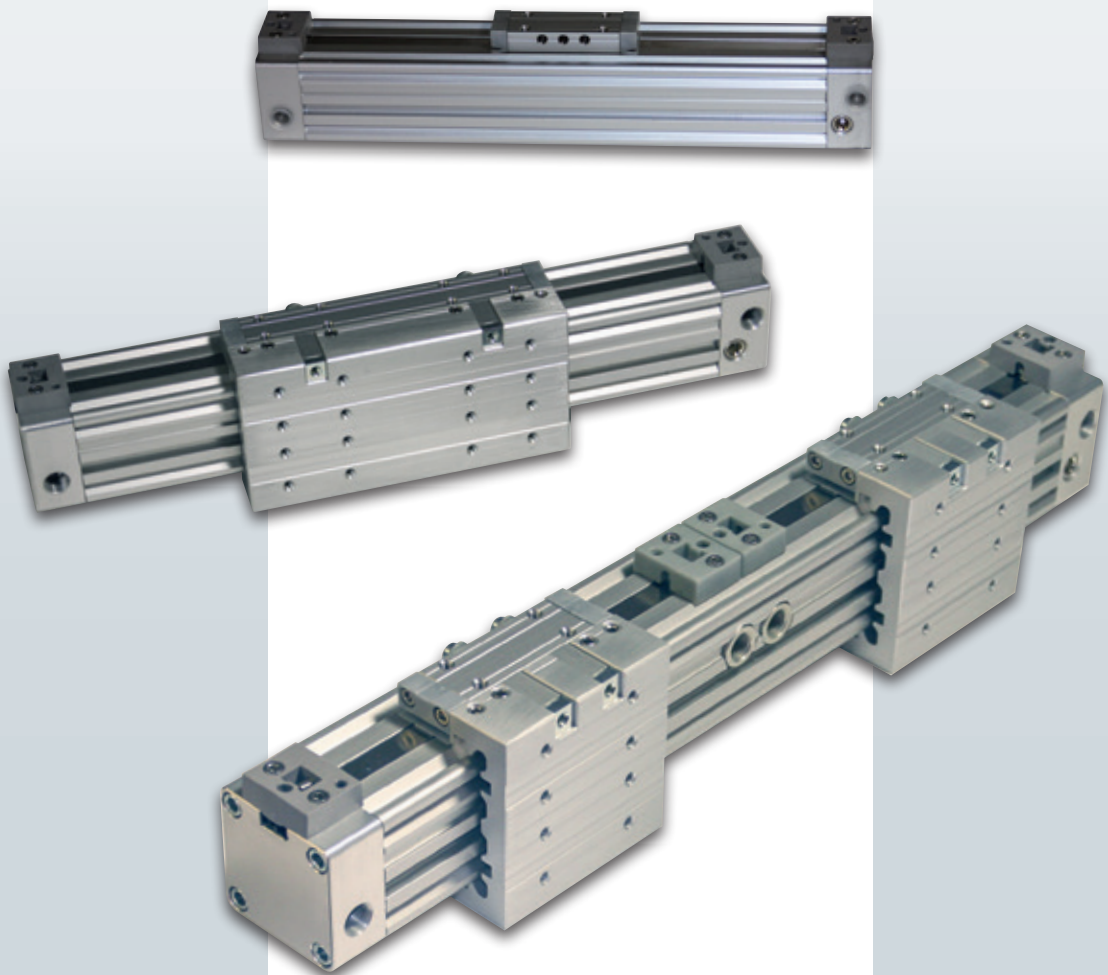


Rodless Pneumatic  
Cylinders and Accessoires  
General Catalogue




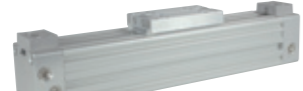


# 无杆气缸和配件

## 总目录



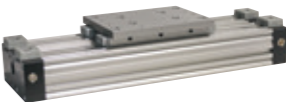



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Basic models cost-effective, reliable and compact 基本型号为紧凑型设计，安全可靠，极具性价比			
	Profile tube and yoke have a very compact and intelligent design that provides a basis to build upon. The two cylinders ZS and ZK in six different diameters from 18 to 63 mm form the foundation.	异形管材和活塞杆采用智能紧凑型设计为产品的构造依据。ZS和ZK这两种基础气缸有六种直径可供选择，自18mm至63mm不等。	14
ZS	 <b>Standard cylinder</b> Rodless double-action cylinder with continuously adjustable end position cushioning	<b>标准气缸</b> 无杆双动气缸，配有连续可变的终位缓冲器	16
ZK	 <b>Standard cylinder short</b> Particularly compact design thanks to a short yoke	<b>标准短缸</b> 采用短活塞杆，设计特别紧凑	17
ZS+	 <b>Standard cylinder with broad yoke head</b> for increased stability	<b>带宽活塞杆头的标准气缸</b> 稳定性更强	20
ZK+	 <b>Standard cylinder short with broad yoke head</b>	<b>带宽活塞杆头的标准短缸</b>	21
Guiding systems integrated on the cylinder an ideal conception 将导流系统集成到气缸上是一种全新的设计理念			
	Guiding cylinders with slide guides running on the profile tube and those with recirculating ball bearing guides for highest demands are being offered.	供应滑动导轨位于异型管材上的导流气缸以及配有能够满足最高需求的循环滚珠轴承导轨的导流气缸。	22
ZF ZFK ZFF ZFU	 <b>Guiding cylinder with external carriage</b> for higher loads.	<b>带外部导流架的导流气缸</b> 可用于高负荷作业。	24
ZSS ZKS	 <b>Guiding cylinder with external ball bearing guide</b> on the underside for high precision and maximum load bearing capacity.	<b>带外部滚珠轴承导轨的导流气缸</b> 滚珠轴承导轨安装在管材底面，精度更高，负荷能力最大化。	30








Special cylinders for special requirements  
可满足特定需求的特殊气缸

The cylinders can also be fitted with external guiding elements. Additional application-specific solutions on request. 无杆气缸产品可配备外部导轨。此外，我们可以根据用户的使用需求提供特定应用的解决方案。

ZP	<b>Parallel cylinder</b> For high loads and torques in all directions. Double action force, central air connection.	<b>平行气缸</b> 适用于较高负荷和扭矩，可在各方向移动。双动力。中心空气连接。	 32
ZFB	<b>Guiding cylinder with passive safety unit</b> For locking in case of pressure drop.	<b>配有被动安全装置的导流气缸</b> 出现压降时可锁闭气缸	 34
ZTS ZTK ZTF ZTKF	<b>Tandem cylinder</b> With two synchronous yokes for high torques in the direction of movement.	<b>串列气缸</b> 配有两个同步活塞杆，适用于运动方向上的较高力矩	 38
ZGS ZGK ZGF ZGKF	<b>Gripping cylinder</b> For gripping and clamping movements as well as for opening and closing.	<b>夹紧缸</b> 具有夹持、紧固功能以及开闭功能。	 44

Accessoires  
配件

The accessories facilitate installation and are the ideal supplement for optimum functioning in the application. 配件用于协助安装，是相关应用中确保最佳工作状态的理想补充工具。

AS	Fixed and adjustable stop for positions	位置固定及调整锁紧装置	 48
FB	Mounting bracket and mounting block for installation	安装托架与安装块	 49
MB	Middle supports for long strokes	长冲程中间支架	 50
PB	Swing bridge for tension-free connections when using external guides	使用外部导轨时的无张力连接旋桥	 52
KT	Cross support for connecting two guiding cylinders to a 2-axis system	将两个导流气缸连接到两轴系统的交叉支架	 53
	T-type and C-type reed switch for detecting positions	位置检测T型及C型簧片开关	 54
	T-type and C-type magnetic switch for detecting positions	位置检测T型及C型磁开关	 55
	Repair set and spare parts: wear parts for maintenance, servicing and small repairs	维修套件和备件：维护、维修及小修磨损件	56

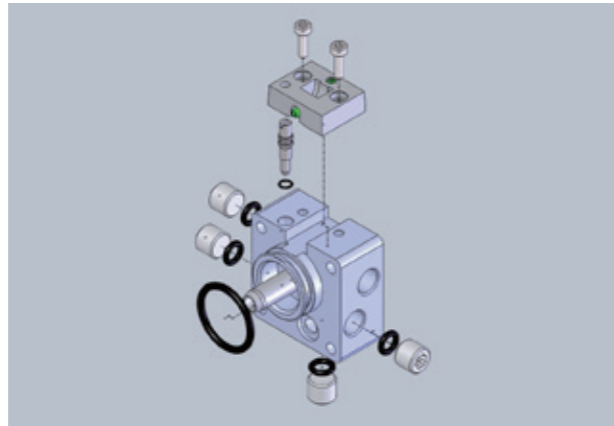
Examples of applications  
应用示例

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一般性解释

Profile tube

The profile tube system comprises the diameters 18, 25, 32, 40, 50 and 63. The special outside geometry of the individual tubes has features such as furrows and grooves etc. that enable the attachment of various components such as guide carriages, guide rails, various accessories, switches, etc.



End caps

The standard end cap pair consists of an end cap with 5 connection openings and an end cap with 3 connection openings. Lanamatic normally assumes that the 3-hole end cap is located on the left end and the 5-hole end cap is located on the right end of a cylinder. This is also shown in the drawing of this catalogue. However, the cylinder can of course be installed the other way round in any given application without impairing its functionality.

Connection variants

The special air ducting design inside the endcaps and the profile tube (tube diameter 25 to 63) enable numerous different connection variants for most of our cylinder models.

The following connection variants are predominantly used:

- Design with connection on one side of both end caps (standard)
- Design with connection on the underside of both end caps (variant)
- Design with connection on one side of a single end cap (variant)
- Design with connection on the front of the end caps (variant, requires additional machining of the endcaps)

异型管材

异型管材系统的直径包括18、25、32、40、50和63。管材的外部特殊几何形状为沟、槽式形状等，因而可安装多种部件，如导轮架、导轨、各种配件、开关等。

端盖

标准端盖组件包括配有5个连接端口的端盖，以及配有3个连接端口的端盖。通常，3端口端盖位于Lanamatic气缸的左侧，5端口端盖位于右侧。请参见本目录图表所示。不过，在既定行业应用中也可以反过来安装，不会影响其功用。

可变化的连接方式

端盖及异形管材(管径25-63)内部采用特殊气道设计,使我们的气缸有不同变化的连接方式,因而应用范围广泛。

以下是主要的不同的变化连接:

- 两端盖其中一面连接的设计(标准连接)
- 两端盖下面连接的设计(变化连接)
- 单端盖一面连接的设计(变化连接)
- 端盖正面连接的设计(变化连接,要求对端盖进行机加工)

Article numbers scheme

The article numbers scheme for cylinders consists of 3 blocks of numbers with 4 digits each.

1<sup>st</sup> number block – cylinder model and diameter:

Digits 1 and 4 determine the cylinder model. Digits 2 and 3 determine the inner diameter of the cylinder (18 mm, 25 mm, 32 mm, 40 mm, 50 mm and 63 mm)

2<sup>nd</sup> number block – connection variant or special dimensions and information for certain special cylinder models:

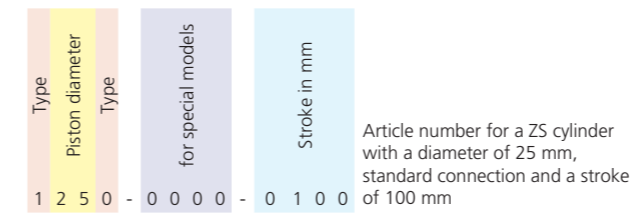
In most cylinder models, the 4th digit of the number block provides information on the connection configuration of the cylinder.

- 0000 stands for standard connection via both end caps
- 0001 stands for the variant with connection on the underside of both end caps
- 0002 stands for the variant with connection on one side of one end cap
- 0004 stands for the variant with connection on the front side of both end caps

In the ZTS/ZTK and ZGS/ZGK special cylinders, the 2nd number block determines the dimension A1 of a model-specific distance (see detailed information on the corresponding cylinder models).

3<sup>rd</sup> number block – cylinder stroke:

The four digits indicate the stroke length of a cylinder in mm. The maximum possible standard stroke length is 6000 mm. Longer stroke lengths available on request.



货号编写方案

本公司气缸货号编写方案包含3个编号组,每组4个数字。

第一组编号——气缸型号和直径:

数字1和4指气缸的型号;数字2和3指气缸的内径(18 mm、25 mm、32 mm、40 mm、50 mm和63 mm)

第二组编号——某些特殊型号气缸的变化连接或特殊尺寸与信息:

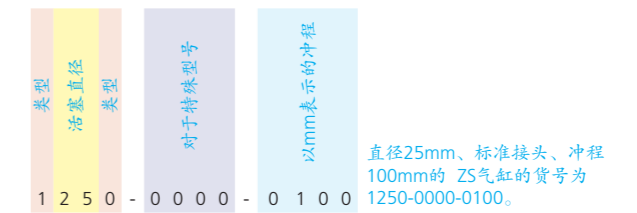
大部分型号气缸中,编号中的第四个数字表示气缸的接头配置信息。

- 0000 表示双端盖标准连接
- 0001 表示双端盖下面连接的变化连接
- 0002 表示单端盖一面连接的变化连接
- 0004 表示双端盖正面连接的变化连接

在ZTS/ZTK和ZGS/ZGK特殊气缸中,第二组编号表示特殊型号的距离A1尺寸(请参见相应型号气缸的详细信息)。

第三组编号——气缸冲程:

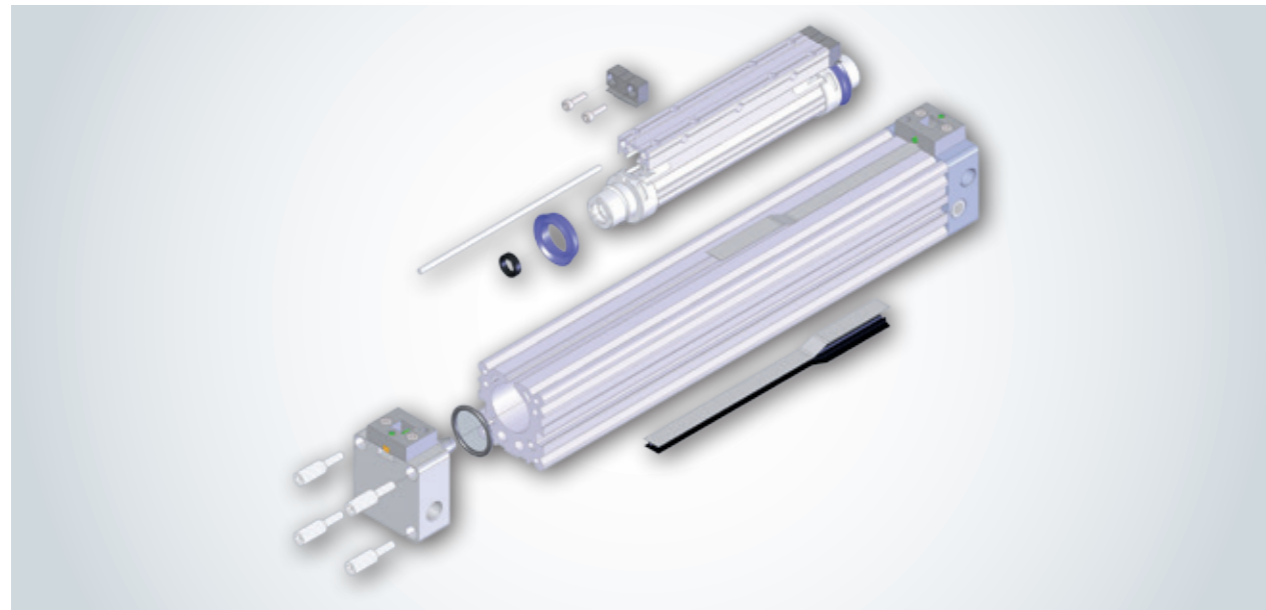
这四个数字表示气缸的冲程长度,单位为mm。最长标准冲程为6000 mm。可根据需求定制更长冲程气缸。



Type 类型	1. Pos. 第1个位置	Ø	Ø	4. Pos. 第4个位置
ZS	1	x	x	0
ZK	2	x	x	0
ZF	3	x	x	0
ZFK	3	x	x	2
ZFF	3	x	x	1
ZFU	3	x	x	5
ZSS	1	x	x	3
ZKS	2	x	x	3
ZP	4	x	x	0
ZFB (passive/被动)	3	x	x	4
ZTS	6	x	x	1
ZTK	6	x	x	2
ZGS	5	x	x	0
ZGK	5	x	x	3

技术信息

优势



Design	Rodless cylinder with direct power transmission through the tube slot onto the yoke.	设计	无杆气缸，通过管槽直接输动力至活塞杆
Stroke length	Any length up to 6,000 mm, longer on request	冲程长度	可长达6000mm；根据需求可定制更长冲程
Mounting position	Any	安装位置	任意位置
Mode of action	Double-action with adjustable end position cushioning	运转模式	以可调终位缓冲器，实现双动
Operating pressure	2 ... 8 bar	工作压力	2-8 巴
Operating temperature	-20 °C ... +70 °C	工作温度	-20 °C - +70 °C
Medium	Filtered and slightly oiled or unoled compressed air	介质	经过滤的、含少量油或不含油的压缩空气
Materials	All parts made of high-strength anodized alloy, sealing parts made of oil-resistant plastics and elastomers	材料	铝制件由高强度阳极氧化处理的合金制成；密封件由抗油塑料和弹性材料制成
The pin cushioning	The novel pin cushioning works similarly to an injection pump, i.e. rotating a control notch changes the flow volume. The cushioning effect can be continuously varied from 0 to 100% by rotation.	销式缓冲器	这一新型的销式缓冲器工作原理与注射泵类似，即旋转控制槽口来更改流量。通过旋转，可以将缓冲效果在0-100%之间进行连续调整。

- The cylinder program has a modular design with standard cylinder models and various attachment parts.
- The compact desing of the profile tube and yoke allows the mounting of the cylinder at minimum space requirements.
- An even shorter installation length can be achieved using the shorter yoke variant (approx. -40%) with slightly lower performance characteristics.
- The optimized profile tube design guarantees low deflection and slot widening at minimum material usage.
- The stroke can be freely selected up to 6000 mm.
- Longitudinal grooves on all sides of the profile enable installation of attachment parts (guide carriage) over the entire stroke length.
- T- and C-grooves enable installation of switches.
- Front and side wipers of the yoke help prevent dirt accumulations along the slot.
- The standard end caps enable various connection variants.
- The pin cushioning damping can be adjusted without steps.
- The front mounting bracket can be rotated 4 x 90°.
- Attachment parts can also be added at a later stage.
- Normal operation does not require any maintenance work (greasing etc.).
- Wear part sets and repair sets enable repair of defective cylinders and, within the framework of preventive maintenance, help to prolong their service life.

- 我们的气缸产品采用模块化、标准型号设计，配备有多种附加零件
- 异形管材和活塞杆采用紧凑型设计，极大地降低了气缸的安装空间
- 采用短活塞杆（长度缩减约40%），大大缩短气缸的安装长度，性能特点仅有些微降低
- 异形管材优化设计，有效降低挠度，拓宽管槽，最大程度地降低材料消耗
- 冲程可自由选取，最高达6000 mm
- 附加零件（导轮架）可通过异形管材各侧纵沟沿整个冲程安装
- 开关可通过T形及C形凹槽安装
- 活塞杆前、侧面的除尘杆能够防止槽内脏物积聚
- 标准端盖可以实现不同的连接方式
- 销式缓冲装置无须步进式调整
- 前安装托架可4 x 90°旋转
- 后续还可添加附加零件
- 正常操作不需要进行任何维护（加润滑脂等）
- 故障气缸可利用磨损件组件和维修组件维修，并通过预防性维护作业，帮助延长气缸的使用寿命

Weight table

重量表

Cylinder 气缸	Weight 0 mm Stroke 零冲程下重量								Weight / Stroke 重量/冲程		
	ZS	ZK	ZF	ZFF	ZFK	ZSS	ZKS	ZP	ZS/ZK/ZF/ZFF/ZFK	ZSS/ZKS	ZP
									for 1000 mm/Stroke 每1000 mm/冲程		
Ø 18 mm	0,4 kg	0,1 kg	0,5 kg	0,6 kg	0,3 kg	0,9 kg	0,5 kg	-	1,5 kg	1,9 kg	-
Ø 25 mm	0,8 kg	0,5 kg	1,1 kg	1,3 kg	0,7 kg	1,7 kg	1,0 kg	1,9 kg	2,5 kg	2,8 kg	5,0 kg
Ø 32 mm	1,3 kg	1,0 kg	1,8 kg	2,4 kg	1,3 kg	3,1 kg	1,8 kg	3,3 kg	3,4 kg	5,7 kg	6,8 kg
Ø 40 mm	2,2 kg	1,6 kg	3,2 kg	4,2 kg	2,1 kg	5,1 kg	3,7 kg	5,8 kg	4,5 kg	7,5 kg	9,0 kg
Ø 50 mm	4,3 kg	2,7 kg	5,9 kg	7,5 kg	3,4 kg	9,7 kg	5,2 kg	11,7 kg	7,5 kg	11,9 kg	15,0 kg
Ø 63 mm	6,6 kg	4,2 kg	8,4 kg	10,0 kg	5,5 kg	13,3 kg	7,4 kg	17,0 kg	9,5 kg	13,9 kg	19,0 kg

Information on weight for further cylinders are available on request  
我们可根据用户的需要提供更多气缸重量信息



Lanamatic hosts design data for most cylinder models and accessories on the Traceparts platform. Existing and potential customers can generate 2D and 3D design data for a defined cylinder (cylinder model, diameter and stroke length) themselves and download it in various formats for their CAD-based application design free of cost.

Lanamatic在Traceparts平台上存有大部分气缸和配件设计数据，老客户和新客户可自行在原有气缸（气缸型号、直径和冲程长度）基础上进行2D和3D设计，也可以各种格式免费下载到CAD应用软件中。

www.tracepartsonline.net > Lanamatic

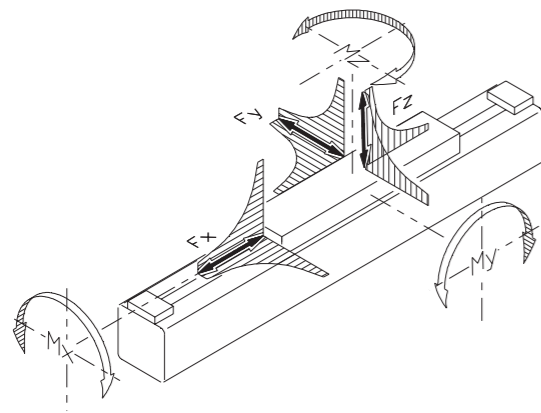
www.tracepartsonline.net > Lanamatic



负荷

All information on forces and torques relate to a speed of  $v < 0.35$  m/s. Adhering to these values results in optimized service life, noise emissions and operational behavior. Higher speeds reduce the permissible forces.

所有力及力矩信息与速度  $v < 0.35$  m/s 相关，只要严格遵循这些规定值，即可延长气缸的使用寿命、降低噪音、提高运行工况。速度越高，允许的力越低。



**Attention 注意:**  $\Sigma F = F_{zul} = \sqrt{F_x^2 + F_y^2 + F_z^2}$

ZS Standard cylinder

ZS 标准气缸

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	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 Standard cylinder short

ZK 标准短缸

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{zul}$ bei v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	40	140	40	25	10	0.4	1.7	1.7
25	270	55	230	90	50	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	590	1500	850	380	5.0	18.0	18.0

负荷

ZS+ Standard cylinder with broad yoke head

ZS+ 标准气缸带宽活塞杆头

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
25	270	350	480	200	120	50	5	16	16
40	680	750	800	700	400	175	20	55	55

At the moment we only offer the diameters 25 and 40, futher diameters are planned.

目前我们能提供的气缸直径是25和40，未来将供应更多直径气缸。

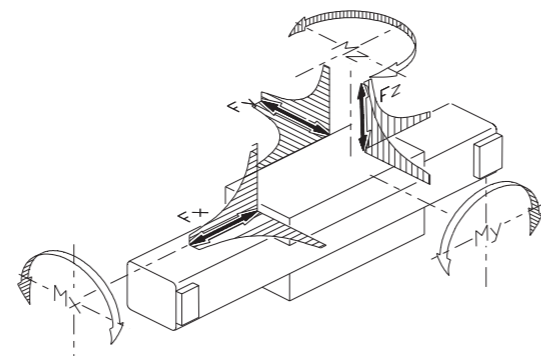
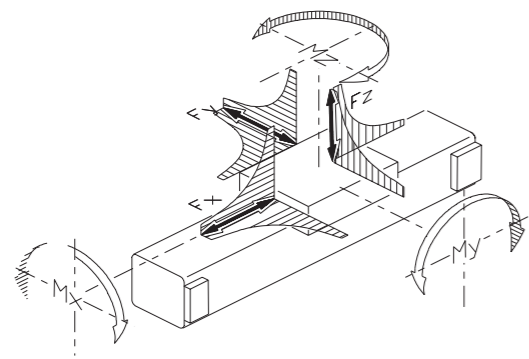
ZK+ Standard cylinder short with broad yoke head

ZK+ 标准短缸带宽活塞杆头

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
25	270	170	230	95	55	28	2,5	3,3	3,3
40	680	750	800	445	260	125	8	12	12

At the moment we only offer the diameters 25 and 40, futher diameters are planned.

目前我们能提供的气缸直径是25和40，未来将供应更多直径气缸。



ZF/ZFU Guiding cylinder with external carriage

ZF/ZFU 导流缸，带外部导轮架

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	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

ZFK Guiding cylinder short with external carriage

ZFK 导流短缸，带外部导轮架

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{zul}$ bei v			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	150	150	50	30	12	1.8	1.8	1.8
25	270	250	250	100	60	30	4	4	4
32	440	450	450	250	135	65	10	10	10
40	680	600	600	480	280	140	16	16	16
50	1060	900	900	800	480	220	30	30	30
63	1680	1100	1100	1500	950	400	45	45	45

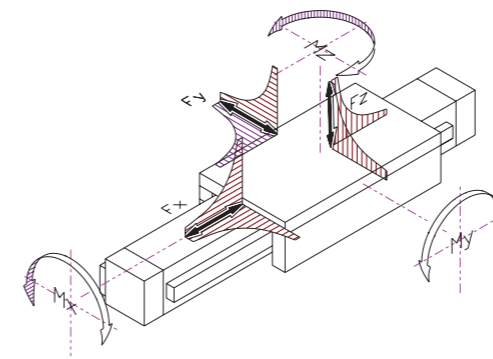
ZFF Guiding cylinder with 2 external carriages

ZFF 导流缸，带两个外部导轮架

Data for Mz when guide carriages have been connected

导轮架连接后的Mz数据

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	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



ZSS Guiding cylinder with external ball bearing guide

ZSS 导流气缸，带外滚珠轴承导轨

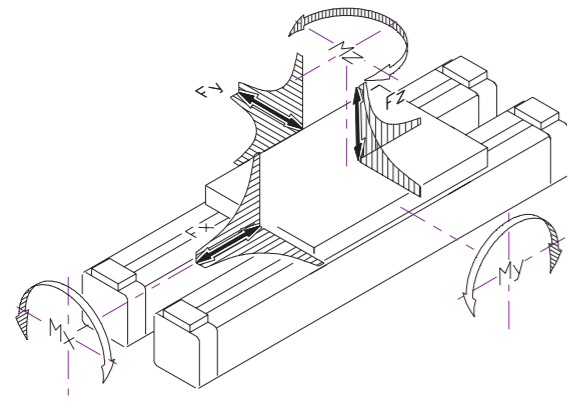
Piston Ø 活塞 Ø	Load rating per carriage 各导轮架的额定负荷			Rail 导轨		Torques 力矩		
	Type 型号	$C_{dyn}$ N	$C_0$ N	Type 型号		Mx (Nm)	My (Nm)	Mz (Nm)
18	MR15MN	3810	5590	MR15M		87	22	
25	EGH15CA	8350	16300	L1S15		170	154	130
32	EGH20CA	11700	23500	L1S20		320	266	222
40	EGH25CA	18800	36500	L1S25		572	516	434
50								
63	EGH30CA	28800	55000	L1S30		1040	870	730

ZKS Guiding cylinder short with external ball bearing guide

ZKS 导流短缸，带外滚珠轴承导轨

Piston Ø 活塞 Ø	Load rating per carriage 各导轮架的额定负荷			Rail 导轨		Torques 力矩		
	Type 型号	$C_{dyn}$ N	$C_0$ N	Type 型号		Mx (Nm)	My (Nm)	Mz (Nm)
18	MR15MN	3810	5590	MR15M		43	11	11
25	EGH15CA	8350	16300	L1S15		85	77	65
32	EGH20CA	11700	23500	L1S20		160	133	111
40	EGH25CA	18800	36500	L1S25		286	258	217
50								
63	EGH30CA	28800	55000	L1S30		520	435	365

## 负荷



## ZP Parallel cylinder

## ZP 平行缸

Piston Ø 活塞 Ø	$v_{max} \leq 0.35 \text{ m/s}$ 最高速度不高于0.35m/s			$F_{allowed}$ at v 不同速度下允许的F			Torques 力矩		
	Fx (N) Action force at 6 bar 6巴条件下的作用力	Fy (N)	Fz (N)	$F_{allowed}$ at 0.75 m/s 0.75 m/s下允许的F	$F_{allowed}$ at 1 m/s 1 m/s下允许的F	$F_{allowed}$ at 1.5 m/s 1.5 m/s下允许的F	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
25	540	240	900	300	175	75	16	27	27
32	880	360	1220	540	300	130	29	52	52
40	1360	540	1750	1090	620	280	55	88	88
50	2120	750	2500	1760	1000	450	90	155	155
63	3360	1000	3300	2900	1660	720	148	260	260

## Note

If greater masses are to be moved, we recommend supporting them at the center of gravity with an additional hydraulic shock absorber.

Information on load values for special cylinders are available on request.

## 备注

如需要移动更多质量, 建议重力中心处用液压减震装置支撑。

我们可根据用户的需要提供更多特殊气缸负荷数据信息。

## 备注及安全规范

## Notes

- The provided data is for product description purposes only and is not to be construed as guaranteed properties in the legal sense.
- Any claims for damages against us, no matter on what legal basis, are null and void, unless we are responsible for willful intent or gross negligence.
- Technical modifications, omissions and errors reserved.

## Safety regulations

Lanamatic cylinders are manufactured in accordance with state-of-the-art standards and are safe to operate.

Dangers can arise if:

- The cylinder is used, mounted or serviced by unqualified personnel or used, mounted or maintained improperly.
- The cylinder is used contrary to its designated use.
- The accident prevent regulations, the VDE guidelines, and the safety and mounting instructions are not observed.

In addition, note that:

- Procedures that impair the functioning and safe operation of Lanamatic cylinders must be avoided.
- The Lanamatic cylinder may be used according to its specification only, any other use being deemed as contrary to its designated use.
- The manufacturer shall not be liable for damage resulting from such use.
- During mounting, reconstruction and maintenance work, the energy supplies must be removed.
- During maintenance, mounting and reconstruction, it is recommended to remove the Lanamatic cylinder from the work area and to perform the work outside of the danger zone.
- During mounting, connection, setup, commissioning and testing, you have to make sure that accidental actuation of the cylinder by the installer or any other person is not possible/reliably avoided.
- Drilling of additional holes, threads or mounting of not official Lanamatic accessories should only be done after consultation with Lanamatic AG.
- If the cylinder is to be operated in an environment containing abrasive dust or aggressive vapors, prior approval must be obtained from the Lanamatic AG.
- Otherwise the current safety and accident prevention regulations valid in the place of use shall apply.

## 备注

- 所给数据仅供产品说明使用, 不构成法律意义上的特性保证。
- 除本公司因蓄意或重大过失负责外, 针对本公司提出的任何索赔, 无论是以何种法律为依据, 均是无效的。
- 本公司保留技术修改、删减和错误的权利。

## 安全规范

Lanamatic气缸根据最高标准制造, 操作安全。

在以下情况下, 可能发生危险:

- 气缸由没有资质的人员使用、安装或维护; 或气缸的使用、安装或维护方法不当。
- 气缸未用于规定用途。
- 未遵守事故预防规定、德国电气工程师协会 (VDE) 指导方针以及安全和安装说明。

此外, 请注意:

- 不得实施有损Lanamatic气缸功能和运行安全的程序
- 必需根据相关规范使用Lanamatic气缸; 其它任何使用都将视为未按规定用途使用。
- 生产商不对因上述使用行为产生的损失负责。
- 安装、改造和维护作业过程中, 必须断电。
- 维护、安装和改造过程中, 建议将Lanamatic气缸从作业区域拆除, 并在危险区域外实施相关作业。
- 安装、连接、设置、调试和测试过程中, 必须防止安装人员或任何其它人员意外启动气缸。
- 与Lanamatic AG协商后, 方能钻孔、车螺纹或安装非原装配件。
- 如果气缸需要在含有磨屑或侵蚀蒸汽的环境中运行, 则必须提前获得Lanamatic AG的批准。
- 使用地的现行安全和事故预防规程将适用。



ZS Standard cylinder  
ZS 标准气缸



ZK Standard cylinder short  
ZS 标准短缸

ZS/ZK Standard cylinder

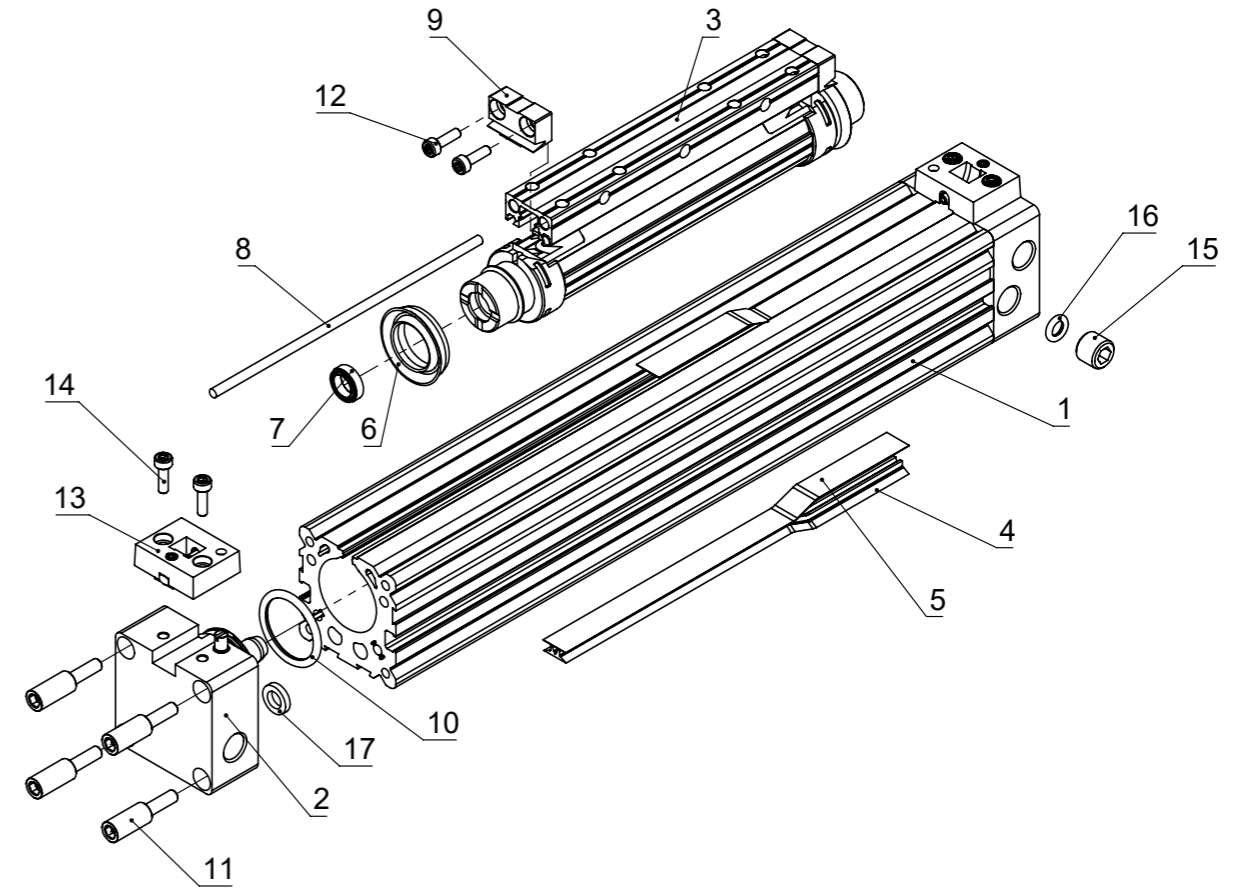
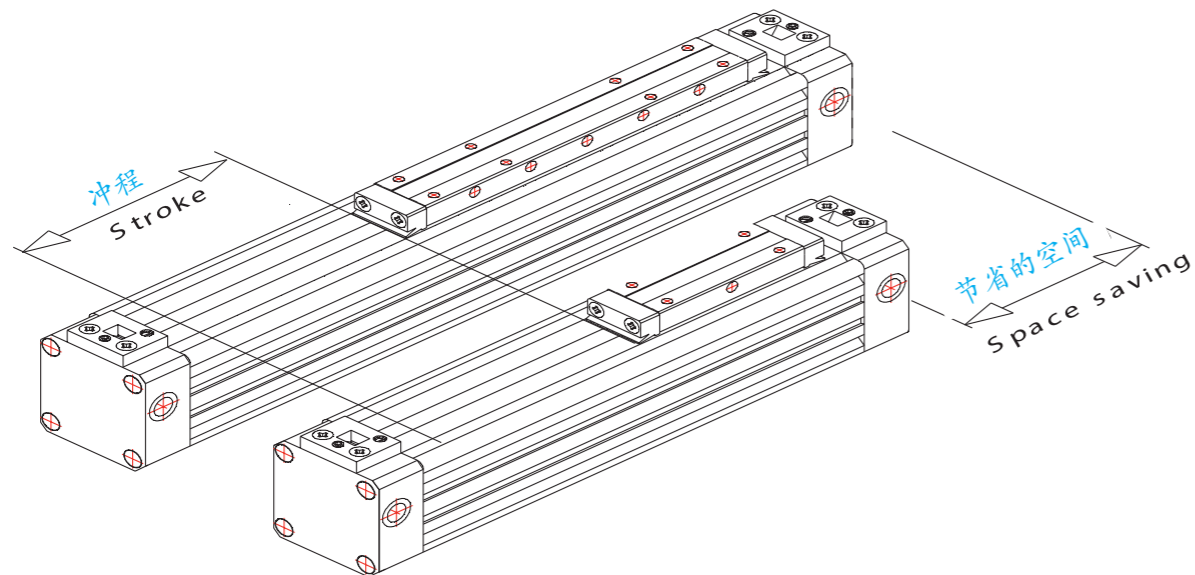
Technical information

- ZS and ZK are the basis cylinder models that almost all other cylinder models are based on.
- The ZK model, compared to the ZS model, is characterized by offering up to 40 % shorter overall cylinder length at the same stroke due to its shorter yoke (depending on the stroke length).
- The shorter yoke of the ZK model brings slightly lower performance data regarding forces and torques in comparison with the ZS model.
- ZS and ZK models are generally delivered with a yoke with an integrated magnet.
- Any additional guide systems and accessories can be installed to ZS and ZK models later on.

ZS/ZK 标准气缸

技术信息

- ZS和ZK气缸为基本款气缸，是所有其他型号气缸的基础
- 与ZS气缸相比，ZK气缸因采用短活塞杆设计（取决于冲程长度），因而冲程相同的情况下整体气缸长度缩短40%
- 与ZS气缸相比，由于ZK气缸采用短活塞杆设计，力、扭矩相关的性能数据略有下降
- ZS和ZK气缸一般配备有集成磁活塞杆
- 可将任一附加导轨系统或配件安装到ZS和ZK气缸



Part list

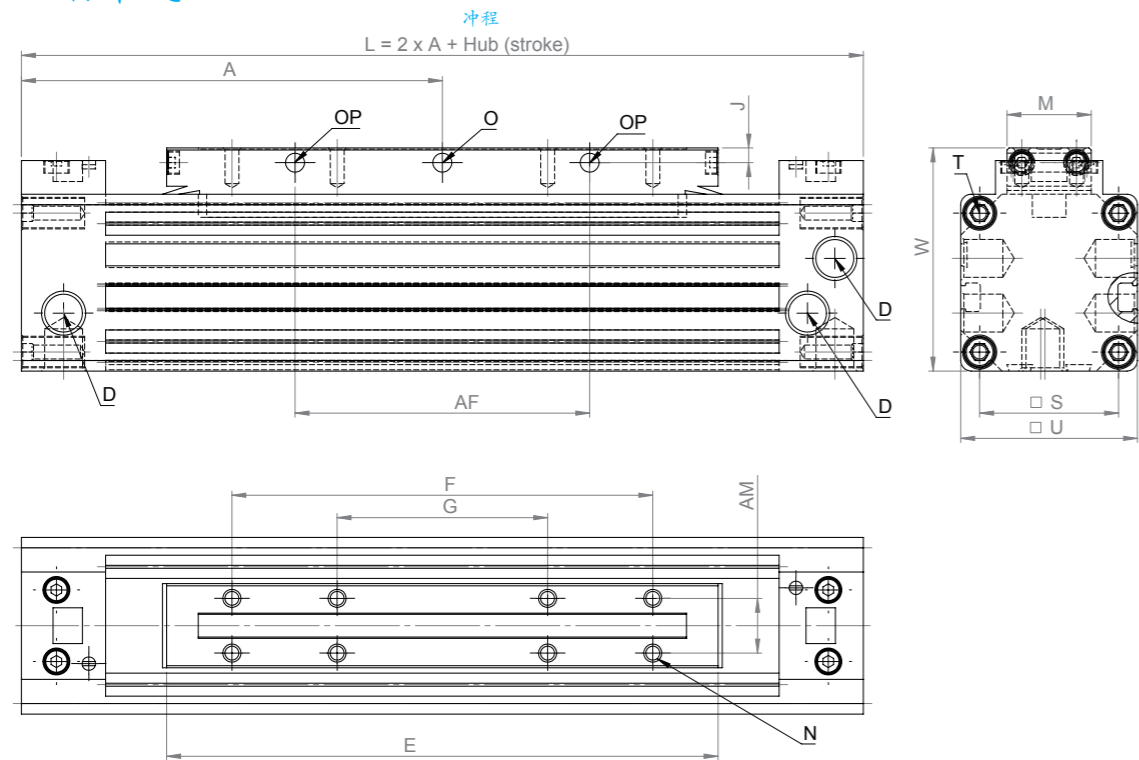
零件清单

Pos. 序号	Description 说明	Order number 订单编号 ZS	Order number 订单编号 ZK	Piece 件数
1	Profile tube 异形管材	1XX0-0011		1
2	End cap set 端盖组件	0XX0-0121		1
3	Yoke 活塞杆	1XX0-1051	2XX0-1051	1
4	PU-sealing strip PU密封条	1XX0-0033		
5	Cover strip 盖条	1XX0-0041		
6	Piston seal 活塞密封件	1XX0-8008		2
7	Cushion ring 缓冲环	1XX0-8001		2
8	Wiper 除尘杆	1XX0-0171		2
9	Head wiper 除尘杆端盖	1XX0-0152		2
10	O-Ring O形环	1XX0-8090		2
11	Special screw 特制螺栓	1XX0-0261		8
12	Cylinder head screw 气缸端盖螺栓	DIN 912 / ISO 4762		4
13	Tape cap 封条端盖	1XX0-1142		2
14	Special screw 特制螺栓	DIN 912 / ISO 4762		4
15	Lock screw 锁紧螺栓	1XX0-1142		6
16	O-Ring O形环	1XX0-8092		6
17	Flat seal 扁型密封件	1XX0-8240		2

XX = Cylinder diameter / 气缸直径



ZS 标准气缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
AF	50	70	100	140	180	230
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	103	131	171	220	280	333
F	75	100	140	180	220	280
G	---	50	70	90	110	140
J	3	3,5	4,5	5	6,5	8
L	L = 2 x A + Stroke 冲程					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

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

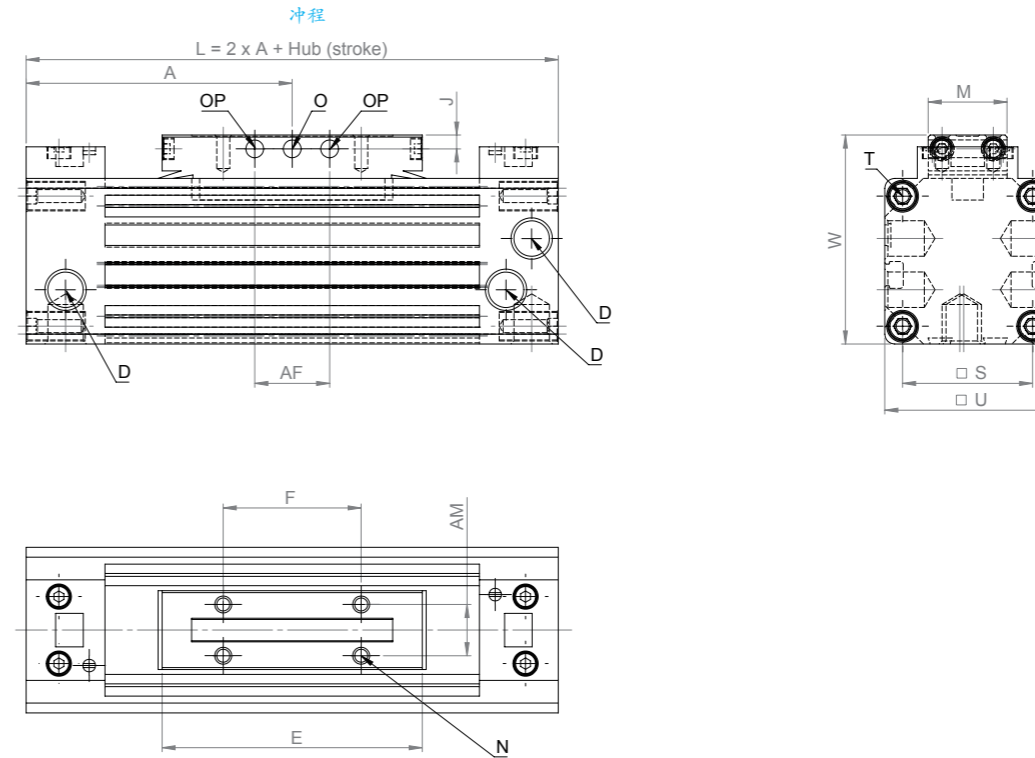
订单示例:  
ZS Ø 25标准气缸  
冲程100 mm

Order number

订单编号

Port Standard	标准端口	1	2	5	0	-	0	0	0	0	-	0	1	0	0
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ZK 标准短缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
AF	15	19	35	50	46	70
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	58	66	86	110	130	153
F	30	35	55	70	70	100
J	3	3,5	4,5	5	6,5	8
L	L = 2 x A + Stroke 冲程					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZK Ø 25 Standard cylinder short  
with stroke 100 mm

订单示例:  
ZK Ø 25标准短缸  
冲程100 mm

Order number

订单编号

Port Standard	标准端口	2	2	5	0	-	0	0	0	0	-	0	1	0	0
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ZS+/ZK+ 标准气缸, 带宽活塞杆头

ZS+/ZK+ 标准气缸, 带宽活塞杆头



ZS+ Standard cylinder with broad yoke head  
ZS+ 标准气缸, 带宽活塞杆头



ZK+ Standard cylinder short with broad yoke head  
ZK+ 标准短缸, 带宽活塞杆头

ZS+/ZK+ standard cylinder with broad yoke head

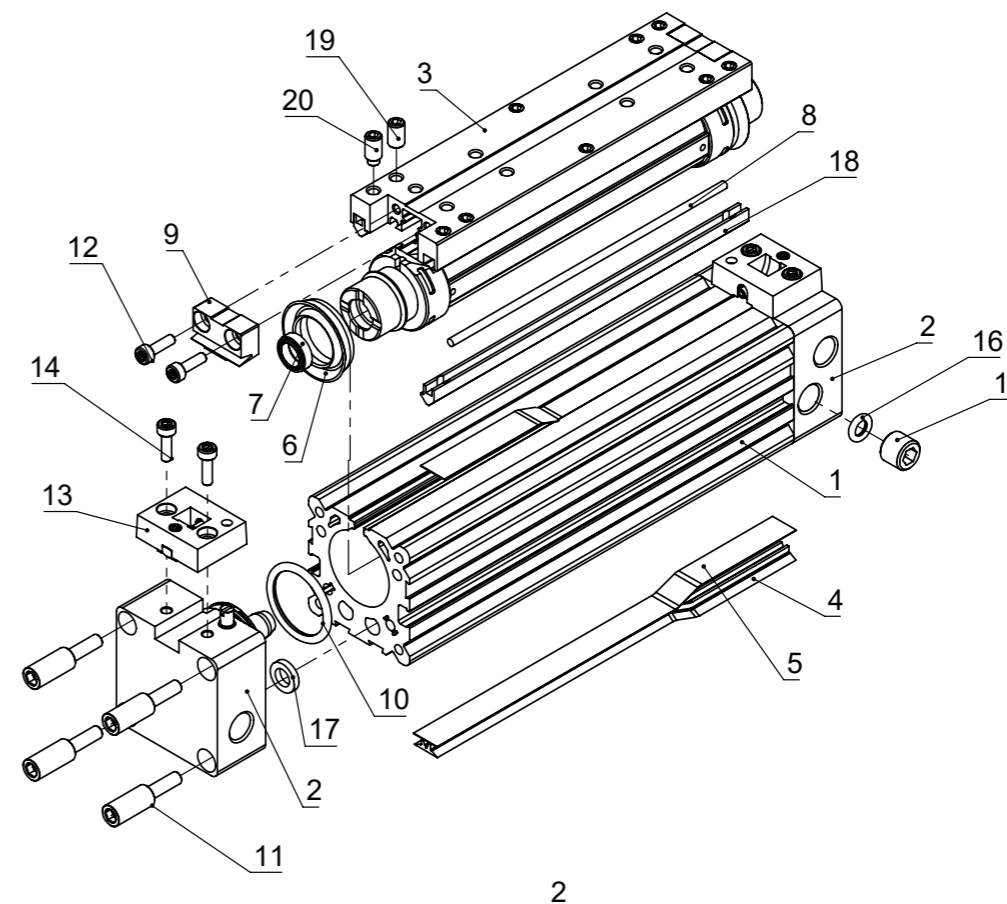
Technical information

- Standard cylinder with broad yoke head for absorbing greater forces and torques than the normal ZS/ZK standard cylinders.
- Yoke head is supported in grooves of the profile tube via guiding bars and hence has greater stability.
- ZS+/ZK+ offer a more performant solution as compared to normal ZS/ZK standard cylinders.
- In terms of mass, ZS+/ZK+ differ from the normal ZS/ZK standard cylinders only by a broader yoke head.
- It is NOT possible to install additional guiding elements on ZS+/ZK+.

ZS+ / ZK+ 标准气缸, 带宽活塞杆头

技术信息

- 带宽活塞杆头的标准气缸比普通ZS/ZK标准气缸吸收更多力和扭矩
- 通过导向杆将活塞杆头支撑于异形管材凹槽内, 从而提高其稳定性。
- 与普通ZS/ZK标准气缸相比, ZS+/ZK+气缸的性能更强
- 在质量上, ZS+/ZK+气缸与普通ZS/ZK标准气缸的差异是活塞杆头更宽
- ZS+/ZK+气缸上不能安装任何附加导流元件



Part list

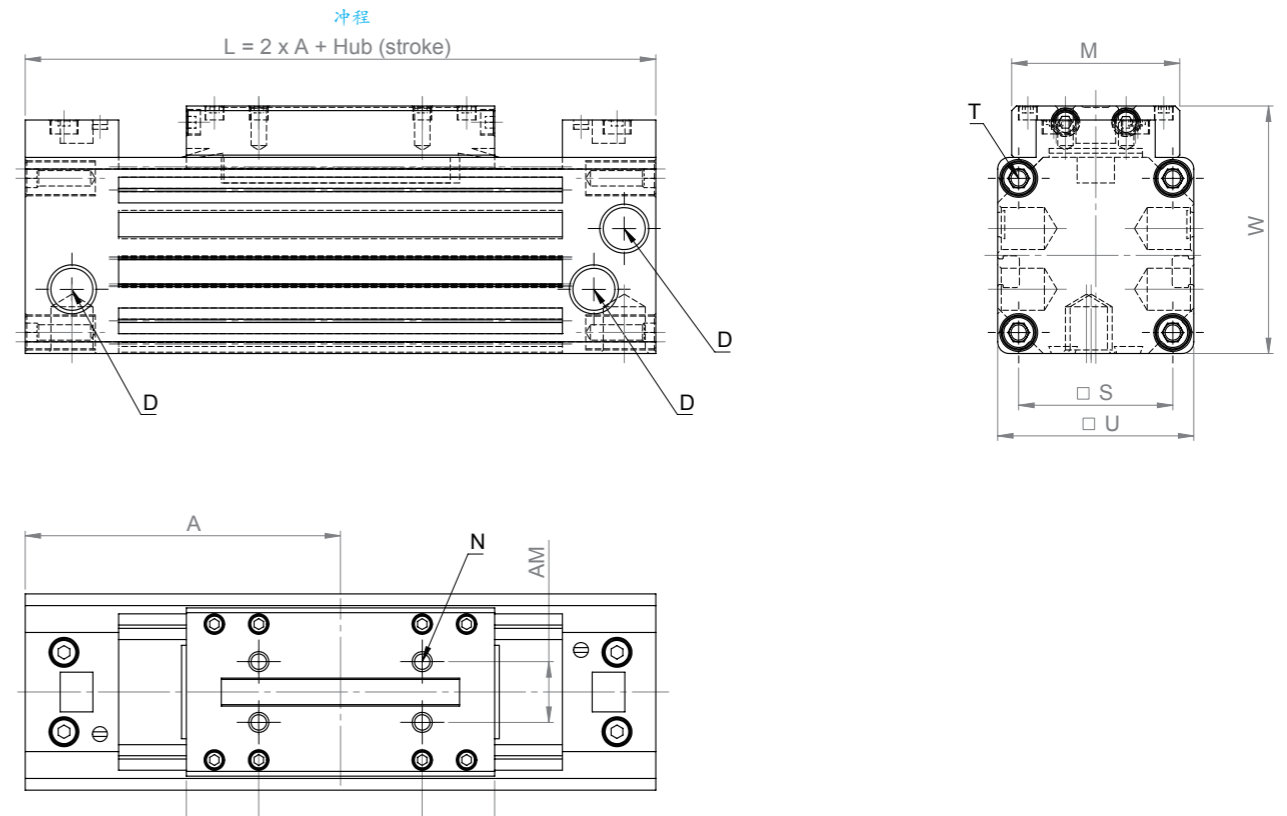
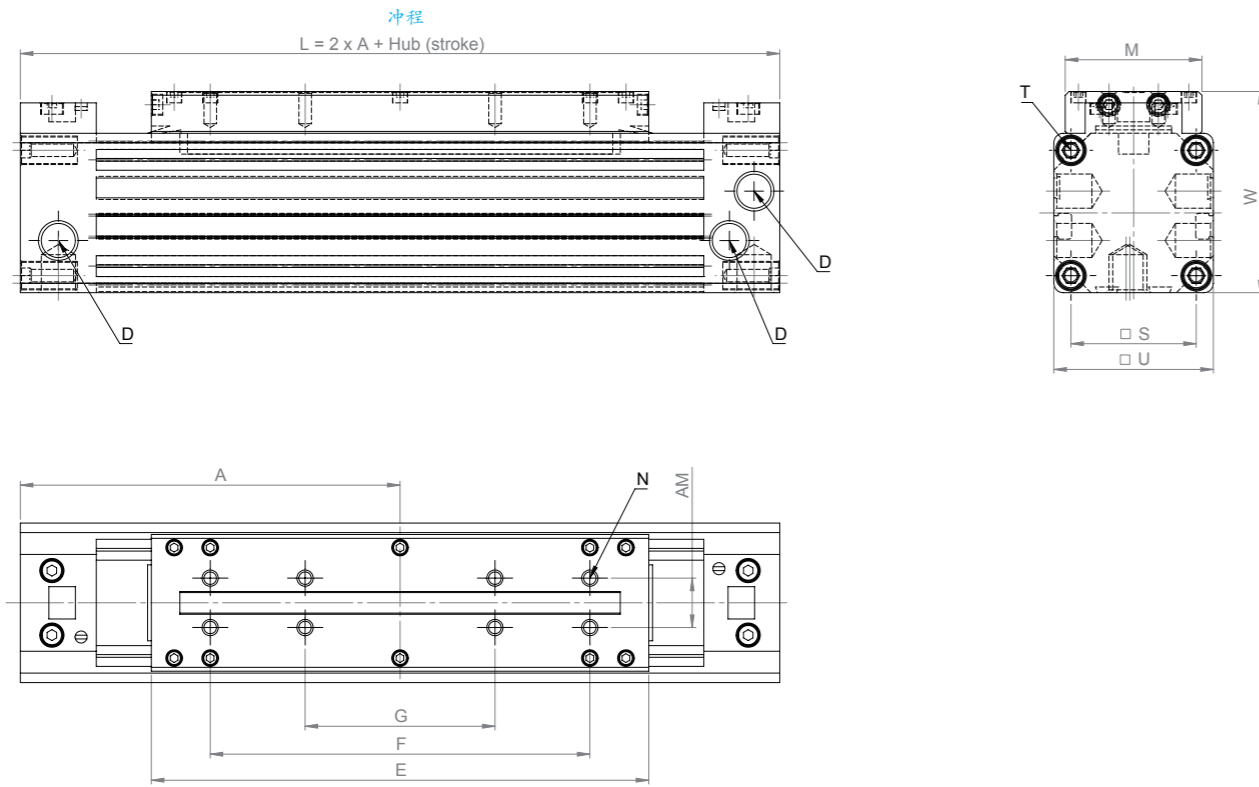
零件清单

Pos. 序号	Description 说明	Order number 订单编号		Piece 件数	
		ZS+	ZK+	ZS+	ZK+
1	Profile tube 异形管材	1XX0-0011		1	
2	Set of end caps 端盖组件		0XX0-0121	1	
3	Yoke 活塞杆	1XX0-1056	2XX0-1056	1	1
4	PU-sealing strip PU密封条		1XX0-0033		
5	Cover strip 盖条		1XX0-0041		
6	Piston seal 活塞密封件		1XX0-8008	2	
7	Cushion ring 缓冲环		1XX0-8001	2	
8	Press bar 除尘杆	3XX0-0231	3XX0-0232	2	2
9	Head wiper 除尘杆端盖		1XX0-0152	2	
10	O-Ring O形环		1XX0-8090	2	
11	Special screw 特制螺栓		1XX0-0261	8	
12	Cylinder head screw 气缸头螺栓		DIN 912 / ISO 4762	4	
13	Tape cap 封条端盖		1XX0-1142	2	
14	Special screw 特制螺栓		DIN 912 / ISO 4762	4	
15	Lock screw 锁紧螺栓		1XX0-0183	6	
16	O-Ring O形环		1XX0-8092	6	
17	Flat seal 平面密封件		1XX0-8240	2	
18	Lock screw 锁紧螺栓	3XX0-0221	3XX0-0222	2	2
19	Grub screw 无头螺丝		DIN 913 / ISO 4026	6	4
20	Grub screw 无头螺丝		DIN 913 / ISO 4026		4

XX = Zylinderdurchmesser / 气缸直径

ZS+ 标准气缸, 带宽活塞杆头

ZK+ 标准短缸, 带宽活塞杆头



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A		100		150		
AM		13		22		
D x thread depth D x 螺纹深度		G1/8" x 8 mm		G1/4" x 12 mm		
E		131		220		
F		100		180		
G		50		90		
L	L = 2 x A + Stroke 冲程					
M		36		51		
N x thread depth N x 螺纹深度		M4 x 7 mm		M6 x 10 mm		
S		33		51		
T x thread depth T x 螺纹深度		M4 x 9 mm		M6 x 12 mm		
U		42		63		
W		53		79		
Cushioning length 缓冲长度		18		34		

Example for order:  
ZS+ Ø 25 Standard cylinder with broad yoke head  
with stroke 100 mm

订单示例:  
ZS+ Ø 25标准气缸, 带宽活塞杆头  
冲程100 mm

Order number	订单编号
Port Standard	标准端口

1	2	5	1	-	0	0	0	0	-	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---

Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A		67,5		95		
AM		13		22		
D x thread depth D x 螺纹深度		G1/8" x 8 mm		G1/4" x 12 mm		
E		66		110		
F		35		70		
L	L = 2 x A + Stroke 冲程					
M		36		51		
N x thread depth N x 螺纹深度		M4 x 7 mm		M6 x 10 mm		
S		33		51		
T x thread depth T x 螺纹深度		M4 x 9 mm		M6 x 12 mm		
U		42		63		
W		53		79		
Cushioning length 缓冲长度		18		34		

Example for order:  
ZK+ Ø 25 Standard cylinder short with broad yoke head  
with stroke 100 mm

订单示例:  
ZK+ Ø 25标准短缸, 带宽活塞杆头  
冲程100 mm

Order number	订单编号
Port Standard	标准端口

2	2	5	1	-	0	0	0	0	-	0	1	0	0
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ZF Guiding cylinder with external carriage  
ZF 导流缸, 带外部导轮架

ZF/ZFK, ZFU and ZFF  
Guiding cylinders with external carriage

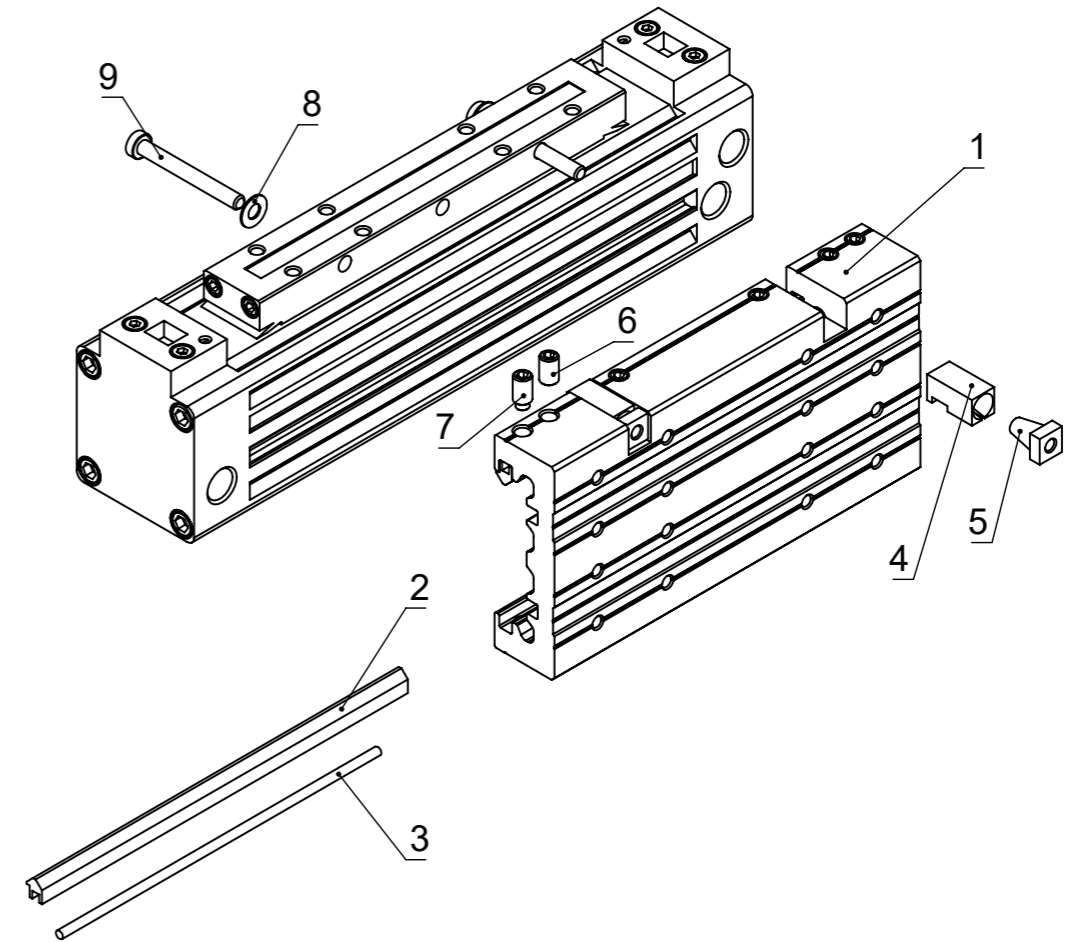
Technical information

- These guiding cylinders are characterized by an additional external guide carriage. The carriage is stabilised by guiding bars in the grooves of the profile tube.
- Thanks to the stabilisation of the carriage in the profile tube grooves, the guiding cylinder has significant better performance data compared to the standard cylinder.
- ZF and ZFK are the standard models of various guiding cylinders.
- ZFU is the guiding cylinder, where the carriage is mounted on the bottom side of the profile tube and connected by an additional angle with the yoke head.
- ZFF is the guiding cylinder, where a carriage is mounted on each side of the yoke head.

ZF/ZFK、ZFU及ZFF导流缸，带外部导轮架

技术信息

- 这些导流缸的外部可配置导轮架，导轮架由异形管材凹槽中的导向杆提供稳固的支持作用
- 由于异形管材凹槽内的导轮架得以稳固，与标准气缸相比，导流缸的性能数据有了很大的提升
- ZF和ZFK是其他导流缸的标准基本型号
- ZFU导流缸中，导轮架安装于异形管材的底部，通过附加角钢与活塞杆头连接
- ZFF导流缸中，导轮架安装在活塞杆头两侧



Part list

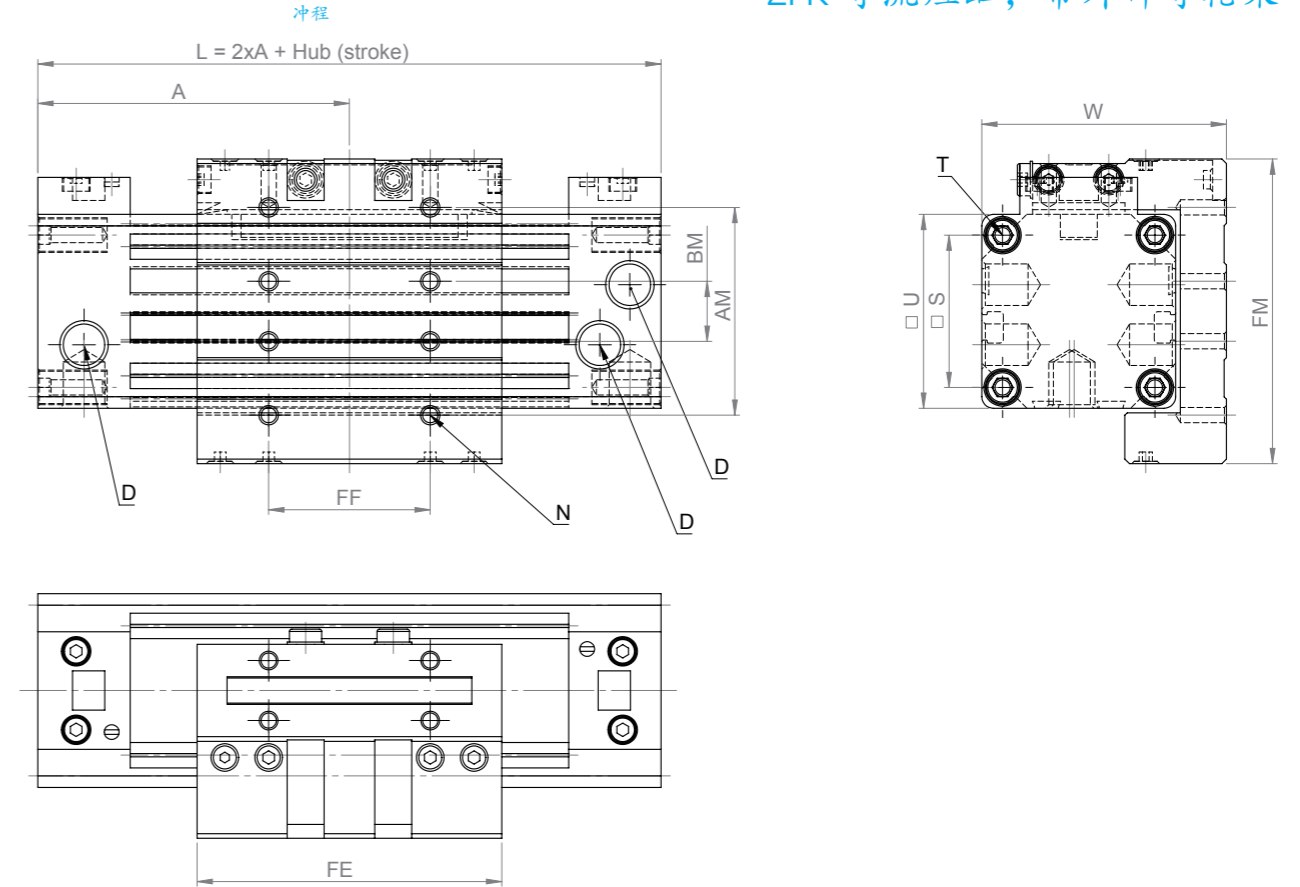
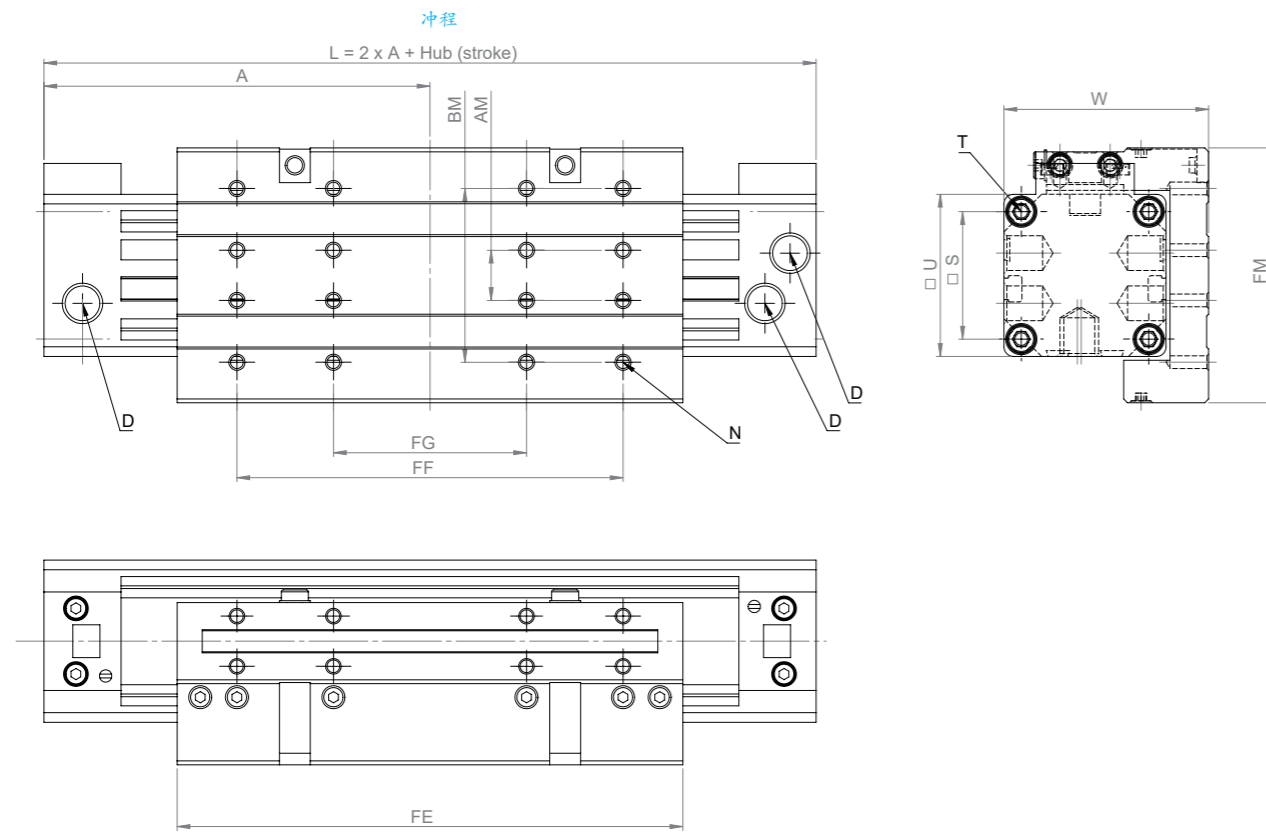
零件清单

Pos. 序号	Description 说明	Order number 订单编号		Piece 件数	
		ZF	ZFK	ZF	ZFK
1	Carriage 导轮架	3XX0-0212	3XX0-0213	1	
2	Guiding bar 导向杆	3XX0-0221	3XX0-0222	2	
3	Press bar 压杆	3XX0-0231	3XX0-0232	2	
4	Clamp wedge 夹紧楔	3XX0-0241		2	
5	Cone nut 锥形螺母	3XX0-0251		2	
6	Grub screw 无头螺丝	DIN 913 / ISO 4026		8	4
7	Grub screw with pin 销式无头螺丝	DIN 915 / ISO 4028		4	
8	Plain washer 平面垫圈	DIN 137B		2	
9	Cylinder head screw 气缸头螺栓	DIN 7984		2	

XX = Cylinder diameter 气缸直径

ZF 导流缸，带外部导轮架

ZFK 导流短缸，带外部导轮架



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	---	50	70	90	110	140
FM	50	66	80	97	116	136
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

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

订单示例:  
ZF Ø 25导流缸, 带导轮架  
冲程100 mm

Order number	订单编号
Port Standard	标准端口
	3 2 5 0 - 0 0 0 0 - 0 1 0 0

Measurements table

测量值表

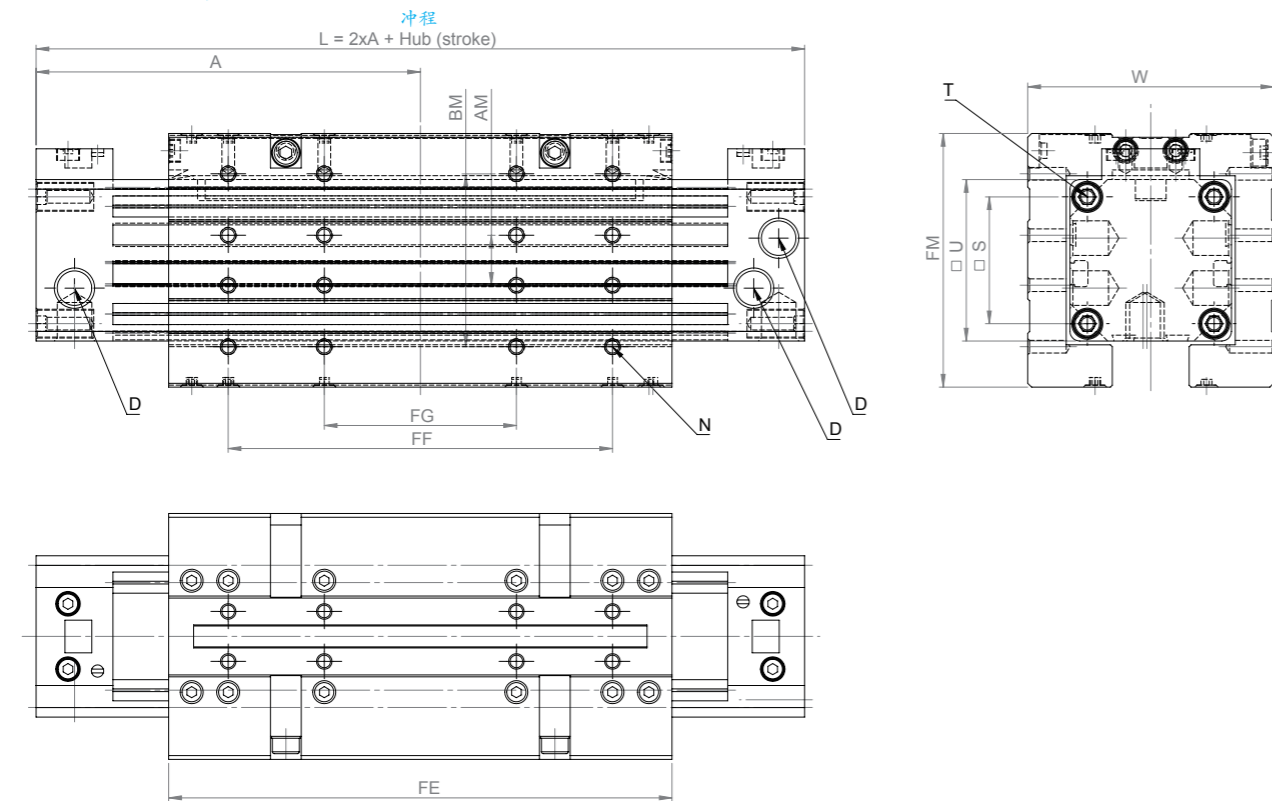
Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	58	66	86	110	130	153
FF	30	35	55	70	70	100
FM	50	66	80	97	116	136
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZFK Ø 25 Guiding cylinder short with external guide carriage  
with stroke 100 mm

订单示例:  
ZFK Ø 25导流短缸带外部导轮架  
冲程100 mm

Order number	订单编号
Port Standard	标准端口
	3 2 5 2 - 0 0 0 0 - 0 1 0 0

ZFF 导流缸, 带两个外部导轮架



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	---	50	70	90	110	140
FM	50	66	80	97	116	136
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	48	64	78	95	114	134
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZFF Ø 25 Guiding cylinder with 2 carriages  
with stroke 100 mm

订单示例:  
ZFF Ø 25导流缸, 带两个外部导轮架  
冲程100 mm

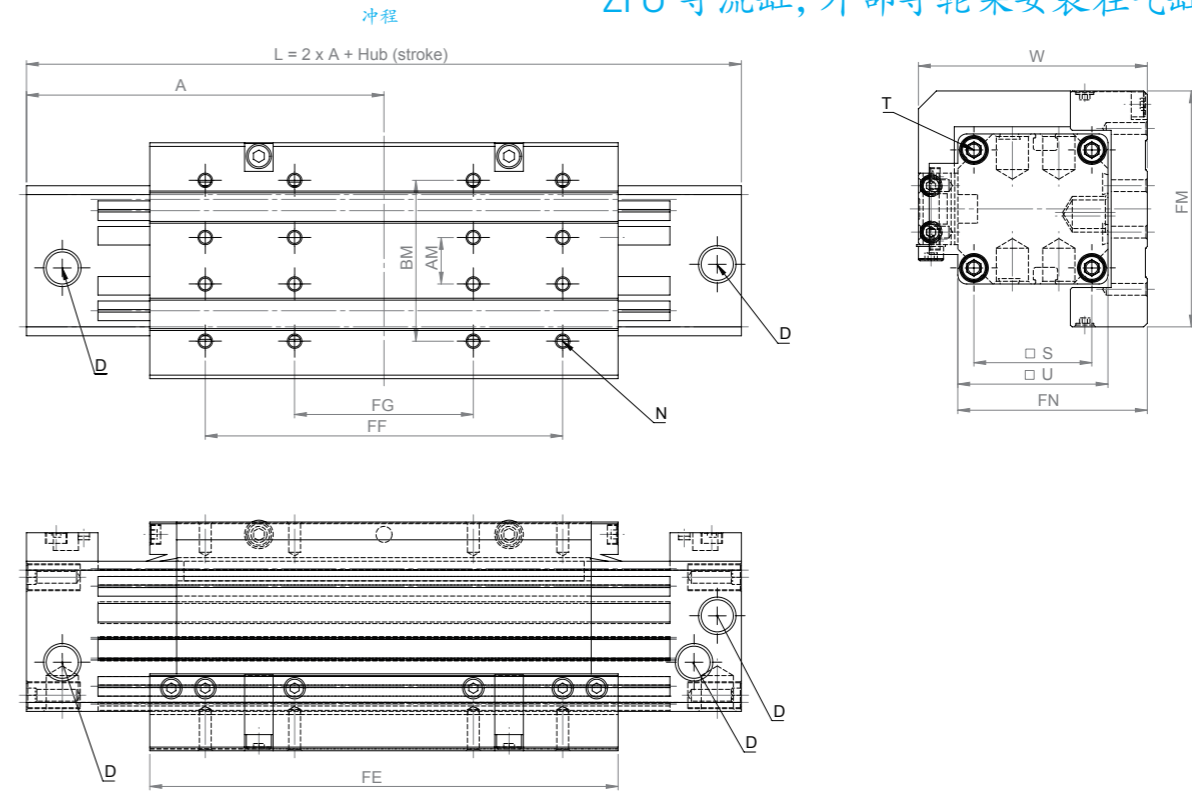
Order number

订单编号

Port Standard	标准端口	3	2	5	1	-	0	0	0	0	-	0	1	0	0
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ZFU 导流缸, 外部导轮架安装在气缸底部



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	---	50	70	90	110	140
FM	50	66	80	97	116	136
FN	39	53	65	79	96	113,5
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	48	64	78	95	114	134
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZFU Ø 25 Guiding cylinder with carriage on the bottom side  
with stroke 100 mm

订单示例:  
ZFU Ø 25导流缸, 导轮架安装在气缸底部  
冲程100 mm

Order number

订单编号

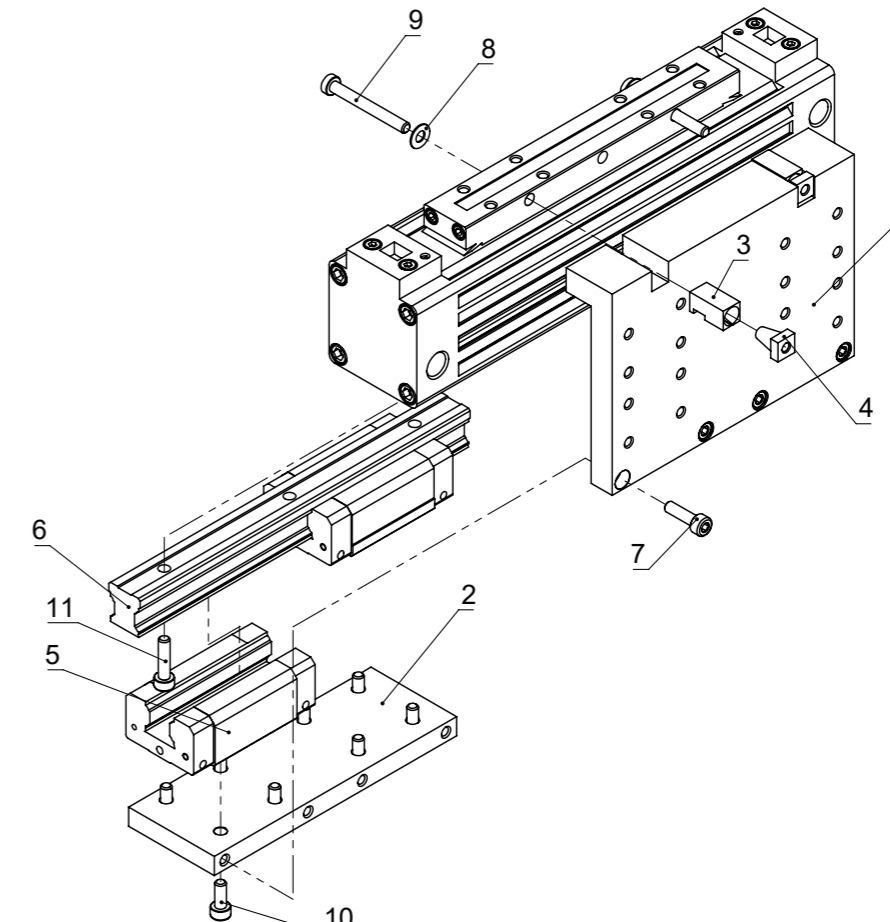
Port Standard	标准端口	3	2	5	5	-	0	0	0	0	-	0	1	0	0
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导流缸, 带外部滚珠轴承导轨

导流缸, 带外部滚珠轴承导轨



ZSS Guiding cylinder with ball bearing guide  
ZSS 导流缸, 带滚珠轴承导轨



### ZSS/ZKS Guiding cylinder with external ball bearing guide

#### Technical information

- ZSS and ZKS are characterised by a ball bearing guide mounted on the bottom side of the profile tube, which is suitable for very high forces and torques.
- For installation of the external ball bearing guide, a part of the underside of the profile tube must be slightly machined in order to achieve a clean and flat surface for installing the rail.
- ZSS guiding cylinders are delivered with 2 guide carriages on the ball bearing guide.
- ZKS guiding cylinders are delivered with 1 guide carriage on the ball bearing guide.
- The maximum stroke is limited to 3000 mm, grater strokes upon request.

### ZSS/ZKS 导流缸, 带外部滚珠轴承导轨

#### 技术信息

- ZSS和ZKS气缸的滚珠轴承导轨安装在异形管材的底部, 因此适用于对力和扭矩要求非常高的领域
- 安装外部滚珠轴承导轨时, 异形管材底部部件必须经过一定的机加工处理, 以使表面清洁、平整, 便于安装轨道
- ZSS导流缸的滚珠轴承导轨配备2个导轮架
- ZKS导流缸配备一个导轮架, 安于滚球轴承导轨之上
- 最大冲程限定在3000 mm, 可根据用户需求定制更大冲程

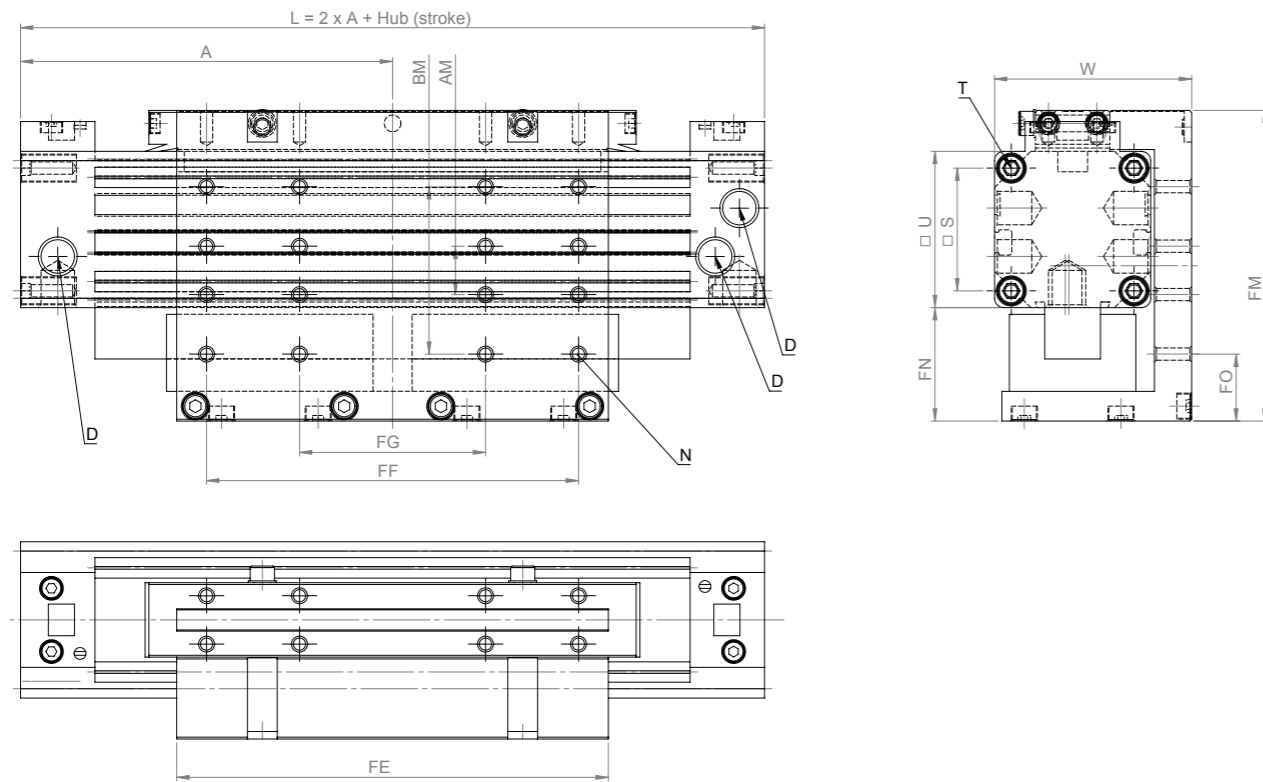
### Part list

### 零件清单

Pos. 序号	Description 说明	Order number 订单编号		Piece 件数	
		ZSS	ZKS	ZSS	ZKS
1	Fixing plate 固定板	1XX3-0005	2XX3-0005	1	
2	Rail plate 轨道板	1XX3-0003	2XX3-0003	1	
3	Clamp wedge 夹紧楔	3XX0-0241		2	
4	Cone nut 锥形螺母	3XX0-0251		2	
5	Carriage 导轮架			2	1
6	Rail 轨道				1
7	Cylinder head screw 气缸头螺栓	DIN 912 / ISO 4762		4	3
8	Plain washer 平面垫圈	DIN 137B		2	
9	Cylinder head screw 气缸头螺栓	DIN 7984		2	
10	Cylinder head screw 气缸头螺栓	DIN 912 / ISO 4762		8	4
11	Cylinder head screw 气缸头螺栓	DIN 912 / ISO 4762		depends on length 取决于长度	

XX = Cylinder diameter 气缸直径

ZSS 导流缸, 带外部滚珠轴承



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	90	116	156	200	260	313
FF	75	100	140	180	220	280
FG	---	50	70	90	110	140
FM	60,5	83,5	101	120	151	168,5
FN	20,5	30,5	36	41	55	55
FO	13	18	22	25	33	32
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

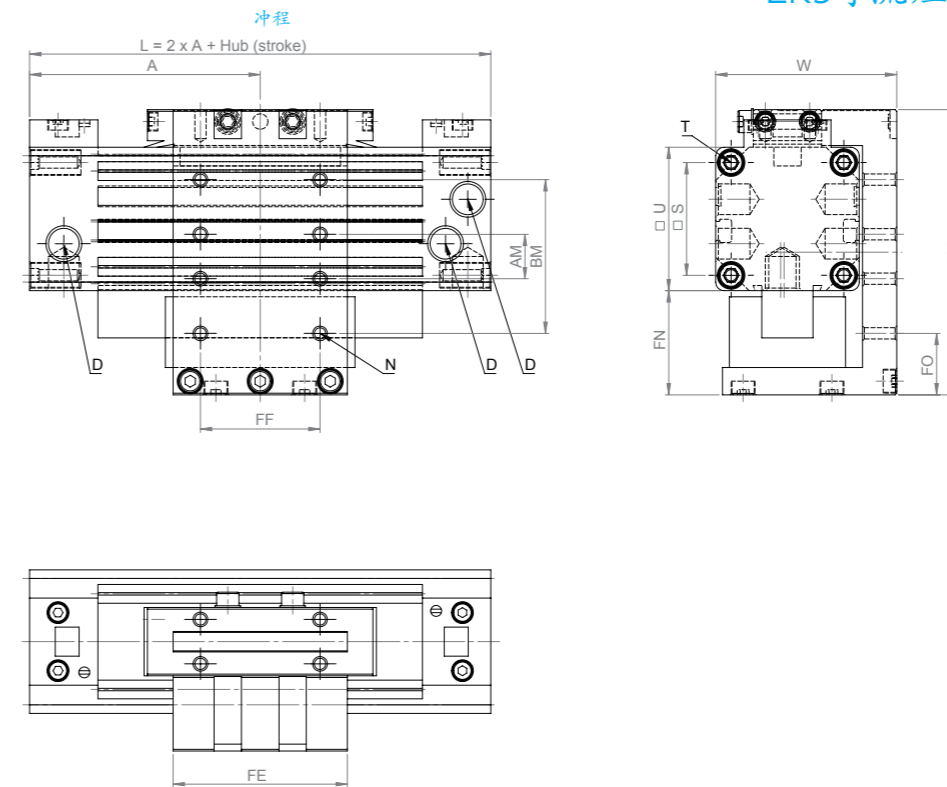
Example for order:  
ZSS Ø 25 Guiding cylinder with external ball bearing  
with stroke 100 mm

订单示例:  
ZSS Ø 25导流缸, 带外部滚珠轴承  
冲程100 mm

Order number	订单编号
Port Standard	标准端口



ZKS 导流短缸, 带外部滚珠轴承



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	45	51	71	90	110	133
FF	30	35	55	70	70	100
FM	60,5	83,5	101	120	151	168,5
FN	20,5	30,5	36	41	55	55
FO	13	18	22	25	33	32
L	L = 2 x A + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZKS Ø 25 Guiding cylinder short with external ball bearing  
with stroke 100 mm

订单示例:  
ZKS Ø 25导流短缸, 带外部滚珠轴承  
冲程100 mm

Order number	订单编号
Port Standard	标准端口



ZP 平行气缸



ZP Parallel cylinder  
平行气缸

ZP Parallel cylinder

Technical information

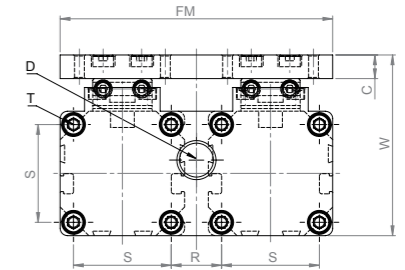
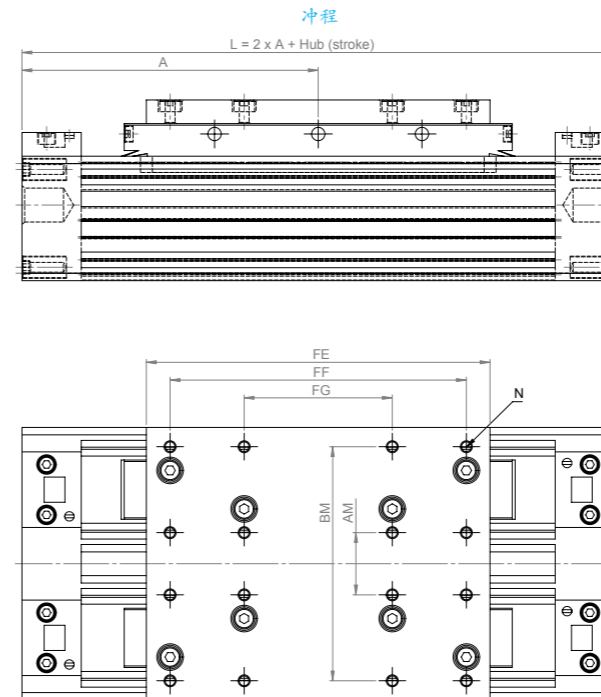
- Special cylinder with end caps designed for parallel installation of two ZS standard cylinders.
- The two yokes are interconnected via a permanently fixed plate.
- The specially designed end caps offer a central air connection on the front side for both cylinders.
- ZP is particularly suitable for applications involving conveyance of great masses (automatic placement machines, transport systems, hub systems etc.).
- The two cylinders arranged in parallel account for practically the double action force.
- Thanks to the cylinders arranged in parallel, ZP can absorb significantly higher loads.

ZP 平行气缸

技术信息

- 特制缸，特殊端盖设计可以平行安装两个ZS标准气缸
- 两个活塞杆通过永久性固定板互联
- 端盖采用特殊设计，双缸前侧中央空气连接
- ZP平行气缸更适用于大质量传送应用（自动置放机、运输系统、枢纽系统等）
- 两个气缸平行使用，更实用，相当于双动力
- 由于气缸为平行设计，ZP平行气缸可承载更大负荷

ZP 平行气缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	100	120	150	180	215
AM	21	26	35	44	55
BM	79	109	139	164	195
C	8	10	12	15	15
D x thread depth D x 螺纹深度	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm	G3/8" x 12 mm	G1/2" x 13 mm
FE	116	156	200	260	313
FF	100	140	180	220	280
FG	50	70	90	110	140
FM	92	125	159	184	218
L	L = 2 x A + Stroke 冲程				
N x thread depth N x 螺纹深度	M4	M5	M6	M8	M8
R	17	31	45	43	47
S	33	41	51	63	78
T x thread depth T x 螺纹深度	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
W	61	75	91	111	128,5
Cushioning length 缓冲长度	18	24	34	40	49

Example for order:  
ZP Ø 25 Parallel cylinder  
with stroke 100 mm

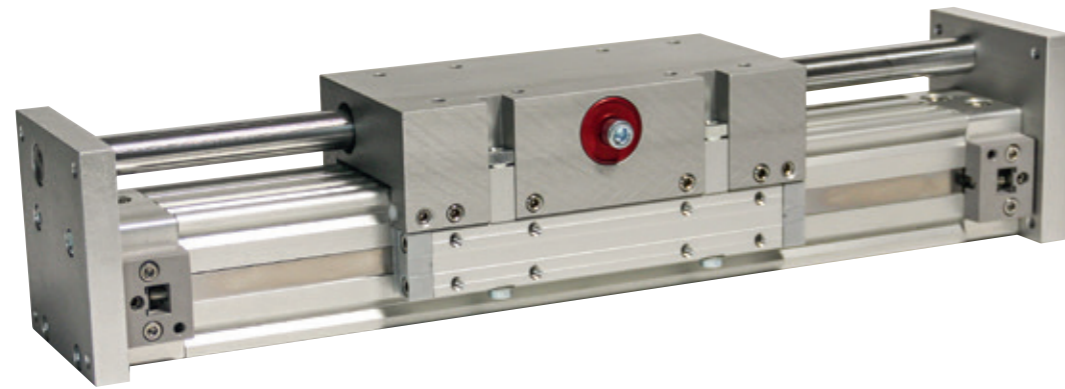
订单示例:  
ZP Ø 25平行气缸  
冲程100 mm

Order number 订单编号

4	2	5	0	-	0	0	0	0	4	-	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

ZFB 导流缸, 带被动锁闭装置

ZFB导流缸, 带被动锁闭装置



ZFB Guiding cylinder with passive locking unit  
ZFB 导流缸, 带被动锁闭装置

ZFB Guiding cylinder with passive safety unit

Technical information

- Special guiding cylinder with external passive locking unit for arrest in case of pressure drop.
- The locking unit can be installed on any ZS standard cylinder.
- The passive locking cartridge applies its locking force in case the pressure in the working pressure circuit drops.
- The locking force is applied to an external sliding guide.
- The locking force is greater than the action force of the cylinder.

Addition for using the ZFB Guiding cylinder

The locking forces Fb listed in the dimensional table on page 35 refer to pure static loading.

Slipping may occur if these maximum values are exceeded. The acting forces in dynamic load scenarios must under no circumstances exceed the static locking forces.

In addition, the locking forces may be slightly lowered if the shaft is not dry.

When using rodless pneumatic cylinders, we generally recommend controlling the same using a 5/3-way valve with an open center position.

With respect to time, the valve circuit must be controlled in such a way that the yoke is loaded with pressurized air on both sides in case of an intermediate stop before the locking cartridge is depressurized.

When releasing, the cylinder should be pressurized on both sides in order to prevent any sudden movements of the yoke (risk of accidents).

ZFB 导流缸, 带被动锁闭装置

技术信息

- 特制导流缸, 当出现压降时, 外部被动锁闭装置启动锁闭
- 锁闭装置可装于任何ZS标准气缸上
- 当工作回路中运行气压下降时, 被动锁闭筒可施加锁闭力
- 锁闭力施加在外部滑动导轨上
- 锁闭力大于气缸的作用力

ZFB导流缸使用方法补充

第35页测量值表上列有锁闭力Fb, 请参见纯静态负荷加载。

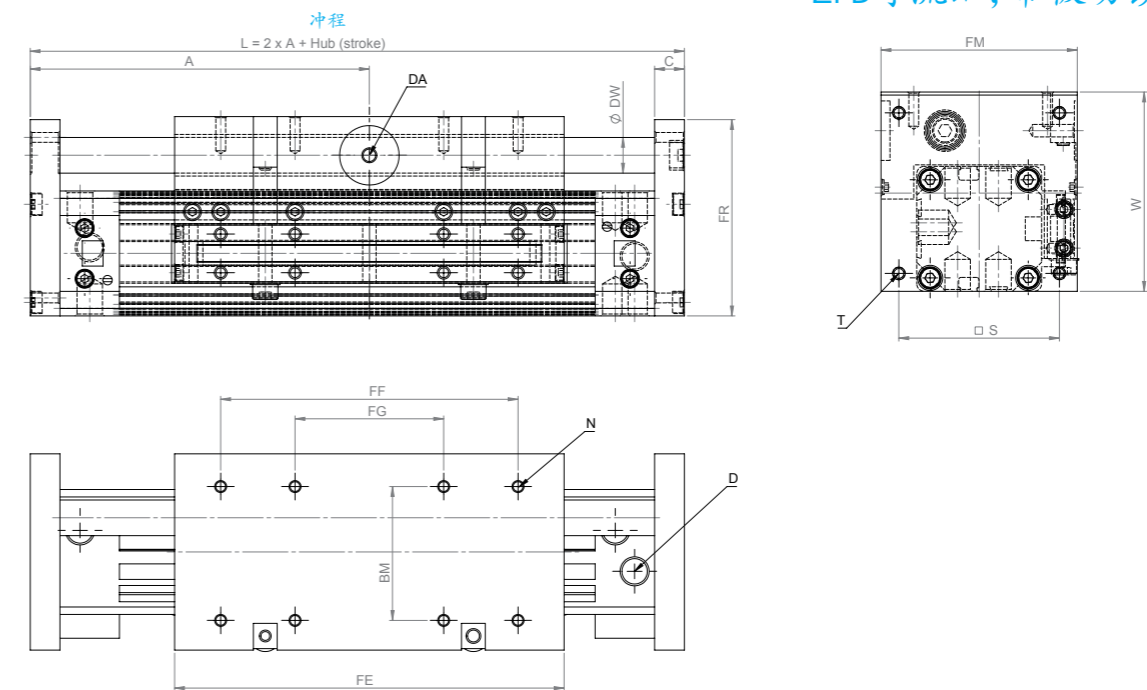
如果超过最大值, 则将出现滑动情况。无论在何种情况下, 动态负荷作用力均不得超过静态锁闭力。

此外, 如轴不干燥, 则锁闭力会稍有下降。

使用无杆气缸时, 我们通常用开放式中心位置5位3通阀进行控制。

就时间而言, 锁闭筒减压前, 如果中途出现停滞情况, 活塞杆两侧加载压缩空气以控制阀门回路。

释放时, 应对气缸两侧加压, 防止活塞杆突然运动(事故风险)。



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	86	110	130	162	195	230
BM	35	45	55	70	85	105
C	6	10	10	12	15	15
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
DA	M5	M5	M5	G1/8"	G1/8"	G1/8"
DW	Ø 6	Ø 12	Ø 12	Ø 16	Ø 20	Ø 20
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	- - -	50	70	90	110	140
FM	50	66	80	97	116	136
FR	47	66	78	92,5	114,5	138
L	L = 2 x A + Stroke 冲程 max.最大 3000 mm					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	42	54	68	80	100	120
T	M3	M4	M5	M6	M8	M8
W	48	67	79	93,5	115,5	139
Cushioning length 缓冲长度	15	18	24	34	40	49
Fb	180 N	600 N	600 N	1000 N	1400 N	2000 N

Example for order:  
ZFB Ø 25 Guiding cylinder with passive safety unit (release under pressure) with stroke 100 mm

订单示例:  
ZFB Ø 25导流缸, 带被动锁闭装置(压力下释放) 冲程100 mm

Order number 订单编号

3	2	5	4	-	0	0	0	0	0	-	0	1	0	0
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ZTS Tandem cylinder  
ZTS 串联气缸

### ZT Tandem cylinder

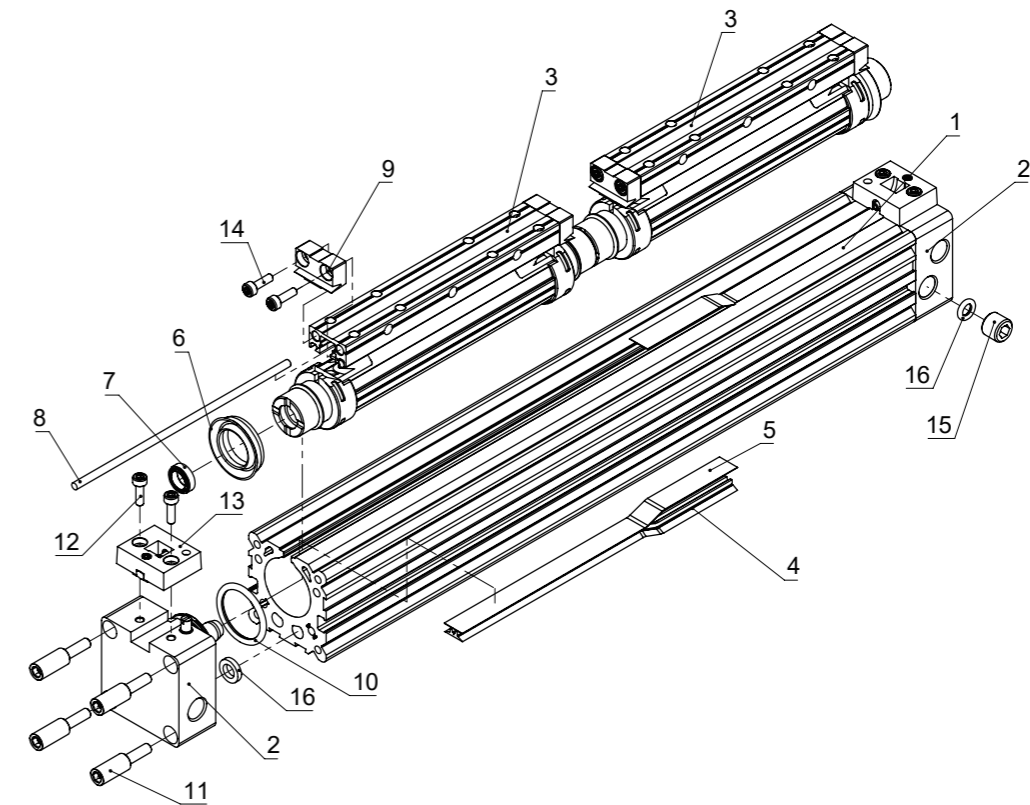
#### Technical information

- Special cylinder with two yokes arranged in series for supporting longer parts.
- Depending on the requirement, ZT can be used in the ZS/ ZK, ZF/ZFK or ZSS/ZKS versions.
- The installation distance of the two yokes in series can be selected independently of the stroke as per the application requirements (A1).
- Depending on the installation of the ZT, it may be used as a parallel cylinder as well.

### ZT 串联气缸

#### 技术信息

- 特制缸，两个活塞杆按序排列，用于支持长缸体。
- ZT 串联气缸可根据用户的需求，应用于 ZS/ ZK、ZF/ZFK 或 ZSS/ZKS 气缸中。
- 两个串联活塞杆的安装距离可根据用户的应用需求 (A1) 选择，而与冲程无关。
- 根据不同的安装方式，ZT 串联气缸也可以用作平行气缸。



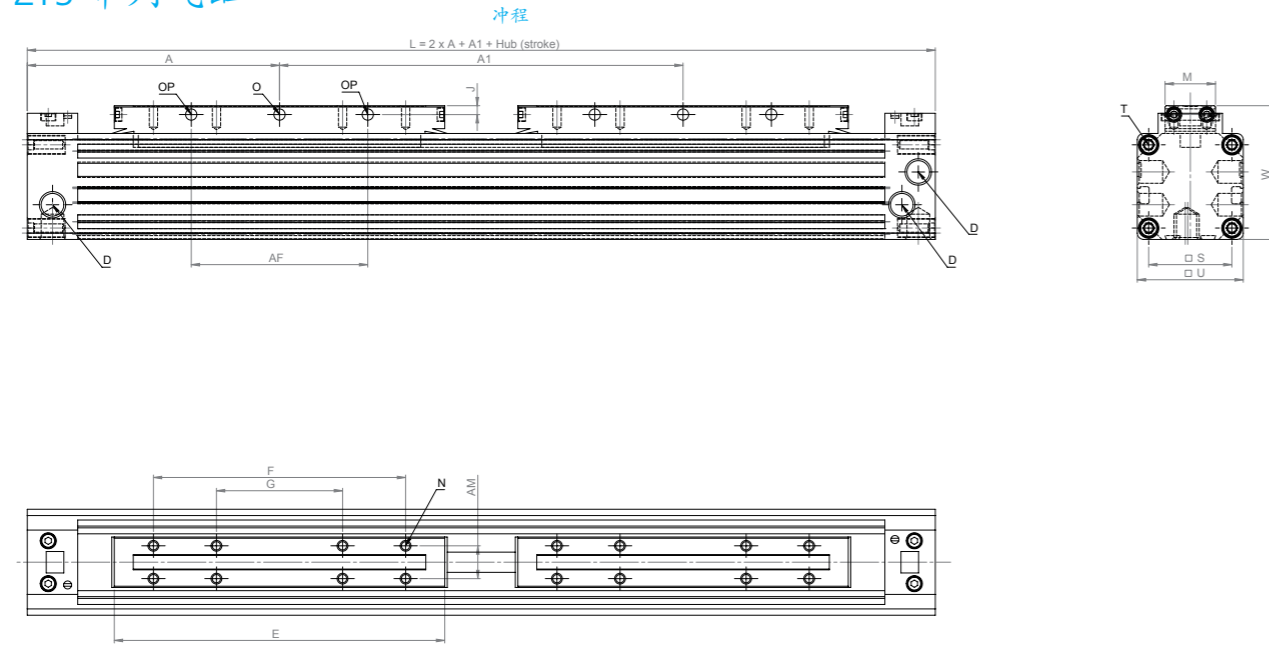
### Part list

### 零件清单

Pos. 序号	Description 说明	Order number	Order number	Piece 件数
		ZTS 订单编号	ZTK 订单编号	
1	Profile tube 异形管材	1XX0-0011		1
2	End cape set 端盖组件	0XX0-0121		1
3	Yoke 活塞杆	1XX0-1051	2XX0-1051	2
4	PU-sealing strip 密封条	1XX0-0033		
5	Cover strip 盖条	1XX0-0041		
6	Piston seal 活塞密封件	1XX0-8008		2
7	Cushion ring 缓冲环	1XX0-8001		2
8	Wiper 除尘杆	1XX0-0171		4
9	Head wiper 除尘杆端盖	1XX0-0152		4
10	O-Ring O形环	1XX0-8090		2
11	Special screw 特制螺栓	1XX0-0261		8
12	Cylinder head screw 气缸头螺栓	DIN 912 / ISO 4762		4
13	Tape cap 防尘端盖	1XX0-1142		2
14	Special screw 特制螺栓	DIN 912 / ISO 4762		8
15	Lock screw 锁紧螺栓	1XX0-0183		6
16	O-Ring O形环	1XX0-8092		6
17	Flat seal 扁密封件	1XX0-8240		2

XX = Cylinder diameter 气缸直径

ZTS 串联气缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
A1 at least 最小A1	127	160	200	252	312	370
AF	50	70	100	140	180	230
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	103	131	171	220	280	333
F	75	100	140	180	220	280
G	- - -	50	70	90	110	140
J	3	3,5	4,5	5	6,5	8
L	$L = 2 \times A + A1 + \text{Stroke}$ 冲程					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZTS Ø 25 Tandem cylinder  
distance A1 200 mm with stroke 100 mm

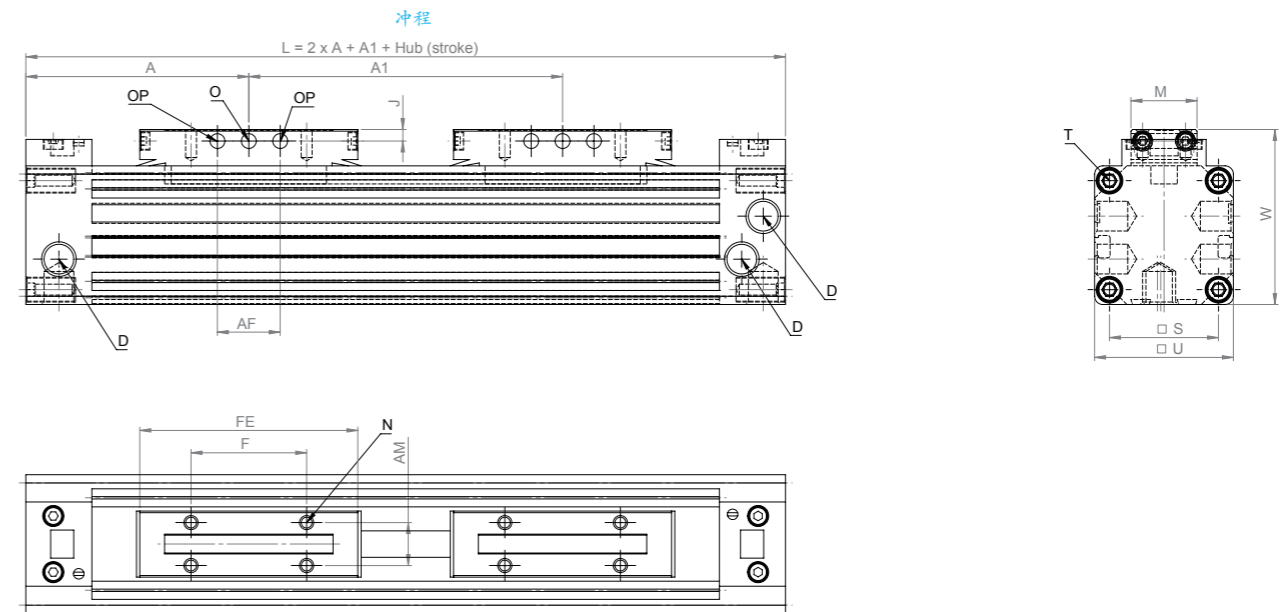
订单示例:  
ZTS Ø 25 串联气缸  
距离A1 200, 冲程100 mm

Order number 订单编号

6	2	5	1	-	0	2	0	0	-	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---



ZTK 串联短缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
A1 at least 最小A1	82	95	115	142	162	190
AF	15	19	35	50	46	70
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	58	66	86	110	130	153
F	30	35	55	70	70	100
J	3	3,5	4,5	5	6,5	8
L	$L = 2 \times A + A1 + \text{Stroke}$ 冲程					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZTK Ø 25 Tandem cylinder short  
distance A1 200 mm with stroke 100 mm

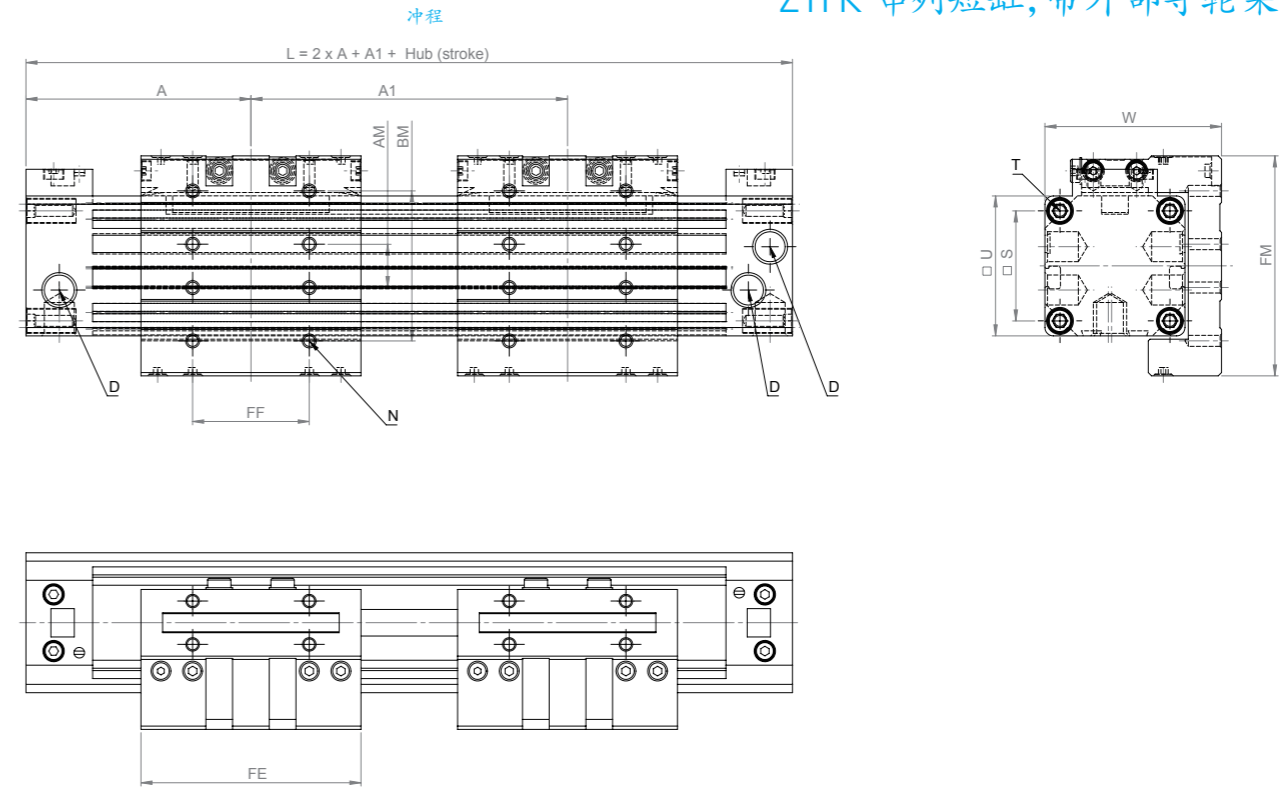
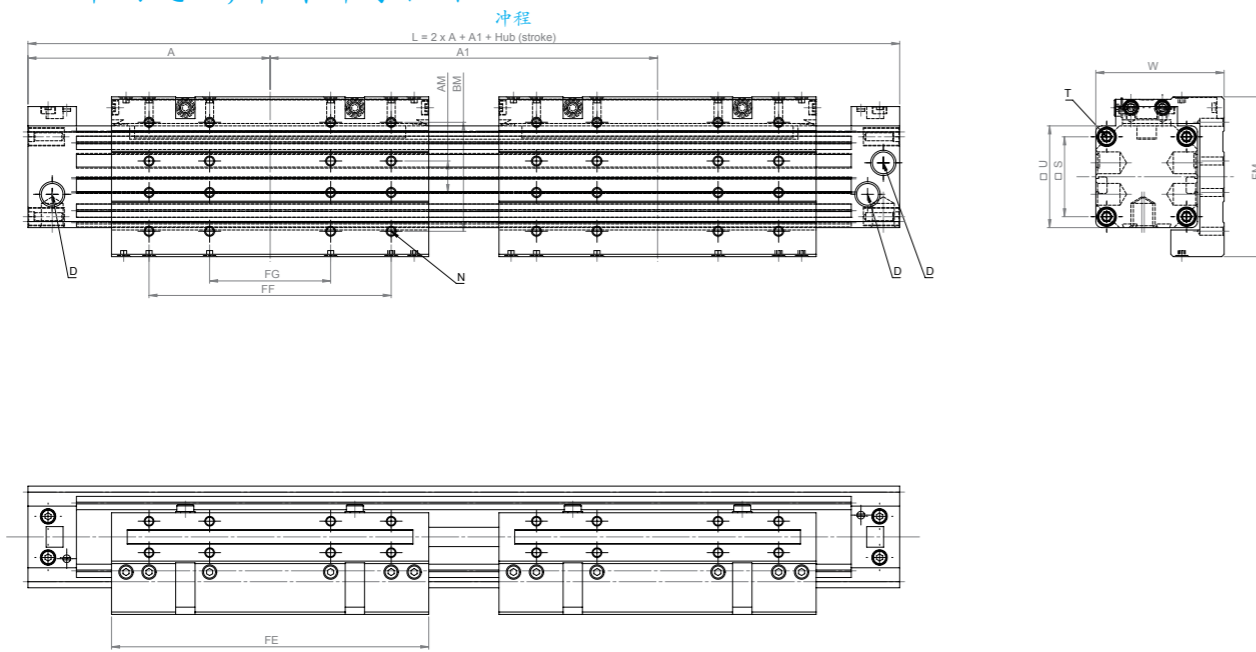
订单示例:  
ZTK Ø 25 串联短缸  
距离A1 200, 冲程100 mm

Order number 订单编号

6	2	5	2	-	0	2	0	0	-	0	1	0	0
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ZTF 串联气缸, 带外部导轮架

ZTFK 串联短缸, 带外部导轮架



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
A1 at least 最小A1	127	160	200	252	312	370
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	- - -	50	70	90	110	140
FM	50	66	80	97	116	136
L	L = 2 x A + A1 + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZTF Ø 25 Tandem cylinder with guide carriage  
distance A1 200 mm with stroke 100 mm

订单示例:  
ZTF Ø 25 串联气缸, 带导轮架  
距离A1 200, 冲程100 mm

Order number 订单编号

6	2	5	3	-	0	2	0	0	-	0	1	0	0
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Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
A1 at least 最小A1	127	160	200	252	312	370
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	- - -	50	70	90	110	140
FM	50	66	80	97	116	136
L	L = 2 x A + A1 + Stroke 冲程					
N x thread depth N x 螺纹深度	M4 x 7,5 mm	M4 x 8 mm	M5 x 10 mm	M6 x 12 mm	M8 x 16 mm	M8 x 16 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZTFK Ø 25 Tandem cylinder short with guide carriage  
distance A1 200 mm with stroke 100 mm

订单示例:  
ZTFK Ø 25 串联短缸, 带导轮架  
距离A1 200, 冲程100 mm

Order number 订单编号

6	2	5	4	-	0	2	0	0	-	0	1	0	0
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ZGS Gripping cylinder  
ZGS 夹紧缸

### ZG Gripping cylinder

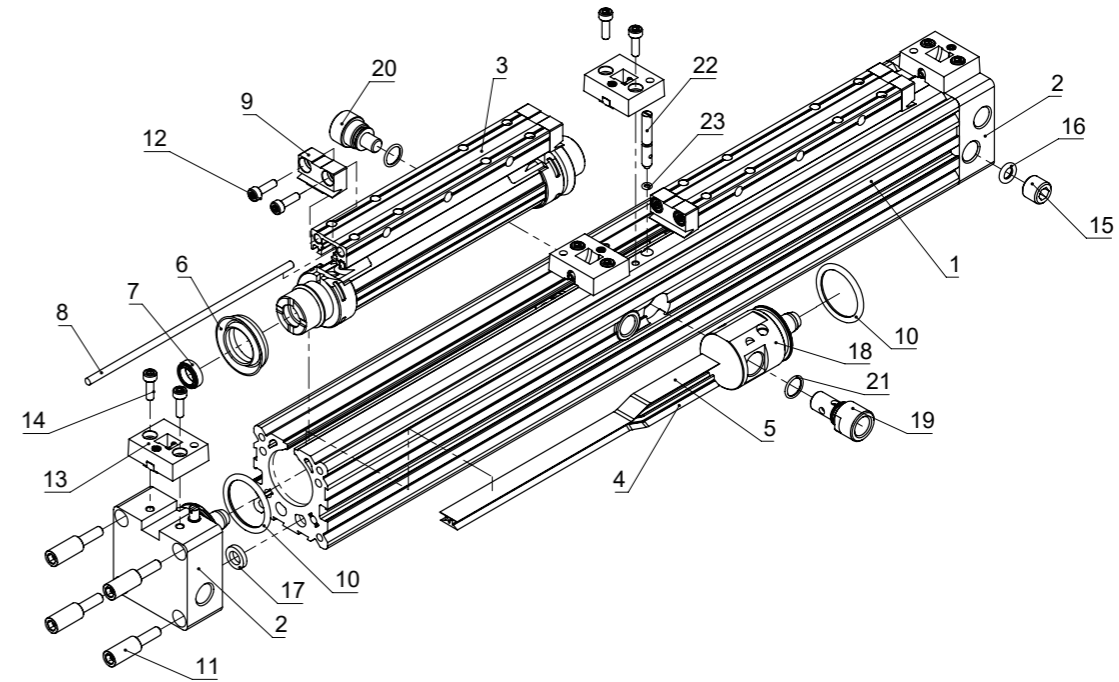
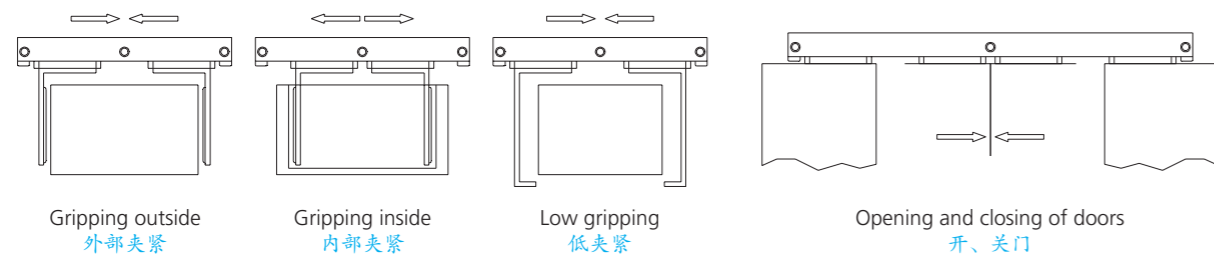
#### Technical information

- Special cylinder with two or more separate cylinder chambers in one profile tube with one yoke each. The cylinder chambers are controlled separately.
- Depending on the requirement, ZG can be used in the ZS/ ZK or ZF/ZFK version. Mixed versions are possible.
- The installation distance of the two yokes can be selected independently of the stroke as per the application requirements (A1).
- ZG can be used for various functions. Application-specific grippers enable e.g.

### ZG 夹紧缸

#### 技术信息

- 特制缸，一异形管材中有两个或以上的独立缸室，每个缸室各一个活塞杆。各气缸室独立控制。
- ZG 夹紧缸可根据用户的需要，应用于 ZS/ ZK 或 ZF/ZFK 气缸中。也可混合使用
- 两个活塞杆的安装距离可根据用户的应用需求 (A1) 选择，而与冲程无关。
- ZG 夹紧缸应用范围广泛。可用于特殊夹紧应用，如：



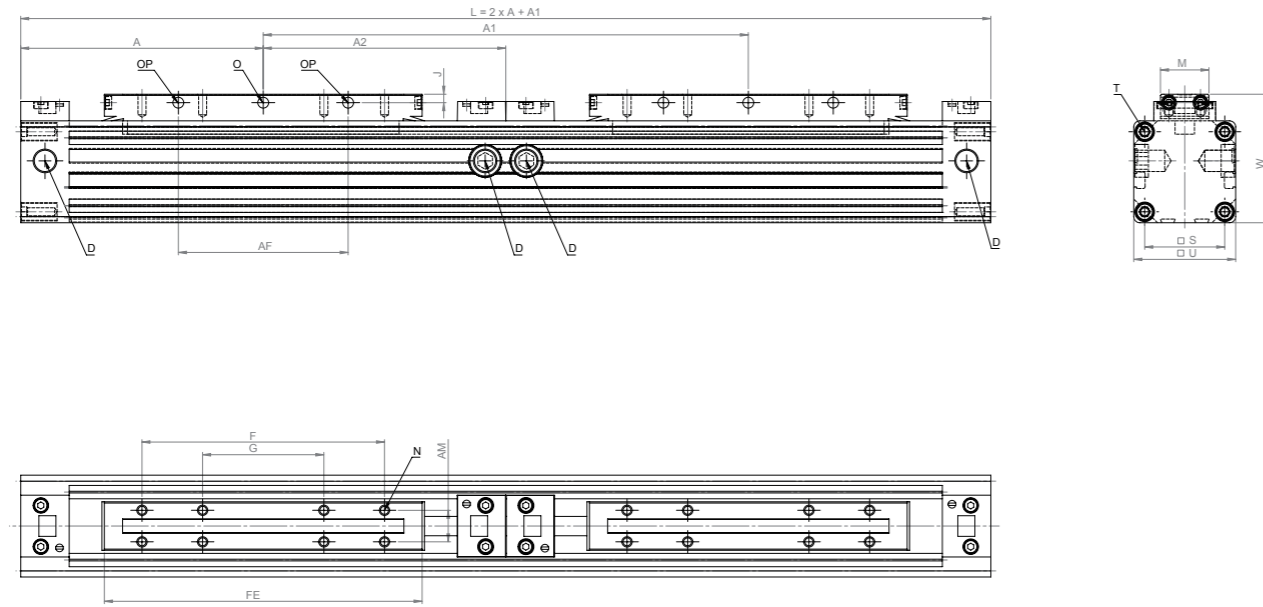
### Part list

### 零件清单

Pos. 序号	Description 说明	Order number 订单编号		Piece 件数
		ZS	ZK	
1	Profile tube 异形管材	1XX0-0011		1
2	Set of end caps 端盖组件	0XX0-0121		1
3	Yoke 活塞杆	1XX0-1051	2XX0-1051	2
4	PU-sealing strip 密封条	1XX0-0033		
5	Cover strip 盖条	1XX0-0041		
6	Piston seal 活塞密封件	1XX0-8008		4
7	Cushion ring 缓冲环	1XX0-8001		4
8	Wiper 除尘杆	1XX0-0171		4
9	Head wiper 除尘杆端盖	1XX0-0152		4
10	O-Ring O形环	1XX0-8090		4
11	Special screw 特制螺栓	1XX0-0261		8
12	Cylinder head screw 气缸头螺栓	DIN 912 / ISO 4762		8
13	Tape cap 防尘带端盖	1XX0-1142		4
14	Special screw 特制螺栓	DIN 912 / ISO 4762		8
15	Lock screw 锁紧螺栓	1XX0-0183		6
16	O-Ring O形环	1XX0-8092		6
17	Flat seal 平面密封件	1XX0-8240		2
18	Endcap (internal) 端盖 (内部)	1XX0-1081		2
19	Connection ZG ZG接头	1XX0-0111		2
20	Connection ZG ZG接头	1XX0-0191		2
21	O-Ring O形环	1XX0-8096		4
22	Cushioning pin 缓冲销	1XX0-0131		2
23	O-Ring O形环	1XX0-8098		2

XX = Cylinder diameter 气缸直径

ZGS 夹紧缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
A1 at least 最小A1	160	200	240	300	360	430
A2	A2 = A + Stroke 冲程					
AF	50	70	100	140	180	230
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	103	131	171	220	280	333
F	75	100	140	180	220	280
G	---	50	70	90	110	140
J	3	3,5	4,5	5	6,5	8
L	L = 2 x A + A1					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZGS Ø 25 Gripping cylinder  
distance A1 (open) 400 mm with stroke 100 mm

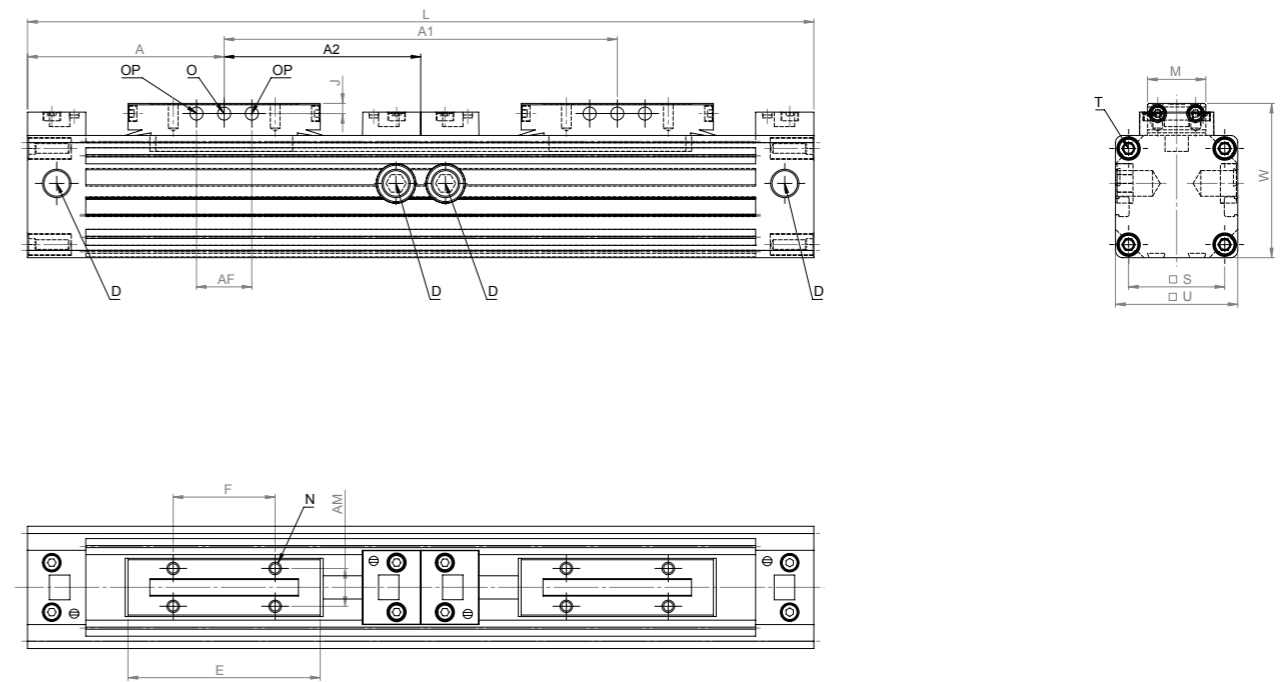
订单示例:  
ZGS Ø 25 夹紧缸  
距离A1 (开) 400, 冲程100 mm

Order number 订单编号

5 2 5 0 - 0 4 0 0 - 0 1 0 0



ZGK 夹紧短缸



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
A1 at least 最小A1	115	135	155	190	210	250
A2	A2 = A + Stroke 冲程					
AF	15	19	35	50	46	70
AM	10	13	16	22	29	40
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
E	58	66	86	110	130	153
F	30	35	55	70	70	100
J	3	3,5	4,5	5	6,5	8
L	L = 2 x A + A1 + Stroke 冲程					
M	15,5	20	25	33	42	54
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
Ø O	Ø 3,5	Ø 4,5	Ø 5,5	Ø 7	Ø 7	Ø 9
Ø OP	Ø 3,4	Ø 4,4	Ø 5,3	Ø 6,8	Ø 6,8	Ø 8,8
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZGS Ø 25 Gripping cylinder short  
distance A1 (open) 400 mm with stroke 100 mm

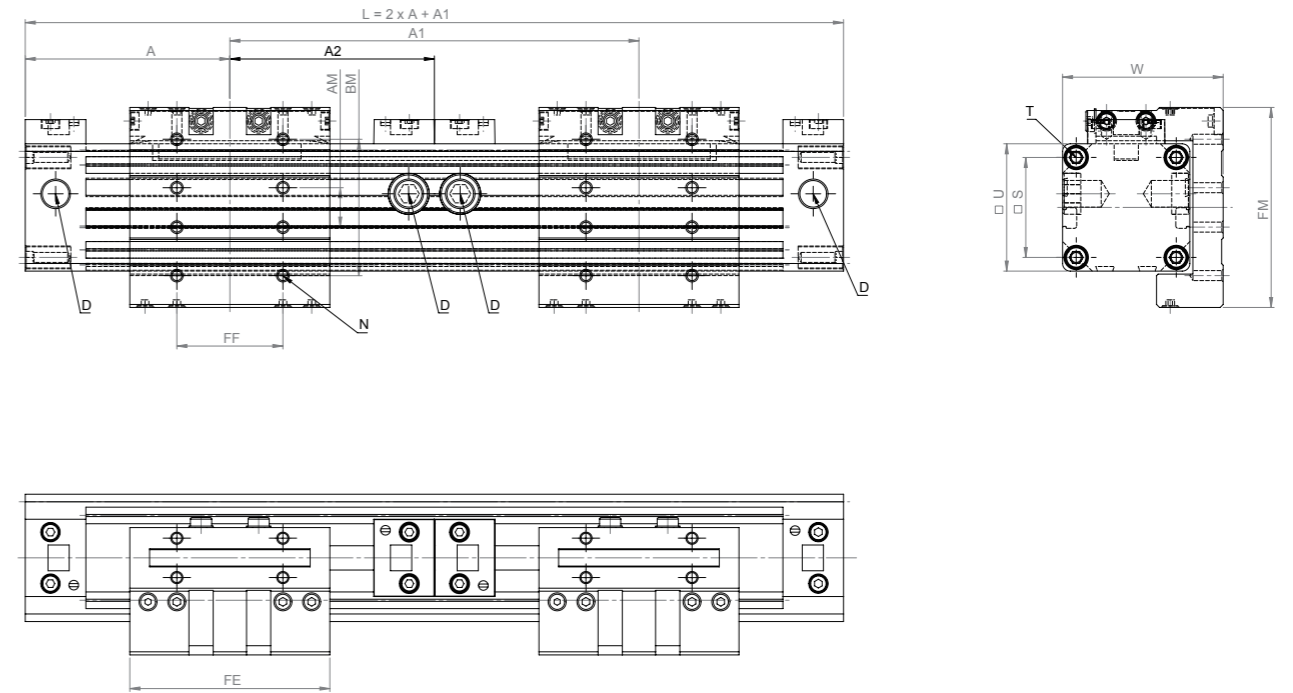
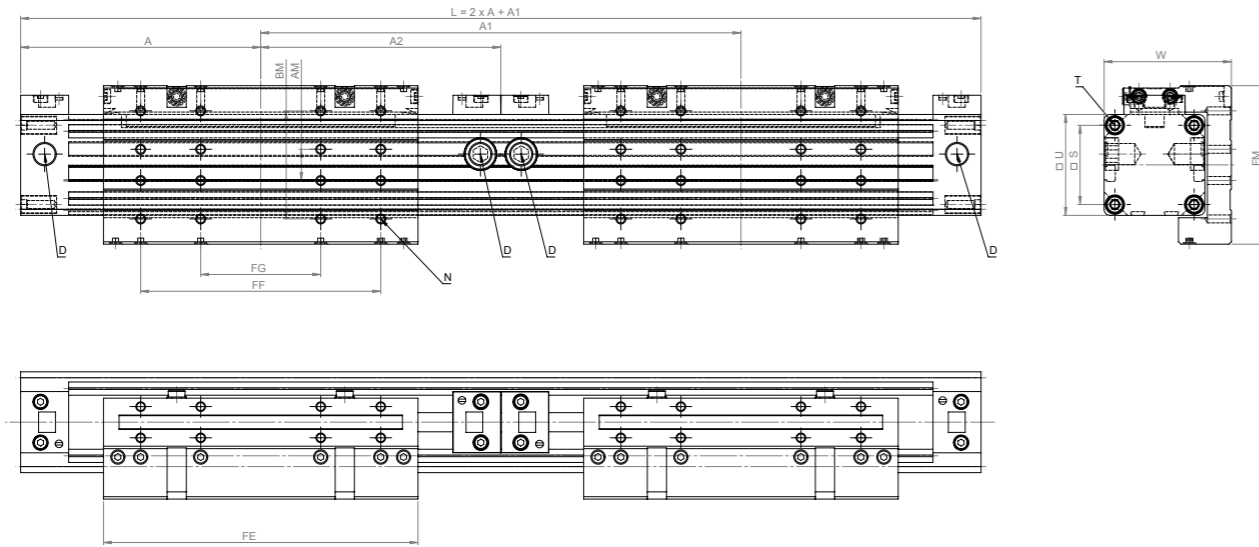
订单示例:  
ZGS Ø 25 夹紧短缸  
距离A1 (开) 400, 冲程100 mm

Order number 订单编号

5 2 5 3 - 0 4 0 0 - 0 1 0 0

ZGF 夹紧缸, 带外部导轮架

ZGFK 夹紧短缸, 带外部导轮架



Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	80	100	120	150	180	215
A1 at least 最小A1	160	200	240	300	360	430
A2	A2 = A + Stroke 冲程					
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	103	131	171	220	280	333
FF	75	100	140	180	220	280
FG	---	50	70	90	110	140
FM	50	66	80	97	116	136
L	L = 2 x A + A1					
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZGF Ø 25 Gripping cylinder with guide carriage  
distance A1 400 mm with stroke 100 mm

订单示例:  
ZGF Ø 25 夹紧缸, 带导轮架  
距离A1 400, 冲程100 mm

Order number 订单编号

5	2	5	1	-	0	4	0	0	-	0	1	0	0
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Measurements table

测量值表

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A	57,5	67,5	77,5	95	105	125
A1 at least 最小A1	115	135	155	190	210	250
A2	A2 = A + Stroke 冲程					
AM	10	13	16	22	29	40
BM	35	45	55	70	85	105
D x thread depth D x 螺纹深度	M5 x 6 mm	G1/8" x 8 mm	G1/8" x 8 mm	G1/4" x 12 mm	G1/4" x 12 mm	G3/8" x 12 mm
FE	58	66	86	110	130	153
FF	30	35	55	70	70	100
FM	50	66	80	97	116	136
L	L = 2 x A + A1					
N x thread depth N x 螺纹深度	M3 x 6 mm	M4 x 7 mm	M5 x 9 mm	M6 x 10 mm	M8 x 12 mm	M8 x 15 mm
S	23,5	33	41	51	63	78
T x thread depth T x 螺纹深度	M3 x 7 mm	M4 x 9 mm	M5 x 10 mm	M6 x 12 mm	M8 x 12 mm	M8 x 12 mm
U	30	42	52	63	78	93
W	39	53	65	79	96	113,5
Cushioning length 缓冲长度	15	18	24	34	40	49

Example for order:  
ZGF Ø 25 Gripping cylinder short with guide carriage  
distance A1 400 mm with stroke 100 mm

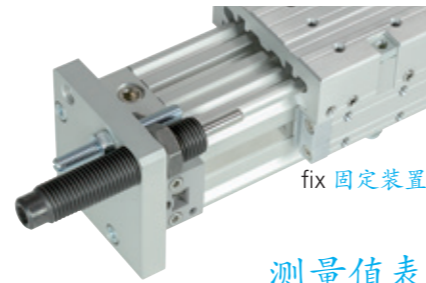
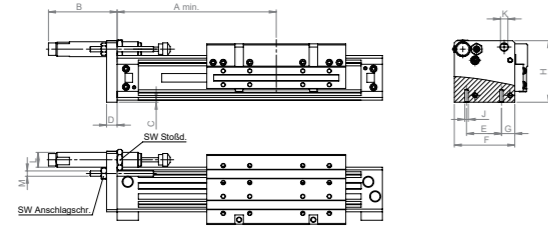
订单示例:  
ZGF Ø 25 夹紧短缸, 带导轮架  
距离A1 400, 冲程100 mm

Order number 订单编号

5	2	5	4	-	0	4	0	0	-	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---



AS 停止调节件



fix 固定装置

测量值表

Measurements table

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A (ZF / ZFK)	80 / 57,5	100 / 67,5	120 / 77,5	150 / 95	180 / 105	215 / 125
B (Manufacturer dep.) B (制造商部门)	22,5	65	65	78	78	70
C	2	2	3	3	3	4,5
D	8	10	10	15	15	15
E	23,5	33	41	51	63	78
F	43,5	57	70	93	102	118,5
G	8	12,5	14,5	16	22,5	20
H	45	58	71,5	89	105	122
J x thread depth J x 螺纹深度	M3 x 10	M4 x 10	M5 x 12	M6 x 15	M8 x 20	M8 x 20
K	M6	M8 x 1	M8 x 1	M8 x 1	M8 x 1	M8 x 1
L	M10 x 1	M14 x 1,5		M25 x 1,5		
M	M6	M6	M8	M8	M8	M8

Example for order:  
AS25 Stop adjustment fix for  
ZF25 or ZFK25  
(without shock absorber)

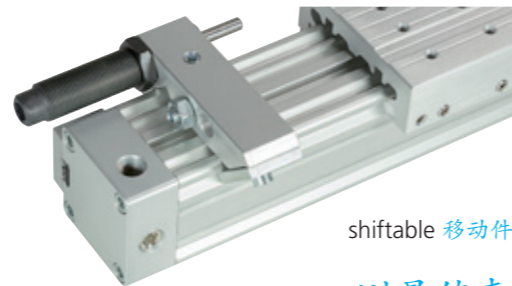
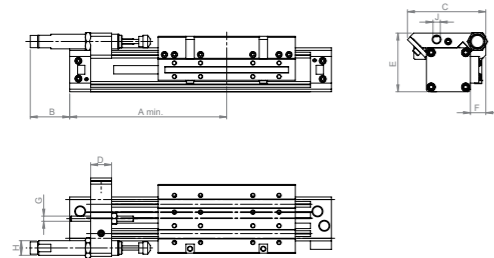
订单示例:  
用于ZF25或ZFK25的AS25停止调节件  
(无减震器)

Order number 订单编号

1	2	5	8	-	0	0	0	1
---	---	---	---	---	---	---	---	---

AS Stop adjustment shiftable

AS 停止调节移动件



shiftable 移动件

测量值表

Measurements table

Piston-Ø 活塞-Ø	Ø 18 mm	Ø 25 mm	Ø 32 mm	Ø 40 mm	Ø 50 mm	Ø 63 mm
A at least (ZF / ZFK) 最小A (ZF/ZK)	111,5 / 89	140 / 107,5	160 / 117,5	203 / 148	223 / 158	284 / 194
B (Manufacturer dep.) B (制造商部门)	20	60	60	96	96	80
C	62	75	84	105	126	140
D	15	20	20	30	30	40
E	43	56	69	86	104	116
F	13	15	18	23	24	25
G	M6	M6	M8	M8	M8	M8
H	M10 x 1	M14 x 1,5		M25 x 1,5		
J		M8 x 1	M8 x 1	M8 x 1	M8 x 1	M8 x 1

Example for order:  
AS25 Stop adjustment shiftable for  
ZF25 or ZFK25  
(without shock absorber)

订单示例:  
ZF25或ZFK25的AS25停止调节移动件  
(无减震器)

Order number 订单编号

1	2	5	8	-	0	0	0	0
---	---	---	---	---	---	---	---	---

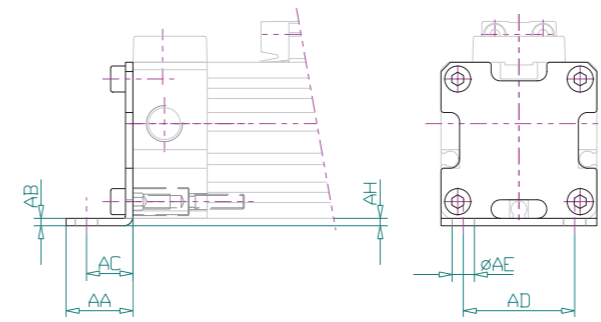
Hydraulic shock absorber  
液压减震器

M10x1 / M14x1.5 / M25x1.5

Please get in touch with us for further information  
如需进一步信息, 请与我们联系



FB 安装托架

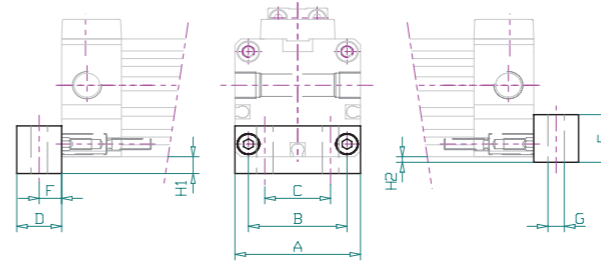


	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
AA	15	18	20	30	28	30
AB	2	2	2-May	3	3	3
AC	10	12,5	13,5	17,5	20	21
AD	20	30	40	50	60	75
AE	Ø 6	Ø 6	Ø 7	Ø 9	Ø 9	Ø 11
AH	2	2	3	3,5	3	4,5
Order No. 订单编号	1182-0001	1252-0001	1322-0001	1402-0001	1502-0001	1632-0001

The order number indicated includes 2 mounting brackets and 8 screws.  
上述订单编号包括2个安装托架和8颗螺丝。

FB Mounting block

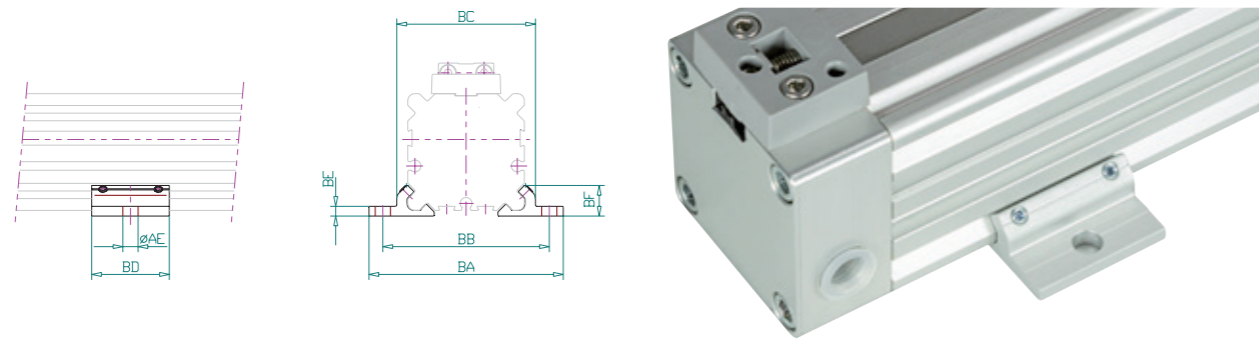
FB 安装块



	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
A	30	42	52	63	78	93
B	23,5	33	41	51	63	78
C	14	22	23,5	30	39	52
D	10	15	15	15	16	20
E	14,5	17	20	23	26	27,5
F	5	7,5	7,5	7,5	8	10
G	Ø 4,5	Ø 5,5	Ø 7	Ø 9	Ø 9	Ø 11
H1	6	6	6	8	8	8
H2	2	2	3	3	3	4,5
Order No. 订单编号	M3 x 14 1182-0005	M4 x 20 1252-0005	M5 x 20 1322-0005	M6 x 20 1402-0005	M8 x 20 1502-0005	M8 x 20 1632-0005

The order number indicated includes 2 mounting blocks and 4 screws.  
上述订单编号包括2个安装托架和4颗螺丝。

MB 轻型中间支架

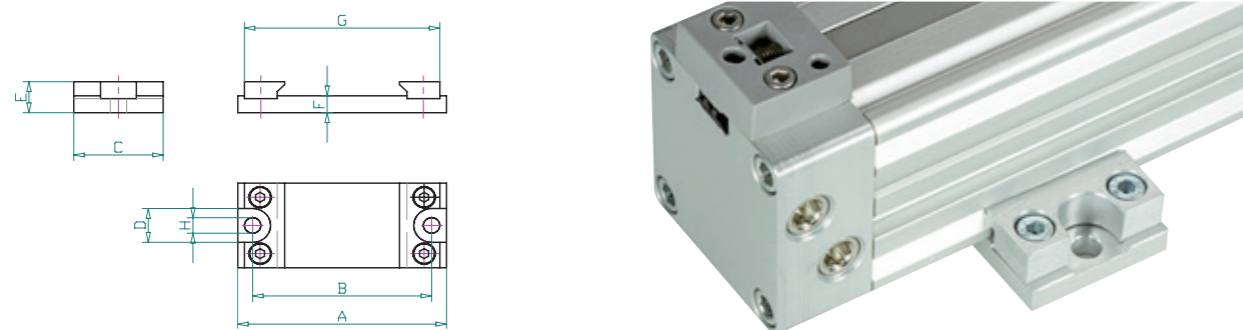


	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
AE	Ø 6	Ø 6	Ø 7	Ø 9	Ø 9	Ø 11
AH	2	2	3	3	3	4.5
BA	56	70	85	105	122	144
BB	46	60	73	90	106	125
BC	36.5	50	61.5	75	91	107
BD	23	28	33	38	43	48
BE	2.5	3.5	4	4.5	5	6
BF	8.25	11	13.8	16	19	22
Order No. 订单编号	1183-0001	1253-0001	1323-0001	1403-0001	1503-0001	1633-0001

The order No. given includes 2 middle supports.  
上述订单编号包括2个中间支架。

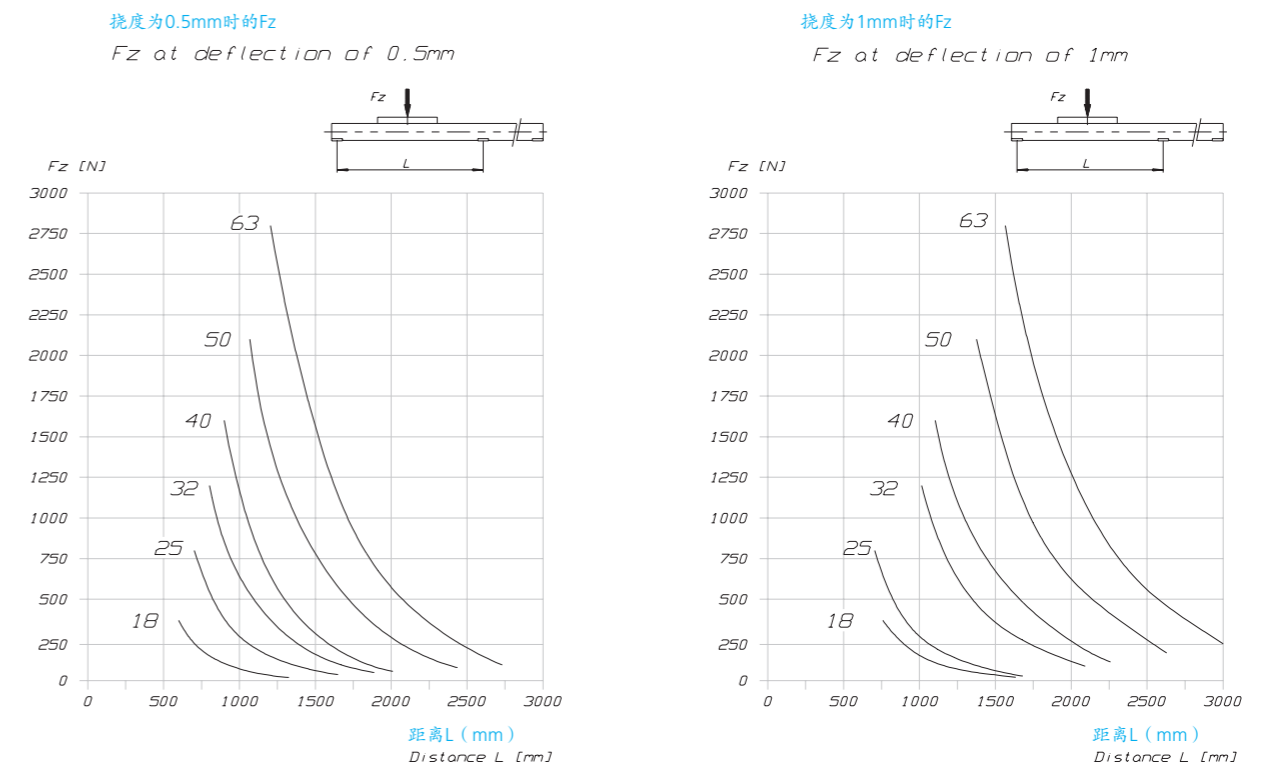
MB Middle support heavy

MB 重型中间支架



	18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
A	Ø 56	Ø 70	Ø 85	Ø 105	Ø 122	Ø 144
B	46	60	73	90.5	105	125
C	30	30	40	40	40	50
D	12	12	12.5	16	16	19
E	11	13	15	18	20.5	21.5
F	6	6	6	8	8	8
G	50.6	65.5	77.5	90.5	107.5	122.5
H	Ø 5.5	Ø 5.5	Ø 6.6	Ø 9	Ø 9	Ø 11
Order No. 订单编号	1183-0002	1253-0002	1323-0002	1403-0002	1503-0002	1633-0002

中间支架挠度曲线图



Tube deflection is to be considered in very long cylinders and great loads.

One or several middle supports are to be provided depending on the permissible deflection.

**Example:**

A cylinder with Ø25 may not exceed a maximum deflection of 0.5 mm at a force Fz of 500 N.

According to the diagram, the cylinder may be 750 mm long. In longer cylinders, a middle support must be installed.

**Additional options:**

When very long cylinders are installed without middle supports, support can be provided by an additional profile.

**Example:**

Each with MB middle support and standard profiles.

对于超长缸和较大负荷，应考虑管材的挠度。

我们根据允许挠度数据提供一个或多个中间支架。

**示例:**

Fz力为500 N时，Ø25气缸的最大挠度不能超过0.5 mm。

根据上述图示，气缸长度为750 mm。

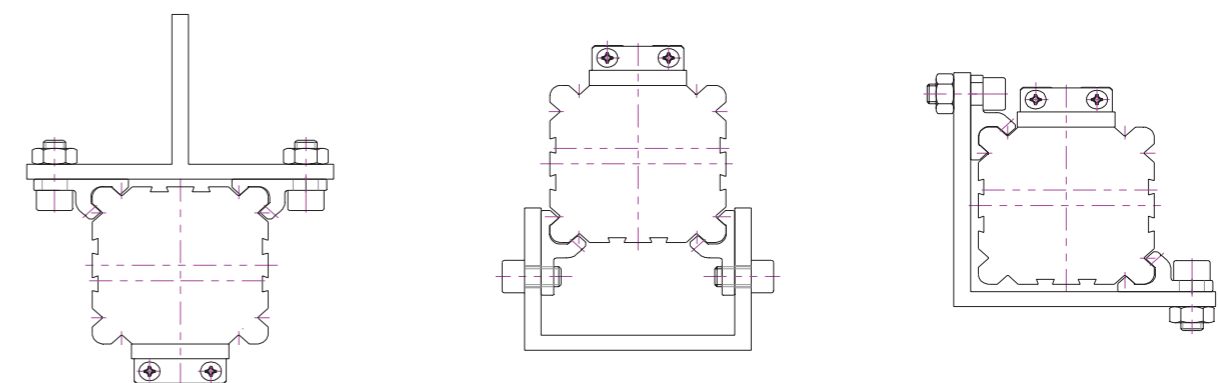
如果是长缸，应安装中间支架。

**其他选项:**

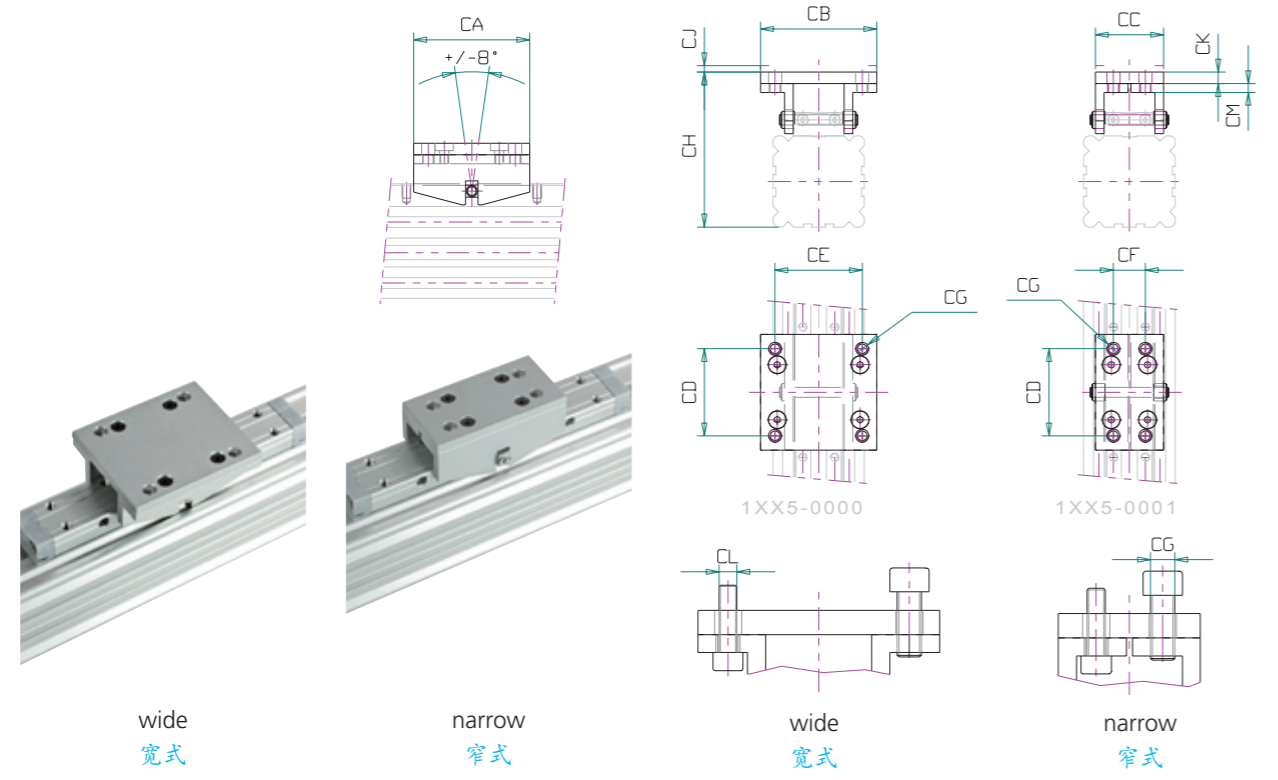
如长缸未安装中间支架，则可以用一个额外型材做支撑。

**示例:**

每一台气缸配备MB中间支架或标准异形件。



PB 旋桥



	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
CA	Ø 50	Ø 60	Ø 70	Ø 80	Ø 90	Ø 100
CB	41.5	50	60	80	95	120
CC	25.5	30	37	47	56	73
CD	30	40	50	60	70	80
CE	34	38	48	60	70	90
CF	9	14	16	22	30	40
CG	M5	M5	M6	M8	M8	M10
CH	54	70	86	107	123	145.5
CJ	2.5	3	3.5	4.5	4.5	5
CK	4	4	6	8	8	8
CM	4	4	6	8	8	8
CL	M4	M4	M5	M6	M6	M8
Order No. wide 订单编号 (宽式)	1185-0000	1255-0000	1325-0000	1405-0000	1505-0000	1635-0000
Order No. narrow 订单编号 (窄式)	1185-0001	1255-0001	1325-0001	1405-0001	1505-0001	1635-0001

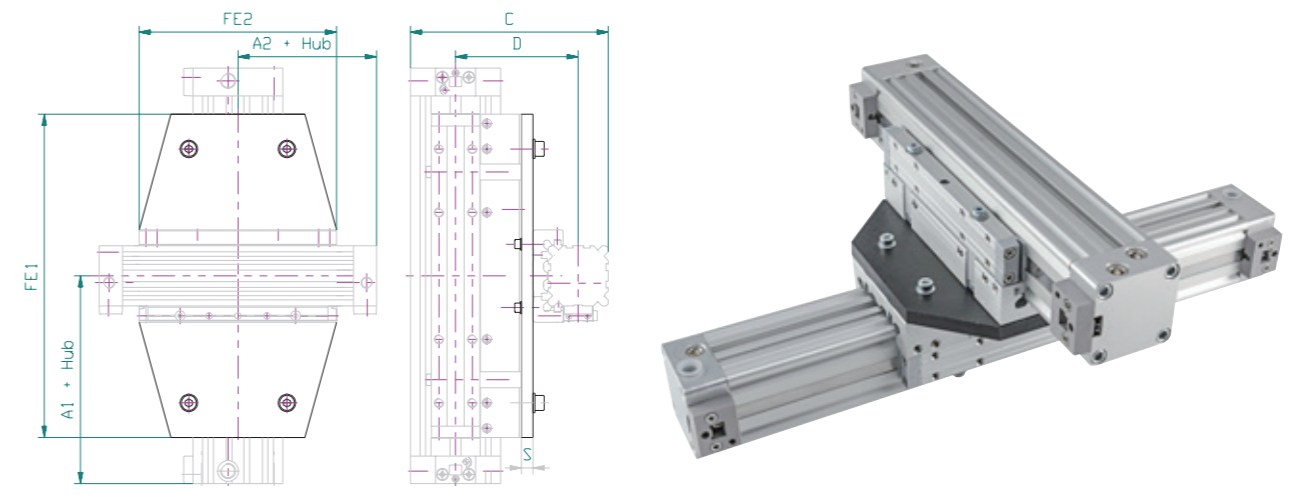
The swing bridge is used where additional guides are used in parallel to the rodless pneumatic cylinder.

无杆气缸中平行使用附加导轨时，应采用旋桥。

The swing bridge transmits the action force to the guiding element without tensioning.

旋桥将作用力传导到导轨元件上，无须作任何张力调整。

KT 交叉支架



Combination 组合	Order No. 订单编号	A1	A2	C	D	FE1	FE2	S
18 : 18	1186-0000	80	80	84	54	103	103	6
25 : 25	1256-0000	100	100	114	72	131	131	8
32 : 32	1326-0000	120	120	140	88	171	171	10
40 : 40	1406-0000	150	150	168	105	220	220	10
50 : 50	1506-0000	180	180	204	126	280	280	12
63 : 63	1636-0000	215	215	239	146	333	333	12

Combination 组合	Order No. 订单编号	A1	A2	C	D	FE1	FE2	S
25 : 18	1256-0001	100	80	100	64	131	103	8
32 : 25	1326-0001	120	100	128	81	171	131	10
40 : 32	1406-0001	150	120	154	96.5	220	171	10
50 : 40	1506-0001	180	150	187	116.5	280	220	12
63 : 50	1506-0001	215	180	221.5	136	333	280	12

Combination 组合	Order No. 订单编号	A1	A2	C	D	FE1	FE2	S
32 : 18	1326-0002	120	80	112	71	171	103	8
40 : 25	1406-0002	150	100	142	89.5	220	131	10
50 : 32	1506-0002	180	120	171	106	280	171	10
63 : 40	1636-0002	215	150	204.5	126.5	333	220	12

The cross support connects two guiding cylinders to become a 2-axis system.

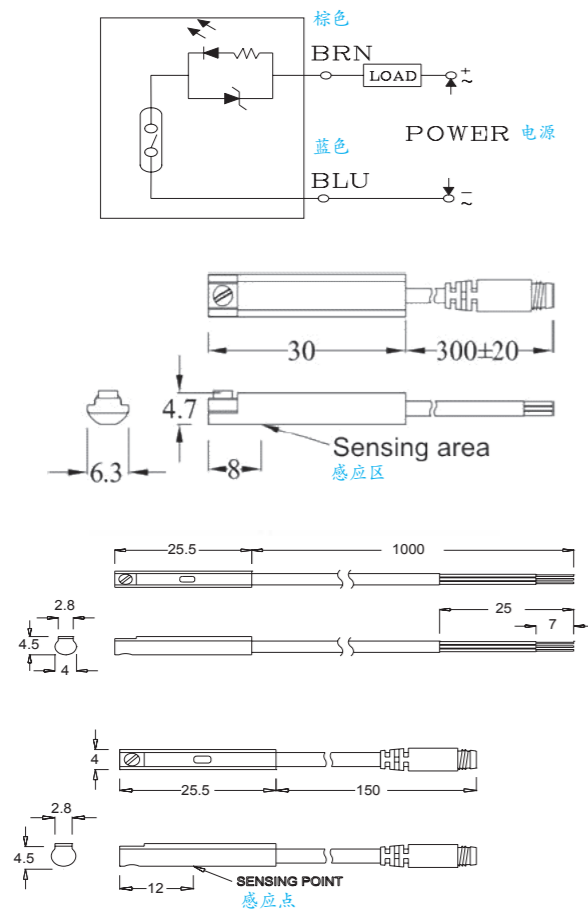
交叉支架与两个导流缸相连接，从而成为一个两轴系统。

Guiding cylinders must be ordered separately.

导流缸必须单独订购。

T型簧片开关 | C型簧片开关

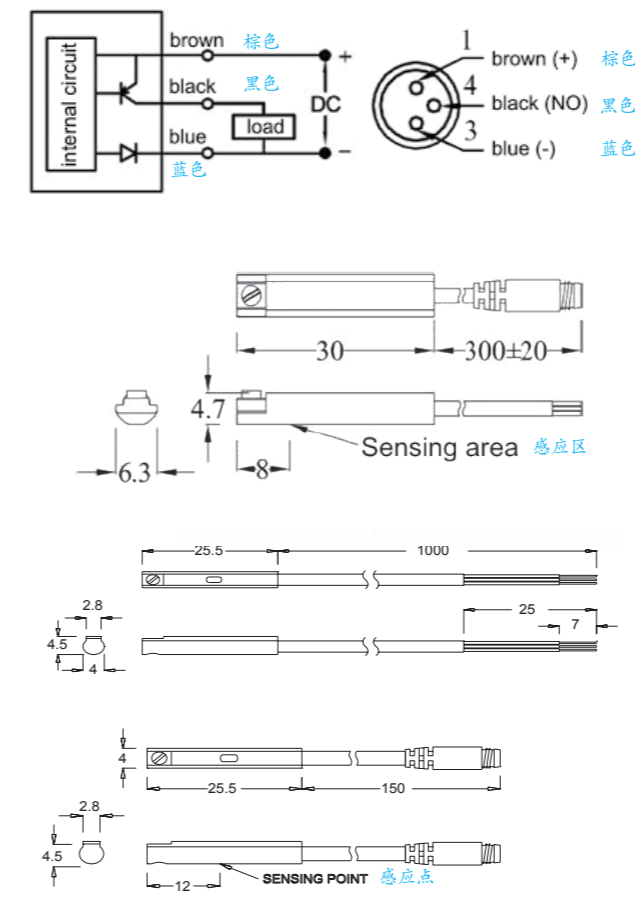
T型磁开关 | C型磁开关



Reed switch T-type  
T型簧片开关



Reed switch C-type  
C型簧片开关



Magnetic switch T-type  
T型磁开关



Magnetic switch C-type  
C型磁开关

Technical information

The magnetic field of a permanent magnet integrated in the yoke triggers the reed switch.  
The magnetic piston is integrated as standard. The limits and additional intermediate positions of the yoke can be queried.

技术信息

永久磁的磁场集成到活塞杆中，用以启动簧片开关。  
集成的磁活塞为标准活塞。活塞杆限值和额外中部位置，可按要求提供信息。

Technical information

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永久磁的磁场集成到活塞杆中，用以启动磁开关。  
集成的磁活塞为标准活塞。活塞杆限值和额外中部位置，可按要求提供信息。

	Reed switch T-Type T型簧片开关		Reed switch C-Type C型簧片开关	
	Reed switch cable 2m 簧片开关电缆2m	Reed switch connector M8x1 簧片开关接头M8x1	Reed switch 1m cable 簧片开关电缆1m	Reed switch with connector 簧片开关接头
	0000-8121	0000-8122	0000 - 8100	0000 - 8120
Form of contact 触点形式	normally open contact 通常是开放式触点		normally open contact 通常是开放式触点	
Switching voltage 开关电压	5 - 240 V DC / AC		5 - 120 V DC / AC	
Switching current 开关电流	100 mA max. 最大		100 mA max. 最大	
Switching rating 额定开关	10 W max. 最大		10 W max. 最大	
Voltage drop 压降	3.0 V max. 最大		3.0 V max. 最大	
Protection class 防护级别	IEC 60529 / IP 67		IEC 60529 / IP 67	
Operating temperature 运行温度	-10 °C bis +70 °C		-10 °C bis +70 °C	
Color of LED LED颜色	Red 红色		Red 红色	
Cable length 电缆长度	2 m (PVC)	0.3 m (PVC) / Connector M8x1 接头 M8x1	1 m (PVC)	0.15m (PVC) / Connector M8x1 接头 M8x1

	Magnetic switch T-type T型磁开关		Magnetic switch C-type C型磁开关	
	Magnetic switch 2 m cable 磁开关电缆2m	Magnetic switch with connector 磁开关接头	Magnetic switch 1 m cable 磁开关电缆1m	Magnetic switch with connector 磁开关接头
	0000-8196	0000-8197	0000-8192	0000-8193
Form of contact 触点形式	Normally open contact 通常是开放式触点		Normally open contact 通常是开放式触点	
Switching voltage 开关电压	10 - 30 V DC		5 - 30 V DC	
Switching current 开关电流	200 mA max. 最大		200 mA max. 最大	
Switching rating 额定开关	6 W max. 最大		6 W max. 最大	
Voltage drop 压降	1.5 V max. 最大		1 V max. 最大	
Protection class 防护级别	IEC 60529 / IP 67		IEC 60529 / IP 67	
Operating temperature 运行温度	-10°C bis +70°C		-10 °C bis +70 °C	
Color of LED LED颜色	Yellow 黄色		Green 绿色	
Cable length 电缆长度	2 m (PVC)	0.3 m (PVC) / Connector M8x1 接头 M8x1	1m (PVC)	0.15 m (PVC) / Connector M8x1 接头 M8x1

修理工具包和磨损件套装



Wear and spare parts

Various repair sets with selected wear parts can be used for cylinder repair and maintenance. Various parts can be ordered as spare parts if and when required.

磨损件和备件

维修包含精选磨损件，可用于气缸维修和维护。如需要，还可订制备件。

Set of wear parts

磨损件套装

Diameter 直径	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
ZS/ZK (Stroke) (冲程)	1189-0088	1259-0088	1329-0088	1409-0088	1509-0088	1639-0088
ZF	3189-0088	3259-0088	3329-0088	3409-0088	3509-0088	3639-0088
ZFK	3189-0089	3259-0089	3329-0089	3409-0089	3509-0089	3639-0089

Sealing band and Coverstrip

密封条和防尘带

Length 长 1 m	1189-0011	1259-0011	1329-0011	1409-0011	1509-0011	1639-0011
Length 长 5 m	1189-0033	1259-0033	1329-0033	1409-0033	1509-0033	1639-0033
Length 长 10 m	1189-0066	1259-0066	1329-0066	1409-0066	1509-0066	1639-0066

Spare parts

备件

Diameter 直径	Ø 18	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
Piston seals 活塞密封件	1189-8008	1259-8008	1329-8008	1409-8008	1509-8008	1639-8008
O-rings O形环	1189-8011	1259-8011	1329-8011	1409-8011	1509-8011	1639-8011
Special screws 特制螺栓	1189-0261	1259-0261	1329-0261	1409-0261	1509-0261	1639-0261
Plugs 塞盖	1189-0181	1259-0181	1329-0181	1409-0181	1509-0181	1639-0181
Tape cap and Head wiper 封条端盖和除尘杆端盖	1189-0111	1259-0111	1329-0111	1409-0111	1509-0111	1639-0111

应用示例



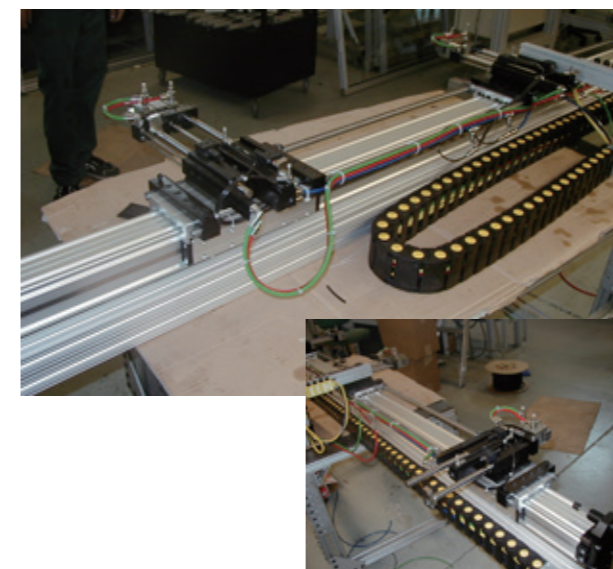
Parallel cylinders for opening and closing a vertical lattice door in the protective fencing around a machine.

用于开、关设备周边防护栏中立式格构门的平行缸



Transfer system for crates / boxes from one conveyor belt to another.

将板条箱/箱子从某输送带运送到另一传送带的输送系统



Transfer element consisting of 1 ZF63 with multiple connected ZF carriages.

传送装置，包括与多组导轮架相连的ZF63气缸。

应用示例



Automation module with ZS Cylinder and external ball bearing guide.

自动装置模块包括ZS气缸和外部滚珠轴承导轨



Supply unit for workpieces to be machined, clamped in machining fixture.

工件机加工的送料装置、机械夹紧装置



ZSS for pick and place of large foam components (manufacturing of rotor blades for wind turbines).

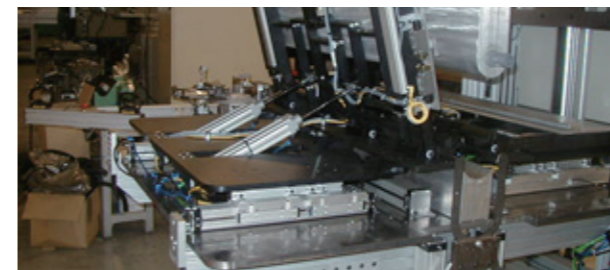
ZSS气缸用于大型泡沫组件拣选和放置（风力涡轮机转叶制造）

应用示例



ZF for transport system for plastic containers.

ZF气缸用于塑料容器输送系统



ZT and ZF for workplace for installing plastic parts on fluid containers.

ZT和ZF气缸用于液体容器塑料件安装场所



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