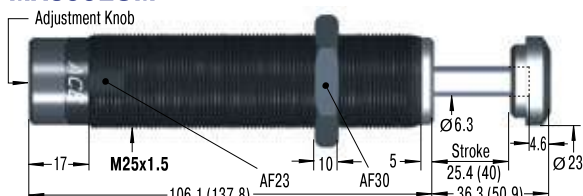


MB20

Clamp Mount



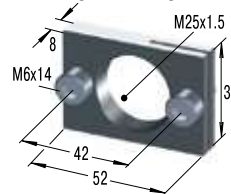
MA600EUM



Dimensions for MA900EUM in (). MA600EUM with M27x3 available to special order

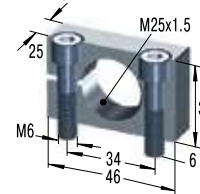
RF25

Rectangular Flange



MB25

Clamp Mount



Additional accessories, mounting, installation ... see from page 36.

Performance

TYPES	Max. Energy Capacity		Effective Weight					Side Load Angle	
	W ₃ Nm/cycle	W ₄ Nm/h	me min. kg	me max. kg	Return force min. N	Return force max. N	Return time s	max. °	Weight kg
MA30EUM	3.5	5,650	0.23	15	1.7	5.3	0.3	2.0	0.013
MA50EUM	5.5	13,550	4.50	20	3.0	6.0	0.3	2.0	0.025
MA35EUM	4.0	6,000	6.00	57	5.0	11.0	0.2	2.0	0.043
MA150EUM	22.0	35,000	1.00	109	3.0	5.0	0.4	2.0	0.060
MA225EUM	25.0	45,000	2.30	226	5.0	10.0	0.1	2.0	0.130
MA600EUM	68.0	68,000	9.00	1,360	10.0	30.0	0.2	2.0	0.310
MA900EUM	100.0	90,000	14.00	2,040	10.0	35.0	0.4	1.0	0,400

¹ For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.