Shock Absorber （Fixed Type (Air Return Type)）

Fixed Type Multi-orifice SA-40 Series

This series of products are made to order for optimum orifice design based on the customer's specifications.

- Since the shock absorbers use a knife edge orifice, they are designed so that they are less affected by viscosity change due to temperature.
- Multi-orifice type shock absorbers which can softly absorb energy.
- A shock absorber having optimum absorbing characteristics for working conditions within the specified energy absorption capacity can be manufactured.
- Small, light and cost-efficient shock absorbers designed to meet the actual conditions.
- If an oil cooler (heat exchanger) is used, the energy absorption capacity can be increased. (However, S-06 and S-11 cannot be provided with the oil cooler.)
- The use of the air return mechanism can delay the return of the rod.
- When an external stopper is installed, an ineffective stroke can be provided at the rear. (Contact us.)

Specification

Model number		S*F/E/H/U-40-10	S*F/E/H/U-40-20	S*F/E/H/U-40-30	S*F/E/H/U-40-40
Max. absorbed energy	J	4250	8500	12800	17000
Stroke	mm	25.4	50.8	76.2	101.6
(Note 1) Max. energy capacity per minute	J/min	8870 {20400}	9240 {23600}	9600 {26700}	10100 {30100}
Collision speed range	m/s	0.05 to 7.6(Spring return) · 0.05 to 2.3(Air return)			
(Note 2) Rod returning force	N	778			
Working temperature range	℃	−5 to +50 (No freezing)			
Mounting style		F style (Front flange) E style (Rear flange) H style (Foot) U style (Cap clevis)			
Weight	kg	45.12	47.29	49.42	51.6
Accessories		Auxiliary oil reservoir, external accumulator, heat exchanger			

Model number		S*F/E/H/U-40-50	S*F/E/H/U-40-60	S*F/E/H/U-40-70	S*F/E/H/U-40-80
Max. absorbed energy	J	21300	25500	29800	34000
Stroke	mm	127.0	152.4	177.8	203.2
(Note 1) Max. energy capacity per minute	J/min	11400 {37600}	11700 {40700}	12100 {43900}	12500 {47200}
Collision speed range	m/s	0.05 to 7.6(Spring return) · 0.05 to 2.3(Air return)			
(Note 2) Rod returning force	N	770			
Working temperature range	℃	−5 to +50 (No freezing)			
Mounting style		F style (Front flange) E style (Rear flange) H style (Foot) U style (Cap clevis)			
Weight	kg	60.79	62.97	65.10	67.27
Accessories		Auxiliary oil reservoir, external accumulator, heat exchanger			

Model number		S*F/E/H/U-40-90	S*F/E/H/U-40-100	S*F/E/H/U-40-110	S*F/E/H/U-40-120
Max. absorbed energy	J	38300	F/E/H style: 42600 U style: 37800	F/E/H style: 46800 U style: 37300	F/E/H style: 51100 U style: 36600
Stroke	mm	228.6	254.0	279.4	304.8
(Note 1) Max. energy capacity per minute	J/min	14000 {54800}	14300 {57900}	14700 {61100}	15200 {64300}
Collision speed range	m/s	0.05 to 7.6(Spring return) · 0.05 to 2.3(Air return)			
(Note 2) Rod returning force	N	765			
Working temperature range	℃	−5 to +50 (No freezing)			
Mounting style		F style (Front flange) E style (Rear flange) H style (Foot) U style (Cap clevis)			
Weight	kg	76.47	78.60	80.77	82.94
Accessories		Auxiliary oil reservoir, external accumulator, heat exchanger			

(Note 1)
- The max. energy capacity per minute shown in the table is the value at an ambient temperature of 26.7℃. The max. energy capacity per minute E_2 (J/min) at an ambient temperature T (℃) is indicated by the following formula.

$$E_2 = \frac{(82.2-T)}{55.5} \times \left(\begin{array}{l}\text{max. energy capacity}\\ \text{per minute shown in}\\ \text{table}\end{array}\right)$$

- It is recommended to select a shock absorber with an allowance so that the energy absorption is about 70% (reference) or less of the maximum energy absorption. When selecting a shock absorber without an allowance, consult us.

(Note 2)
- Maximum values when rod is retracted full stroke
- The values in brackets { } are the maximum energy capacities per minute of shock absorbers provided with heat exchanger.

- The shock absorbers can absorb actual corresponding weight of up to 50% of design corresponding weight.

$$0.5 \leqq \frac{\text{actual corresponding weight}}{\text{design corresponding weight}} \leqq 1$$

How to Order

When placing an order, specify the model number shown below.