



**High  
Performance  
Conveyor  
Belting**

## PowerTwist Plus – The Problem Solving Belt

Manufactured from a high performance elastomer and reinforced by polyester, PowerTwist Plus is a high performance alternative to conventional conveyor belting. Constructed from a series of individual links, PowerTwist Plus provides an incredibly strong, yet flexible belt, which offers improved performance in key criteria.

### Proven Benefits

PowerTwist Plus is designed to excel in applications where traditional endless belts fail to perform or are difficult to fit. PowerTwist Plus offers many benefits:-

- **Easier/Faster Fitting**

Downtime can be reduced from hours to just minutes. PowerTwist Plus can be made to length on site, joined by hand around the shafts and sprung onto the pulleys at the required tension. There is no need to dismantle equipment or use complex joining or welding tools.

- **Highly Durable**

PowerTwist Plus produces high performance even in the most demanding conditions. It is highly resistant to extreme temperatures (over 100°C), abrasion, exposure to oils, grease, water, steam, common industrial solvents and chemicals.

- **Low Maintenance**

PowerTwist Plus is fitted at the required tension and needs minimal retensioning whilst in operation. The high quality materials are resistant to permanent stretch. PowerTwist Plus also requires no lubrication whilst in operation.

- **Reduction in Noise**

The PowerTwist Plus design can reduce operational belt noise by up to 50% in comparison to other belt types.

- **Long Lengths**

PowerTwist Plus can be made into belts of any length allowing long centre distances in conveying applications.

- **Reduced Stockholding**

PowerTwist Plus can be made to length on site, this removes the need to hold numerous different spare endless belt lengths.

- **Non-Marking**

PowerTwist Plus minimizes surface contact marks or stains on the products being conveyed.



## PowerTwist Plus - Proven in a Multitude of Applications.

PowerTwist Plus is widely used in many diverse applications. The gallery below illustrates just a few examples:-



### Glass

PowerTwist Plus is used extensively in the glass industry because it is non-marking, high temperature resistant and resistant to cuts and glass particles - not to mention it's other advantages.

### Roller Drive Conveyors

In addition to conveying belt, PowerTwist Plus is extensively used for power transmission on Roller Drive or Line Shaft conveyors.

Excessive downtime can be avoided as belts can be fitted around the drive in minutes without having to dismantle the whole line.

Easy fit and low stretch ensure that round section PowerTwist Plus can be used to provide advantages on powered curve applications.



### Industrial Packaging

PowerTwist Plus was used on this barrel production line because it saved hours of fitting time on inaccessible drives, standardised the spares inventory and provided a longer belt life, being resistant to oils and the lacquer used to coat the metal.



### Washdowns

PowerTwist Plus is ideal for use in applications which require washdowns. Here the belt is installed on a crate washer due to it's high resistance to water, high temperatures and common detergents.



### "White" Goods

PowerTwist Plus is used to convey bulky consumer goods because it is non-marking and has sufficient strength to convey heavy items.

### Wood Conveying

PowerTwist Plus is widely used for wood conveying because of it's high abrasion resistance and speed of replacement without joining tools on long production lines.



### Warehousing/ Packaging.

PowerTwist Plus is widely used in time critical operations because replacement belts of any lengths are always available and can be fitted in minutes without the use of complex joining tools. PowerTwist Plus is ideal for conveying boxes, totes, crates and pallets.



### Metal

PowerTwist Plus is used in sheet metal conveying because of it's resistance to damage from sharp edges and oil. In addition it does not mark or scratch the product and long centre distances can be designed.

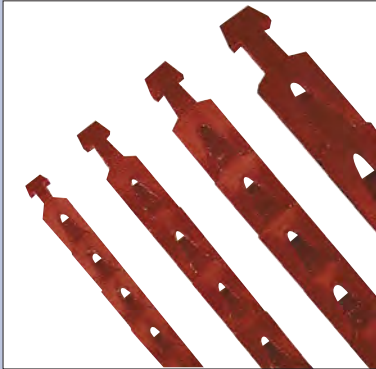


### Light Bulbs

Round section PowerTwist Plus is used on this line because it is non-marking and easy to fit on inaccessible equipment. The round section allows movement around tight bends in any direction.

## PowerTwist Plus – Range / Availability

PowerTwist Plus is available in most standard industry profiles including:-



### V Section

Z /10, A/13, B/17, C/22,  
D/32 Section Available



### Round Section

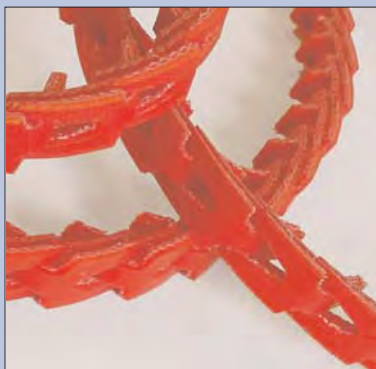
Round profiles are available in  
a range of diameters from 8 to  
19mm.



### Double Sided

AA, BB, and CC sections  
available. Ideal for Serpentine  
drives or where reduced  
surface contact is required.

## Specialist Options



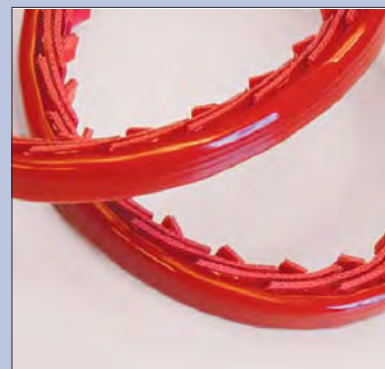
### High Grip Surface

Features a cast 85A  
durometer additional  
supergrasp top surface.  
Available in A, B and C  
sections.



### PowerTwist Plus – “Bridge Top”

Polymer bridge tab inserts  
increase top surface grip  
and cushion product during  
transfer. Also available with  
Teflon® bridge tabs - ideal  
for applications which  
require the conveyance of  
high temperature  
components - surface  
temperatures up to 240°C.  
Available in A and B  
sections.



### Cushion Drive

A zero-downtime solution  
for belt-driven powered  
roller conveyor systems.  
A smooth, high-grip top  
urethane surface means  
low noise. Installs easily  
without dropping idlers or  
dismantling drive  
components. Available in A  
and B sections.

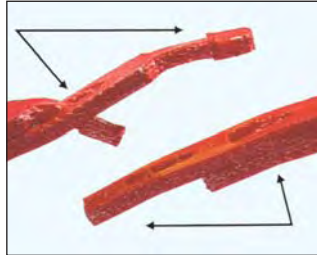
## PowerTwist Plus – An Easy Fit Alternative...

PowerTwist Plus can be fitted without the need for any complex or expensive joining tools. However, when fitting Powertwist it is important that the fitting instructions below are followed carefully.

### How To Measure Assemble & Install

#### I. How to Measure

Pull belt tight around pulleys to check hand tight length, overlapping the last two tabs with two holes in matching links as shown. Count the number of links and remove one link for every 24 of Z/3L, A/4L, and B/5L Sections, and one link for every 20 of C and D Sections. This gives the correct installed belt length and will ensure optimum belt tension when running.



Note: Every tenth link is designated with an arrow (←). For multiple belt drives, ensure that each belt has the same number of links.

#### II. Disassembly



Hold belt upside down. Bend back as far as possible; hold with one hand. Twist one tab 90° parallel with slot.



Pull end of link over tab.



Rotate belt end with tab 90°



Pull belt end through two links.

#### III. Assembly



Hold belt with tabs pointing outward.



Place end tab through two links at once.



Flex belt further and insert second tab through end link by twisting tab with thumb.

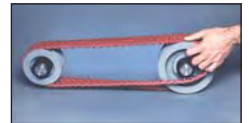


Ensure tab returns to position across belt. Reverse belt so tabs run inside.

**IMPORTANT – Turn Belt INSIDE OUT (As shown) To Ensure Easy Assembly and Disassembly.**

#### IV. Installation

1. Set pulleys in mid position
2. Turn belt to have tabs facing inside
3. Determine direction of drive rotation
4. Align belt directional arrow (←) with drive rotation.
5. Fit belt in one pulley
6. Roll belt onto first groove by rotating the drive by hand. Note: the belt may seem very tight, this is OK.



**DO NOT JOG MOTOR.**

7. Check to see all tabs are still in their correct position and are not twisted out of alignment.
8. For multiple belt drives, work belt from groove to groove. On particularly wide drives, it may be easier to install half the belts from the inboard side and half from the outboard. Note: With drive ratios around 1:1, it may be necessary to add back one link to allow belts to be rolled on. This does not apply if using the Alternative Installation Method.

#### V. Alternative Installation Method

1. Set shafts/pulleys in mid position of adjustment range and mark base clearly.
2. Determine required belt length as in I.
3. Move one shaft/pulley set inwards to mid position.
4. Install belts as in IV.
5. Adjust shaft/pulley to mid position.

#### VI. Retensioning

Like all high performance V-belts, PowerTwist Plus V-Belts require the maintenance of correct drive tension to operate efficiently. Experience indicates that drive tension should be checked after 24 hours running at full load. A retension may be necessary depending on the severity of the drive. Any initial belt stretch is then taken up. Subsequently, belt tension should be checked periodically and adjusted when necessary.

**If you have any problems please contact us on +44 (0)870 7577007.**

Please see details below regarding basic technical data for the PowerTwist Plus belts. If you require more information please contact us.

Product	Maximum Working Pull Force per Belt	Minimum Recommended Pulley Diameter mm	Belt Weight Kg / m
<b>PT+ V-sections</b>			
A	60	75	0.11
B	100	125	0.15
C	140	200	0.23
D	280	300	0.55
<b>Friction-Top</b>			
A	35	75	0.11
B	65	125	0.15
<b>Round Section</b>			
5/16" (8mm)	25	75	0.06
3/8" (9.5mm)	33	75	0.06
1/2" (12.5mm)	45	75	0.09
9/16" (14.3mm)	80	125	0.14
3/4" (19mm)	63	200	0.20

Coefficient of Friction ( $\mu$ ) on UHMW guide = 0.55  
 Maximum operating temperature 105°C (consult factory if over 70°C)  
 Installation Tension = 4% (remove 1 link in 24), Use 5% for sect. C, D, 9/16", 1/4"

Belt Calculation - Direct conveying

$$T_a = W_t \times \mu$$

$W_t$  = total product weight over length of belt  
 $\mu$  = coefficient of friction

If conveyor has an **incline** use:

$$T_a = \frac{W_t \times (H_t + \mu \times \sqrt{C^2 + H_t^2})}{C}$$

$C$  = centre distance

$H_t$  = incline height

$$T_b = B_w \times C \times \mu$$

$B_w$  = belt weight / metre (see table above)

If the product will accumulate while the belt moves under it use:

$$T_c = W_t \times \mu_p$$

$\mu_p$  = coeff. of friction between belt and product

$$\text{Total effective belt tension } T_e = T_a + T_b + T_c$$

To determine tight side tension (T1)  $T_1 = T_e \times 1.25$

T1 must be  $\leq$  Maximum Working Pull Force (see table). If more than one belt then divide T1 by number of belts or divide T1 by Maximum Working Pull Force to calculate the number of belts required.

For belts supported by idler rollers or for under side **roller drives** use  $\mu = 0.17$ .

## More Conveying Solutions From Fenner Drives®

In addition to PowerTwist Plus we also offer a comprehensive range of Polyurethane and Polyester Cord Conveyor Belting. We offer a range of materials and belt types including reinforced and super-grip top versions.

We are also a leading manufacturer of O' Rings for live roller conveyor systems.

### Quality Brands from Fenner Drives

We are one of the world's leading manufacturers of problem solving power transmission and conveyor belting.

**NU TLINK**

**SUPER TLINK**

**PowerTwist Plus**

**EAGLE**  
POLYURETHANE BELTING

**DUNLOP**  
BELTING PRODUCTS

**Trantorque**  
Keyless Bushings

