

TAN AIR

RODLESS CYLINDER ORDERING GUIDE



● STROKE TABLE

BORE SIZE (Φ)	Available stroke (mm)
ZS (ZF), (ZK) -18	
ZS (ZF), (ZK) -25	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
ZS (ZF), (ZK) -32	550, 600, 650, 700, 750, 800, 850, 900, 950, 1000
ZS (ZF), (ZK) -40	1050, 1100, 1150, 1200, 1250, 1300, 1350, 1400
ZS (ZF), (ZK) -50	1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800
ZS (ZF), (ZK) -63	1850, 1900, 1950, 2000

● SPECIFICATION

Bore size	Φ18	Φ25	Φ32	Φ40	Φ40	Φ63
Port size	M5x6	1/8"x8	1/8"x8	1/4"x12	1/4"x12	3/8"x12
Carrying force/6bars	140N	270N	440N	680N	1060N	1680N
Cushioning	15mm	18mm	24mm	34mm	40mm	49mm
Cushion	Adjustable					
Stroke	Variable up to 6000mm, option for higher than 6000mm					
Operation	Double acting					
Fluid	Filtered compressed air without lubricated, or slightly lubricated only.					
Operation pressure	2--8bars					
Max. pressure	8bars					
Lubrication	Free					
Tubing material	Anodized aluminum alloy					
Magnets	Built-in					
Working temperature	-20. c--80. c					
Weight of zs carriage	0.3kg	0.6kg	1.1kg	1.8kg	3.2kg	5.6kg
Weight of zk carriage	0.2	0.4	0.7	1.2	2.0	3.2
Weight of zf carriage	0.4		1.5	2.8	4.9	8.0
Weight of 1000mm stroke	1.5		4.8	6	7.4	10

● HOW TO ORDER

ZF	32	B	50	SR1
ZS: standard type ZF: Guiding type ZK: short type	Bore size 32: Φ32 40: Φ40 50: Φ50 63: Φ63	Stroke length see table		Blank No sensor SR1: 1 Sensor SPST type SR2: 2 Sensor SPST type SN1: 1 Sensor NPN type SN2: 2 Sensor NPN type SP1: 1 Sensor PNP type SP2: 2 Sensor PNP type

● ROD END JOINT TYPE

Sensor clamp code	Sensor code
0000-08060	AL-30R: 5-240VDC/AC (STANDARD) normal open
	AL-30P: 5-30VDC/AC PNP normal open
	AL-30N: 5-30VDC/AC NPN normal open

RODLESS CYLINDER TECHNICAL SPECIFICATIONS



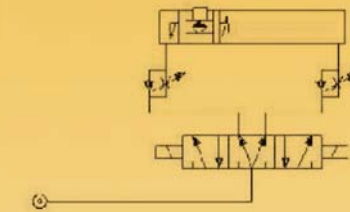
SHAKO	Order
ZS Standard type With identical basic length (0-stroke) like existing competitors' cylinders, i. e. the fitting length is exchangeable, so the cylinder is also exchangeable	*Standard type
ZF Guiding type Also with the same length as existing competitors' cylinders, but with an external adjustable slide guide, capable of handling high moments and forces in all directions possible. it contains externally on the cylinder tube V-guides, incorporated in them a guiding carriage to be moved sideways by side guides. The guiding carriage is attached sideways on the cylinder tube, i. s. so it will not be influenced by a possible tube slot extension, which is only non-descript with cylinders anyway, but it can moreover nearly be adjusted without space. As the V-guide are integrated in the cylinder tube, a costly mounting of additional guiding profiles can be avoided.	*Standard type
Zk short type Has a 0-stroke which is reduced by up to 42%, i. e. the basic length is partly even shorter than the length of a cylinder with piston rod. therefore the cylinder ZK can be applied in areas, which were technologically not possible before for rodless pneumatic cylinders.	*Standard type
Zff guiding type Especially suited for high loads and moments. through addition of second guiding carriage (can also be mounted at a later date) the already remarkable performance if the guiding cylinder ZF can be further increased by another 60%.	*Option
ZFK guiding type The short cylinder ZK can also be mounted with an additional guiding carriage, which means that the advantages of the ZK as mentioned above can be enlarged with a guiding element.	*Option
ZP parallel type Is used for application where higher forces and torques occur. by parallel mounting of the yokes the torque transferred to the mounting plate can be multiplied. it can also be used, where, with limited space, the action force of the cylinder has to be doubled or if there are long loads to be lifted.	*Option
ZG gripping type Has a parallel function, meaning that the opening and closing of the grippers work parallel to a rodless pneumatic cylinder and can be used for outside and inside gripping, as well as for gripping under an object and for gripping inside without any defined surface. opening and closing of slide and safety doors.	*Option
ZT tandem type Is equipped with two yokes placed in line, behind each other. through the tandem arrangement of the yokes and the eligible distance between the yokes, in longitudinal directions much higher torques can be transferred than with the traditional construction sizes.	*Option
ZD double action type Is a new pneumatic element, which is especially suitable to be built in where the height is restricted but nevertheless powerful stroke needed.	*Option

● ZFF, ZFK, ZP, ZG, and ZD are ordering on request type.

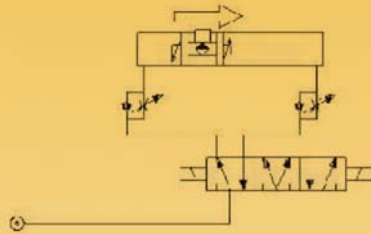
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RODLESS CYLINDER TECHNICAL SPECIFICATIONS

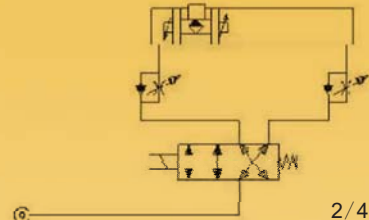
● CONTROLS



2/3 way valves



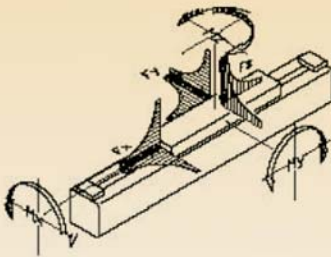
2/3 way valves



2/4 way valves

- Strike cylinder always with pressure on both sides, bleed until in movement direction.
- Speed regulation by exhaust restrictor (one-way flow restrictor) A control of the cylinder without flow restriction causes an enormous acceleration. the resulting kinetic energy can destroy the cylinder and the whole equipment.
- Slow run; at 6 bar reduced by flow restrictor up to 0.05m/sec operation speed up to 2m/sec depending on loads.

● LOADS



Achtung: $F = F_{zul} = \sqrt{F_x^2 + F_y^2 + F_z^2}$

● ZS Standard type

Piston	Vmax 0.35 (m/s)			F force admissible of			Moment/torques		
	Fx (N) action force of 6 bar	Fy (N)	Fz (N)	F force admissible of 0.75m/s	F force admissible of 1m/s	F force admissible of 1.5m/s	mx (nm) fy/fz	my (nm) fx/fz	Mz (nm) fx/fy
18	140	80	300	80	40	20	1	3	3
25	270	110	480	155	90	40	2	13	13
32	440	165	650	280	155	70	3.5	25	25
40	680	225	800	500	290	125	5.5	40	40
50	1060	325	1060	790	420	195	10	65	65
63	1680	435	1680	1500	850	370	16	100	100

● ZK Short type

Piston	Vmax 0.35 (m/s)			F force admissible of			Moment/torques		
	Fx (N) action force of 6 bar	Fy (N)	Fz (N)	F force admissible of 0.75m/s	F force admissible of 1m/s	F force admissible of 1.5m/s	mx (nm) fy/fz	my (nm) fx/fz	Mz (nm) fx/fy
18	140	40	300	80	40	20	1	3	3
25	270	55	230	90	90	25	0.7	2.7	2.7
32	440	70	320	200	110	45	1.0	5.0	5.0
40	680	100	400	420	240	110	2.0	8.5	8.5
50	1060	140	480	750	440	190	3.5	13.0	13.0
63	1680	180	580	1500	850	380	50	18.0	18.0

● ZF guiding type

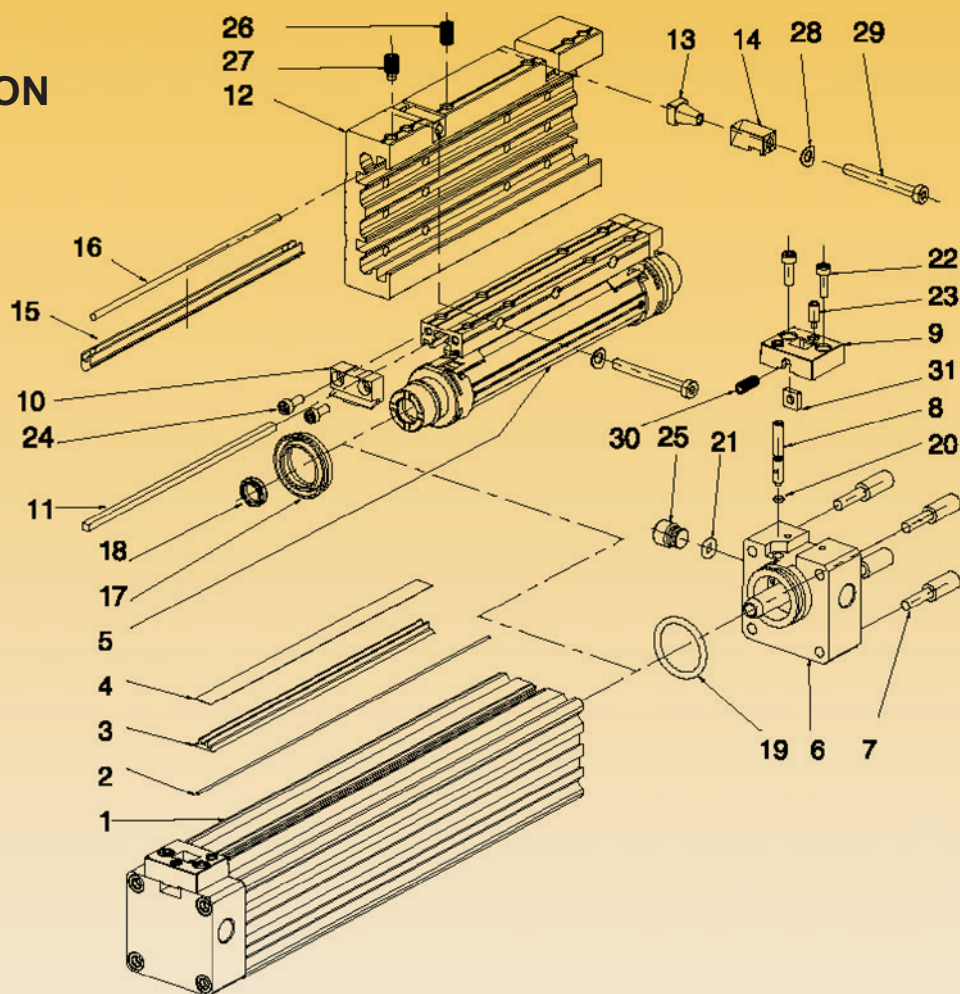
Piston	Vmax 0.35 (m/s)			F force admissible of			Moment/torques		
	Fx (N) action force of 6 bar	Fy (N)	Fz (N)	F force admissible of 0.75m/s	F force admissible of 1m/s	F force admissible of 1.5m/s	mx (nm) fy/fz	my (nm) fx/fz	Mz (nm) fx/fy
18	140	370	370	100	58	26	3.5	6	6
25	270	800	800	280	160	65	10	20	20
32	440	200	200	510	300	140	25	45	45
40	680	1600	1600	1000	550	250	40	75	75
50	1060	2100	2100	1500	850	380	80	150	150
63	1680	2800	2800	2500	1400	610	110	250	250

All data concerning forces and torques refer to a speed of $v < 0.35 \text{ m/s}$. Observation keeping the indicated values ensures maximum service life, minimum noise and optimum operating results. Higher speeds reduce the admissible forces.

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RODLESS CYLINDER TECHNICAL SPECIFICATIONS

● EXPLOSION



● MATERIAL LIST

POS.	Description	Material	POS.	Description	Material
1	Tube	al anodized	17	piston seal	pu
2	Round profiles	PU	18	cushion ring	NBR
3	Sealing strip	PA	19	O-Ring	NBR
4	Cover strip	stainless steel		O-Ring	NBR
5	Yoke	al anodized/POM	20	flat seat	NBR
6	Endcap	al anodized	21	countersunk screw	Zinc-plated steel
7	Special screw	zinc-plated steel	22	grub screw with pin	Zinc-plated steel
8	Cushioning pin	stainless steel	23	cylinder head screw	Zinc-plated steel
9	Strip cover	POM	24	plug screw	Zinc-plated steel
10	Head wiper	POM	25	grub screw	browned steel
11	Wiper	POM	26	grub screw with pin	browned steel
12	Carriage	al anodized	27	plain washer	Zinc-plated steel
13	Cone nut	zinc-plated steel	28	cylinder head screw	Zinc-plated steel
14	Clamp wedge	al anodized	29	grub screw	browned steel
15	Guiding bar	POM	30	square nut	Zinc-plated steel
16	Press bar	stainless steel	31		