"ONE SHOT" TENSIONING

Fenner PB belts are Precision Built to ensure inherent length stability and matching during storage and on the drive. Over many years, the principle of "one-shot" tensioning has been verified by successful drives the world over.

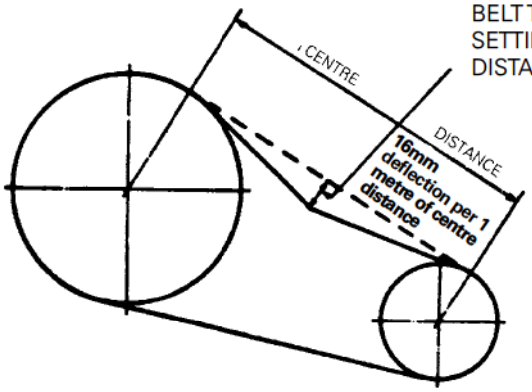
- Install the belts to be a snug fit around the pulleys.
- Spin the pulleys 3-4 revolutions to bed belts into the pulley grooves. (Note: if done manually, beware of finger entrapment between belts and pulleys)
- Tension the belts to the 1.25x setting forces from the table.
- Run the drive under load for 15-20 minutes.
- Stop the drive, check tension & reset to the basic value (standard V and wedge belts) if necessary.
  CRE Plus & Quattro Plus belts should be reset to the 1.25x value.

With a drive that is properly designed for the application there should be no need for further attention during the life of the belts.

For short centre distance drives where the deflection of the belt is too small to measure accurately it is recommended that both deflection and setting force be doubled.

Method of belt tensioning using Fenner Belt Tension Indicator

- Calculate the deflection in mm on a basis of 16mm per metre of centre distance. Centre distance (metres) x 16 = deflection (mm).
- Set the lower marker ring at the deflection distance required in mm on the lower scale.
- Set the upper marker ring against the bottom edge of the top tube.
- Place the belt tension indicator on top of the belt at the centre of span, and apply a force at right angles to the belt, deflecting it to the point where the lower marker ring is level with the top of an adjacent belt.
- Read off the setting force value indicated by the top edge of the upper marker ring.
- Compare this force to the kgf value shown in the table.
- If a Fenner Belt Tension Indicator is not available, a spring balance and rule will suffice.
- With banded belts (pages 68 and 69) use a bar across the band width to ensure even distribution of the force and DIVIDE the force measured by the number of belts in the band for comparison with the values in the table above. Alternatively, for the same deflection, use a setting force from the table above MULTIPLIED by the number of belts in the band.



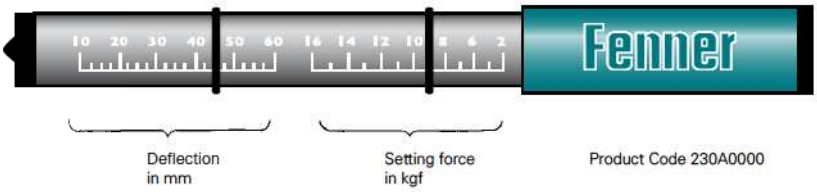
BELT TENSION INDICATOR APPLIES SETTING FORCE AT MID CENTRE DISTANCE

The setting forces below are designed to cover a wide range of drives. A precise setting force for individual applications can be calculated. Please consult your local Authorised Distributor or use the 'Fenner Select' design software at www.fptgroup.com

SETTING FORCES

Belt Section	Setting force to deflect belt 16 mm per metre of span				
	Small pulley diameter (mm)	Basic setting forces Newtons (N)	kilograms (kgf)	1.25 x setting forces Newtons (N)	kilograms (kgf)
SPZ	56 to 71	16	1.6	20	2.0
	75 to 90	18	1.8	22	2.2
	95 to 125	20	2.0	25	2.5
XPZ & QXPZ	over 125	22	2.2	28	2.8
SPA	80 to 100	22	2.2	28	2.8
	106 to 140	30	3.0	38	3.9
	150 to 200	36	3.7	45	4.6
XPA & QXPA	over 200	40	4.0	50	5.1
SPB	112 to 160	40	4.0	50	5.1
	170 to 224	50	5.1	62	6.3
	236 to 355	62	6.3	77	7.9
XPB& QXPB	over 355	65	6.6	81	8.3
SPC & QXPC	224 to 250	70	7.1	87	8.9
	265 to 355	92	9.4	115	12.0
	over 375	115	12.0	144	15.0
8V	335 & above	150	15.0	190	19.0
Z	56 to 100	5 to 7.5	0.5 to 0.8		
A (& HA banded)	80 to 140	10 to 15	1.0 to 1.5		
B	125 to 200	20 to 30	2.0 to 3.1		
C	200 to 400	40 to 60	4.1 to 6.1		
D	355 to 600	70 to 105	7.1 to 10.7		

FENNER BELT TENSION INDICATOR



Deflection in mm — Setting force in kgf — Product Code 230A0000

NOTES:

For single belt drives a straight edge should be placed across the two pulleys to act as a datum for measuring the amount of deflection.

If the measured force falls within the values given, the drive should be satisfactory. A measured force below the basic value indicates under-tensioning.

A new drive should be tensioned to the 1.25x value to allow for the normal drop in tension during the running-in period.

After the drive has been running for 15–20 minutes, under load the tension should be checked and re-adjusted, if necessary.

TROUBLE SHOOTING

Small radial cracks on belt side and base

Generally caused by slippage due to insufficient belt tension, but excessive heat and/or chemical fumes can also cause the same problem.

Belt swelling or softening

Caused by excessive contamination by oil, certain cutting fluids, water or rubber solvent.

Whip during running

Often caused by incorrect tensioning, particularly on long centre drives. If a slightly higher (or lower) tension does not cure the problem there may be a critical vibration frequency in the system which requires re-design or use of banded belts. Consult your local Authorised Distributor Technical Services.

Pulleys

Pulley groove wear can cause rapid belt failure. Check grooves for wear with a Fenner groove gauge.

Installation and Operaton of Wedge & V-Belt Drives

Although comparatively old in principle today's belt drive is an extremely efficient method of transmitting power between prime mover and machinery.

It owes its present high performance standards to many years of research and development by engineers and technologists, leading to significant refinements in materials and processes.

To derive maximum benefit from such advances it is important that the simple installation and operation procedures set out here are closely followed. Making these routines standard practice will ensure optimum performance and long, trouble-free life from Fenner belt drives.

INSTALLATION

PULLEYS

Before assembling the drive, check the pulley grooves are free from scores or sharp edges, and all dimensions conform to the relevant standard.

Drive installation is straightforward with Taper Lock – but follow all steps on the installation leaflet provided with every Taper Lock bush.

ALIGNMENT

Good alignment of pulleys is important to avoid belt flank wear. The diagrams opposite show some of the common alignment faults.

Pulley misalignment should not exceed 1/2 ° angular and 10mm / metre drive centre distance, axial.

A laser alignment device is available, which facilitates quick, easy and accurate pulley alignment - consult your local Authorised Distributor.

BELT INSTALLATION

When the pulleys have been correctly positioned on the shafts, the belts can be installed to complete the drive.

The drive centre distance should be reduced prior to the installation of the belts so that they may be fitted without the use of force. Under no circumstances must belts be prised into the grooves. Belts and pulley grooves can easily be damaged by using sharp tools to stretch the belts over the pulley rim.

The installation allowance given in the table opposite is the minimum recommended reduction in centre distance for the various belt sections and lengths to allow for correct fitting.

The take-up allowance given in the same table should be added on to the calculated centre distance to allow for belt stretch/bedding in.

GUARDS

Where guards are necessary it is desirable to use mesh materials to permit adequate ventilation.

Guards should be generously sized to allow for incidental belt flap.

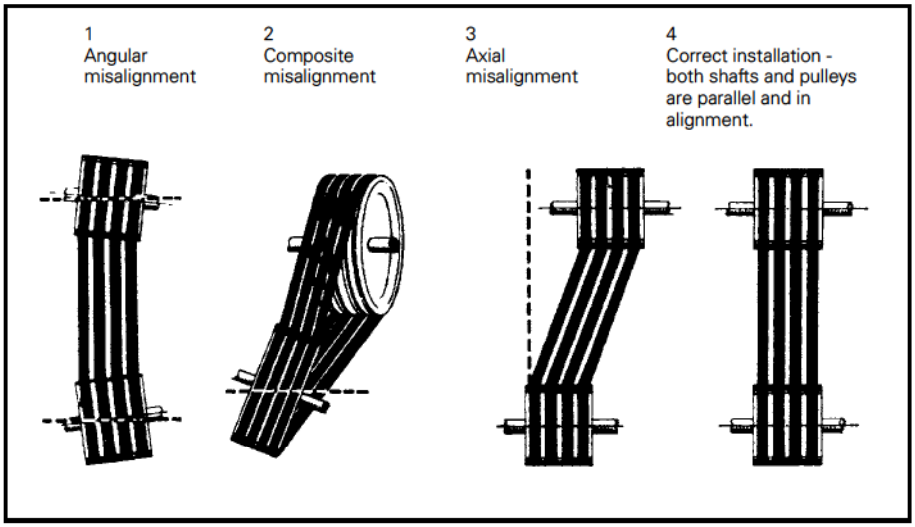
TENSIONING PULLEYS

If tensioning (jockey) pulleys are to be used on wedge belt drives, they must be grooved pulleys working on the inside of the drive, preferably on the slack side. The pulley should be positioned as close as possible to the large pulley. Flat tensioning pulleys, bearing on the outside of the drive are permissible only with V and not with wedge belts. They should be positioned within one third of the centre distance from the small pulley.

The tensioning pulley must have at least the same diameter as the small pulley of the drive.

Tensioning pulley movemement must allow for passing the belts over the outside diameter of one of the drive pulleys on installation, and should also allow for belt stretch/bedding in.

The modern wedge belt drive is a highly efficient power transmission medium, but optimum performance will not be achieved without correct tension and alignment.



INSTALLATION AND TAKE-UP ALLOWANCE

Belt Pitch Length (mm)	Installation Allowances SPZ Z	SPA A	SPB B	SPC C	8V D	Take -up (mm)
410 to 530	20					5
530 to 840		25	30			10
850 to 1160				50		15
1170 to 1500						20
1510 to 1830						25
1840 to 2170						30
2180 to 2830					65	40
2840 to 3500						50
3520 to 4160						60
4170 to 5140						70
5220 to 6150						85
6180 to 7500						105
7600 to 8500						125
8880 to 10170						145
10600 to 12500						175

TAPER LOCK

All Fenner V and wedge belt pulleys use Taper Lock shaft fixing.

Detailed instructions for fitting and dismounting Taper Lock products are included with Taper Lock bushes.