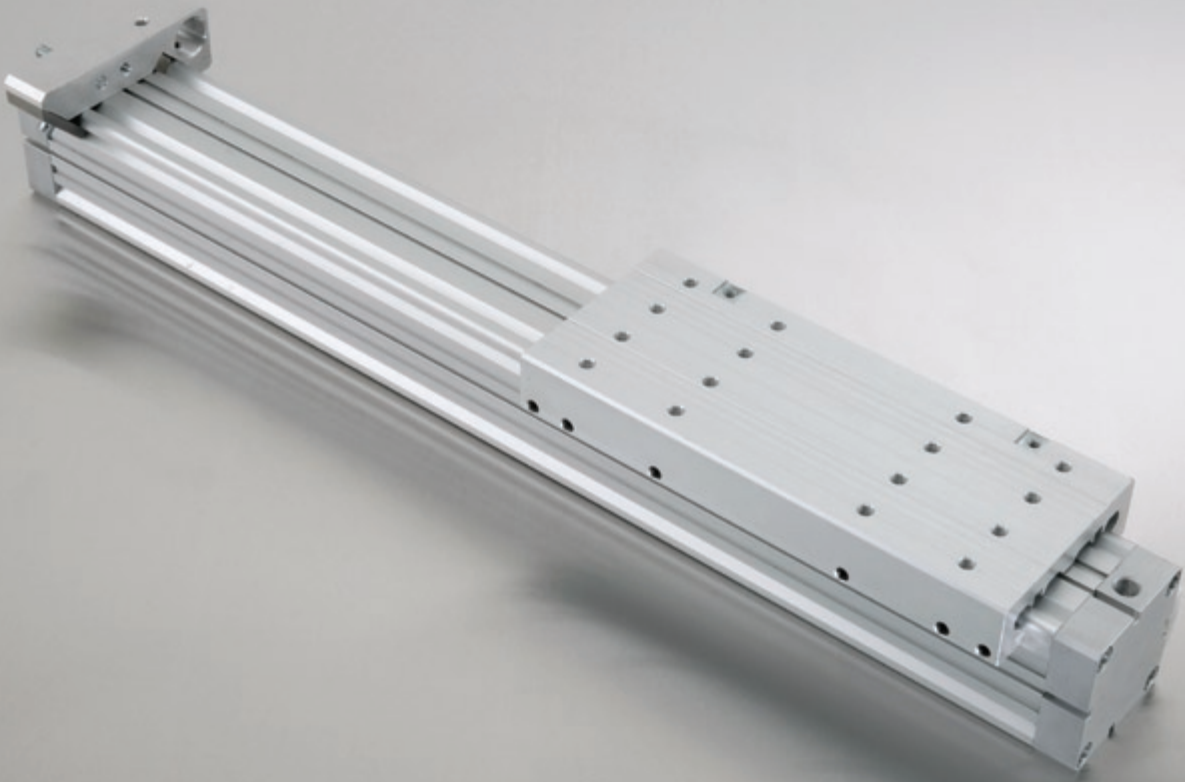
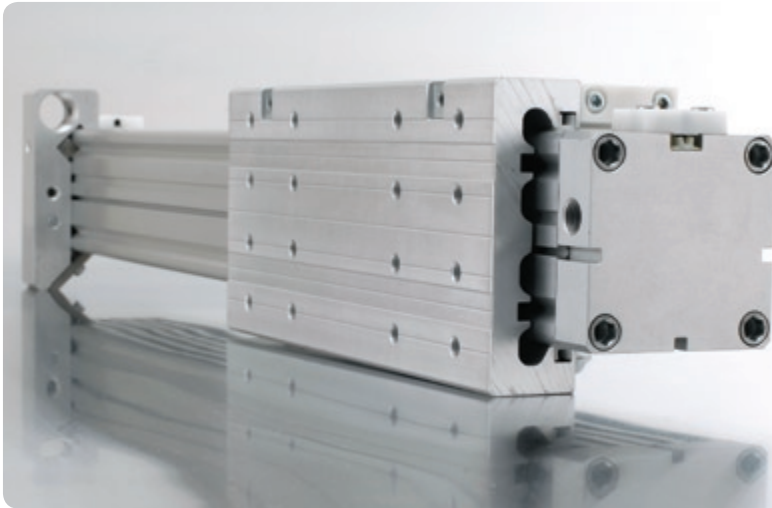


RODLESS CYLINDERS





RODLESS CYLINDERS

Ø18 - Ø63

SPECIAL DESIGN FOR SAVING SPACE



SAFETY REGULATIONS

The LANAMATIC cylinder is safe and made according to the latest technical research.

There could be a danger if

- The cylinder will be used, mounted and maintained either improperly or by unqualified staff

- The cylinder will not be used according to the regulations.
- The accident prevention regulations (UUV, VDE), the safety and installation regulations will not be respected

- Working methods, restricting the function and operation safety of the cylinder, have to be omitted.

- The cylinder is exclusively to be used in the scope of its technical data; any other use beyond this is out of the regulations

- The manufacturer is not liable for damages caused by such an improper use.

- In case of mounting, rebuilding or maintaining the energy supply has to be removed.

- In case of maintenance, extension or rebuilding it is advisable to remove the cylinder from the working area and to do the work out of the danger zone.

- When mounting, connecting, adjusting, bringing into service and testing the units it should be guaranteed that no mechanic or another person could operate the cylinders by mistake.

- Additional bores, thread or attachments, being not offered as accessories, can only be applied after consulting the LANAMATIC AG.

- Should a cylinder be operated in the neighbourhood of abrasive dust or aggressive vapour, the prior approval of LANAMATIC AG is necessary.

- Otherwise, the safety and accident prevention regulations of the operation place are valid.

Note:

These data are to be used as product information and not as granted properties by law.

Any claim for damages against us is to be ruled out, without considering the cause in law, unless intention or gross negligence could be applied to us.

All rights reserved for technical changes, omissions and fallacy.



ZS
ZSS **STANDARD CYLINDER**
With identical fitting length as existing cylinders without piston 0-stroke compatible.



ZK
ZKS **SHORT CYLINDER**
With extremely shortened fitting length 0-stroke up to %42 shorter.



ZF
ZFF
ZFK
ZFU
ZFB **GUIDING CYLINDER**
With external an adjustable slide guide. For high Loads.



ZP **PARALLEL CYLINDER**
for high loads and moments in every direction double action force central port.



ZGS
ZGK
ZGF
ZGFK **GRIPPING CYLINDER**
Gripping and clamping functions. Opening & closing functions.



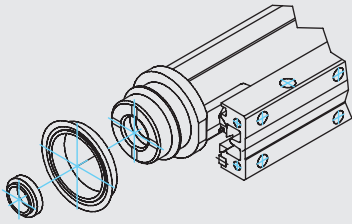
ZTS
ZTK
ZTF **TANDEM CYLINDER**
For high moments in longitudinal direction.



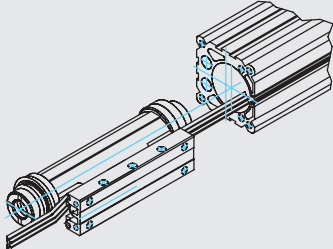
ZDS
ZDK
ZDF
ZDFK **DOUBLE ACTION CYLINDER**
Double action force pressing, embossing, punching etc.



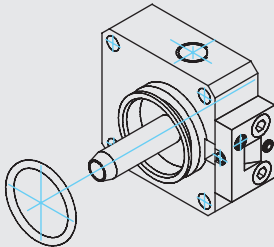
FB
MB
PB
KT **ACCESSORIES**
Mounting brackets. Middle support. Swinging bridge. Cross support etc.



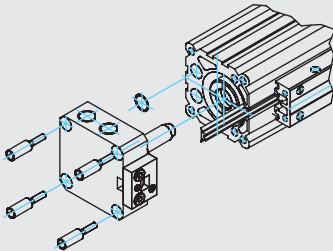
Lubricate piston seals and cushioning ring lightly.
Mount piston seals on piston.
Put cushioning ring into the slot.
Take care that the smaller Ø of the ring is out side.



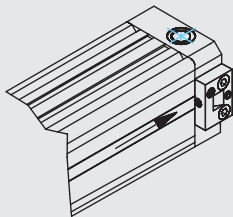
Lubricate sealing strip lightly.
Bend up one end and insert it into yoke.
Insert long end of sealing strip into the tube profile and put the yoke into the tube profile.



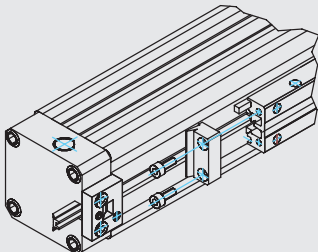
Endcap is preassembled with strip cover and cushioning pin.
Lubricate O-ring and mount it.



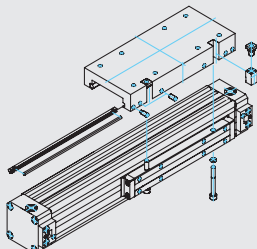
Push yoke to the end and insert end cap.
On one side port insert flat sealing and tighten the special screws.



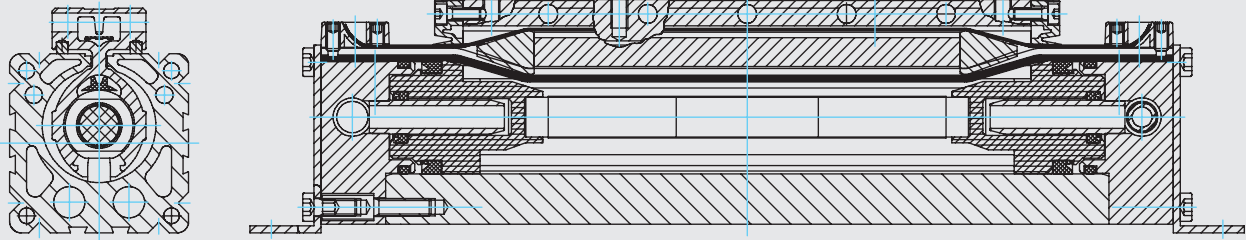
Insert cover strip and clamp it with grub screw.
Pull through yoke.
Measure exact length and clamp it on other side.



Pull the sealing strip tight (approx 0.5 - 1% of the length), stretch it and fix with grub screw with pin.
Cut off overstanding sealing strip insert wiper, screw on head wiper and tighten cover strip with it



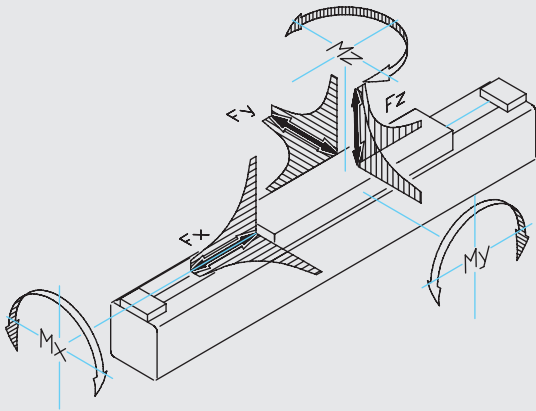
Fit grub screw with adhesive (Loctite).
Slide on guide carriage and adjust guiding bar with grub screws lightly.
Beat guide carriage lightly with a rubber hammer from the side.
Check clearance, readjust if necessary



TECHNICAL INFORMATION

Construction	: Rodless cylinder with direct power transmission through the tube slot onto the yoke
Stroke	: Variable up to 6000 mm higher on request.
Fitting position	: Variable.
Operation	: Double acting with adjustable end of travel cushioning.
Operating pressure	: 2 - 8 bar
Operating temperature	: -20° C / +80° C
Medium	: Filtered and slightly oiled or not lubricated compressed air.
Material	: Aluminium parts made of high-strength alloy, sealing parts made of oil resistant plastic and elastomers

Cylinder	Force/6 bar	Cushioning	Weight			Weight/Stroke
			ZS	ZF	ZFF	
18	140 N	15 mm	0.3 kg	0.4 kg	0.6 kg	1.5 kg/1000 mm
25	270 N	18 mm	0.6 kg	0.9 kg	1.1 kg	2.6 kg/1000 mm
32	440 N	24 mm	1.1 kg	1.5 kg	2.2 kg	3.6 kg/1000 mm
40	680 N	34 mm	1.8 kg	2.8 kg	3.8 kg	4.8 kg/1000 mm
50	1060 N	40 mm	3.2 kg	4.9 kg	6.4 kg	7.4 kg/1000 mm
63	1680 N	49 mm	5.6 kg	8.0 kg	10.4 kg	10.0 kg/1000 mm



LOADS

All data concerning ile forces and torques refer to a speed of $v < 0.35$ m/s

Observation keeping the indicated values ensures maximum service life, minimum noise and optimum operating results.

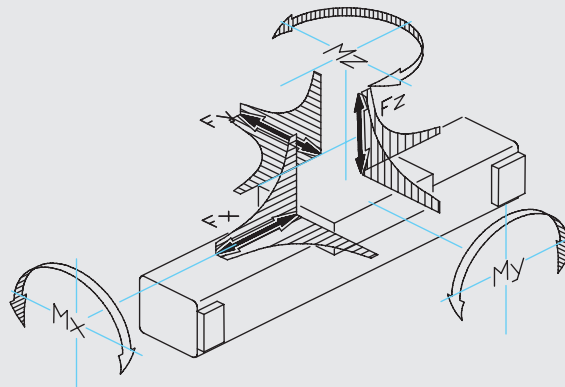
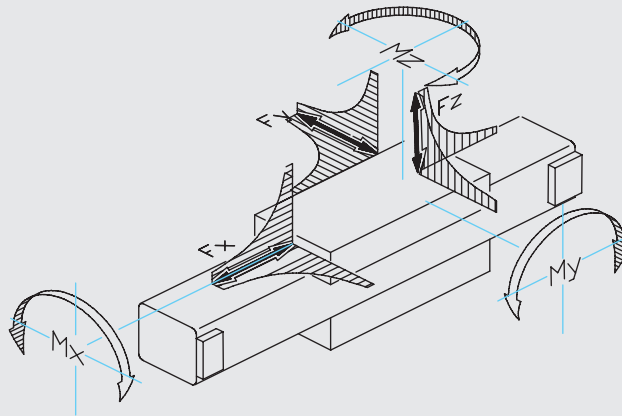
Higer speeds reduce the admissible forces.

ZS STANDARD CYLINDER

Cylinder	V max ≤ 0.35 m/s			V or port F			Torques		
	Fx (N)	Fy (N)	Fz (N)	F 0.75 m/s	F 1 m/s	F 1.5 m/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

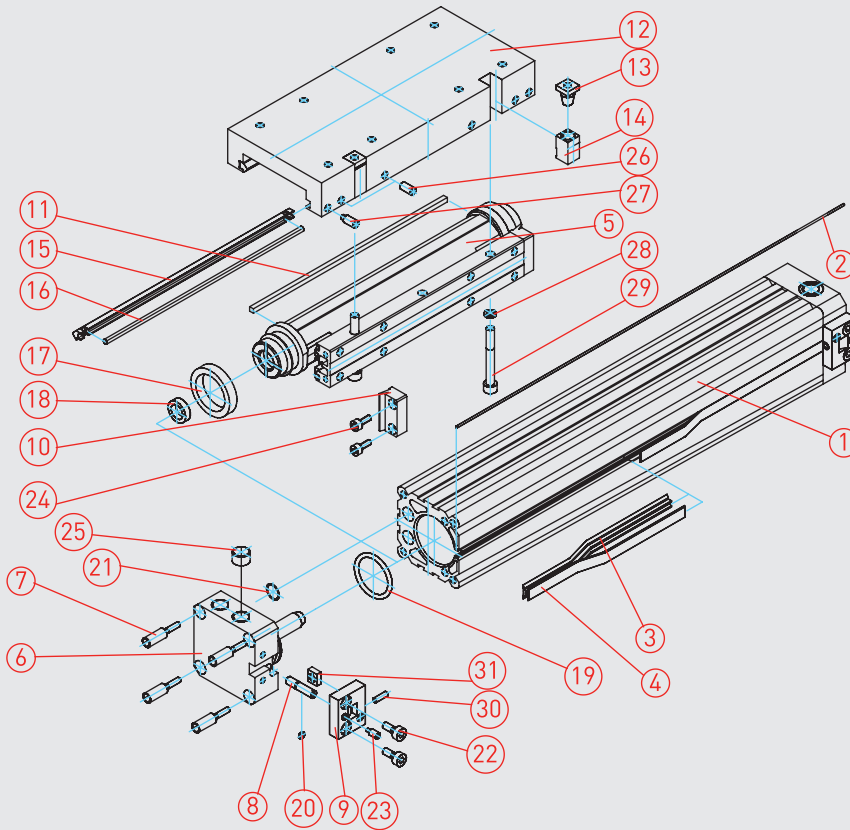
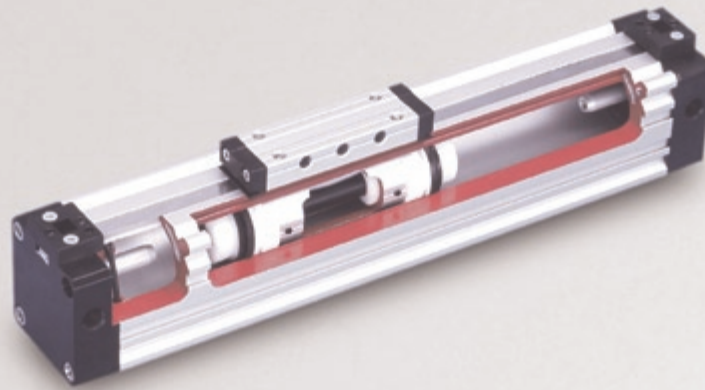
ZF GUIDING CYLINDER

Cylinder	V max ≤ 0.35 m/s			V or port F			Torques		
	Fx (N)	Fy (N)	Fz (N)	F 0.75 m/s	F 1 m/s	F 1.5 m/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	1200	1200	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



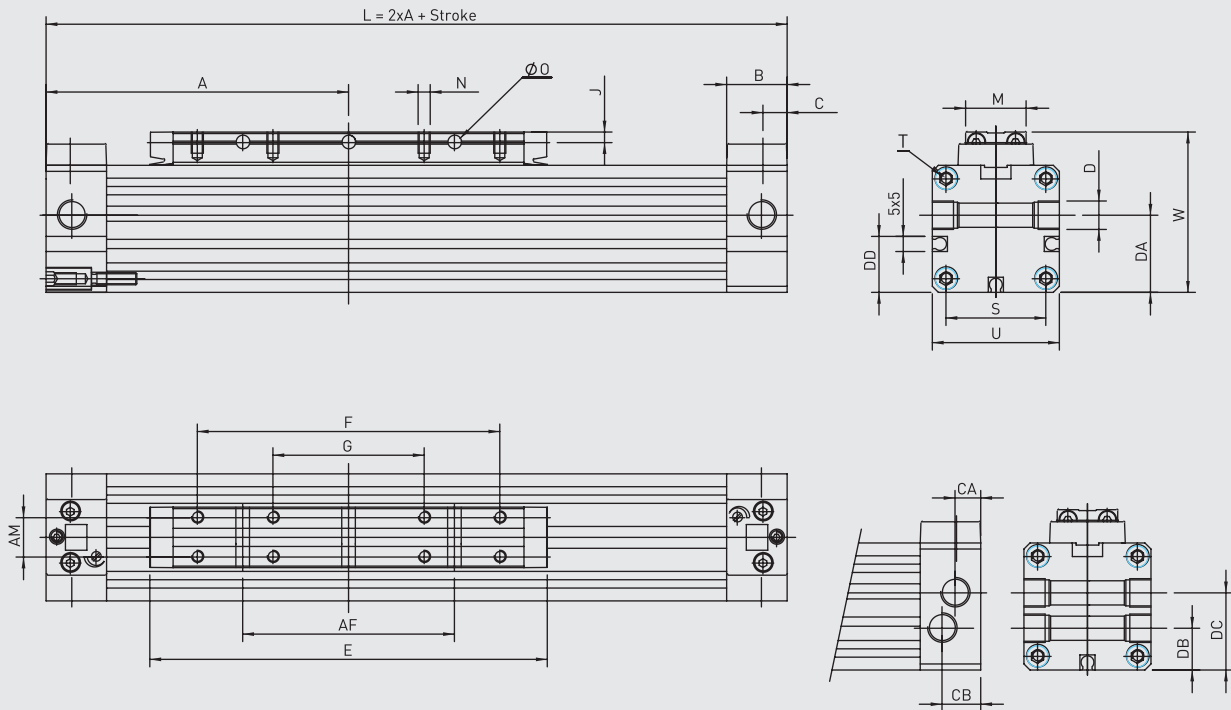
ZFF DOUBLE GUIDING CYLINDER

Cylinder	V max \leq 0.35 m/s			V or port F			Torques		
	Fx (N)	Fy (N)	Fz (N)	F 0.75 m/s	F 1 m/s	F 1.5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz(Nm) Fx/Fy
18	140	550	550	150	80	31	5.2	9	9
25	270	1200	1200	420	210	80	15	30	30
32	440	1800	1800	750	400	170	37	67	67
40	680	2400	2400	1500	750	300	60	110	110
50	1060	3200	3200	2200	1150	460	120	220	220
63	1680	4200	4200	3700	1900	740	170	370	370



No	MATERIAL NAME	CHARACTERISTIC
1	Tube	Al Mg Si 0.5 Eloval Plated
2	Rond Profile	TPU
3	Sealing Strip	PA
4	Cover Strip	Stainless Steel
5	Yoke	Al Eloval / POM
6	Endcap	Al Eloval
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 Eloval
13	Cone Nut	Zinc-Plated Steel
14	Clamp Wedge	Al Eloval
15	Guiding Bar	POM
16	Press Bar	Stainless Steel

No	MATERIAL NAME	CHARACTERISTIC
17	Piston Seal	PU
18	Cushion Ring	NBR
19	O-ring	NBR
20	O-ring	NBR
21	Flat Seal	NBR
22	Countersunk Screw	Zinc-Plated Steel
23	Grup Screw with Pin	Zinc-Plated Steel
24	Cylinder Head Screw	Zinc-Plated Steel
25	Plug Screw	Zinc-Plated Steel
26	Grub Screw	Stell
27	Grub Screw with Pin	Stell
28	Plain Washer	Zinc-Plated Steel
29	Cylinder Head Screw	Zinc-Plated Steel
30	Grub Screw	Stell
31	Square Nut	Zinc-Plated Steel

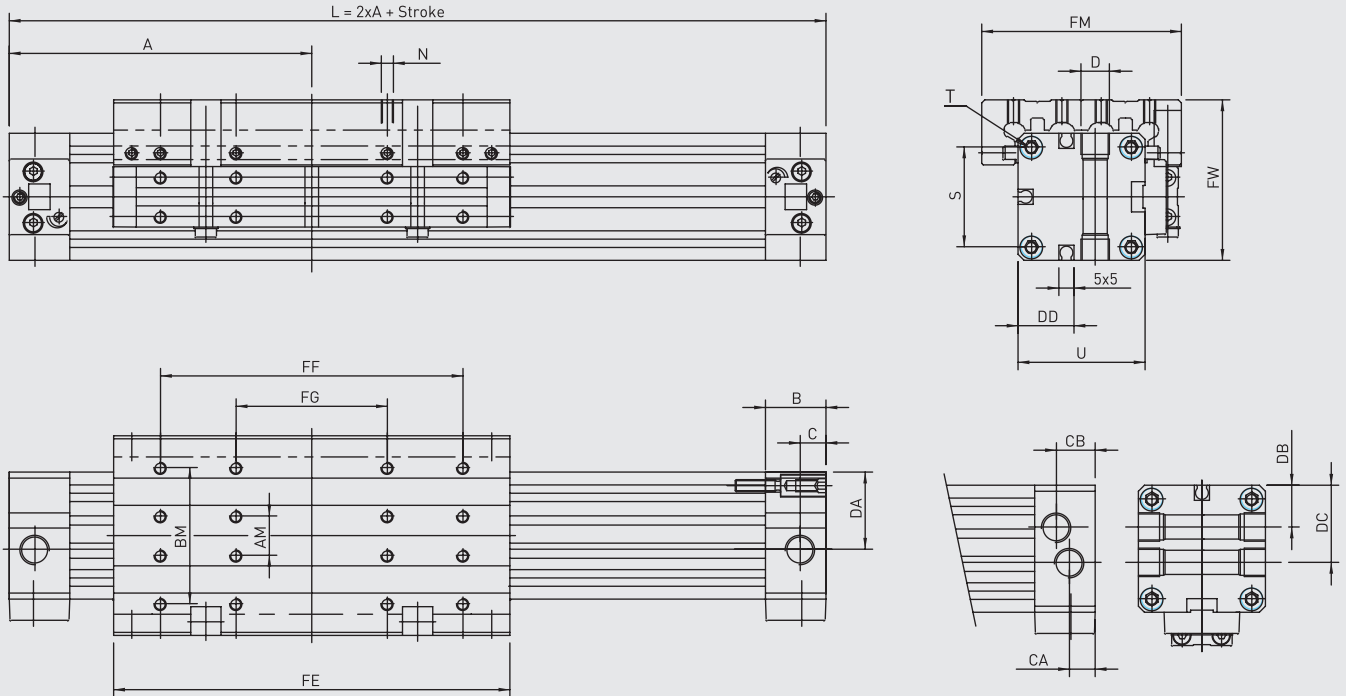


ZS STANDARD CYLINDER

Ø	A	AF	AM	B	C	CA	CB	D	DA	DB	DC	DD	E	F	G	J	M	N	Ø0	S	T	U	W
Ø 18	80	50	10	16.5	6.5	-	-	M7x1/6	15.5	-	-	-	103	75	-	3	15.5	M3x6	Ø 3.5	23.5	M3x7	30	39
Ø 25	100	70	13	20	8.5	7	13	G1/8x8	25.5	14	28	18.5	131	100	50	3.5	20	M4x7	Ø 4.5	33	M4x9	42	53
Ø 32	120	100	16	20	8.5	7	13	G1/8x8	32	16	34.5	21	171	140	70	4.5	25	M5x9	Ø 5.5	41	M5x10	52	65
Ø 40	150	140	22	23	13	11	14.5	G1/4x12	37.5	18.5	41	29.5	220	180	90	5	33	M6x10	Ø 7	51	M6x12	63	79
Ø 50	180	180	29	23	13	12	14	G1/4x12	47.5	22.5	47.5	37	280	220	110	6.5	42	M8x12.5	Ø 7	63	M8x12	78	96
Ø 63	215	230	40	29	13	12.5	15.5	G3/8x12	59.5	24.5	59.5	44.5	333	280	140	8	54	M8x15	Ø 9	78	M8x12	93	113.5

Example of order: ZS Ø 25 Standard cylinder with stroke 100mm

Order number															
1	2	5	0	-	0	0	0	0	0	-	0	1	0	0	Port Standard
1	2	5	0	-	0	0	0	1	-	0	1	0	0	Port Underneath	
1	2	5	0	-	0	0	0	2	-	0	1	0	0	One Side Port	

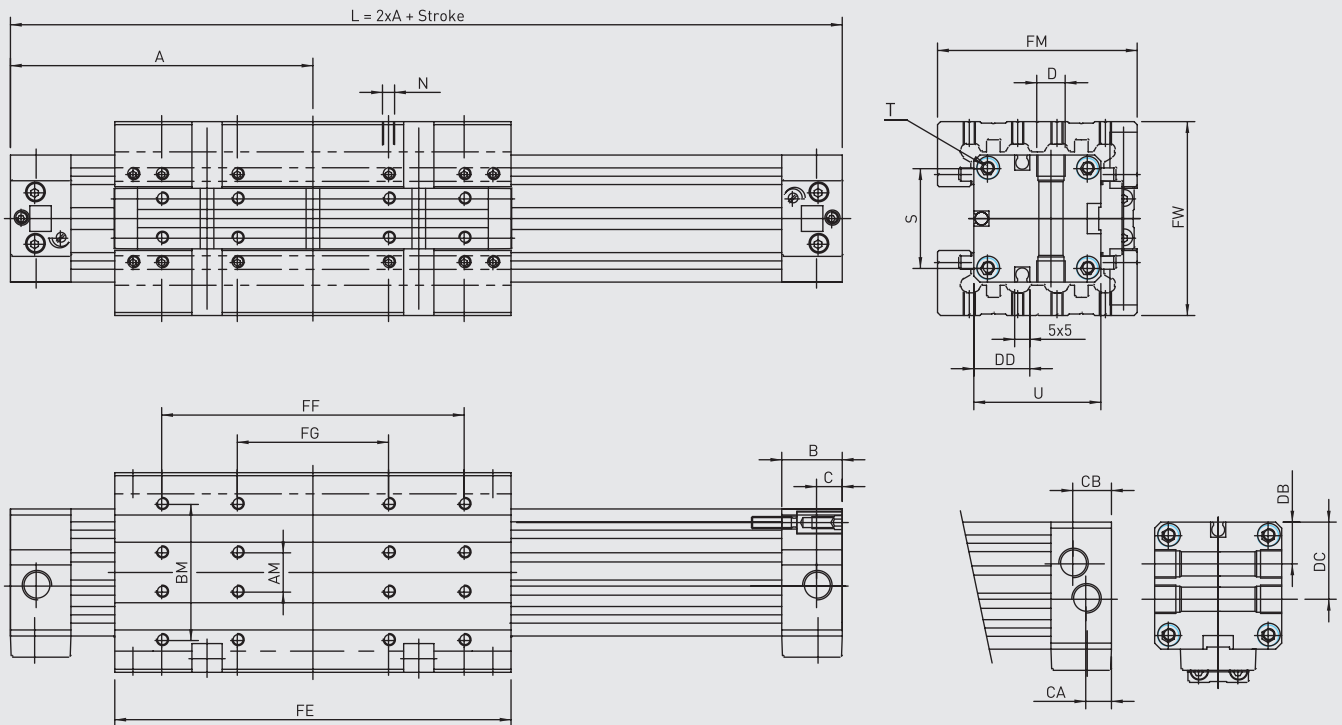


ZF GUIDING CYLINDER

Ø	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	FE	FF	FG	FM	FW	N	S	T	U
Ø 18	80	10	16.5	35	6.5	-	-	M7x1/6	17.5	-	-	-	103	75	-	50	39	M4x7.5	23.5	M3x7	30
Ø 25	100	13	20	45	8.5	7	13	G1/8x8	25.5	14	28	18.5	131	100	50	66	53	M4x8	33	M4x9	42
Ø 32	120	16	20	55	8.5	7	13	G1/8x8	32	17.5	34.5	21	171	140	70	80	65	M5x10	41	M5x10	52
Ø 40	150	22	24	70	13	9.5	14.5	G1/4x12	37.5	20	42	29.5	220	180	90	97	79	M6x12	51	M6x12	63
Ø 50	180	29	24	85	13	9.5	14.5	G1/4x12	47.5	26	52	37	280	220	110	116	96	M8x16	63	M8x12	78
Ø 63	215	40	30	105	13	11	18.5	G3/8x12	59.5	30	62	44.5	333	280	140	136	113.5	M8x16	78	M8x12	93

Example of order: ZF Ø 25 Guiding cylinder with stroke 100mm

Order number															
3	2	5	0	-	0	0	0	0	0	-	0	1	0	0	Port Standard
3	2	5	0	-	0	0	0	1	-	0	1	0	0	Port Underneath	
3	2	5	0	-	0	0	0	2	-	0	1	0	0	One Side Port	

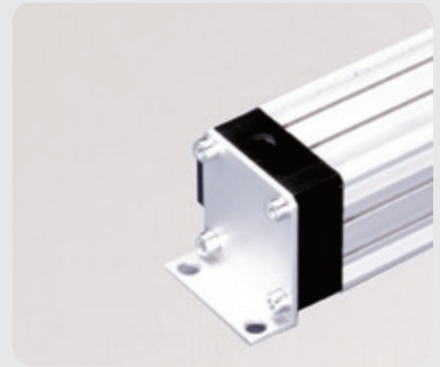
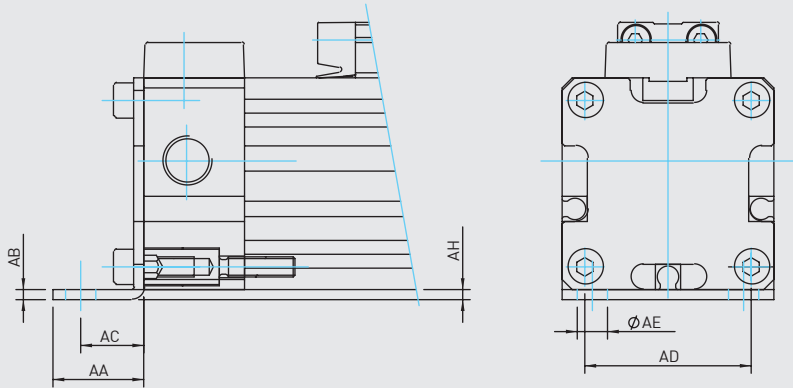


ZFF DOUBLE GUIDING CYLINDER

Ø	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	FE	FF	FG	FM	FW	N	S	T	U
Ø 18	80	10	16.5	35	6.5	-	-	M7x1/6	17.5	-	-	-	103	75	-	50	48	M4x7.5	23.5	M3x7	30
Ø 25	100	13	20	45	8.5	7	13	G1/8x8	25.5	14	28	18.5	131	100	50	66	64	M4x8	33	M4x9	42
Ø 32	120	16	20	55	8.5	7	13	G1/8x8	32	17.5	34.5	21	171	140	70	80	78	M5x10	41	M5x10	52
Ø 40	150	22	24	70	13	9.5	14.5	G1/4x12	37.5	20	42	29.5	220	180	90	97	95	M6x12	51	M6x12	63
Ø 50	180	29	24	85	13	9.5	14.5	G1/4x12	47.5	26	52	37	280	220	110	116	114	M8x16	63	M8x12	78
Ø 63	215	40	30	105	13	11	18.5	G3/8x12	59.5	30	62	44.5	333	280	140	136	134	M8x16	78	M8x12	93

Example of order: ZFF Ø 25 Double Guiding cylinder with stroke 100mm

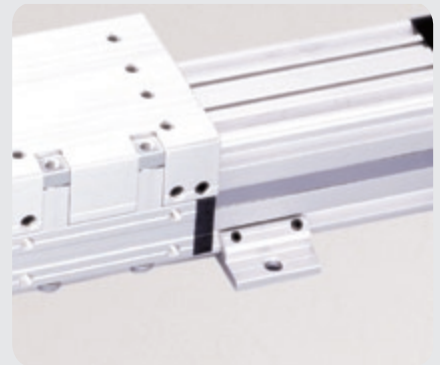
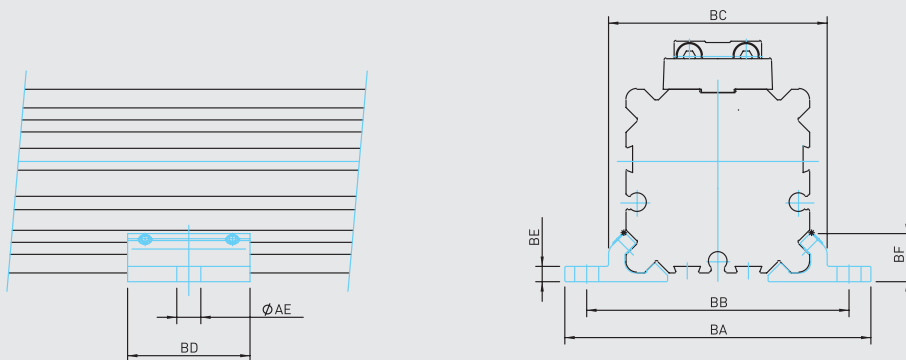
Order number															
3	2	5	1	-	0	0	0	0	0	-	0	1	0	0	Port Standard
3	2	5	1	-	0	0	0	0	1	-	0	1	0	0	Port Underneath
3	2	5	1	-	0	0	0	0	2	-	0	1	0	0	One Side Port



FB MOUNTING BRACKETS

Cylinder Ømm	AA	AB	AC	AD	AE	AH	Order No.
Ø 18	15	2	10	20	Ø 6	2	1182-0001
Ø 25	18	2	12.5	30	Ø 6	2	1252-0001
Ø 32	20	2.5	13.5	40	Ø 7	3	1322-0001
Ø 40	30	3	17.5	50	Ø 9	3.5	1402-0001
Ø 50	28	3	20	60	Ø 9	3	1502-0001
Ø 63	30	3	21	75	Ø 11	4.5	1632-0001

The order No. given includes 2 mounting brackets and 8 screw

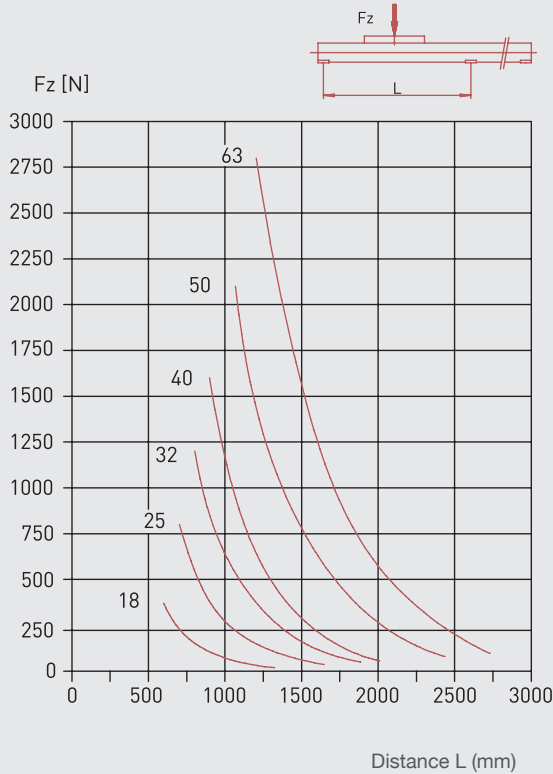


MB MIDDLE SUPPORT

Cylinder Ømm	AE	AH	BA	BB	BC	BD	BE	BF	Order No.
Ø 18	Ø 6	2	56	46	36.5	23	2.5	8.25	1183-0001
Ø 25	Ø 6	2	70	60	50	28	3.5	11	1253-0001
Ø 32	Ø 7	3	85	73	61.5	33	4	13.8	1323-0001
Ø 40	Ø 9	3	105	90	75	38	4.5	16	1403-0001
Ø 50	Ø 9	3	122	106	91	43	5	19	1503-0001
Ø 63	Ø 11	4.5	144	125	107	48	6	22	1633-0001

The order No. given includes 2 mounting brackets and 4 screw

Fz at deflection of 0.5 mm



Deflection Diagram

MB Middle Support

When using very long cylinders or applying heavy loads, the tube deflections is to be taken into consideration. One or more middle supports are to be used according to the admissible deflection.

Example:

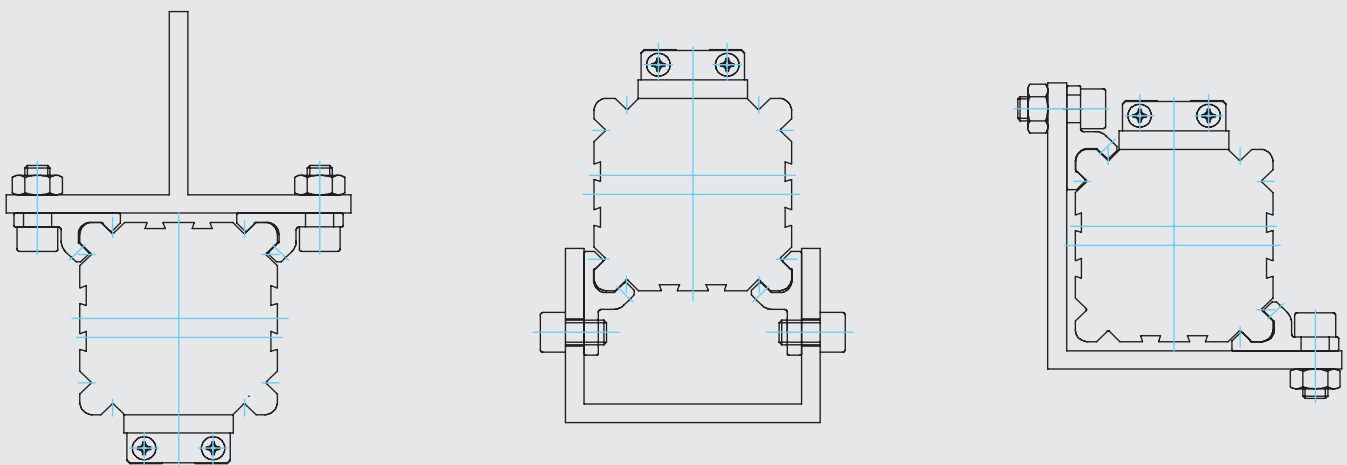
A cylinder $\varnothing 25$ should deflect by a maximum of 0.5mm when applying a force F_z of 500N. According to the diagram the cylinder can be 750mm long. Longer cylinders must have a middle support.

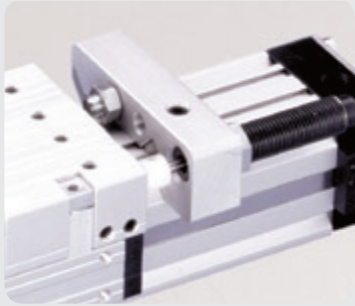
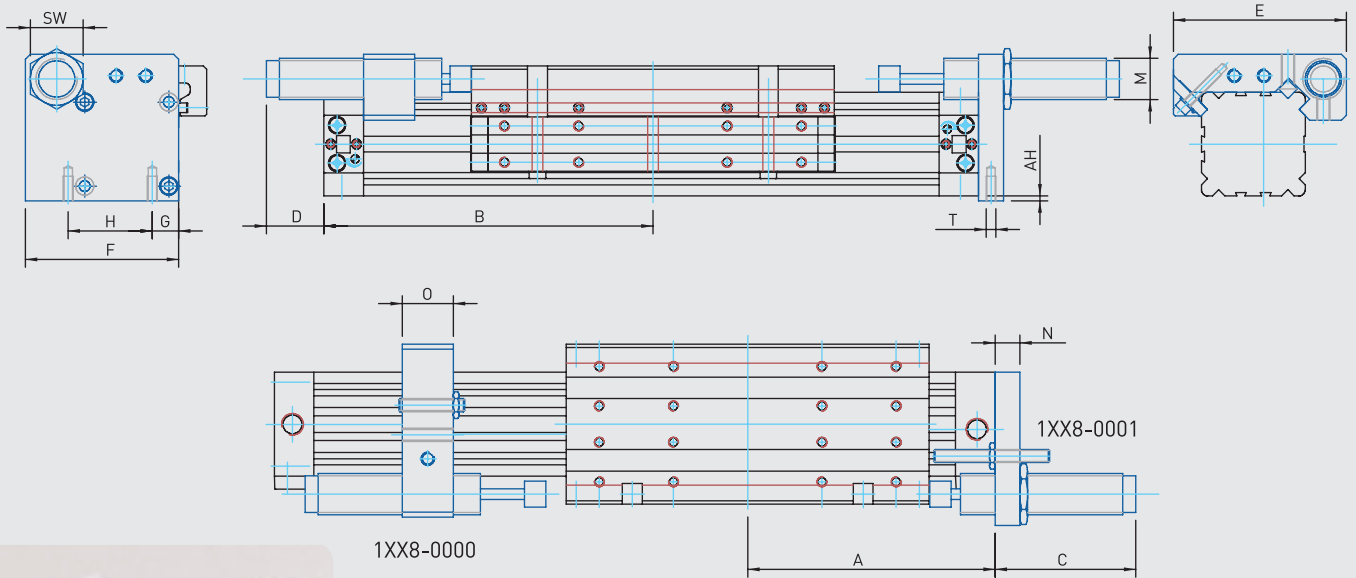
Other possibilities:

In case very long cylinders are installed without supports, an additional profile can be used as a support.

Examples:

All versions with middle support and standard profiles.





AS STOP ADJUSTMENT

Cylinder Ømm	A	AH	B	C	D	E	F	G	H	M	N	O	SW	T
	ZF/ZFK		ZF/ZFK											
Ø 18	80/57.5	2	113/90.5	32	Max. 25	57	43.5	8	23.5	M10x1	8	15	13	M3x10
Ø 25	100/67.5	2	117.5/85	37	Max. 40	72	57	12.5	33	M14x1.5	10	20	17	M4x10
Ø 32	120/77.5	3	135.5/90	70	Max. 30	84	70	14.5	41	M14x1.5	12	20	17	M5x12
Ø 40	150/95	3	165/110	65	Max. 50	105	93	16	51	M25x1.5	15	30	32	M6x15
Ø 50	180/105	3	195/140	80	Max. 65	126	102	22.5	63	M25x1.5	15	30	32	M8x20
Ø 63	215/125	4.5	250/160	80	65	140	118.5	20	78	M25x1.5	15	40	32	M8x20

Example of order: AS25 stop adjustment shiftable ZF25 or ZFK25 (without shock absorbers)

Order No.									
1	2	5	8	-	0	0	0	0	0