

Fenner Multi Pull

Poly-V Belts

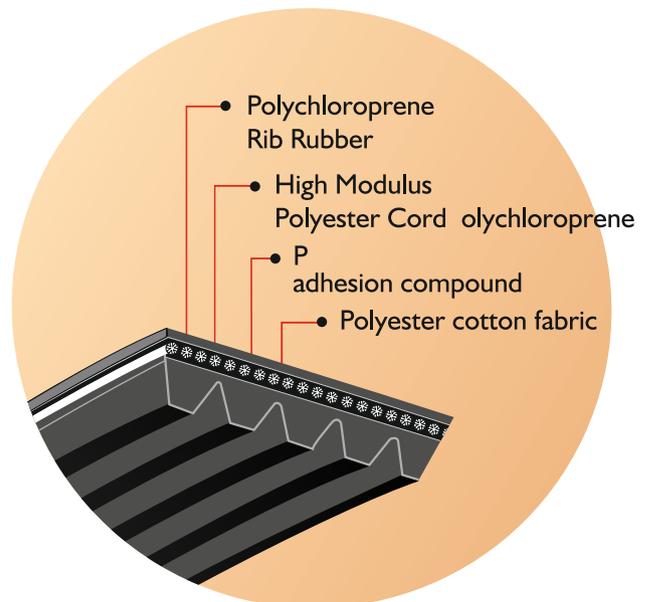


Multi-Pull Ribbed Poly-V Belts have 40% higher power carrying capacity over conventional V-belts. Single flexible low stretch belt drive eliminates necessity for multiple / matched set belts. The continuous high tensile synthetic cord makes maximum utilization of the face width and ensures a uniform tension throughout the belt. Poly-V belts give lesser wear and longer life to the pulleys & bearings due to lesser static tension and belt slippage.

There are five sections available:

- PH** - Fractional Horse Power belt for very light duty applications.
- PJ** - Low cost belt for light duty applications.
- PK** - Designed specifically for the automotive industry, it is also suitable for Machine Tool drives etc.
- PL** - Medium duty drive belt covering a wide range of applications.
- PM** - High performance makes this belt unrivalled for heavy duty applications.

Tests have proved that these belts are capable of saving energy of upto 7% compared to conventional V-belts / Flat belts.



Features

Compact Drive

POLY-V belt is highly flexible and hence can be used with smaller pulley diameters to give a lighter and compact drive.

Higher Power

40% higher power rating per unit width compared to conventional V-belts.

Zero Slippage

Almost eliminates the slippage due to maximum wedge contact on the pulleys.

Energy Saving

Maximum returns with energy saving upto 4 - 8%.

Rear Side Drive

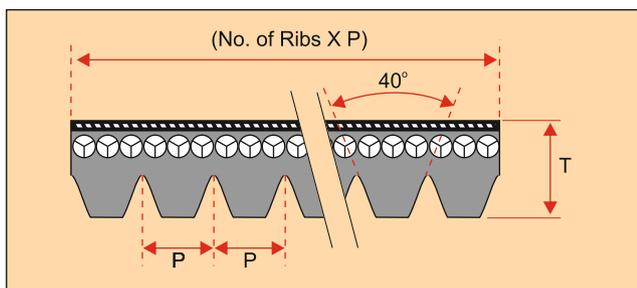
Being thinner the rear side can be used to drive additional accessories / idlers without affecting life.

Higher Bearing Life

Lesser static tension gives higher bearing life.

Silent Drive

Gives vibration and noise free power transmission in every application.



Section	Pitch(p) (mm)	Thickness(t) (mm)	Max .no of Ribs/sleeve
PH	1.60	2.90	24
PJ	2.34	3.80	24, 36, 48
PK	3.56	4.50	24
PL	4.70	7.00	50
PM	9.40	13.50	40

Single Belt

Eliminates the necessity to use multiple / matched set Belts.

Higher Speed

Can be used at higher speed more than 40 m/sec.

Longer Life

Gives lesser wear and longer life to the pulleys due to lesser static tension and belt slippage.

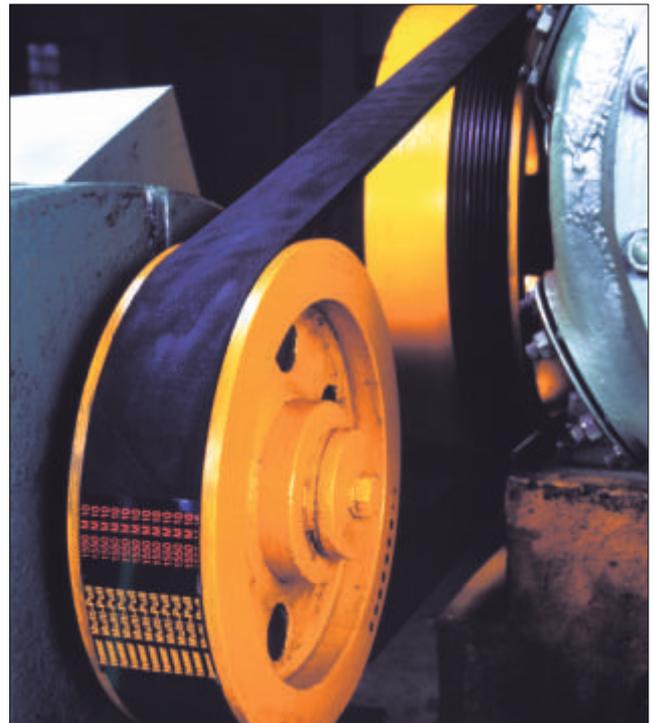
Low Downtime & Replacement Cost

Reduces downtime and also belt replacement cost.

Serpentine Drives:

Multi-Pull is a flexible belt and can be reverse bent round a pulley. The outside of the belt can be used to drive. This enables Multi-Pull to be used on Multi-Pulley or Serpentine Drives.

For selection Consult Fenner



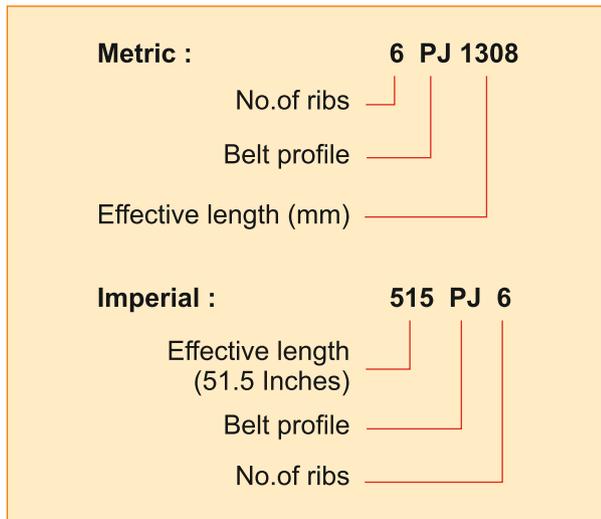
**Multi-Pull Poly-V Drive
- Compressor Application**

Standard Belt Lengths

PH		PJ		PK		PK		PL		PM	
Effective Length		Effective Length		Effective Length		Effective Length		Effective Length		Effective Length	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1321	52.00	483	19.00	610	24.00	1948	76.70	1270	50.00	2311	91.00
1346	53.00	508	20.00	660	26.00	1961	77.20	1334	52.50	2388	94.00
1372	54.00	559	22.00	673	26.50	1981	78.00	1372	54.00	2515	99.00
1397	55.00	584	23.00	686	27.00	2050	80.70	1397	55.00	2692	106.00
1422	56.00	610	24.00	699	27.50	2101	82.70	1422	56.00	2832	111.50
1473	58.00	660	26.00	711	28.00	2144	84.40	1473	58.00	2921	115.00
1549	61.00	711	28.00	739	29.10	2205	86.80	1562	61.50	3010	118.50
1588	62.50	724	28.50	762	30.00	2258	88.90	1613	63.50	3124	123.00
1664	65.50	762	30.00	775	30.50	2329	91.70	1664	65.50	3327	131.00
1753	69.00	813	32.00	790	31.10	2385	93.90	1715	67.50	3531	139.00
1854	73.00	864	34.00	790	31.10	2441	96.10	1803	71.00	3734	147.00
1892	74.50	914	36.00	818	32.20	2479	97.60	1842	72.50	4089	161.00
1905	75.00	940	37.00	841	33.10	2522	99.30	1943	76.50	4191	165.00
1930	76.00	965	38.00	871	34.30	2586	101.80	1981	78.00	4470	176.00
1956	77.00	1016	40.00	884	34.80	2611	102.80	2019	79.50	4648	183.00
1969	77.50	1054	41.50	902	35.50	2680	105.50	2070	81.50	5029	198.00
1981	78.00	1092	43.00	914	36.00	2835	111.60	2096	82.50	5410	213.00
1994	78.50	1105	43.50	927	36.50	2845	112.00	2134	84.00	6121	241.00
2007	79.00	1118	44.00	940	37.00	2896	114.00	2197	86.50	6883	271.00
2032	80.00	1130	44.50	955	37.60	2921	115.00	2235	88.00	7645	301.00
2057	81.00	1143	45.00	970	38.20	2997	118.00	2324	91.50	8407	331.00
2083	82.00	1168	46.00	991	39.00			2362	93.00	9169	361.00
2108	83.00	1194	47.00	1016	40.00			2477	97.50	9931	391.00
2134	84.00	1219	48.00	1031	40.60			2515	99.00	10693	421.00
2159	85.00	1232	48.50	1054	41.50			2705	106.50	12217	481.00
2184	86.00	1245	49.00	1080	42.50			2743	108.00	13741	541.00
2210	87.00	1270	50.00	1110	43.70			2845	112.00	13970	550.00
2235	88.00	1283	50.50	1146	45.10			2896	114.00	13995	551.00
2261	89.00	1295	51.00	1166	45.90			2921	115.00		
2286	90.00	1308	51.50	1194	47.00			2997	118.00		
2311	91.00	1321	52.00	1229	48.40			3086	121.50		
2337	92.00	1346	53.00	1257	49.50			3124	123.00		
2362	93.00	1372	54.00	1295	51.00			3289	129.50		
2388	94.00	1397	55.00	1334	52.50			3327	131.00		
2413	95.00	1422	56.00	1359	53.50			3493	137.50		
2438	96.00	1473	58.00	1387	54.60			3696	145.50		
2464	97.00	1549	61.00	1425	56.10			4051	159.50		
2489	98.00	1588	62.50	1461	57.50			4191	165.00		
2515	99.00	1651	65.00	1496	58.90			4470	176.00		
2540	100.00	1664	65.50	1529	60.20			4623	182.00		
		1753	69.00	1560	61.40			5029	198.00		
		1854	73.00	1626	64.00			5385	212.00		
		1892	74.50	1659	65.30			6096	240.00		
		1905	75.00	1681	66.20			6121	241.00		
		1956	77.00	1725	67.90			6883	271.00		
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		2286	90.00	1930	76.00			12217	481.00		
		2337	92.00					13741	541.00		
		2388	94.00					13970	550.00		
		2438	96.00					13995	551.00		
		2489	98.00								
		2540	100.00								

Sizes not listed
can also be supplied
subject to minimum
order quantity.
Consult Fenner.

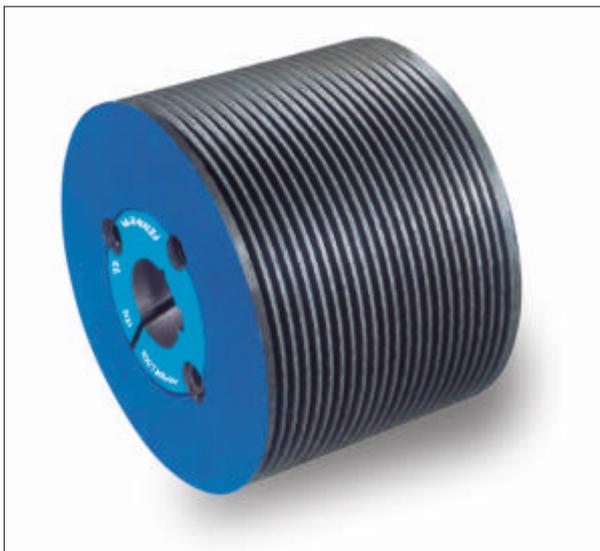
Designation of Belts



Installation Instructions

1. Pulleys

Before assembling the drive, check the pulley grooves are free from scores or sharp edges, and are dimensionally correct.



Minimum effective diameter of Pulley (mm)	PH	PJ	PK	PL	PM
	13	20	50	75	180

2. Alignment

Good alignment of pulleys prior to belt installation is important. The pulleys may be aligned by placing a straight edge or cord along the edges. The shafts must also be parallel and in the same plane.

3. Belts

When 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. Belt and pulley grooves can easily be damaged by using sharp tools to stretch the belts over the pulley rim.

The belt should be run under load and observed during the first few hours. After several hours running re-check the tension, it may be necessary to take up adjustment to compensate for normal drop in tension during the running in period.

4. Guards

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

5. Idler Pulleys

If idler pulleys are used it is recommended that they be as large a diameter as practical. All idlers should be located on the slack side of the drive. When used on the inside the idler should have the same groove profile as the driver and driven pulleys.

The pulley should be positioned as close as possible to the large pulley. Minimum pitch diameters are listed in the table below. When using on the outside, the idler should be flat (not crowned) and positioned as close as possible to the small pulley.

Section	Minimum Diameter (mm)	
	Idler on Inside	Idler on Outside
PJ	20	40
PK	38	75
PL	100	200
PM	224	375

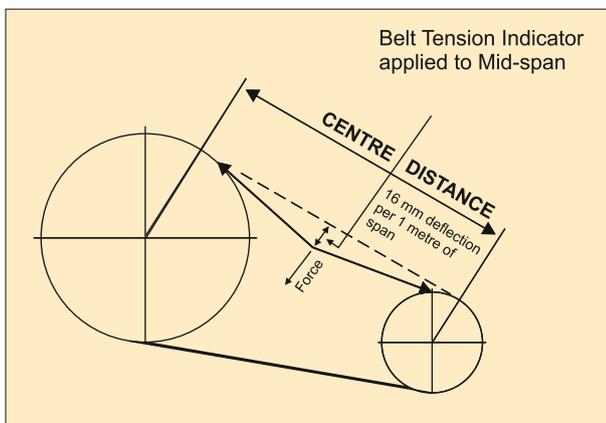
Tensioning Instructions

Deflection Method

Multi-Pull Drives will be sufficiently tensioned if the deflection force 'F' applied perpendicular at mid-span to produce a deflection equal to 16 mm per metre of span distance falls within the range given in the table below.

To improve tensioning accuracy the drive should be run briefly to seat the belt before making final measurement. A new belt should be tensioned to the higher value. Re-tensioning however should be toward the lower value.

A straight edge should be placed across the pulleys to act as datum for measuring the amount of deflection. Calculate the deflection in mm on a basis of 16 mm per metre of centre distance.



Tensioning Forces

Belt Section	Force required to deflect belt 16 mm per metre of span		
	Small Pulley Diameter (mm)	Newton (N) per rib	Kilogram force (kgf) per rib
PJ	Below 45	1.6 to 3.0	0.16 to 0.30
	45 - 66	3.0 to 5.0	0.30 to 0.50
	67 - 125	4.0 to 7.0	0.40 to 0.70
PL	below 160	10 to 15	1.0 to 1.5
	160 - 224	12 to 20	1.2 to 2.0
PM	below 355	30 to 45	3.0 to 4.5
	355 - 560	35 to 60	3.5 to 6.0

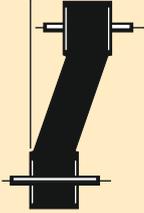
The above tensioning forces are for average drive conditions. A precise belt tensioning force can be calculated - contact Fenner Technical Services. Although this is the preferred method of tensioning it may prove impractical. In this case the elongation method can be used.

Elongation Method

Mark two reference lines on the back of the belt, at approximately 80% of the span length, tighten the belt until the extension of the reference lines correspond with values given in the table below. New belts should be installed with an elongation towards the higher value and re-tensioned towards the lower value.

Belt Section	Pulley Diameter Range mm	Elongation mm / metre
PJ	Below 45	3 - 4
	45 - 66	4 - 6
	67 - 125	6 - 7
PL	below 160	5 - 7
	160 - 224	7 - 9
PM	below 355	4 - 5
	355 - 560	5 - 7

Shaft Alignment

- Shafts are not parallel to one another. 
- Shafts are not in correct alignment although they appear parallel when seen from above. 
- Shafts are parallel and in alignment but pulleys are not in alignment. 
- Correct installation both shafts and pulleys are parallel and in alignment. 

The dotted lines emphasize the faults by indicating the correct position.

Pulleys should be mounted as close as possible to the bearings to reduce overhung load.

The maximum axial misalignment allowed is 3 mm per metre centre distance (maximum 15 mm).

Shaft parallelism must be kept within 2 degree.

Tensioning The Belt

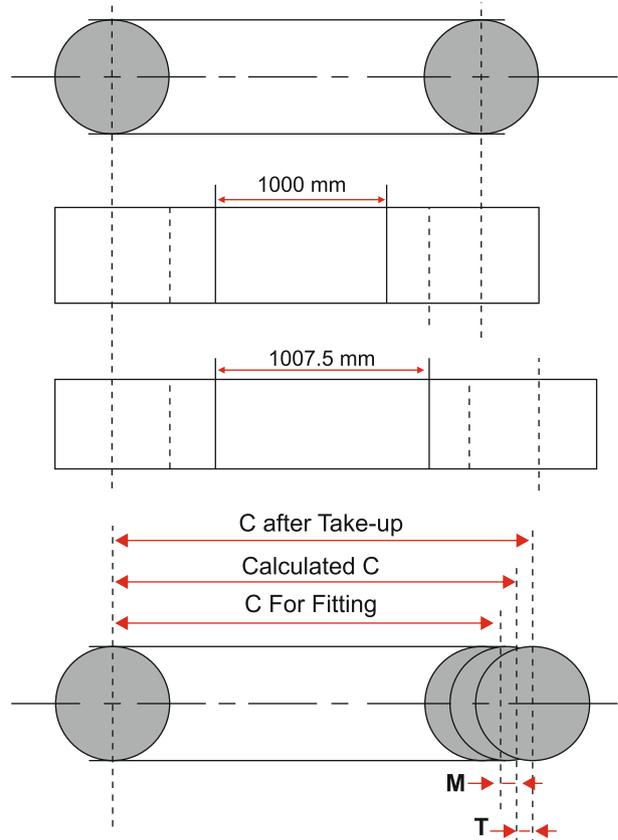
Fenner Multipull Belts must be tensioned correctly and with great care. The under or over tensioning can cause functional problems and lead to premature belt failure.

We recommend the elongation method, which is simple and requires no special equipment.

1. Fit the belt on the pulleys with no tension.
2. Draw two lines perpendicularly across the back of the belt about 80% of the belt span apart (or one metre apart for very long spans).
3. Increase the distance between the two lines by 0.5 to 0.75% i.e. by 5mm to 7.5mm for an initial spacing of 1000 mm.
4. Run the drive under load for about 10 minutes.
5. Check the tension of the belt (i.e. the spacing between the two lines) and readjust if necessary.

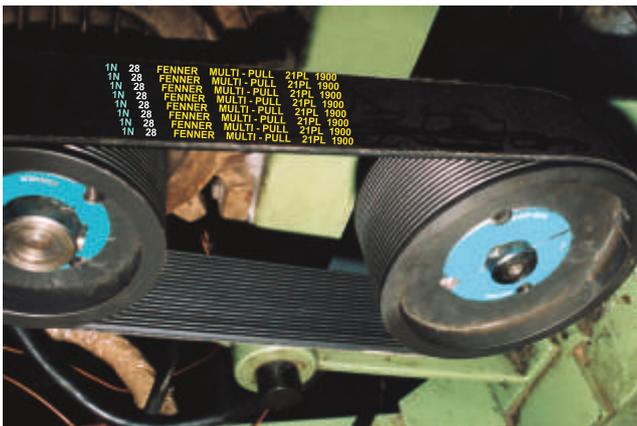
Generally the tensioning values for each section are maintained as under:

PJ	PK	PL	PM
0.5%	0.6%	0.6%	0.6%



Centre Distance Adjustment : Fitting and Take-Up Recommendations

Belt Length (mm)	PJ		PK		PL		PM	
	M	T	M	T	M	T	M	T
< 750	-10	+10	-11	+13				
750 - 1200	-10	+15	-12	+16	-15	+20		
1200 - 2000	-15	+20	-16	+22	-20	+25		
2000 - 3500	-20	+30	-23	+32	-30	+35	-40	+50
3500 - 6000					-40	+50	-50	+70
> 6000							-100	+130



Multi-Pull Poly-V Drive