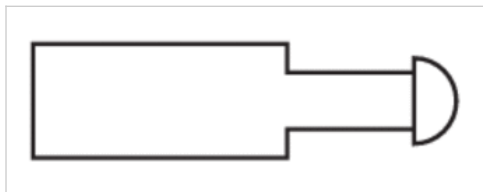


Industrial shock absorber, Series SA1-MA

- 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

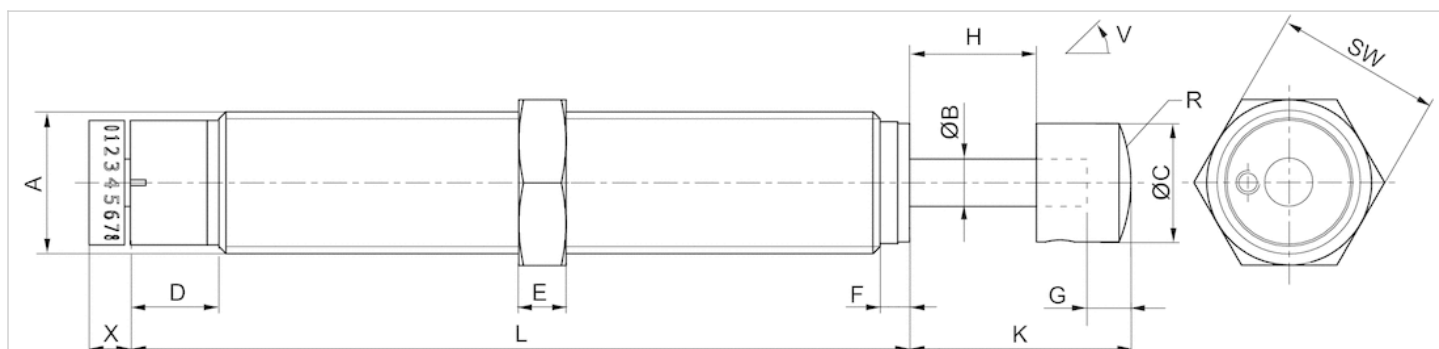
Part No.	Fig.
R412010322	Fig. 1
R412010323	Fig. 2
R412010324	Fig. 2
R412010325	Fig. 2
R412010326	Fig. 2
R412010327	Fig. 3, Fig. 4
R412010328	Fig. 3, Fig. 4
R412010329	Fig. 3, Fig. 4
R412010330	Fig. 3, Fig. 4

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

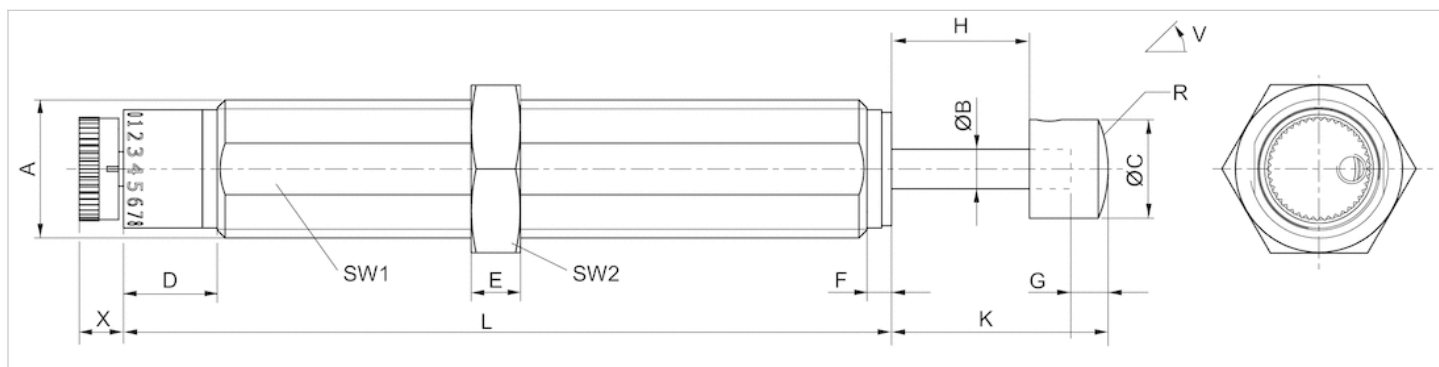
V = tilt

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

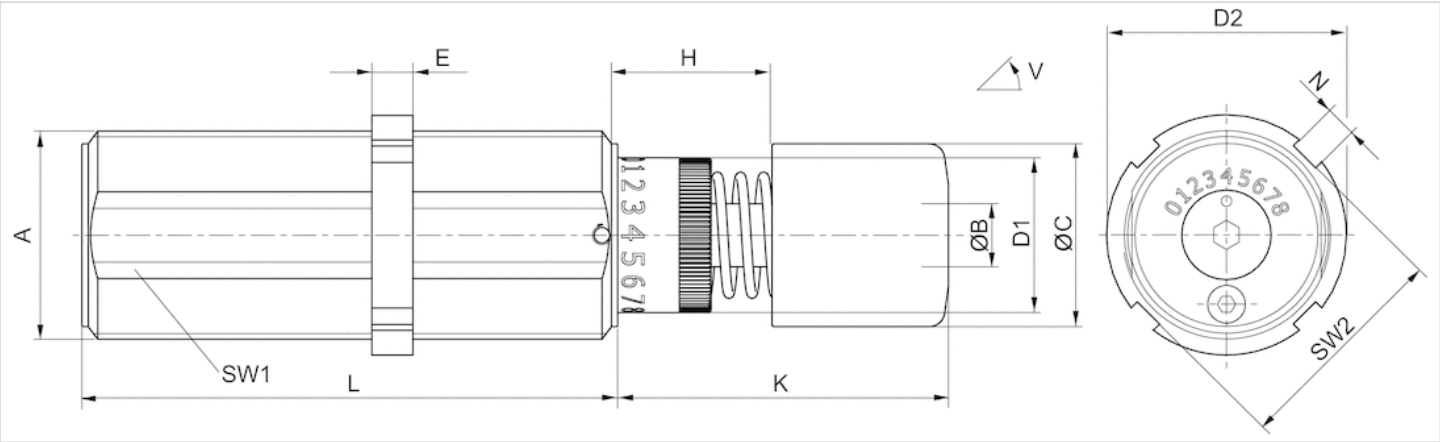
V = tilt

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



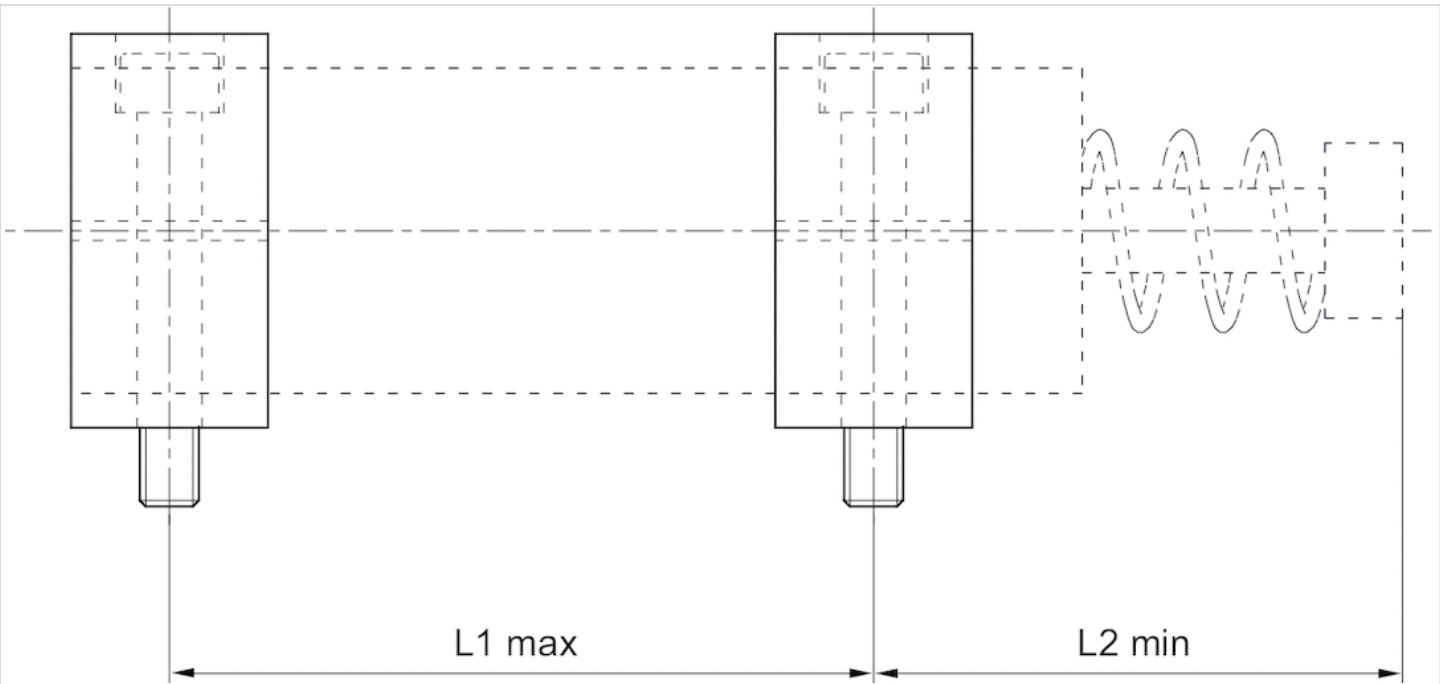
A = mounting thread
V = tilt

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.

Industrial shock absorber, Series SA1-MC

- Cushioning self-compensating
- Mounting Lock nut
- Mounting thread M6x0,5, M8x1, M10x1, M12x1
- SA1-MC



Ambient temperature min./max.

Medium

Mounting

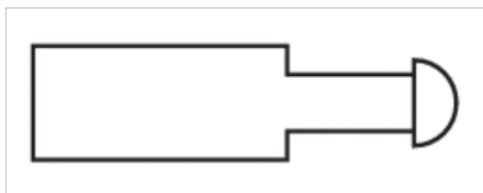
Weight

-20 ... 80 °C

Oil

Lock nut

See table below



Technical data

Part No.	Mounting thread	Stroke	Max. energy absorption/stroke	Max. energy absorption/hour
R412010284	M6x0,5	5 mm	1 Nm	3000 Nm
R412010285	M6x0,5	5 mm	1 Nm	3000 Nm
R412010286	M8x1	5 mm	1,5 Nm	4000 Nm
R412010287	M8x1	5 mm	1,5 Nm	4000 Nm
R412010288	M10x1	8 mm	10 Nm	24000 Nm
R412010289	M10x1	8 mm	10 Nm	24000 Nm
R412010290	M10x1	8 mm	10 Nm	24000 Nm
R412010291	M12x1	10 mm	14 Nm	30000 Nm
R412010292	M12x1	10 mm	14 Nm	30000 Nm
R412010293	M12x1	10 mm	14 Nm	30000 Nm

Part No.	Effective mass me	Return spring force	sealing for piston rod
	min./max.	min./max.	
R412010284	0,8 ... 2,8 kg	2 ... 5 N	Polyurethane
R412010285	1,5 ... 4 kg	2 ... 5 N	Polyurethane
R412010286	0,5 ... 4 kg	2 ... 5 N	Acrylonitrile butadiene rubber
R412010287	0,8 ... 6 kg	2 ... 5 N	Acrylonitrile butadiene rubber
R412010288	1,3 ... 5,3 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber
R412010289	4,3 ... 20 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber
R412010290	16,5 ... 47 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber

Part No.	Effective mass me	Return spring force	sealing for piston rod
	min./max.	min./max.	
R412010291	0,5 ... 1,8 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber
R412010292	1,5 ... 7,7 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber
R412010293	5 ... 57 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber

Part No.	Stop	Weight	Fig.
R412010284	Polyoxymethylene	0,003 kg	Fig. 1
R412010285	Polyoxymethylene	0,003 kg	Fig. 1
R412010286	Polyurethane, Steel	0,007 kg	Fig. 2
R412010287	Polyurethane, Steel	0,007 kg	Fig. 2
R412010288	Polyurethane, Steel	0,02 kg	Fig. 3
R412010289	Polyurethane, Steel	0,02 kg	Fig. 3
R412010290	Polyurethane, Steel	0,02 kg	Fig. 3
R412010291	Polyurethane, Steel	0,036 kg	Fig. 4
R412010292	Polyurethane, Steel	0,036 kg	Fig. 4
R412010293	Polyurethane, Steel	0,036 kg	Fig. 4

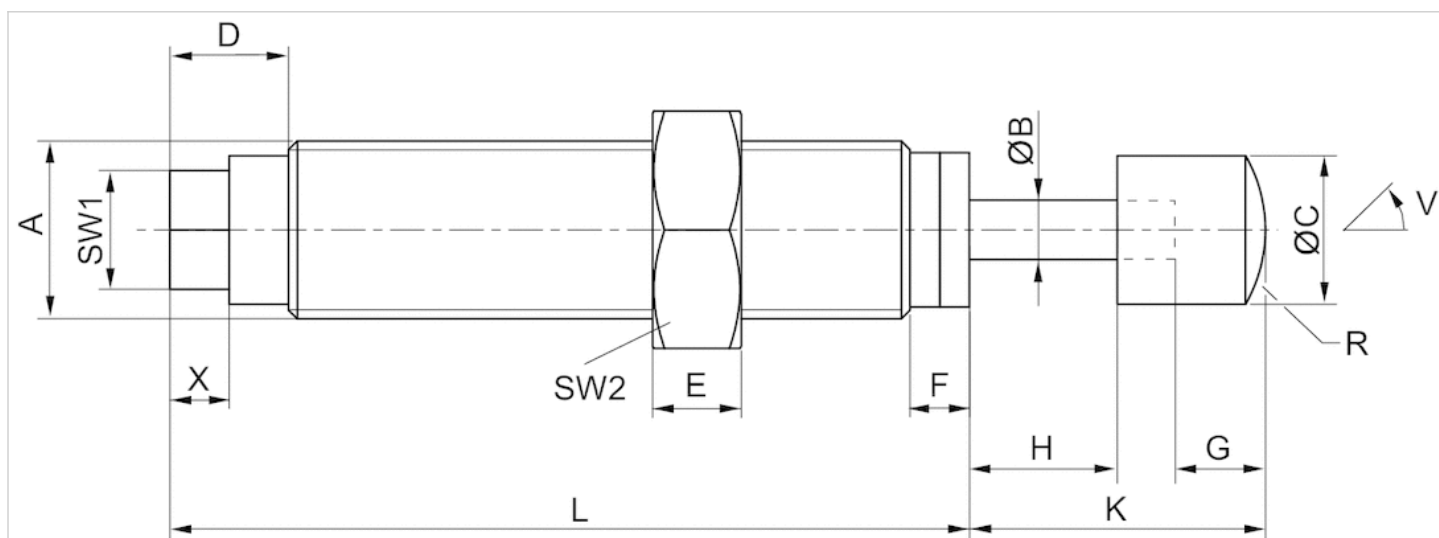
Technical information

Material

Cylinder tube	Steel, salt bath nitrocarburized
Piston rod	Stainless steel, ground and hardened
sealing for piston rod	Polyurethane, Acrylonitrile butadiene rubber
Lock nut	Steel, salt bath nitrocarburized
Mounting ring	Polyoxymethylene, Polyurethane, Steel

Dimensions

Fig. 1



A = mounting thread

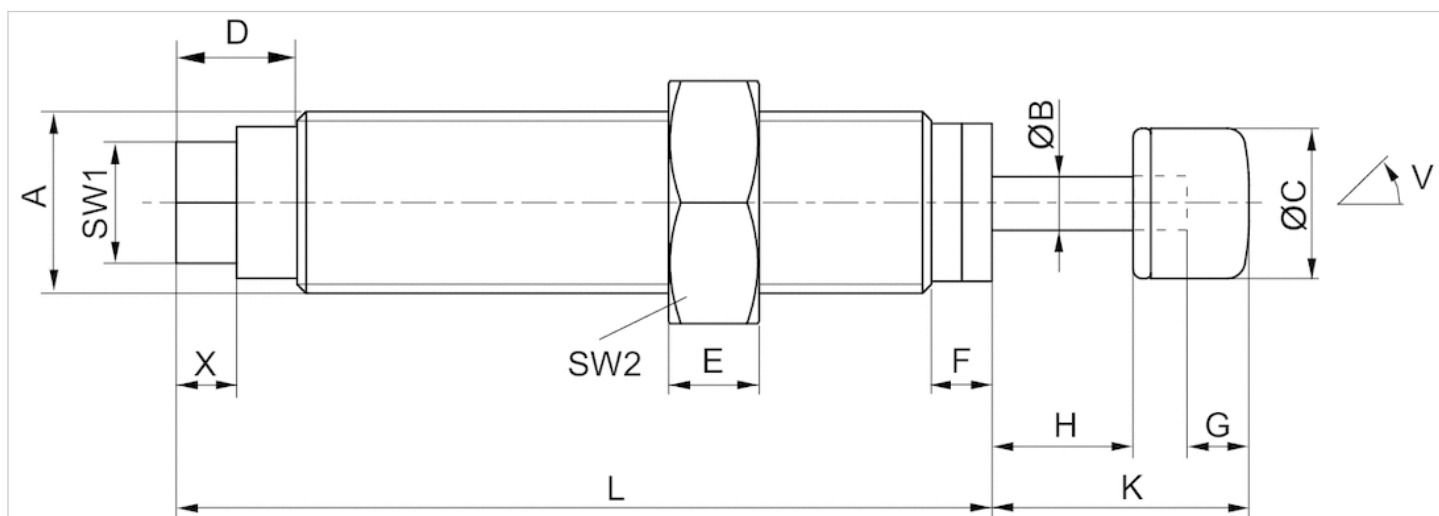
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	R	SW1	SW2	W [°]	X
R412010284	SA1-MC	M6x0,5	2	5	4	3	2	2	5	10	27	5	4	8	2	2
R412010285	SA1-MC	M6x0,5	2	5	4	3	2	2	5	10	27	5	4	8	2	2

Dimensions

Fig. 2



A = mounting thread

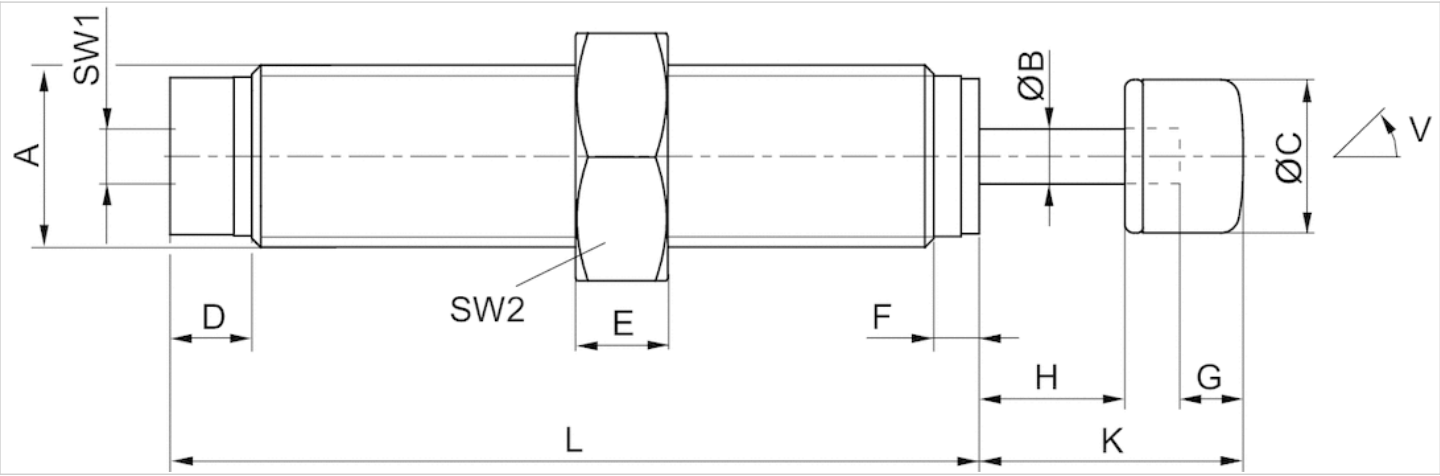
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	SW1	SW2	W [°]	X
R412010286	SA1-MC	M8x1	2.3	6.5	6	3	2.5	3	5	11.5	30	5.5	11	3	3
R412010287	SA1-MC	M8x1	2.3	6.5	6	3	2.5	3	5	11.5	30	5.5	11	3	3

Dimensions

Fig. 3



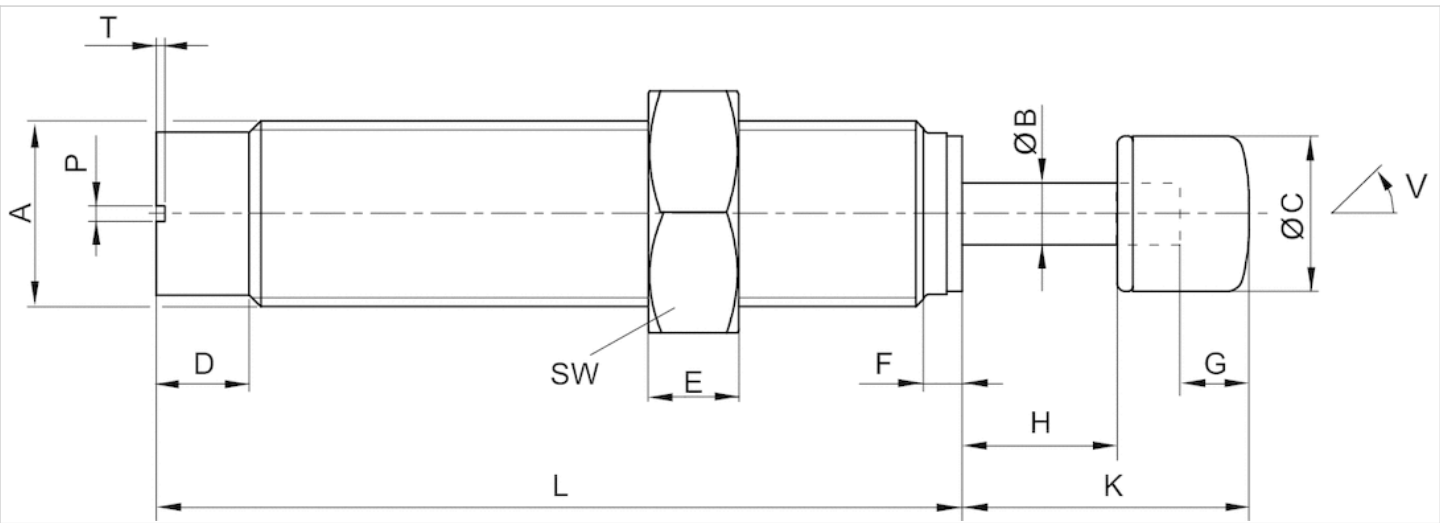
A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	SW1	SW2	W [°]
R412010288	SA1-MC	M10x1	3	8.4	4.5	3	2.5	3	8	14.5	44.5	3	13	2
R412010289	SA1-MC	M10x1	3	8.4	4.5	3	2.5	3	8	14.5	44.5	3	13	2
R412010290	SA1-MC	M10x1	3	8.4	4.5	3	2.5	3	8	14.5	44.5	3	13	2

Dimensions

Fig. 4



A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	P	T	SW	W [°]
R412010291	SA1-MC	M12x1	4	10	6	4	2.5	4	10	18.5	52	1	0.6	14	2
R412010292	SA1-MC	M12x1	4	10	6	4	2.5	4	10	18.5	52	1	0.6	14	2
R412010293	SA1-MC	M12x1	4	10	6	4	2.5	4	10	18.5	52	1	0.6	14	2

Industrial shock absorber, Series SA1-MC

- Cushioning self-compensating
- Mounting Clamping flange
- Mounting thread M6x0,5, M8x1, M10x1, M12x1
- SA1-MC



Ambient temperature min./max.

Medium

Mounting

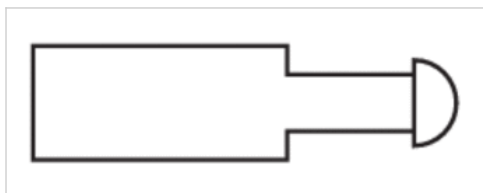
Weight

-20 ... 80 °C

Oil

Clamping flange

See table below



Technical data

Part No.	Mounting thread	Stroke	Max. energy absorption/stroke	Max. energy absorption/hour
R412010294	M6x0,5	5 mm	1 Nm	3000 Nm
R412010295	M6x0,5	5 mm	1 Nm	3000 Nm
R412010296	M8x1	5 mm	1,5 Nm	4000 Nm
R412010297	M8x1	5 mm	1,5 Nm	4000 Nm
R412010298	M10x1	8 mm	10 Nm	24000 Nm
R412010299	M10x1	8 mm	10 Nm	24000 Nm
R412010300	M10x1	8 mm	10 Nm	24000 Nm
R412010301	M12x1	10 mm	14 Nm	30000 Nm
R412010302	M12x1	10 mm	14 Nm	30000 Nm
R412010303	M12x1	10 mm	14 Nm	30000 Nm

Part No.	Effective mass me	Return spring force	sealing for piston rod
	min./max.	min./max.	
R412010294	0,8 ... 2,8 kg	2 ... 5 N	Polyurethane
R412010295	1,5 ... 4 kg	2 ... 5 N	Polyurethane
R412010296	0,5 ... 4 kg	2 ... 5 N	Acrylonitrile butadiene rubber
R412010297	0,8 ... 6 kg	2 ... 5 N	Acrylonitrile butadiene rubber
R412010298	1,3 ... 5,3 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber
R412010299	4,3 ... 20 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber
R412010300	16,5 ... 47 kg	3,6 ... 8 N	Acrylonitrile butadiene rubber

Part No.	Effective mass m_e	Return spring force	sealing for piston rod
	min./max.	min./max.	
R412010301	0,5 ... 1,8 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber
R412010302	1,5 ... 7,7 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber
R412010303	5 ... 57 kg	3,5 ... 7 N	Acrylonitrile butadiene rubber

Part No.	Stop	Weight	Fig.
R412010294	Polyoxymethylene	0,02 kg	Fig. 1
R412010295	Polyoxymethylene	0,02 kg	Fig. 1
R412010296	Polyurethane, Steel	0,03 kg	Fig. 2
R412010297	Polyurethane, Steel	0,03 kg	Fig. 2
R412010298	Polyurethane, Steel	0,05 kg	Fig. 3
R412010299	Polyurethane, Steel	0,05 kg	Fig. 3
R412010300	Polyurethane, Steel	0,05 kg	Fig. 3
R412010301	Polyurethane, Steel	0,06 kg	Fig. 4
R412010302	Polyurethane, Steel	0,06 kg	Fig. 4
R412010303	Polyurethane, Steel	0,06 kg	Fig. 4

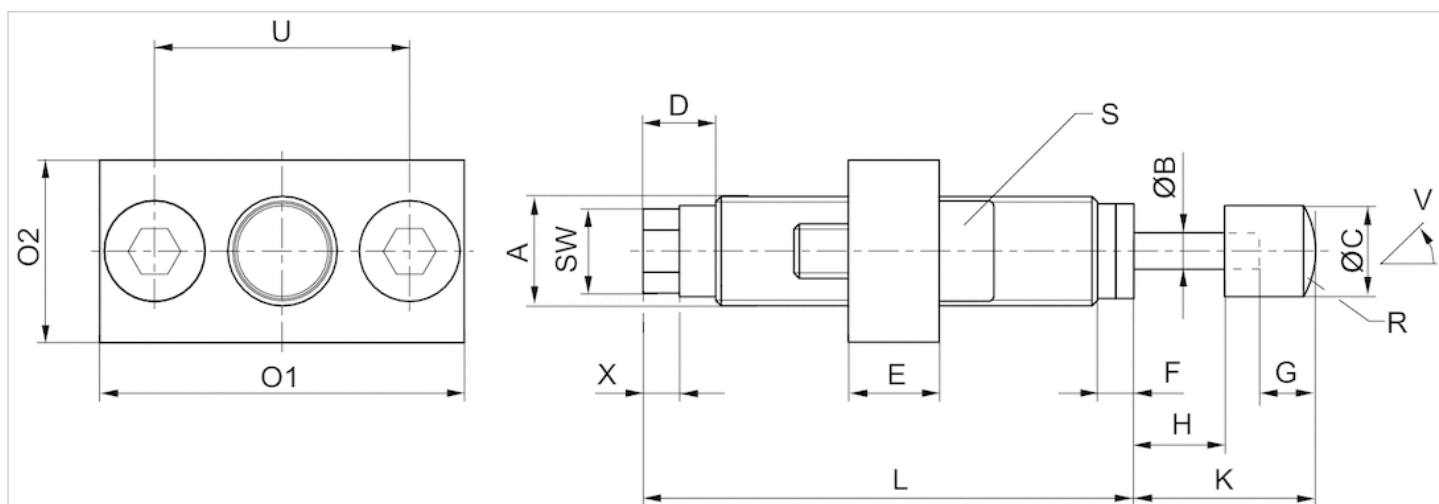
Technical information

Material

Cylinder tube	Steel, salt bath nitrocarburized
Piston rod	Stainless steel, ground and hardened
sealing for piston rod	Polyurethane, Acrylonitrile butadiene rubber
Clamping flange	Steel, salt bath nitrocarburized
Mounting ring	Polyoxymethylene, Polyurethane, Steel

Dimensions

Fig. 1



A = mounting thread

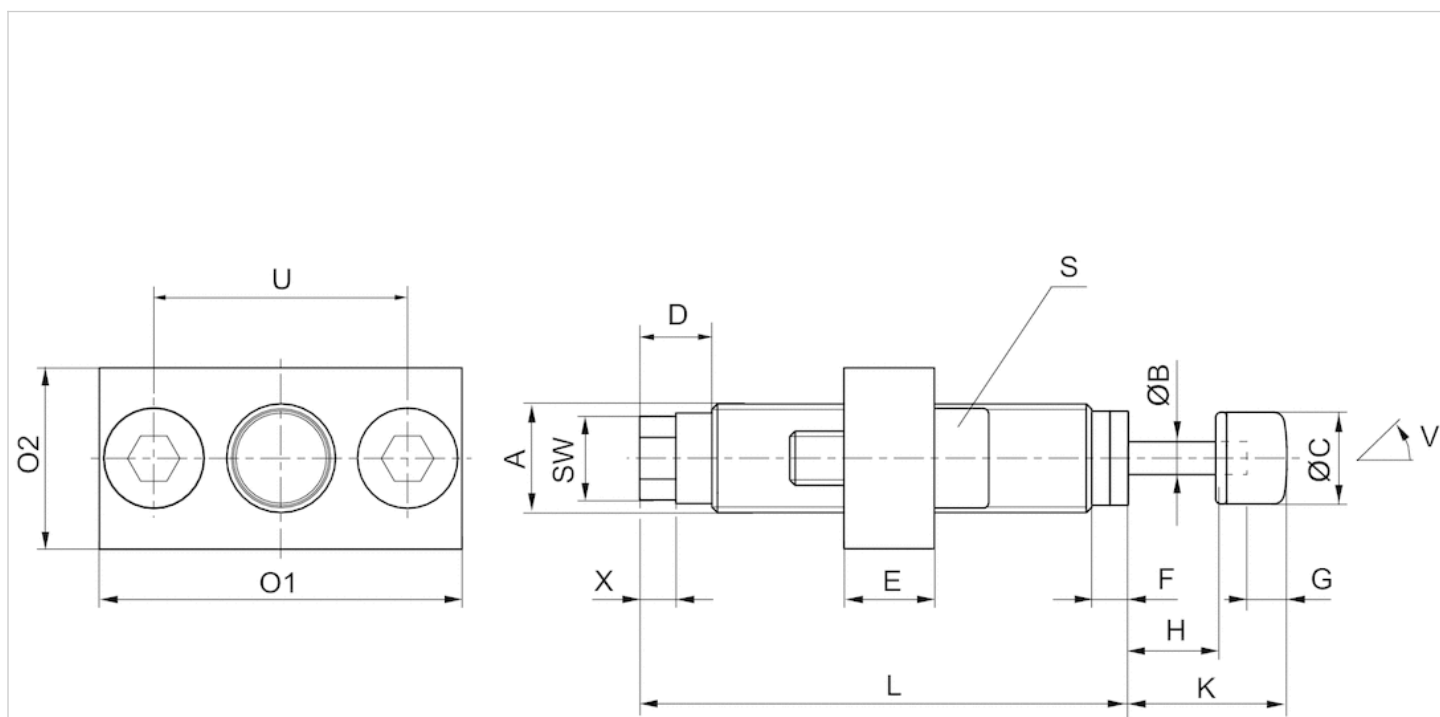
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	O1	O2	R	S	SW	U	W [°]	X
R412010294	SA1-MC	M6x0,5	2	5	4	5	2	2	5	10	27	20	10	5	M3x10	4	14	2	2
R412010295	SA1-MC	M6x0,5	2	5	4	5	2	2	5	10	27	20	10	5	M3x10	4	14	2	2

Dimensions

Fig. 2



A = mounting thread

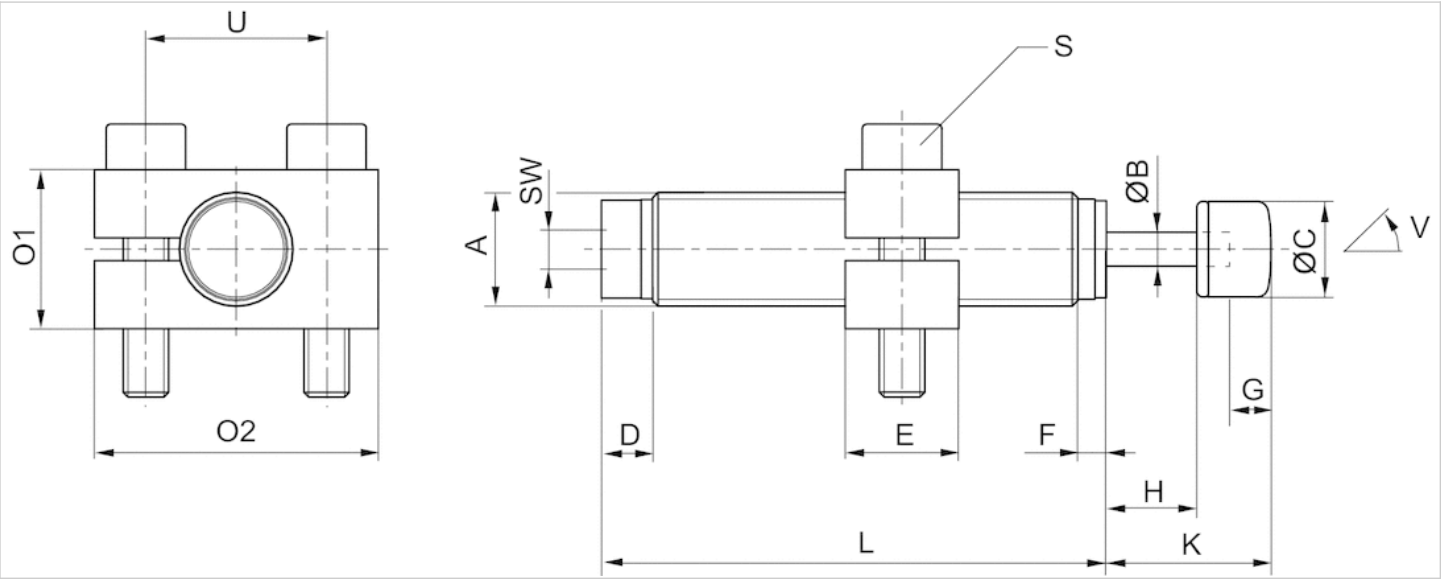
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	O1	O2	S	SW	U	W [°]	X
R412010296	SA1-MC	M8x1	2.3	6.5	6	6	2.5	3	5	11.5	30	25	15	M4x12	5.5	18	3	3
R412010297	SA1-MC	M8x1	2.3	6.5	6	6	2.5	5	5	11.5	30	25	15	M4x12	5.5	18	3	3

Dimensions

Fig. 3



A = mounting thread
V = tilt

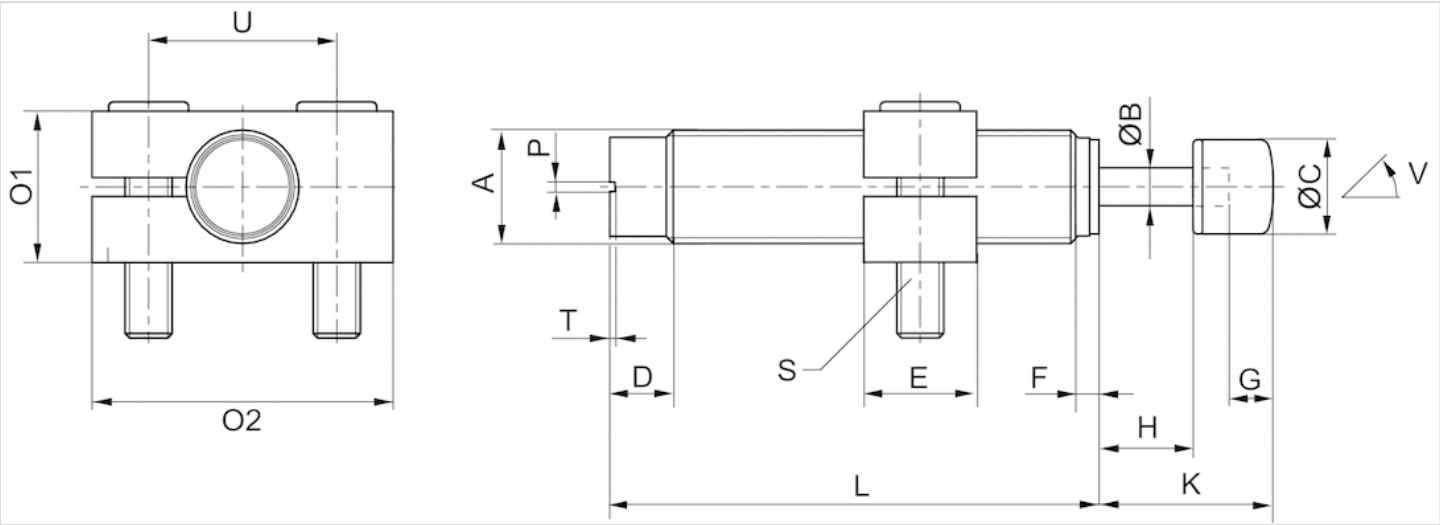
Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	O1	O2	S	SW	U
R412010298	SA1-MC	M10x1	3	8.4	4.5	10	2.5	3	8	14.5	44.5	25	14	M4x20	3	16
R412010299	SA1-MC	M10x1	3	8.4	4.5	10	2.5	3	8	14.5	44.5	25	14	M4x20	3	16
R412010300	SA1-MC	M10x1	3	8.4	4.5	10	2.5	3	8	14.5	44.5	25	14	M4x20	3	16

W [°]	
	2
	2
	2

Dimensions

Fig. 4



A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	O1	O2	P	S	T	U
R412010301	SA1-MC	M12x1	4	10	6	12	2.5	4	10	18.5	52	32	16	1	M5x20	0.6	20
R412010302	SA1-MC	M12x1	4	10	6	12	2.5	4	10	18.5	52	32	16	1	M5x20	0.6	20
R412010303	SA1-MC	M12x1	4	10	6	12	2.5	4	10	18.5	52	32	16	1	M5x20	0.6	20

W [°]	
2	
2	
2	

Industrial shock absorber, Series SA1-MC

- Cushioning self-compensating
- Mounting Clamping flange
- Mounting thread M14x1,5, M20x1,5, M25x1,5
- SA1-MC



Ambient temperature min./max.

Medium

Mounting

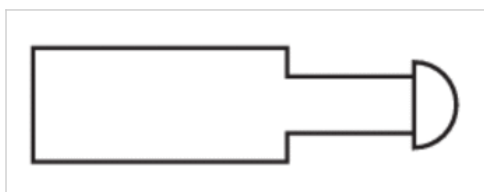
Weight

-20 ... 80 °C

Oil

Clamping flange

See table below



Technical data

Part No.	Mounting thread	Stroke	Max. energy absorption/stroke	Max. energy absorption/hour
R412010313	M14x1,5	14 mm	30 Nm	50000 Nm
R412010314	M14x1,5	14 mm	30 Nm	50000 Nm
R412010315	M14x1,5	14 mm	30 Nm	50000 Nm
R412010316	M20x1,5	13 mm	65 Nm	52000 Nm
R412010317	M20x1,5	13 mm	65 Nm	52000 Nm
R412010319	M25x1,5	25 mm	220 Nm	105600 Nm
R412010318	M20x1,5	13 mm	65 Nm	52000 Nm
R412010320	M25x1,5	25 mm	220 Nm	105600 Nm
R412010321	M25x1,5	25 mm	220 Nm	105600 Nm

Part No.	Effective mass me	Return spring force	Weight	Fig.
	min./max.	min./max.		
R412010313	3,5 ... 17 kg	13 ... 23 N	0,07 kg	Fig. 1
R412010314	9,9 ... 76 kg	13 ... 23 N	0,07 kg	Fig. 1
R412010315	62 ... 252 kg	13 ... 23 N	0,07 kg	Fig. 1
R412010316	7,5 ... 36 kg	12 ... 23 N	0,22 kg	Fig. 2
R412010317	20 ... 160 kg	12 ... 23 N	0,22 kg	Fig. 2
R412010319	24 ... 120 kg	15 ... 31 N	0,37 kg	Fig. 2
R412010318	130 ... 610 kg	12 ... 23 N	0,22 kg	Fig. 2
R412010320	440 ... 2050 kg	15 ... 31 N	0,37 kg	Fig. 2

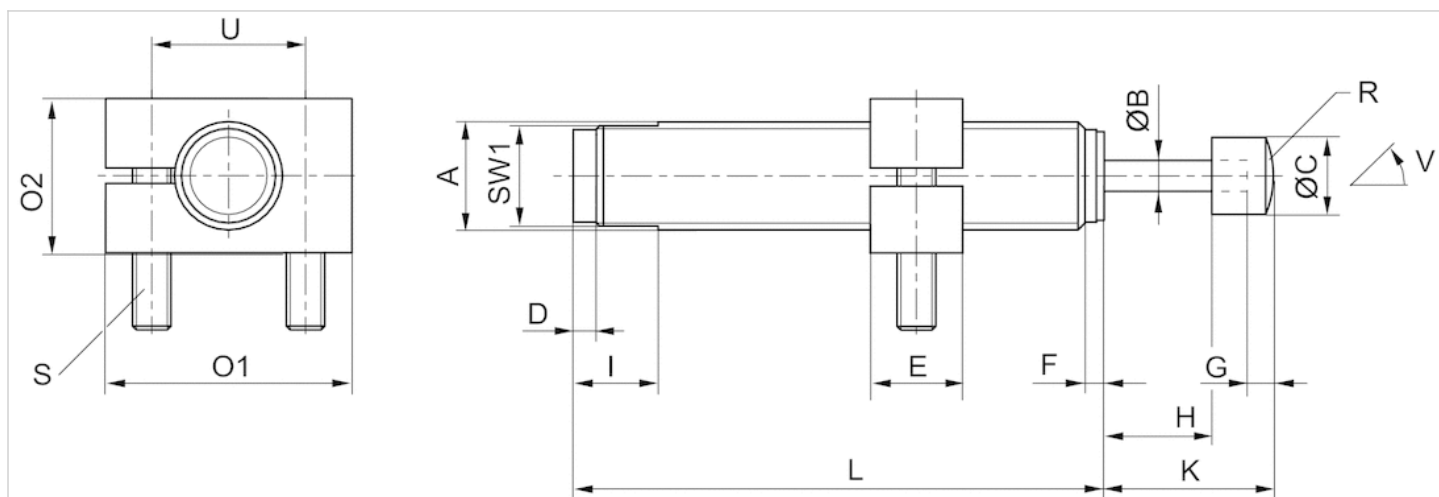
Part No.	Effective mass m_e	Return spring force	Weight	Fig.
	min./max.	min./max.		
R412010321	1760 ... 10800 kg	15 ... 31 N	0,37 kg	Fig. 2

Technical information

Material	
Cylinder tube	Steel, salt bath nitrocarburized
Piston rod	Stainless steel, ground and hardened
Clamping flange	Steel, salt bath nitrocarburized
Mounting ring	Polyoxymethylene
Scraper	Polyurethane

Dimensions

Fig. 1



A = mounting thread

V = tilt

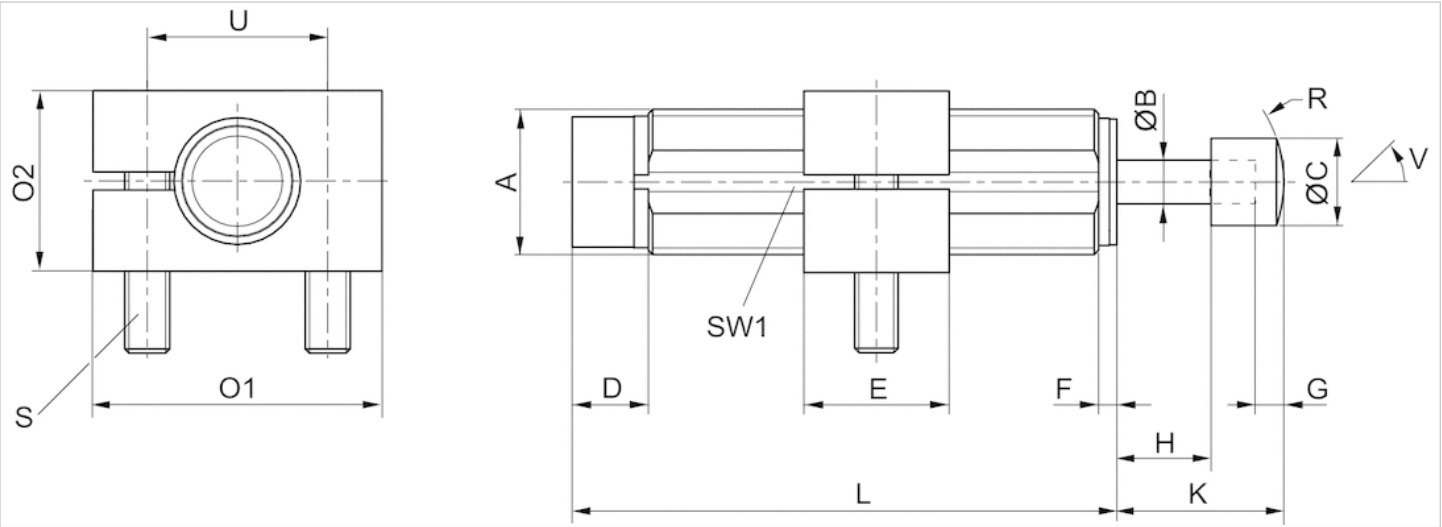
Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	I	K	L	O1	O2	R	S	SW1	U
R412010313	SA1-MC	M14x1,5	4	10	3	12	2.5	3.5	14	11	22	69	32	20	13	M5x25	13	20
R412010314	SA1-MC	M14x1,5	4	10	3	12	2.5	3.5	14	11	22	69	32	20	13	M5x25	13	20
R412010315	SA1-MC	M14x1,5	4	10	3	12	2.5	3.5	14	11	22	69	32	20	13	M2x25	13	20

W [°]
4
4
4

Dimensions

Fig. 2



A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	ØC	D	E	F	G	H	K	L	O1	O2	R	S	SW1	U
R412010316	SA1-MC	M20x1,5	6	12	10.5	20	2.5	4	13	23	75	40	25	18.5	M6x30	18	28
R412010317	SA1-MC	M20x1,5	6	12	10.5	20	2.5	4	13	23	75	40	25	18.5	M6x30	18	28
R412010319	SA1-MC	M25x1,5	8	16	9.5	25	3.5	5	25	38	108	47	32	20	M6x40	23	34
R412010318	SA1-MC	M20x1,5	6	12	10.5	20	2.5	4	13	23	75	40	25	18.5	M6x30	18	28
R412010320	SA1-MC	M25x1,5	8	16	9.5	25	3.5	5	25	38	108	47	32	20	M6x40	23	34
R412010321	SA1-MC	M25x1,5	8	16	9.5	25	3.5	5	25	38	108	47	32	20	M6x40	23	34

W [°]
4
4
2
4
2
2

Industrial shock absorber, Series SA1-MC

- Cushioning self-compensating
- Mounting Lock nut
- Mounting thread M14x1,5, M20x1,5, M25x1,5
- SA1-MC



Ambient temperature min./max.

Medium

Mounting

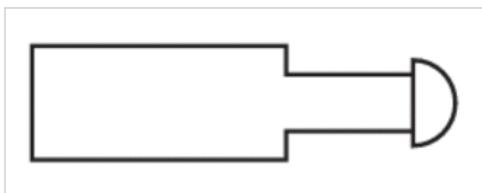
Weight

-20 ... 80 °C

Oil

Lock nut

See table below



Technical data

Part No.	Mounting thread	Stroke	Max. energy absorption/stroke	Max. energy absorption/hour
R412010304	M14x1,5	14 mm	30 Nm	50000 Nm
R412010305	M14x1,5	14 mm	30 Nm	50000 Nm
R412010306	M14x1,5	14 mm	30 Nm	50000 Nm
R412010307	M20x1,5	13 mm	65 Nm	52000 Nm
R412010308	M20x1,5	13 mm	65 Nm	52000 Nm
R412010309	M20x1,5	13 mm	65 Nm	52000 Nm
R412010310	M25x1,5	25 mm	220 Nm	105600 Nm
R412010311	M25x1,5	25 mm	220 Nm	105600 Nm
R412010312	M25x1,5	25 mm	220 Nm	105600 Nm

Part No.	Effective mass me	Return spring force
	min./max.	min./max.
R412010304	3,5 ... 17 kg	13 ... 23 N
R412010305	9,9 ... 76 kg	13 ... 23 N
R412010306	62 ... 252 kg	13 ... 23 N
R412010307	7,5 ... 36 kg	12 ... 23 N
R412010308	20 ... 160 kg	12 ... 23 N
R412010309	130 ... 610 kg	12 ... 23 N
R412010310	24 ... 120 kg	15 ... 31 N
R412010311	440 ... 2050 kg	15 ... 31 N

Part No.	Effective mass me	Return spring force
	min./max.	min./max.
R412010312	1760 ... 10800 kg	15 ... 31 N

Part No.	Piston rod	sealing for piston rod
R412010304	Stainless steel, ground and hardened	-
R412010305	Stainless steel, hardened	Nitrile butadiene rubber
R412010306	Stainless steel, ground and hardened	-
R412010307	Stainless steel, ground and hardened	-
R412010308	Stainless steel, ground and hardened	-
R412010309	Stainless steel, ground and hardened	-
R412010310	Stainless steel, ground and hardened	-
R412010311	Stainless steel, ground and hardened	-
R412010312	Stainless steel, ground and hardened	-

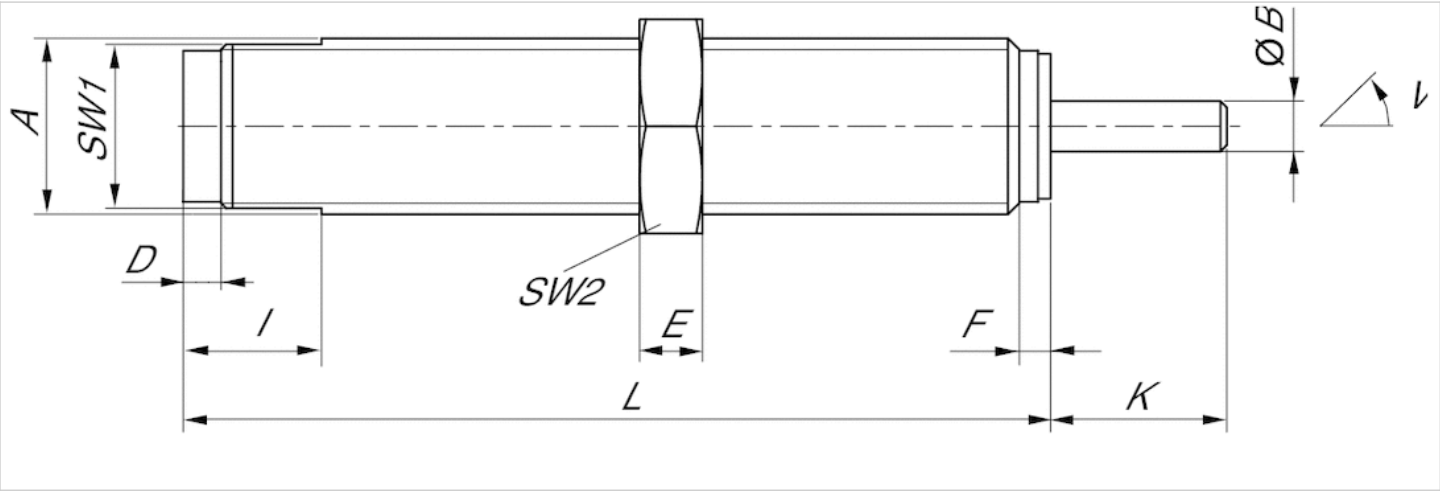
Part No.	Lock nut	Weight	Fig.
R412010304	Steel, salt bath nitrocarburized	0,05 kg	Fig. 1
R412010305	-	0,05 kg	Fig. 1
R412010306	Steel, salt bath nitrocarburized	0,05 kg	Fig. 1
R412010307	Steel, salt bath nitrocarburized	0,15 kg	Fig. 2
R412010308	Steel, salt bath nitrocarburized	0,15 kg	Fig. 2
R412010309	Steel, salt bath nitrocarburized	0,15 kg	Fig. 2
R412010310	Steel, salt bath nitrocarburized	0,29 kg	Fig. 2
R412010311	Steel, salt bath nitrocarburized	0,29 kg	Fig. 2
R412010312	Steel, salt bath nitrocarburized	0,29 kg	Fig. 2

Technical information

Material	
Cylinder tube	Steel, salt bath nitrocarburized
Piston rod	Stainless steel, ground and hardened, Stainless steel, hardened
sealing for piston rod	Nitrile butadiene rubber
Lock nut	Steel, salt bath nitrocarburized
Scraper	Polyurethane

Dimensions

Fig. 1



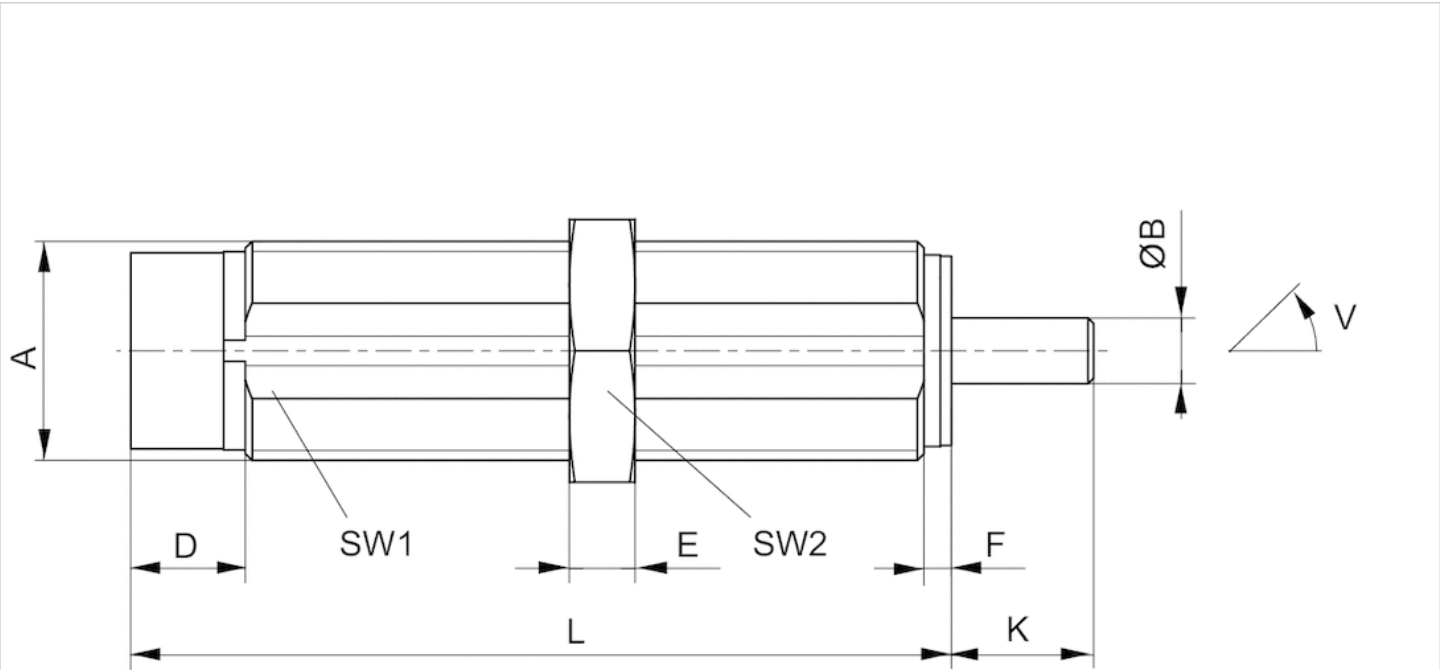
A = mounting thread
V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	D	E	F	I	K	L	SW1	SW2	W [°]
R412010304	SA1-MC	M14x1,5	4	3	5	2.5	11	14	69	13	17	4
R412010305	SA1-MC	M14x1,5	4	3	5	2.5	11	14	69	13	17	4
R412010306	SA1-MC	M14x1,5	4	3	5	2.5	11	14	69	13	17	4

Dimensions

Fig. 2



A = mounting thread

V = tilt

Dimensions

Part No.	Type	Mounting thread	ØB	D	E	F	K	L	SW1	SW2	W [°]
R412010307	SA1-MC	M20x1,5	6	10.5	6	2.5	13	75	18	24	4
R412010308	SA1-MC	M20x1,5	6	10.5	6	2.5	13	75	18	24	4
R412010309	SA1-MC	M20x1,5	6	10.5	6	2.5	13	75	18	24	4
R412010310	SA1-MC	M25x1,5	8	9.5	8	3.5	25	108	23	30	2
R412010311	SA1-MC	M25x1,5	8	9.5	8	3.5	25	108	23	30	2
R412010312	SA1-MC	M25x1,5	8	9.5	8	3.5	25	108	23	30	2

Lock nut

- for series SA1-MC



Weight

See table below

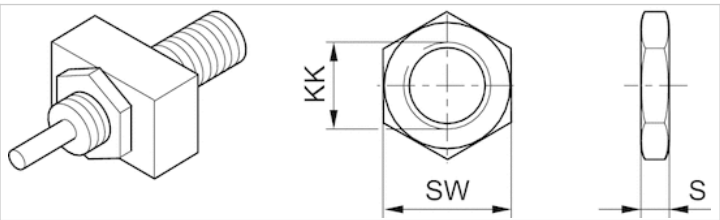
Technical data

Part No.	Suitable piston rod thread	Weight
R412010359	M6x0,5	0,001 kg
R412010360	M8x1	0,002 kg
R412010361	M10x1	0,002 kg
R412010362	M12x1	0,002 kg
R412010363	M14x1,5	0,005 kg
R412010364	M20x1,5	0,011 kg
R412010365	M25x1,5	0,023 kg

Technical information

Material	
	Steel
	salt bath nitrocarburized

Dimensions



Dimensions

Part No.	KK	For series	S	SW
R412010359	M6x0,5	SA1-MC	3	8
R412010360	M8x1	SA1-MC	3	11
R412010361	M10x1	SA1-MC	3	13
R412010362	M12x1	SA1-MC	4	14
R412010363	M14x1,5	SA1-MC	5	17
R412010364	M20x1,5	SA1-MC	6	24
R412010365	M25x1,5	SA1-MC	8	30

Groove nut

- for series SA1-MA



Weight

See table below

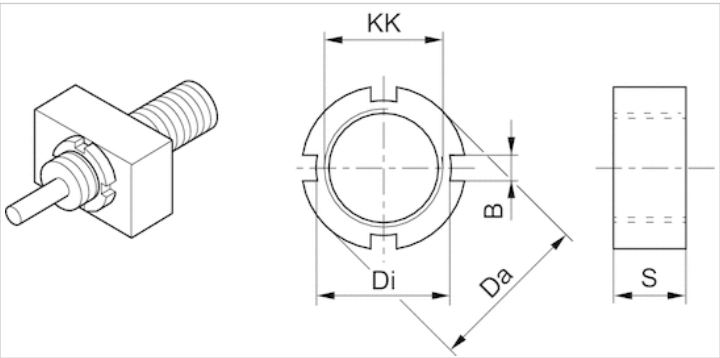
Technical data

Part No.	Suitable piston rod thread	Weight
R412010331	M33x1,5	0,02 kg
R412010332	M64x2	0,1 kg

Technical information

Material	
	Steel
	bronzed

Dimensions



Dimensions

Part No.	For series	Da	Di	B	S
R412010331	SA1-MA	38	35	5	6.5
R412010332	SA1-MA	74	71	10	10

Flange mounting



Weight

See table below

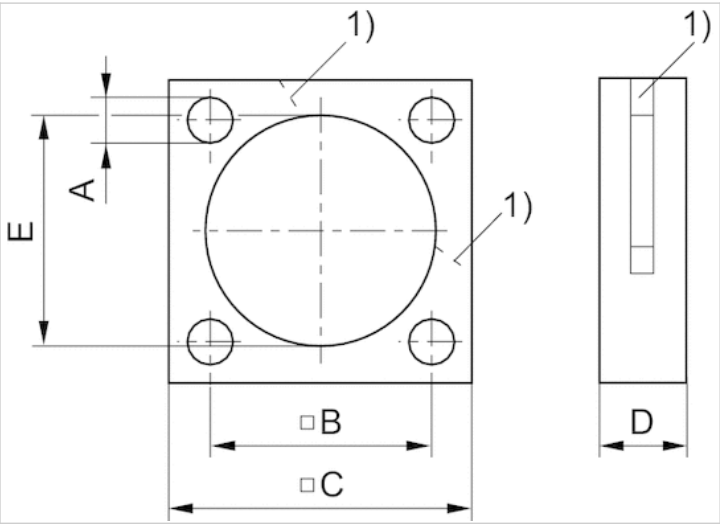
Technical data

Part No.	Scope of delivery	Weight
R412010333	1 piece	0,1 kg
R412010334	1 piece	0,4 kg

Technical information

Material	
Material	Steel
	bronzed

Dimensions



1) Clamping slot

Dimensions

Part No.	For series	A	B	C	D	E
R412010333	SA1-MC	6.6	32	45	12	M33x1,5
R412010334	SA1-MC	11	58	80	16	M64x2

Clamping flange



Weight

See table below

Technical data

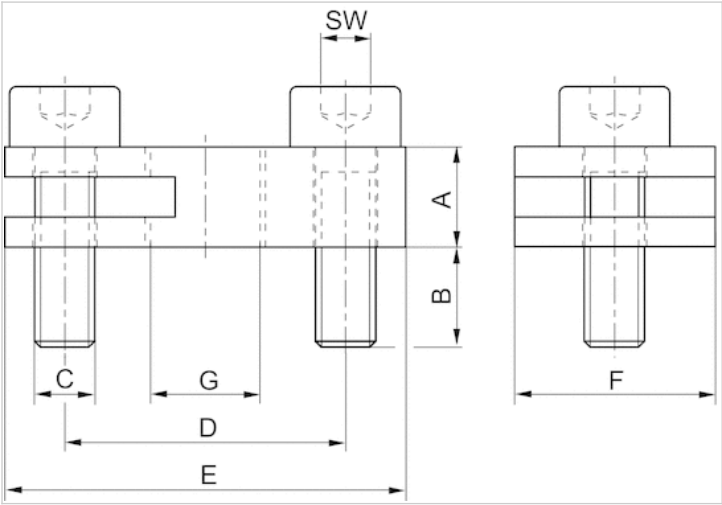
Part No.	Scope of delivery	Weight
R412010341	1 piece	0,01 kg
R412010342	1 piece	0,02 kg

Scope of delivery: clamping flange and 2 screws ISO 4762

Technical information

Material	
Clamping flange	Steel
	salt bath nitrocarburized
Screws	Steel
	galvanized

Dimensions



Dimensions

Part No.	A	B	C	D	E	F	G	SW	Clamping flange	Surface
R412010341	5	5	M3x10	14	20	10	M6x0,5	2,5	Steel	salt bath nitrocarburized
R412010342	6	6	M4x12	18	25	15	M8x1	3	Steel	salt bath nitrocarburized

Screws	Surface
Steel	galvanized
Steel	galvanized

Clamping flange



Weight

See table below

Technical data

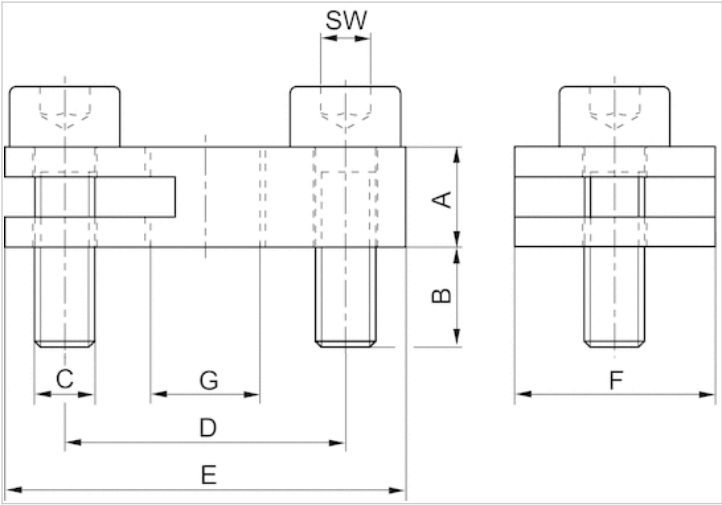
Part No.	Scope of delivery	Weight
R412010343	1 piece	0,025 kg
R412010344	1 piece	0,04 kg
R412010345	1 piece	0,05 kg
R412010346	1 piece	0,12 kg
R412010347	1 piece	0,21 kg

Scope of delivery: clamping flange and 2 screws ISO 4762

Technical information

Material	
Clamping flange	Steel
	salt bath nitrocarburized
Screws	Steel
	galvanized

Dimensions



Dimensions

Part No.	A	B	C	D	E	F	G	H	SW	Clamping flange	Surface
R412010343	14	6	M4x20	16	25	10	M10x1	2	3	Steel	salt bath nitrocarburized
R412010344	16	8	M5x20	20	32	12	M12x1	2	4	Steel	salt bath nitrocarburized
R412010345	20	10	M5x25	20	32	12	M14x1,5	2	4	Steel	salt bath nitrocarburized
R412010346	25	11	M6x30	28	40	20	M20x1,5	2	5	Steel	salt bath nitrocarburized
R412010347	32	14	M6x40	34	47	25	M25x1,5	2	5	Steel	salt bath nitrocarburized

Screws	Surface
Steel	galvanized
Steel	galvanized
Steel	galvanized
Steel	galvanized
Steel	galvanized

Clamping flange



Weight

See table below

Technical data

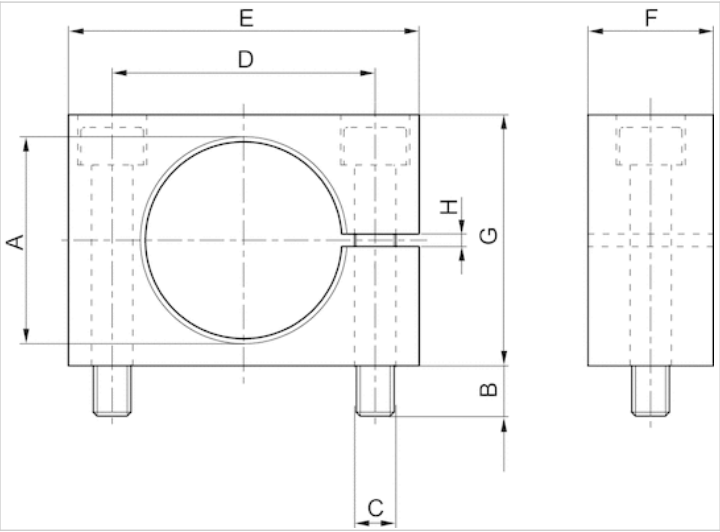
Part No.	Scope of delivery	Weight
R412010348	1 piece	0,45 kg
R412010349	1 piece	1,9 kg

Scope of delivery: 1 assembly consisting of 2 clamping flanges and 4 screws ISO 4762, Observe the catalog page for the shock absorber for positioning the clamping flanges.

Technical information

Material	
Clamping flange	Steel
	salt bath nitrocarburized
Screws	Steel
	galvanized

Dimensions



Dimensions

Part No.	A	B	C	D	E	F	G	H	Clamping flange	Surface
R412010348	M33x1,5	8	M6x40	42	56	20	40	2	Steel	salt bath nitrocarburized
R412010349	M64x2	12	M10x80	78	100	25	80	2	Steel	salt bath nitrocarburized

Screws	Surface
Steel	galvanized
Steel	galvanized

Stop head

- for series SA1-MC



Weight

See table below

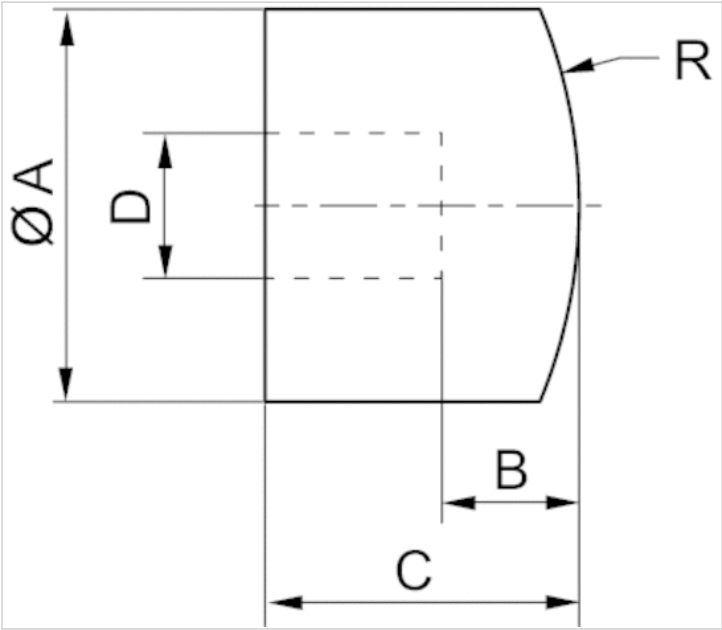
Technical data

Part No.	for series	Scope of delivery	Weight
R412010356	SA1-MC	5 piece	0,001 kg
R412010357	SA1-MC	5 piece	0,001 kg
R412010358	SA1-MC	5 piece	0,003 kg

Technical information

Material	
Housing	Polyoxymethylene

Dimensions



Dimensions

Part No.	ØA	B	C	D 1)	R
R412010356	10	3.5	8	4	13
R412010357	12	4	10	6	18.5
R412010358	16	5	13	8	20

1) Rod diameter

stop sleeve

- for series SA1-MC



Weight

See table below

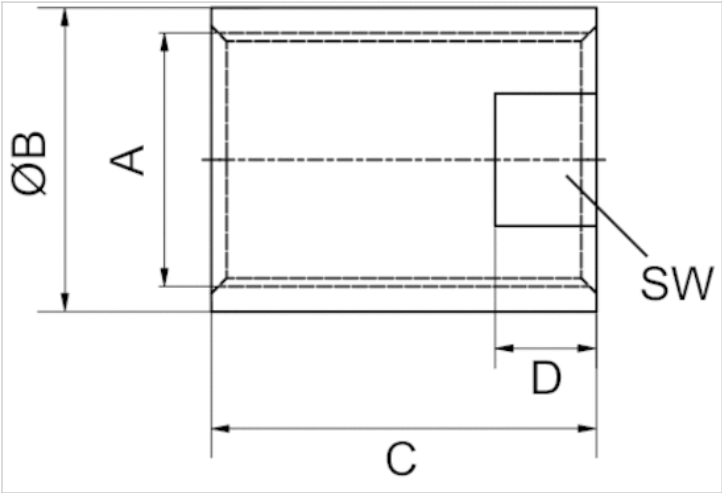
Technical data

Part No.	for series	Scope of delivery	Weight
R412010335	SA1-MC	2 piece	0,005 kg
R412010336	SA1-MC	2 piece	0,01 kg
R412010337	SA1-MC	2 piece	0,02 kg
R412010338	SA1-MC	2 piece	0,02 kg
R412010339	SA1-MC	2 piece	0,06 kg
R412010340	SA1-MC	2 piece	0,14 kg

Technical information

Material	
Housing	Steel, salt bath nitrocarburized

Dimensions



Dimensions

Part No.	A	$\varnothing B$	C	D	SW
R412010335	M8x1	11	12	–	–
R412010336	M10x1	14	15	–	–
R412010337	M12x1	16	20	–	–
R412010338	M14x1,5	18	20	6	15
R412010339	M20x1,5	25	35	8	22
R412010340	M25x1,5	30	38	10	30

Side load adapter

- for series SA1-MC



Weight

See table below

Technical data

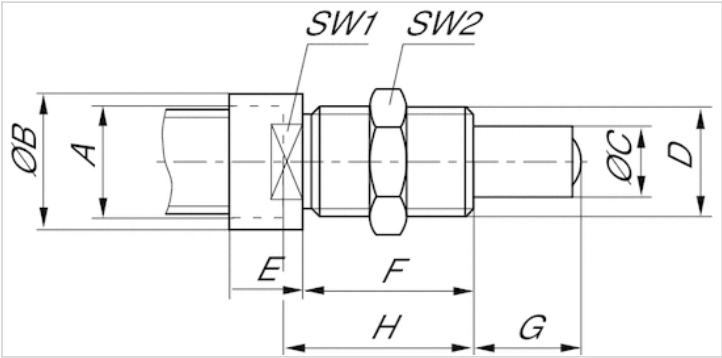
Part No.	for series	External Ø	Scope of delivery	Weight	
R412010350	SA1-MC	12 mm	1 piece	0,01 kg	-
R412010351	SA1-MC	14 mm	1 piece	0,02 kg	-
R412010352	SA1-MC	15 mm	1 piece	0,025 kg	-
R412010353	SA1-MC	18 mm	1 piece	0,04 kg	1)
R412010354	SA1-MC	24 mm	1 piece	0,08 kg	1)
R412010355	SA1-MC	30 mm	1 piece	0,2 kg	1)

1) Scope of delivery: side load adapter and counter nut, Use only with SA1-MC series without stop head M14x15 - M25x1.5

Technical information

Material	
Piston	Stainless steel
Surface	bronzed
Stop sleeve	Steel
Nut	Steel
Surface	salt bath nitrocarburized

Dimensions



Dimensions

Part No.	A	ØB	ØC	D	E	F	G	H	SW1	SW2
R412010350	M8x1	12	4	M8x1	6	10	5	13	10	11
R412010351	M10x1	14	6	M10x1	7	12	8	15	13	13
R412010352	M12x1	15	7	M12x1	7	18	10	21	14	14
R412010353	M14x1,5	18	8	M14x1,5	8	20	14	24	16	17
R412010354	M20x1,5	24	12	M20x1,5	9	20	13	25	22	24
R412010355	M25x1,5	30	16	M25x1,5	13	38	25	41	27	30