#### Magnum Series MC 33 to MC 64 Self-Compensating



Parker presents the ultimate in industrial shock absorber design...the Magnum Series. These versatile performers offer you the capability to mount shock absorbers that contain the highest energy capacity ratings in the industry. Up to 150% of the energy per cycle of previous models in the same package size, means increased safety factors in a wider range of applications.

**Up to 390% of the effective weight capacity** of previous models, may allow a smaller, lower priced shock absorber to be mounted, to meet your application requirements.

All Magnum Series shock absorbers are fully threaded for ease of installation. Incorporation of high strength materials along with an integral stop collar translates to extended shock absorber life and cost savings for you.

Applications include: automotive manufacturing and production equipment, large robotics, heavy conveyors, packaging and glass bottling equipment, rotary actuators, theme park rides, and lumber industry equipment.

#### **Technical Data**

Impact velocity range:

MC Models: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec)

Operating Temperature: 10° to 150°F (-12° to 66°C)

Oil type: ATF

**Materials:** Steel with black oxide finish. Piston rod high tensile steel, hardened and chrome plated. Rod end button hardened steel with black oxide finish. Zinc plated return spring. For optimum heat dissipation, **do not** paint shock absorber.

Technical data applies to standard and metric threaded models.

Lock nut included with each shock absorber.



# Linear Deceie

#### Magnum Series MA and ML 33 to 64 Adjustable

Magnum Series adjustable shock absorbers feature the latest seal technology, a hardened piston ring, pressure chamber and outer body for increased operating life. Additionally, these rugged units offer the unique feature of front or rear adjustment along with a fully threaded outer body for ease of installation.

Magnum Series adjustable shock absorbers are **directly interchangeable** with obsolete primary series and competitor models.

Along with the self-compensating models, the adjustable range offers unprecedented increases in energy and effective weight capacity.

Applications are the same as self-compensating models.



### **Technical Data**

Impact velocity range

**MA Models:** 0.5 to 16.5 ft/sec (0.15 to 5 m/sec) **ML Models:** 0.06 to 1.5 ft/sec (0.02 to 0.46 m/sec)

Operating Temperature: 10° to 150°F (-12° to 66°C)

Oil type: ATF

**Materials:** Steel with black oxide finish. Piston rod high tensile steel, hardened and chrome plated. Rod end button hardened steel with black oxide finish. Zinc plated return spring. For optimum heat dissipation, **do not** paint shock absorber.

**Adjustment:** After installation of the Magnum Series shock absorber, cycle the machine a number of times. Turn the front stop collar or the rear adjuster against the scale marked 0 to 9 until optimum deceleration is achieved (i.e. smooth deceleration throughout the stroke).

Hard impact at start of stroke-turn adjuster toward 9.

Hard set-down at end of stroke-turn adjuster toward 0.

Technical data applies to standard and metric threaded models.

The Actuator Division recommends that side load not exceed

5°. Maximum side load depends on application.

For additional information consult The Actuator Division.

Lock nut included with each shock absorber.

Industrial Shocks

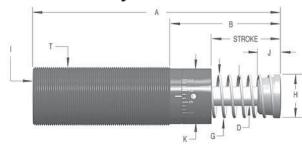
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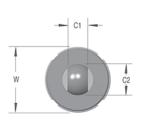
#### Magnum Series MC/MA/ML 33 and 36 Self-Compensating and Adjustable

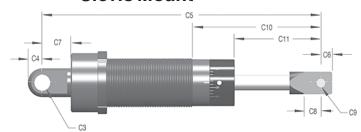
# **Primary Mount**

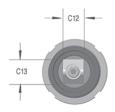


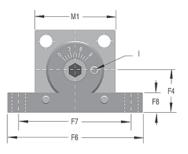


Clevis Mount

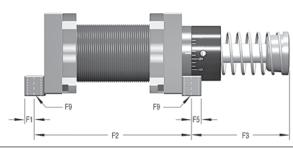








# Side-Foot Mount



**I**\*

1/8

NPT

MALE

C11

1.36

(34.5)

2.36

(60)

J

0.75

(19.1)

C12

0.50

(12.7)

Κ

1.15

(29.2)

C13

0.75

(19.1)

G

0.99

(25.1)

C9

.2505

(6.4)

Н

1.00

(25.4)

C10

2.64

(67.1)

3.64

(92.5)

33 Model Dime	ension	S In In	ches (I	/lillimet	ers)
Model	Stroke	Α	В	D	(
MC, MA, ML 3325	0.91 (23.1)	5.44 (138.1)	2.19 (55.6)	0.375	0.9
MC, MA, ML 3350	1.91 (48.5)	7.44 (189)	3.19 (81)	(9.5)	(25
Model	C5	C6	C7	C8	С
MC, MA, ML 3325	6.58 (167)	0.25	0.48	0.50	.25
MC, MA, ML 3350	8.58 (217.8)	(6.4)	(12.2)	(12.7)	(6.
Model	F6	F7	F8	F9	
MC, MA, ML 3325 MC, MA, ML 3350	2.75 (69.9)	2.37 (60)	0.50 (12.7)	0.23 (5.9)	

<sup>\*</sup> For models MAA and MAS 33 the 1/8-27 male fitting is shipped with the shock. MAA and MAS 45 and 64 have pipe plugs.

Т

1-1/4-12

M33x1.5

C14

N/A

W

1.50

(38.10)

1.56

(39.71)

F1

0.25

(6.4)

C1

0.50

(12.7)

F2

3.75

(95.3)

4.75

(120.7)

C2

0.76

(19.3)

F3

1.94

(49.3)

2.94

(74.7)

C3

.2505

(6.40)

F4

0.87

(22.1)

C4

0.32

(8.1)

F5

0.25

(6.4)

Note: For models MAA, MLA and MCA indicate P for the side port option when ordering clevis mount.

Note: M 36 and 1-3/8 thread is optional.

Note: A side port can be adapted to Magnum Series 33 MAA, MLA and MCA models and is a special adder item. A side port adapter ring is molded onto the outer tube and increases the overall diameter by 0.25 inches (6.3 mm) in the area of the ring. The side port centerline is located 0.81 inches (20.7 mm) from the front of the outer tube. Add (-P) to the model ordering code if a side port is desired, see page N34.

Note: Poly pad available on 33 models only - part no. 250-0011.

Lock nut included with each shock absorber. See page N51 for dimensions.

Note: All dimensions and tolerance values listed in this catalog are nominal and subject to change without prior notice.



# Magnum Series MC/MA/ML 33 and 36 Self-Compensating and Adjustable

36 Model Dime	ension	S IN IN	ICHES	(MILLIN	IETERS	)									
Model	Stroke	Α	В	D	G	Н	l*	J	K	Т	W	C1	C2	C3	C4
MC, MA, ML 3625	0.91 (23.1)	5.44 (138.1)	2.19 (55.6)	0.375	0.99	1.00	1/8	0.75	1.15	1-3/8-12	1.75	N/A	N/A	N/A	N/A
MC, MA, ML 3650	1.91 (48.5)	7.44 (189)	3.19 (81)	(9.5)	(25.1)	(25.4)	NPT MALE	(19.1)	(29.2)	M36x1.5	(44.5)				
Model	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	F1	F2	F3	F4	F5
MC, MA, ML 3625	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MC, MA, ML 3650															
Model	F6	F7	F8	F9											
MC, MA, ML 3625 MC, MA, ML 3650	N/A	N/A	N/A	N/A											

	Specifications	.MC Series	, Self-Com	pensating
--	----------------	------------	------------	-----------

			E3	Energy per l	lour in Ibs/hou	r (Nm/hour)			
Model	W Effectiv Ibs	e Weight	Energy per Cycle in lbs (Nm)	Internal Accumulator (Self-Contained)	External Accumulator (A/O Tank)	External Accumulator (Re-circulating)	Return Force Ibs (N)	Return Time sec	Shipping Weight Ibs (kg)
MC 3325-1 MC 3325-2 MC 3325-3 MC 3325-4	20-80 68-272 230-920 780-3,120	(9-36) (31-123) (104-417) (354-1,415)	1,350 (153)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.00 (0.45)
MC 3350-1 MC 3350-2 MC 3350-3 MC 3350-4	40-160 136-544 460-1,840 1,560-6,240	(18-73) (62-247) (209-835) (708-2,830)	2,700 (305)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.2 (0.54)
MC 3625-1 MC 3625-2 MC 3625-3 MC 3625-4	20-80 68-272 230-920 780-3,120	(9-36) (31-123) (104-417) (354-1,415)	1,350 (153)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.23 (0.56)
MC 3650-1 MC 3650-2 MC 3650-3 MC 3650-4	40-160 136-544 460-1,840 1,560-6,240	(18-73) (62-247) (209-835) (708-2,830)	2,700 (305)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.51 (0.68)

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec)

Specific	SpecificationsMA Series, Adjustable													
MA 3325	20-3,800	(9-1,724)	1,500 (169)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.0 (0.45)					
MA 3350	28-5,400	(13-2,449)	3,000 (339)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.2 (0.54)					
MA 3625	20-3,800	(9-1,724)	1,500 (169)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.23 (0.56)					
MA 3650	28-5,400	(13-2,449)	3,000 (339)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.51 (0.68)					

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec)

SpecificationsML	. Series, Low Velocity	Adjustable					
ML 3325	1,500 (169)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.0 (0.45)
ML 3350	3,000 (339)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.2 (0.54)
ML 3625	1,500 (169)	670,000 (75,000)	1,100,000 (124,000)	1,500,000 (169,000)	10.3-19.8 (46-88)	0.03	1.23 (0.56)
ML 3650	3,000 (339)	760,000 (85,000)	1,200,000 (135,000)	1,600,000 (180,000)	9.9-30.3 (44-135)	0.06	1.51 (0.68)

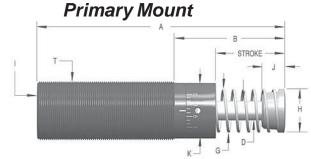
Impact velocity range: 0.06 to 1.5 ft/sec (0.02 to 0.46 m/sec)

Note: Side load not to exceed 5°. Maximum side load depends on application.

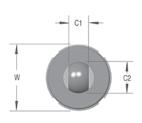


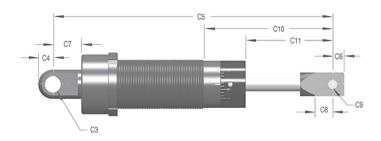
# Self-Compensating and Adjustable

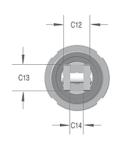


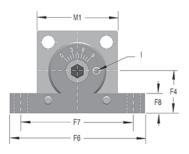


# **Clevis Mount**

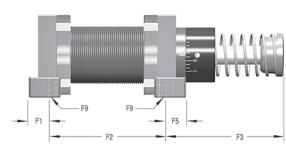








# **Side-Foot Mount**



Model	Stroke	Α	В	D	G	Н	<b>I</b> *	J	K	Т	W	C1	C2	C3	C4
MC, MA, ML 4525	0.91 (23.1)	5.69 (144.5)	1.97 (50)												
MC, MA, ML 4550	1.91 (48.5)	7.69 (195.3)	2.97 (75.4)	0.50 (12.7)	1.36 (34.5)	1.38 (34.9)	1/8 NPT	0.87 (22.1)	1.65 (41.9)	1-3/4-12 M45x1.5	2.25 (57.20)	0.75 (19.1)	1.00 (25.4)	.5005 (12.7)	0.50 (12.7)
MC, MA 4575	2.91 (73.9)	9.69 (246.1)	3.97 (100.8)												
Model	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	F1	F2	F3	F4	F5
MC, MA, ML 4525	7.85 (199.4)					2.57 (65.3)	1.51 (38.4)					3.50 (88.9)	1.94 (49.3)		
MC, MA, ML 4550	9.85 (250.2)	0.50 (12.7)	1.06 (26.9)	0.69 (17.5)	.3755 (9.6)	3.57 (90.7)	2.51 (63.8)	1.00 (25.4)	1.00 (25.4)	.505 (12.8)	0.50 (12.7)	4.38 (111.8)	3.06 (77.7)	1.16 (29.5)	0.37 (9.5)
MC, MA, ML 4575	11.85 (301)					4.57 (116.1)	3.51 (89.2)					5.38 (237.8)	4.06 (103.1)		
Model	F6	F7	F8	F9											
MC, MA, ML 4525															
	3.75	3.00	0.56	0.35											

\*For models MAA and MAS 33 the 1/8-27 male fitting is shipped with the shock. MAA and MAS 45 and 64 have pipe plugs.



4575

MC, MA

# Magnum Series MC/MA/ML 45 Self-Compensating and Adjustable

Specific	ationsMC	Series, Sel	f-Compen	sating					
			E3	Energy per H	our in Ibs/hou	r (Nm/hour)			
Model	Effectiv	Ve ve Weight (kg)	Energy per Cycle in lbs (Nm)	Internal Accumulator (Self-Contained)	External Accumulator (A/O Tank)	External Accumulator (Re-circulating)	Return Force Ibs (N)	Return Time sec	Shipping Weight Ibs (kg)
MC 4525-1 MC 4525-2 MC 4525-3 MC 4525-4	170-680 575-2,300	(23-91) (77-300) (261-1,043) (885-3,538)	3,000 (339)	950,000 (107,000)	1,400,000 (158,000)	1,700,000 (192,000)	15.1-22.8 (67-101)	0.03	2.5 (1.13)
MC 4550-2 MC 4550-3 MC 4550-4	100-400 340-1,360 1,150-4,600 3,900-15,600	(45-181) (154-617) (522-2,087) (1,769-7,076)	6,000 (678)	1,000,000 (112,000)	1,700,000 (192,000)	2,200,000 (248,000)	15.1-32.2 (67-143)	0.08	3.0 (1.36)
MC 4575-1 MC 4575-2 MC 4575-3 MC 4575-4	,,	(136-544) (231-925) (785-3,139) (2,654-10,614)	9,000 (1,017)	1,300,000 (146,000)	2,000,000 (225,000)	2,500,000 (282,000)	11.7-40.3 (52-179)	0.11	3.5 (1.59)

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec)

Specific	SpecificationsMA Series, Adjustable													
MA 4525	95-22,000	(43-9,979)	3,450 (390)	950,000 (107,000)	1,400,000 (158,000)	1,700,000 (192,000)	15.1-22.8 (67-101)	0.03	2.5 (1.13)					
MA 4550	150-32,000	(68-14,515)	6,900 (780)	1,000,000 (112,000)	1,700,000 (192,000)	2,200,000 (248,000)	15.1-32.2 (67-143)	0.08	3.0 (1.36)					
MA 4575	155-33,000	(70-14,968)	10,350 (1,169)	1,300,000 (146,000)	2,000,000 (225,000)	2,500,000 (282,000)	11.7-40.3 (52-179)	0.11	3.5 (1.59)					

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec)

Specific	SpecificationsML Series, Low Velocity Adjustable													
ML 4525	N/A	N/A	3,450 (390)	950,000 (107,000)	1,400,000 (158,000)	1,700,000 (192,000)	15.1-22.8 (67-98)	0.03	2.5 (1.13)					
ML 4550	N/A	N/A	6,900 (780)	1,000,000 (112,000)	1,700,000 (192,000)	2,200,000 (248,000)	15.1-32.2 (67-143)	0.08	3.0 (1.36)					

Impact velocity range: 0.06 to 1.5 ft/sec (0.02 to 0.46 m/sec)

Note: A side port can be adapted to Magnum Series 45 MAA, MLA and MCA models and is a special adder item. A side port adapter ring is molded onto the outer tube and increases the overall diameter by 0.5 inches (12.7 mm) in the area of the ring. The side port centerline is located 1.04 inches (26.4 mm) from the front of the outer tube. Add (-P) to the model ordering code if a side port is desired, see page N34.

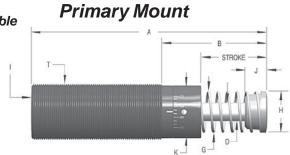
Note: Side load not to exceed 5°. Maximum side load depends on application.

Lock nut included with each shock absorber. See page N 51 for dimensions.



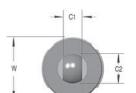
# Magnum Series MC/MA/ML 64 Self-Compensating and Adjustable



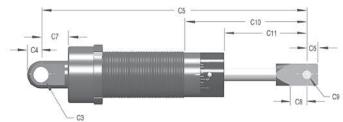


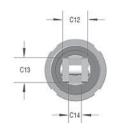


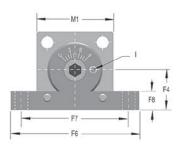
Adjuster (MA and ML only)



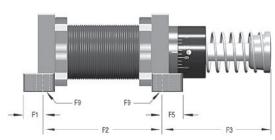








# **Side-Foot Mount**



Model	Stroke	Α	В	D	G	н	<b>I</b> *	J	K	Т	W	C1	C2	C3	C4
ML 6425	0.91 (23.1)	6.85 (174)	2.35 (59.7)												
MC, MA, ML 6450	1.91 (48.6)	8.85 (224.8)	3.35 (85.1)												
MC, MA 64100	3.91 (99.4)	12.85 (326.4)	5.35 (135.9)	0.75 (19.1)	1.86 (47.2)	1.90 (48.3)	1/4 NPT	1.06 (26.9)	2.37 (60.2)	2-1/2-12 M64x2	3.00 (76.20)	1.25 (31.8)	1.50 (38.1)	.7505 (19.1)	0.75 (19.1)
MC, MA 64150	5.91 (150.1)	17.73 (450.4)	8.23 (209)		2.31 (58.7)	2.38 (60.3)		1.25 (31.8)							
MCA, MAA 64150	5.91 (150.1)	17.60 (447)	8.10 (205.7)		N/A	1.90 (48.3)		1.06 (26.9)			N/A	N/A	N/A	N/A	N/A
Model	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	F1	F2	F3	F4	F5
ML 6425	10.12 (257.1)					3.75 (95.2)	2.31 (58.7)					4.00 (101.6)	2.56 (65.0)		
MC, MA, ML 6450	12.12 (307.9)					4.75 (120.7)	3.31 (84.1)					5.00 (127.00)	3.56 (90.4)		
MC, MA 64100	16.12 (409.5)	0.63 (16.0)	1.29 (32.8)	1.40 (35.6)	.7505 (19.1)	6.75 (171.5)	5.31 (134.9)	1.50 (38.1)	1.25 (31.8)	.625 (15.9)	0.69 (17.5)	7.00 (177.8)	5.56 (141.2)	1.78 (45.2)	0.69 (17.5)
MC, MA 64150	20.87 (530.1)					9.50 (241.3)	8.06 (204.7)					9.00 (228.6)	8.44 (214.4)		
MCA, MAA 64150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				8.31 (211.1)		
													(211.1)		
Model	F6	F7	F8	F9									(211.1)		



MC, MA, ML 6450

MCA, MAA 64150

64100

64150

MC, MA

MC, MA

5.62

(142.8)

4.88

(124.0)

0.75

(19.1)

0.42

(10.7)

#### Magnum Series MC/MA/ML 64 Self-Compensating and Adjustable

Specifica	tionsMC S	eries, Self-C	ompensatir	ng					
			E3	Energy per Ho	ur in Ibs/hour E4	(Nm/hour)			
Model	We Effective Ibs (	WeightCycle	Energy per Accumulator in lbs (Nm)	Internal Accumulator (Self-Contained)	External Accumulator (A/O Tank)	External Force (Re-circulating)	Return Time Ibs (N)	Return Weight sec	Shipping Ibs (kg)
MC 6450-1 MC 6450-2 MC 6450-3	300-1,200 1,020-4,080 3,460-13,840 <b>MC 6450-4</b>	(136-544) (463-1,851) (1,569-6,278) 11,700-46,800	15,000 (1,695) (5,307-21,228)	1,300,000 (146,000)	2,600,000 (293,000)	3,400,000 (384,000)	20.1-34.9 (89-155)	0.12	6.4 (2.90)
MC 64100-2 MC 64100-3 MC 64100-4	MC 64100-1 2,040-8,160 6,920-27,680 23,400-93,600	600-2,400 (925-3,701) (3,139-12,556) (10,614-42,457)	(272-1,089) 30,000 (3,390)	1,700,000 (192,000)	3,400,000 (384,000)	4,400,000 (497,000)	23.5-61 (104-271)	0.34	8.15 (3.70)
MC 64150-1 MC 64150-2 MC 64150-3 MC 64150-4	900-3,600 3,060-12,240 10,380-41,520 35,100-140,400	(408-1,633) (1,388-5,552) (4,708-18,833) (15,921-63,685)	45,000 (5,084)	2,200,000 (248,000)	4,400,000 (497,000)	5,700,000 (644,000)	16.9-82.2 (75-366)	0.48	11.25 (5.10)

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec).

SpecificationsMA Series, Adjustable										
MA 6450	480-110,000	(218-49,895)	18,000 (2,034)	1,300,000 (146,000)	2,600,000 (293,000)	3,400,000 (384,000)	20.1-34.9 (69-155)	0.12	6.4 (2.90)	
MA 64100	600-115,000	(272-52,163)	36,000 (4,067)	1,700,000 (192,000)	3,400,000 (384,000)	4,400,000 (497,000)	23.5-61 (104-271)	0.34	8.15 (3.70)	
MA 64150	730-175,000	(331-79,379)	54,000 (6,101)	2,200,000 (248,000)	4,400,000 (497,000)	5,700,000 (644,000)	16.9-82.2 (75-366)	0.48	11.25 (5.10)	

Impact velocity range: 0.5 to 16.5 ft/sec (0.15 to 5 m/sec).

SpecificationsML Series, Low Velocity Adjustable										
ML 6425	N/A	N/A	9,000 (1,017)	1,100,000 (124,000)	2,200,000 (248,000)	2,900,000 (328,000)	26.7-34.9 (119-155)	0.06	5.5 (2.49)	
ML 6450	N/A	N/A	18,000 (2,034)	1,300,000 (146,000)	2,600,000 (293,000)	3,400,000 (384,000)	20.1-34.9 (89-155)	0.12	6.4 (2.90)	

**Impact velocity range:** 0.06 to 1.5 ft/sec (0.02 to 0.46 m/sec).

\*For models MAA and MAS 33 the 1/8-27 male fitting is shipped with the shock. MAA and MAS 45 and 64 have pipe plugs.

Note: A side port can be adapted to Magnum Series 64 MAA, MLA and MCA models and is a special adder item. A side port adapter ring is molded onto the outer tube and increases the overall diameter by 0.5 inches (12.7 mm) in the area of the ring. The side port centerline is located 1.47 inches (37.3 mm) from the front of the outer tube. Add (-P) to the model ordering code if a side port is desired, see page N34.

Note: MA and MC 64150 models include an integral, non-removable stop block, not a stop collar. Adjustable models can be adjusted from front or rear.

Note: MAA and MCA 64150 models include a stop collar, 0.75 inches (19 mm) longer than the standard 64 model stop collar.

Note: For models MAA, MLA and MCA indicate P for the side port option when ordering clevis mount.

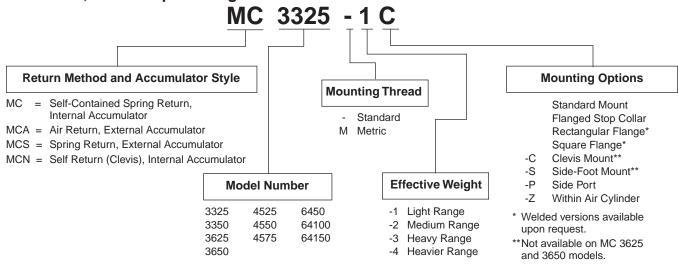
Note: 64150 models do not include a stop collar. Adjustable models can still be adjusted from front or rear.

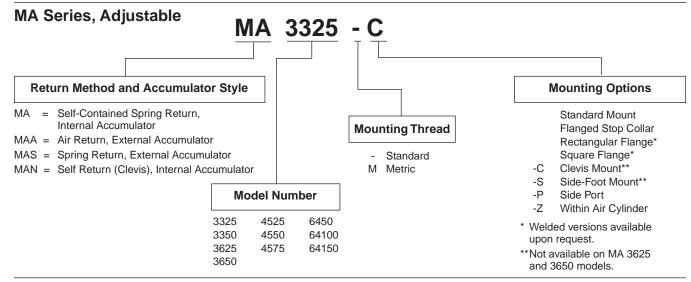
Note: Side load not to exceed 5°. Maximum side load depends on application. Lock nut included with each shock absorber. See page N51 for dimensions.



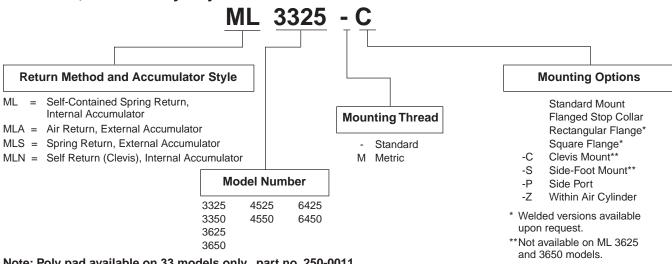
# **Ordering Information**

# MC Series, Self-Compensating





# ML Series, Low Velocity Adjustable



Note: Poly pad available on 33 models only...part no. 250-0011.

Note: Flanges and flanged stop collars are packaged separately from shock absorbers.



