

SHOCK ABSORBERS

ADJUSTABLE ABSORPTION CAPACITY TYPE

KSHE, KSH Series

Specifications

Item	Model	Multi orifice type					Single orifice type				
		KSHE5×8	KSHE6×10	KSHE8×15	KSHE10×20	KSHE12×22	KSH5×8	KSH6×10	KSH8×10	KSH10×15	KSH12×22
Maximum absorption J [ft·lbf]		1.5 [1.11]	3.0 [2.21]	9.8 [7.23]	14.7 [10.84]	29.4 [21.69]	1.5 [1.11]	3.0 [2.21]	5.9 [4.35]	9.8 [7.23]	24.5 [18.07]
Absorbing stroke mm [in.]		8 [0.31]	10 [0.39]	15 [0.59]	20 [0.79]	22 [0.87]	8 [0.31]	10 [0.39]	10 [0.39]	15 [0.59]	22 [0.87]
Maximum impact speed m/s [ft./sec.]		1.5 [4.92]					1.0 [3.28]				
Maximum operating frequency cycle/min		60					30				
Spring return force ^{Note} N [lbf.]		5.6 [1.26]	9.2 [2.07]	10.7 [2.41]	14.4 [3.24]	16.3 [3.66]	5.6 [1.26]	9.2 [2.07]	15.7 [3.53]	16.6 [3.73]	37.1 [8.34]
Angle variation		3° or less					3° or less				
Operating temperature range °C [°F]		0~60 [32~140]					0~60 [32~140]				

Note: Values when compressed.

Mass

Model	Item	Body Mass	Additional mass			
			Side mounting bracket	Flange mounting bracket	Stopper nut	With cap
KSHE5×8	KSH5×8	24 [0.85]	15 [0.53]	16 [0.56]	7 [0.25]	1 [0.035]
KSHE6×10	KSH6×10	43 [1.52]	22 [0.78]	15 [0.53]	8 [0.28] (12 [0.42])	1 [0.035]
		90 [3.17]			19 [0.67] (30 [1.06])	
KSHE8×15	KSH8×10	102 [3.60]	68 [2.40]	28 [0.99]	4 [0.14]	4 [0.14]
		130 [4.59]			4 [0.14]	
KSHE10×20	KSH10×15	144 [5.08]	110 [3.88]	57 [2.01]	5 [0.18]	5 [0.18]
		192 [6.77]			46 [1.62] (69 [2.43])	
KSHE12×22	KSH12×22	200 [7.05]	140 [4.94]	54 [1.90]	8 [0.28]	8 [0.28]

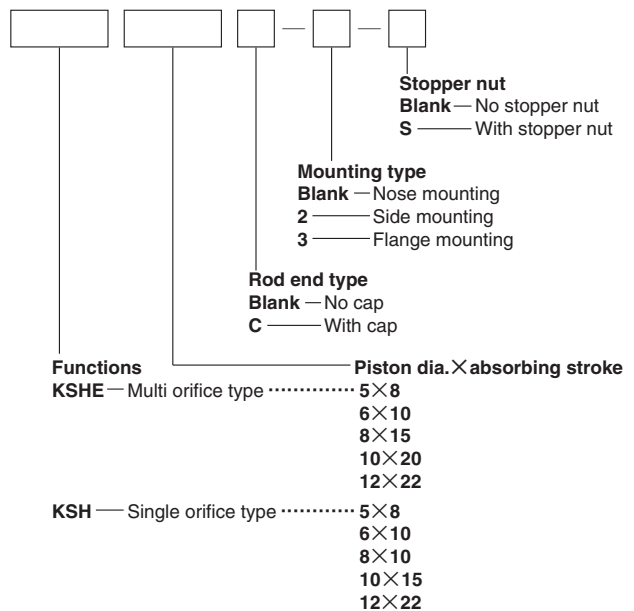
Note: Values in parentheses () are for with cap models.

Remarks : 1. The body is equipped with two mounting nuts.

2. For side mounting bracket, supplied with two mounting screws.

Calculation sample: The mass of KSHE10×20 with side mounting bracket, stopper nut and cap is
144+110+50+5=309 g [10.90 oz.]

Order Codes

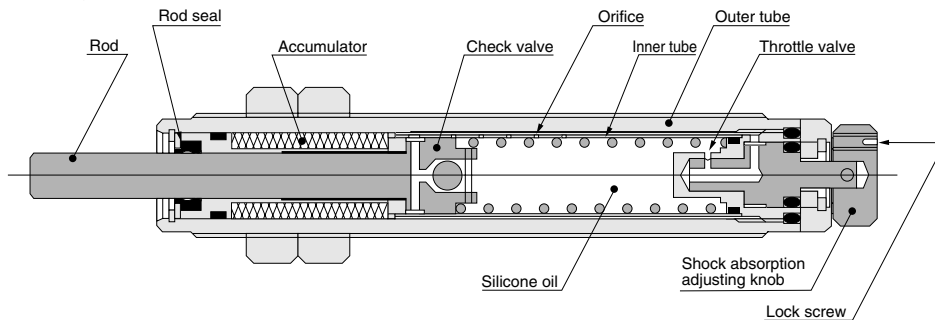


- Mounting bracket and stopper nut are included at time of delivery.
- The mounting screws are included with the side mounting bracket.
- Stopper nut dimensions differ between with rod end cap and no cap type.

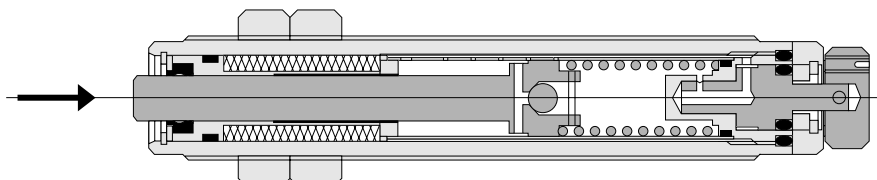
Inner Construction and Major Parts

The illustration shows multi orifice type : For KSHE□×□.

Not in operation



In operation



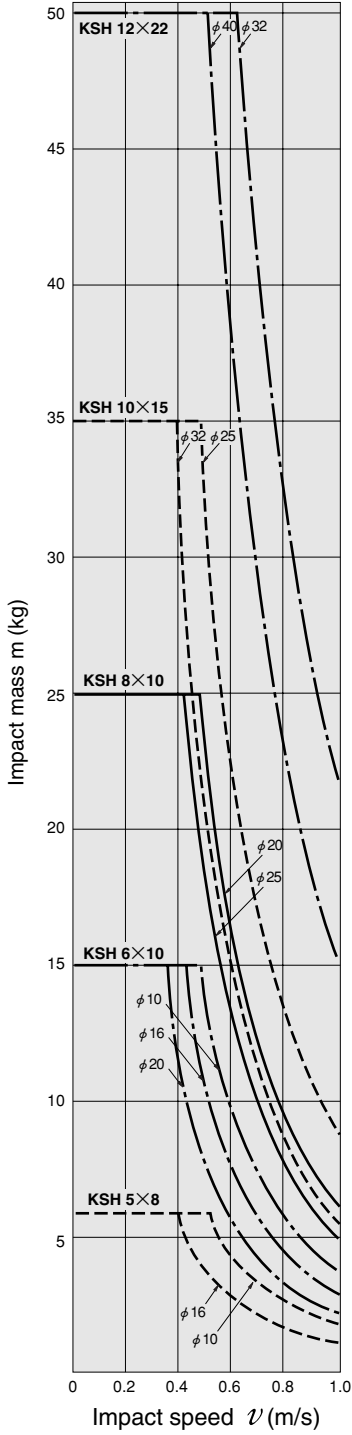
Selection Guideline

Precautions for Use of Selection Graphs

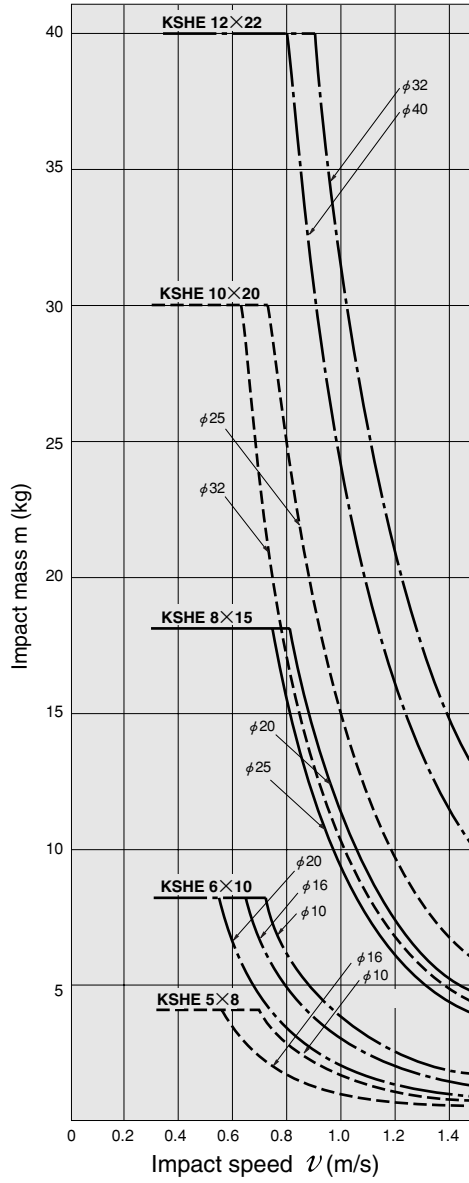
1. The selection graphs show the best conditions for usage of the product with horizontal impacts.
2. The selection graphs are calculated for a cylinder with air pressure of 0.5 MPa [73 psi].

● Selection Graphs

KSH (For low speed)



KSHE (For high speed)



1 kg = 2.20 lb. 1 m/s = 3.28 ft./sec.

Dimensions (mm)

● Nose mounting

● No rod end cap
KSHE□×□, KSH□×□



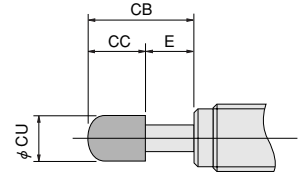
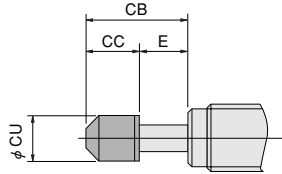
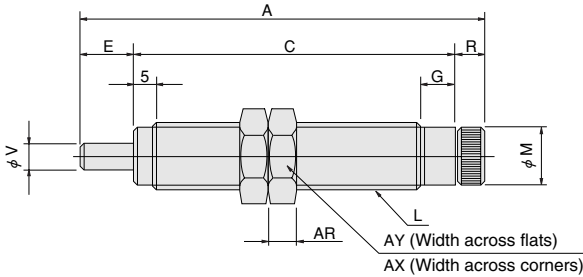
KSH Piston dia. × absorbing stroke

● With rod end cap
KSHE□×□C

KSHE5×8C
KSH□×□C



S-CAP



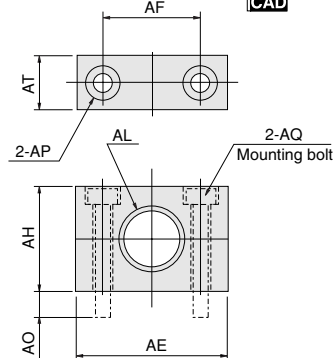
Model	Code	A	C	E	G	L	M	R	V	AR	AX	AY	CB	CC	CU
KSHE5×8□	KSH5×8□	68	55	8	4	M10×1	9	5	3	3	13.9	12	16	8	8
KSHE6×10□	KSH6×10□	78	61	10	10	M12×1	11	7	3	4	16.2	14	20	10	10
	KSH8×10□	92	75	10	10	M16×1.5	13	7	5	7	21.9	19	25	15	12
KSHE8×15□	KSH10×15□	114	92	15	10	M18×1.5	15	7	6	8	25.4	22	30	15	14
	KSH12×22□	147	118	22	10	M20×1.5	17	7	6	10	27.7	24	40	18	16
KSHE10×20□		115	88	20	10	M18×1.5	15	7	5	8	25.4	22	35.5	15.5	15
KSHE12×22□		120	91	22	10	M20×1.5	17	7	5	10	27.7	24	40	18	16
	KSH12×22□	147	118	22	10	M20×1.5	17	7	6	10	27.7	24	40	18	16

Dimensions of Mounting Bracket (mm)

● Side mounting bracket : -2



S-SIDE



Model	Code	AE	AF	AH	AL	AO
For KSHE 5×8□	For KSH 5×8□	22	14	14	M10×1 Counterbore φ 10.2 Depth2	(9.3)
For KSHE 6×10□	For KSH 6×10□	25	16	18	M12×1 Counterbore φ 12.2 Depth2	(5.3)
For KSHE(S) 8×15□ ^{Note}	For KSH 8×10□	38	25	25	M16×1.5	(7.4)
For KSHE(S) 10×20□ ^{Note}	For KSH10×15□	50	34	30	M18×1.5	(11.5)
For KSHE(S) 12×22□ ^{Note}	For KSH12×22□	50	34	30	M20×1.5	(13.6)

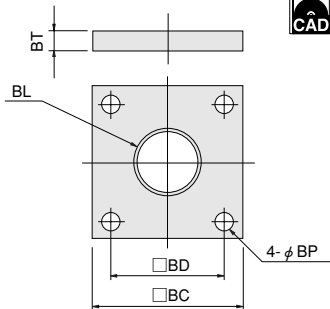
Model	Code	AP	AQ (Hexagon socket head screw)	AT
For KSHE 5×8□	For KSH 5×8□	φ 3.4 Counterbore φ 6.2 Depth3.3	M3×0.5 Screw length 20	9
For KSHE 6×10□	For KSH 6×10□	φ 3.4 Counterbore φ 6.2 Depth3.3	M3×0.5 Screw length 20	9
For KSHE(S) 8×15□ ^{Note}	For KSH 8×10□	φ 4.5 Counterbore φ 8 Depth4.4	M4×0.7 Screw length 28	12
For KSHE(S) 10×20□ ^{Note}	For KSH10×15□	φ 6.5 Counterbore φ 11 Depth6.5	M6×1 Screw length 35	12
For KSHE(S) 12×22□ ^{Note}	For KSH12×22□	φ 9 Counterbore φ 14 Depth8.6	M8×1.25 Screw length 35	16

● Mounting screws (hexagon socket head screws) are supplied with side mounting bracket.
Note: For KSHES (shock absorbers with sensor switch), see p.595.

● Flange mounting bracket : -3



S-FLANGE



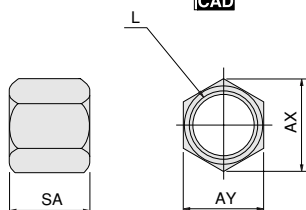
Model	Code	BC	BD	BL	BP	BT
For KSHE 5×8□	For KSH 5×8□	25	18	M10×1 Counterbore φ 10.2 Depth1.7	3.2	4
For KSHE 6×10□	For KSH 6×10□	25	18	M12×1 Counterbore φ 12.2 Depth1.7	3.2	4
For KSHE(S) 8×15□ ^{Note}	For KSH 8×10□	34	24	M16×1.5	4.5	4
For KSHE(S) 10×20□ ^{Note}	For KSH10×15□	40	28	M18×1.5	6.5	6
For KSHE(S) 12×22□ ^{Note}	For KSH12×22□	40	28	M20×1.5	6.5	6

Note: For KSHES (shock absorbers with sensor switch), see p.595.

● Stopper nut : -S



S-STOPER



Model	Code	L	AX	AY	SA
For KSHE 5×8	For KSH 5×8	M10×1	13.9	12	17
For KSHE 5×8C	For KSH 5×8C				17
For KSHE 6×10	For KSH 6×10	M12×1	16.2	14	25
For KSHE 6×10C	For KSH 6×10C				20
For KSHE 8×15	For KSH 8×10	M16×1.5	21.9	19	32
For KSHE 8×15C	For KSH 8×10C				25
For KSHE10×20	For KSH10×15	M18×1.5	25.4	22	37
For KSHE10×20C	For KSH10×15C				30
For KSHE12×22	For KSH12×22	M20×1.5	27.7	24	45
For KSHE12×22C	For KSH12×22C				