BLU

BLU

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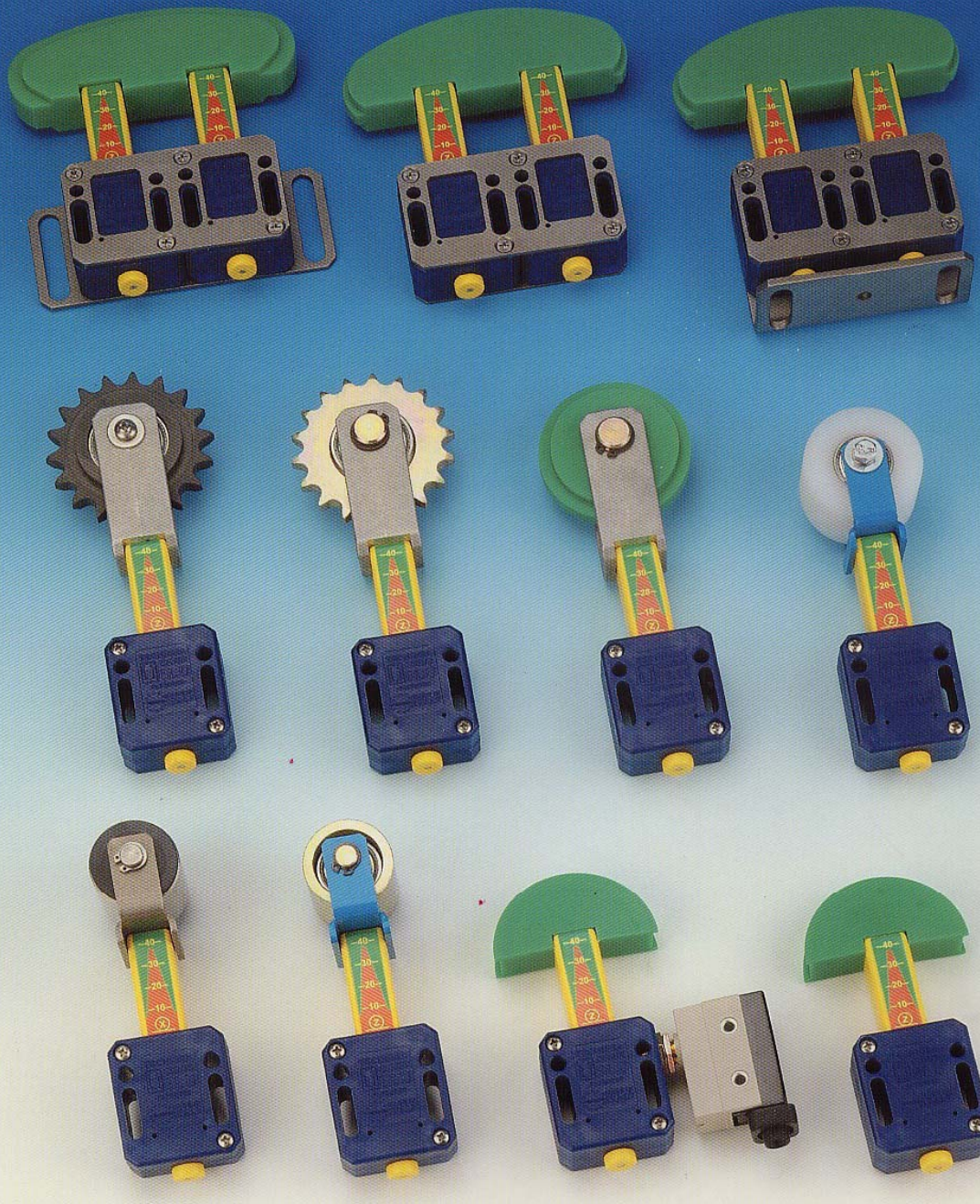
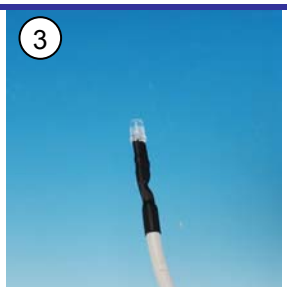
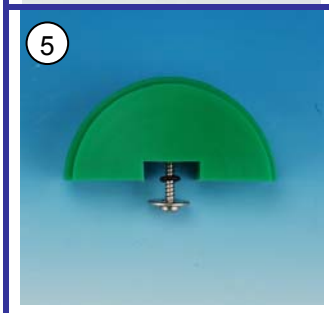
BREVETTATO - PATENTED



TECNIDEA CIDUE
泰尼达 S.r.l.

产品展示 / PRODUCT RANGE

1  **BL** 第 13 页	2  **FCE** 第 15 页	3  **LUX** 第 15 页	4  **ALUX** 第 15 页
5  **VF** 第 16 页	6  **FR** 第 17 页	7  **FC** 第 18 页	8  **FN** 第 19 页
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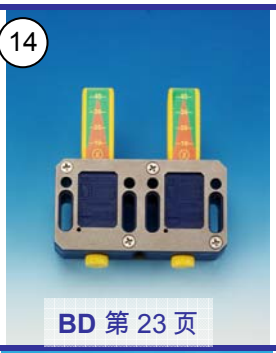
13  **FG** 第 22 页	14  **BD** 第 23 页	15  **BF** 第 24 页	16  **BA** 第 25 页
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BLU – 获专利

Tecnidea Cidue srl，以在轴向和扭转式弹性组件市场上的领先企业的身份，在所有工业领域拥有无数的革新性应用，有幸向您推荐其产品“BLU”和“BLUD”，它们由市场的特殊要求而诞生，为了满足须在潮湿环境，有水，或与腐蚀剂接触情况下操作的建造者的需要而设计。

这些产品可作为自动链条拉紧装置、自动皮带拉紧装置、减震器、减速器使用，并可为满足特殊的应用需要而专门设计。

自动张紧装置在一项传动系统中极为重要，因为除了保证传动系统、链条或皮带的正确运转，还能消减在动态运动中产生的振动，保证更正规的运转同时也提高机器其他部件的寿命。

BLU 由两个由塑性材料制成的薄壳构成的主体组成，之间由不锈钢螺钉固定，塑性材料制成的方柱在主体内部滑动，在方柱内含有一条镀锌钢材质或不锈钢材质的弹簧。

BLUD 由两个并列连接并由不锈钢螺钉固定在两块薄板之间的 BLU 组件构成。这项产品与 BLU 相比呈现如下的优势：使用两个方柱，可通过四个螺钉固定，由于使用两个弹簧可产生与 BLU 相比成倍的力量，使用具更高弧度半径的滑块，并可与特殊的夹具配合，提高其应用的可能性。

BLU 和 BLUD 都有三个尺寸，即三种不同的推动力，由我们的客户自行选择最适合其需要的尺寸。所有的弹性组件都配有预加负荷系统，尤其有助于简化安装操作，这个话题在第 12 页详细讨论。如有需要，每个 BLU 弹性组件均可配备电子限位开关，这一点对机器正确运转的操控极为有用（见第 15 页）。

产品目录的前半部分展示轴向弹性组件、简介、计算系统及产品展示，使得在这份产品目录中的内容一目了然。

在前半部分和后半部分之间您可参考配套元件选择表（见第 14 页），其中展示弹性组件与仓库现存的配套元件配合使用的所有可能性方案。另外我们可设计与配套元件选择表中不同的配件。在后半部分展示现有的配套元件（滑块、滑轮、齿轮和滚轮）及相关技术特性。

BLU – Patented

Tecnidea Cidue srl is a leading producer of axial and rotation elastic elements for wide-ranging innovative applications in all the industrial sectors. The “BLU” and “BLUD” items have been recently added to the company’s line in order to respond the specific needs of the market. Given special producers’ requirements, they have been designed to fit in humid environments, in contact with water or corrosive agents.

The items can be used as automatic chain tighteners, automatic belt tighteners, shock absorbers, decelerator. They can also be personalised in order to meet special application requirements.

Automatic chain tighteners play a key role inside gearings and drives. They guarantee the appropriate performance of chain or belt drives, absorb vibrations from kinematic motion and maintain a more regular processing which improves the life of the other components in the machinery.

The BLU element consists of a body made of two plastic shells fixed to each other with stainless steel screws. The body houses a shifting square-section plastic pin which contains a galvanised or stainless steel spring.

The BLUD element is obtained by joining two BLU elements fixed between two plates with stainless steel screws. Compared to BLU, the BLUD element provides the following plus: it works with two pins, can be fixed with four stainless steel screws, the force is double as it works with two springs, it uses sliders with a greater curvature radius and can be further equipped with special brackets that increase its application range.

Both the BLU and the BLUD elements are available in three sizes, i.e. with three different thrust forces. Clients can select the items that meet at best their needs. All the elements in the Tecnidea Cidue range are provided with a pre-load system which is extremely advantageous in order to simplify mounting operations (see page 12). Each BLU elastic element can be supplied with an electric limit switch and becomes a very practical solution to control the appropriate performance of the machine (see page 15). The first part of this catalogue contains the overall description of the entire range and includes the axial elastic elements, the preliminary notes, the calculation systems and the description of the items.

A table of all the KITS available (see page 14) has been inserted between the first and the second part of this catalogue. The table shows all the possible combinations with elastic elements and the KITS available on stock. In addition, the company is always ready to design different realizations in addition to those included in the table. The available KITS and their technical specifications (sliders, wheels, gears and rollers) are described in the second section of this catalogue.

所使用的材料

Tecnidea Cidue srl 就不同种类的应用，使用市场上所有的最优质的材料，并为持续改善自身产品的质量和美观而进行不断的研究。主体和方柱为 PA 6-30% FV 材质，使用冲压模具制成。镀锌钢弹簧使用 C85 型钢材，不锈钢弹簧使用 AISI 302 型钢材。所有的螺钉螺栓为 AISI 304 型不锈钢材质。滑块和滑轮为聚乙烯制，经机床加工，一般来讲为绿色，分子重量为 1'000'000。这项产品被特别指定为在链条滑动应用中的对比部件。以上所描述的材料施与我们的产品高质量和低耗损的特性。这种材料可在–50°C 和+70°C 之间的温度条件下持续工作。我们的塑制滚轮为 PA46，经过车床加工，具极高的机械性能和优级的精加工，尤其注意其同心性，以保证滑轮的平衡性。在滚轮内部安装由先进厂家生产的优质轴承，使其具有在国际市场上不可争辩的极高效能和质量。金属制滚轮可以是不锈钢 AISI 316 或经镀黄锌处理的钢材。链条张紧装置的塑料链轮以 Nylon PA 6-30% FV 制造。金属链轮提供黄色镀锌处理，塑料和金属滚轮均在 203 KRR AH02 型轴承上安装。在此产品目录中使用的所有轴承均为钢制，如有特别需求，我们也可提供不锈钢制的。

滚轮式链条：

滚轮式链条传动系统由一个驱动齿轮“A”和一个或多个从动齿轮“B”组成。运动从驱动轮通过链条环向从动轮传导。链条的理论伸展长度“L_t” [mm] 由以下公式得到：

$$L_t = n \cdot p$$

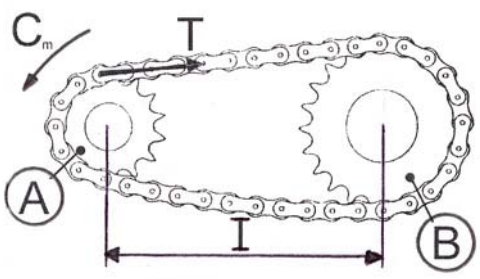


图 1

A= 驱动齿轮
D_{pA}= 驱动齿轮径节 以 mm 表示
B= 从动齿轮
p= 链条节距 以 mm 表示
n= 节数
Z_A= A 轮齿数
Z_B= B 轮齿数
C_m= 驱动转矩 以 Nm 表示
M_t= 所要传送的转矩 以 Nm 表示
T= 在张紧端链条受力 以 N 表示
I= 轴距 以 mm 表示

对链条式传动系统来说，有必要两个齿数之和 $Z_A+Z_B>50$ ，并且每个齿轮的齿数 $Z_{A,B}<125$。由于一般来讲链条的节数为偶数，我们建议所使用齿轮的齿数不应具有相同的因数（如果不可能做到，应采用至少一个齿数为奇数的链轮），使用这项措施可将磨损平均分配在链轮和链条上。

到这一步可计算链条的实际长度：

$$L_r = \frac{2 \cdot I}{p} + \frac{Z_A + Z_B}{2} + \frac{p \cdot (Z_B - Z_A)^2}{4 \cdot \pi^2 \cdot I} + Y .$$

在此 Y 是为了达到偶数节数的长度，以 mm 表示。

为了计算滚轮式链条的张力，有必要获得驱动转矩“C_m”，通过由所要传送的转矩“Mt”乘以一项系数“f=1,2÷2,5”。此系数取决于电动机重新启动数目、电动机功率和工作条件：

$$C_m = M_t \cdot f .$$

在链条拉紧臂的拉力“T”由以下公式得到：

$$T = \frac{2 C_m}{D_{pA}} \cdot 1000 .$$

为此我们建议选择一条断裂负载高过 T 值 5 到 8 倍的链条。相反地，在从动端几乎不受力，唯一的受力来自链条自身的重量。

这种传动系统的最频繁的问题是链条的拉长，由此导致：

- 缠绕角度降低，因此在驱动齿轮上的受拉齿轮数目减低；
- 传动比不稳定；
- 在链条滚轮和链轮齿之间的不正常接触；
- 链条和链轮的提前磨损；

- 高噪音；
- 振动，及其向机器整个结构内部传播；
- 跳齿；
- 链条从传动系统中掉落；
- 在最严重的情况下，链条断裂。

但是为了解决链条松弛问题，在传动系统安装过程中，过度地将链条拉紧是不正确的，因为在短时间内可能遇到前述状况恶化的风险。

因此，使用一台自动张紧装置是不可避免的，它可在一定时间内修正拉长并持续消减振动。自动链条张紧装置应安置在电动机链轮出口从动端，离齿冠距离超过四个节距的位置。为了选择正确张力值，应在以上显示数据之外，考虑到链条的重量和所用链条的种类。在第 14 页上的配套元件选择表中显示一些参考值可帮助您作选择。为了正确地将 BLU 安置在设备内部，应注意链条所构成轨道的几何形状，进入张紧装置端的链条与张紧装置轴所成角度 δ 与从张紧装置出口端链条与张紧装置轴所成的角度相同。以这种方式，方柱将在轴的方向自由运动，不至于造成方柱和方柱滑动所在的主体中之间的过高摩擦。

安装正确!

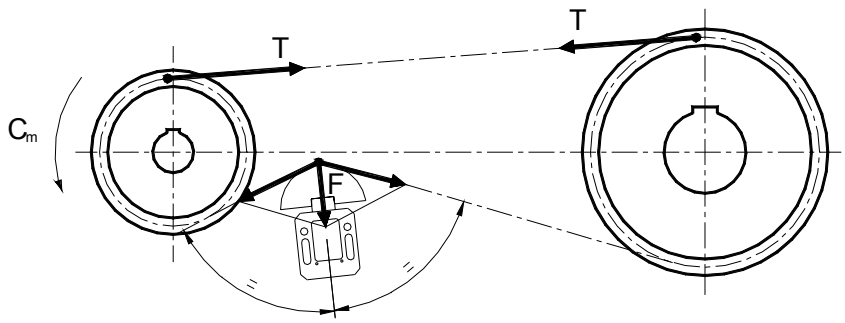


图 2

安装错误!

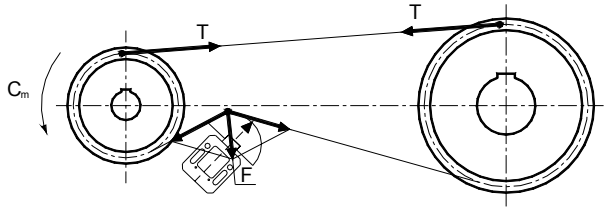


图 3

安装错误!

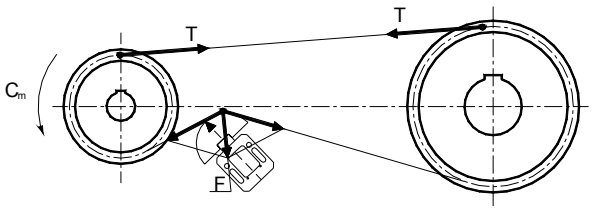


图 4

平型皮带或梯形皮带：

皮带传送系统一般由一个驱动滑轮和一个或多个从动滑轮构成。从一个轮到另一个轮的运动传导通过一些皮带进行，一般来讲皮带由塑性材料制成，其切面可为长方形（平带）或梯形（V 带）。 有关嵌齿轮皮带，参考相关于滚轮链条的章节。

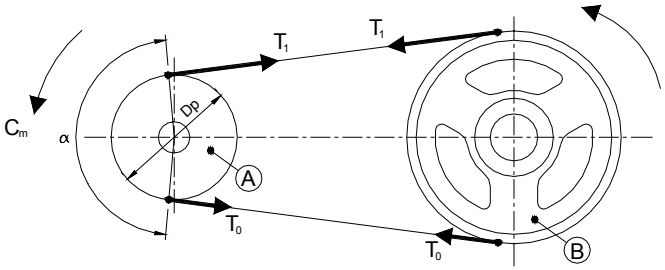


图 5

A= 驱动滑轮
B= 从动滑轮
D_p= 驱动滑轮径节 以 mm 表示
T_1= 在链条张紧臂上的拉力 以 N 表示
T_0= 在链条从动臂上的拉力 以 N 表示
C_m= 主动轴上的最高转矩 以 Nm 表示
α= 缠绕角度

由于不可避免的皮带长度伸展的错误，皮带传输不能保证完美恒定的传动比。在安装后，由于皮带和滑轮之间存在的轻度打滑，在特定的动力条件下，尤其在重新启动时，这些动态可造成整条皮带在驱动滑轮上的滑动。这些滑动由以下因素造成：

- 皮带在驱动滑轮上的缠绕角度α小；
- 由于接触表面有油、脂肪存在，或由于伸长，造成低摩擦系数；
- 振动；
- 皮带预紧力低。

为了消除轻微打滑现象，有必要使用自动张紧装置，由此可保证对皮带加长做出修正并在皮带轨道的适当部位打一个结“n”而削减振动；并采用适当的安装定位，提高缠绕角度α。

在选择张紧装置时，应了解沿着皮带作用的拉力。为了计算皮带传送系统的拉力，由于在驱动轮上一般来讲缠绕角度α较小，有必要写下驱动滑轮旋转平衡方程式（方程式 1)和打滑极限条件（方程式 2)。一般来讲α 应接近 π rad。

要解决的系统如下：

$$\begin{cases} (T_1 - T_0)\cdot\dfrac{D_p}{2}\cdot\dfrac{1}{1000} = C_m \quad \text{(方程式 1)} \\ T_1 = T_0 e^{\eta\alpha} \quad \text{(方程式 2)} \end{cases}$$

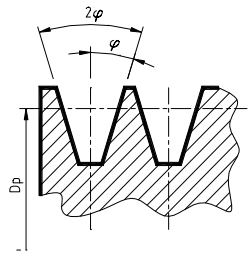


图 6

e= 自然常数 e，约为 2.72

□= 在皮带和滑轮之间的摩擦系数 (在 V 型皮带的情况下，应将此系数除以 sin(φ), 在此φ为沟槽的半开角，以 rad 表示)

图 6

M_t= 在正常条件下所要传输的转矩 以 Nm 表示

C_m= 主动轴上最大转矩 以 Nm 表示

f_s= 工作系数从 2 到 5

“C_m” 是在启动过程中所达到的最高转矩，即在造成打滑的最严重条件下，以工作系数“f_s” (2÷5)乘以在正常条件下所要传输的转矩“M_t”，即 $C_m=f_s\cdot M_t$。

自动张紧装置应安置于从动端，与驱动滑轮最接近的部位。由于在皮带拉紧器上的摩擦力和阻力基本上不存在，在张紧装置设置的皮带端的张力是恒定的。BLU 应沿着张紧装置轴方向产生一份力量，这份力量有必要至少对在安置张紧装置的皮带端所受的两份张力之和作出平衡。为了 BLU 的正确运转，其安装必须使得方柱，即弹簧的的滑动轴与皮带进入和离开张紧装置所形成的角度尽可能相等。图 7 显示一个正确安装的实例：BLU 安装在从动端。传动系统的简图显示，如此离开驱动滑轮的皮带与垂直线成 γ 角，皮带从动端与垂直线成 β 角。为了正确运转，张紧装置 BLU 中进入和离开张紧装置的皮带与装置轴线的角度等于： $\delta = \dfrac{(180° - \gamma - \beta)}{2}$。这种位置的几何形状可使得装置正确运转，有效地对皮带所受力进行轴向平衡，由此在 BLU 的方柱上不会产生任何垂直的力量。

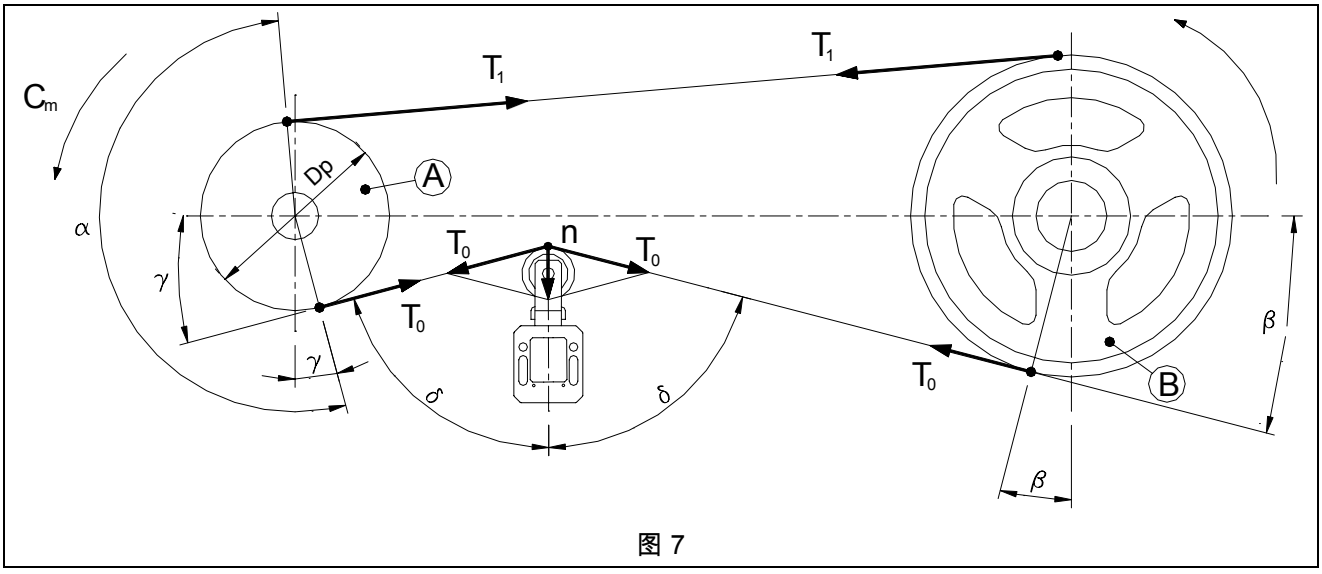


图 7

计算实例:

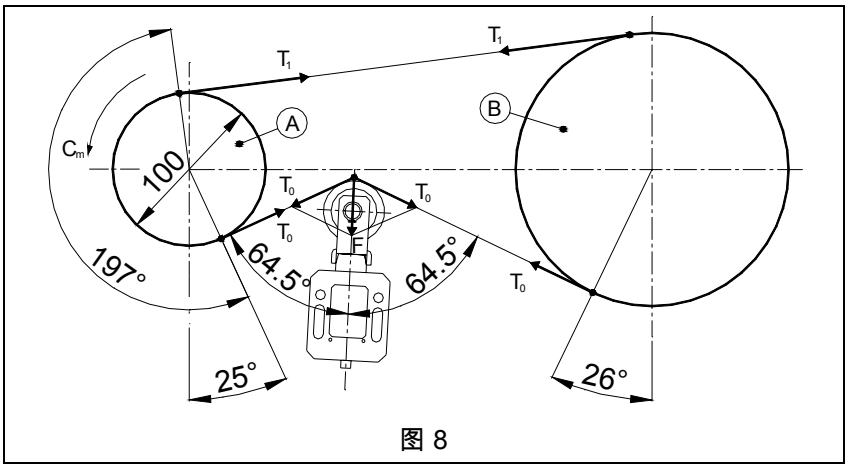


图 8

电动机性能: P=3 Cv

n=940 giri/min

将之前的数据转换为国际计量单位: P=3x735=2205 W

ω= 940xπ/30=98.4 rad/s

$P= M_t x\omega$ ➔$M_t=P/\omega$=22.4 Nm

假设 f_s=2.5

$C_m=2.5xM_t$=56 Nm

驱动滑轮直径 D_p=100 mm

$$\begin{cases}(T_1-T_0)x0.05=56 \rightarrow (T_1-T_0)=1120 & \text{(方程式 1)}\\ T_1 = T_0 e^{\eta\alpha} & \text{(方程式 2)}\end{cases}$$

- 缠绕角度 α=197°xπ/180°=3.44 rad
- 皮带和滑轮之间的摩擦系数 □=0.2
- V 型皮带半开角φ=17° ➔ sin(φ)=0.29
- V 带➔ □'=0.2/sin(φ)=0.2/0.29=0.69
- 自然常数 e=2.72

$T_1=T_0xe^{0.69x3.44}= T_0x10.74$ (方程式 2)

$(10,74T_0-T_0)$ =1120 (方程式 1)

➔T_0=115 N
➔T_1=1120+115=1235 N
➔F=2x115xcos(64.5°)=99 N

现在可选择一台可产生与力量 F 相当的推力的弹性组件，从配套元件列表中可根据皮带种类选择滚轮。

滑块、滑轮、链轮还是滚轮？

在选择正确的张紧装置时，会经常遇到哪个配套元件是对于特定的应用正确的问题。首先，第一个要考虑的问题是要如何利用 BLU，事实上，滑块、滑轮和链轮一般用于链条，滚轮用于皮带。低速的链条传动系统最好使用滑块或滑轮，中速系统建议使用链轮；为了减低噪音，高速系统最好使用滑块而不是链轮，但应使用低负载的弹簧。

在使用皮带时，所注意的主要因素有两点：皮带的宽度及其速度。皮带的宽度应比滚轮低大约 10mm，皮带施与滚轮的旋转速度应低于 3000 转 / 分。在更高速度情况下，请向我们咨询。

TECHNICAL MANUAL
MATERIAL USED

Tecnidea Cidue srl uses the best materials available on the market for its specific applications, and looks always forward to improving the quality and appearance of its product range.
The body and pin are in moulded PA 6-30% FV. Spring can be made of C85 galvanised or AISI 302 steel. All the bolts are in AISI 304 stainless steel. Sliders and wheels are made of polyethylene and are mechanically processed. The usual colour is green and the molecular weight is 1,000,000. This material is ideal as a contrasting element in chain sliding applications. As a result of top quality materials and careful processing, these first-rate products last long and can stand continuous working cycles with temperature ranging from –50°C and +70°C. The plastic rollers in PA6 are lathed for high-performing mechanical features and top finishing with a special focus on concentricity which plays a primary role in the roller balance. The rollers house high quality bearings from leading producers and provide undisputable high performance and quality at the international level. Metal rollers can either be in AISI 316 stainless steel or yellow galvanised steel. Chain tightener pinions are in Nylon PA 6-30% FV.
Metal chain tightener pinions are galvanized (yellow treatment); both plastic and metal pinions are mounted on bearings 203 KRR AH02.
The bearings described in this catalogue are all in steel; on request, they can be supplied in stainless steel.

Roller chains:

Roller chain gearings consist of a driving gear "A" and one or more driven gears "B". The motion from the driving gear to the driven gears occurs by means of a chain link. The development of the theoretical length "L_t" [mm] is given by the following formula:

$$L_t = n \cdot p$$

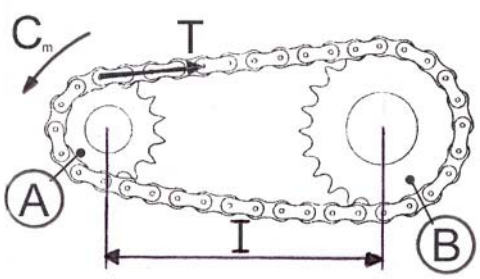


Figure 1

A= driving toothed wheel
D_{pA}= diametral pitch of the toothed wheel A in mm
B= driver toothed wheel
p= inside length (pitch) in mm
n= number of pitches
Z_A= number of the teeth of the wheel A
Z_B= number of the teeth of the wheel B
C_m= motor torque in Nm
M_t= torque to be transmitted in Nm
T= pull on chain on the tensed branch in N
I= distances between centres in mm

For chain gearings it would be better that $Z_A+Z_B>50$ and the number of spurs on each wheel is $Z_{A,B}<125$. Given the fact that a chain has a number of even links, we recommend that you use gears with spurs exempt from reciprocal dividers. Should this not be possible, at least one pinion with an odd number of spurs should be applied, as this contributes to obtain a uniform wear of both pinions and chain.
Now, the real length of the chain can be measured:

$$L_r = \frac{2 \cdot I}{p} + \frac{Z_A + Z_B}{2} + \frac{p \cdot (Z_B - Z_A)^2}{4 \cdot \pi^2 \cdot I} + Y$$

Where Y is a number in mm to obtain the even number of links.
The driving couple "C_m" must be obtained in order to determine the roller chain tension, and this is the result of the gearing couple "M_t" multiplied by a coefficient "f=1,2÷2,5" which depends on the number of re-starts, the power of the motor and the working conditions:

$$C_m = M_t \cdot f$$

The pull "T" of the chain on the tensed branch shall be determined using the following formula:

$$T = \frac{2 C_m}{D_{pA}} \cdot 1000$$

We recommend that you use a chain with a breakage load 5 to 8 times higher than T. On the driven branch, the tension is almost zero because the only acting force is that given by the chain weight itself.
With this type of gear, the most usual inconvenience is a loosening of the chain which causes:

- *a decrease in the winding angle, i.e. the number of spurs acting on the driving gear;*
- *lack of a steady gearing relation;*
- *anomalous contact among the chain rollers and the pinion spurs:*
- *early wear of both the chains and the pinions;*
- *high level of noise;*
- *vibrations that propagate to the overall structure of the machine;*
- *spur jumping;*
- *exit of the driving gear;*
- *breakage of the chain in the worst of the cases.*

It would be a mistake however, trying to solve the problem of a chain getting loose, by tensing it too much when you set it for operation because in a very short time the chain could get even looser.

As a consequence, the Automatic Chain Tightener appears as the only solution to prevent any loosening and to absorb all vibrations. The automatic chain tightener must be positioned on the driven branch to the exit of the motor pinion at a distance no shorter than 4 pitches from the gear. The ideal tension value must be selected on the basis of the above values, the weight of the chain and the type of chain used. The KIT table on page 14 shows the reference values which you should consider to make the right choice. If you wish to position correctly the BLU element inside your system, make sure that the chain's path geometry will be such that the angle δ obtained from the "incoming" chain to the tightener and the tightener axis is equal to the "outgoing" angle of the tightener and the tightener axis. This will allow the pin to move free in the axial direction without causing excessive friction between the pin and the inside of the body in which it slides.

CORRECT ASSEMBLY!

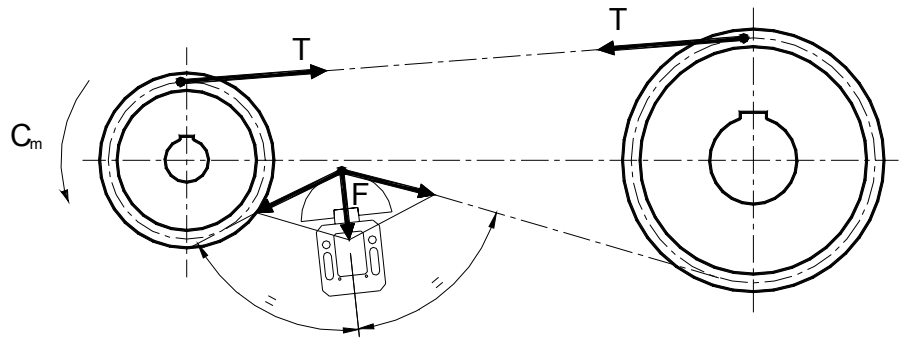


Figure 2

WRONG ASSEMBLY!

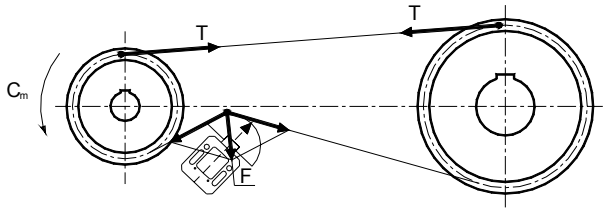


Figure 3

WRONG ASSEMBLY!

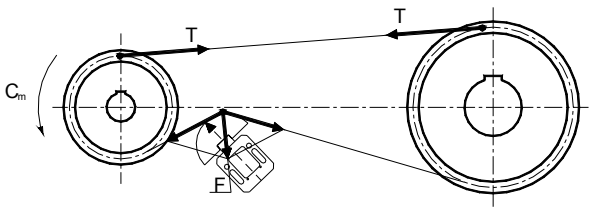


Figure 4

Flat or trapezoidal belts:

Belt drives mainly consist of a driving pulley and one or more driver pulleys. The belts are transmitting the motion from one gear to the other, and they are generally made in plastic materials, shaped in rectangular sections (flat belts) or trapezoidal sections (trapezoidal belts). For timing belts, see the section on roller chains.

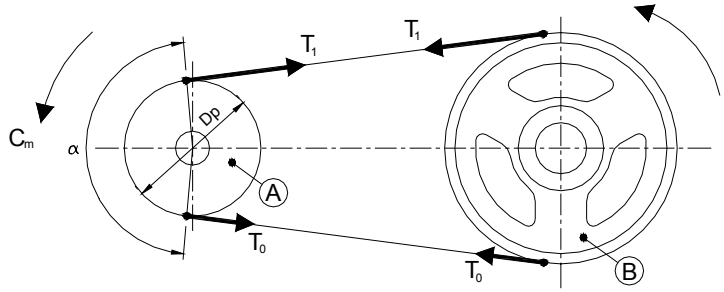


Figure 5

A= driving pulley
B= driver pulley
D_p= diametral pitch of the driving pulley in mm
T_1= tension on the tensed branch in N
T_0= tension on the driver branch in N
C_m= maximum torque on the driving shaft in Nm
α= angle of twist

Belt drives are not synonymous with perfect and steady gear relation because the micro-slidings between belt and pulley cannot be avoided along the length which moves kinematically. Above all in special dynamic conditions such as re-starts, the entire belt of the driving pulley may slide. Sliding depends on a number of factors:

- *low winding of the angle α of the belt on the driving pulley;*
- *low friction coefficient between the contact surfaces of the belt and the pulley given the presence of oil or fat or because of lengthening;*
- *vibrations;*
- *low pre-tensioning of the belt.*

To avoid micro-sliding, the use of an automatic tightener becomes a must and a way to recover any lengthening as well as vibrations with an "n" knot in a convenient position along the belt path. If appropriately placed, this also increases the winding angle α.

You can make the perfect selection of the tightener if you know which are the pulling tensions acting along the belt. The calculation of the pulls of a belt drive depends necessarily on the equation of balance at the rotation of the driving pulley (equation 1) together with the max allowed sliding condition (equation 2), because on the driving gear the winding angle α is usually lower. In general, α must be approximately π rad.

The system to be solved is the following:

$$\begin{cases} (T_1 - T_0) \cdot \frac{D_p}{2} \cdot \frac{1}{1000} = C_m & \text{(equation 1)} \\ T_1 = T_0 e^{\eta\alpha} & \text{(equation 2)} \end{cases}$$

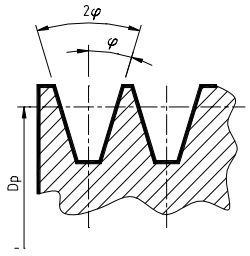


Figure 6

e= Nepero's number, equal to 2,72
□= friction coefficient between belt and pulley (in case of V-type belts, this coefficient has to be divided by sin(φ), where φ is the angle of the semiaperture of the rim of the pulley in rad). Figure 6
M_t= torque to be transmitted at uniform rating in Nm
C_m= maximum torque on the driving shaft in Nm
f_s= duty factor from 2 to 5

"C_m" is the maximum value of the couple that can be reached during the start up, i.e. in the heaviest sliding conditions. This is obtained by multiplying the value of the couple to be driven "M_t" by a service factor "f_s" (2÷5) in regimen conditions, i.e. $C_m = f_s \cdot M_t$.
The automatic tightener should be positioned in the driven branch as close as possible to the driving pulley. The tension in the belt branch on which the tightener acts is steady because the friction and contrasting forces on the belt tightener are almost zeroed. The force developed by the BLU element should be at least necessary to re-balance the resulting value from the sum of the two components of the tension on the branch on which the tightener is applied, along the tightener axis itself. The BLU element will work ideally if – when you position it – the angles which form between the sliding axis of the pin (i.e. the spring) and the belt "incoming" and "outgoing" from the tightener are as equal as possible. Figure 3 shows an example of a correct application: the BLU element has been positioned along the driven branch. The gear configuration forms an angle of the belt going out of the driving pulley of γ degrees versus the vertical position, and on the driven pulley of β degrees versus the vertical position. The BLU element works correctly when it is oriented in a way that the angle obtained from the belt "incoming" and "outgoing" from the tightener and its axis are even and equal to: $\delta = \frac{(180° - \gamma - \beta)}{2}$. *This positioning geometry allows the tightener to work correctly thus balancing axially the resultant of the forces acting on the belt so that no perpendicular force can develop along the BLU pin.*

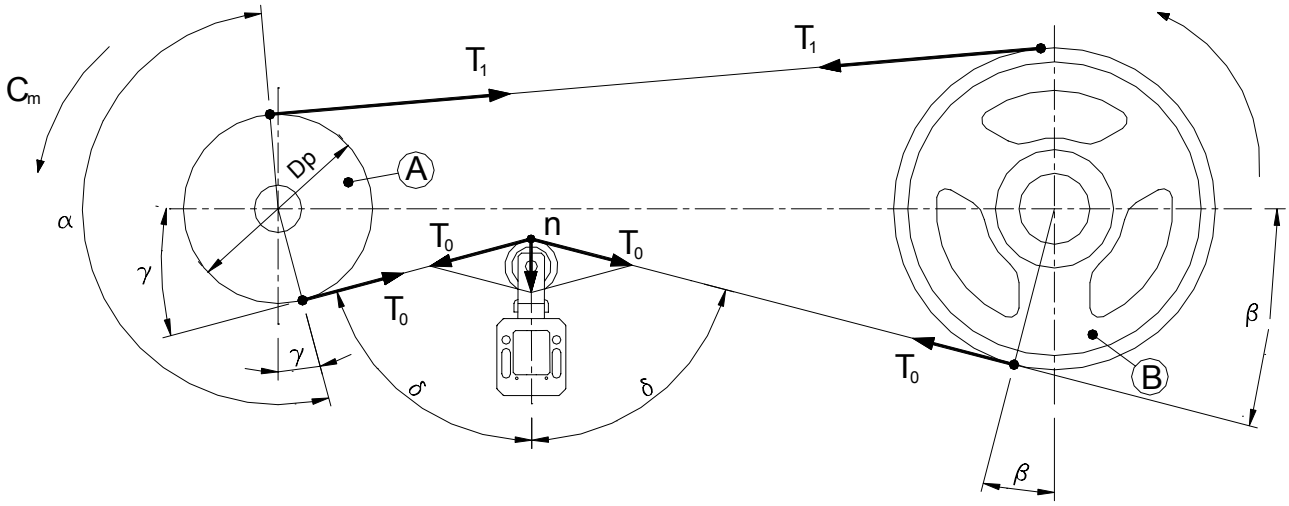


Figure 7

Example of calculation

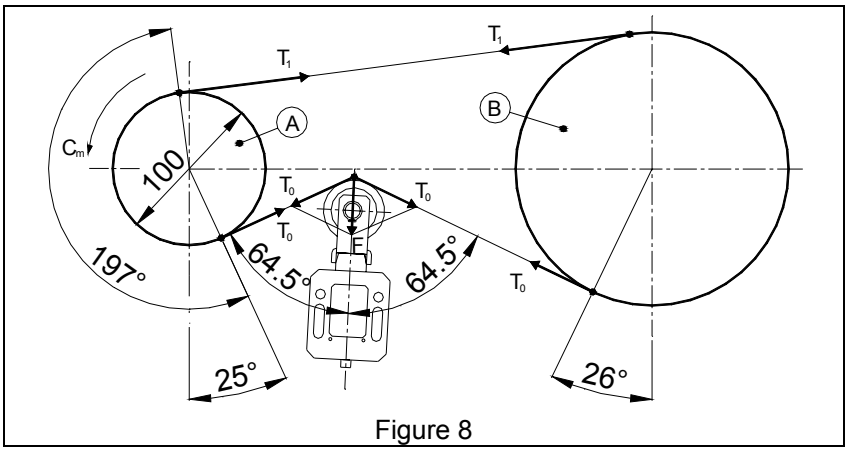


Figure 8

Motor features: P=3 Cv
n=940 rpm
We convert the previous values into the unit of measure SI: P=3x735=2205 W
ω= 940xπ/30=98,4 rad/s

$P= M_t x \omega$ ➔$M_t=P/\omega$=22,4 Nm
We suppose f_s=2,5
$C_m=2,5xM_t$=56 Nm

Diametral pitch of the driving pulley D_p=100 mm

$$\begin{cases} (T_1-T_0)x0,05=56 \rightarrow (T_1-T_0)=1120 & \textit{(equation 1)} \\ T_1 = T_0 e^{\eta\alpha} & \textit{(equation 2)} \end{cases}$$

- *angle of twist* α=197°xπ/180°=3,44 rad
- *friction coefficient between belt and pulley* □ =0,2
- *V-type belt with angle of semiaperture* φ=17° ➔ sin(φ)=0,29
- *V-type belt* ➔ □'=0,2/sin(φ)=0,2/0,29=0,69
- *Nepero's number* e=2,72

$$\begin{cases} T_1=T_0 x e^{0,69x3,44}= T_0 x10,74 & \textit{(equation 2)} \\ (10,74T_0-T_0) =1120 & \textit{(equation 1)} \end{cases}$$

➔T_0=115 N
➔T_1=1120+115=1235 N
➔F=2x115xcos(64,5°)=99 N

Now we can choose the elastic element that will have to develop a push compatible to the force F and from the table kit choice we can choose the roller according to the type of the belt.

Slider, gear, pinion, roller?
In making the choice of the ideal tightener, the usual question is which is the right KIT to be used in a specific application. Above all, the first parameter to be considered is the type of use of the BLU element. In general, sliders, gears, and pinions are used with chains while rollers are used with belts. In chain drives at low speeds, the use of pinions is recommended; high speeds require sliders to decrease noise pollution, but with less loaded springs.
As regards belts, the main parameters that should be taken into consideration are two: the width of the chain and its speed. The belt width must be approximately 10 mm lower than that of the roller, and the rotation speed that the belt imparts to the roller must be lower than 3000 r.p.m. For higher speeds we recommend that you contact us.

安装指导:

为了使 BLU 能在链条或皮带传动系统进行最佳操作，有必要将其正确地在设备上安装。张紧装置应安装在传动系统缓慢端（不受力）并尽量靠近驱动系统（链轮或滑轮）。下述将 BLU 组件在设备中安装的应遵循的简单安装步骤：

1) 从主体底部将预加负荷用柱销□拔出 (图 1);
2) 在方柱上施力，挤压弹簧，使其可完全进入主体内部；
3) 在方柱完全进入主体内部时，将预加负荷用柱销 Ⓟ 插入主体上可见的孔 F_p 中 (图 2);
4) 将如此预加负荷的 BLU 安装在设备上，使用两个螺钉和在主体上的槽将其推靠在将受力的系统（链条或皮带）上。将螺钉拧紧，如果有必要的话，将两个柱销插在主体上相应的孔内。在这一步，应注意张紧装置的轴和受力组件之间所形成的定位角度 (图 3);
5) 将预加负荷用柱销 Ⓟ 从孔 F_p 中拔出，并将其重新插入其初始位置。张紧装置将自动将链条或皮带拉紧 (图 4).

Assembly instructions:

In order to make BLU working in the best way on the chain or belt drive, it is necessary that it is placed correctly on the system. The tightener is to be assembled on the slow section of the transmission and the nearest possible to the mover (pinions or pulleys). The are some easy assembly steps to be followed in phase of BLU installation:

1) *Take out the preloading pin □ from the bottom of the body (Bild 1);*
2) *Press on the column, so that, when compressing, the spring it can enter completely inside the body;*
3) *With the column completely inside the body, put the preloading pin Ⓟ in the visible hole F_p on the body (Bild 2);*
4) *Place BLU, so preloaded, on the system and through the use of two screws and the slot placed on the body, push it towards the organ to be set at work (chain or belt). Tighten the screws and if necessary place two pins in the designated holes on the body. In this phase pay attention to the angle positioning which will be created between the tightener axis and the element to be tensioned (Bild 3);*
5) *Take the preloading pin Ⓟ out from the hole F_p and place it in its initial seat. The screw coupling will automatically carry the chain or belt in tension (Bild 4).*

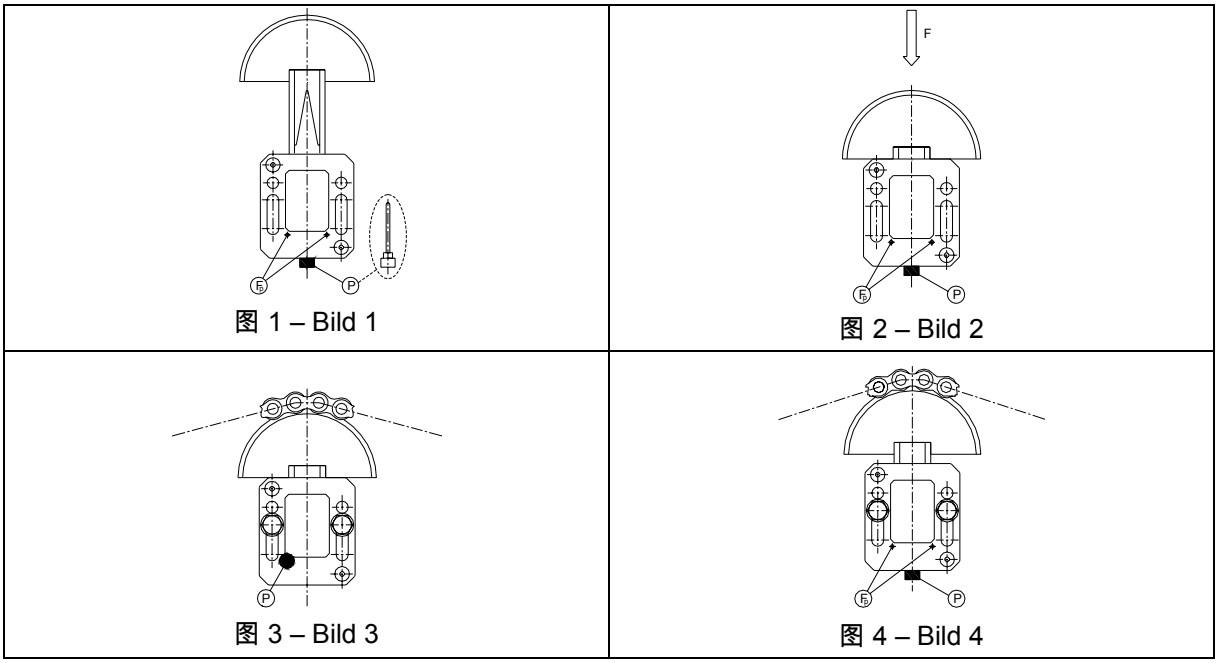


图 1 – Bild 1　　图 2 – Bild 2

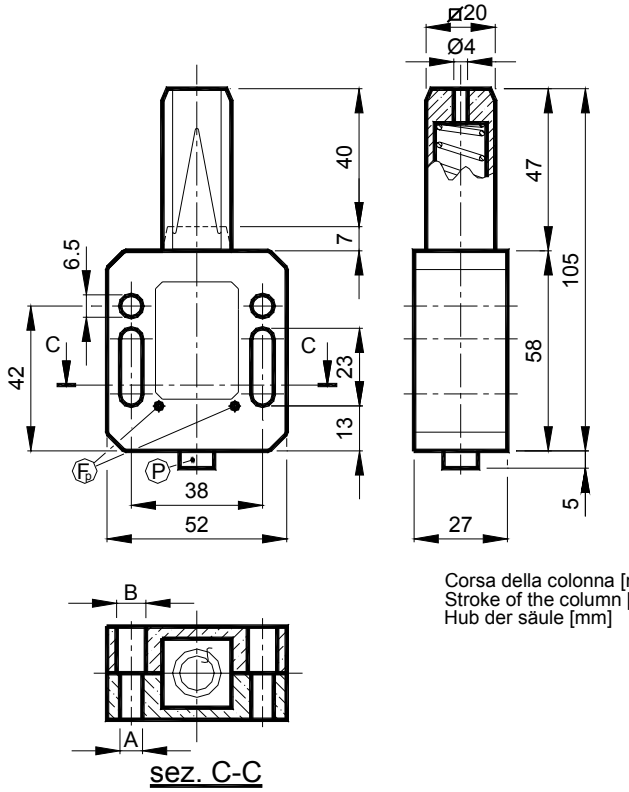
图 3 – Bild 3　　图 4 – Bild 4

BLU 弹性组件 – 型号 BL-Z: 具镀锌钢制弹簧 – 型号 BL-X: 具不锈钢弹簧

BLU elastic elements - Type BL-Z: with spring in galvanized steel – Type BL-X: with spring in stainless steel

BLU 完全由塑性材料制成，具不锈钢螺钉。内部的弹簧可为镀锌钢或不锈钢材质。最高工作温度为+80°C。所有的主体都配有预加负荷系统。行程为 40 mm。

BLU is completely built in plastic with screws in stainless steel . The inside spring can be in galvanized or stainless steel. The maximum operating temperature is +80°C. All the bodies are supplied with preloading system. The stroke is 40 mm.



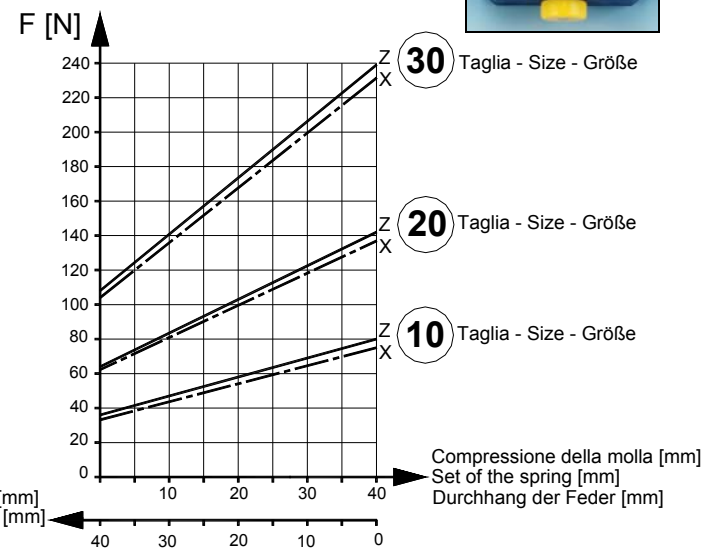


Diagramma di carico
Loading diagram
Ladungsdiagramm

Ⓕ$_D$ = 预加负荷孔 – *Preloading hole*

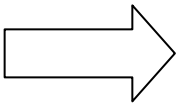
Ⓟ =预加负荷用桩销 – Preloading pin

具镀锌钢制弹簧 *With spring in galvanized steel*		重量: 0,1 Kg *Weight: 0,1 Kg*			具不锈钢制弹簧 *With spring in stainless steel*		重量: 0.1 Kg *Weight: 0,1 Kg*
型号 *Type*	编号 N°	A	B	Newton	型号 *Type*	编号 N°	Newton
BL 10-6 Z	**BL010010**	6.5	6.5	36-79	**BL 10-6 X**	**BL010110**	35-77
BL 10-8 Z	**BL010013**	8.5	8.5	36-79	**BL 10-8 X**	**BL010113**	35-77
BL 10-6/8 Z	**BL010016**	6.5	8.5	36-79	**BL 10-6/8 X**	**BL010116**	35-77
BL 20-6 Z	**BL010020**	6.5	6.5	64-142	**BL 20-6 X**	**BL010120**	63-139
BL 20-8 Z	**BL010023**	8.5	8.5	64-142	**BL 20-8 X**	**BL010123**	63-139
BL 20-6/8 Z	**BL010026**	6.5	8.5	64-142	**BL 20-6/8 X**	**BL010126**	63-139
BL 30-6 Z	**BL010030**	6.5	6.5	108-239	**BL 30-6 X**	**BL010130**	105-233
BL 30-8 Z	**BL010033**	8.5	8.5	108-239	**BL 30-8 X**	**BL010133**	105-233
BL 30-6/8 Z	**BL010036**	6.5	8.5	108-239	**BL 30-6/8 X**	**BL010136**	105-233

配套元件选择列表 / *Choose table KIT*

链条 - *Chain* (DIN 8187)		型号 - *Type*				尺寸 – *Size*	型号 - *Type*					最高皮带宽度 [mm] *Max belt width [mm]*
ISO	节距 *Pitch*	VF	FR	FC	FN		FP	FU	FPX	FUX	FG	
		页数 16 Page	页数 17 Page	页数 18 Page	页数 19 Page		页数 20 Page	页数 20 Page	页数 21 Page	页数 21 Page	页数 22 Page	
04-B1	6 mm	VF 10-AU				10					FG A	15
04-B1	6 mm	VF 10-AS				10	FP 1	FU 1	FPX 1	FUX 1		30
05-B1	8 mm	VF 10-0U				10						
05-B1	8 mm	VF 10-0S	FR 10-0S			10						
06-B1	3/8“x7/32“	VF 10-1U				10						
06-B1	3/8“x7/32“	VF 10-1S	FR 10-1S	FC 10-1S		10						
06-B1	3/8“x7/32“	VF 20-1U				20					FG A	15
06-B1	3/8“x7/32“	VF 20-1S	FR 20-1S	FC 20-1S	FN 20-1S	20	FP 1	FU 1	FPX 1	FUX 1		30
06-B1	3/8“x7/32“				FN 30-1S	30						
08-B1	1/2“x5/16“	VF 20-2S	FR 20-2S	FC 20-2S		20					FG B	25
08-B1	1/2“x5/16“	VF 30-2S	FR 30-2S	FC 30-2S	FN 30-2S	30					FG B	25
10-B1	5/8“x3/8“	VF 20-3S	FR 20-3S	FC 20-3S		20	FP 2/3	FU 2/3	FPX 2/3	FUX 2/3		40
10-B1	5/8“x3/8“	VF 30-3S	FR 30-3S	FC 30-3S	FN 30-3S	30	FP 2/3	FU 2/3	FPX 2/3	FUX 2/3		40
12-B1	3/4"x7/16”	VF 30-4S	FR 30-4S			30					FG C	35
05-B2	8 mm	VF 10-0D	FR 10-0D			10						
06-B2	3/8“x7/32“	VF 10-1D	FR 10-1D			10						
06-B2	3/8“x7/32“	VF 20-1D	FR 20-1D			20						
06-B2	3/8“x7/32“				FN 30-1D	30						
08-B2	1/2“x5/16“	VF 20-2D	FR 20-2D			20						
08-B2	1/2“x5/16“	VF 30-2D	FR 30-2D			30						
10-B2	5/8“x3/8“	VF 30-3D				30						
05-B3	8 mm	VF 20-0T				20						
05-B3	8 mm	VF 30-0T				30						
06-B3	3/8“x7/32“	VF 20-1T				30						
06-B3	3/8“x7/32“	VF 30-1T	FR 30-1T			30						

尺寸 *SIZE*	**10:**	Z: 36 - 79 X: 35 - 77	N
尺寸 *SIZE*	**20:**	Z: 64 -142 X: 63 -139	N
尺寸 *SIZE*	**30:**	Z:108 -239 X:105 -233	N



页数 Page 13

附件 / Accessories

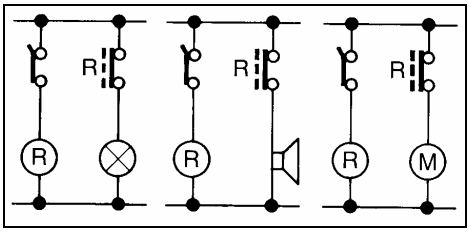
电子限位开关 - 型号: **E** / 型号: **I** / 型号: **V**

Travel-end switch *– Type:* ***E*** */ Type:* ***I*** */ Type:* ***V***

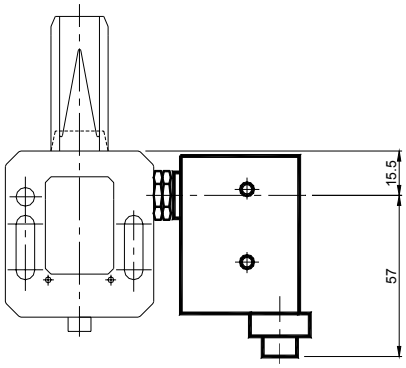
电子限位开关 – *Travel-end switch*

电子限位开关配套原件可在所有 BLU 或 BLUD 弹性组件上应用。我们所使用的电子限位开关的保护级别为 IP63，为此也可在潮湿环境中使用。在想要监控机器的正确运转和 / 或保障操作人员安全时，电子限位开关极为有用。我们的客户可在不同的操作方式 (**E**, **I**, **V**)之间进行选择，这点在订货时应指明。

*The travel-end switch can be mounted on all BLU or BLUD elastic elements. The travel-end switch we use is with IP63 protection class, so it can be used also in damp environments. The travel-end switch is particularly useful when you want to control the correct working of the machine and/or protect the safety of the workers. Our clients can choose among three different solutions (**E**, **I**, **V**) which have to be specified in order phase.*

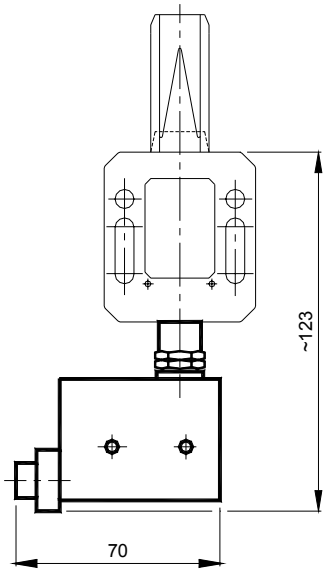


电子线路 – *Electrical diagram*



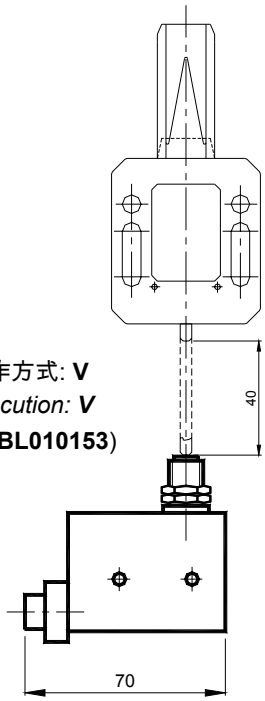
操作方式: **E** – *Execution:* ***E***

(编号 **BL010150**)



操作方式: **I** – *Execution:* ***I***

(编号 **BL010156**)



操作方式: **V**

Execution: ***V***

(编号 **BL010153**)

光信号 – 型号: **LUX** / 型号: **ALUX**

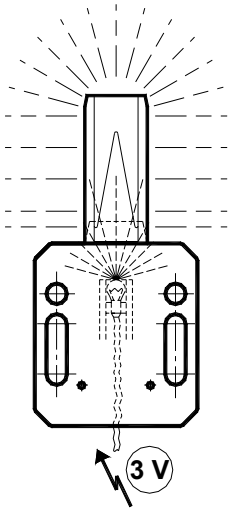
Signal light *– Type:* ***LUX*** */ Type:* ***ALUX***

LUX (编号 **BL010160**)

ALUX (编号 **BL010163**)

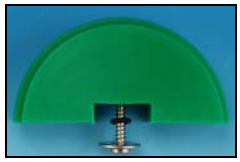
光信号附件可在所有的 BLU 或 BLUD 弹性组件上应用。光源在主体内部安装，可由一个小灯泡或发光二极管或一条光纤维带发光。通过方柱所过滤的光线可用于一个设备的照明源，作为维修过程中的定位信号，如与电子限位开关 (型号:**E**)联合使用，作为一个危险指示信号，作为主体行程的检察信号等。如客户有特殊要求，可在 BLU 或 BLUD 方柱或主体上特殊位置上钻几个小孔，以增强光信号的透出。

*The signal light can be mounted on all BLU or BLUD. The light source is placed inside the body and is generated by a small lamp or led or a optic fibres beam. The light filtering through the column can be used as a light source in a system, as a positioning signal during maintenance, as a danger signal when associated to a travel-end switch (Type: **E**), as checking signal for column carried out stroke etc. If required by the customer, it is possible to perform small holes on the BLU or BLUD column or body in specified spots in order to increase the light signal leakage.*



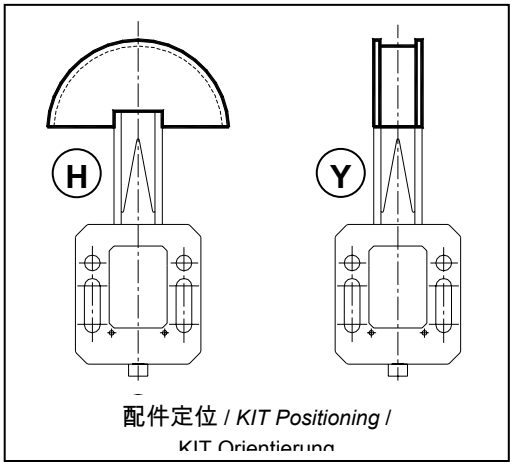
链条张紧装置配套元件 / *KIT for chain tighteners*

聚乙烯滑块 – 型号: **VF** / *Polyethylene sliding block – Type: **VF***

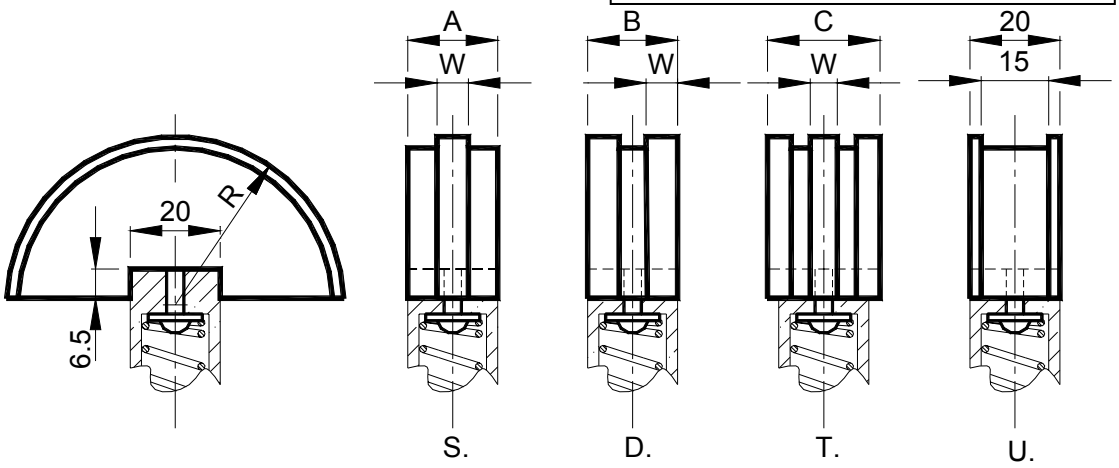


配套元件由高分子密度聚乙烯滑块和不锈钢螺栓组成。工作速度 ≤20 米 / 分。滑块工作温度 ≤70°C。具半圆形轮廓的滑块 V 适用于小轴距和在室外使用。客户应指定安装方向 (**H** 或 **Y**)，否则将以操作方式 **H** 供货。

*The KIT is made up by a polyethylene sliding block with high molecular density with bolts and nuts in stainless steel. Operating speed £20 m/min. Sliding block operating temperature £70°C. It is suitable for reduced interaxis and for use in outside enviroment. Please specify the positioning (**H** or **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning* / KIT Orientierung



轮廓 **U** 用于宽度至 15 mm 的链条 / ***U** Profile for chains with widths till 15 mm*

型号 *Type*	S 编号 N°	D 编号 N°	T 编号 N°	U 编号 N°	链条 *Chain*	尺寸 *Size*	R	A	B	C	W	重量 *Weight* in Kg			
												S.	D.	T.	U.
VF 10-A	BL010172			BL010170	6 mm	**10**	37.5	20			2.3	0.03			0.03
VF 10-0	BL010174	BL010190		BL010170	8 mm	**10**	37.5	20	20		2.5	0.03	0.03		0.03
VF 20-0			BL010210		8 mm	**20**	37.5			20	2.5			0.04	
VF 30-0			BL010210		8 mm	**30**	37.5			20	2.5			0.04	
VF 10-1	BL010176	BL010192		BL010170	3/8”x7/32”	**10**	37.5	20	20		5	0.03	0.03		0.03
VF 20-1	BL010176	BL010192	BL010212	BL010170	3/8”x7/32”	**20**	37.5	20	20	25	5	0.03	0.03	0.04	0.03
VF 30-1			BL010212		3/8”x7/32”	**30**	37.5			25	5			0.04	
VF 20-2	BL010178	BL010194			1/2”x5/16”	**20**	37.5	20	20		7	0.03	0.04		
VF 30-2	BL010178	BL010194			1/2”x5/16”	**30**	37.5	20	20		7	0.03	0.04		
VF 20-3	BL010180				5/8”x3/8”	**20**	40	20			9	0.04			
VF 30-3	BL010180	BL010196			5/8”x3/8”	**30**	40	20	25		9	0.04	0.08		
VF 30-4	BL010182				3/4”x7/16”	**30**	40	20			11	0.05			

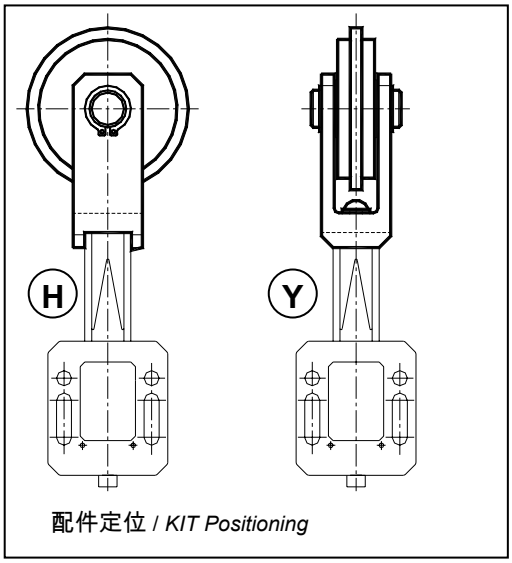
链条张紧装置配套元件 / *KIT for chain tighteners*

聚乙烯滑轮 – 型号: **FR**

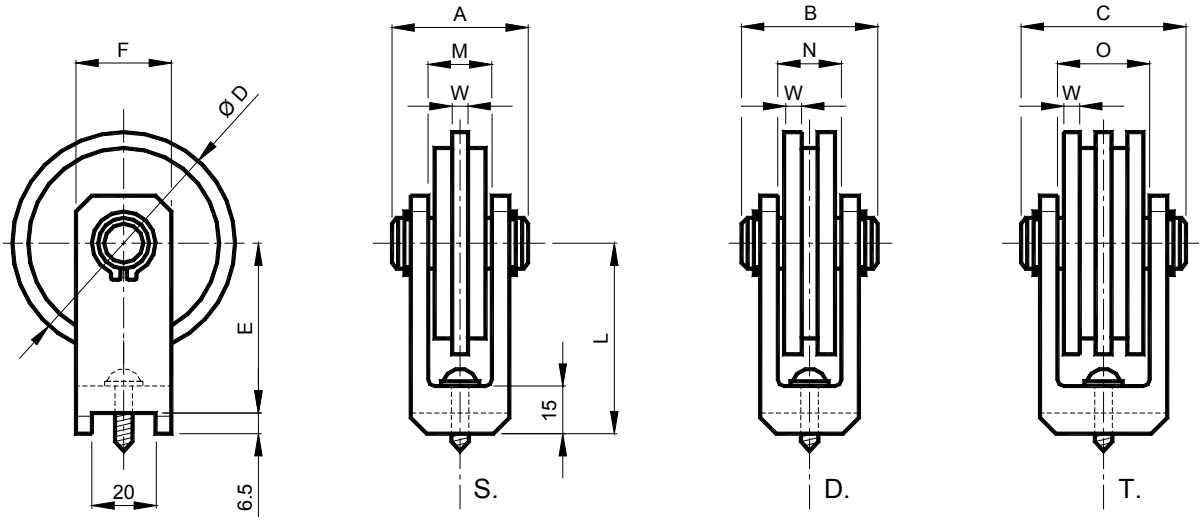
Polyethylene wheelset – Type: ***FR***

配套元件由一个铝质支架和在镀锌钢轴上的空转滑轮组成。滑轮为高分子密度聚乙烯制。所用螺栓为镀锌钢材质。工作速度 ≤30 米 / 分。滑轮工作温度 ≤70°C。 应指定安装定位 (**H** 或 **Y**)，否则将以操作方式 **H** 提供。

*This KIT is made up by an aluminium fork with idle wheel on the pin in galvanized steel. Polyethylene wheel, high molecular density. The used bolts and nuts are in galvanized steel. Operating speed £30 m/min. Operating temperature of the wheel set £70°C. Please specify the positioning (**H** or **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning*



型号 *Type*	S 编号 N°	D 编号 N°	T 编号 N°	链条 *Chain*	尺寸 -*Size* Größe	A	B	C	∅ D	E	F	M	N	O	L	W	重量 - *Weight* in Kg		
																	S.	D.	T.
FR 10-0	BL010230	BL010240		8 mm	**10**	40	40		70	53.5	30	19	19		60	2.5	0.19	0.20	
FR 10-1	BL010232	BL010242		3/8”x7/32”	**10**	40	40		70	53.5	30	19	19		60	5	0.19	0.20	
FR 20-1	BL010232	BL010242		3/8”x7/32”	**20**	40	40		70	53.5	30	19	19		60	5	0.19	0.20	
FR 30-1			BL010248	3/8”x7/32”	**30**			60	70	53.5	30			37	60	5			0.24
FR 20-2	BL010234	BL010244		1/2”x5/16”	**20**	40	60		70	53.5	30	19	37		60	7	0.20	0.29	
FR 30-2	BL010234	BL010244		1/2”x5/16”	**30**	44	60		70	53.5	30	19	37		60	7	0.20	0.29	
FR 20-3	BL010236			5/8”x3/8”	**20**	45			90	63.5	30	19			70	9	0.27		
FR 30-3	BL010236			5/8”x3/8”	**30**	45			90	63.5	30	19			70	9	0.27		
FR 30-4	BL010238			3/4”x7/16”	**30**	45	65		90	63.5	30	19	37		70	11	0.28		

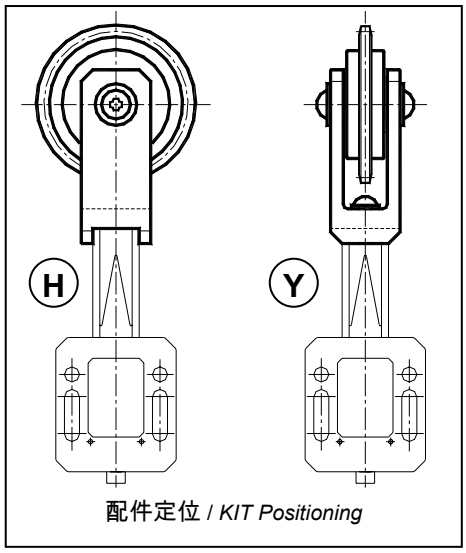
链条张紧装置配套元件 / *KIT for chain tighteners*

链条张紧装置塑料链轮 具国产轴承 – 型号: **FC**

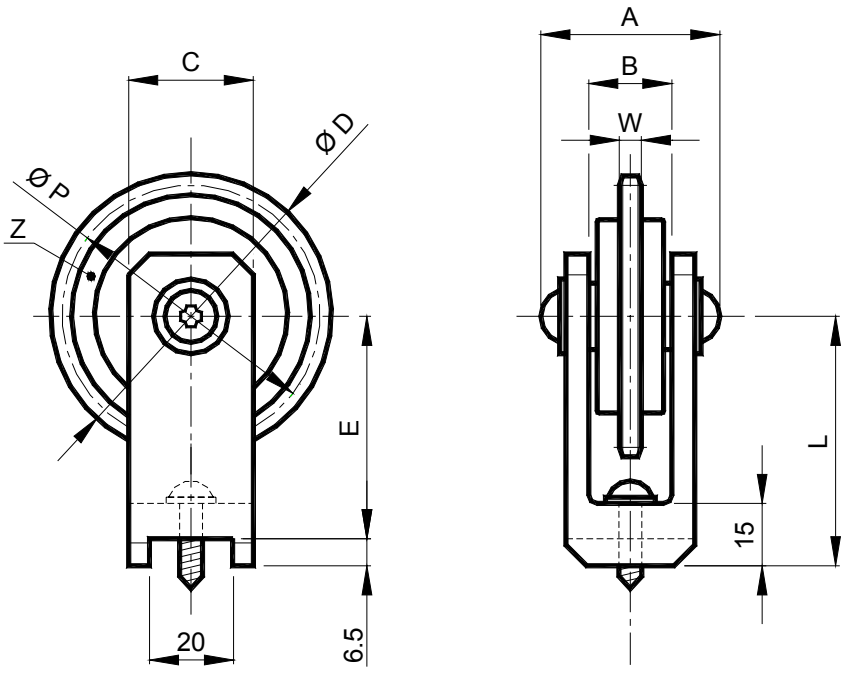
Plastic sprocket wheelset with national bearing – Type: ***FC***

配套元件由一个铝质支架和空转链轮组成。 链轮由一个底部加大的轴承上模制的 nylon PA 6-30% FV 制的冠组成。所用螺栓为镀锌钢材质。工作速度 ≤60 米 / 分。链轮工作温度 ≤80°C。客户应指定安装定位 (**H** 或 **Y**) , 否则将以操作方式 **H** 供货。

*The kit is made up by an aluminium fork with idle pinion. The pinion consists of a nylon PA 6-30% FV crown installed on an enlarged bearing. The used bolts and nuts are in galvanized steal. Operating speed £60 m/min. Operating temperature of the pinion £80°C. Please specify the positioning (**H** or **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning*



型号 *Type*	编号 N°	链条 *Chain*	尺寸 Size	Z	A	B	C	ØD	E	L	ØP	W	重量 *Weight* in Kg
FC 10-1	BL010250	3/8”x7/32”	**10**	21	42	19	30	68.0	53.5	60	63.90	5.3	0.10
FC 20-1	BL010250	3/8”x7/32”	**20**	21	42	19	30	68.0	53.5	60	63.90	5.3	0.10
FC 20-2	BL010252	1/2”x5/16”	**20**	18	42	19	30	77.8	53.5	60	73.14	7.2	0.18
FC 30-2	BL010252	1/2”x5/16”	**30**	18	42	19	30	77.8	53.5	60	73.14	7.2	0.18
FC 20-3	BL010254	5/8”x3/8”	**20**	17	47	19	30	93.0	63.5	70	86.39	9.1	0.30
FC 30-3	BL010254	5/8”x3/8”	**30**	17	47	19	30	93.0	63.5	70	86.39	9.1	0.30

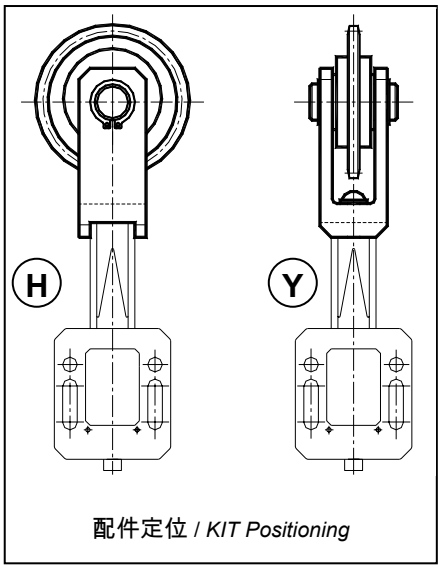
链条张紧装置配套元件 / *KIT for chain tighteners*

链条张紧装置镀锌钢链轮 具国产轴承 – 型号: **FN**

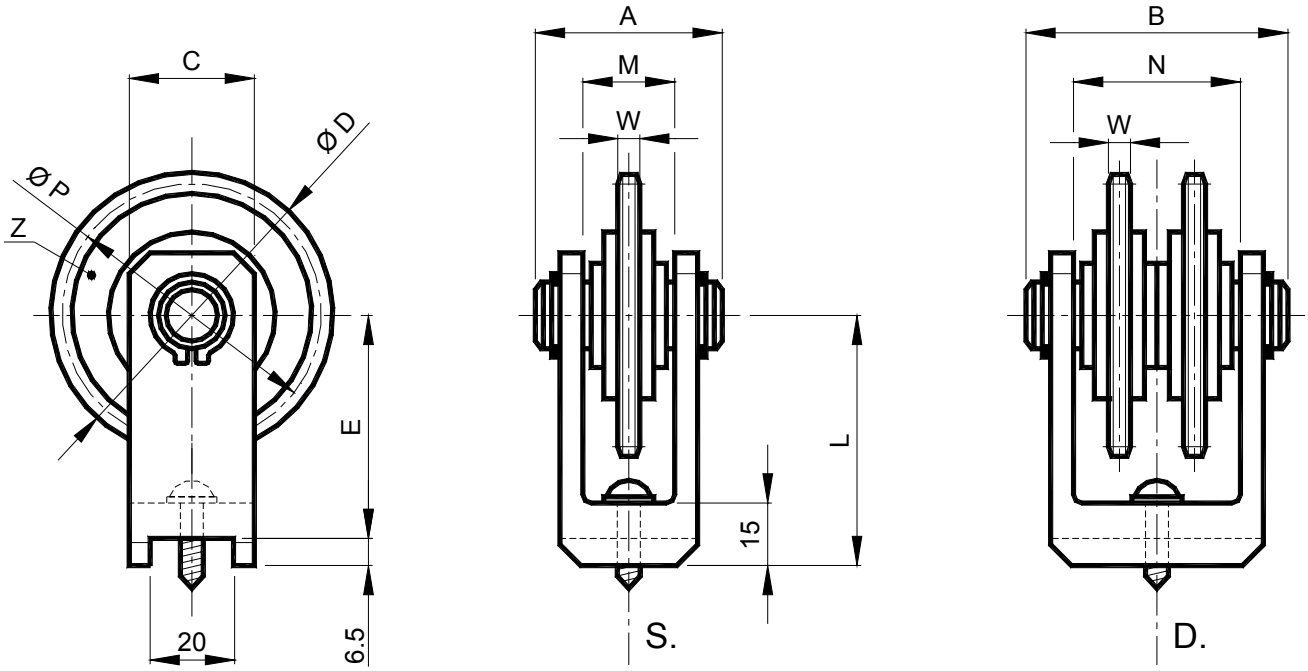
*Sprocket wheelset with national bearing – Type: **FN***

配套元件由一个铝质支架和空转链轮组成。 链轮由一个底部加大的轴承上模制的 nylon PA 6-30% FV 制的冠组成。所用螺栓为镀锌钢。工作速度 ≤60 米 / 分。链轮工作温度 ≤80°C。客户应指定安装方向 (**H** 或 **Y**)，否则将以操作方式 **H** 提供。

*The KIT is made up by an aluminium fork with idle pinion. The pinion consists of a crown in galvanized steel installed on a enlarged bearing. The used bolts and nuts are in galvanized steel. Operating speed £60 m/min. Operating temperature of the pinion £80°C. Please specify the positioning (**H** or **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning*



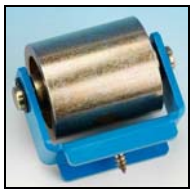
型号 *Type*	S 编号 N°	D 编号 N°	链条 *Chain*	尺寸 Size	Z	A	B	C	∅D	E	M	N	L	∅P	W	重量 *Weight* in Kg	
																S.	D.
FN 20-1	BL010260		3/8”x7/32”	**20**	21	39		30	68.0	53.5	19		60	63.90	5.3	0.29	
FN 30-1	BL010260	BL010266	3/8”x7/32”	**30**	21	39	60	30	68.0	53.5	19	37	60	63.90	5.3	0.29	0.52
FN 30-2	BL010262		1/2”x5/16”	**30**	18	39		30	77.8	53.5	19		60	73.14	7.2	0.36	
FN 30-3	BL010264		5/8”x3/8”	**30**	17	44		30	93.0	63.5	19		70	86.39	9.1	0.51	

皮带张紧装置配套元件 / *KIT for belt-tighteners*

聚酰氨滚轮 – 型号: **FP** / 镀锌钢滚轮 – 型号: **FU**

*Rollerset in polyamid – Type: **FP** /*
*Rollerset in galvanized steel – Type **FU***

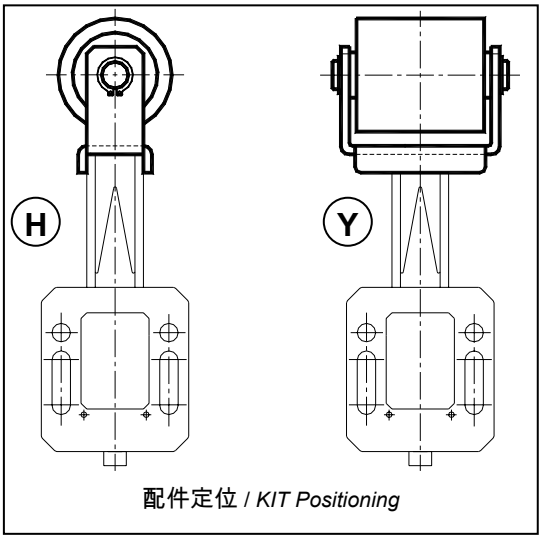
FP



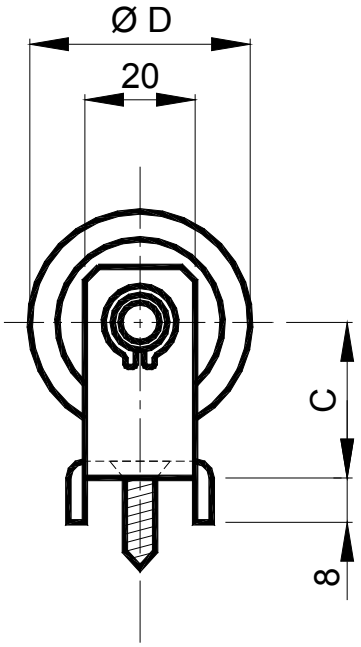
FU

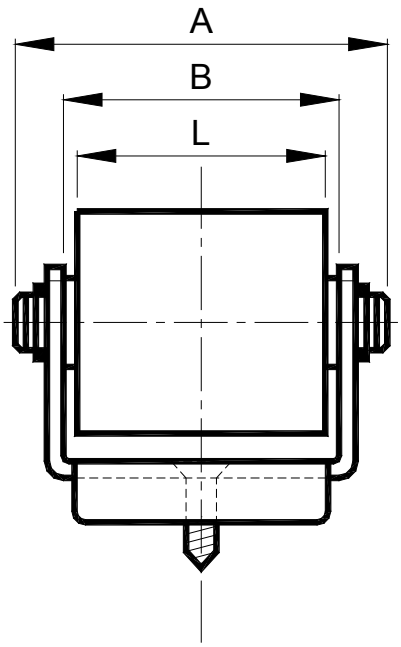
配套元件由一 个镀漆钢制支架和空转滚轮组成。滚轮可为聚酰氨 (**FP**)，或镀锌钢(**FU**), 在润滑轴承上安装。滚轮工作温度 ≤80°C。客户应指定安装定位 (**H** 或 **Y**)，否则将以操作方式 **H** 提供。

*The kit is made up by a painted steel fork with idle rollerset. The rollerset can be in polyamid (**FP**) or in galvanized steel (**FU**), installed on greased bearings. Operating temperature of the rollerset £80°C. Please specify the positioning (**H** o **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning*





聚酰氨滚轮 *Rollerset in polyamid*									镀锌钢滚轮 *Rollerset in galvanized steel*		
型号 *Type*	编号 N°	重量 *Weight* in Kg	A	B	C	∅D	L	尺寸 Size	型号 *Type*	编号 N°	重量 *Weight* in Kg
FP 10-1	BL010284	0.18	60	45	23	30	35	**10**	**FU 10-1**	BL010286	0.26
FP 20-1	BL010284	0.18	60	45	23	30	35	**20**	**FU 20-1**	BL010286	0.26
FP 20-2/3	BL010294	0.38	66	52	28	40	45	**20**	**FU 20-2/3**	BL010296	0.56
FP 30-2/3	BL010294	0.38	66	52	28	40	45	**30**	**FU 30-2/3**	BL010296	0.56

皮带张紧装置配套元件 / *KIT for belt-tighteners*

具保护层的聚酰氨滚轮 – 型号: **FPX** / 具保护层的不锈钢滚轮 – 型号: **FUX**

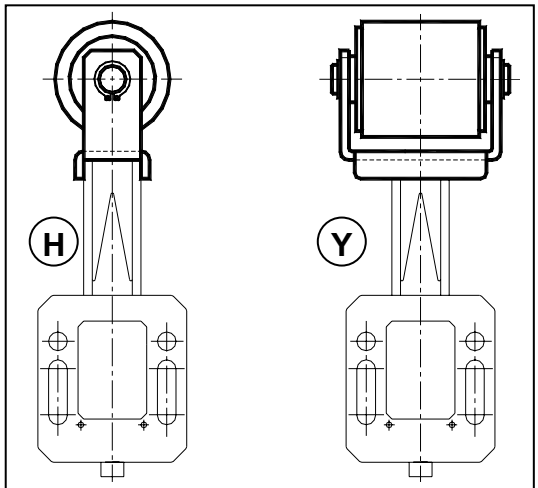
*Rollerset in polyamid with protective shields – Type: **FPX** / Rollerset in stainless steel with protective shields – Type: **FUX***

FPX

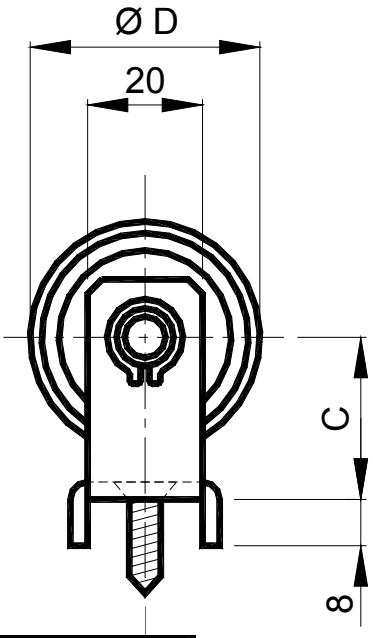
FUX

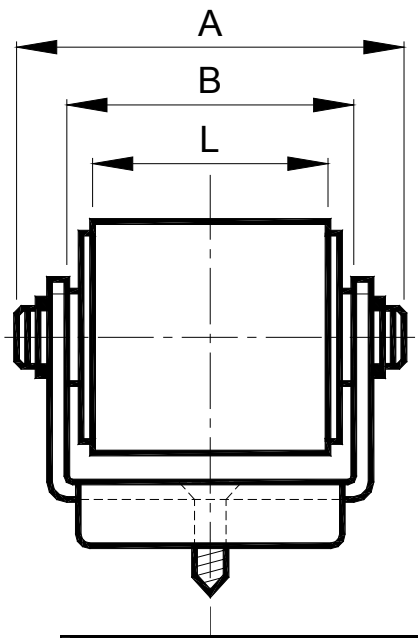
配套元件由一个不锈钢制支架和空转轮组成。滚轮可为聚酰氨(**FPX**)或不锈钢(**FUX**)。 具双面保护层，在润滑轴承上安装。适于室外使用。滚轮工作温度 ≤80°C。客户应指定安装定位 (**H** 或 **Y**)，否则将以操作方式 **H** 提供。

*The kit is made up by a stainless steel fork with idle rollerset. The rollerset can be in polyamid (**FPX**) or in stainless steel (**FUX**). It has the protective shields on both side and it is installed on greased bearings. They are suitable for use in outside enviroment. Operating temperature of the rollersets £80°C. Please specify the positioning (**H** o **Y**), otherwise it will be supplied with **H** execution.*



配件定位 / *KIT Positioning*





具保护层的聚酰氨滚轮 *Rollerset in polyamid with shields*									具保护层不锈钢滚轮 *Rollerset in stainless steel with shields*		
型号 *Type*	编号 N°	重量 *Weight* in Kg	A	B	C	Ø D	L	尺寸 Size	型号 *Type*	编号 N°	重量 *Weight* in Kg
FPX 10-1	BL010280	0.20	54	42	23	30	35	**10**	**FUX 10-1**	BL010282	0.30
FPX 20-1	BL010280	0.20	54	42	23	30	35	**20**	**FUX 20-1**	BL010282	0.30
FPX 20-2/3	BL010290	0.30	72	58	28	40	45	**20**	**FUX 20-2/3**	BL010292	0.60
FPX 30-2/3	BL010290	0.30	72	58	28	40	45	**30**	**FUX 30-2/3**	BL010292	0.60

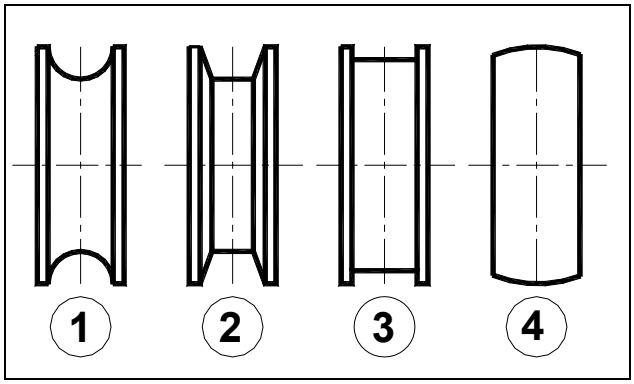
皮带张紧装置配套元件 / *KIT for belt tighteners*

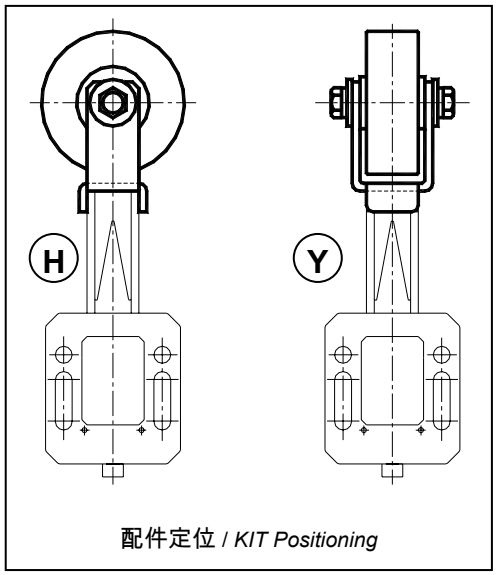
具特殊用途的滚轮 – 型号: **FG**

Rollerset for special applications – Type: **FG**

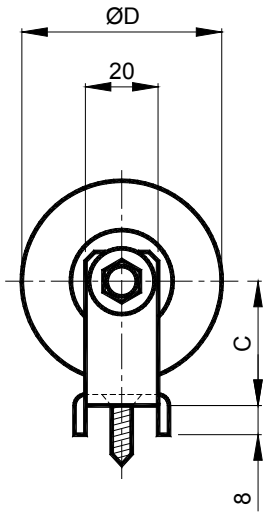
配套元件由一个镀漆钢支架和空转轮组成。聚酰氨滚轮在润滑轴承上安装。滚轮工作温度 ≤80°C。客户应指定安装定位 (**H** 或 **Y**)，否则将以操作方式 **H** 提供。见所要求尺寸和轮廓的不同操作方式 (1,2,3,4)。

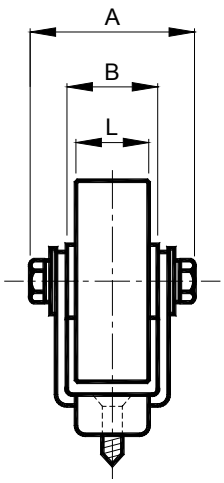
*The KIT is made up by a painted steel fork with idle rollerset. The polyamid rollerset is installed on greased bearings. Operating temperature of the rollerset < 80° C. Please specify the positioning (**H** or **Y**), otherwise it will be supplied with **H** execution. Executions with dimensions and profiles on request (1,2,3,4).*





配件定位 / *KIT Positioning*

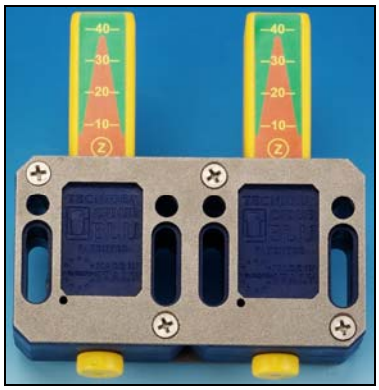




聚酰氨滚轮 *Rollerset in polyamid*								
型号 *Type*	**编号 N°**	**尺寸** *Size*	**A**	**B**	**C**	**ØD**	**L**	**重量** *Weight* **in Kg**
FG 10-A	BL010300	**10**	45	25	34	55	20	0.16
FG 20-A	BL010300	**20**	45	25	34	55	20	0.16
FG 20-B	BL010302	**20**	55	35	34	55	30	0.21
FG 30-B	BL010302	**30**	55	35	34	55	30	0.21
FG 30-C	BL010304	**30**	65	45	34	55	40	0.26

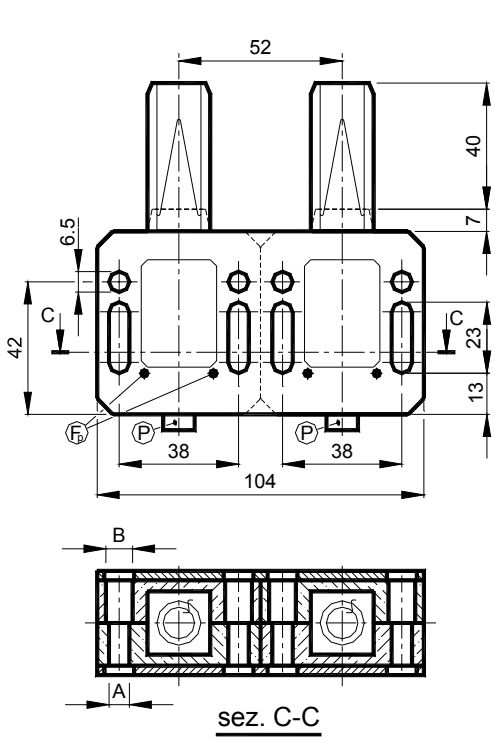
BLUD 弹性组件 – 型号 BD-Z: 具镀锌钢制弹簧 – 型号 BD-X: 具不锈钢制弹簧

BLUD elastic elements – Type BD-Z: with springs in galvanized steel – Type BD-X: with springs in stainless steel



BLUD 完全由塑性材料制成，具不锈钢薄板和螺钉。内部的弹簧可为镀锌钢或不锈钢材质。最高工作温度为+80°C。所有的主体都配备预加负荷系统。行程为 40 mm。

BLUD is completely built in plastic with plates and screws in stainless steel. The inside springs can be in galvanized or stainless steel. The maximum operating temperature is +80°C. All the bodies are supplied with preloading system. The stroke is 40mm.



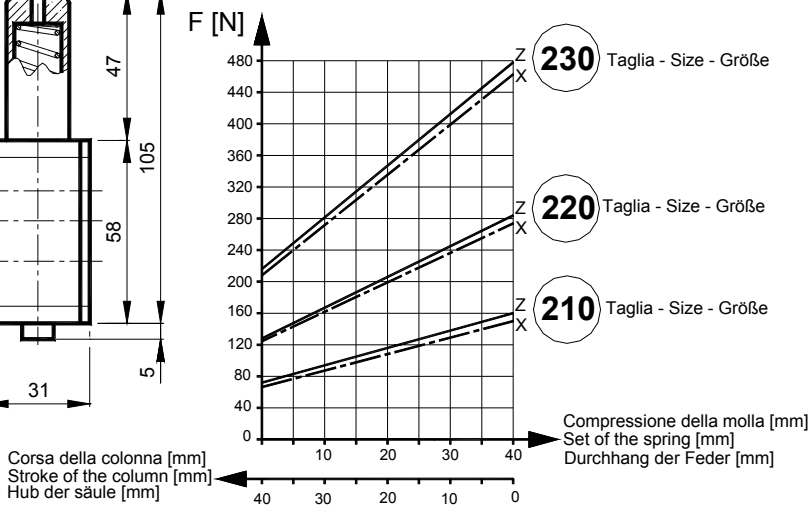


Diagramma di carico
Loading diagram
Ladungsdiagramm

(FD) =预加负荷孔 – *Preloading hole* – Vorspannloch

Ⓟ =预加负荷用桩销 – *Preloading pin* – Vorspannzapfen

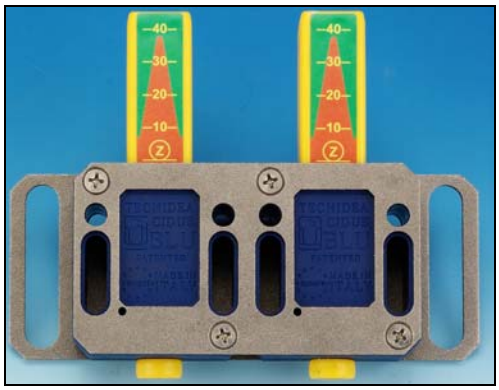
具镀锌钢制弹簧 *With springs in galvanized steel*		重量 0,36 Kg *Weight 0,36 Kg*			具不锈钢制弹簧 *With springs in stainless steel*		重量 0.36 Kg *Weight* 0,36 Kg
型号 *Type*	编号 N°	A	B	Newton	型号 *Type*	编号 N°	Newton
BD 2•10-6 Z	BL010310	6.5	6.5	72-158	BD 2•10-6 X	BL010410	70-154
BD 2•10-8 Z	BL010313	8.5	8.5	72-158	BD 2•10-8 X	BL010413	70-154
BD 2•10-6/8 Z	BL010316	6.5	8.5	72-158	BD 2•10-6/8 X	BL010416	70-154
BD 2•20-6 Z	BL010320	6.5	6.5	128-284	BD 2•20-6 X	BL010420	126-278
BD 2•20-8 Z	BL010323	8.5	8.5	128-284	BD 2•20-8 X	BL010423	126-278
BD 2•20-6/8 Z	BL010326	6.5	8.5	128-284	BD 2•20-6/8 X	BL010426	126-278
BD 2•30-6 Z	BL010330	6.5	6.5	216-478	BD 2•30-6 X	BL010430	210-466
BD 2•30-8 Z	BL010333	8.5	8.5	216-478	BD 2•30-8 X	BL010433	210-466
BD 2•30-6/8 Z	BL010336	6.5	8.5	216-478	BD 2•30-6/8 X	BL010436	210-466

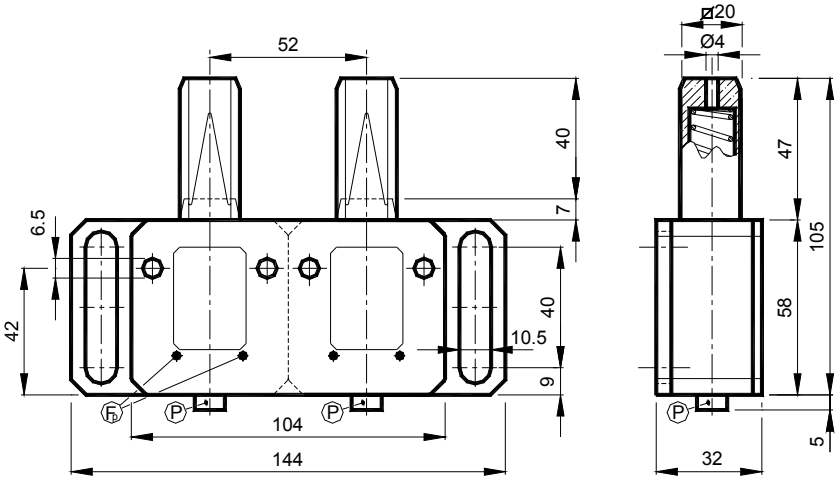
BLUD 弹性组件 – 型号 BF-Z: 具镀锌钢制弹簧 – 型号 BF-X: 具不锈钢制弹簧

BLUD elastic elements – Type BF-Z: with springs in galvanized steel – Type BF-X: with springs in stainless steel

具突出固定夹具的 BLUD。BLUD 完全由塑性材料制成，具不锈钢薄板和螺钉。内部的弹簧可为镀锌钢或不锈钢材质。最高工作温度为+80°C。所有的主体都配备预加负荷系统。行程为 40 mm。

BLUD with the sticking out fixing support. BLUD is completely built in plastic with plates and screws in stainless steel. The inside springs can be in galvanized or stainless steel. The maximum operating temperature is +80°C. All the bodies are supplied with preloading system. The stroke is 40mm.





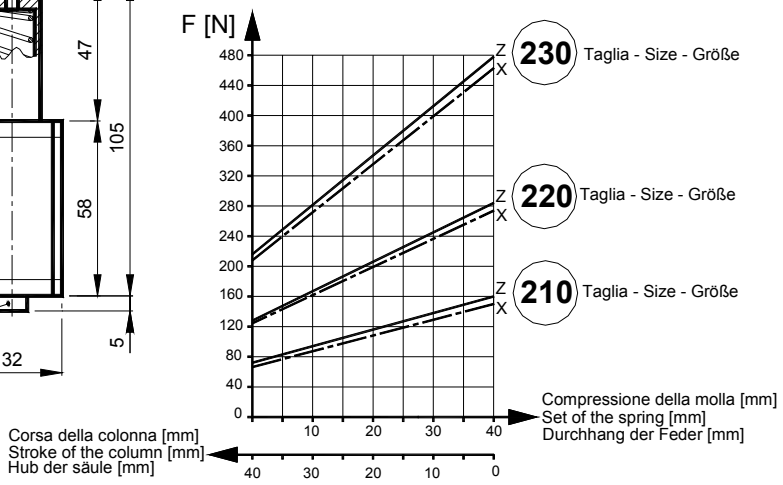


Diagramma di carico
Loading diagram
Ladungsdiagramm

Ⓕ$_D$=预加负荷孔 – *Preloading hole*

Ⓟ=预加负荷用桩销 – *Preloading pin*

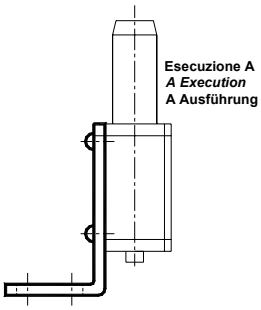
具镀锌钢制弹簧 *With springs in galvanized steel*				具不锈钢制弹簧 *With springs in stainless steel*		
型号 *Type*	编号 N°	Newton	重量 *Weight* In Kg	型号 *Type*	编号 N°	Newton
BF 2•10 Z	**BL010450**	72-158	0.42	**BF 2•10 X**	**BL010460**	70-154
BF 2•20 Z	**BL010453**	128-284	0.42	**BF 2•20 X**	**BL010463**	126-278
BF 2•30 Z	**BL010456**	216-478	0.42	**BF 2•30 X**	**BL010466**	210-466

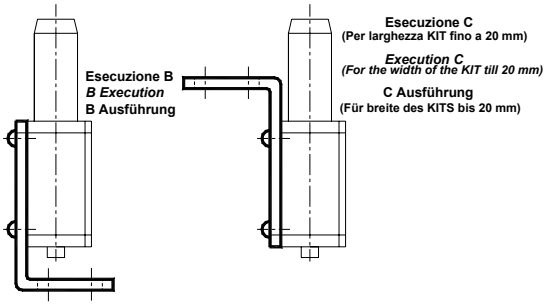
BLUD 弹性组件 – 型号 BA-Z: 具镀锌钢制弹簧 – 型号 BA-X: 具不锈钢制弹簧

BLUD elastic elements – Type BA-Z: with springs in galvanized steel – Type BA-X: with springs in stainless steel

具成“L”形的固定夹具的 BLUD。BLUD 完全由塑性材料制成，具不锈钢薄板和螺钉。内部的弹簧可为镀锌钢或不锈钢材质。最高工作温度为+80°C。 客户应指定不同操作型式(**A**-**B**-**C**)，否则将以安装方向 “**A**”提供。行程为 40 mm。

BLUD with L-shaped fixing support. BLUD is completely built in plastic with plates and screws in stainless steel. The inside springs can be in galvanized or stainless steel. The maximum operating temperature is +80°C. Please specify the Type of execution (A-B-C), otherwise it will be supplied with A positioning. The stroke is 40mm.





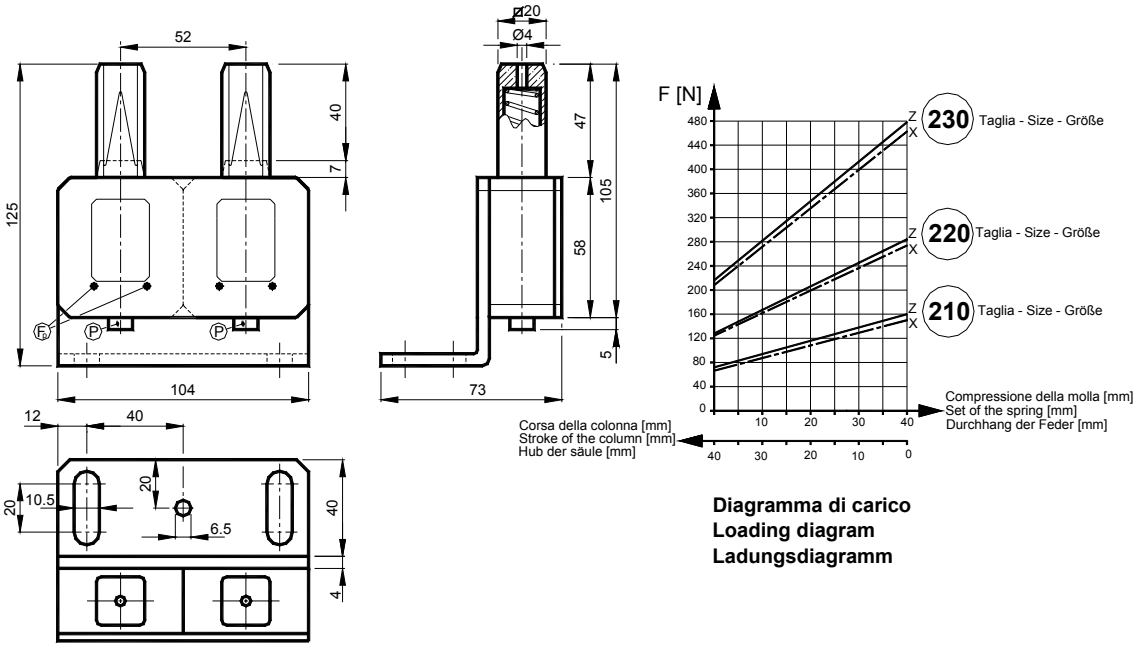


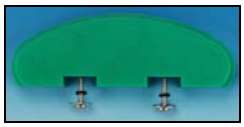
Diagramma di carico
Loading diagram
Ladungsdiagramm

Ⓕp=预加负荷孔 – *Preloading hole*

Ⓟ=预压桩销 – *Preloading pin*

具镀锌钢制弹簧 *With springs in galvanized steel*				具不锈钢制弹簧 *With springs in stainless steel*		
型号 *Type*	编号 N°	Newton	重量 *Weight* In Kg	型号 *Type*	编号 N°	Newton
BA 2•10 Z	**BL010470**	72-158	0.50	**BA 2•10 X**	**BL010480**	70-154
BA 2•20 Z	**BL010473**	128-284	0.50	**BA 2•20 X**	**BL010483**	126-278
BA 2•30 Z	**BL010476**	216-478	0.50	**BA 2•30 X**	**BL010486**	210-466

配套元件选择列表 / *Choose table KIT*

链条 - *Chain* (DIN 8187)		型号 - *Type*	
ISO	节距 *Pitch*	VG  页数 Page 27	尺寸 – *Size*
05-B1	8 mm	VG 2•10-0S	10
06-B1	3/8“x7/32“	VG 2•10-1S	10
06-B1	3/8“x7/32“	VG 2•20-1S	20
08-B1	1/2“x5/16“	VG 2•20-2S	20
10-B1	5/8“x3/8“	VG 2•20-3S	20
10-B1	5/8“x3/8“	VG 2•30-3S	30
12-B1	3/4"x7/16”	VG 2•30-4S	30
16-B1	1“x17.02 mm	VG 2•30-5S	30
05-B2	8 mm	VG 2•10-1D	10
06-B2	3/8“x7/32“	VG 2•10-1D	10
06-B2	3/8“x7/32“	VG 2•20-1D	20
08-B2	1/2“x5/16“	VG 2•20-2D	20
10-B2	5/8“x3/8“	VG 2•20-3D	20
10-B2	5/8“x3/8“	VG 2•30-3D	30
12-B2	3/4"x7/16”	VG 2•30-4D	30
16-B2	1“x17.02 mm	VG 2•30-5D	30
05-B3	8 mm	VG 2•10-0T	10
06-B3	3/8“x7/32“	VG 2•10-1T	10
06-B3	3/8“x7/32“	VG 2•20-1T	20
08-B3	1/2“x5/16“	VG 2•20-2T	20
08-B3	1/2“x5/16“	VG 2•30-2T	30
10-B3	5/8“x3/8“	VG 2•20-3T	20
10-B3	5/8“x3/8“	VG 2•30-3T	30
12-B3	3/4"x7/16”	VG 2•30-4T	30
16-B3	1“x17.02 mm	VG 2•30-5T	30

尺寸 *SIZE*	**2•10:**	Z: 72 -158 X: 70 -154	N
尺寸 *SIZE*	**2•20:**	Z: 128 -284 X: 126 -278	N
尺寸 *SIZE*	**2•30:**	Z: 216 -478 X: 210 -466	N

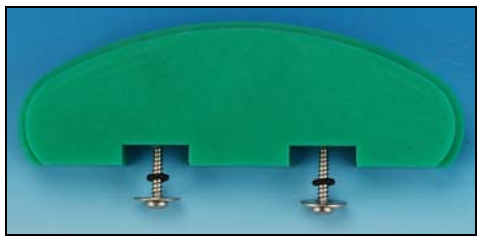
页数 Page 23

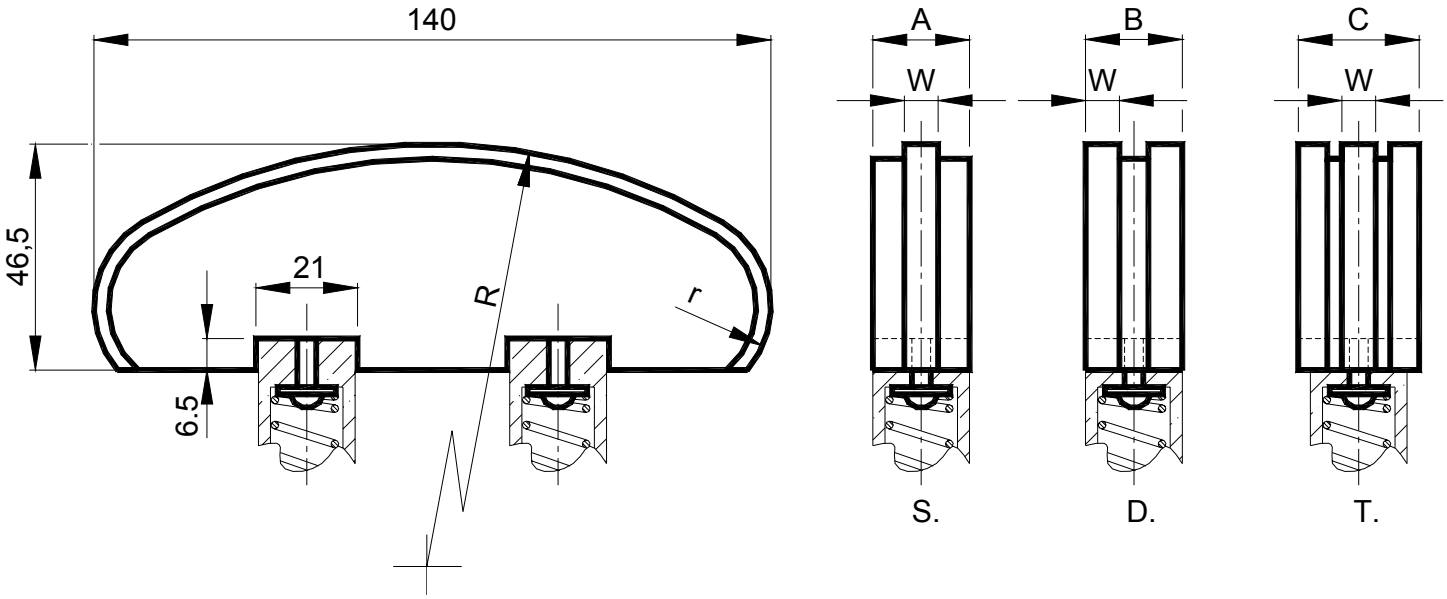
链条张紧装置配套元件 / *KIT for chain tighteners*

聚乙烯滑块 – 型号: **VG** / *Polyethylene sliding block – Type:* ***VG*** /

配套元件由高分子密度聚乙烯滑块和不锈钢螺栓组成。工作速度 ≤20 米 / 分。滑块工作温度 ≤70°C。 适用于大轴距或室外使用。

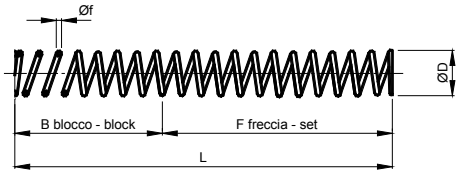
The KIT is made up by a polyethylene sliding block with high modular density with bolts and nuts in stainless steel. Operating speed £20m/min. Sliding block operating temperature £70°C. It is suitable for big interaxis and for use in outside enviroment.





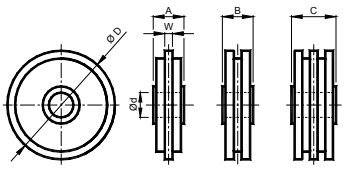
型号 *Type*	S 编号 N°	D 编号 N°	T 编号 N°	链条 *Chain*	尺寸 *Size*	r	R	A	B	C	W	重量 *Weight* in Kg		
												S.	D.	T.
VG 2•10-0	BL010500	BL010520	BL010540	8 mm	**2•10**	20	120	20	20	20	2.5	0.07	0.07	0.09
VG 2•10-1	BL010502	BL010522	BL010542	3/8“x7/32“	**2•10**	20	120	20	20	25	5	0.08	0.08	0.10
VG 2•20-1	BL010502	BL010522	BL010542	3/8“x7/32“	**2•20**	20	120	20	20	25	5	0.08	0.08	0.10
VG 2•20-2	BL010504	BL010524	BL010544	1/2“x5/16“	**2•20**	20	120	20	20	35	7	0.08	0.08	0.10
VG 2•30-2			BL010544	1/2“x5/16“	**2•30**	20	120			35	7			0.10
VG 2•20-3	BL010506	BL010526	BL010546	5/8“x3/8“	**2•20**	20	140	20	25	42	9	0.10	0.12	0.3
VG 2•30-3	BL010506	BL010526	BL010546	5/8“x3/8“	**2•30**	20	140	20	25	42	9	0.10	0.12	0.3
VG 2•30-4	BL010508	BL010528	BL010548	3/4"x7/16”	**2•30**	20	140	20	30	50	11	0.12	0.25	0.35
VG 2•30-5	BL010510	BL010530	BL010550	1“x17.02 mm	**2•30**	20	160	25	45	80	16	0.20	0.50	0.8

附件 / *Accessories*



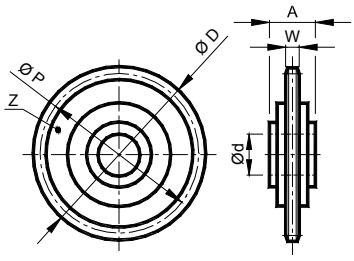
弹簧 型号: MB Z (镀锌) / MB X (不锈钢)
Spring Type: MB Z (Galvanized) / MB X (Stainless)

型号 *Type*	编号 N°	Øf	L	ØD	B	F	重量 *Weight* in Kg
弹簧 MB10 Z	BL001034	1.4	118	14	29.40	88.6	0.01
弹簧 MB20 Z	BL001036	1.6	118	14	33.60	84.4	0.01
弹簧 MB30 Z	BL001038	1.8	118	14	37.80	80.2	0.02
弹簧 MB10 X	BL001054	1.4	118	14	29.40	88.6	0.01
弹簧 MB20 X	BL001056	1.6	118	14	33.60	84.4	0.01
弹簧 MB30 X	BL001058	1.8	118	14	37.80	80.2	0.02



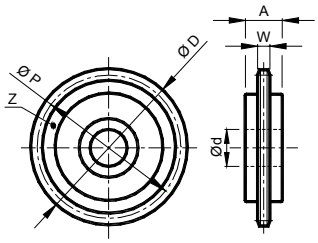
滑轮 型号: R
Wheelset Type: R

型号 *Type*	S 编号 N°	D 编号 N°	T 编号 N°	链条 *Chain*	A	B	C	ØD	Ød	W	重量 *Weight* in Kg		
											S.	D.	T.
R0	AR004233	AR004243		8 mm	18	18		70	16	2.5	0.04	0.04	
R1	AR004234	AR004244	AR004253	3/8“x7/32“	18	18	36	70	16	5	0.04	0.04	
R2	AR004235	AR004245	AR004254	1/2“x5/16“	18	36	36	70	16	7	0.04	0.10	0.10
R3	AR004236	AR004246	AR004255	5/8“x3/8“	18	36	50	90	16	9	0.08	0.16	0.18
R4	AR004237	AR004247	AR004256	3/4"x7/16“	18	36	49	90	16	11	0.08	0.18	0.20
R5	AR004238	AR004248		1“x17.02mm	18	50		110	20	16	0.14	0.20	
R6	AR004239			1“1/4x3/4“	18			110	20	18	0.15		
R7	AR004240			1“1/2x1”	24			110	20	24	0.22		



链条张紧装置链轮 型号: PT
Sprocket wheelsets Type: PT

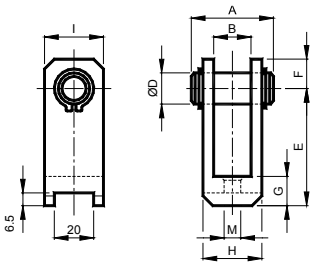
型号 *Type*	编号 N°	链条 *Chain*	Z	A	Ød	ØP	ØD	W	重量 *Weight* In Kg
PT1-21	TB001195	3/8”x7/32”	21	18.3	16 +0.26 +0.13	63.90	68.0	5.3	0.17
PT2-16	TB001196	1/2”x5/16”	16	18.3	16 +0.26 +0.13	65.10	69.5	7.2	0.18
PT2-18	TB001197	1/2”x5/16”	18	18.3	16 +0.26 +0.13	73.14	77.8	7.2	0.23
PT3-14	TB001198	5/8”x3/8”	14	18.3	16 +0.26 +0.13	71.34	78.0	9.1	0.24
PT3-17	TB001199	5/8”x3/8”	17	18.3	16 +0.26 +0.13	86.39	93.0	9.1	0.36
PT4-15	TB001200	3/4”x7/16”	15	18.3	16 +0.26 +0.13	91.63	99.8	11.1	0.46
PT5-12	TB001201	1”x17.02mm	12	17.7	20 +0.00 -0.01	98.14	109.0	16.2	0.74



链条张紧装置塑料链轮 型号: PN
Plastic Sprocket wheelsets Type: PN

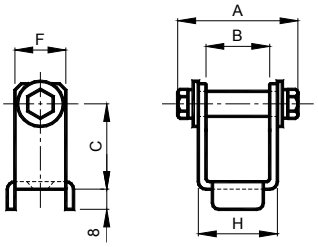
型号 *Type*	编号 N°	链条 *Chain*	Z	A	Ød	ØP	ØD	W	重量 *Weight* In Kg
PN1-21	RE002180	3/8”x7/32”	21	18.3	16 +0.26 +0.13	63.90	68.0	5.3	0.15
PN2-18	RE002182	1/2”x5/16”	18	18.3	16 +0.26 +0.13	65.10	69.5	7.2	0.16
PN3-17	RE002184	5/8”x3/8”	17	18.3	16 +0.26 +0.13	71.34	78.0	9.1	0.30

支架 型号: FF
Bracket Type: FF



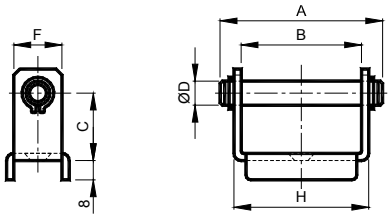
型号 *Type*	编号 N°	A	B	Ø D	E	F	G	H	I	M	重量 *Weight* in Kg
F 10 F	BL010560	40	19	16	60	15	15	30	30	8	0.12
F 11 F	BL010561	45	19	16	70	15	15	35	30	8	0.16
F 12 F	BL010562	60	37	16	60	15	15	50	30	8	0.18

支架 型号: FS
Bracket Type: FS

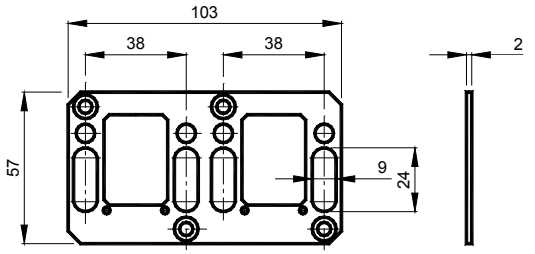


型号 *Type*	编号 N°	A	B	C	F	H	重量 *Weight* in Kg
FS A	BL010565	45	25	34	20	32	0.06
FS B	BL010566	55	35	34	20	42	0.08
FS C	BL010567	65	45	34	20	52	0.10

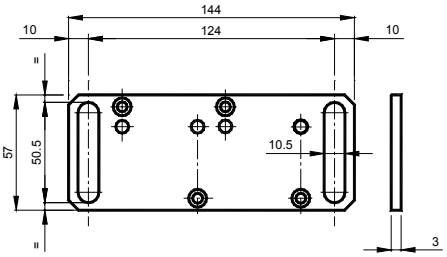
支架 型号: FR
Bracket Type: FR



型号 *Type*	编号 N°	A	B	C	Ø D	F	H	材料 *Material*	重量 *Weight* in Kg
FR 1	BL010570	60	45	23	8	20	52	镀漆钢 *Painted steel*	0.08
FR 2/3	BL010571	66	52	28	10	20	58	镀漆钢 *Painted steel*	0.10
XFR 1	BL010575	54	42	23	8	20	49	不锈钢 / *Stainless*	0.08
XFR 2/3	BL010576	72	58	28	10	20	64	不锈钢 / *Stainless*	0.11

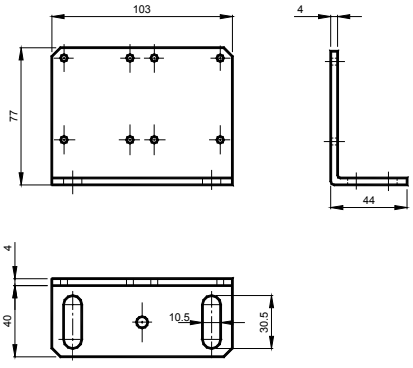


联接薄板 型号: PU 编号: BL001270 (重量 0.06 Kg)
Joint plate Type: PU Cod: BL001270 (Weight 0.06 Kg)

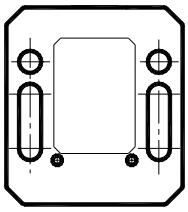


固定薄板 型号:PD Cod: BL001274 (重量 0.18 Kg)
Fixing plate Type: PD Cod: BL001274 (Weight 0.18 Kg)

预加负荷柱销 BL001080
Preloading pin BL001080

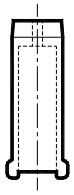


角形薄板 型号: PA 编号: BL001278 (重量 0.38 Kg)
Angular plate Type PA: Cod: BL001278 (Weight 0.38 Kg)



主体 型号 M6 编号: BL001000 (重量 0.03 Kg)
主体 型号 M8 编号: BL001005 (重量 0.03 Kg)

Body Type M6 Cod: BL001000 (Weight 0.03 Kg)
Body Type M8 Cod: BL001005 (Weight 0.03 Kg)



方柱 编号: BL001020 (重量 0.02 Kg)

Column Cod: BL001020 (Weight 0.02 Kg)

应用实例 / Examples of application

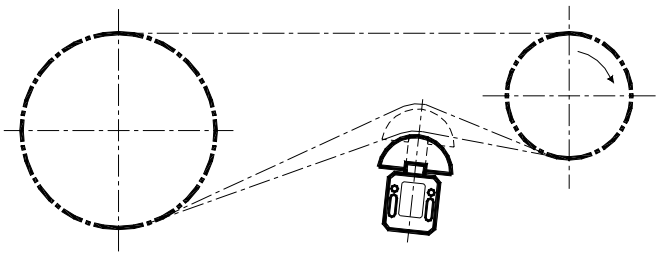


图 1 – Bild 1

链条张紧装置 – Chain tightener

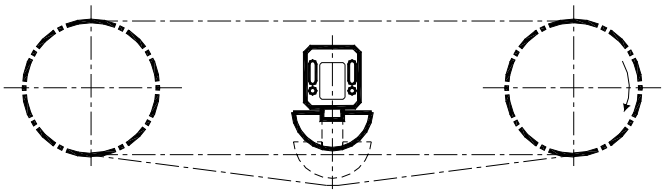


图 2 – Bild 2

内部链条张紧装置 – Internal chain tightener

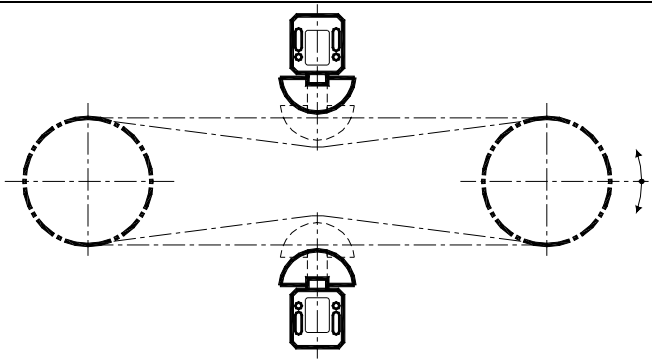


图 3 – Bild 3

由于可回返运动的双重拉紧

Double tightening for reversible movements

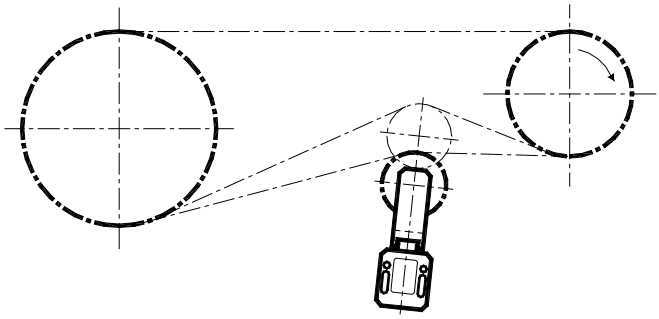


图 4 – Bild 4

高速型式，链轮安装在轴承上

Version for use with high speed, with pinion mounted on bearing

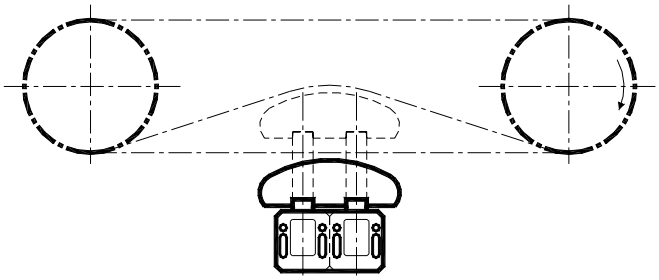


图 5 – Bild 5

用于大轴距的链条修正

Chain recovery for big interaxis

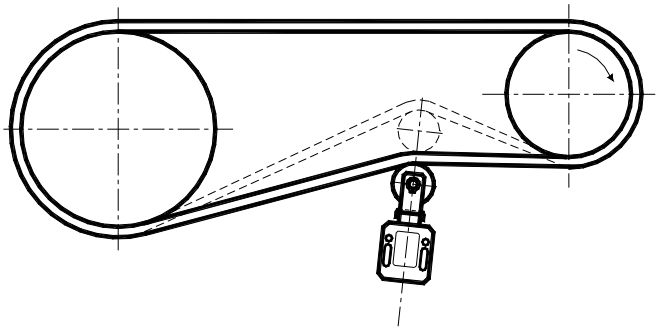


图 6 – Bild 6

皮带张紧装置

Belt stretcher

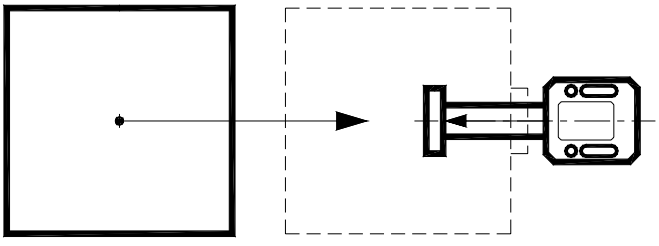


图 7 – Bild 7

减速器

Decelerator

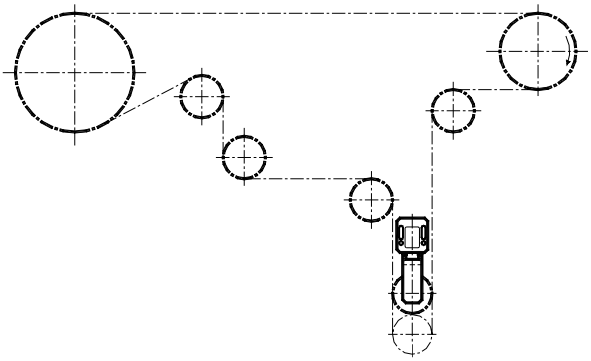
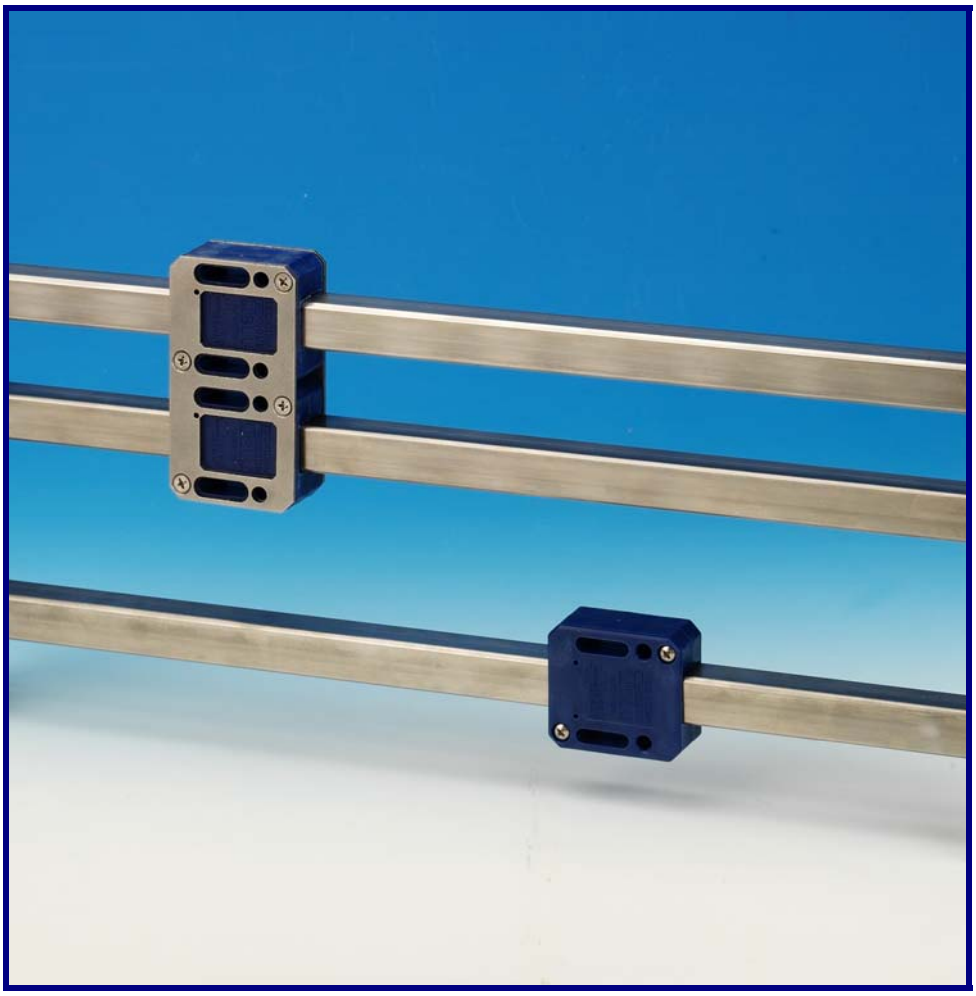


图 8 – Bild 8

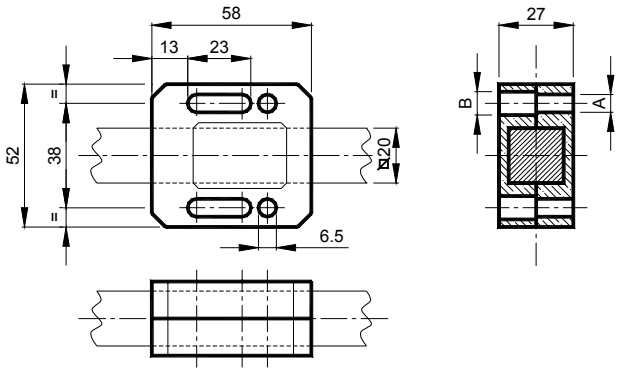
悬链的自动张紧

Automatic tension of a catenary

轴向滑动导向
AXIAL SLIDES



轴向滑动导向 - 型号: **GS** / ***Axial slides*** – *Type:* ***GS***

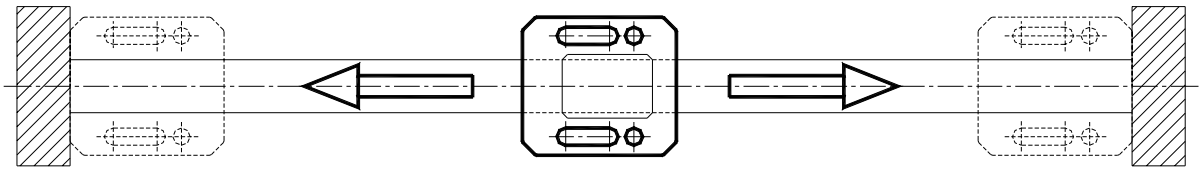


GS 组件用于组成在边长为 20 mm 的铝质或钢制的方形轮廓上的滑动导向。GS 完全由塑性材料制成，具不锈钢螺钉。

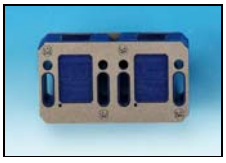
GS are used to make up slides on aluminium or steel square profiles which have the side 20mm. GS is completely built in plastic with screws in stainless steel.

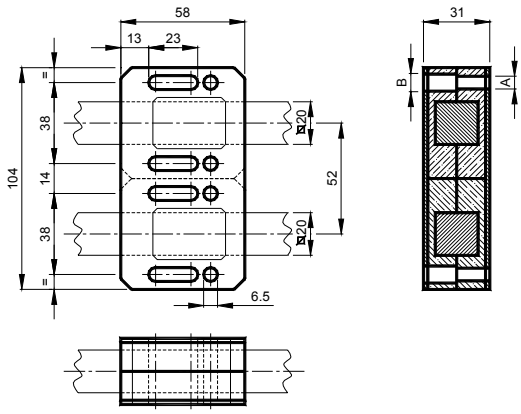
型号 *Type*	编号 N°	A	B	重量 *Weight* in Kg
GS 6	**BL010580**	6.5	6.5	0.06
GS 8	**BL010582**	8.5	8.5	0.06
GS 6/8	**BL010584**	6.5	8.5	0.06

GS 滑动导向应用实例 / *Example of application of the GS SLIDE*



轴向滑动导向 - 型号: **GD** / ***Axial slides*** – *Type:* ***GD***



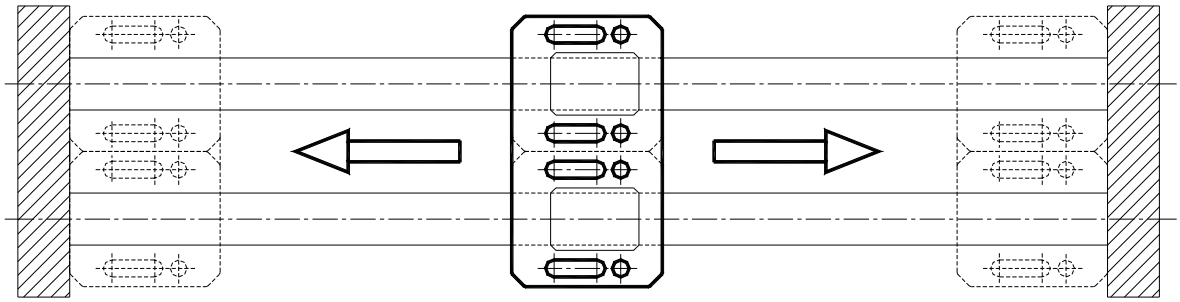


GD 组件用于组成边长为 20 mm 的铝质或钢制的方形轮廓上的滑动导向。GD 完全由塑性材料制成，具不锈钢薄板和螺钉。

GD are used to make up slides on aluminium or steel square profiles which have the side 20mm. GD is completely built in plastic with plates and screws in stainless steel.

型号 *Type*	编号 N°	A	B	重量 *Weight* in Kg
GD 6	**BL010590**	6.5	6.5	0.25
GD 8	**BL010592**	8.5	8.5	0.25
GD 6/8	**BL010594**	6.5	8.5	0.25

GD 滑动导向应用实例/ *Example of application of the GD SLIDE*



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5) **包装** – 包装费在费用价格中计算。

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10) **财产** – 在就发票额完全支付款项之前，一切寄出的货物仍为TECNIDEA CIDUE S.r.l.公司的财产。

11) **主管法院** – 与TECNIDEA CIDUE S.r.l.商业关系相联的任何争议将为维罗纳法院的权限。

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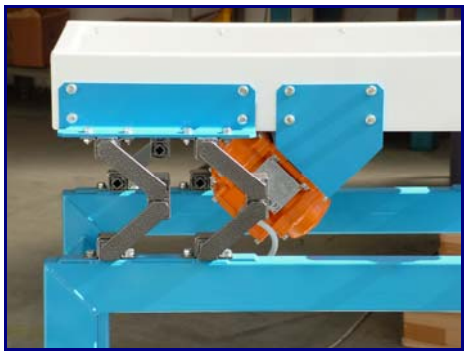



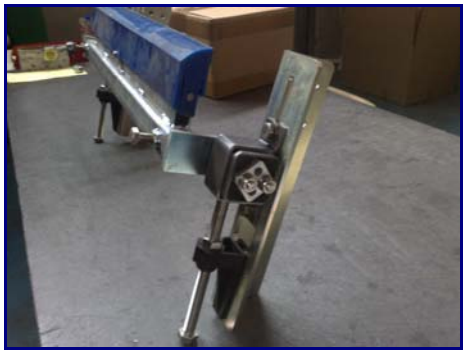


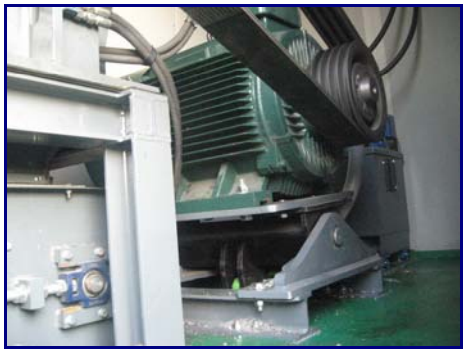
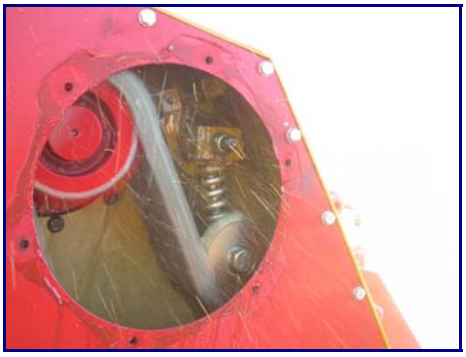


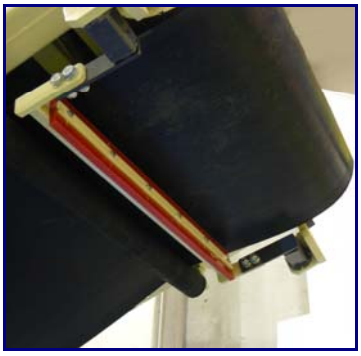

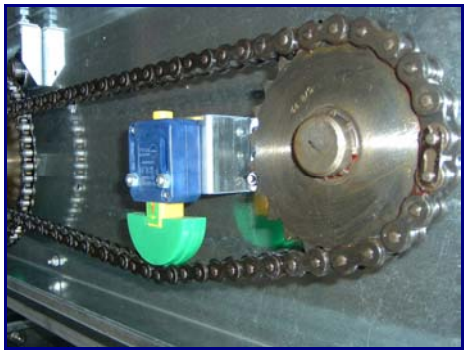

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