



Automation Control Equipment

Damping Technology

ACE: Your partner for industrial shock absorbers,
gas springs and vibration control

**Main Catalog 2018
North America**



**Metric
Dimensions**

Industrial Shock Absorbers

Absorbers suited for all loads

ACE industrial shock absorbers work hard. Their application means moving loads are evenly decelerated over the full stroke. The result: the lowest braking force and shortest braking time. The MAGNUM series from ACE is viewed as the reference standard for medium-sized damping technology.

Many innovations such as diaphragm accumulators, long life seals, hardened inner pressure chambers and make a decisive contribution towards extension of the service life. This means that the effective load range can be increased considerably, providing users with more scope with respect to the absorber size and greater utilization of the machine's output. ACE offers a wide range of matching accessories for all absorber series. This eliminates internal production of assembly parts which involves high costs and loss of time.

Innovative damping techniques

Reference class for medium sizes

Less stress on the machine

Increase of production figures

Long machine service lives



Industrial Shock Absorbers



MC33 to MC64

Page 56

Self-Compensating

High energy absorption and robust design

Linear slides, Swivel units, Turntables, Portal systems



MC33-V4A to MC64-V4A

Page 60

Self-Compensating, Stainless Steel

Optimum corrosion protection

Linear slides, Swivel units, Turntables, Food industry



MC33-HT to MC64-HT

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Self-Compensating

Extreme temperature and high cycle applications

Linear slides, Swivel units, Turntables, Machines and plants



MC33-LT to MC64-LT

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Self-Compensating

Extreme temperature and high cycle applications

Linear slides, Swivel units, Turntables, Machines and plants



SC33 to SC45

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Self-Compensating, Piston Tube Technology

Piston tube design for maximum energy absorption

Turntables, Swivel units, Robot arms, Linear slides



MA/ML33 to MA/ML64

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Adjustable

High energy absorption and progressive adjustment

Linear slides, Swivel units, Turntables, Portal systems



SASL1 1/8

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Adjustable

Low velocity and high effective weight range

Linear slides, Pneumatic cylinders, Swivel units, Handling modules



SALD1/2 to SALD1 1/8

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Adjustable

High energy absorption and a wide effective weight range

Linear slides, Pneumatic cylinders, Swivel units, Handling modules



SALDN3/4

Page 86

Adjustable

High energy absorption and a wide effective weight range

Linear slides, Pneumatic cylinders, Swivel units, Handling modules

MC33 to MC64

High energy absorption and robust design

Self-Compensating

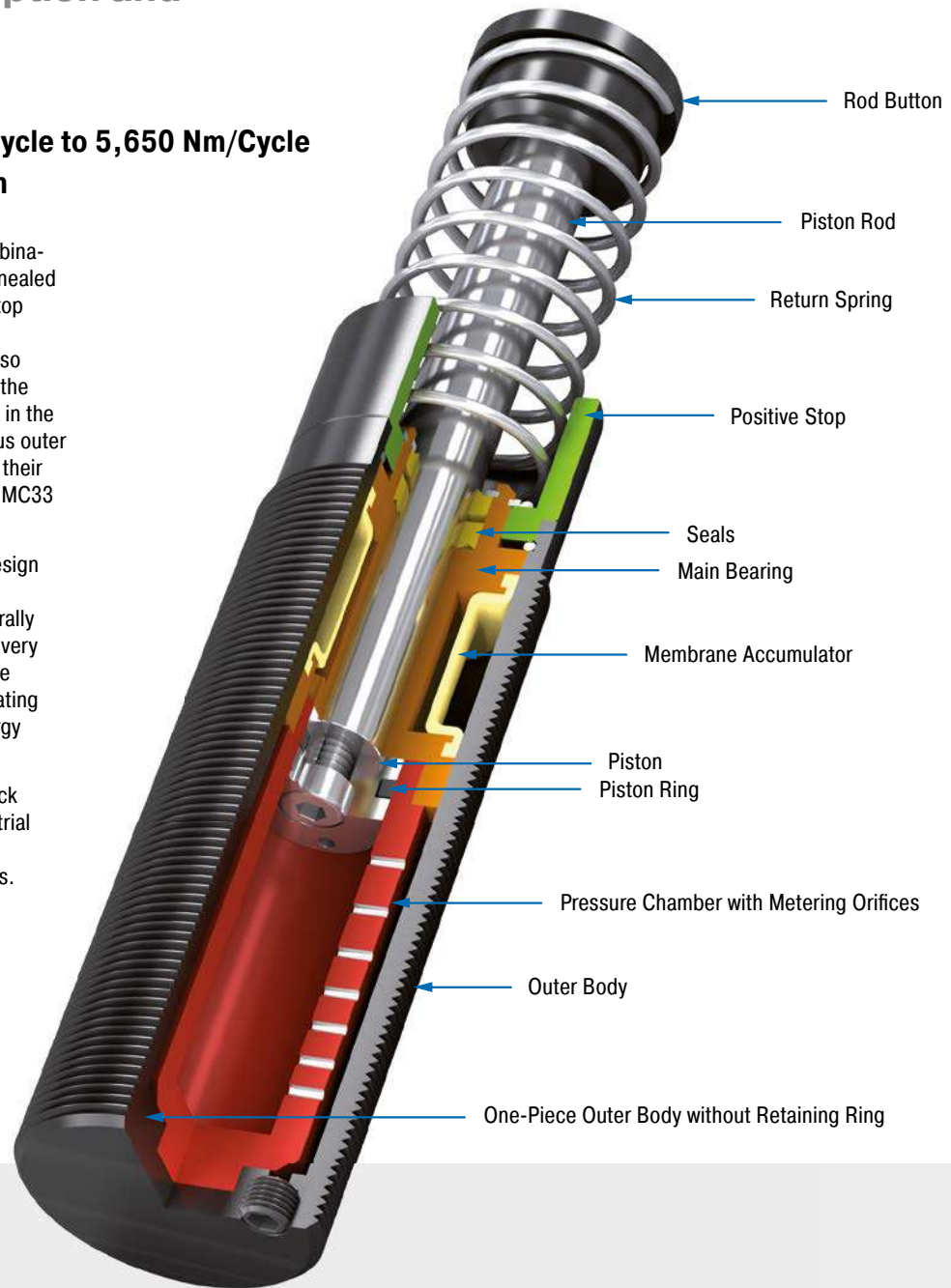
Energy capacity 170 Nm/Cycle to 5,650 Nm/Cycle

Stroke 23.1 mm to 150 mm

The latest damper technology: The combination of the latest sealing technology, annealed guide bearing and integrated positive stop make these self-compensating shock absorbers from ACE'S MAGNUM range so successful. After all, users benefit from the longer service life of the products, even in the most difficult environments. A continuous outer thread and extensive accessories make their contribution to the success story of the MC33 to MC64.

High energy absorption in a compact design and a wide damping range lead to huge advantages in practice. Alongside generally more compact designs, these small yet very powerful absorbers enable full use of the machine's performance. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

These self-compensating industrial shock absorbers are used in all areas of industrial automation and machine engineering, especially in automation and for gantries.



Technical Data

Energy capacity: 170 Nm/Cycle to 5,650 Nm/Cycle

Impact velocity range: 0.15 m/s to 5 m/s. Other speeds on request.

Operating temperature range: -12 °C to +66 °C. Other temperatures on request.

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel; Accessories: Steel with black oxide finish or nitride hardened

Damping medium: Automatic Transmission Fluid (ATF)

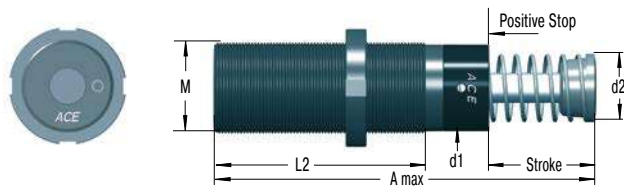
Application field: Linear slides, Swivel units, Turntables, Portal systems, Machines and plants, Tool machines, Machining centers, Z-axes, Impact panels, Handling modules

Note: A noise reduction of 3 dB to 7 dB is possible when using the special impact button. For emergency use only applications and for continuous use (with additional cooling) it is sometimes possible to exceed the published max. capacity ratings. In this case, please consult ACE.

Safety information: 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.

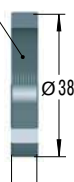
On request: Special oils, nickel-plated, increased corrosion protection, mounting inside air cylinders or other special options are available on request.

MC33

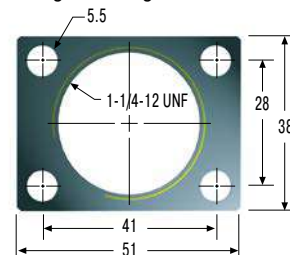


Product available for UNF and metric thread (for metric add suffix -M from part number)
M36x1.5 and M42x1.5 also available to order

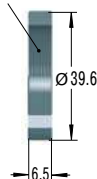
250-0038 Locking Ring 1-1/4-12 UNF



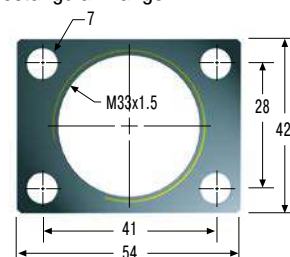
250-0016 Rectangular Flange



250-0292 Locking Ring M33x1.5



250-0293 Rectangular Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

Self-Compensating _____
33 for 1-1/4-12 UNF or M33 threads _____
Stroke 0.98" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1 1/4-12)
Effective Weight Range Version _____

MC3325M-1

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC3325	23.2	138	30	25	83	1-1/4-12 UNF / M33x1.5
MC3350	48.6	189	30	25	108	1-1/4-12 UNF / M33x1.5

Performance

TYPES	Max. Energy Capacity				Effective Weight			Return Force min. N	Return Force max. N	Return Time s	Side Load Angle max. °	Weight kg
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	Hardness					
MC3325-0	170	75,000	124,000	169,000	3	11	-0	45	90	0.03	4	0.51
MC3325-1	170	75,000	124,000	169,000	9	40	-1	45	90	0.03	4	0.51
MC3325-2	170	75,000	124,000	169,000	30	120	-2	45	90	0.03	4	0.51
MC3325-3	170	75,000	124,000	169,000	100	420	-3	45	90	0.03	4	0.51
MC3325-4	170	75,000	124,000	169,000	350	1,420	-4	45	90	0.03	4	0.51
MC3350-0	330	85,000	135,000	180,000	5	22	-0	45	135	0.06	3	0.63
MC3350-1	330	85,000	135,000	180,000	18	70	-1	45	135	0.06	3	0.63
MC3350-2	330	85,000	135,000	180,000	60	250	-2	45	135	0.06	3	0.63
MC3350-3	330	85,000	135,000	180,000	210	840	-3	45	135	0.06	3	0.63
MC3350-4	330	85,000	135,000	180,000	710	2,830	-4	45	135	0.06	3	0.63

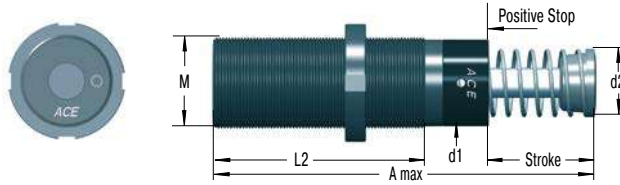
¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² The effective weight range limits can be raised or lowered to special order.

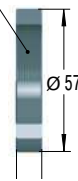
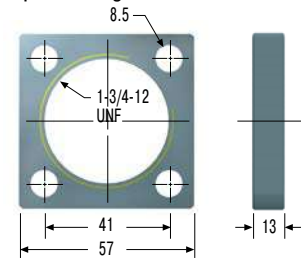
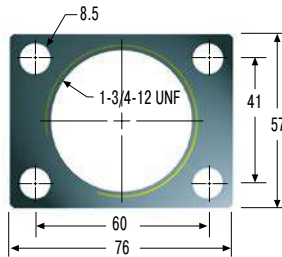
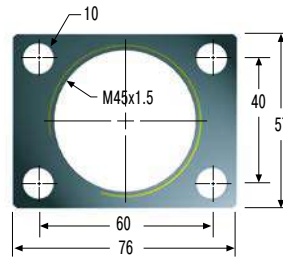
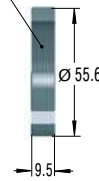
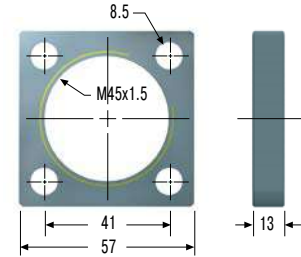
³ For applications with higher side load angles please contact ACE.

Self-Compensating

MC45



Product available for UNF and metric thread (for metric add suffix -M from part number)

250-0041
Locking Ring
1-3/4-12 UNF250-0023
Square Flange250-0024
Rectangular Flange250-0299
Rectangular Flange250-0297
Locking Ring
M45x1.5250-0298
Square Flange

The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

Self-Compensating _____
45 for 1-3/4-12 UNF or M45 threads _____
Stroke 0.98" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1-3/4-12)
Effective Weight Range Version _____

MC4525M-1

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC4525	23.1	145	42	35	95	1-3/4-12 UNF / M45x1.5
MC4550	48.5	195	42	35	120	1-3/4-12 UNF / M45x1.5
MC4575	73.9	246	42	35	145	1-3/4-12 UNF / M45x1.5

Performance

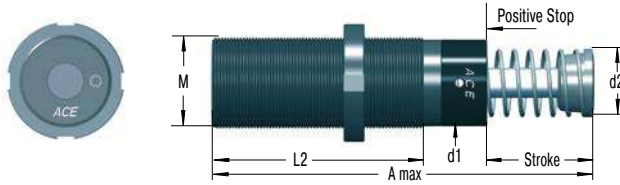
TYPES	Max. Energy Capacity				Effective Weight			Return Force			Return Time		Side Load Angle		Weight kg
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	Hardness	min. N	max. N		s		max. °		
MC4525-0	370	107,000	158,000	192,000	7	27	-0	70	100		0.03		4		1.13
MC4525-1	370	107,000	158,000	192,000	20	90	-1	70	100		0.03		4		1.13
MC4525-2	370	107,000	158,000	192,000	80	310	-2	70	100		0.03		4		1.13
MC4525-3	370	107,000	158,000	192,000	260	1,050	-3	70	100		0.03		4		1.13
MC4525-4	370	107,000	158,000	192,000	890	3,540	-4	70	100		0.03		4		1.13
MC4550-0	740	112,000	192,000	248,000	13	54	-0	70	145		0.08		3		1.36
MC4550-1	740	112,000	192,000	248,000	45	180	-1	70	145		0.08		3		1.36
MC4550-2	740	112,000	192,000	248,000	150	620	-2	70	145		0.08		3		1.36
MC4550-3	740	112,000	192,000	248,000	520	2,090	-3	70	145		0.08		3		1.36
MC4550-4	740	112,000	192,000	248,000	1,800	7,100	-4	70	145		0.08		3		1.36
MC4575-0	1,130	146,000	225,000	282,000	20	80	-0	50	180		0.11		2		1.59
MC4575-1	1,130	146,000	225,000	282,000	70	270	-1	50	180		0.11		2		1.59
MC4575-2	1,130	146,000	225,000	282,000	230	930	-2	50	180		0.11		2		1.59
MC4575-3	1,130	146,000	225,000	282,000	790	3,140	-3	50	180		0.11		2		1.59
MC4575-4	1,130	146,000	225,000	282,000	2,650	10,600	-4	50	180		0.11		2		1.59

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² The effective weight range limits can be raised or lowered to special order.

³ For applications with higher side load angles please contact ACE.

MC64



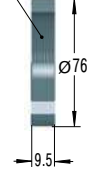
Product available for UNF and metric thread (for metric add suffix -M from part number) 150 mm stroke model does not include stop collar.

Positive stop is provided by the rod button (Ø 60 mm) and a stop block.

250-0042

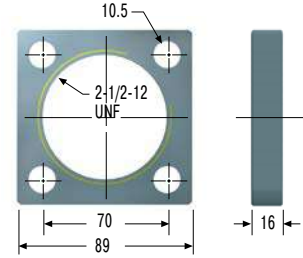
Locking Ring

2-1/2-12 UNF



250-0028

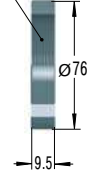
Square Flange



250-0301

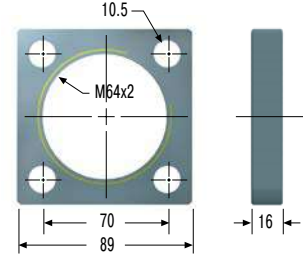
Locking Ring

M64x2



250-0302

Square Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

Self-Compensating **MC6450M-1**
64 for 2-1/2-12 UNF or M64 threads
Stroke 0.97" (50 mm)
Metric Thread
(omitted when using thread UNF 2-1/2-12)
Effective Weight Range Version

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC6450	48.6	225	60	48	140	2-1/2-12 UNF / M64x2
MC64100	99.4	326	60	48	191	2-1/2-12 UNF / M64x2
MC64150	150	450	60	48	241	2-1/2-12 UNF / M64x2

Performance

TYPES	Max. Energy Capacity				Effective Weight			Return Force min. N	Return Force max. N	Return Time s	Side Load Angle max. °	Weight kg
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	Hardness					
MC6450-0	1,870	146,000	293,000	384,000	35	140	-0	90	155	0.12	4	2.90
MC6450-1	1,870	146,000	293,000	384,000	140	540	-1	90	155	0.12	4	2.90
MC6450-2	1,870	146,000	293,000	384,000	460	1,850	-2	90	155	0.12	4	2.90
MC6450-3	1,870	146,000	293,000	384,000	1,600	6,300	-3	90	155	0.12	4	2.90
MC6450-4	1,870	146,000	293,000	384,000	5,300	21,200	-4	90	155	0.12	4	2.90
MC64100-0	3,730	192,000	384,000	497,000	70	280	-0	105	270	0.34	3	3.70
MC64100-1	3,730	192,000	384,000	497,000	270	1,100	-1	105	270	0.34	3	3.70
MC64100-2	3,730	192,000	384,000	497,000	930	3,700	-2	105	270	0.34	3	3.70
MC64100-3	3,730	192,000	384,000	497,000	3,150	12,600	-3	105	270	0.34	3	3.70
MC64100-4	3,730	192,000	384,000	497,000	10,600	42,500	-4	105	270	0.34	3	3.70
MC64150-0	5,650	248,000	497,000	644,000	100	460	-0	75	365	0.48	2	5.10
MC64150-1	5,650	248,000	497,000	644,000	140	1,640	-1	75	365	0.48	2	5.10
MC64150-2	5,650	248,000	497,000	644,000	1,390	5,600	-2	75	365	0.48	2	5.10
MC64150-3	5,650	248,000	497,000	644,000	4,700	18,800	-3	75	365	0.48	2	5.10
MC64150-4	5,650	248,000	497,000	644,000	16,000	63,700	-4	75	365	0.48	2	5.10

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² The effective weight range limits can be raised or lowered to special order.

³ For applications with higher side load angles please contact ACE.

MC33-V4A to MC64-V4A

Optimum corrosion protection

Self-Compensating, Stainless Steel

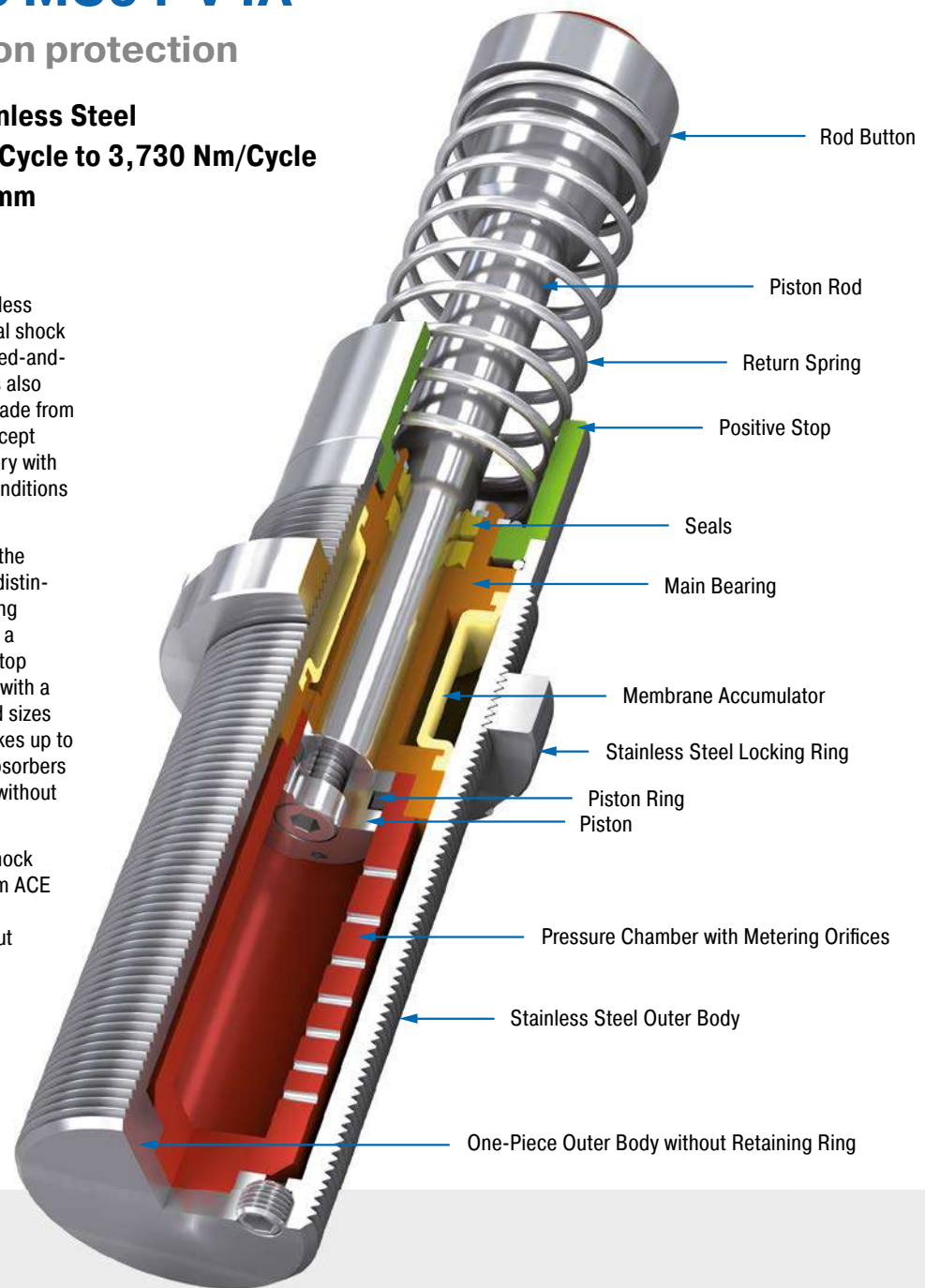
Energy capacity 170 Nm/Cycle to 3,730 Nm/Cycle

Stroke 23.1 mm to 99.4 mm

The latest damper technology in stainless steel: The self-compensating industrial shock absorbers MC33 to MC64 from the tried-and-tested and popular MAGNUM range is also available with all outer components made from stainless steel, material AISI 316L (except piston rod). They are filled in the factory with special oil, which meets the permit conditions (NSF-H1) for the food industry.

Just like the standard product family, the MAGNUM stainless steel models are distinguished by their robust, modern sealing technology, high energy absorption in a compact design, integrated positive stop and a wide damping range. Equipped with a PUR head, they are available in thread sizes M33x1.5 to M64x2 with damping strokes up to 100 mm. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

These self-compensating industrial shock absorbers made of stainless steel from ACE are mainly used in the food, medical, electronics and offshore industries, but also in many other markets.



Technical Data

Energy capacity: 170 Nm/Cycle to 3,730 Nm/Cycle

Impact velocity range: 0.15 m/s to 5 m/s. Other speeds on request.

Operating temperature range: -12 °C to +66 °C. Other temperatures on request.

Mounting: In any position

Positive stop: Integrated

Material: Outer body, Main bearing, Accessories, Locking ring: Stainless steel (1.4404, AISI 316L); Piston rod: Hard chrome plated steel; Rod end button: Stainless steel (1.4404, AISI 316L) with elastomer insert; Return spring: Stainless steel

Damping medium: Special oil NSF-H1 approved

Application field: Linear slides, Swivel units, Turntables, Food industry, Medical technology, Portal systems, Machines and plants, Tool machines, Machining centers, Z-axes

Note: Impact button for noise reduction included. For emergency use only applications and for continuous use (with additional cooling) it is sometimes possible to exceed the published max. capacity ratings. In this case, please consult ACE.

Safety information: 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.

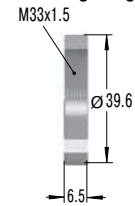
On request: Special oils, other special options and special accessories are available on request.

MC33M-V4A



250-0048

Locking Ring



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

Self-Compensating _____
 Thread Size M33 _____
 Stroke 0.98" (25 mm) _____
 Effective Weight Range Version _____
 Stainless Steel 1.4404/AISI 316L _____

MC3325M-2-V4A

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L1 mm	L2 mm	M
MC3325M-V4A	23.2	151.2	30	29.2	13.2	83	M33x1.5
MC3350M-V4A	48.6	202.2	30	29.2	13.2	108	M33x1.5

Performance

	Max. Energy Capacity		Effective Weight			2				
TYPES	E ₃	E ₄	¹ We min.	¹ We max.	Hardness	Return Force	Return Force	Return Time	Side Load Angle	Weight
	Nm/cycle	Nm/h	kg	kg		min.	max.	s	max.	kg
MC3325M-0-V4A	170	75,000	3	11	-0	45	90	0.03	4	0.51
MC3325M-1-V4A	170	75,000	9	40	-1	45	90	0.03	4	0.51
MC3325M-2-V4A	170	75,000	30	120	-2	45	90	0.03	4	0.51
MC3325M-3-V4A	170	75,000	100	420	-3	45	90	0.03	4	0.51
MC3325M-4-V4A	170	75,000	350	1,420	-4	45	90	0.03	4	0.51
MC3350M-0-V4A	330	85,000	5	22	-0	45	135	0.06	3	0.63
MC3350M-1-V4A	330	85,000	18	70	-1	45	135	0.06	3	0.63
MC3350M-2-V4A	330	85,000	60	250	-2	45	135	0.06	3	0.63
MC3350M-3-V4A	330	85,000	240	840	-3	45	135	0.06	3	0.63
MC3350M-4-V4A	330	85,000	710	2,830	-4	45	135	0.06	3	0.63

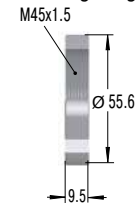
¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² For applications with higher side load angles please contact ACE.

Self-Compensating, Stainless Steel

MC45M-V4A**250-0049**

Locking Ring



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix**Standard Models**

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

Self-Compensating _____
 Thread Size M45 _____
 Stroke 0.98" (25 mm) _____
 Effective Weight Range Version _____
 Stainless Steel 1.4404/AISI 316L _____

MC4525M-2-V4A**Dimensions**

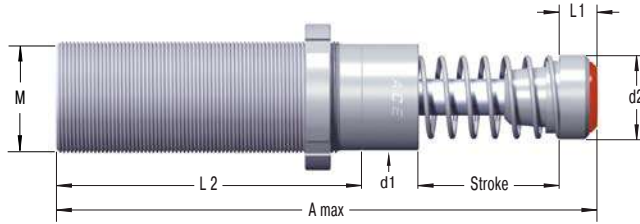
TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L1 mm	L2 mm	M
MC4525M-V4A	23.1	164.5	42	42	19.4	95	M45x1.5
MC4550M-V4A	48.5	214.4	42	42	19.4	120	M45x1.5
MC4575M-V4A	73.9	265.4	42	42	19.4	145	M45x1.5

Performance

	Max. Energy Capacity		Effective Weight			2				
TYPES	E ₃	E ₄	¹ We min.	¹ We max.	Hardness	Return Force	Return Force	Return Time	Side Load Angle	Weight
	Nm/cycle	Nm/h	kg	kg		min.	max.	s	max.	kg
MC4525M-0-V4A	370	107,000	7	27	-0	70	100	0.03	4	1.14
MC4525M-1-V4A	370	107,000	20	90	-1	70	100	0.03	4	1.14
MC4525M-2-V4A	370	107,000	80	310	-2	70	100	0.03	4	1.14
MC4525M-3-V4A	370	107,000	260	1,050	-3	70	100	0.03	4	1.14
MC4525M-4-V4A	370	107,000	890	3,540	-4	70	100	0.03	4	1.14
MC4550M-0-V4A	740	112,000	13	54	-0	70	145	0.08	3	1.36
MC4550M-1-V4A	740	112,000	45	180	-1	70	145	0.08	3	1.36
MC4550M-2-V4A	740	112,000	150	620	-2	70	145	0.08	3	1.36
MC4550M-3-V4A	740	112,000	520	2,090	-3	70	145	0.08	3	1.36
MC4550M-4-V4A	740	112,000	1,800	7,100	-4	70	145	0.08	3	1.36
MC4575M-0-V4A	1,130	146,000	20	80	-0	50	180	0.11	2	1.59
MC4575M-1-V4A	1,130	146,000	70	270	-1	50	180	0.11	2	1.59
MC4575M-2-V4A	1,130	146,000	230	930	-2	50	180	0.11	2	1.59
MC4575M-3-V4A	1,130	146,000	790	3,140	-3	50	180	0.11	2	1.59
MC4575M-4-V4A	1,130	146,000	2,650	10,600	-4	50	180	0.11	2	1.59

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.² For applications with higher side load angles please contact ACE.

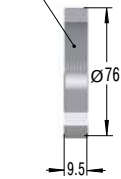
MC64M-V4A



250-0179

Locking Ring

M64x2



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MC: Self-Contained with return spring, self-compensating

Special Models

MCA: Air/Oil return without return spring. Use only with external air/oil tank.

MCS: Air/Oil return with return spring. Use only with external air/oil tank.

MCN: Self-Contained without return spring

Ordering Example

MC6450M-2-V4A

Self-Compensating _____
Thread Size M64 _____
Stroke 0.97" (50 mm) _____
Effective Weight Range Version _____
Stainless Steel 1.4404/AISI 316L _____

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L1 mm	L2 mm	M
MC6450M-V4A	48.6	244.1	60	60	19.1	140	M64x2
MC64100M-V4A	99.4	345.1	60	60	19.1	191	M64x2

Performance

TYPES	Max. Energy Capacity		Effective Weight			Return Force min. N	Return Force max. N	Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg	Hardness					
MC6450M-0-V4A	1,870	146,000	35	140	-0	90	155	0.12	4	2.90
MC6450M-1-V4A	1,870	146,000	140	540	-1	90	155	0.12	4	2.90
MC6450M-2-V4A	1,870	146,000	460	1,850	-2	90	155	0.12	4	2.90
MC6450M-3-V4A	1,870	146,000	1,600	6,300	-3	90	155	0.12	4	2.90
MC6450M-4-V4A	1,870	146,000	5,300	21,200	-4	90	155	0.12	4	2.90
MC64100M-0-V4A	3,730	192,000	70	280	-0	105	270	0.34	3	3.70
MC64100M-1-V4A	3,730	192,000	270	1,100	-1	105	270	0.34	3	3.70
MC64100M-2-V4A	3,730	192,000	930	3,700	-2	105	270	0.34	3	3.70
MC64100M-3-V4A	3,730	192,000	3,150	12,600	-3	105	270	0.34	3	3.70
MC64100M-4-V4A	3,730	192,000	10,600	42,500	-4	105	270	0.34	3	3.70

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² For applications with higher side load angles please contact ACE.

MC33-HT to MC64-HT

Extreme temperature and high cycle applications

Self-Compensating

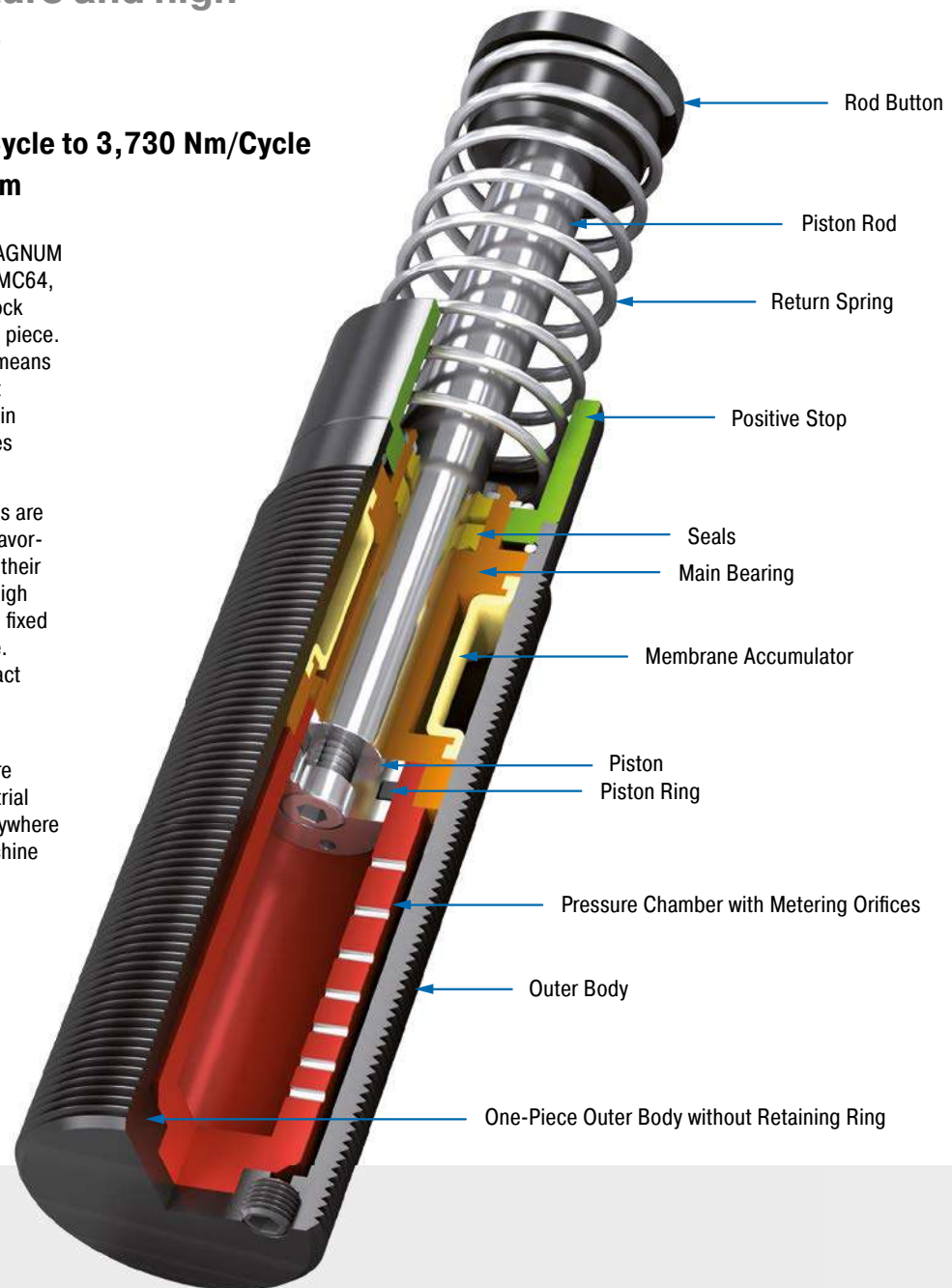
Energy capacity 170 Nm/Cycle to 3,730 Nm/Cycle

Stroke 23.1 mm to 99.4 mm

Greater application range: just like all MAGNUM types from the product family MC33 to MC64, the HT (high temperature) industrial shock absorbers are also made from one solid piece. They use special seals and fluids. This means that these versions can even be used at extreme temperatures of 0 °C to 150 °C in order to safely and reliably damp masses and absorb 100 % of the kinetic energy.

These ready-to-install machine elements are recommended even under the most unfavorable conditions. Additional benefits are their robust, innovative sealing technology, high energy absorption in a compact design, fixed positive stop and a wide damping range. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

Designed for use in extreme temperature ranges, these self-compensating industrial shock absorbers are suitable almost anywhere in plant, industrial, automation and machine engineering.



Technical Data

Energy capacity: 170 Nm/Cycle to 3,730 Nm/Cycle

Impact velocity range: 0.15 m/s to 5 m/s.
Other speeds on request.

Operating temperature range: 0 °C to 150 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel; Accessories: Steel with black oxide finish or nitride hardened

Damping medium: Synthetic high temperature oil

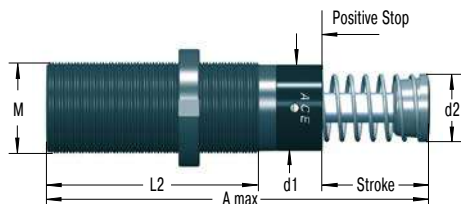
Application field: Linear slides, Swivel units, Turntables, Machines and plants, Tool machines, Machining centers, Z-axes

Note: A noise reduction of 3 dB to 7 dB is possible when using the special impact button.

Safety information: 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.

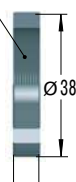
On request: Nickel-plated, increased corrosion protection, mounting inside air cylinders or other special options are available on request. Adjustable HT and LT shock absorbers.

MC33-HT

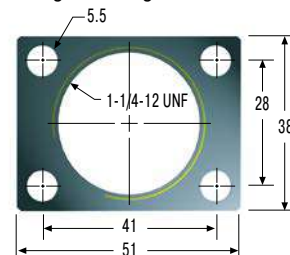


Product available for UNF and metric thread (for metric add suffix -M from part number)
M33x1.5, M36x1.5 and M42x1.5 also available to order

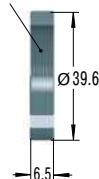
250-0038 Locking Ring 1-1/4-12 UNF



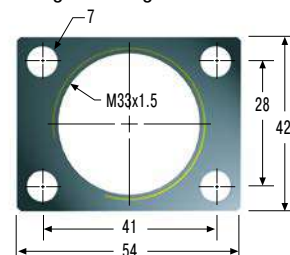
250-0016 Rectangular Flange



250-0292 Locking Ring M33x1.5



250-0293 Rectangular Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
33 for 1-1/4-12 UNF or M33 threads _____
Stroke 1.97" (50 mm) _____
Metric Thread _____
(omitted when using thread UNF 1-1/4-12)
Effective Weight Range Version _____
HT = Version for High Temperature Use _____

MC3350M-2-HT

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC3325-HT	23.2	138	30	25	83	1-1/4-12 UNF / M33x1.5
MC3350-HT	48.6	189	30	25	108	1-1/4-12 UNF / M33x1.5

Performance

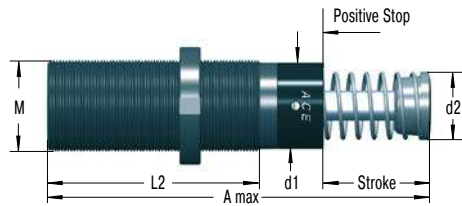
TYPES	Max. Energy Capacity			Effective Weight			Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ at 20 °C Nm/h	E ₄ at 100 °C Nm/h	¹ We min. kg	¹ We max. kg	Hardness		
MC3325-0-HT	170	215,000	82,000	3	11	-0	4	0.51
MC3325-1-HT	170	215,000	82,000	9	40	-1	4	0.51
MC3325-2-HT	170	215,000	82,000	30	120	-2	4	0.51
MC3325-3-HT	170	215,000	82,000	100	420	-3	4	0.51
MC3325-4-HT	170	215,000	82,000	350	1,420	-4	4	0.51
MC3350-0-HT	330	244,000	93,000	5	22	-0	3	0.63
MC3350-1-HT	330	244,000	93,000	18	70	-1	3	0.63
MC3350-2-HT	330	244,000	93,000	60	250	-2	3	0.63
MC3350-3-HT	330	244,000	93,000	240	840	-3	3	0.63
MC3350-4-HT	330	244,000	93,000	710	2,830	-4	3	0.63

¹ The effective weight range limits can be raised or lowered to special order.

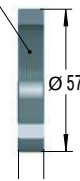
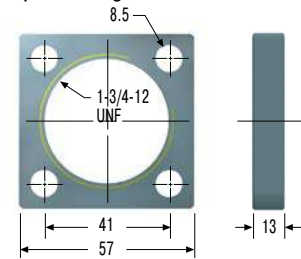
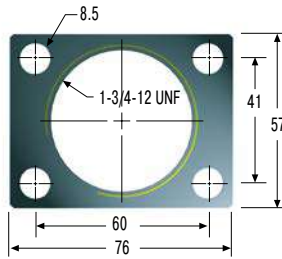
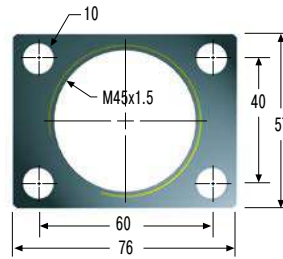
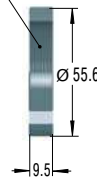
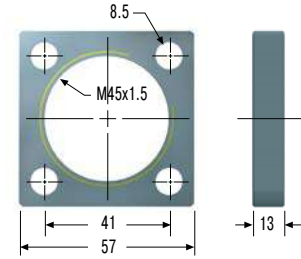
² For applications with higher side load angles please contact ACE.

Self-Compensating

MC45-HT



Product available for UNF and metric thread (for metric add suffix -M from part number)

250-0041
Locking Ring
1-3/4-12 UNF

250-0023
Square Flange

250-0024
Rectangular Flange

250-0299
Rectangular Flange

250-0297
Locking Ring
M45x1.5

250-0298
Square Flange


The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
45 for 1-3/4-12 UNF or M45 threads _____
Stroke 0.91" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1-3/4-12)
Effective Weight Range Version _____
HT = Version for High Temperature Use _____

MC4525M-2-HT

Dimensions

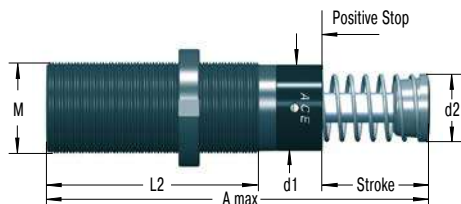
TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC4525-HT	23.1	151	42	35	95	1-3/4-12 UNF / M45x1.5
MC4550-HT	48.5	195	42	35	120	1-3/4-12 UNF / M45x1.5

Performance

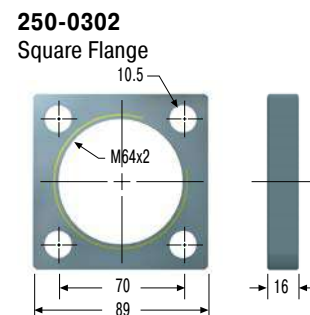
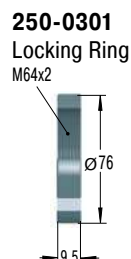
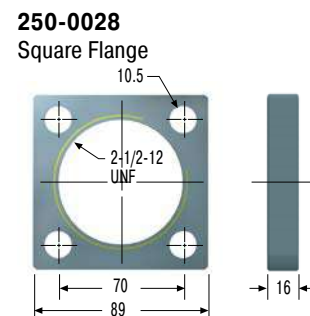
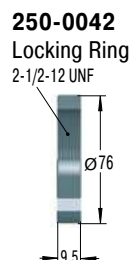
TYPES	Max. Energy Capacity			Effective Weight			Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ at 20 °C Nm/h	E ₄ at 100 °C Nm/h	¹ We min. kg	¹ We max. kg	Hardness		
MC4525-0-HT	370	307,000	117,000	7	27	-0	4	1.13
MC4525-1-HT	370	307,000	117,000	20	90	-1	4	1.13
MC4525-2-HT	370	307,000	117,000	80	310	-2	4	1.13
MC4525-3-HT	370	307,000	117,000	260	1,050	-3	4	1.13
MC4525-4-HT	370	307,000	117,000	890	3,540	-4	4	1.13
MC4550-0-HT	740	321,000	122,000	13	54	-0	3	1.36
MC4550-1-HT	740	321,000	122,000	45	180	-1	3	1.36
MC4550-2-HT	740	321,000	122,000	154	620	-2	3	1.36
MC4550-3-HT	740	321,000	122,000	522	2,090	-3	3	1.36
MC4550-4-HT	740	321,000	122,000	1,800	7,100	-4	3	1.36

¹ The effective weight range limits can be raised or lowered to special order.² For applications with higher side load angles please contact ACE.

MC64-HT



Product available for UNF and metric thread (for metric add suffix -M from part number)



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
64 for 2-1/2-12 UNF or M64 threads _____
Stroke 1.91" (50 mm) _____
Metric Thread _____
(omitted when using thread UNF 2-1/2-12)
Effective Weight Range Version _____
HT = Version for High Temperature Use _____

MC6450M-2-HT

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC6450-HT	48.6	225	60	48	140	2-1/2-12 UNF / M64x2
MC64100-HT	99.4	326	60	48	191	2-1/2-12 UNF / M64x2

Performance

TYPES	Max. Energy Capacity			Effective Weight			Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ at 20 °C Nm/h	E ₄ at 100 °C Nm/h	¹ We min. kg	¹ We max. kg	Hardness		
MC6450-0-HT	1,870	419,000	159,000	35	140	-0	4	2.90
MC6450-1-HT	1,870	419,000	159,000	140	540	-1	4	2.90
MC6450-2-HT	1,870	419,000	159,000	460	1,850	-2	4	2.90
MC6450-3-HT	1,870	419,000	159,000	1,600	6,300	-3	4	2.90
MC6450-4-HT	1,870	419,000	159,000	5,300	21,200	-4	4	2.90
MC64100-0-HT	3,730	550,000	200,000	70	280	-0	3	3.70
MC64100-1-HT	3,730	550,000	200,000	270	1,100	-1	3	3.70
MC64100-2-HT	3,730	550,000	200,000	930	3,700	-2	3	3.70
MC64100-3-HT	3,730	550,000	200,000	3,150	12,600	-3	3	3.70
MC64100-4-HT	3,730	550,000	200,000	10,600	42,500	-4	3	3.70

¹ The effective weight range limits can be raised or lowered to special order.

² For applications with higher side load angles please contact ACE.

MC33-LT to MC64-LT

Extreme temperature and high cycle applications

Self-Compensating

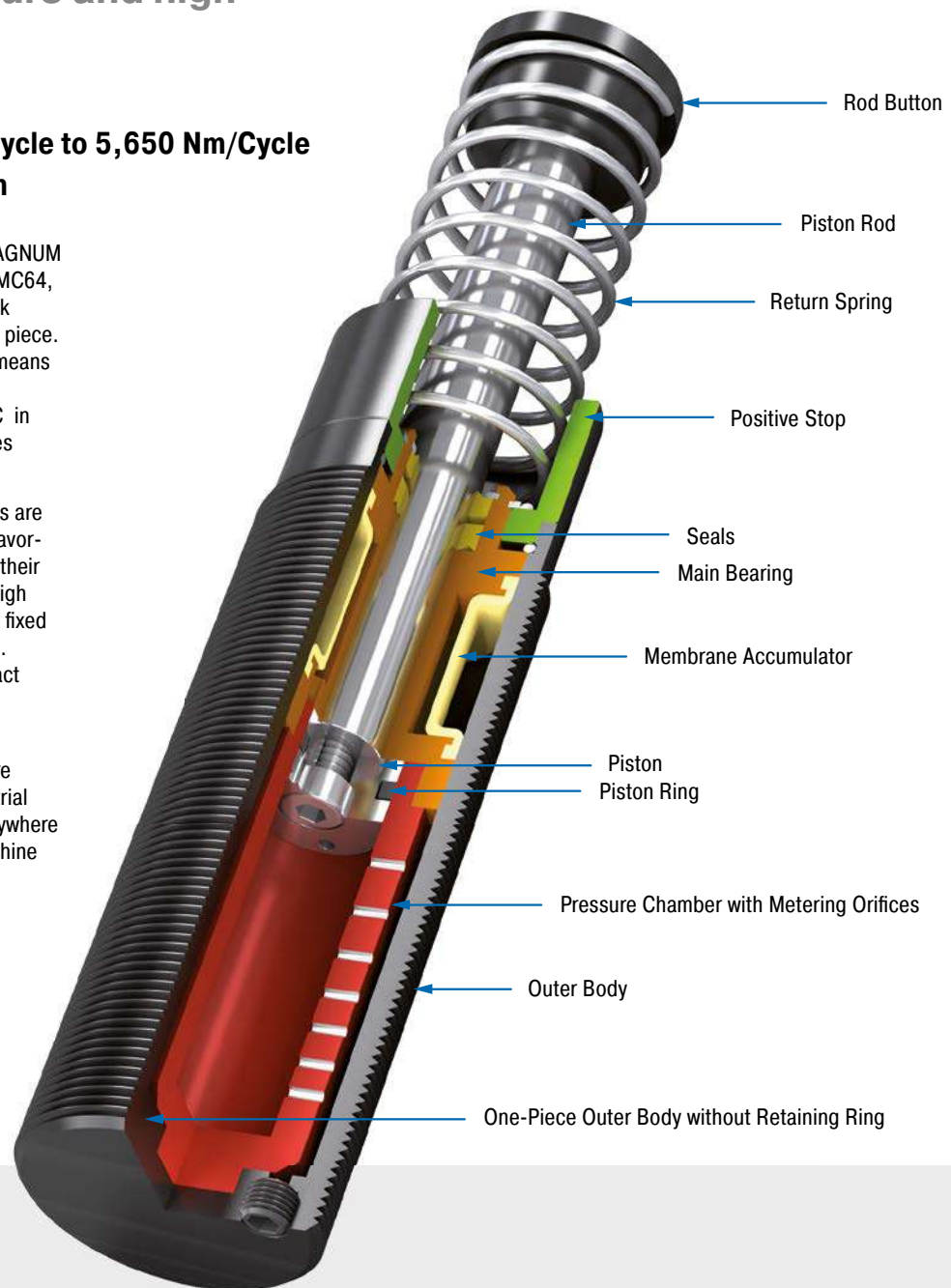
Energy capacity 170 Nm/Cycle to 5,650 Nm/Cycle

Stroke 23.1 mm to 150 mm

Greater application range: just like all MAGNUM types from the product family MC33 to MC64, the LT (low temperature) industrial shock absorbers are also made from one solid piece. They use special seals and fluids. This means that these versions can even be used at extreme temperatures of -50 °C to 66 °C in order to safely and reliably damp masses and absorb 100 % of the kinetic energy.

These ready-to-install machine elements are recommended even under the most unfavorable conditions. Additional benefits are their robust, innovative sealing technology, high energy absorption in a compact design, fixed positive stop and a wide damping range. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

Designed for use in extreme temperature ranges, these self-compensating industrial shock absorbers are suitable almost anywhere in plant, industrial, automation and machine engineering.



Technical Data

Energy capacity: 170 Nm/Cycle to 5,650 Nm/Cycle

Impact velocity range: 0.15 m/s to 5 m/s.
Other speeds on request.

Operating temperature range: -50 °C to +66 °C

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel; Accessories: Steel with black oxide finish or nitride hardened

Damping medium: Low temperature hydraulic oil

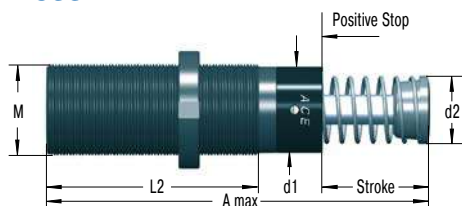
Application field: Linear slides, Swivel units, Turntables, Machines and plants, Tool machines, Machining centers, Z-axes

Note: A noise reduction of 3 dB to 7 dB is possible when using the special impact button.

Safety information: 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.

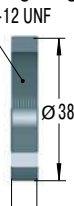
On request: Nickel-plated, increased corrosion protection, mounting inside air cylinders or other special options are available on request. Adjustable HT and LT shock absorbers.

MC33-LT

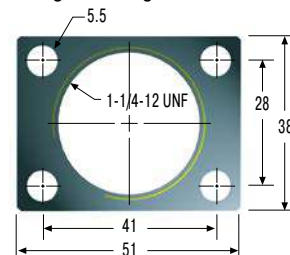


Product available for UNF and metric thread (for metric add suffix -M from part number)
M33x1.5, M36x1.5 and M42x1.5 also available to order

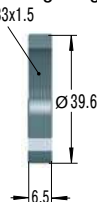
250-0038 Locking Ring 1-1/4-12 UNF



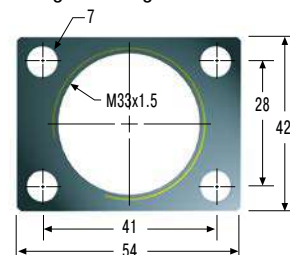
250-0016 Rectangular Flange 1-1/4-12 UNF



250-0292 Locking Ring M33x1.5



250-0293 Rectangular Flange M33x1.5



The calculation and selection of the most suitable damper
should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
33 for 1-1/4-12 UNF or M33 threads _____
Stroke 0.91" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1-1/4-12)
Effective Weight Range Version _____
LT = Version for High Temperature Use _____

MC3325M-3-LT

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC3325-LT	23.2	138	30	25	83	1-1/4-12 UNF / M33x1.5
MC3350-LT	48.6	189	30	25	108	1-1/4-12 UNF / M33x1.5

Performance

TYPES	Max. Energy Capacity		Effective Weight			Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg	Hardness			
MC3325-0-LT	170	75,000	3	11	-0	0.08	4	0.51
MC3325-1-LT	170	75,000	9	40	-1	0.08	4	0.51
MC3325-2-LT	170	75,000	30	120	-2	0.08	4	0.51
MC3325-3-LT	170	75,000	100	420	-3	0.08	4	0.51
MC3325-4-LT	170	75,000	350	1,420	-4	0.08	4	0.51
MC3350-0-LT	330	85,000	5	22	-0	0.16	3	0.63
MC3350-1-LT	330	85,000	18	70	-1	0.16	3	0.63
MC3350-2-LT	330	85,000	60	250	-2	0.16	3	0.63
MC3350-3-LT	330	85,000	240	840	-3	0.16	3	0.63
MC3350-4-LT	330	85,000	710	2,830	-4	0.16	3	0.63

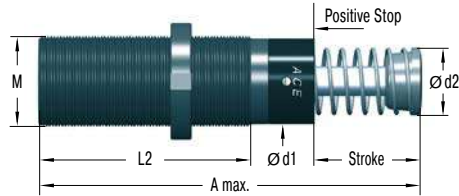
¹ The effective weight range limits can be raised or lowered to special order.

² at -50 °C

³ For applications with higher side load angles please contact ACE.

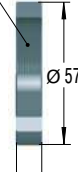
Self-Compensating

MC45-LT

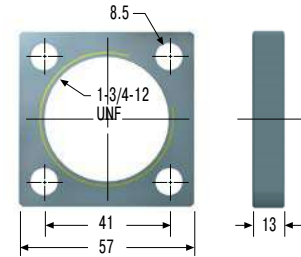


Product available for UNF and metric thread (for metric add suffix -M from part number)

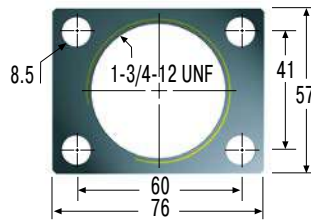
250-0041
Locking Ring
1-3/4-12 UNF



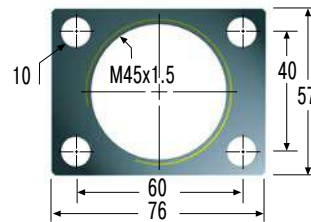
250-0023
Square Flange



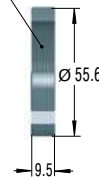
250-0024
Rectangular Flange



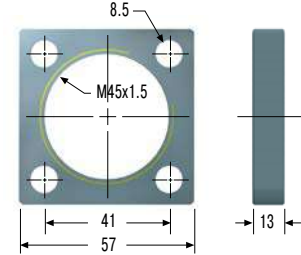
250-0299
Rectangular Flange



250-0297
Locking Ring
M45x1.5



250-0298
Square Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
45 for 1-3/4-12 UNF or M45 threads _____
Stroke 0.91" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1-3/4-12)
Effective Weight Range Version _____
LT = Version for High Temperature Use _____

MC4525M-3-LT

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC4525-LT	23.1	151	42	35	95	1-3/4-12 UNF / M45x1.5
MC4550-LT	48.5	195	42	35	120	1-3/4-12 UNF / M45x1.5
MC4575-LT	73.9	246	42	35	145	1-3/4-12 UNF / M45x1.5

Performance

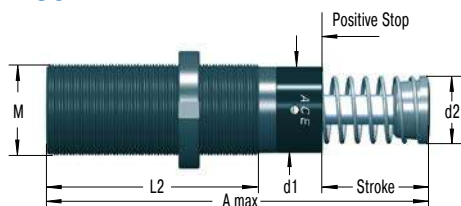
TYPES	Max. Energy Capacity		Effective Weight		Hardness	Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg				
MC4525-0-LT	370	107,000	7	27	-0	0.08	4	1.13
MC4525-1-LT	370	107,000	20	90	-1	0.08	4	1.13
MC4525-2-LT	370	107,000	80	310	-2	0.08	4	1.13
MC4525-3-LT	370	107,000	260	1,050	-3	0.08	4	1.13
MC4525-4-LT	370	107,000	890	3,540	-4	0.08	4	1.13
MC4550-0-LT	740	112,000	13	54	-0	0.16	3	1.36
MC4550-1-LT	740	112,000	45	180	-1	0.16	3	1.36
MC4550-2-LT	740	112,000	150	620	-2	0.16	3	1.36
MC4550-3-LT	740	112,000	520	2,090	-3	0.16	3	1.36
MC4550-4-LT	740	112,000	1,800	7,100	-4	0.16	3	1.36
MC4575-0-LT	1,130	146,000	20	80	-0	0.24	2	1.59
MC4575-1-LT	1,130	146,000	70	270	-1	0.24	2	1.59
MC4575-2-LT	1,130	146,000	230	930	-2	0.24	2	1.59
MC4575-3-LT	1,130	146,000	790	3,140	-3	0.24	2	1.59
MC4575-4-LT	1,130	146,000	2,650	10,600	-4	0.24	2	1.59

¹ The effective weight range limits can be raised or lowered to special order.

² at -50 °C

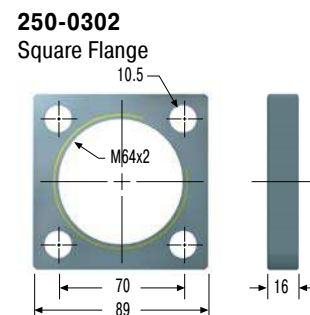
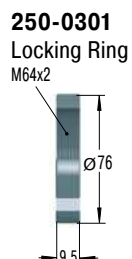
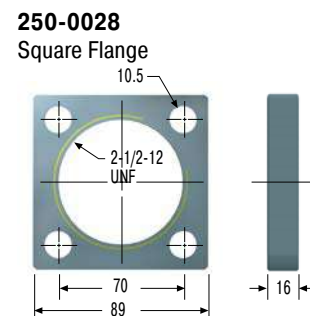
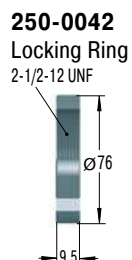
³ For applications with higher side load angles please contact ACE.

MC64-LT



Product available for UNF and metric thread (for metric add suffix -M from part number) 150 mm stroke model does not include stop collar.

Positive stop is provided by the rod button (Ø 60 mm) and a stop block.



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example

Self-Compensating _____
64 for 2-1/2-12 UNF or M64 threads _____
Stroke 1.91" (50 mm) _____
Metric Thread _____
(omitted when using thread UNF 2-1/2-12)
Effective Weight Range Version _____
LT = Version for High Temperature Use _____

MC6450M-3-LT

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MC6450-LT	48.6	225	60	48	140	2-1/2-12 UNF / M64x2
MC64100-LT	99.4	326	60	48	191	2-1/2-12 UNF / M64x2
MC64150-LT	150	450	60	48	241	2-1/2-12 UNF / M64x2

Performance

TYPES	Max. Energy Capacity		Effective Weight		Hardness	Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg				
MC6450-0-LT	1,870	146,000	35	140	-0	0.24	4	2.90
MC6450-1-LT	1,870	146,000	140	540	-1	0.24	4	2.90
MC6450-2-LT	1,870	146,000	460	1,850	-2	0.24	4	2.90
MC6450-3-LT	1,870	146,000	1,600	6,300	-3	0.24	4	2.90
MC6450-4-LT	1,870	146,000	5,300	21,200	-4	0.24	4	2.90
MC64100-0-LT	3,730	192,000	70	280	-0	0.68	3	3.70
MC64100-1-LT	3,730	192,000	270	1,100	-1	0.60	3	3.70
MC64100-2-LT	3,730	192,000	930	3,700	-2	0.68	3	3.70
MC64100-3-LT	3,730	192,000	3,150	12,600	-3	0.68	3	3.70
MC64100-4-LT	3,730	192,000	10,600	42,500	-4	0.68	3	3.70
MC64150-0-LT	5,650	248,000	100	460	-0	0.96	2	5.10
MC64150-1-LT	5,650	248,000	410	1,640	-1	0.96	2	5.10
MC64150-2-LT	5,650	248,000	1,390	5,600	-2	0.96	2	5.10
MC64150-3-LT	5,650	248,000	4,700	18,800	-3	0.96	2	5.10
MC64150-4-LT	5,650	248,000	16,000	63,700	-4	0.96	2	5.10

¹ The effective weight range limits can be raised or lowered to special order.

² at -50 °C

³ For applications with higher side load angles please contact ACE.

SC33 to SC45

Piston tube design for maximum energy absorption

Self-Compensating, Piston Tube Technology

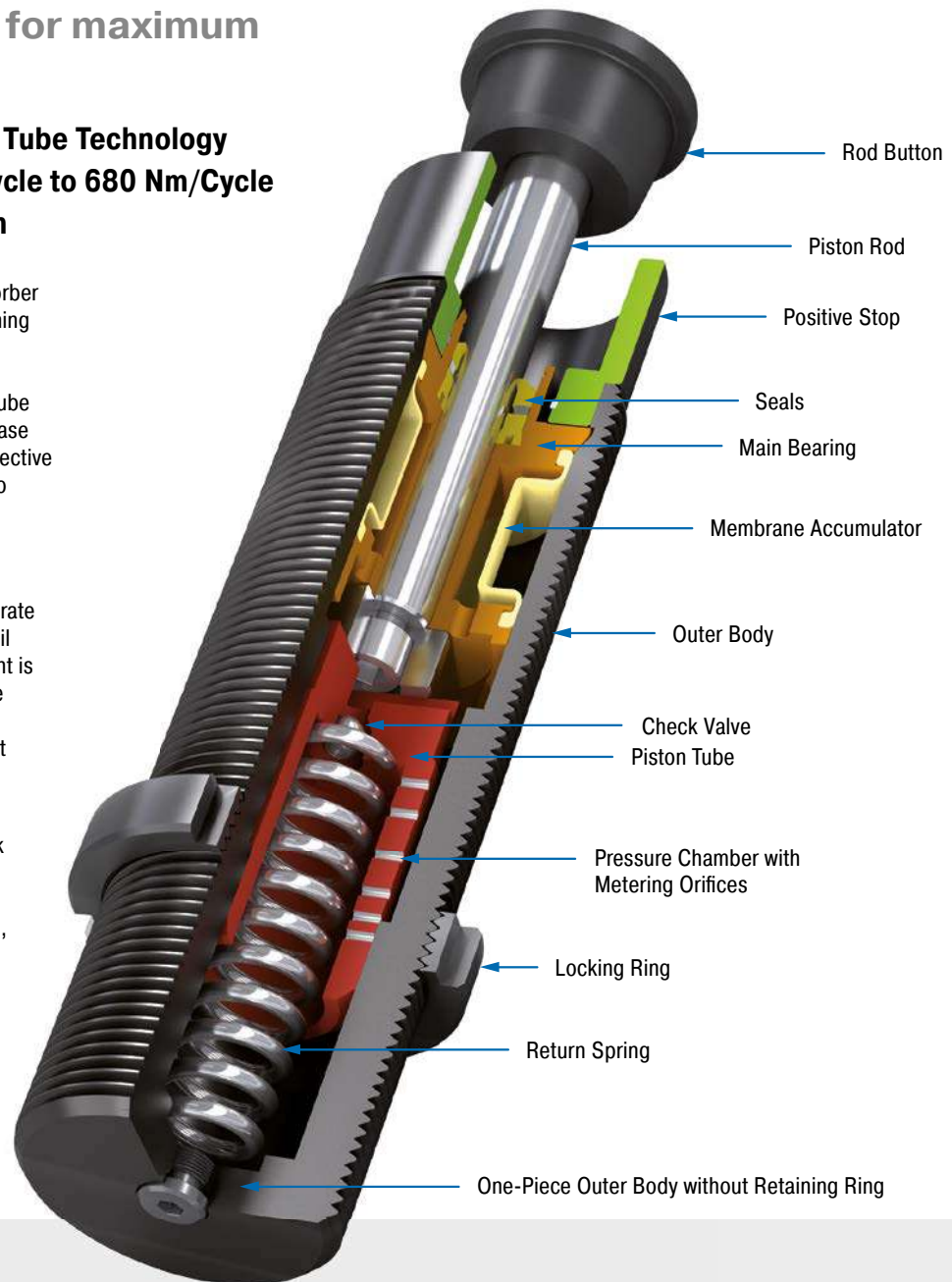
Energy capacity 155 Nm/Cycle to 680 Nm/Cycle

Stroke 23.1 mm to 48.6 mm

True performers: The SC33 to SC45 absorber models are strong and durable by combining the proven sealing technology from the MAGNUM range including membrane accumulator with the well-known piston tube technology from the SC² family. We increase the oil volume to ensure the maximum effective weights. Short stroke lengths of 25 mm to 50mm (.98 in to 1.96 in) deliver shorter braking times in combination with high energy absorption.

These dampers safely and reliably decelerate rotary movements without unwanted recoil effects. Installation close to the pivot point is possible. ACE's generation of piston tube manage low impact speeds with ease. Self-compensating shock absorbers react to changing energy conditions, without adjustment.

These self-compensating industrial shock absorbers can be relied on in industrial, automation and machine engineering. They are used in pivot units, rotary tables, robot arms or integrated wherever deceleration is needed.



Technical Data

Energy capacity: 155 Nm/Cycle to 680 Nm/Cycle

Impact velocity range: 0.02 m/s to 0.46 m/s. Other speeds on request.

Operating temperature range: -12 °C to +66 °C. Other temperatures on request.

Mounting: In any position

Positive stop: Integrated

Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Accessories: Steel with black oxide finish or nitride hardened

Damping medium: Low temperature hydraulic oil

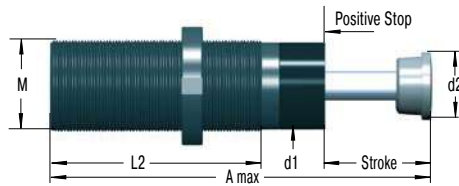
Application field: Turntables, Swivel units, Robot arms, Linear slides, Pneumatic cylinders, Handling modules, Machines and plants, Finishing and processing centers

Note: A noise reduction of 3 dB to 7 dB is possible when using the special impact button.

Safety information: 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: Special oils, mounting inside air cylinders or other special options are available on request.

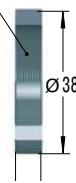
SC33



Product available for UNF and metric thread (for metric add suffix -M from part number)

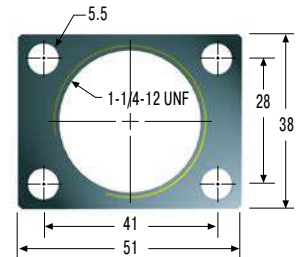
250-0038

Locking Ring
1-1/4-12 UNF



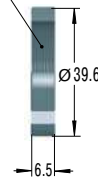
250-0016

Rectangular Flange



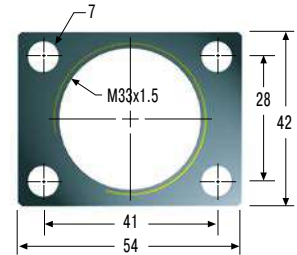
250-0292

Locking Ring
M33x1.5



250-0293

Rectangular Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Ordering Example

Self-Compensating _____
33 for 1-1/4-12 UNF or M33 threads _____
Stroke 0.98" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1 1/4-12)
Effective Weight Range Version _____

SC3325M-5

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
SC3325	23.2	178	30	25	122	1-1/4-12 UNF / M33x1.5
SC3350	48.6	254	30	25	173	1-1/4-12 UNF / M33x1.5

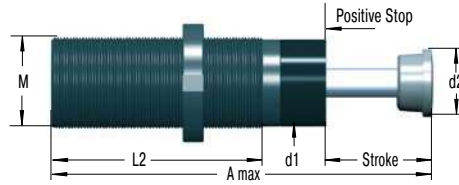
Performance

TYPES	Max. Energy Capacity		Effective Weight			Return Force				Side Load Angle		Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg	Hardness	min. N	max. N	Return Time s	max. °			
SC3325-5	155	75,000	1,360	2,721	-5	44	89	0.75	4			0.68
SC3325-6	155	75,000	2,500	5,443	-6	44	89	0.75	4			0.68
SC3325-7	155	75,000	4,989	8,935	-7	44	89	0.75	4			0.68
SC3325-8	155	75,000	8,618	13,607	-8	44	89	0.75	4			0.68
SC3350-5	310	85,000	2,721	4,990	-5	51	125	0.90	3			0.92
SC3350-6	310	85,000	4,536	9,980	-6	51	125	0.90	3			0.92

¹ The effective weight range limits can be raised or lowered to special order.

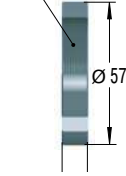
² For applications with higher side load angles please contact ACE.

SC45

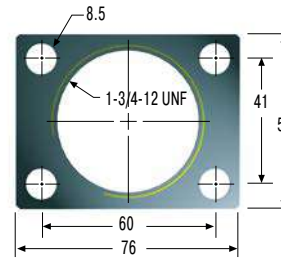


Product available for UNF and metric thread
(for metric add suffix -M from part number)

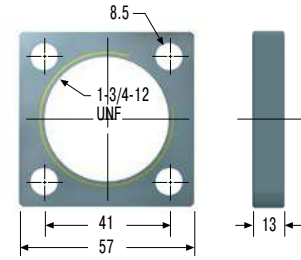
250-0041
Locking Ring
1-3/4-12 UNF



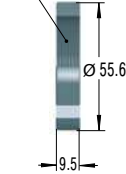
250-0024
Rectangular Flange



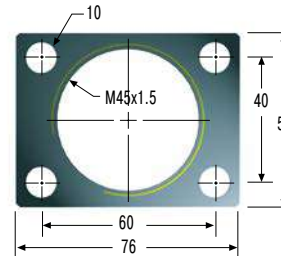
250-0023
Square Flange



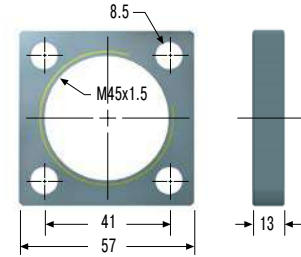
250-0297
Locking Ring
M45x1.5



250-0299
Rectangular Flange



250-0298
Square Flange



The calculation and selection of the most suitable damper
should be carried out or be approved by ACE.

Ordering Example

Self-Compensating _____
45 for 1 3/4-12 UNF or M45 threads _____
Stroke 0.98" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1 3/4-12)
Effective Weight Range Version _____

SC4525M-5

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
SC4525	23.1	189	42	35	139	1-3/4-12 UNF / M45x1.5
SC4550	48.5	265	42	35	190	1-3/4-12 UNF / M45x1.5

Performance

TYPES	Max. Energy Capacity		Effective Weight			Return Force				Side Load Angle	
	E ₃ Nm/cycle	E ₄ Nm/h	¹ We min. kg	¹ We max. kg	Hardness	min. N	max. N	Return Time s	max. °	Weight kg	
SC4525-5	340	107,000	3,400	6,800	-5	67	104	0.8	4	1.43	
SC4525-6	340	107,000	6,350	13,600	-6	67	104	0.8	4	1.43	
SC4525-7	340	107,000	12,700	22,679	-7	67	104	0.8	4	1.43	
SC4525-8	340	107,000	20,411	39,000	-8	67	104	0.8	4	1.43	
SC4550-5	680	112,000	6,800	12,246	-5	47	242	1.0	3	1.90	
SC4550-6	680	112,000	11,790	26,988	-6	47	242	1.0	3	1.90	
SC4550-7	680	112,000	25,854	44,225	-7	47	242	1.0	3	1.90	

¹ The effective weight range limits can be raised or lowered to special order.

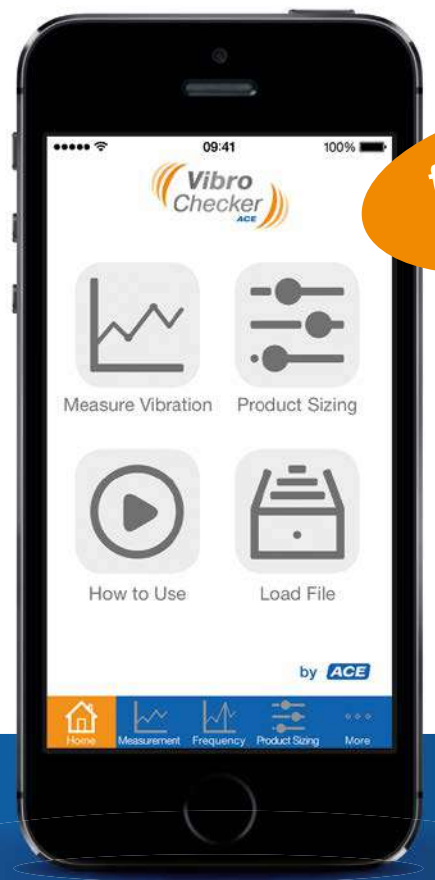
² For applications with higher side load angles please contact ACE.



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MA/ML33 to MA/ML64

High energy absorption and progressive adjustment

Adjustable

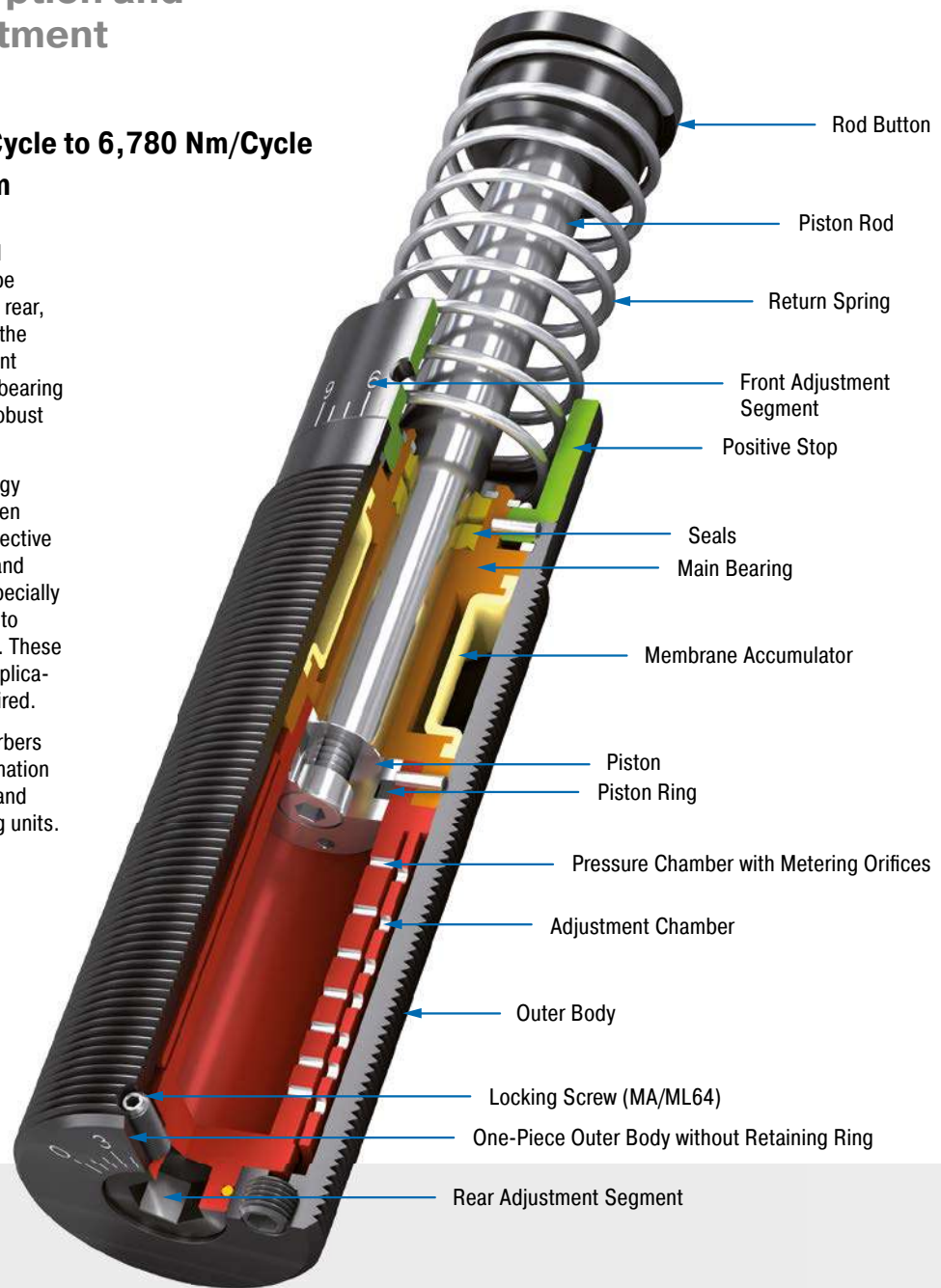
Energy capacity 170 Nm/Cycle to 6,780 Nm/Cycle

Stroke 23.1 mm to 150 mm

Adjustable and unique: These industrial shock absorbers from ACE, which can be precisely adjusted both at the front and rear, also contribute towards the success of the MAGNUM range. Equipped with excellent sealing technology, an annealed guide bearing and integrated positive stop, they are robust and durable.

These dampers absorb 50 % more energy than their predecessors but are built even more compactly. The larger range of effective loads also opens up options in design and assembly. This makes the ML range especially suitable for effective weights of 300 kg to 500,000 kg (661 lbs. to 1,102,311 lbs.). These shocks are the best option wherever application data changes and flexibility is required.

These adjustable industrial shock absorbers are used in all areas of industrial, automation and machine engineering, for gantries and integrated in linear carriages or pivoting units.



Technical Data

Energy capacity: 170 Nm/Cycle to 6,780 Nm/Cycle

Impact velocity range: MA: 0.15 m/s to 5 m/s. ML: 0.02 m/s to 0.46 m/s. Other speeds on request.

Operating temperature range: -12 °C to +66 °C. Other temperatures on request.

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: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel; Accessories: Steel with black oxide finish or nitride hardened

Damping medium: Automatic Transmission Fluid (ATF)

Application field: Linear slides, Swivel units, Turntables, Portal systems, Machines and plants, Tool machines, Machining centers, Z-axes, Impact panels, Handling modules

Note: A noise reduction of 3 dB to 7 dB is possible when using the special impact button. For emergency use only applications and for

continuous use (with additional cooling) it is sometimes possible to exceed the published max. capacity ratings. In this case, please consult ACE.

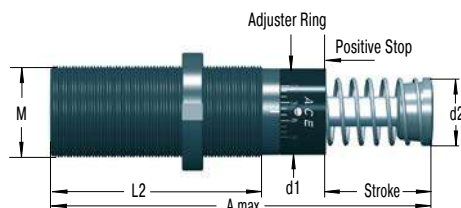
Safety information: External materials in the surrounding area can attack the seal components and lead to a shorter service life. Please contact ACE for appropriate solution suggestions. Do not paint the shock absorbers due to heat emission.

On request: Special oils, nickel-plated, increased corrosion protection, mounting inside air cylinders or other special options are available on request.

MA/ML33

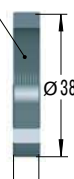


Adjuster

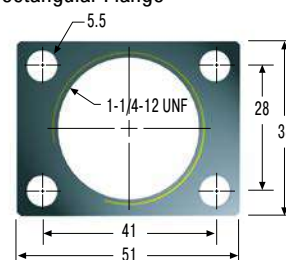


Product available for UNF and metric thread (for metric add suffix -M from part number)
M33x1.5, M36x1.5 and M42x1.5 also available to order

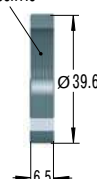
250-0038 Locking Ring 1-1/4-12 UNF



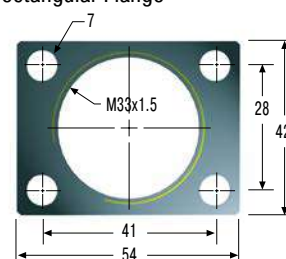
250-0016 Rectangular Flange



250-0292 Locking Ring M33x1.5



250-0293 Rectangular Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MA: Self-Contained with return spring, adjustable

ML: Self-Contained with return spring, adjustable, for lower impact velocity

Special Models

MAA, MLA: Air/Oil return without return spring. Use only with external air/oil tank.

MAS, MLS: Air/Oil Return with return spring. Use only with external air/oil tank.

MAN, MLN: Self-Contained without return spring

Ordering Example

MA/ML3325M

Adjustable _____
33 for 1-1/4-12 UNF or M33 threads _____
Stroke 0.98" (25 mm) _____
Metric Thread _____
(omitted when using thread UNF 1 1/4-12)

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MA3325	23.2	138	30	25	83	1-1/4-12 UNF / M33x1.5
ML3325	23.2	138	30	25	83	1-1/4-12 UNF / M33x1.5
MA3350	48.6	189	30	25	108	1-1/4-12 UNF / M33x1.5
ML3350	48.6	189	30	25	108	1-1/4-12 UNF / M33x1.5

Performance

TYPES	Max. Energy Capacity				Effective Weight		Return Force		Return Time s	Side Load Angle max. °	Weight kg
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	min. N	max. N			
MA3325	170	75,000	124,000	169,000	9	1,700	45	90	0.03	4	0.45
ML3325	170	75,000	124,000	169,000	300	50,000	45	90	0.03	4	0.45
MA3350	340	85,000	135,000	180,000	13	2,500	45	135	0.06	3	0.54
ML3350	340	85,000	135,000	180,000	500	80,000	45	135	0.06	3	0.54

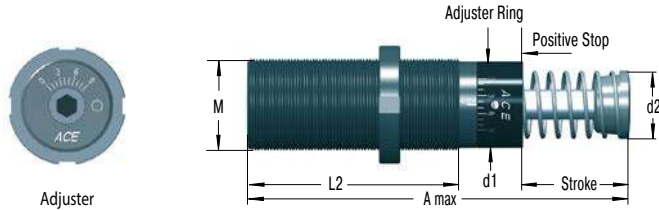
¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² The effective weight range limits can be raised or lowered to special order.

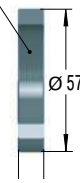
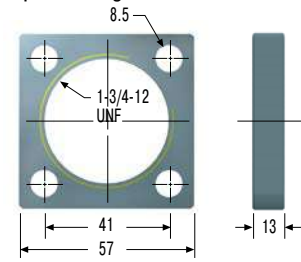
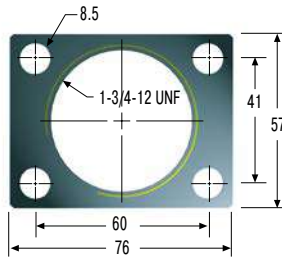
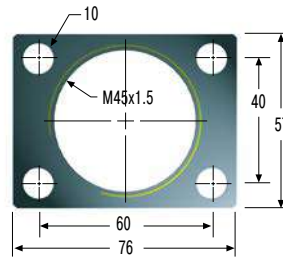
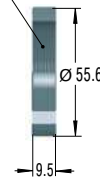
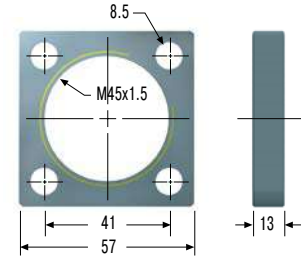
³ For applications with higher side load angles please contact ACE.

Adjustable

MA/ML45



Product available for UNF and metric thread (for metric add suffix -M from part number)

250-0041
Locking Ring
1-3/4-12 UNF

250-0023
Square Flange

250-0024
Rectangular Flange

250-0299
Rectangular Flange

250-0297
Locking Ring
M45x1.5

250-0298
Square Flange


The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MA: Self-Contained with return spring, adjustable

ML: Self-Contained with return spring, adjustable, for lower impact velocity

Special Models

MAA, MLA: Air/Oil return without return spring. Use only with external air/oil tank.

MAS, MLS: Air/Oil Return with return spring. Use only with external air/oil tank.

MAN, MLN: Self-Contained without return spring

Ordering Example

Adjustable _____
 45 for 1-3/4-12 UNF or M45 threads _____
 Stroke 0.98" (25 mm) _____
 Metric Thread _____
 (omitted when using thread UNF 1-3/4-12)

MA/ML4525M

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
MA4525	23.1	145	42	35	95	1-3/4-12 UNF / M45x1.5
ML4525	23.1	145	42	35	95	1-3/4-12 UNF / M45x1.5
MA4550	48.5	195	42	35	120	1-3/4-12 UNF / M45x1.5
ML4550	48.5	195	42	35	120	1-3/4-12 UNF / M45x1.5
MA4575	73.9	246	42	35	145	1-3/4-12 UNF / M45x1.5

Performance

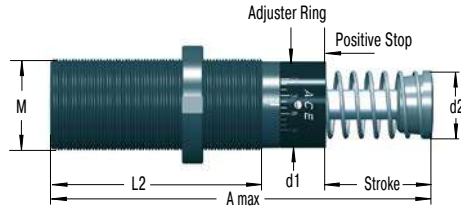
TYPES	Max. Energy Capacity				Effective Weight		Return Force			Return Time		Side Load	
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	min. N	max. N		min. s	max. s	Angle max. °	Weight kg
MA4525	425	107,000	158,000	192,000	40	10,000	70	100		0.03		4	1.13
ML4525	425	107,000	158,000	192,000	3,000	110,000	70	100		0.03		4	1.13
MA4550	850	112,000	192,000	248,000	70	14,500	70	145		0.08		3	1.36
ML4550	850	112,000	192,000	248,000	5,000	180,000	70	145		0.08		3	1.36
MA4575	1,300	146,000	225,000	282,000	70	15,000	50	180		0.11		2	1.59

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.² The effective weight range limits can be raised or lowered to special order.³ For applications with higher side load angles please contact ACE.

MA/ML64

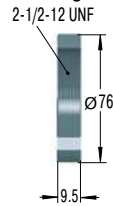


Adjuster

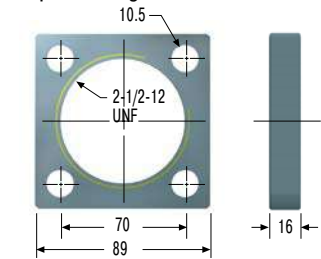


Product available for UNF and metric thread (for metric add suffix -M from part number)
150 mm stroke model does not include stop collar.
Positive stop is provided by the rod button (Ø 60 mm) and a stop block.

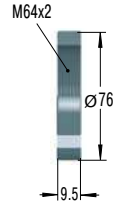
250-0042 Locking Ring



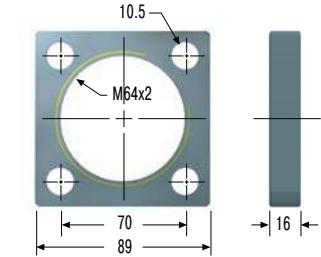
250-0028 Square Flange



250-0301 Locking Ring



250-0302 Square Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

Standard Models

MA: Self-Contained with return spring, adjustable

ML: Self-Contained with return spring, adjustable, for lower impact velocity

Special Models

MAA, MLA: Air/Oil return without return spring. Use only with external air/oil tank.

MAS, MLS: Air/Oil Return with return spring. Use only with external air/oil tank.

MAN, MLN: Self-Contained without return spring

Ordering Example

Adjustable _____
64 for 2-1/2-12 UNF or M64 threads _____
Stroke 1.97" (50 mm) _____
Metric Thread _____
(omitted when using thread UNF 2-1/2-12)

MA/ML6450M

Dimensions

TYPES	Stroke mm	A max. mm	d1 mm	d2 mm	L2 mm	M
ML6425	23.2	174	60	48	114	2-1/2-12 UNF / M64x2
MA6450	48.6	225	60	48	140	2-1/2-12 UNF / M64x2
ML6450	48.6	225	60	48	140	2-1/2-12 UNF / M64x2
MA64100	99.4	326	60	48	191	2-1/2-12 UNF / M64x2
MA64150	150	450	60	48	241	2-1/2-12 UNF / M64x2

Performance

TYPES	Max. Energy Capacity				Effective Weight		Return Force			Return Time		Side Load		Weight kg
	¹ E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	E ₄ with Oil Recirculation Nm/h	² We min. kg	² We max. kg	min. N	max. N		min. s	max. s	Angle max. °		
ML6425	1,135	124,000	248,000	332,000	7,000	300,000	120	155		0.06		5		2.50
MA6450	2,275	146,000	293,000	384,000	220	50,000	90	155		0.12		4		2.90
ML6450	2,275	146,000	293,000	384,000	11,000	500,000	90	155		0.12		4		2.90
MA64100	4,520	192,000	384,000	497,000	270	52,000	105	270		0.34		3		3.70
MA64150	6,780	248,000	497,000	644,000	330	80,000	75	365		0.48		2		5.10

¹ For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.

² The effective weight range limits can be raised or lowered to special order.

³ For applications with higher side load angles please contact ACE.

SASL1 1/8

Low velocity and high effective weight range

Adjustable

Energy capacity 900 Nm/Cycle to 1,800 Nm/Cycle

Stroke 25 mm to 51 mm

Designed for low velocity, high propelling force applications, SASL shock absorbers are a fixed flange product with a built-in square mount.

SASL industrial shock absorbers can be adjusted and precisely adapted to your requirements; they feature an integrated positive stop and are designed to handle effective weights from 1,800 to 5,400 Nm per cycle.

These adjustable shock absorbers are ideal for all areas of industrial automation and machine engineering applications. They are used in linear slides, tool machines, swivel units or wherever deceleration is needed.



Technical Data

Energy capacity: 900 Nm/Cycle to 1,800 Nm/Cycle

Impact velocity range: 0.08 m/s to 0.61 m/s

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

Positive stop: Integrated

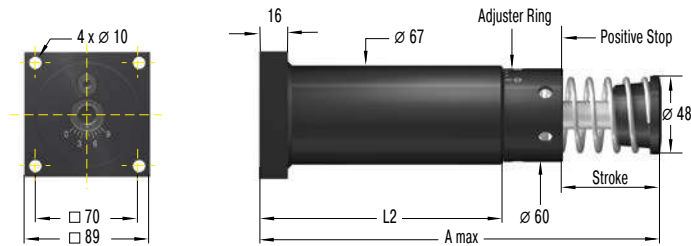
Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel

Damping medium: Automatic Transmission Fluid (ATF)

Application field: Linear slides, Pneumatic cylinders, Swivel units, Handling modules, Machines and plants, Finishing and processing centers, Measuring tables, Tool machines, Machining centers, Locking systems

Safety information: 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.

SASL 1 1/8-R Rear Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

SASL: Internal accumulator, spring return
 ASLA: Internal accumulator, mechanical return
 ASLS: External accumulator, spring return
 ASL: External accumulator, air or mechanical return

Ordering Example

SASL11/8x1-R

Adjustable _____
 Bore 1 1/8" (28.5 mm) _____
 Stroke 1" (25 mm) _____
 Rear Flange _____

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
SASL11/8X1-R	23	175	100
SASL11/8X2-R	48.5	225	124

Performance

TYPES	Max. Energy Capacity			Effective Weight		Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg	
SASL11/8X1-R	900	142,000	282,000	318	320,000	3.67
SASL11/8X2-R	1,800	170,000	340,000	385.5	590,000	4.17

¹ The effective weight range limits can be raised or lowered to special order.

SALD1/2 to SALD1 1/8

High energy absorption and a wide effective weight range

Adjustable

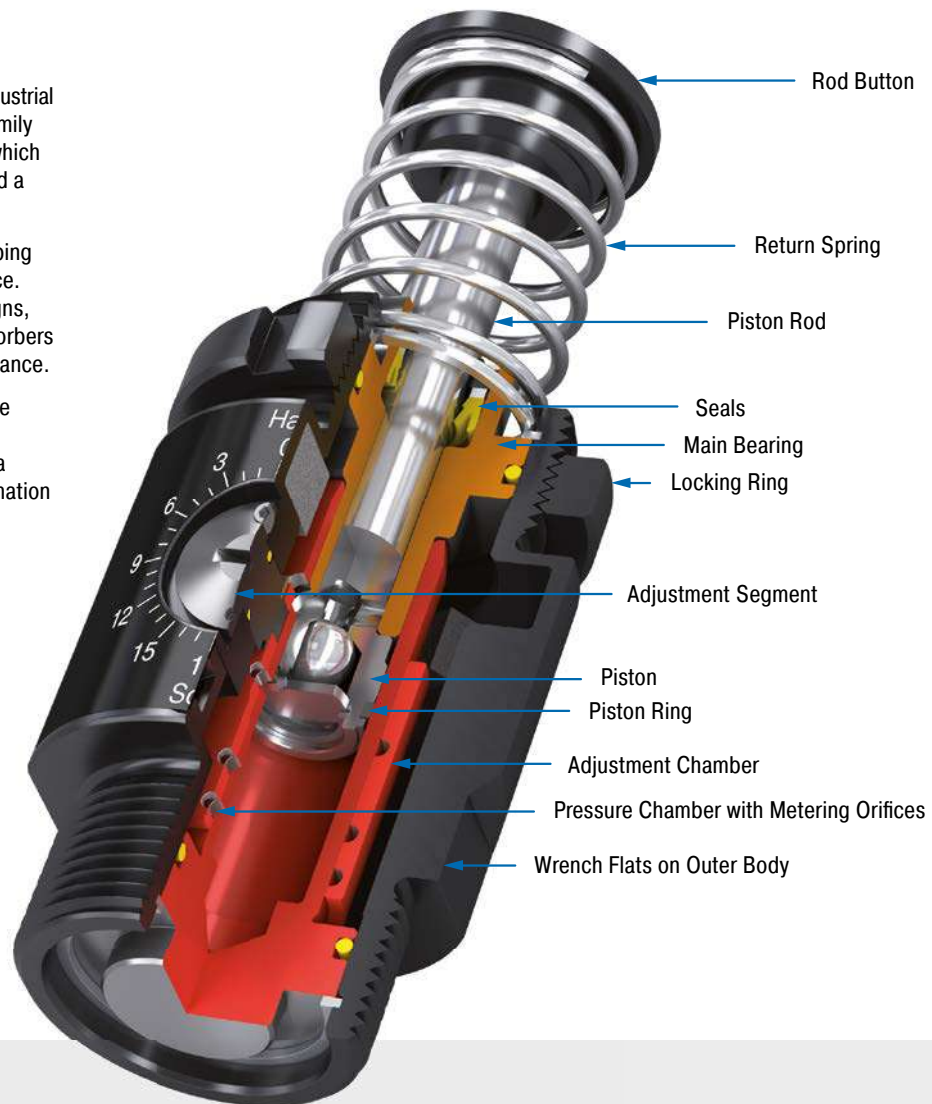
Energy capacity 153 Nm/Cycle to 5,400 Nm/Cycle

Stroke 25 mm to 152 mm

Ideal for high-speed moving machines, industrial shock absorbers of the SALD product family feature a built-in external positive stop which prevents damage from bottoming out and a positive work-positioning point.

High energy absorption and a wide damping range lead to huge advantages in practice. Alongside generally more compact designs, these small yet very powerful shock absorbers enable full use of the machine's performance.

These adjustable shock absorbers can be adjusted and precisely adapted to your requirements, making them suitable for a variety of applications in industrial automation and machine engineering applications, especially in automation and gantries.



Technical Data

Energy capacity: 153 Nm/Cycle to 5,400 Nm/Cycle

Impact velocity range: 0.3 m/s to 4.6 m/s

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

Mounting: In any position

Positive stop: External

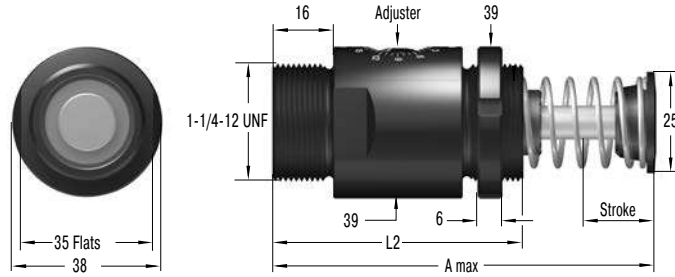
Material: Outer body: Nitride hardened steel; Piston rod: Hard chrome plated steel; Rod end button: Hardened steel and corrosion-resistant coating; Return spring: Zinc plated or plastic-coated steel

Damping medium: Automatic Transmission Fluid (ATF)

Application field: Linear slides, Pneumatic cylinders, Swivel units, Handling modules, Machines and plants, Finishing and processing centers, Measuring tables, Tool machines, Machining centers, Locking systems

Safety information: 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.

SALD1/2-P Primary



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

SALD: Internal accumulator, spring return
ALDA: Internal accumulator, mechanical return
ALDS: External accumulator, spring return
ALD: External accumulator, air or mechanical return

Ordering Example

Adjustable _____
Bore 1/2" (12.7 mm) _____
Stroke 1" (25 mm) _____
Primary _____

SALD1/2x1-P

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
SALD1/2X1-P	23.2	138	82
SALD1/2X2-P	48.5	189	102

Performance

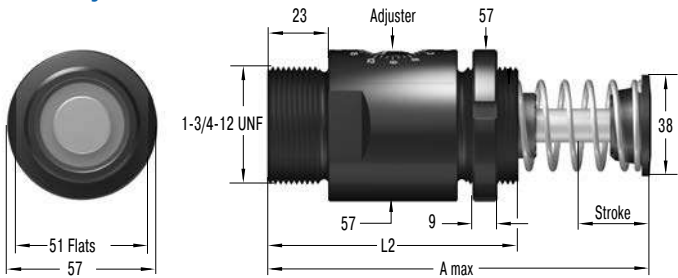
TYPES	Max. Energy Capacity			Effective Weight		Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg	
SALD1/2X1-P	153	85,000	147,000	4.5	1,225	0.68
SALD1/2X2-P	305	98,000	158,000	9.5	2,585	0.83

¹ The effective weight range limits can be raised or lowered to special order.



Adjustable

SALD3/4-P Primary



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

- SALD: Internal accumulator, spring return
- ALDA: Internal accumulator, mechanical return
- ALDS: External accumulator, spring return
- ALD: External accumulator, air or mechanical return

Ordering Example

Adjustable _____

Bore 3/4" (19 mm) _____

Stroke 1" (25 mm) _____

Primary _____

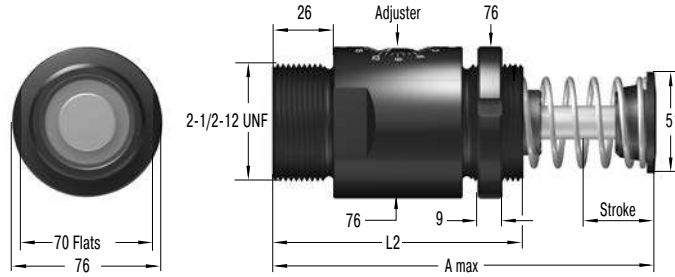
SALD3/4x1-P

Dimensions			
TYPES	Stroke mm	A max. mm	L2 mm
SALD3/4X1-P	23.2	151	101
SALD3/4X2-P	48.5	202	126
SALD3/4X3-P	74	252	152

Performance						
TYPES	Max. Energy Capacity			Effective Weight		Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg	
SALD3/4X1-P	340	124,000	181,000	9	8,100	1.47
SALD3/4X2-P	680	147,000	225,000	15.9	14,500	1.81
SALD3/4X3-P	1,000	181,000	2,700,000	22.7	21,000	2.24

¹ The effective weight range limits can be raised or lowered to special order.

SALD1 1/8-P Primary



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

SALD: Internal accumulator, spring return
ALDA: Internal accumulator, mechanical return
ALDS: External accumulator, spring return
ALD: External accumulator, air or mechanical return

Ordering Example

Adjustable _____
Bore 1 1/8" (28.5 mm) _____
Stroke 1" (25 mm) _____
Primary _____

SALD3/4x1-P

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
SALD11/8X2-P	48.5	226	140
SALD11/8X4-P	99	327	190
SALD11/8X6-P	150	451	241

Performance

TYPES	Max. Energy Capacity			Effective Weight		Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg	
SALD11/8X2-P	1,800	170,000	340,000	54	22,700	3.97
SALD11/8X4-P	3,600	225,000	452,000	72.5	45,000	5.22
SALD11/8X6-P	5,400	280,000	565,000	91	68,000	7.04

¹ The effective weight range limits can be raised or lowered to special order.

SALDN3/4

High energy absorption and a wide effective weight range

Adjustable

Energy capacity 390 Nm/Cycle to 1,200 Nm/Cycle

Stroke 25 mm to 76 mm

SALDN industrial shock absorbers offer high performance levels and a long service life, even in the most difficult environments. These shock absorbers feature an integrated positive stop and are designed to handle effective weights from 390 to 1,200 Nm per cycle.

High energy absorption in a compact design and a wide damping range lead to huge advantages in practice. Alongside generally more compact designs, these small yet very powerful shock absorbers enable full use of the machine's performance.

These adjustable shock absorbers can be adjusted and precisely adapted to your requirements, making them suitable for a variety of applications in industrial automation and machine engineering applications, especially in automation and gantries.



Technical Data

Energy capacity: 390 Nm/Cycle to 1,200 Nm/Cycle

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

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

Mounting: In any position

Positive stop: Integrated

Adjustment: Rear of shock

Damping medium: Automatic Transmission Fluid (ATF)

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

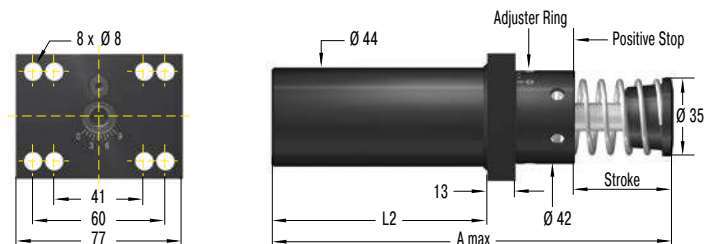
Machines and plants, Finishing and processing centers, Measuring tables, Tool machines, Machining centers, Locking systems

Note: ACE recommends selecting a model with 20 % more capacity than your calculations indicate necessary. This extra capacity allows for changes in weight, velocity or cycle rates increase in the future.

Safety information: 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: Special oils, nickel-plated, increased corrosion protection, mounting inside air cylinders, additional impact velocity ranges or other special options are available on request.

SALDN3/4-RF Front Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

SALDN: Internal accumulator, spring return
 ALDAN: Internal accumulator, mechanical return
 ALDSN: External accumulator, spring return
 ALDN: External accumulator, air or mechanical return

Ordering Example

Adjustable _____
 Bore 3/4" (19 mm) _____
 Stroke 1" (25 mm) _____
 Series (RF = Front Flange) _____

SALDN3/4x1-RF

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
SALDN3/4X1-RF	25	145	82
SALDN3/4X2-RF	50	195	107
SALDN3/4X3-RF	75	246	133

Performance

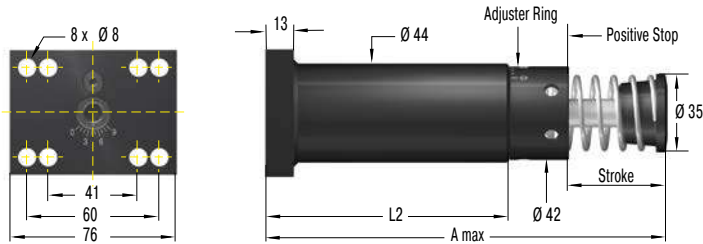
TYPES	Max. Energy Capacity			Effective Weight		Return Force min. N	Return Force max. N	Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg					
SALDN3/4X1-RF	390	107,000	158,000	45	10,000	7	10	0.03	4	1.13
SALDN3/4X2-RF	780	113,000	190,000	72.6	14,500	7	14.5	0.08	3	1.37
SALDN3/4X3-RF	1,200	147,000	226,000	115	15,000	5	18.25	0.11	2	1.59

¹ The effective weight range limits can be raised or lowered to special order.



Adjustable

SALDN3/4-RR Rear Flange



The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

Model Type Prefix

- SALDN: Internal accumulator, spring return
- ALDAN: Internal accumulator, mechanical return
- ALDSN: External accumulator, spring return
- ALDN: External accumulator, air or mechanical return

Ordering Example

Adjustable _____

Bore 3/4" (19 mm) _____

Stroke 1" (25 mm) _____

Series (RR = Rear Flange) _____

SALDN3/4x1-RR

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
SALDN3/4X1-RR	25	145	82
SALDN3/4X2-RR	50	195	107
SALDN3/4X3-RR	75	246	133

Performance

TYPES	Max. Energy Capacity			Effective Weight		Return Force min. N	Return Force max. N	Return Time s	Side Load Angle max. °	Weight kg
	E ₃ Nm/cycle	E ₄ Nm/h	E ₄ with Air/Oil Tank Nm/h	¹ We min. kg	¹ We max. kg					
SALDN3/4X1-RR	390	107,000	158,000	43	10,000	7	10	0.03	4	1.13
SALDN3/4X2-RR	780	113,000	190,000	72.6	14,500	7	14.5	0.08	3	1.37
SALDN3/4X3-RR	1,200	147,000	226,000	115	15,000	5	18.25	0.11	2	1.59

¹ The effective weight range limits can be raised or lowered to special order.

High Performance

for PET Stretch Blow Machines

NEW



PET 20 and PET 27

**20 million cycles – up to 107 °C – aluminium outer body
hardened pressure chamber – corrosion protection**

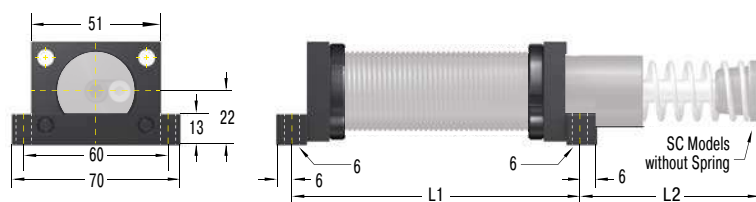
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extended service life – low-wear – faster
reduced downtime – improved system performance
increased production volume – high cost efficiency

M33x1.5

250-0294

Side Foot Mounting Kit



250-0294 = 1 locknut, 2 flanges, 2 bars, 4 screws M6x40, DIN 912

Torque max.: 11 Nm

Clamping torque: 90 Nm

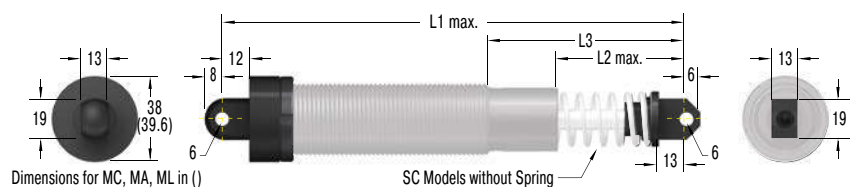
Bolts to mount assembled shock & mount not included.

Dimensions

TYPES	L1 mm	L2 mm
MC, MA, ML3325	95.3	49.3
MC, MA, ML3350	120.7	74.7
SC3325	134.9	49.3
SC3350	185.7	74.7
SCS33-25	95.3	49.3
SCS33-50	120.7	74.7

250-0323

Clevis Mount Assembly



Dimensions for MC, MA, ML in ()

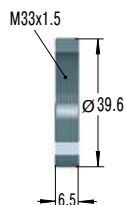
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
MC, MA, ML3325	167.13	34.54	67.05
MC, MA, ML3350	217.93	59.94	92.46
SC3325	206.76	34.67	67.31
SC3350	282.96	60.20	92.71

Use positive stop at both ends of travel.

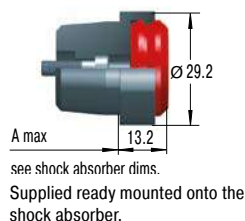
250-0292

Locking Ring



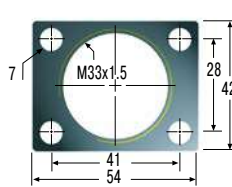
250-0091

Poly Button



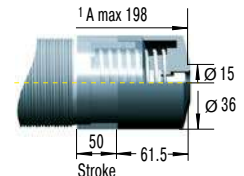
250-0293

Rectangular Flange



250-0130

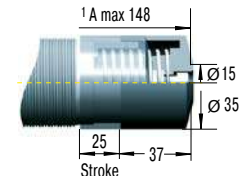
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0730

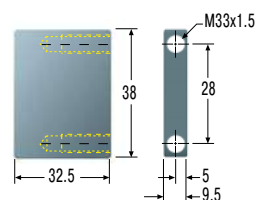
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

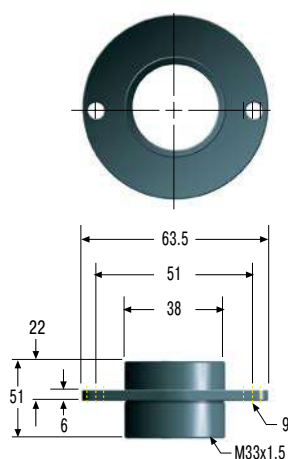
250-0427

Stop Bar



250-0071

Flanged Stop Collar

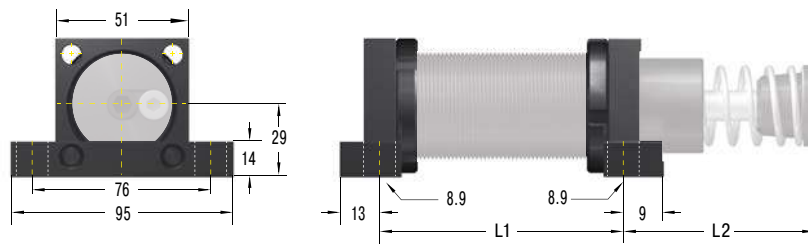


Mounting, installation, ... see page 96.

M45x1.5

250-0300

Side Foot Mounting Kit



Dimensions

TYPES	L1 mm	L2 mm
MC, MA, ML4525	88.9	49.3
MC, MA, ML4550	111.8	77.7
MC, MA4575	136.6	103.1
SC4525	129.5	53.9
SC4550	180.3	78.5
SCS45-25	88.9	49.3
SCS45-50	111.8	77.7
SCS45-75	136.6	103.1

250-0300 = 1 locknut, 2 flanges, 2 bars, 4 screws M8x50, DIN 912

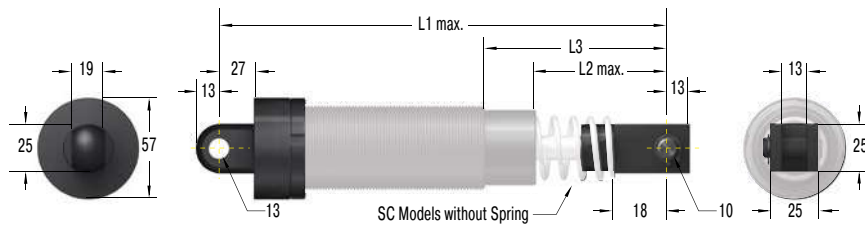
Torque max.: 27 Nm

Clamping torque: 350 Nm

Bolts to mount assembled shock & mount not included.

250-0325

Clevis Mount Assembly



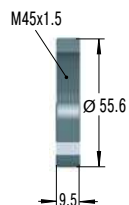
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
MC, MA, ML4525	199.39	38.35	65.27
MC, MA, ML4550	250.19	63.75	90.67
MC, MA4575	300.99	89.15	116.07
SC4525	243.84	38.35	65.28
SC4550	320.04	63.75	90.68

Use positive stop at both ends of travel.

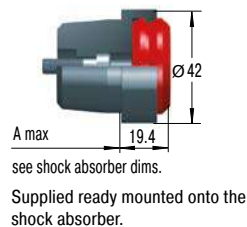
250-0297

Locking Ring



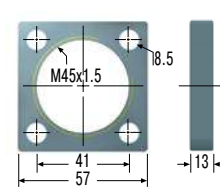
250-0092

Poly Button



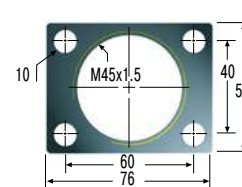
250-0298

Square Flange



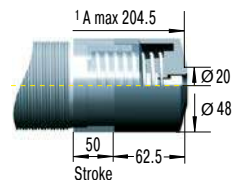
250-0299

Rectangular Flange



250-0778

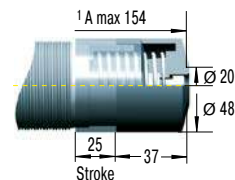
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0731

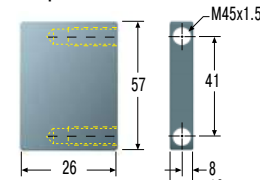
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

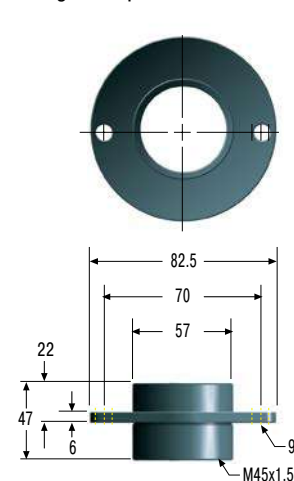
250-0639

Stop Bar



250-0073

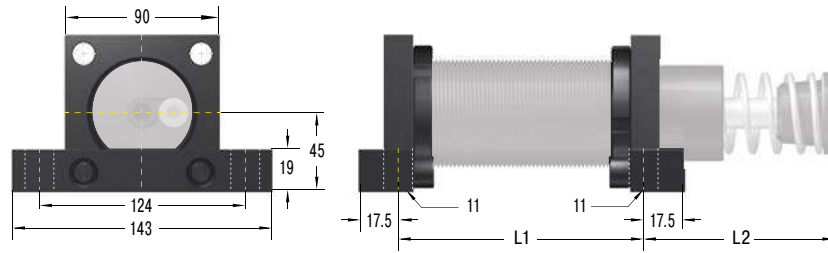
Flanged Stop Collar



M64x2

250-0304

Side Foot Mounting Kit



250-0304 = 1 locknut, 2 flanges, 2 bars, 4 screws M10x80, DIN 912

Torque max.: 50 Nm

Clamping torque: 350 Nm

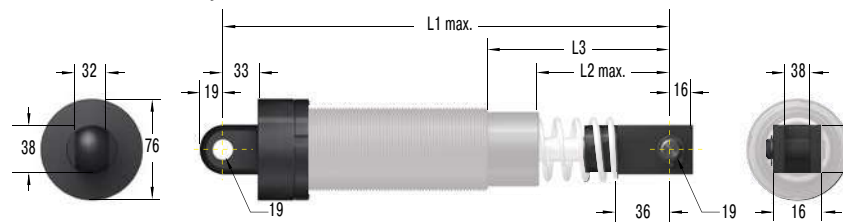
Bolts to mount assembled shock & mount not included.

Dimensions

TYPES	L1 mm	L2 mm
ML6425	101.6	64.5
MC, MA, ML6450	127.0	89.9
MC, MA64100	177.8	140.7
MC, MA64150	228.6	213.9
SCS64-50	127.0	89.9
SCS64-100	177.8	140.7
SCS64-150	228.6	213.9

250-0626

Clevis Mount Assembly



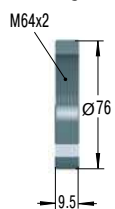
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
ML6425	257.10	58.70	95.50
MC, MA, ML6450	307.90	84.10	120.70
MC, MA64100	409.50	134.90	171.50
MC, MA64150	530.10	204.70	241.30

Use positive stop at both ends of travel.

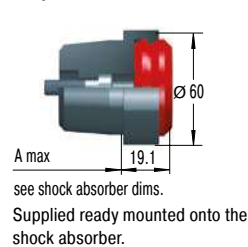
250-0301

Locking Ring



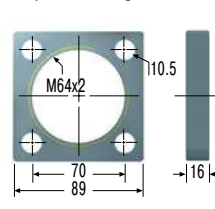
250-0093

Poly Button



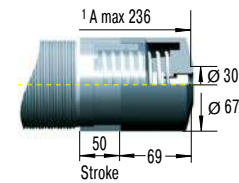
250-0302

Square Flange



250-0787

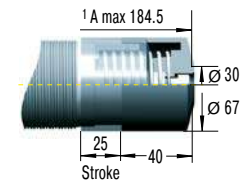
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0839

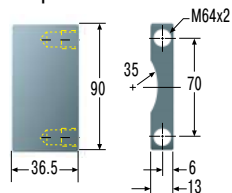
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0640

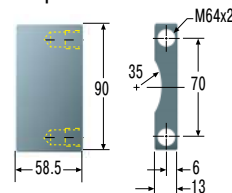
Stop Bar



For MC/MA/ML6425M to 64100M models

250-0641

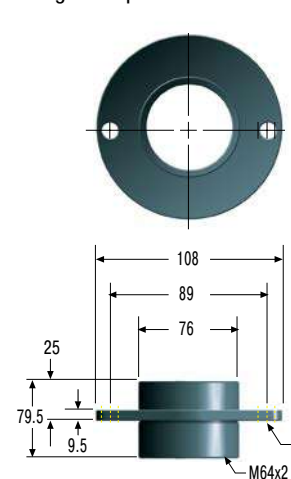
Stop Bar



For MC/MA/ML64150M model

250-0077

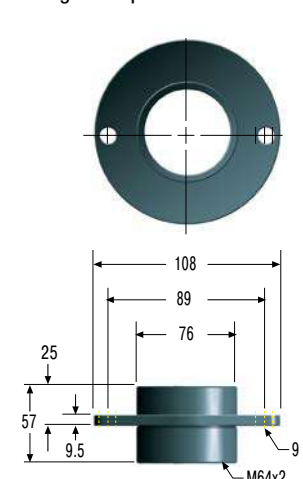
Flanged Stop Collar



For MC/MA/ML64150M model

250-0075

Flanged Stop Collar



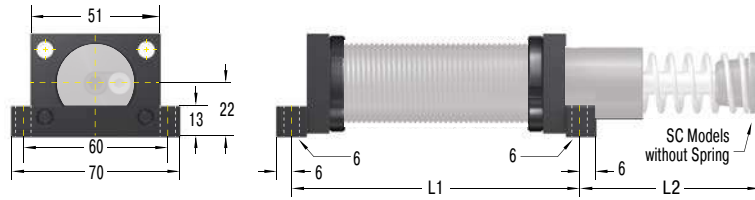
For MC/MA/ML6425M to 64100M models

Mounting, installation, ... see page 96.

1-1/4-12 UNF

250-0015

Side Foot Mounting Kit



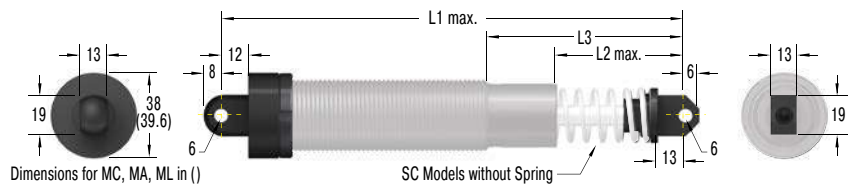
250-0015 = 1 locknut, 2 flanges, 2 bars, 4 screws 1-1/4-12 UNF, DIN 912
Torque max.: 11 Nm
Clamping torque: 90 Nm
Bolts to mount assembled shock & mount not included.

Dimensions

TYPES	L1 mm	L2 mm
MC, MA, ML3325	95.3	49.3
MC, MA, ML3350	120.7	74.7
SC3325	134.9	49.3
SC3350	185.7	74.7
SCS33-25	95.3	49.3
SCS33-50	120.7	74.7

250-0225

Clevis Mount Assembly



Dimensions for MC, MA, ML in ()

SC Models without Spring

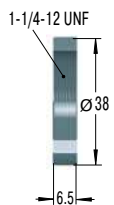
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
MC, MA, ML3325	167.13	34.54	67.05
MC, MA, ML3350	217.93	59.94	92.46
SC3325	206.76	34.67	67.31
SC3350	282.96	60.20	92.71

Use positive stop at both ends of travel.

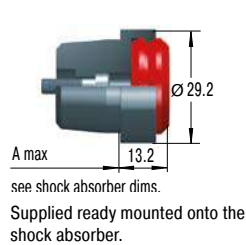
250-0038

Locking Ring



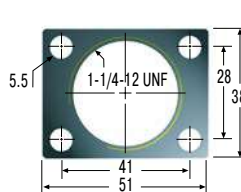
250-0091

Poly Button



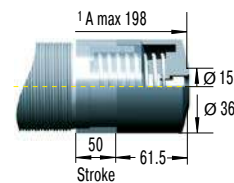
250-0016

Rectangular Flange



250-0130

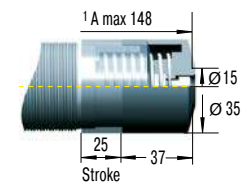
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0730

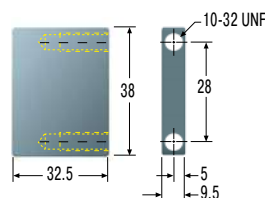
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

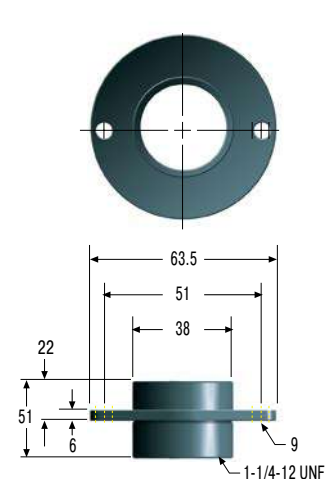
250-0426

Stop Bar



250-0070

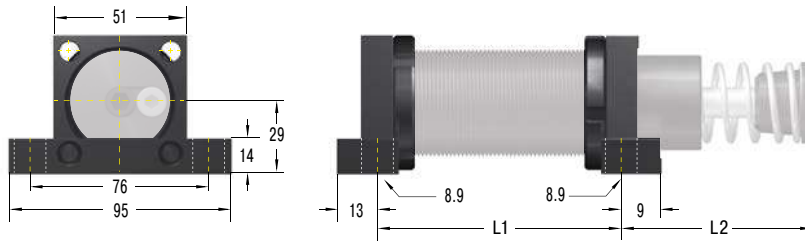
Flanged Stop Collar



1-3/4-12 UNF

250-0025

Side Foot Mounting Kit



Dimensions

TYPES	L1 mm	L2 mm
MC, MA, ML4525	88.9	49.3
MC, MA, ML4550	111.8	77.7
MC, MA4575	136.6	103.1
SC4525	129.5	53.9
SC4550	180.3	78.5
SCS45-25	88.9	49.3
SCS45-50	111.8	77.7
SCS45-75	136.6	103.1

250-0025 = 1 locknut, 2 flanges, 2 bars, 4 screws 1-3/4-12 UNF, DIN 912

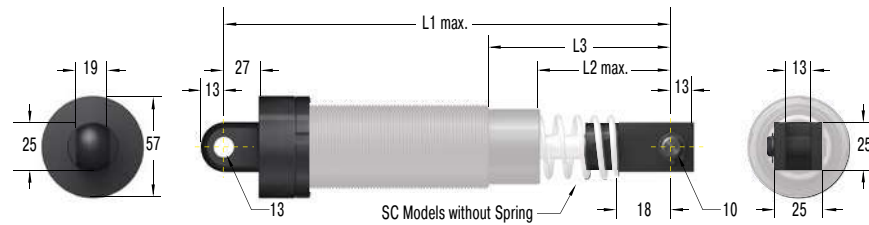
Torque max.: 27 Nm

Clamping torque: 350 Nm

Bolts to mount assembled shock & mount not included.

250-0324

Clevis Mount Assembly



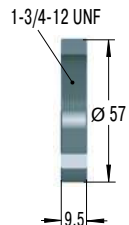
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
MC, MA, ML4525	199.39	38.35	65.27
MC, MA, ML4550	250.19	63.75	90.67
MC, MA4575	300.99	89.15	116.07
SC4525	243.84	38.35	65.28
SC4550	320.04	63.75	90.68

Use positive stop at both ends of travel.

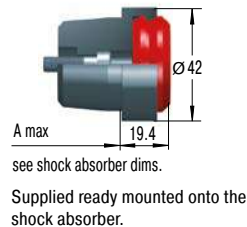
250-0041

Locking Ring



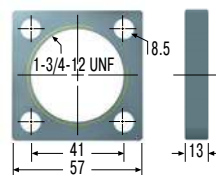
250-0092

Poly Button



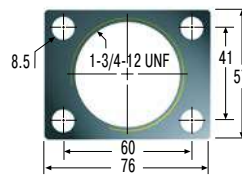
250-0023

Square Flange



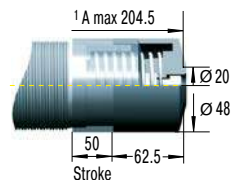
250-0024

Rectangular Flange



250-0778

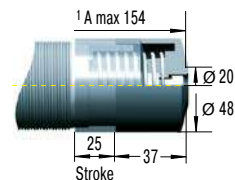
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0731

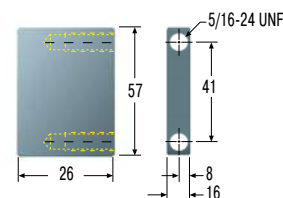
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

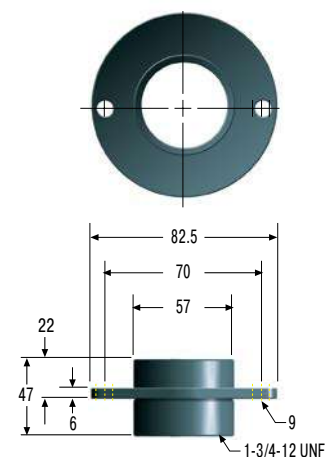
250-0428

Stop Bar



250-0072

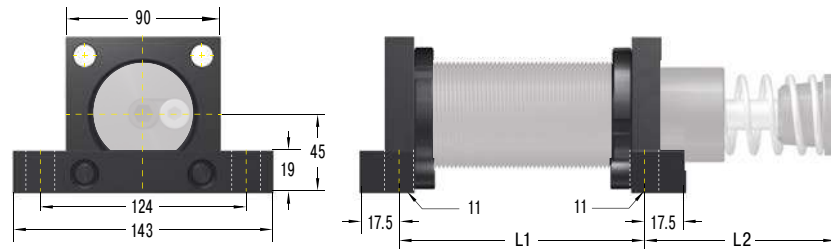
Flanged Stop Collar



2-1/2-12 UNF

250-0030

Side Foot Mounting Kit



Dimensions

TYPES	L1 mm	L2 mm
ML6425	101.6	64.5
MC, MA, ML6450	127.0	89.9
MC, MA64100	177.8	140.7
MC, MA64150	228.6	213.9
SCS64-50	127.0	89.9
SCS64-100	177.8	140.7
SCS64-150	228.6	213.9

250-0030 = 1 locknut, 2 flanges, 2 bars, 4 screws 2-1/2-12 UNF, DIN 912

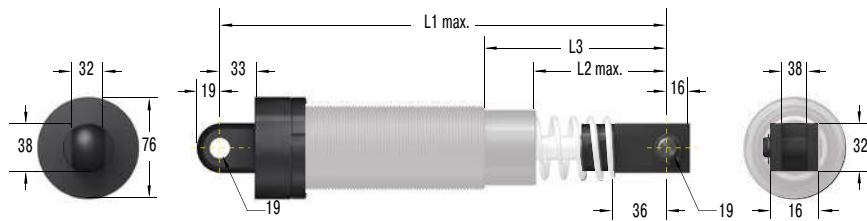
Torque max.: 50 Nm

Clamping torque: 50 Nm

Bolts to mount assembled shock & mount not included.

250-0625

Clevis Mount Assembly



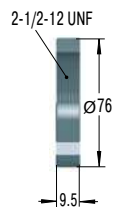
Dimensions

TYPES	L1 max. mm	L2 max. mm	L3 mm
ML6425	257.10	58.70	95.50
MC, MA, ML6450	307.90	84.10	120.70
MC, MA64100	409.50	134.90	171.50
MC, MA64150	530.10	204.70	241.30

Use positive stop at both ends of travel.

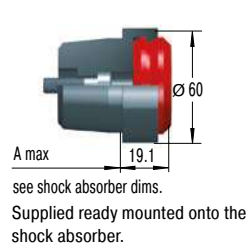
250-0042

Locking Ring



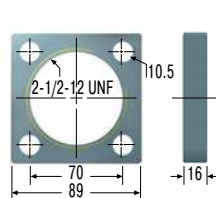
250-0093

Poly Button



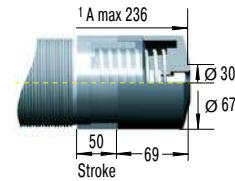
250-0028

Square Flange



250-0787

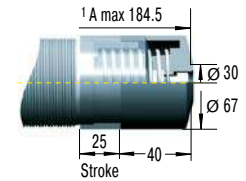
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0839

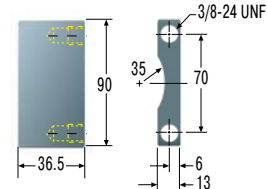
Steel Shroud



¹ Total installation length of the shock absorber inc. steel shroud

250-0430

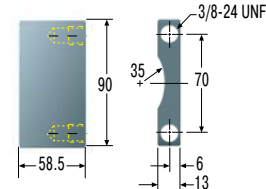
Stop Bar



For MC/MA/ML6425 to 64100 models

250-0432

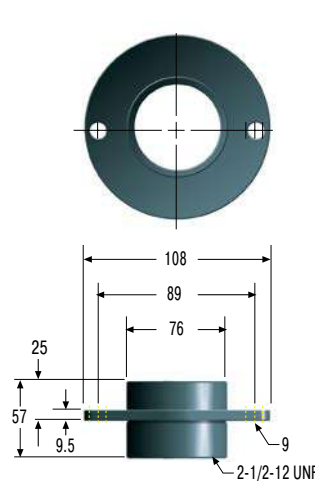
Stop Bar



For MC/MA/ML64150 models

250-0074

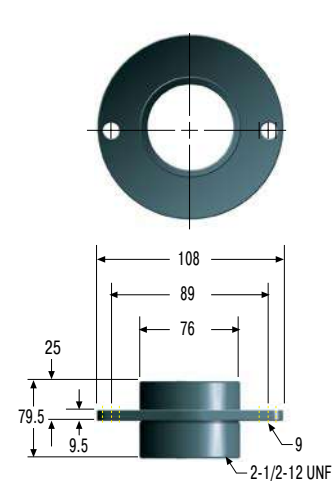
Flanged Stop Collar



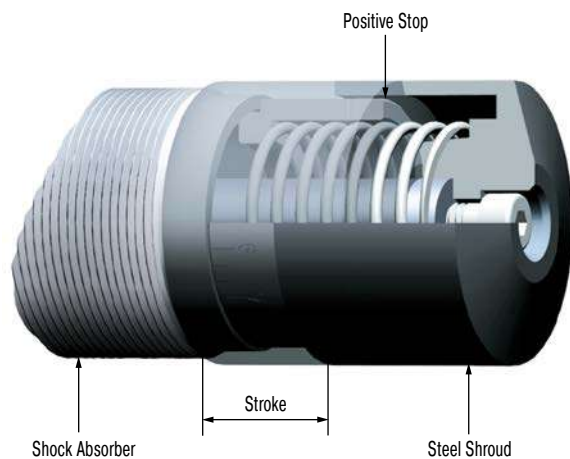
For MC/MA/ML 6425 to 64100 models

250-0076

Flanged Stop Collar



For MC/MA/ML64150M model



Steel Shroud

For industrial shock absorbers with a 25 or 50 mm stroke.

Grinding beads, sand, welding splatter, paints and adhesives etc. can adhere to the piston rod. They then damage the rod seals and the shock absorber quickly fails. In many cases the installation of the optional steel shroud can provide worthwhile protection and increase lifetime.

Material

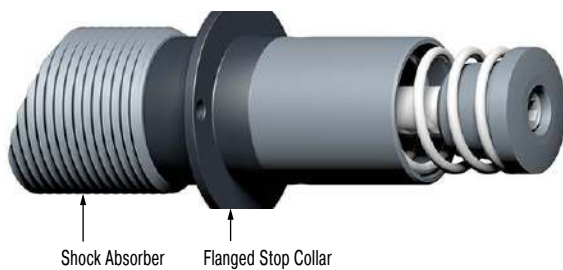
Hardened high tensile steel

Mounting information

To mount the steel shroud it's necessary to remove the rod end button of the shock absorber.

Safety information

When installing don't forget to allow operating space for the shroud to move as the shock absorber is cycled.

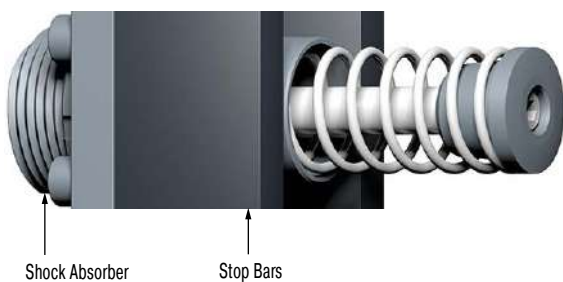


Flanged Stop Collar

Flanged stop collars provide industrial shock absorbers with a secure front mount and a positive mechanical stop. No specific mounting panel thickness is required.

Material

Hardened high tensile steel



Stop Bar

Stop bars are used in pairs and come two per package for assembly. Hard metric stop bars are available upon request.

Material

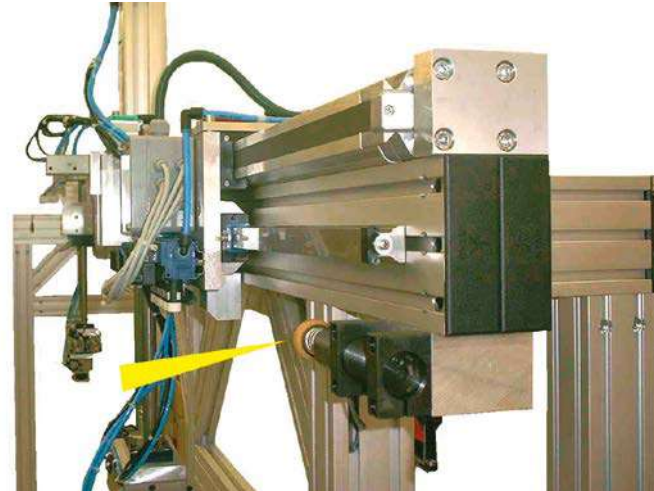
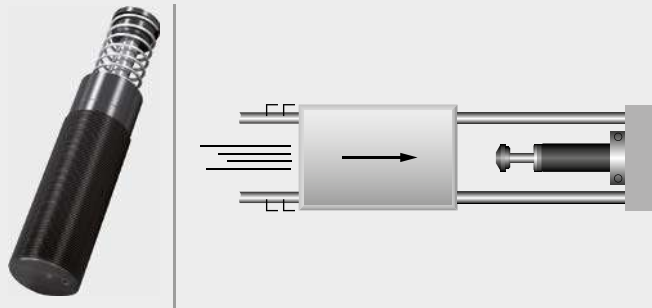
Hardened high tensile steel

Application Examples

MC33

Quicker, gentle positioning

ACE industrial shock absorbers optimize portals for machine loading and increase productivity. This device is driven by piston rodless pneumatic cylinders where two gripper slides are moving independently of each other at speeds of 2 to 2.5 m/sec., is equipped with industrial shock absorbers as brake systems. Their function is to stop a mass of 25 kg up to 540 times per hour. The MC3350-1-S model was chosen for this application, allowing easy and extremely accurate adjustment of the end positions of the adjustable limit stops. In comparison to brake systems with other function principles, shock absorbers allow higher travel speeds and shorter cycle sequences.

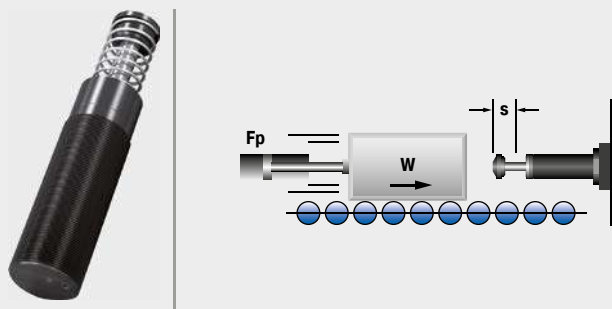


Industrial shock absorbers optimize portal operation

MC45

MAGNUM protection of carriage construction

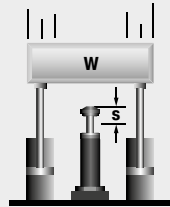
Serving a similar purpose, several ACE dampers are installed in Jada, the triple-axis, free-moving badminton robot. In order for the badminton robot to be capable of playing, it must be able to change direction in the shortest time possible. Jada is designed therefore to brake at a maximum of 30 m/s². For this task, linear modules are limited by the use of industrial shock absorbers of the type MC4575-0. Miniature shock absorbers and profile dampers are also installed at the location of the „racket hand“. In all cases, the modern ACE machine elements serve to protect the end positions of the construction.



A variety of different dampers are used to slow the rapid movements of a badminton robot
FMTC vzw, 3001 Leuven, Belgium

MC64-VA**MAGNUM damper for safety under water**

A pipeline from the rig to the well head that is as flexible as possible is considered to be a quick-disconnect connection in an emergency. Nevertheless, this connection made at the oil source on the sea floor is an Achilles heel. If the connection snaps or if it cannot be separated quickly enough during hazards such as storms, unpredictable, often serious consequences can hardly be prevented. With the so-called XR connector, the safety at this critical point is significantly increased. In the innovative design 10 industrial shock absorbers per connection from the MAGNUM series from ACE master this important task.

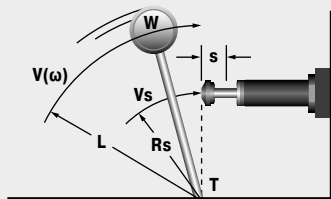


MAGNUMS allow for emergency quick disconnection of the pipelines from the oil rigs

Subsea Technologies Ltd, Aberdeen, AB12 3AY, UK

MC64M**Emergency exits made safer with MAGNUM shock absorbers**

MAGNUM 64150 industrial shock absorbers are integrated into the overall safety design for the Amsterdam metro system. In contrast to previous solutions, ACE shocks ensure rapid opening and stopping for a five-ton barrier located at the end of an emergency escape route. In this application, over 5,100 Nm of energy are able to be absorbed per stroke. Through installing shock absorbers in end positions of the design, over 63,700 kg of effective weight are able to be absorbed. ACE provided an excellent solution, even with an impact speed of approximately 1.8 meters per second and the barrier exit grille at an unusual impact angle.

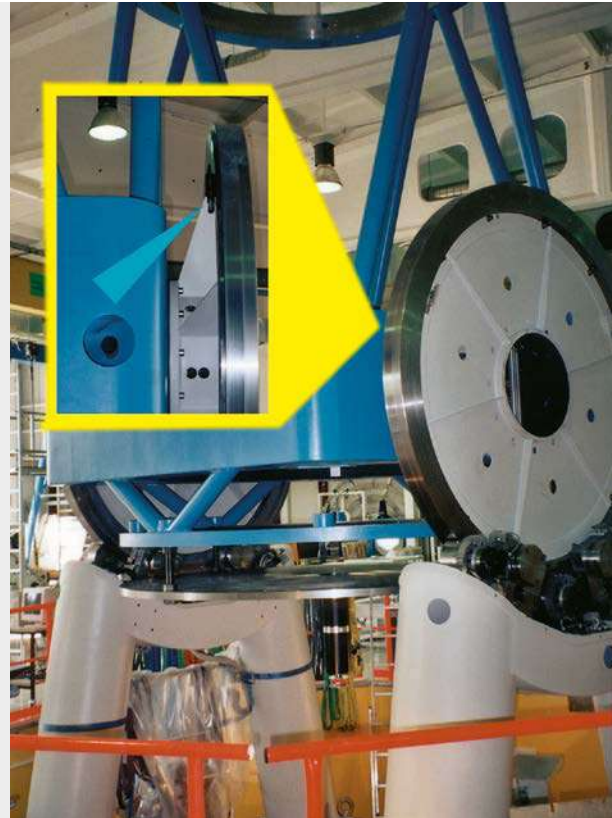
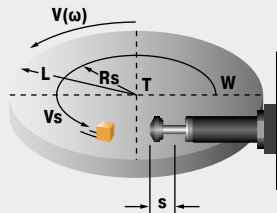


A heavy, five-ton barrier safely stopped by MAGNUM shock absorbers
J.P. van Eesteren B.V., 1006 BD Amsterdam, Netherlands

MA/ML33

Safe swiveling

ACE industrial shock absorbers offer safety to spare for swiveling or braking of large telescope. The optical system of this telescope for special observations is moveable in two space coordinates. The structure in which the telescope is mounted weighs 15,000 kg and consists of a turntable with drives and two wheel disks rotating on bearings. It enables a rotation by $\pm 90^\circ$ from horizon to horizon. To safeguard the telescope in case of overshooting the respective swiveling limits, ML3325 industrial shock absorbers are used as braking elements. Should the telescope inadvertently overshoot the permissible swivel range, they will safely damp the travel of the valuable telescope.

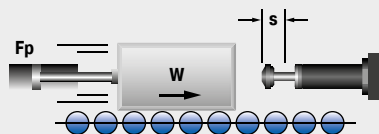


Perfect overshoot protection for precision telescope

MA/ML64

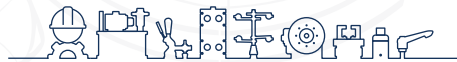
MAGNUM helps in the fight against people not buckling up

The Central-Hessian police department has developed an accident simulator with the help of ACE Stoßdämpfer GmbH aimed at significantly increasing the number of road traffic seatbelt wearers. The mobile simulator demonstrates strikingly that the smallest impact velocities lead to enormous forces, even when wearing seat belts, and can cause serious injuries when not. Adjustable MAGNUM type MA64150 dampers are installed to protect the simulator passengers and the end points of the construction at various speeds and moving masses. These are the largest adjustable dampers of the ACE product range; stronger special constructions are possible at any time.



MAGNUM dampers ensure the reliable braking of moving masses on the seat and the protection of the entire carriage construction
Central Hessian Police Department, Karl-Glöckner-Straße 2, 35394 Gießen, Germany

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