Shock Absorbers

Coolant-Resistant / Economy Overview

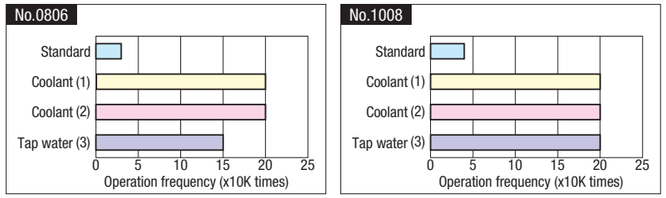
Features of Coolant-Resistant Type

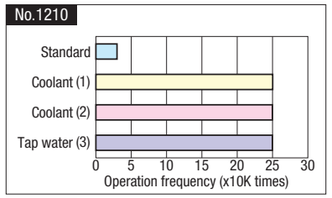
– Protection seals for fluid intrusions allow for use in wet conditions, suitable for machine tools and related applications.
– Replacement with Standard Type is possible since mounting Outer Dia. Screw size is the same.
– Suitable for water-soluble cutting oil A1 [JIS K2241-2000], but also available for water-insoluble cutting oil or under wet conditions. (In case of using water instead of water-soluble cutting oil, the durability may be inferior.)

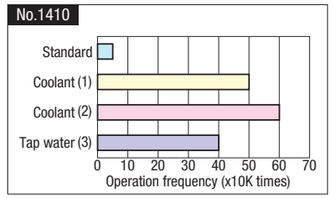
Durability Test Data (Ref.)

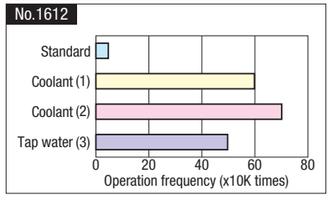
Test Condition

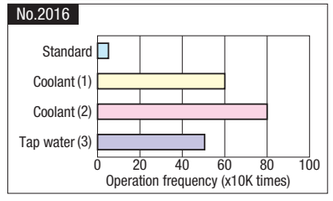
Coolant (1): JIS A1 emulsion Water-soluble cutting oil
(Yushiro Chemical Industry Co., Ltd. Yushiroken FGE330 Dilution 20 times)
Coolant (2): JIS N1 Water-Insoluble Cutting Oil
(Yushiro Chemical Industry Co., Ltd. Yushiro Oil CG8)
(3): Tap water
Load: Ø40 Air Cylinder (Cylinder propulsion only)
Collision Cycle 30/min. Dripping 4 cc/min.





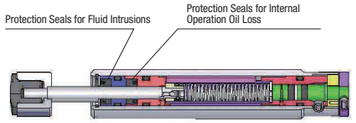




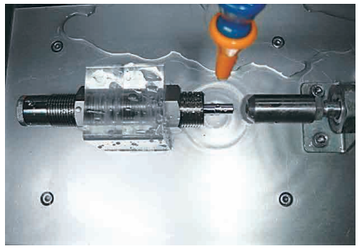


Durability results may vary depending on each test condition. Testing fluid or volume may affect the results. Prior tests are recommended to obtain appropriate results.
When used in environments where the piston rods are kept from fluid contacts, the internal oil may be lost by premature leakage.

Inner Structure

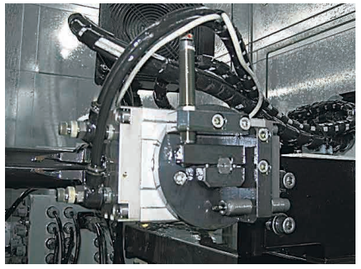


Test Scene



Example

Rotating Table Stopper [Dedicated machining equipment]



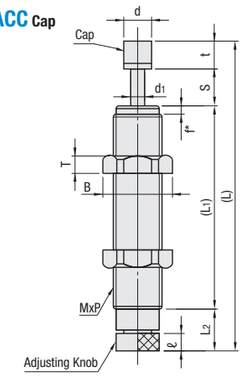
Shock Absorbers

Coolant-Resistant

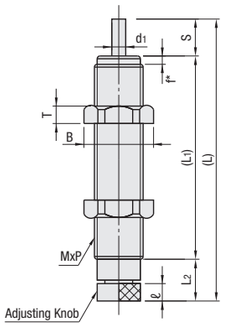
Shock Absorbers – Coolant-Resistant

RoHS10

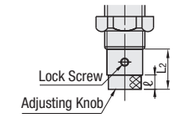
MACC Cap



MACS No Cap



(No.1612 2016 Shape of Adjustable Part)



(1No.1210 Shape of Adjustable Part)

(Cap)

No.	Material (Main Body)	Surface Treatment
0806	303 Stainless Steel	—
1008, 1210, 1410, 1612	SUM	Electroless Nickel Plating
2016	Carbon Steel12C Pipe Steel (JIS)	
Cap	Polyacetal	—

- f* is the dimension of thread dia. M14 or smaller. M16 or larger is threaded to the tip.
- Avoid parallel use of adjustable type as synchronization of shock absorption characteristics is difficult
- Impact force can be easily adjusted by turning the adjusting knob on the bottom.
- Operating ambient temperature -5–70°C

Part Number Type	No.	Speed	Thread Dia. M x P	Stroke S	Max. Absorbed Energy (E') 1 time (J)	Max. Absorbed Energy (E') Per minute (J)	Max. Equivalent Mass (me') (kg)	Piston Rod Return Force (N)	Max. Drag Value (N)	(L)	(L1)	L2	ℓ	d	d1	t	f	B (Wrench Flats)	T
MACC Cap / MACS No Cap	0806	M	M8 x 0.75	6	1.4	36.7	15	9 or Less	670	64 (59)	47	6	3	6	2.5	5	2.3	12.7 (11)	2
	1008	L	M10 x 1.0	8	1.47	58.8	10	9 or Less	637	79.5 (73.2)	56.7	8.5	3.5	6	2.4	6.3	1.6	14.2 (13)	3
		M			1.76		10												
		H					2.5												
	1210	L	M12 x 1.0	10	2.94	98	30	13 or less	1470	90.6 (82.6)	67.6	5	—	8	3.5	8	1.5	16.2 (14)	4
		M			4.9		4												
		H																	
	1410	L	M14 x 1.5	10	3.92	147	30	14 or less	1813	108.2 (98.2)	77.8	10.4	5	10	4	10	1.7	19.6 (17)	6
		M			5.88		35												
		H					4.5												
	1612	L	M16 x 1.5	12	9.8	235	50	20 or less	2646	122.7 (107.7)	81.2	14.5	4.5	13.5	5	15	—	20 (19)	6
		M					10												
		H																	
	2016	L	M20 x 1.5	16	29.4	343	300	33 or less	3528	137 (120)	86	18	4	18	6	17	—	27.7 (24)	8
		M					200												
		H					120												

- L Dimension values in ( ) are for MACS type.

kgfm=Jx0.101972, kgf=Nx0.101972

Collision Velocity Type		Collision Velocity Range	Max. Operating Cycle
Low Speed	L	0.3–1 m/s	60 cycle/min*
Medium Speed	M	0.3–2 m/s	
High Speed	H	0.7–3 m/s	

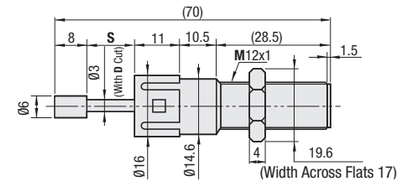
- *For No.0806, max. operating cycle should be 45 cycle/min.

Part Number Example Part Number: MAC1008H

Shock Absorbers – Economy Type

RoHS10

EMACN



- Operating Temp. Range: -10–50°C
  Durability: 500,000 times
  Collision Velocity Range: No.1212 A / B / C : 0.3–1.0 m/s
  No.1212D : 0.1–0.7 m/s
  No.1212E : 0.1–0.5 m/s
  Max. Tightening Torque: 1.5 N/m
  When shouldering to Ø14.6, tighten up at 1.0 N/m.

Parts	Material	Surface Treatment
Main Body	PPS	—
Cap	POM Polyoxymethylene	
Piston Rod	C36000 Brass	Electroless Nickel Plating

Accessory: Nut (Opposite Angle 19.6, Opposite Side 17)

Part Number Type	No.	Cap Color	Thread Diameter M	Stroke S	Max. Absorbed Energy (E') Per Impact (J)	Max. Absorbed Energy (E') Per minute (J)	Max. Equivalent Mass (me') (kg)	Piston Rod Return Force (N)	Max. Drag Value (N)
EMACN	1212A	White	M12 x 1	12	0.29	14.7	1.5	2.45	245
	1212B	Black			0.49		3.0		294
	1212C	Yellow			1.0	5.0	5.0		
	1212D	Green					7.5		
	1212E	Red					10.0		

Part Number Example Part Number: EMACN1212A