



# FW Series (M12~M25)

## Double Direction Type Multiple-Orifice Fixed



### <Characteristics>

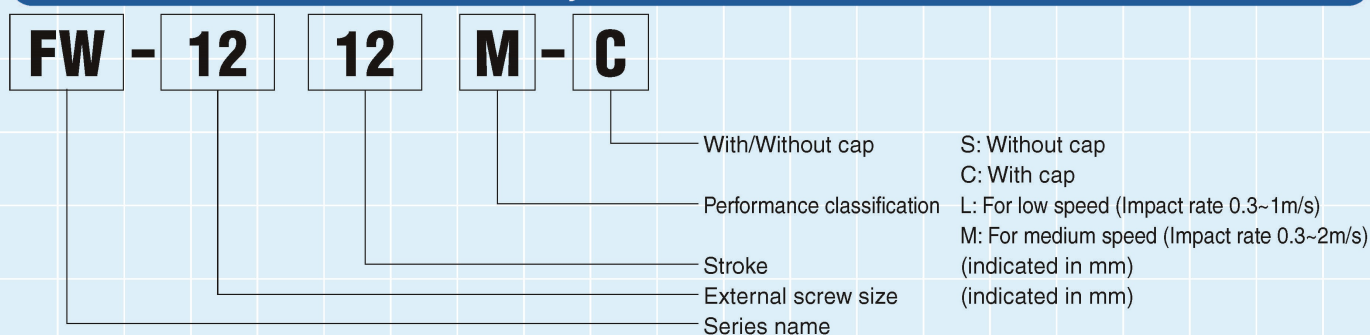
- This product is a double-rod type that can absorb impact from both directions.
- Because of its multiple-orifice structure, a smooth impact absorption is possible.
- Idea for small spaces.

### <Specifications>

Model		FW-1212L-C	FW-1616M-□	FW-2025M-□	FW-2530M-□
Max. absorption energy	J (kgf·m)	4.9 (0.5)	13.7 (1.4)	39.2 (4.0)	62.7 (6.4)
Stroke	mm	12	16	25	30
Max. equivalent mass	kg (kgf)	39 (39)	30 (30)	87 (87)	140 (140)
Range of impact rate	m/s	0.3~1	0.3~2	0.3~2	0.3~2
Max. drag	N (kgf)	1078 (110)	2646 (270)	4900 (500)	6370 (650)
Max. cycle rate	cycle/min	60	60	60	60
Max. absorption	J/min	41	235	343	490
energy per minute	(kgff·m/min)	(4.2)	(24)	(35)	(50)
Recovering power of the piston rod	N (kgf)	7.8 (0.8) or lower	17.6 (1.8) or lower	24.5 (2.5) or lower	29.4 (3.0) or lower
Operating temperature	°C	-5~70	-5~70	-5~70	-5~70
Mass: (S type)	g	—	130	234	460
(C type)	g	64	142	271	527

Note) Insert S in the □ to order without a cap, and insert C in the □ to order with a cap (R if ordering urethane cap).

### <Key to Model Number>



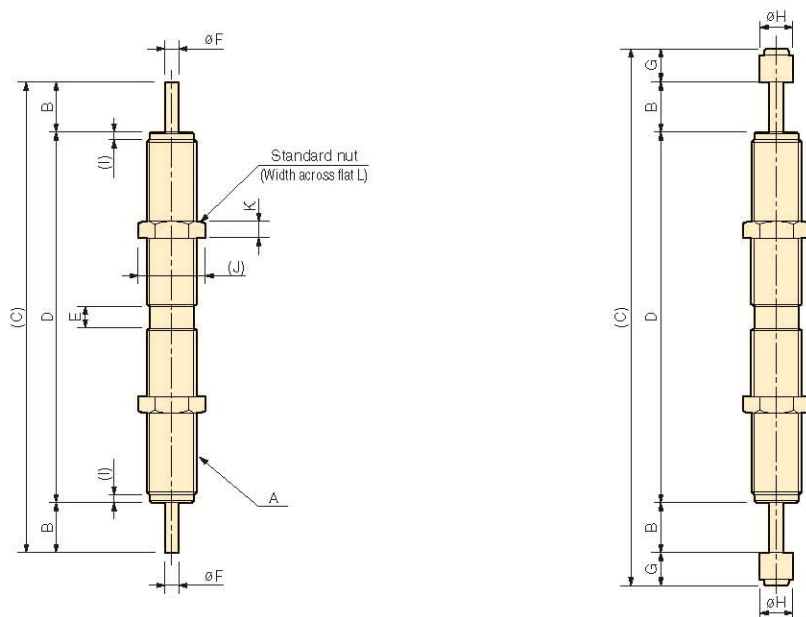
### <Precautions for Use>

- \* Do not use this product without carefully reading the attached owner's manual.
- \* Ensure that sufficient mounting strength is secured for this product. (As a guideline, it should be 2 to 3 times the maximum drag listed in the catalogue.)
- \* It cannot absorb impact from both directions at the same time.

- \* Do not use this product in a vacuum or a location where it may come in contact with oil.
- \* Ensure that an eccentric load is not applied to the soft absorber. (Allowable eccentric angle:  $\pm 2.5^\circ\text{C}$ )
- \* Ensure that an external stopper is also used.

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### <Dimensions>

Model	A	B	C	D	E	$\phi F$	G	$\phi H$	I	J	K	L
FW-1212L-C	M12X1.0	12	130	90	5	3.5	8	8	2	16.2	4	14
FW-1616M-S	M16X1.5	16	134	102	-	5	-	-	6	21.9	6	19
FW-1616M-C			164				15	13.5	6			
FW-2025M-S	M20X1.5	25	170	120	-	6	-	-	6	27.7	8	24
FW-2025M-C			204				17	18	6			
FW-2530M-S	M25X1.5	30	205	145	-	8	-	-	6	37	10	32
FW-2530M-C			241				18	22	6			

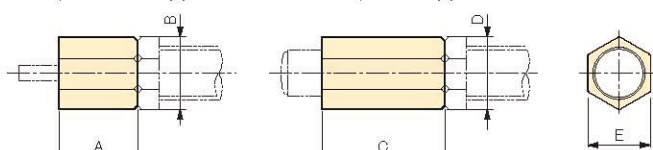
### <Optional Parts>

#### Stopper nut OP-020\*\*-□

■ Adjust so that it stops 1mm before the stroke end, and fasten with the main unit's nut until secured.

OP-020\*\*-S  
(Without cap)

OP-020\*\*-C  
(With cap)



Note) When attaching, make sure that the side without a bearing chamfer is the impact surface.

\*Standard nuts are sold separately as well.

For FW-1212: M12 nut  
For FW-1616: M16 nut  
For FW-2025: M20 nut  
For FW-2530: M25 nut

### <Compatible Chart for Applicable Models>

Model	A	B	C	Applicable model	Mass g
OP-020KB-C	16	16.2	14	FW-1212L-C	8
OP-020HB-S	15	21.9	19	FW-1616M-S	15
OP-020HB-C	30	21.9	19	FW-1616M-C	28
OP-020EB-S	30	27.7	24	FW-2025M-S	46
OP-020EB-C	47	27.7	24	FW-2025M-C	68
OP-020GB-S	20	37	32	FW-2530M-S	65
OP-020GB-C	32	37	32	FW-2530M-C	102