

MAC / MAD series

SHOCK ABSORBERS



Miniature MAC series -M8, M10, M12



Our miniature shock absorbers MAC Series- M8, M10, M12 provide great effect for shock impact and come to stop smoothly and are ideal for light loads.

MAD series -Adjustable



MAD-I410 is designed in single orifice. MAD-2016, MAD-2525, MAD-2540 and MAD-3650 are designed in porosity. MAD Series of shock absorbers is self-contained, fully adjustable and suitable for wide range of applications.

Order example:

MAC — 0806 — 1 — □

MAD: Adjustable
MAC: Non-Adjustable
MACD: Double Cushion

Tube O.D.

STROKE

Select Damping Constant from Graph:
1: High Impact Speed
2: Medium Impact Speed
3: Low Impact Speed

Blank: with cap
N: without Cap

MAC series - Porous type M14, M20, M25, M36



MAC series is self-compensating, and ideal for energy absorption in high speed, medium speed and low speed impact. MAC series can stop moving objects smoothly and quietly.

MAD series -Porous adjustable type M42



Stroke in 25, 50, 75mm, adjustable, this series is ideal for heavy duty applications.

Long stroke in 50 mm- Porous fixed type



Model MAC 2050 and M 20 are applicable for high impact and high effectiveness.

MACD-2030 Double cushion



MACD-2030 are porosity fixed and double cushioning shock absorbers, and can be used alternatively against impact from directions of upper and lower sides, or right

MAC Self compensation SHOCK ABSORBERS



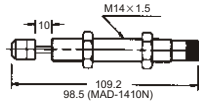
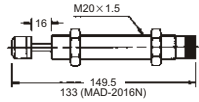
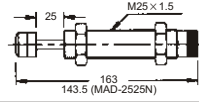
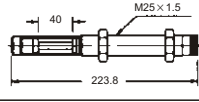
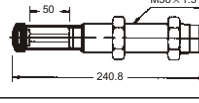
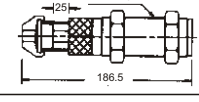
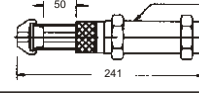
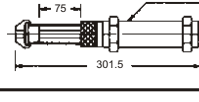
MAC series - Self compensation

Model	Dimensions	Max. effective mass (kg)	Max. energy absorbed per cycle (nm)	Max. impact speed (m/s)	Without cap	With cap	Flange	Stop collar
MAC-0806		0.5~6	2	0.5~2.0	○	○	—	○
MAC-1005		1~7	3	0.8~3.5	○	○	—	○
MAC-1008		2~9	4	0.8~3.0	○	○	—	○
MAC-1210		5~30	5	0.8~3.0	○	○	—	○
MAC-1412		8~100	15	0.8~3.0	○	○	—	○
MAC-1416		10~150	20	0.8~3.0	○	○	—	○
MAC-1420		12~160	25	0.8~3.0	○	○	—	○
MAC-2020		30~700	40	1.0~3.5	○	○	—	○
MAC-2030		30~700	50	1.0~3.5	○	○	—	○
MAC-2050		600~1200	60	1.0~3.5	—	○	—	○
MAC-2525		200~1500	80	1.0~4.0	—	○	—	○
MAC-2540		300~2000	120	1.0~4.0	—	○	—	○
MAC-2550		15~160	98	1.0~4.0	○	○	—	○
MAC-2580		20~200	150	1.0~4.0	○	○	—	○
MAC-3660		400~2400	250	1.0~4.0	—	○	○	○
MACD-2030		40~900	45	1.0~3.5	—	○	—	○

Specification

Order no.	Stroke (mm)	Max. Nm per cycle (Et)	Max. Nm per hour (Etc)	Max. effective mass (ml) kg	Max. impact speed (v) m/s	Operating temperature (°C)	Weight (g)
MAC-0806-1	6	2	8800	0.5	2.0	-10~80	11
MAC-0806-2	6	2	8800	2.0	1.0	-10~80	11
MAC-0806-3	6	2	8800	6.0	0.5	-10~80	11
MAC-1005-1	5	3	10800	1	3.0	-10~80	14
MAC-1005-2	5	3	10800	3	1.5	-10~80	14
MAC-1005-3	5	3	10800	7	0.8	-10~80	14
MAC-1008-1	8	4	15200	2	3.0	-10~80	20
MAC-1008-2	8	4	15200	4	1.5	-10~80	20
MAC-1008-3	8	4	15200	9	0.8	-10~80	20
MAC-1210-1	10	5	17640	5	3.0	-10~80	31.5
MAC-1210-2	10	5	17640	10	1.5	-10~80	31.5
MAC-1210-3	10	5	17640	30	0.8	-10~80	31.5
MAC-1412-1	12	15	30000	8	3.0	-10~80	80
MAC-1412-2	12	15	30000	50	1.5	-10~80	80
MAC-1412-3	12	15	30000	100	0.8	-10~80	80
MAC-1416-1	16	20	35000	10	3.0	-10~80	90
MAC-1416-2	16	20	35000	70	1.5	-10~80	90
MAC-1416-3	16	20	35000	150	0.8	-10~80	90
MAC-1420-1	20	25	40000	12	3.0	-10~80	95
MAC-1420-2	20	25	40000	80	1.5	-10~80	95
MAC-1420-3	20	25	40000	160	0.8	-10~80	95
MAC-2020-1	20	40	40000	30	3.5	-10~80	215
MAC-2020-2	20	40	40000	200	2.0	-10~80	215
MAC-2020-3	20	40	40000	700	1.0	-10~80	215
MAC-2030-1	30	50	48000	30	3.5	-10~80	220
MAC-2030-2	30	50	48000	200	2.0	-10~80	220
MAC-2030-3	30	50	48000	700	1.0	-10~80	220
MAC-2050-1	50	60	60000	60	3.5	-10~80	300
MAC-2050-2	50	60	60000	400	2.0	-10~80	300
MAC-2050-3	50	60	60000	1200	1.0	-10~80	300
MAC-2525-1	25	80	70000	200	4.0	-10~80	330
MAC-2525-2	25	80	70000	800	2.5	-10~80	330
MAC-2525-3	25	80	70000	1500	1.0	-10~80	330
MAC-2540-1	40	120	75000	300	4.0	-10~80	430
MAC-2540-2	40	120	75000	1200	2.5	-10~80	430
MAC-2540-3	40	120	75000	2000	1.0	-10~80	430
MAC-2550-1	50	98	90000	15	4.0	-10~80	435
MAC-2550-2	50	98	90000	40	2.5	-10~80	435
MAC-2550-3	50	98	90000	160	1.0	-10~80	435
MAC-2580-1	80	150	120000	20	4.0	-10~80	535
MAC-2580-2	80	150	120000	50	2.5	-10~80	535
MAC-2580-3	80	150	120000	200	1.0	-10~80	535
MAC-3660-1	60	250	120000	400	4.0	-10~80	1030
MAC-3660-2	60	250	120000	1500	2.5	-10~80	1030
MAC-3660-3	60	250	120000	2400	1.0	-10~80	1030
MACD-2030-1	30	45	55000	40	3.5	-10~80	220
MACD-2030-2	30	45	55000	300	2.0	-10~80	220
MACD-2030-3	30	45	55000	900	1.0	-10~80	220

MAD series - Adjustable

Model	Dimensions	Max. effective mass (kg)	Max. energy absorbed per cycle (Nm)	Max. impact speed (m/s)	Without cap	With cap	Flange	Stop collar
MAD-1410		80	20	3.0	○	○	—	○
MAD-2016		200	25	3.5	○	○	—	○
MAD-2525		400	85	3.5	—	○	—	○
MAD-2540		700	100	3.5	—	○	—	○
MAD-3650		1400	300	3	—	○	○	○
MAD-4225		3000	260	3.5	—	○	○	—
MAD-4250		4000	500	4.5	—	○	○	—
MAD-4275		6000	750	4.5	—	○	○	—

Specification

Order no.	Stroke (mm)	Max. Nm per cycle (Et)	Max. Nm per hour (Etc)	Max. effective mass (ml) kg	Max. impact speed (v) m/s	Operating temperature (°C)	Weight (g)
MAD-1410N	10	20	25000	80	3.0	-10~80	84
MAD-1410	10	20	25000	80	3.0	-10~80	90
MAD-2016N	16	25	30000	200	3.5	-10~80	222
MAD-2016	16	25	30000	200	3.5	-10~80	230
MAD-2525	25	85	54000	400	3.5	-10~80	335
MAD-2525N	25	85	70000	400	3.5	-10~80	350
MAD-2540	40	100	80000	700	3.5	-10~80	455
MAD-3650	50	300	100000	1400	3	-10~80	1100
MAD-4225	25	260	125000	3000	3.5	-10~80	1280
MAD-4250	50	500	150000	4000	4.5	-10~80	1490
MAD-4275	75	750	180000	6000	4.5	-10~80	1710

MAC series Non adjustable hydraulic series

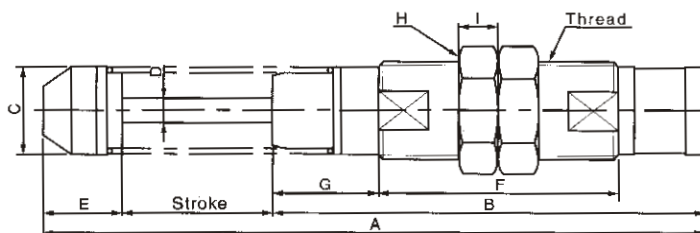
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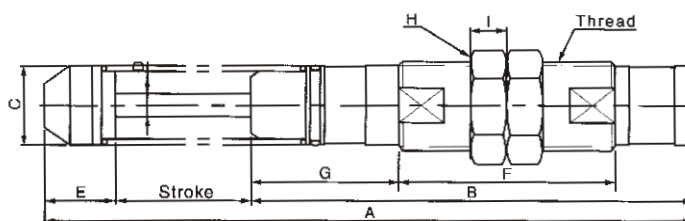
Specification

Order No.	Stroke (mm)	Max. Nm per cycle (Et)	Max. Nm per hour (Etc)	Max. effective mass (ml) Kg	Max. impact speed (v) M/s	Operating temperature (°C)	Weight (g)
MAC-1415-7K	15	9.8	35,280	15	1.5	-10~80	80
MAC-1415-8K	15	9.8	35,280	7	2	-10~80	80
MAC-1415-9K	15	9.8	35,280	3	3	-10~80	80
MAC-2030-4K	30	44	26,460	120	0.9	-10~80	185
MAC-2030-5K	30	44	26,460	60	1.2	-10~80	185
MAC-2030-6K	30	44	26,460	30	1.7	-10~80	185
MAC-2030-7K	30	44	26,460	15	2.4	-10~80	185
MAC-2030-8K	30	44	26,460	8	3.3	-10~80	185
MAC-2030-16K	30	44	26,460	5	4.2	-10~80	205
MAC-2030-18K	30	44	26,460	3	6.0	-10~80	205
MAC-2050-10K	50	59	35,280	60	1.4	-10~80	250
MAC-2050-11K	50	59	35,280	30	2	-10~80	250
MAC-2050-12K	50	59	35,280	15	2.8	-10~80	250
MAC-2050-13K	50	59	35,280	8	3.8	-10~80	250
MAC-2050-16K	50	59	35,280	5	5.0	-10~80	235
MAC-2050-17K	50	59	35,280	3	6.8	-10~80	245

MAC-2030-4K
 MAC-2030-5K
 MAC-2030-6K
 MAC-2030-7K
 MAC-2030-8K



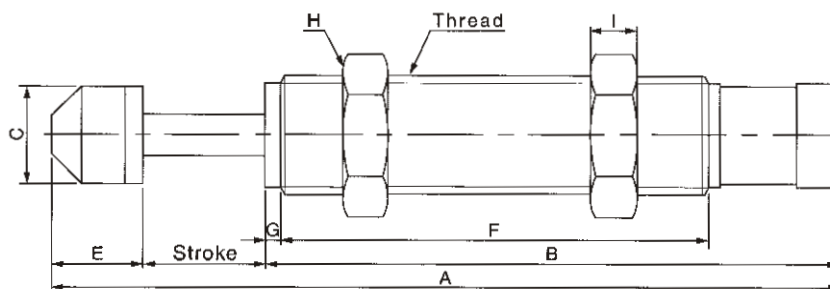
MAC-2030-16K
 MAC-2030-18K



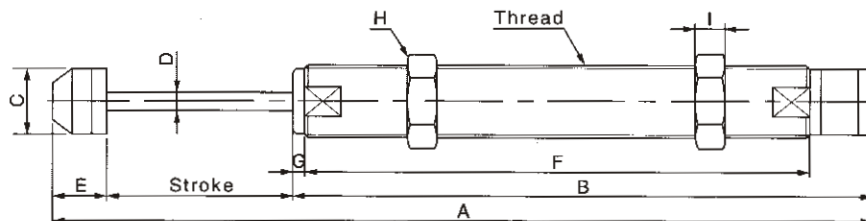
Specification

Order no.	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I
MAC-1415-7K	M 14×1.0	15	95.2	69.5	12	3.5	10.7	53	2	19	6
MAC-1415-8K	M 14×1.0	15	95.2	69.5	12	3.5	10.7	53	2	19	6
MAC-1415-9K	M 14×1.0	15	95.2	69.5	12	3.5	10.7	53	2	19	6
MAC-2030-4K	M 20×1.5	30	132.5	86	18	5	16.5	48	21	26	8
MAC-2030-5K	M 20×1.5	30	132.5	86	18	5	16.5	48	21	26	8
MAC-2030-6K	M 20×1.5	30	132.5	86	18	5	16.5	48	21	26	8
MAC-2030-7K	M 20×1.5	30	132.5	86	18	5	16.5	48	21	26	8
MAC-2030-8K	M 20×1.5	30	132.5	86	18	5	16.5	48	21	26	8
MAC-2030-16K	M 20×1.5	30	144.2	86	18	5	16.5	48	32.7	26	8
MAC-2030-18K	M 20×1.5	30	144.2	86	18	5	16.5	48	32.7	26	8
MAC-2050-10K	M 20×1.5	50	220.5	156	17	5	14.5	136	3	26	8
MAC-2050-11K	M 20×1.5	50	220.5	156	17	5	14.5	136	3	26	8
MAC-2050-12K	M 20×1.5	50	220.5	156	17	5	14.5	136	3	26	8
MAC-2050-13K	M 20×1.5	50	220.5	156	17	5	14.5	136	3	26	8
MAC-2050-16K	M 20×1.5	50	220.5	156	18	5	14.5	136	3	26	8
MAC-2050-17K	M 20×1.5	50	220.5	156	18	5	14.5	57	3	26	8

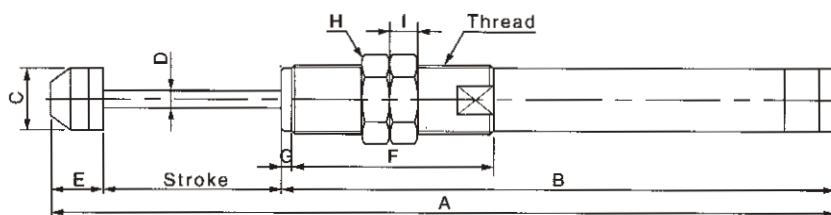
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MAC-1415-8K
MAC-1415-9K



MAC-2050-10K
MAC-2050-11K
MAC-2050-12K
MAC-2050-13K
MAC-2050-16K



MAC-2050-17K



MAC series Non adjustable hydraulic series

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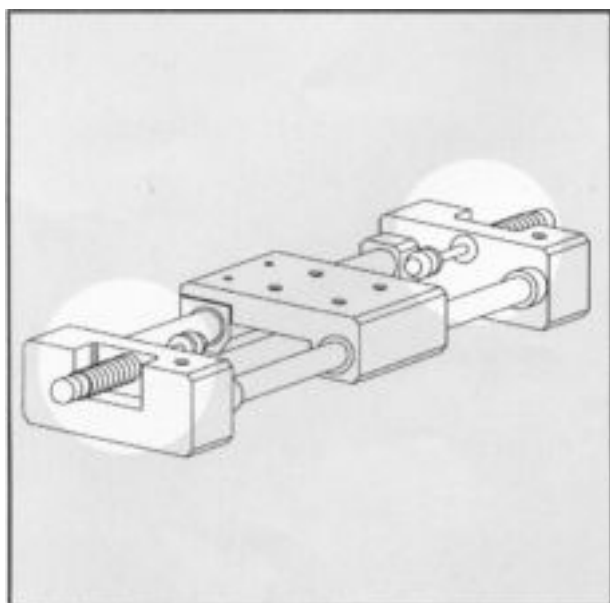
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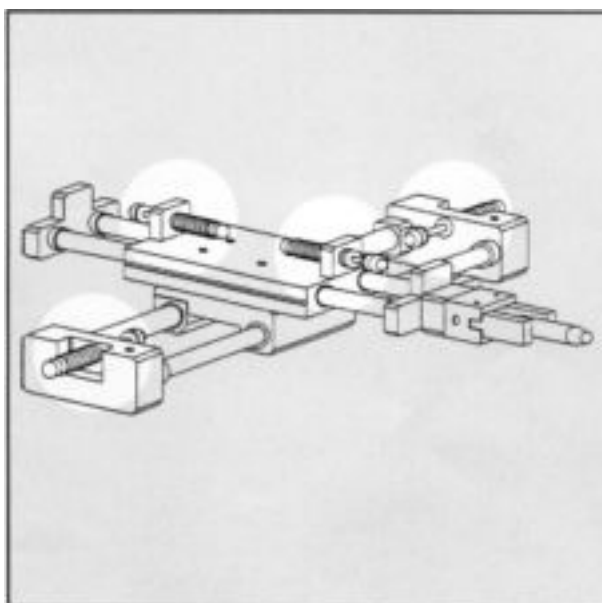
Specification

Order no.	Stroke (mm)	Max. Nm per cycle (Et)	Max. Nm per hour (Etc)	Max. effective mass (ml) kg	Max. impact speed (v) m/s	Operating temperature (°C)	Weight (g)
MAC-0806-SN	6	3	7,000	6	0.3-2.5	-10~80	15
MAC-0806-S	6	3	7,000	6	0.3-2.5	-10~80	17
MAC-1007-SN	7	6	12,400	12	0.3-3.5	-10~80	25
MAC-1007-S	7	6	12,400	12	0.3-3.5	-10~80	28
MAC-1210-SN	10	12	22,500	22	0.3-4.0	-10~80	29
MAC-1210-S	10	12	22,500	22	0.3-4.0	-10~80	32
MAC-1412-SN	12	20	33,000	40	0.3-5.0	-10~80	65
MAC-1412-S	12	20	33,000	40	0.3-5.0	-10~80	70
MAC-2015-SN	15	59	38,000	120	0.3-5.0	-10~80	150
MAC-2015-S	15	59	38,000	120	0.3-5.0	-10~80	160
MAC-2525-SN	25	80	60,000	180	0.3-5.0	-10~80	295
MAC-2525-S	25	80	60,000	180	0.3-5.0	-10~80	280
MAC-2725-SN	25	147	72,000	270	0.3-5.0	-10~80	360
MAC-2725-S	25	147	72,000	270	0.3-5.0	-10~80	375

Application example: Slide unit cylinder

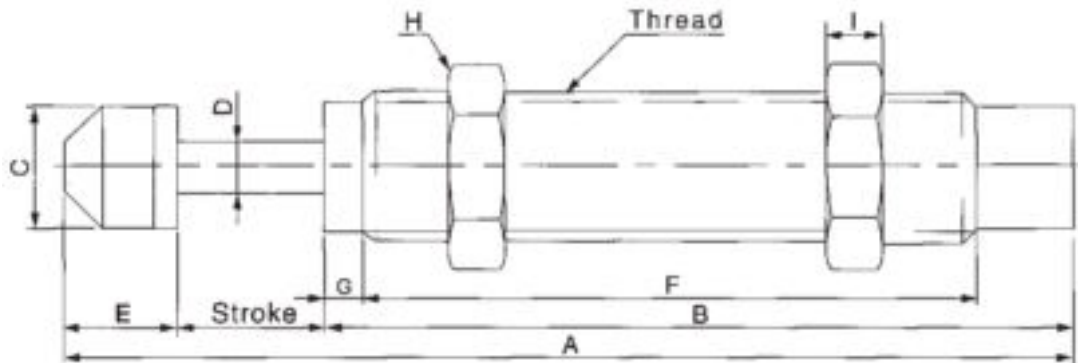


Application example: Slide unit



MAC series Non adjustable hydraulic series

SHOCK ABSORBERS



Specification

Order no.	Thread	Stroke (mm)	A	B	C	D	E	F	G	H	I
MAC-0806-SN	M 8×1.0	6	--	40.6	--	2.8	--	33.6	2	11	3
MAC-0806-S	M 8×1.0	6	55.2	40.6	6.6	2.8	8.6	33.6	2	11	3
MAC-1007-SN	M 10×1.0	7	--	47	--	3	--	39	3	12.7	3
MAC-1007-S	M 10×1.0	7	62.6	47	8.6	3	8.6	39	3	12.7	3
MAC-1210-SN	M 12×1.0	10	--	50	--	3	--	45.5	--	14	4
MAC-1210-S	M 12×1.0	10	67	50	10.3	3	7	45.5	--	14	4
MAC-1412-SN	M 14×1.5	12	--	67	--	4	--	58	4	19	6
MAC-1412-S	M 14×1.5	12	90	67	12	4	11	58	4	19	6
MAC-2015-SN	M 20×1.5	15	--	73	--	6	--	62	4	26	8
MAC-2015-S	M 20×1.5	15	103	73	18	6	15	62	4	26	8
MAC-2525-SN	M 25×1.5	25	--	92	--	8	--	82	--	32	10
MAC-2525-S	M 25×1.5	25	130	92	22.8	8	13	82	--	32	10
MAC-2725-SN	M 27×1.5	25	--	111	--	8	--	96	5	36	6
MAC-2725-S	M 27×1.5	25	154.8	111	22	8	18.8	96	5	36	6

Application example: Pick and place robot Application example: Press feed

