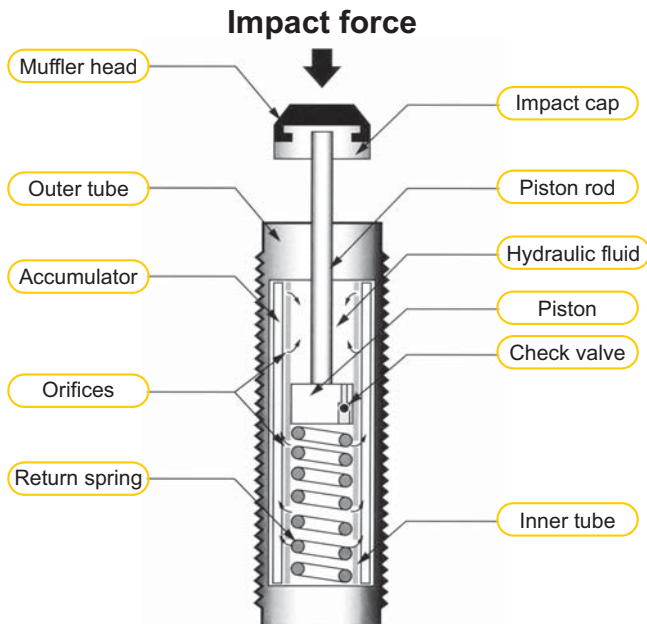


Features

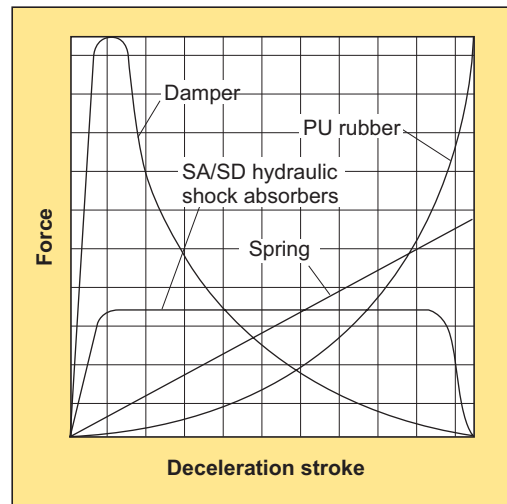
1. SA series allow approximately 1 mm fixed stop before the end of the stroke.
2. Do not apply paint on piston rod and threaded body.
3. When you assemble it, please pay attention to the strength of the fixed plank and the eccentric angle.
4. Stop collar prevents shock absorber piston from bottoming and can be used for stroke adjustment.



Main structure



Impact force graph



• The impact force graph are made by different buffer materials.

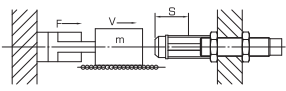
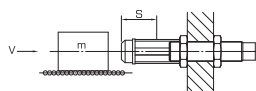
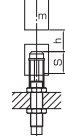
How to order

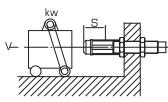
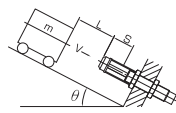
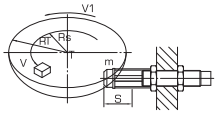
SA	25	X	40	1	NC
Series	External diameter		Stroke	Speed	
SA non-adjustable				1 Suitable for high speed	Nil With impact head
SD adjustable				2 Suitable for middle speed	NC Without impact head
				3 Suitable for low speed	S Self compensation with impact head
					SN Self compensation without impact head

Common symbol

- E_k (Nm): Kinetic energy
- E_D (Nm): Work or drive energy
- E_T (Nm): Total energy
- E_{Tc} (Nm): Total energy absorbed per hour
- F (N): Propelling force
- F_M (N): Maximum impact energy= $1.2E_T/S$ (a rough estimation)
- g (m/s²): Acceleration of gravity=9.81
- μ : Coefficient of friction
- θ (rad): Impact or incline angle
- ω (rad/s): Angular velocity
- W_e (kg): Efficient weight
- C (Hr): Impact frequency per hour
- d (mm): Cylinder bore
- h (m): Height
- HM : Coefficient of torque=2.5(1–2.5)
- m (kg): Load weight
- P (bar): Operating pressure
- R (m): Radius
- R_s (m): Radius of load
- S (m): Cushioning stroke
- T (Nm): Swing torque
- t (sec): Deceleration time
- V (m/s): Impact velocity
- KW (kw): Output of motor

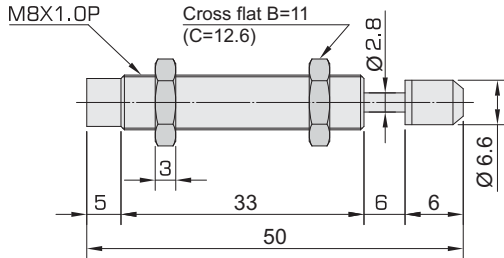
Formulas

Formula			
	(1) Object with propelling force	(2) Object without propelling force	(3) Freely falling object
			
Kinetic energy E_k	$\frac{m \times V^2}{2}$	$\frac{m \times V^2}{2}$	$m \times g \times h$
Work or drive energy E_D	$F \times S$	0	$m \times g \times s$
Total energy E_T	$E_k + E_D$	$E_k + E_D$	$E_k + E_D$
Total energy absorbed per hour E_{Tc}	$E_T \times C$	$E_T \times C$	$E_T \times C$
Efficient weight W_e	$\frac{2 \times E_T}{V^2}$	m	$\frac{2 \times E_T}{V^2}$
Freely falling object velocity V	—	—	$\sqrt{2 \times g \times h}$

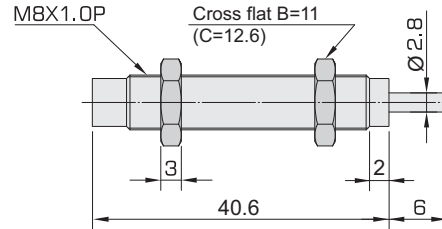
Formula			
	(4) Object driven by motor	(5) Falling on inclined surface	(6) Swing torque
			
Kinetic energy E_k	$\frac{m \times V^2}{2}$	$\frac{m \times V^2}{2}$	$0.25 \times m \times V_1^2$
Work or drive energy E_D	$\frac{1000 \times KW \times HM \times S \times T \times S}{V}$	$m \times S \times \sin \theta \times g$	$\frac{(T \times S)}{R_s}$
Total energy E_T	$E_k + E_D$	$E_k + E_D$	$E_k + E_D$
Total energy absorbed per hour E_{Tc}	$E_T \times C$	$E_T \times C$	$E_T \times C$
Efficient weight W_e	$\frac{2 \times E_T}{V^2}$	$\frac{2 \times E_T}{V^2}$	$\frac{2 \times E_T}{V^2}$
Freely falling object velocity V	—	$\sqrt{2 \times g \times L \times \sin \theta}$	$\frac{(V_T \times R_s)}{R_T}$

External dimensions

SA0806

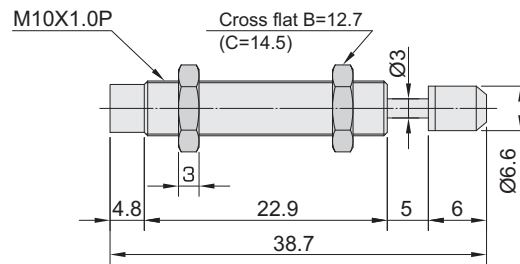


SA0806-SN



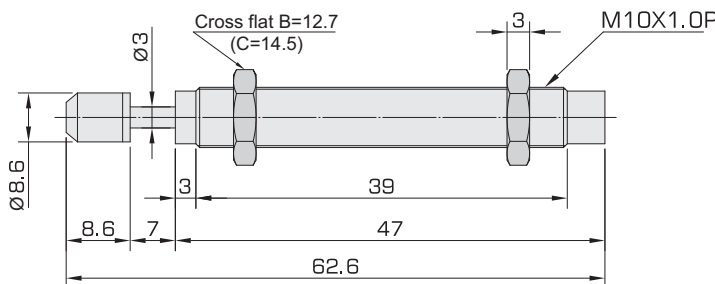
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA0806-1	6	2	0.5	2.0	8800	-10~+80
SA0806-2	6	2	2.0	1.0	8800	-10~+80
SA0806-3	6	2	6.0	0.5	8800	-10~+80
SA0806-SN	6	3	6.0	0.3~2.5	7000	-10~+80

SA1005

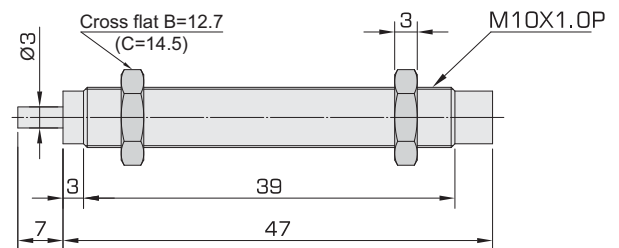


Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1005-1	5	3	1	3	10800	-10~+80
SA1005-2	5	3	3	1.5	10800	-10~+80
SA1005-3	5	3	7	0.8	10800	-10~+80

SA1007S



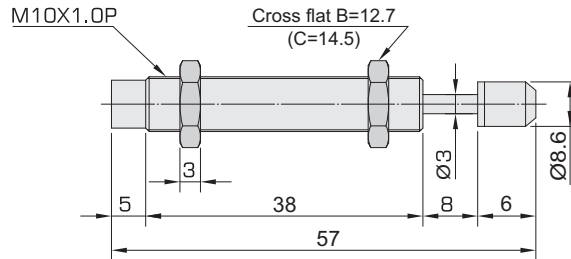
SA1007-SN



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1007S	7	6	12	0.3~3.5	12400	-10~+80
SA1007-SN	7	6	12	0.3~3.5	12400	-10~+80

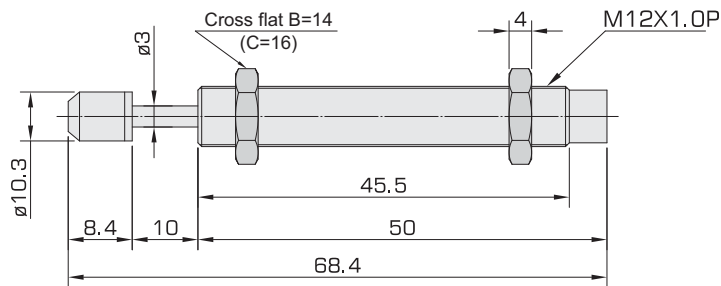
External dimensions

● SA1008



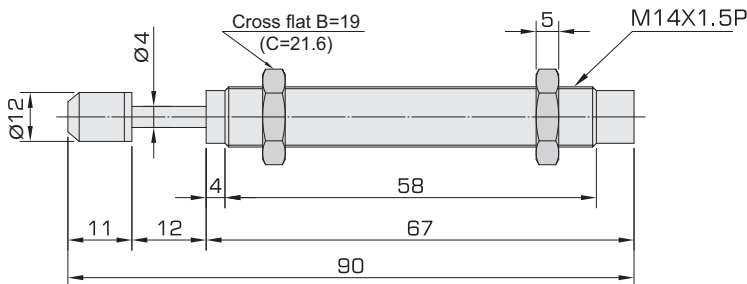
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1008-1	8	4	2	3.0	15200	-10~+80
SA1008-2	8	4	4	1.5	15200	-10~+80
SA1008-3	8	4	9	0.8	15200	-10~+80

● SA1210S

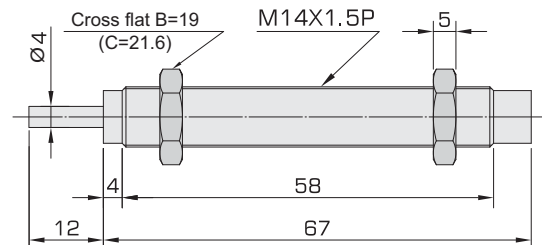


Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1410S	10	12	22	0.3~4.0	22500	-10~+80

● SA1412S



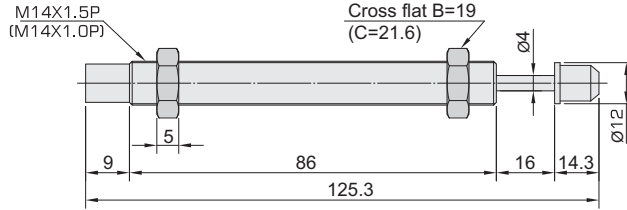
● SA1412-SN



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1412S	12	20	40	0.3~5.0	33000	-10~+80
SA1412-SN	12	20	40	0.3~5.0	33000	-10~+80

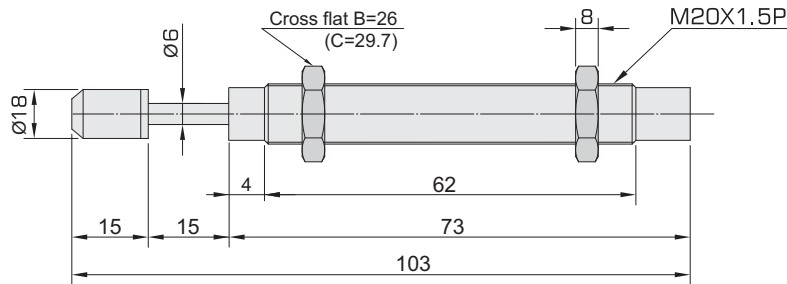
External dimensions

● SA1416



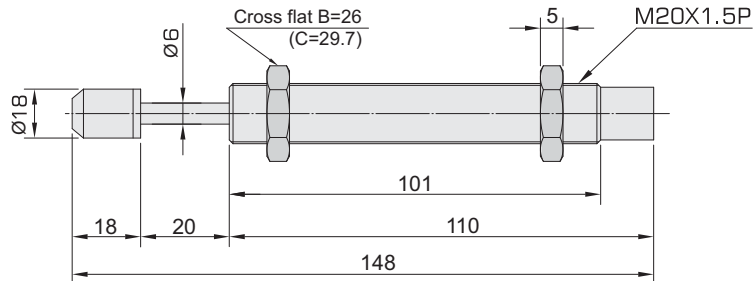
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1416-1	16	20	10	3.0	35000	-10~+80
SA1416-2	16	20	70	1.5	35000	-10~+80
SA1416-3	16	20	150	0.8	35000	-10~+80

● SA2015S



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2015S	15	59	120	0.3~5.0	38000	-10~+80

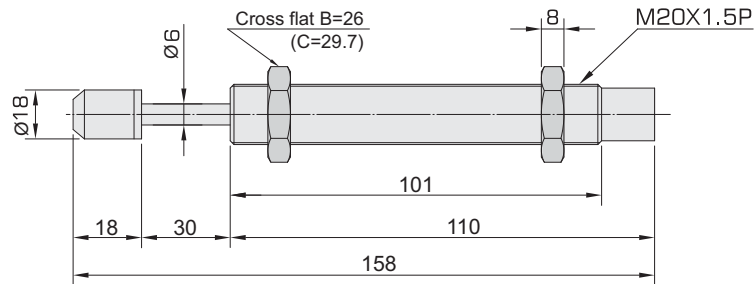
● SA2020



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2020-1	20	40	30	3.5	42000	-10~+80
SA2020-2	20	40	200	2.0	42000	-10~+80
SA2020-3	20	40	700	1.0	42000	-10~+80

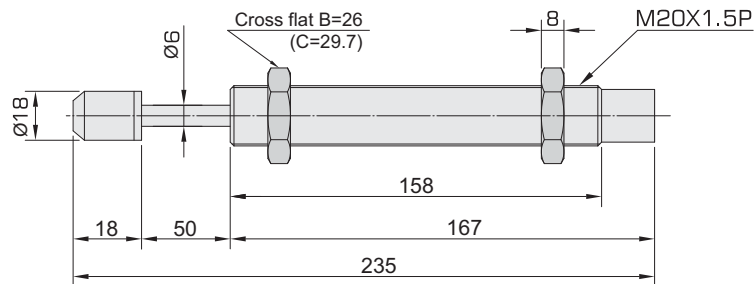
External dimensions

● SA2030



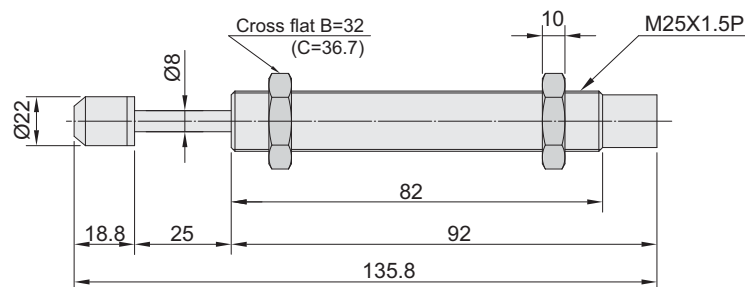
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2030-1	30	50	30	3.5	48000	-10~+80
SA2030-2	30	50	200	2.0	48000	-10~+80
SA2030-3	30	50	700	1.0	48000	-10~+80

● SA2050



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2050	50	60	60	3.5	60000	-10~+80
SA2050	50	60	400	2.0	60000	-10~+80
SA2050	50	60	1200	1.0	60000	-10~+80

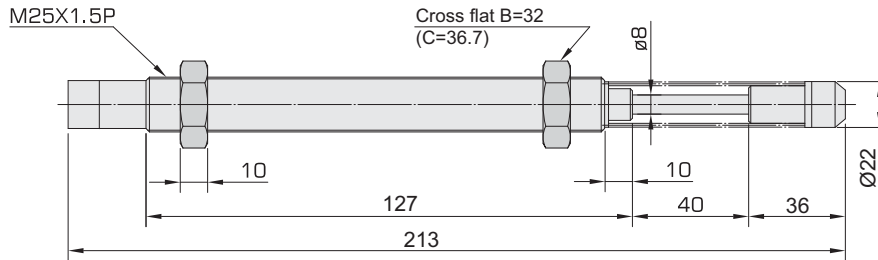
● SA2525S



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2525S	25	80	180	0.3~5.0	60000	-10~+80

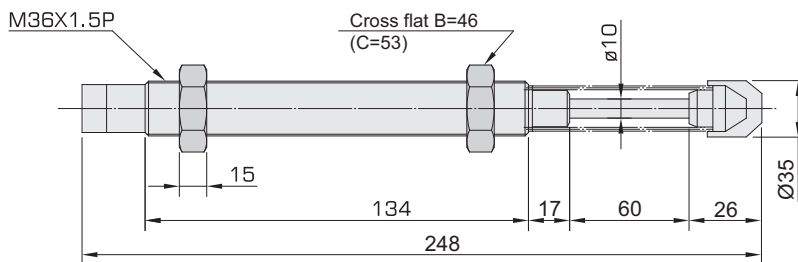
External dimensions

SA2540



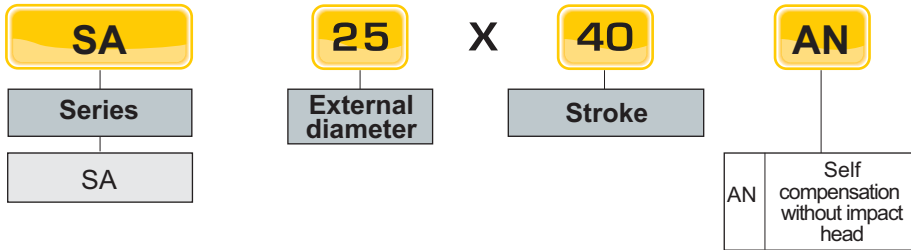
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2540-1	40	120	300	4.0	75000	-10~+80
SA2540-2	40	120	1200	2.5	75000	-10~+80
SA2540-3	40	120	2000	1.0	75000	-10~+80

SA3660



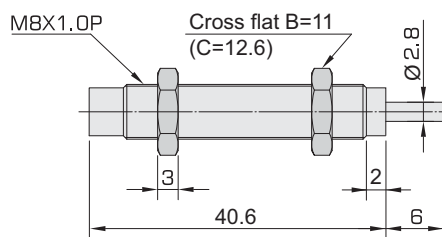
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA3660-1	60	250	400	4.0	120000	-10~+80
SA3660-2	60	250	1500	2.5	120000	-10~+80
SA3660-3	60	250	2400	1.0	120000	-10~+80

How to order



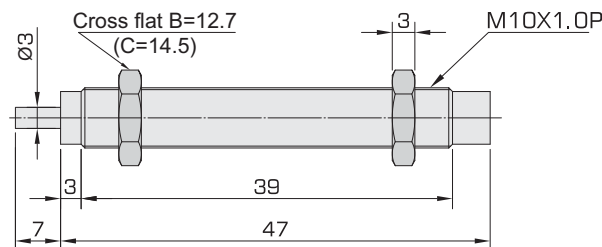
External dimensions

SA0806-AN



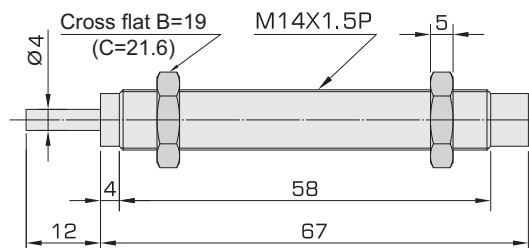
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA0806-AN	6	3	6.0	0.3~2.5	7000	-10~+80

SA1007-AN



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1007-AN	7	6	12	0.3~3.5	12400	-10~+80

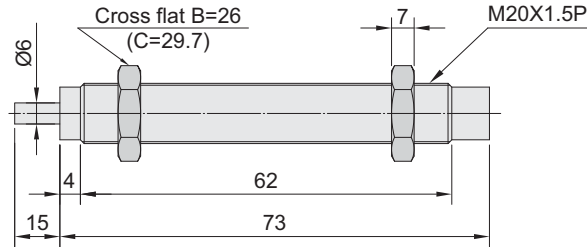
SA1412-AN



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA1412-AN	12	20	40	0.3~5.0	33000	-10~+80

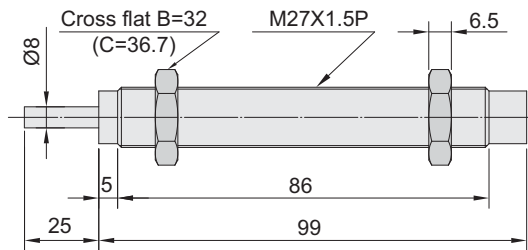
External dimensions

● SA2015-AN



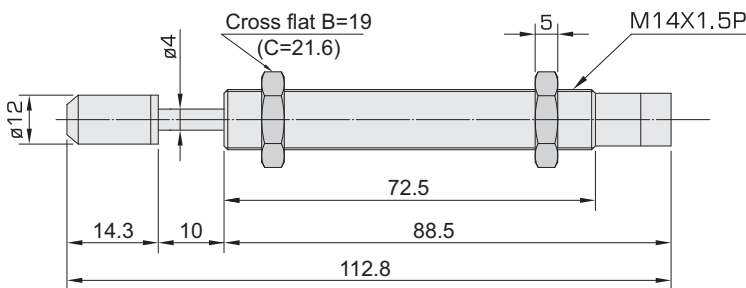
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2015-AN	15	59	120	0.3~5.0	38000	-10~+80

● SA2725-AN

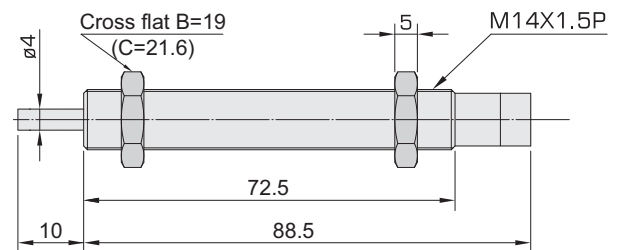


Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SA2725-AN	25	147	270	0.3~5.0	72000	-10~+80

● SD1410 (adjustable)



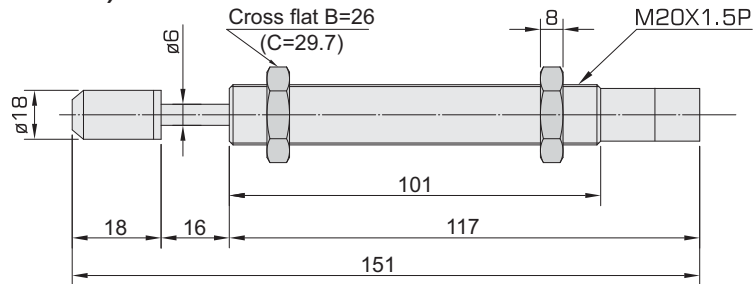
● SD1410-NC



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD1410	10	20	80	3.0	25000	-10~+80
SD1410-NC	10	20	80	3.0	25000	-10~+80

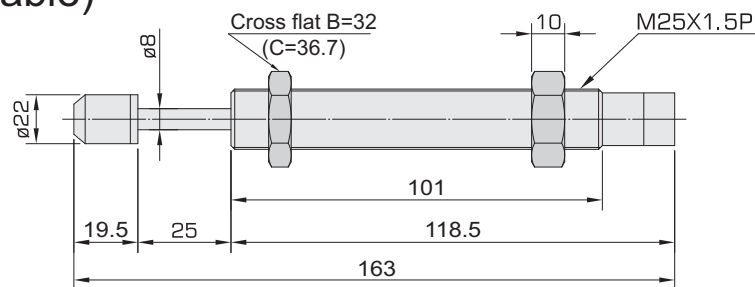
External dimensions

● SD2016 (adjustable)



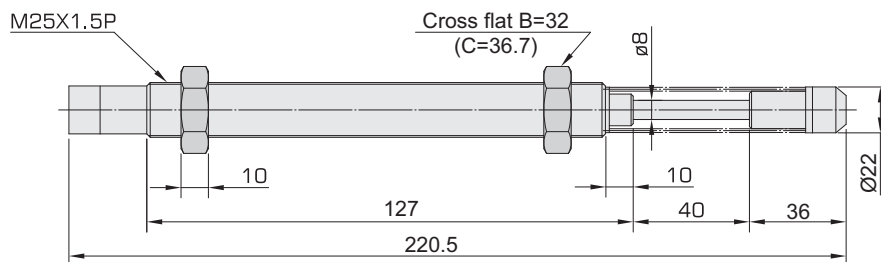
Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD2016	16	25	200	3.5	30000	-10~+80

● SD2525 (adjustable)



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD2525	25	85	400	3.5	54000	-10~+80

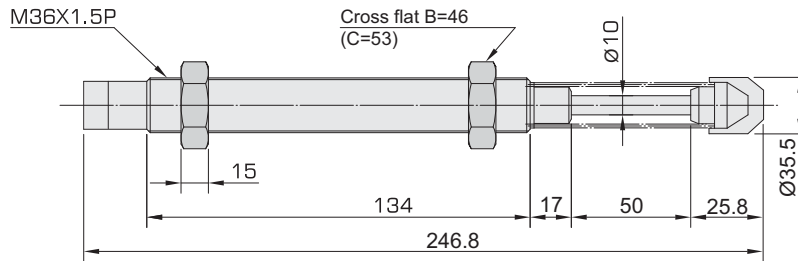
● SD2540 (adjustable)



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD2540	40	100	700	3.5	80000	-10~+80

External dimensions

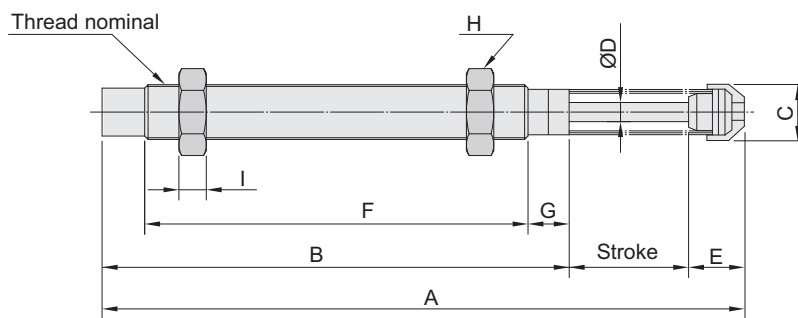
● SD3650 (adjustable)



Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD3650	50	300	1400	3.0	100000	-10~+80

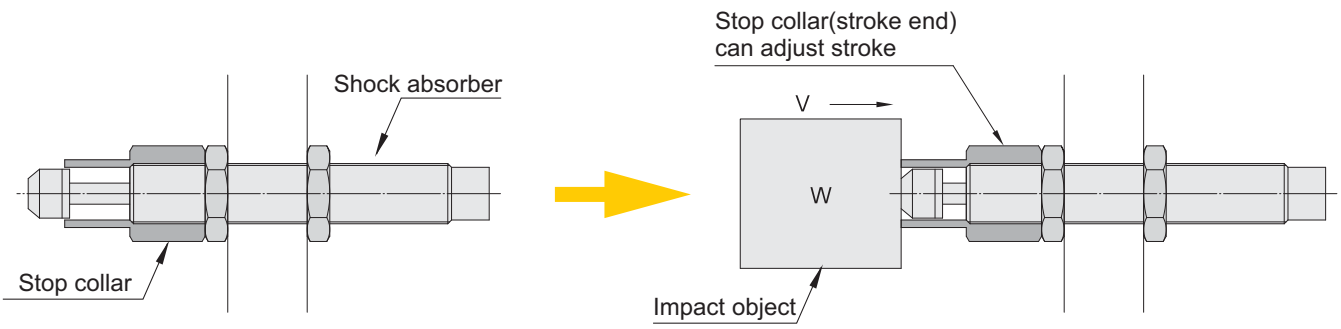
● SD4225/SD4250/SD4275 (adjustable)

Model	Stroke mm	Max.Nm per cycle Nm	Effective weight We(kg)	Max. impact speed m/s	Max. Nm per hour Nm	Operating temperature °C
SD4225	25	260	3000	3.5	125000	-10~+80
SD4250	50	500	4000	4.5	150000	-10~+80
SD4275	75	750	6000	4.5	180000	-10~+80



Model	Thread nominal	Stroke	A	B	C	D	E	F	G	H	I
SD4225	M42X1.5	25mm	186.4	127.5	44.5	12	33.9	88	28.5	50	15
SD4250	M42X1.5	50mm	240.9	157	44.5	12	33.9	117.5	28.5	50	15
SD4275	M42X1.5	75mm	301.4	187.5	44.5	12	33.9	148	28.5	50	15

How to set stop collar



Before impact

After impact

Optional accessories

Model	Dimensions	Applicable for shock absorber model
● SC08		SA0806
● SC10		SA1008
● SC12		SA1210
● SC14		SA1415 SD1410

Model	Dimensions	Applicable for shock absorber model
● SC20		SA2020 SA2050 SD2016
● SC25		SA2525 SD2525
● SC25L		SA2540 SD2540
● SC36		SA3660 SD3650

