

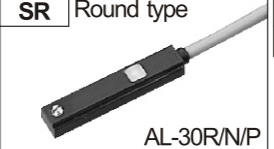


How to order

ZF **32** **B** **50** **SR** **1**

Rodless pneumatic cylinder		Bore size	
ZS	Standard type	18	φ 18
ZF	Guiding type	25	φ 25
ZK	Short type	32	φ 32
		40	φ 40
		50	φ 50
		63	φ 63

Stroke	Sensor type	Number of sensor
Blank	W/O sensor	1 pc
SR	Round type	2 pcs



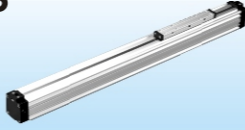
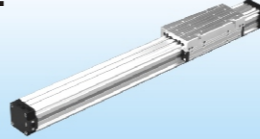

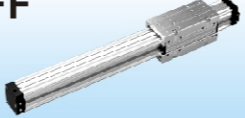

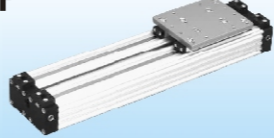
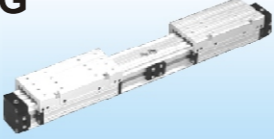
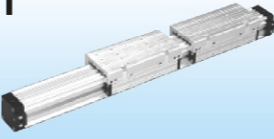
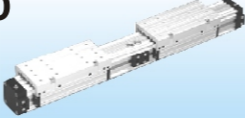
AL-30R/N/P

Stroke table

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

Specifications

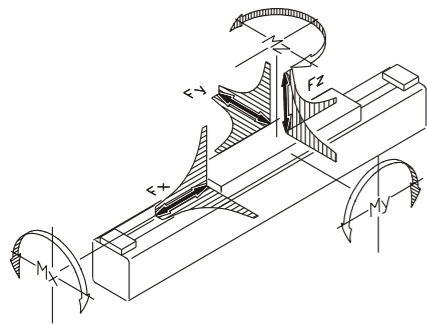
Bore size	φ 18	φ 25	φ 32	φ 40	φ 50	φ 63
Port size	M5	1/8"		1/4"		3/8"
Carrying force	140N	270N	440N	680N	1060N	1680N
Cushioning	15mm	18mm	24mm	34mm	40mm	49mm
Cushion	Adjustable					
Stroke	Variable up to 6000mm, option for longer than 6000mm					
Acting	Double acting					
Fluid	Filtered compressed air without lubricant, or slightly lubricated only					
Operating pressure range	2 ~ 8 kgf/cm ²					
Max operating pressure	8 kgf/cm ²					
Lubrication	Not required or few					
Barrel material	Aluminum alloy					
Magnet	Built-in					
Ambient temperature	-20°C ~ 80°C					
Piston speed	2000mm/Sec(Max)					
Weight of ZS carriage	0.3kg	0.6kg	1.1kg	1.8kg	3.2kg	5.6kg
Weight of ZK carriage	0.2kg	0.4kg	0.7kg	1.2kg	2.0kg	3.2kg
Weight of ZF carriage	0.4kg	0.9kg	1.5kg	2.8kg	4.9kg	8.0kg
Weight of stroke 1000mm barrel	1.5kg	2.6kg	4.8kg	6kg	7.4kg	10kg

Model	Summary	Order
ZS 	ZS Standard cylinder With identical fitting length as existing cylinders without piston. 0-stroke compatible.	Standard
ZF 	ZF Guiding cylinder With external and adjustable slide guide. For high loads.	Standard
ZK 	ZK Short cylinder With extremely shortened fitting length. 0-stroke up to 42% shorter.	Standard
ZFF 	ZFF Guiding cylinder With external and adjustable slide guide. For high loads.	Option
ZFK 	ZFK Guiding cylinder With external and adjustable slide guide. For high loads.	Option
ZP 	ZP Parallel cylinder For high loads and movements in every direction double action force central port.	Option
ZG 	ZG Gripping cylinder Gripping and clamping functions. Opening & closing function.	Option
ZT 	ZT Tandem cylinder For high movements in longitudinal direction.	Option
ZD 	ZD Double action cylinder Double action force pressing, embossing, punching...etc.	Option

PNEUMATIC CYLINDER

PNEUMATIC CYLINDER

Loads



$$\text{Formula } F = F_{zul} = \sqrt{F_x + F_y + F_z}$$

Note:

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 noise and optimum operating results.
Higher speeds reduce the admissible forces.

ZS Standard cylinder

Piston	$V_{max} \leq 0.35 \text{ m/s}$			F force admissible of			Torques		
	F _x (N) Acting force of 6 bar	F _y (N)	F _z (N)	0.75 m/s	1 m/s	1.5 m/s	M _x (Nm) F _y /F _z	M _y (Nm) F _x /F _z	M _z (Nm) F _x /F _y
φ 18	140	80	300	80	40	20	1	3	3
φ 25	270	110	480	155	90	40	2	13	13
φ 32	440	165	650	280	155	70	3.5	25	25
φ 40	680	225	800	500	290	125	5.5	40	40
φ 50	1060	325	1060	790	420	195	10	65	65
φ 63	1680	435	1680	1500	850	370	16	100	100

ZK Short cylinder

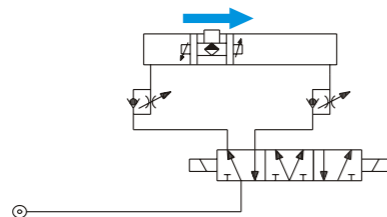
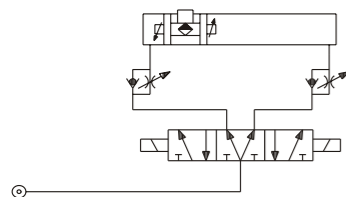
Piston	$V_{max} \leq 0.35 \text{ m/s}$			F force admissible of			Torques		
	F _x (N) Acting force of 6 bar	F _y (N)	F _z (N)	0.75 m/s	1 m/s	1.5 m/s	M _x (Nm) F _y /F _z	M _y (Nm) F _x /F _z	M _z (Nm) F _x /F _y
φ 18	140	40	300	80	40	20	1	3	3
φ 25	270	55	230	90	50	25	0.7	2.7	2.7
φ 32	440	70	320	200	110	45	1	5	5
φ 40	680	100	400	420	240	110	2	8.5	8.5
φ 50	1060	140	480	750	440	190	3.5	13	13
φ 63	1680	180	590	1500	850	380	50	18	18

ZF Guiding cylinder

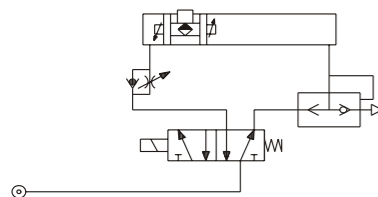
Piston	$V_{max} \leq 0.35 \text{ m/s}$			F force admissible of			Torques		
	F _x (N) Acting force of 6 bar	F _y (N)	F _z (N)	0.75 m/s	1 m/s	1.5 m/s	M _x (Nm) F _y /F _z	M _y (Nm) F _x /F _z	M _z (Nm) F _x /F _y
φ 18	140	370	370	100	58	26	3.5	6	6
φ 25	270	800	800	280	160	65	10	20	20
φ 32	440	200	200	510	300	140	25	45	45
φ 40	680	1600	1600	1000	550	250	40	75	75
φ 50	1060	2100	2100	1500	850	380	80	150	150
φ 63	1680	2800	2800	2500	1400	610	110	250	250

Controls

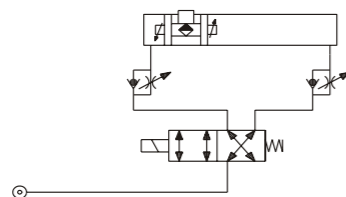
5/3WAY VALVES



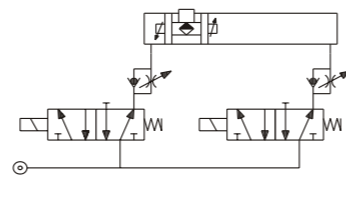
5/2WAY VALVES



4/2WAY VALVES

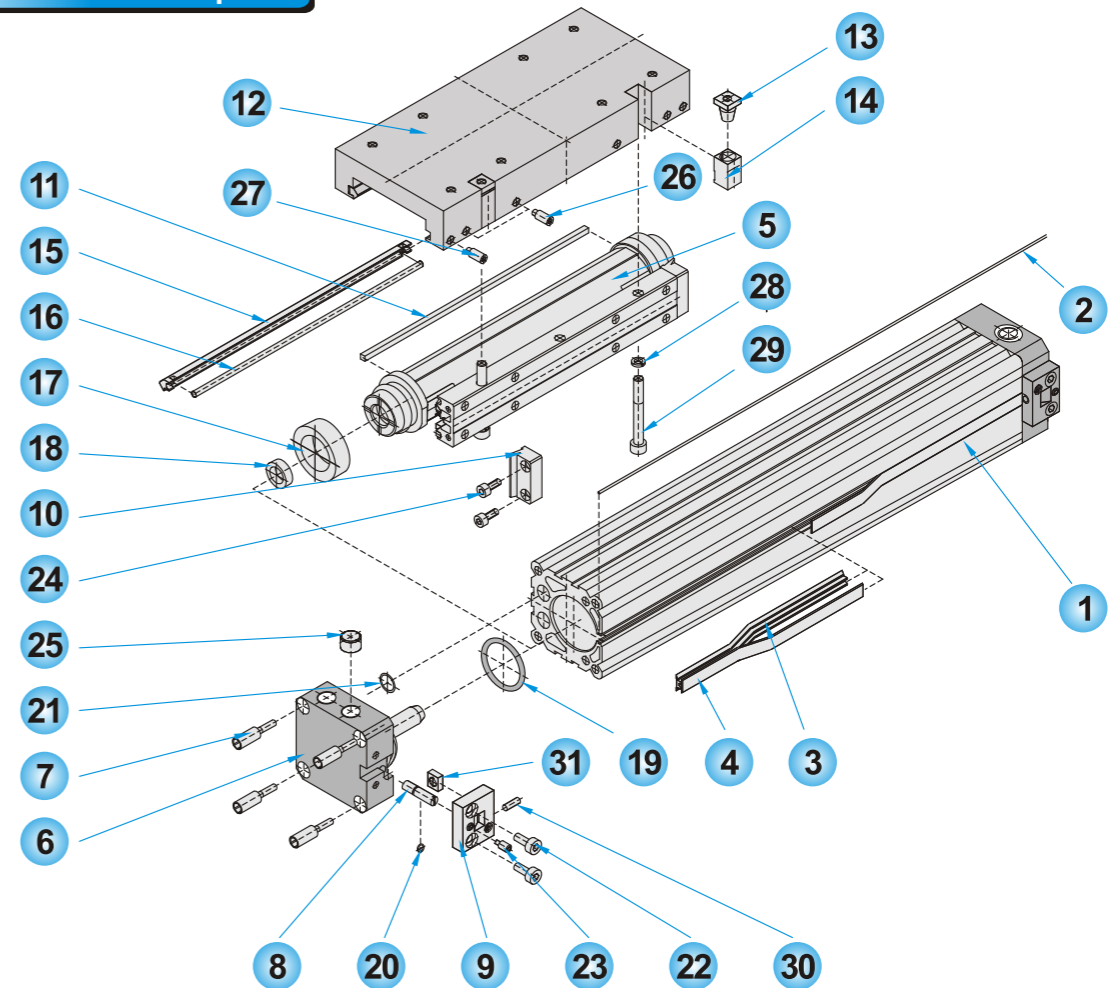


5/2WAY VALVES



- 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.

Material of parts



No.	Description	Material
1	Tube	Al anodized
2	Round profile	PU
3	Sealing strip	PA
4	Cover strip	Stainless steel
5	Yoke	Al anodized/POM
6	End cap	Al anodized
7	Special screw	Zinc-plated steel
8	Cushioning pin	Stainless steel
9	Strip cover	POM
10	Head wiper	POM
11	Wiper	POM
12	Carriage	Al anodized
13	Cone nut	Zinc-plated steel
14	Clamp wedge	Al anodized
15	Guiding bar	POM
16	Press bar	Stainless steel

No.	Description	Material
17	Piston seal	PU
18	Cushion ring	NBR
19	O-ring	NBR
20	O-ring	NBR
21	Flat seal	NBR
22	Countersink screw	Zinc-plated steel
23	Grub screw with pin	Zinc-plated steel
24	Cylinder head screw	Zinc-plated steel
25	Plug screw	Zinc-plated steel
26	Grub screw	Browned steel
27	Grub screw with pin	Browned steel
28	Plain washer	Zinc-plated steel
29	Cylinder head screw	Zinc-plated steel
30	Grub screw	Browned steel
31	Square nut	Zinc-plated steel