MA/ML33 to MA/ML64

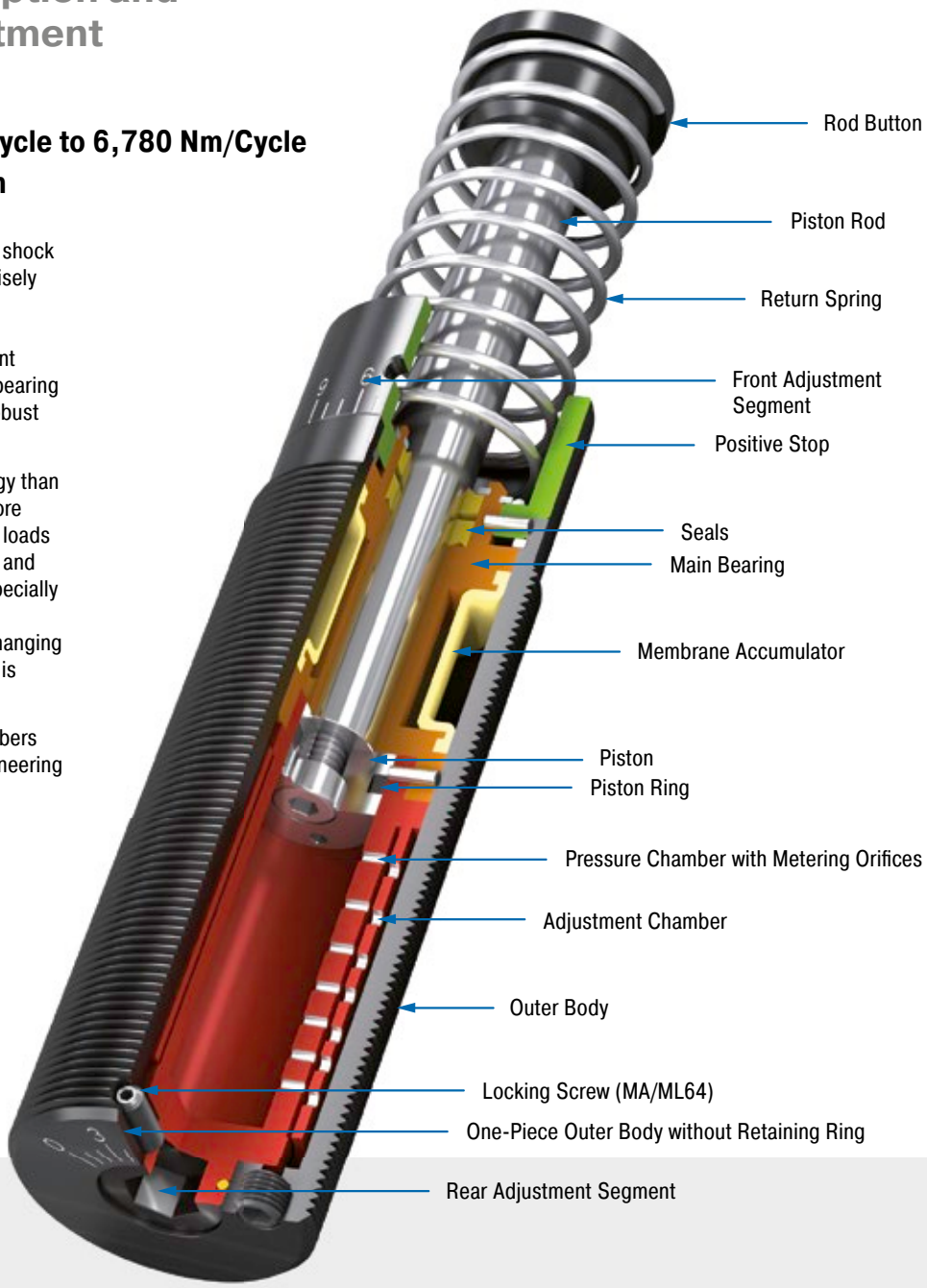
High energy absorption and progressive adjustment

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 series. 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 various options in design and assembly. This makes the ML series especially suitable for effective loads of 300 kg to 500,000 kg. Where work is done with changing application data and wherever flexibility is required, they make the best option.

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



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 centres, Z-axes, Impact panels

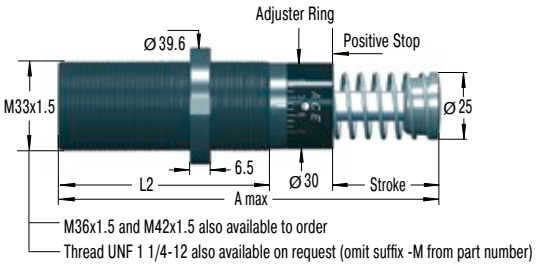
Note: A noise reduction of 3 to 7 dB is possible when using the special impact button (PP). For emergency use only applications and for continous use (with additional cooling) it is sometimes possible to exceed the published max. capacity ratings. In this case, please consult ACE.

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

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

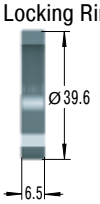
Issue 07.2017 – Specifications subject to change

MA/ML33EUM

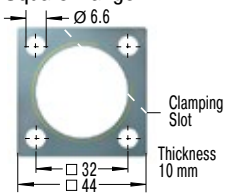


Adjuster

NM33
Locking Ring



QF33
Square Flange



Torque max.: 11 Nm
Clamping torque: > 90 Nm
Install with 4 machine screws

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/ML3350EUM**

Adjustable
Thread Size M33
Stroke 50 mm
EU Compliant
Metric Thread
(omitted when using thread UNF 1 1/4-12)

Dimensions

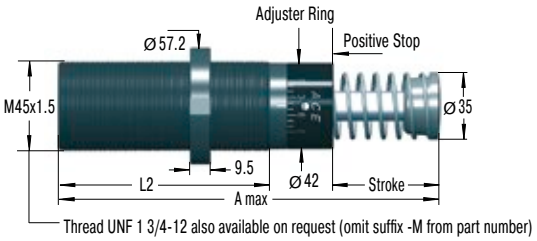
TYPES	Stroke mm	A max. mm	L2 mm
MA3325EUM	23.2	138	83
ML3325EUM	23.2	138	83
MA3350EUM	48.6	189	108
ML3350EUM	48.6	189	108

Performance

	Max. Energy Capacity				Effective Weight						
TYPES	[1] W_3 Nm/cycle	W_4 Nm/h	W_4 with Air/Oil Tank Nm/h	W_4 with Oil Recirculation Nm/h	[2] me min. kg	[2] me max. kg	Return Force min. N	Return Force max. N	Return Time s	[3] Side Load Angle max. °	Weight kg
MA3325EUM	170	75,000	124,000	169,000	9	1,700	45	90	0.03	4	0.51
ML3325EUM	170	75,000	124,000	169,000	300	50,000	45	90	0.03	4	0.51
MA3350EUM	340	85,000	135,000	180,000	13	2,500	45	135	0.06	3	0.62
ML3350EUM	340	85,000	135,000	180,000	500	80,000	45	135	0.06	3	0.62

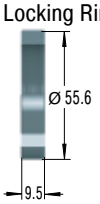
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] The effective weight range limits can be raised or lowered to special order.
[3] For applications with higher side load angles consider using the side load adaptor (BV) pages 74 to 77.

MA/ML45EUM

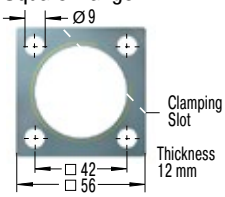


Adjuster

NM45
Locking Ring



QF45
Square Flange



Torque max.: 27 Nm
Clamping torque: > 200 Nm
Install with 4 machine screws

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/ML4525EUM**

Adjustable
Thread Size M45
Stroke 25 mm
EU Compliant
Metric Thread
(omitted when using thread UNF 1 3/4-12)

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
MA4525EUM	23.1	145	95
ML4525EUM	23.1	145	95
MA4550EUM	48.5	195	120
ML4550EUM	48.5	195	120
MA4575EUM	73.9	246	145

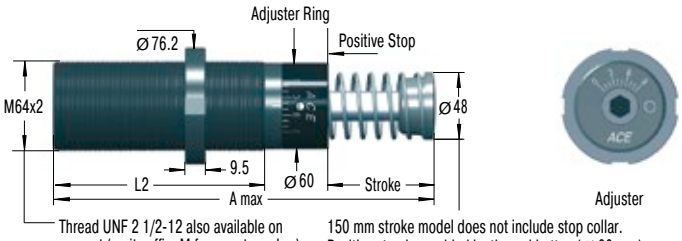
Performance

	Max. Energy Capacity				Effective Weight						
TYPES	[1] W_3 Nm/cycle	W_4 Nm/h	W_4 with Air/Oil Tank Nm/h	W_4 with Oil Recirculation Nm/h	[2] me min. kg	[2] me max. kg	Return Force min. N	Return Force max. N	Return Time s	[3] Side Load Angle max. °	Weight kg
MA4525EUM	425	107,000	158,000	192,000	40	10,000	70	100	0.03	4	1.13
ML4525EUM	425	107,000	158,000	192,000	3,000	110,000	70	100	0.03	4	1.13
MA4550EUM	850	112,000	192,000	248,000	70	14,500	70	145	0.08	3	1.37
ML4550EUM	850	112,000	192,000	248,000	5,000	180,000	70	145	0.08	3	1.37
MA4575EUM	1,300	146,000	225,000	282,000	70	15,000	50	180	0.11	2	1.59

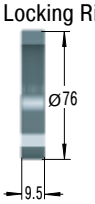
[1] For emergency use only applications it is sometimes possible to exceed the above ratings. Please consult ACE for further details.
[2] The effective weight range limits can be raised or lowered to special order.
[3] For applications with higher side load angles consider using the side load adaptor (BV) pages 74 to77.

Issue 07.2017 – Specifications subject to change

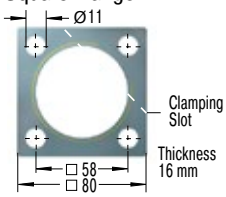
MA/ML64EUM



NM64
Locking Ring



QF64
Square Flange



Torque max.: 50 Nm
Clamping torque: > 210 Nm
Install with 4 machine screws

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/ML6450EUM**

Adjustable
Thread Size M64
Stroke 50 mm
EU Compliant
Metric Thread
(omitted when using thread UNF 2 1/2-12)

Dimensions

TYPES	Stroke mm	A max. mm	L2 mm
ML6425EUM	23.2	174	114
MA6450EUM	48.6	225	140
ML6450EUM	48.6	225	140
MA64100EUM	99.4	326	191
MA64150EUM	150	450	241

Performance

	Max. Energy Capacity				Effective Weight						
TYPES	[1] W_3 Nm/cycle	W_4 Nm/h	W_4 with Air/Oil Tank Nm/h	W_4 with Oil Recirculation Nm/h	[2] me min. kg	[2] me max. kg	Return Force min. N	Return Force max. N	Return Time s	[3] Side Load Angle max. °	Weight kg
ML6425EUM	1,135	124,000	248,000	332,000	7,000	300,000	120	155	0.06	5	2.5
MA6450EUM	2,275	146,000	293,000	384,000	220	50,000	90	155	0.12	4	3.0
ML6450EUM	2,275	146,000	293,000	384,000	11,000	500,000	90	155	0.12	4	3.0
MA64100EUM	4,520	192,000	384,000	497,000	270	52,000	105	270	0.34	3	3.7
MA64150EUM	6,780	248,000	497,000	644,000	330	80,000	75	365	0.48	2	5.1

[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 consider using the side load adaptor (BV) pages 74 to 77.

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