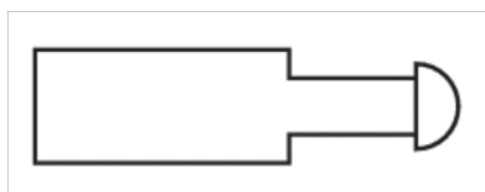


Industrial shock absorber, Series SA1-MA

- Cushioning adjustable
- Mounting Lock nut
- Mounting thread M12x1 M14x1,5 M20x1,5 M25x1,5 M33x1,5 M64x2
- SA1-MA



Ambient temperature min./max.	-20 ... 80 °C
Medium	Oil
Impact speed, min./max.	See table below
Mounting	Lock nut
Weight	See table below



Technical data

Part No.	Mounting thread	Stroke	Max. energy absorption/stroke	Max. energy absorption/hour
R412010322	M12x1	12 mm	22 Nm	35200 Nm
R412010323	M14x1,5	14 mm	30 Nm	50000 Nm
R412010324	M20x1,5	19 mm	100 Nm	76500 Nm
R412010325	M25x1,5	25 mm	220 Nm	105600 Nm
R412010326	M25x1,5	40 mm	390 Nm	175600 Nm
R412010327	M33x1,5	25 mm	300 Nm	120000 Nm
R412010328	M33x1,5	50 mm	500 Nm	150000 Nm
R412010329	M64x2	100 mm	5000 Nm	350000 Nm
R412010330	M64x2	150 mm	8000 Nm	400000 Nm

Part No.	Effective mass me	Return spring force	impact speed
	min./max.	min./max.	min./max.
R412010322	9 ... 800 kg	2,5 ... 7 N	0,2 ... 3,5 m/s
R412010323	1,6 ... 1500 kg	13 ... 23 N	0,1 ... 6 m/s
R412010324	9 ... 4500 kg	12 ... 23 N	0,1 ... 6 m/s
R412010325	22 ... 11000 kg	15 ... 31 N	0,1 ... 6 m/s
R412010326	38 ... 18000 kg	11 ... 20 N	0,1 ... 6 m/s
R412010327	60 ... 2950 kg	30 ... 50 N	0,02 ... 6 m/s
R412010328	100 ... 4000 kg	23 ... 50 N	0,02 ... 6 m/s
R412010329	1000 ... 62500 kg	45 ... 130 N	0,02 ... 6 m/s

Part No.	Effective mass me	Return spring force	impact speed
	min./max.	min./max.	min./max.
R412010330	1250 ... 105000 kg	35 ... 130 N	0,02 ... 6 m/s

Part No.	Cylinder tube	Lock nut	Weight
R412010322	Steel, salt bath nitrocarburized	Steel, salt bath nitrocarburized	0,036 kg
R412010323	Steel, salt bath nitrocarburized	Steel, salt bath nitrocarburized	0,05 kg
R412010324	Steel, salt bath nitrocarburized	Steel, salt bath nitrocarburized	0,14 kg
R412010325	Steel, salt bath nitrocarburized	Steel, salt bath nitrocarburized	0,29 kg
R412010326	Steel, salt bath nitrocarburized	Steel, salt bath nitrocarburized	0,39 kg
R412010327	Steel, bronzed	Steel, bronzed	0,45 kg
R412010328	Steel, bronzed	Steel, bronzed	0,55 kg
R412010329	Steel, bronzed	Steel, bronzed	3,9 kg
R412010330	Steel, bronzed	Steel, bronzed	4,8 kg

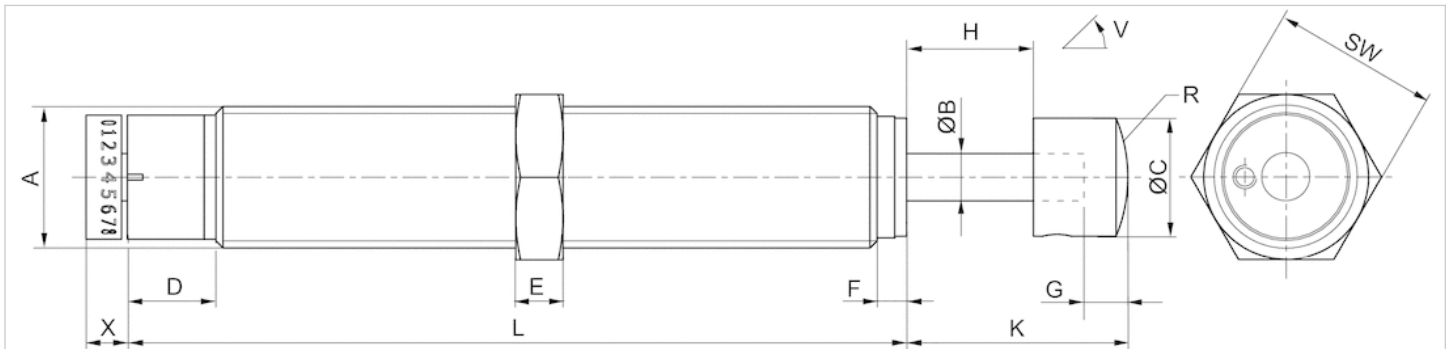
Part No.	Fig.
R412010322	Fig. 1
R412010323	Fig. 2
R412010324	Fig. 2
R412010325	Fig. 2
R412010326	Fig. 2
R412010327	Fig. 3, Fig. 4
R412010328	Fig. 3, Fig. 4
R412010329	Fig. 3, Fig. 4
R412010330	Fig. 3, Fig. 4

Technical information

Material	
Cylinder tube	Steel, salt bath nitrocarburized Steel, bronzed
Piston rod	Stainless steel, ground and hardened
Lock nut	Steel, salt bath nitrocarburized Steel, bronzed
Mounting ring	Steel, hardened and bronzed
Scraper	Polyurethane

Dimensions

Fig. 1



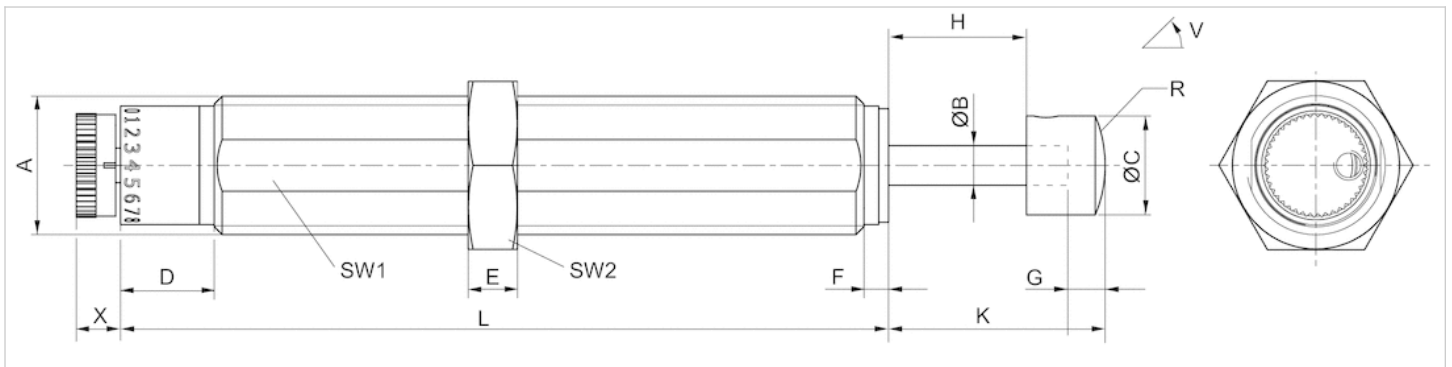
A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	R	SW	W [°]	X
R412010322	SA1-MA	M12x1	4	10	7.5	4	2.5	4	12	20	66	13	14	3	3.5

Dimensions

Fig. 2



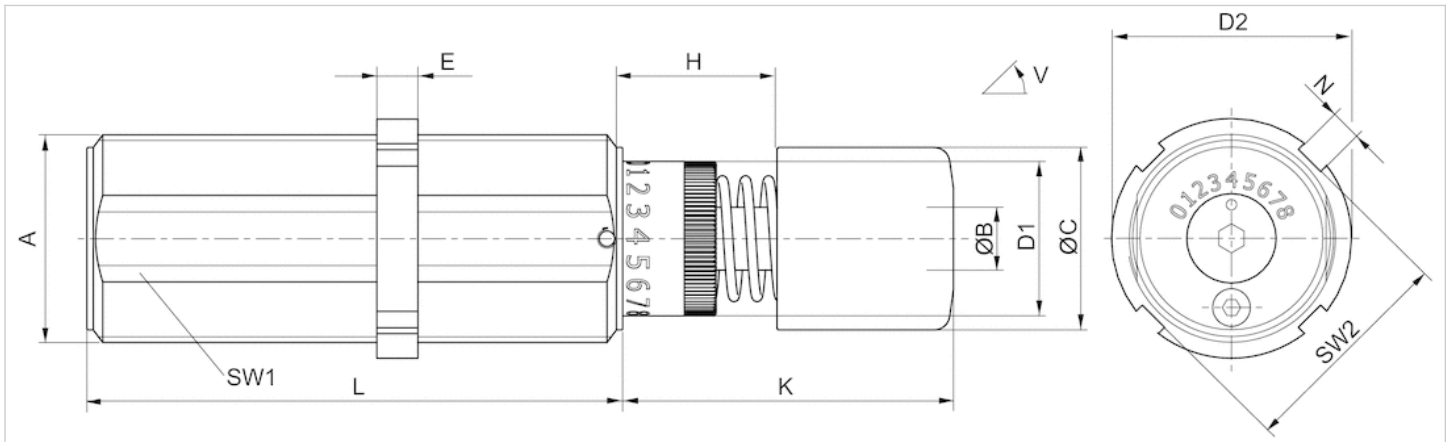
A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	R	SW1	SW2	W [°]	X
R412010323	SA1-MA	M14x1,5	4	10	9.5	5	2.5	4	14	22	78	13	13	17	5	4.5
R412010324	SA1-MA	M20x1,5	6	16	10	6	2.5	4	19	29	88	32.5	18	24	2	5.7
R412010325	SA1-MA	M25x1,5	8	20	9	8	3.5	5	25	38	108	30.3	23	30	2	8.3
R412010326	SA1-MA	M25x1,5	8	20	9	8	3.5	5	40	53	130	30.3	23	30	1	8

Dimensions

Fig. 3



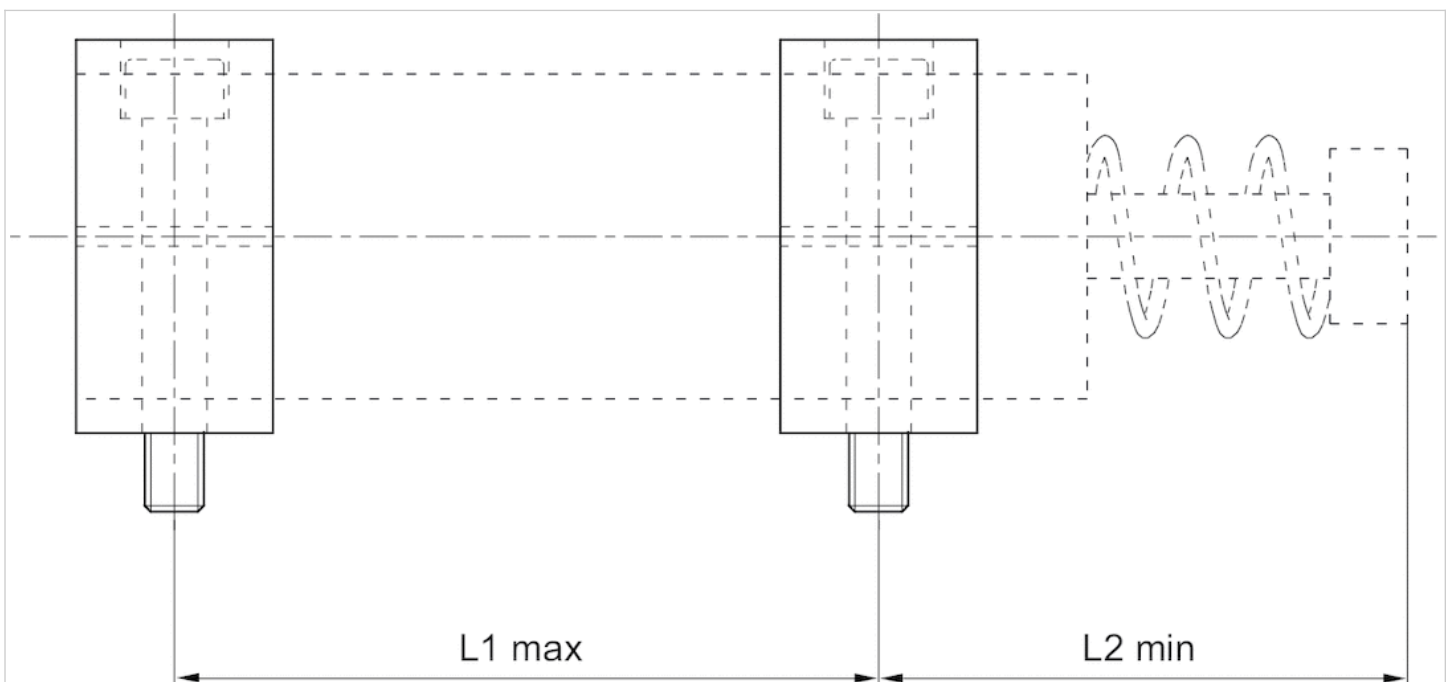
A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	ØD1	ØD2	E	H	K	L	N	SW1	SW2	W [°]
R412010327	SA1-MA	M33x1,5	10	29	24.5	38	6.5	25	53	85	5	30	35	4
R412010328	SA1-MA	M33x1,5	10	29	24.5	38	6.5	50	78	110	5	30	35	3
R412010329	SA1-MA	M64x2	22	59	51	74	10	100	157	179	10	60	71	3
R412010330	SA1-MA	M64x2	22	59	51	74	10	150	207	246	10	60	71	2

Dimensions

Fig. 4 - Positioning the clamping flanges



Dimensions

Part No.	Type	Mounting thread	L1max	L2min
R412010327	SA1-MA	M33x1,5	65	63
R412010328	SA1-MA	M33x1,5	90	88
R412010329	SA1-MA	M64x2	154	169,5
R412010330	SA1-MA	M64x2	221	219,5

You will find further dimensions on the catalog page for clamping flanges.