

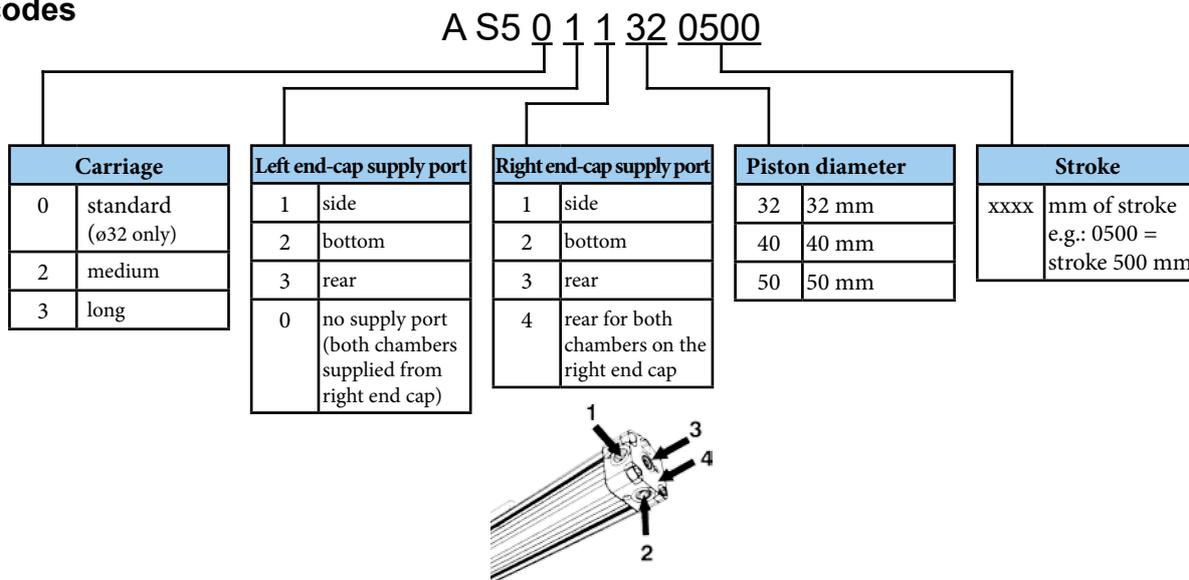
The rodless cylinders of the S5 series are particularly useful where there is no space for a standard cylinder. The piston rod does not extend from the cylinder. Thanks to their maximum stroke of up to 6 meters, they can also be used in applications where the use of a conventional cylinder would be impossible. This series uses the proven two-strip principle. The S5 series features technopolymer sliding guides on steel guide rods. The carriage can be equipped with a locking unit as an accessory.

Working pressure	0,6 MPa
Min. pressure	0,3 MPa
Max. pressure	1,0 MPa
Temp. range	-20°C to +80°C
Working medium	modified compressed air
Carriage speed	min. 20 mm.s ⁻¹ max. 1,5 m.s ⁻¹

Piston diameter [mm]	32	40	50
Force at 0,6 MPa [N]	420	640	1050
Connection	G1/4"	G3/8"	G3/8"
Length of adjustable cushioning [mm]	32,5	41,5	52
Max. stroke [mm]	6000	6000	6000
Stroke tolerance [mm]	+3,2	+3,2	+3,2

Piston diameter [mm]		32	40	50
Weight base - 0 mm of stroke [kg]	standard	2,78	-	-
	medium	3,27	6,09	10,03
	long	4,65	8,60	14,04
100 mm of stroke [kg]		0,495	0,920	1,280

Order codes



Construction / materials

- caps: ø16; zamak ø25-50: die-cast aluminium
- tube: anodized aluminium
- piston: aluminium
- piston guide slide: acetal resin
- guide: technopolymer slide, steel guide rods
- sealings: NBR

For long-term and trouble-free operation, we recommend:

- 1) speed maximum 1 m.s⁻¹
- 2) use a hydraulic shock absorber if the efficiency of the internal cushioning approaches the limit value
- 3) if the cylinder is used vertically, the cushioning capacity is reduced by 40%
- 4) maintain a correct and constant lubrication

The pneumatic sealing is achieved through an axial elastomer stripseal reinforced with Kevlar. This system guarantees dimensional stability even with high speeds. The external protection seal consists of a thermoplastic stripseal reinforced with Kevlar.



Permissible static load and stress

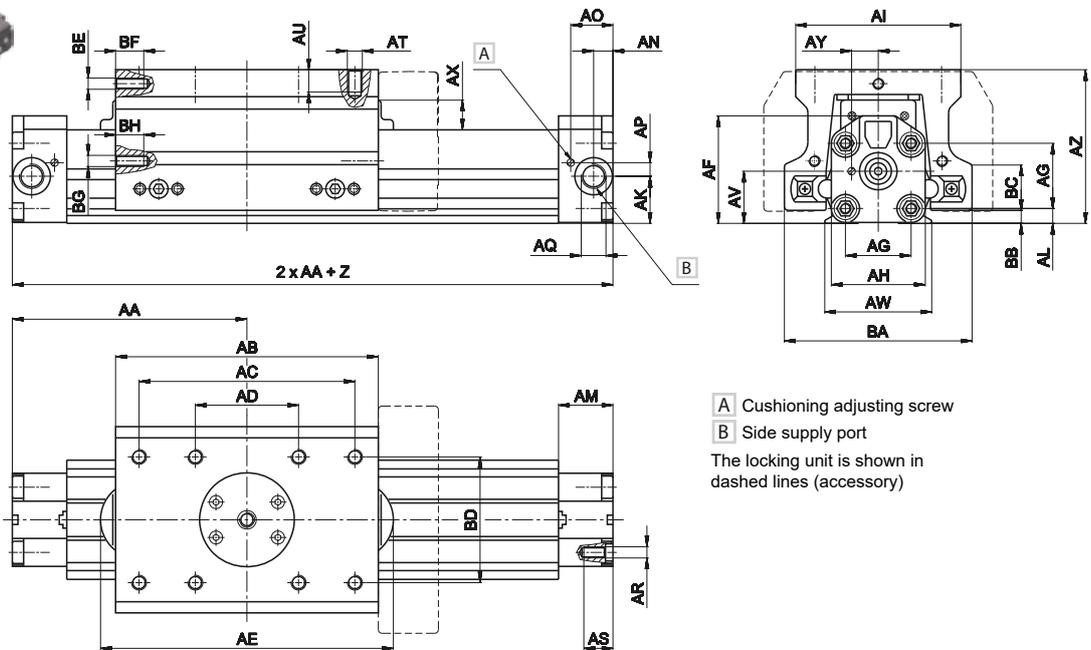
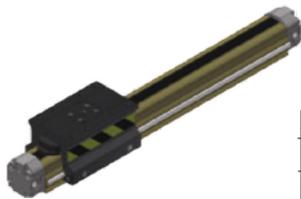
Cylinder force F	Static load			Static moment		
	P1	P2	P3	M1	M2	M3

∅	F [N] at 0,6 MPa	P1 [N]	P2 [N]	P3 [N]	Standard carriage [Nm]			Medium carriage [Nm]			Long carriage [Nm]		
					M1	M2	M3	M1	M2	M3	M1	M2	M3
32	420	400	400	400	20	9	27	30	12	40	55	18	75
40	640	600	600	600	-	-	-	60	30	80	110	45	150
50	1050	800	800	800	-	-	-	85	50	110	150	75	210

i A moment is the product of the load (N) and the arm (m), i.e. the distance between the centre of gravity of the load and the longitudinal axis of the piston. Please note that in dynamic conditions, the load must be reduced due to effects associated with the speed. Calculation of permissible dynamic stress and verification of internal damping efficiency can be found on page 1-47.

Dimensions

Standard carriage - 8 fixing holes

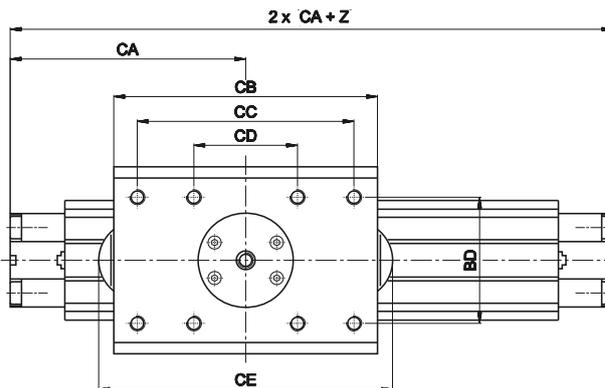
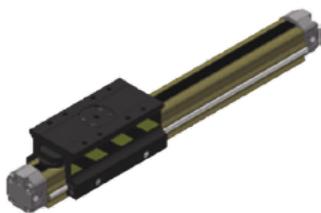


Z = stroke

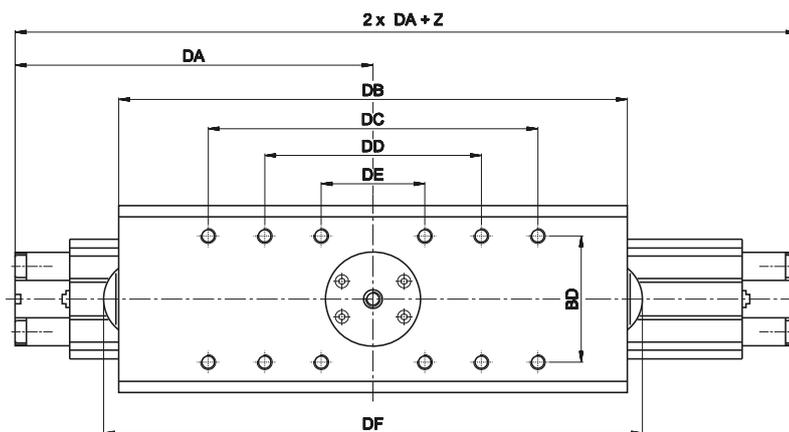
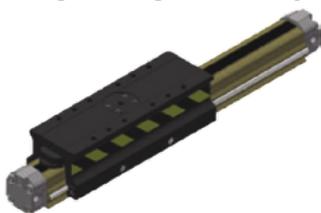
∅	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK	AL	AM	AN	AO	AP	AQ	AR
32	125	140	115	55	156	57	35	50	88	25,3	8	29	10,3	22,5	7,3	G1/4"	M6
40	-	-	-	-	-	-	44	64	90	33,8	11,8	33	12,5	26,5	8,7	G3/8"	M8
50	-	-	-	-	-	-	55	80	100	41,4	14,7	33	14,2	25,7	11,8	G3/8"	M10

∅	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH
32	15,5	M6	12	28	57	16	14,2	82,5	100	7	24,5	67,5	15	M6	M6	15
40	20	M8	14	37	67	19,5	16,5	106,6	135	7	39	65	15	M6	M6	15
50	20	M8	16	47,7	86	20,5	19,1	123,7	149	7,2	41	76,5	16	M8	M6	15

Medium carriage - 8 fixing holes



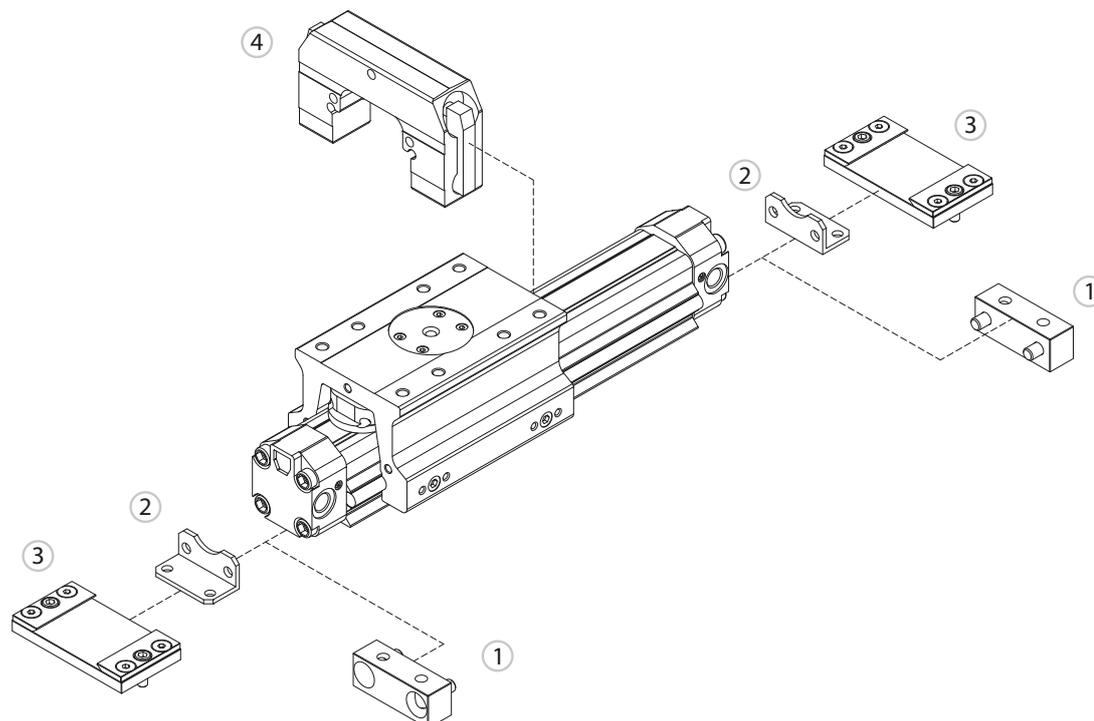
Long carriage - 12 fixing holes



Z = stroke

∅	BD	CA	CB	CC	CD	CE	DA	DB	DC	DD	DE	DF
32	67,5	142,5	175	115	55	191	190	270	175	115	55	286
40	65	169	205	180	75	215	225	317	280	185	75	327
50	76,5	205	258	190	80	271	277	398	320	200	80	411

Mounting accessories



Mounting accessories	... see page
1 Bracket for ∅40, 50	... 4-32
2 Bracket for ∅32	... 4-32
3 Fixing plate	... 4-30
4 Locking unit	

Examination and verification of internal cushioning

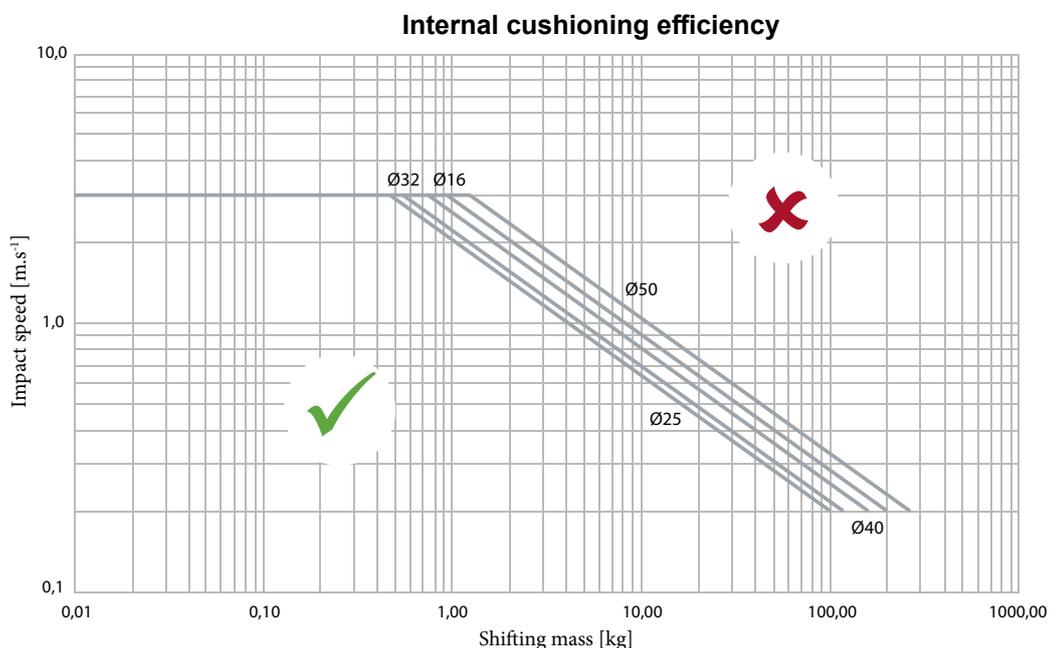
In a system with moving masses, as in the case of rodless cylinders, it is essential to control the dissipation of the system's kinetic energy as it is brought to a stop. First of all, it is necessary to establish and verify the most suitable method for cushioning the system, in order to avoid the moving mass (carriage with load) striking against the end-caps and compromising the life of the cylinder.

If the point corresponding to a given load and speed lies beneath the appropriate curve, the cushioning is able to absorb the kinetic energy of the system.

Vice versa if the point lies above the curve, the cushioning is not able to absorb the kinetic energy. In that case you must:

- a) decrease the load and maintain the translation speed
- b) decrease the speed and maintain the load
- c) select a cylinder with a bigger bore or with twin chambers
- d) use external hydraulic shock absorber (see page 9-1)

Attention: if the cylinder is mounted vertically, the damping efficiency is reduced by 40%.



Dynamic load capacity

Procedure for determining the permissible values for dynamic stress:

- determine the KRV coefficient according to the speed
- multiply the permissible values for static stress by the KRV coefficient and the value calculated in this way is the maximum permissible value for dynamic stress

