Power Transmission Belts
for Every Industrial Application

- Wrapped (Classical & Wedge) Belts
- Cogged (Classical & Wedge) Belts
- Multipull Poly-V Belts
- Timing HTD & FXT Belts
- Banded Belts
- Speciality Belts

Fenner

No 1

RELY ON THE **LEADER**

in India for over 50 years

Total Power Transmission & Sealing Solutions

- State-of-the Art Manufacturing Facilities in five locations
- Most Modern R & D Facilities and Material Development Centre
- Wide distribution Network throughout the country
- Products Reaching to over 50 countries
- ISO 9001, TS 16949, ISO 14001 & OHSAS 18001 certifications for Quality, Environmental, Health & Safty management systems
- TPM Award winning Manufacturing Plants at Maduari & Patancheru

The driving force

Industry • Agricuture • Automobiles • Appliances

World Class Infrastructure Facilities

Belts and Oil seals Plant
Madurai, Tamilnadu

State of the art Speciality Belts Plant,
Nilakottai, Tamilnadu

Belts, Oil seals & Moulded Rubber Products
Plant Patancheru, Andhra Pradesh

State-of-the-art Oil seals Plant
Sriperumbudur, Tamilnadu

JK Pioneer Oil seals Plant,
Patancheru, Andhra Pradesh

State-of-the-art R & D Centre,
Sriperumbudur, Tamilnadu

Engineering Products Plant
Pashamailaram, Andhra Pradesh

For over 150 years, the name Fenner has been synonymous with the best in mechanical power transmission. Customers have come to trust Fenner Belts for performance and reliability, efficiency and economy: Reason why Fenner has been the first choice amongst Transmission Rubber belts.

Starting from the first V-Belts, Fenner India has been spearheading every advancement in the Power Transmission Industry in India. Fenner India has to its credit most of the firsts in India in the Power Transmission Industry innovations. From Classical V Belts, Space saver Wedge Belts, Raw Edge Cogged belts, Multipull Poly-V belts to Synchronous Timing Belts Fenner India has been the brand leader for more than five decades. Fenner Belts are built to the highest standards from the best materials available using state-of-the-art manufacturing processes.

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SpacesaVer Wedge Belt Drive - Rolling Mill Application

POLY-F PLUS PB

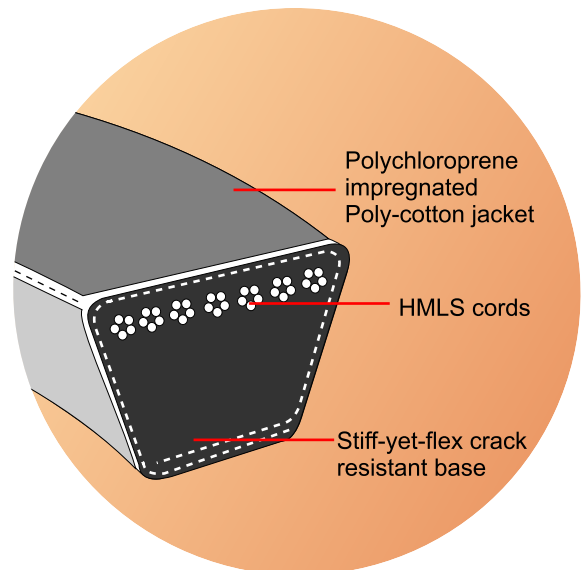**THE MATCHLESS PERFORMER**

Classical Wrapped Belts

Fenner Poly-F Plus PB Belts are built to the highest standards from the best materials available using state-of-the-art manufacturing processes and conform to IS2494 (Part 1) and BS3790.

Construction & Features

● **Specially designed Polyester-cotton blended fabric jacket impregnated with Polychloroprene synthetic rubber** - imparts superior flexibility, better traction, flex and wear resistance. This makes the belts oil and heat resistant as well as antistatic.

● **The High Modulus Low Stretch HMLS Polyester cords** enable the belts to carry higher horse power loads with minimum stretch resulting in better belt stability and fewer take-up adjustments.

● **Stiff-yet-flex-crack-resistant base made out of specially compounded Polymers** ensures uniform load transfer to cords preventing power loss and premature belt failure.

● **Poly F Plus PB belts are 'Precision Built' and subject to precise length stability** and hence, no need for matching of belts.

Polychloroprene
impregnated
Poly-cotton jacket

HMLS cords

Stiff-yet-flex crack
resistant base

even amongst a group of belts which were nominally of the same length. This was due to the nature of material - textiles and polymers used and the technology adopted.

Fenner was the first to introduce `PB` Precision Built V- Belts and this problem was completely eliminated.

These belts of superior length stability, evenly tensioned, take higher loads for longer periods resulting in maximum belt life.

● **The unique 'HSS' process of Heat Stretching and Length Stabilising** ensures that belts retain the tension and stay matched not only in storage but more significantly `on the drive`, resulting in uniform loading and maximum life.

● **Poly - F Plus PB belts require only One shot Tensioning**
    - so fit and forget about belt re-tensioning

All these features make Fenner Poly -F Plus PB a belt that outlasts any other belt. This means,
 - reduced down time
 - increased productivity and thus - increased profits.

Poly- F Plus PB's superior performance vis-a-vis other belts has been conclusively proven in Test Rig Runs as well as Field Trials.

The importance of Even Belt

Loading & the 'PB' advantage

If the belts on a multiple belt drive are not of the same length, shorter belts would be under tension and bear the entire load while the longer ones run slack and contribute little to the power transmission. The drive is therefore under belted in effect and would result in short belt life as shown in Table - 1, even though the drive was properly designed and apparently installed correctly. This problem of slight variation in length was inherent

Table -1: Effects of underbelting

No. of V - Belts	Percent life
10 Normal number of V-Belts	100
9	70
8	45
7	28
6	17

"One Shot" Tensioning

Poly - F Plus PB Belts are built right from the start to ensure totally precise inherent length, to stay matched during storage and on the drive making "one-shot" tensioning a reality endorsed by satisfied customers.

Put the belts around the pulleys, set them to the appropriate tension value stated in the "Tensioning Forces" Table 2 in page no. 9, using the Belt tension indicator as shown. Run the drive under load for 30 minutes, stop the drive, check the tension, re-setting to catalogue value if necessary. On a properly designed drive for the application there will be no need for any further attention during the life of the drive.

Fenner **POLY-F PLUS PB — THE MATCHLESS PERFORMER** **Classical Belts Range**

Section A (13 × 8)

Size	Pitch Length(mm)	Size	Pitch Length(mm)
A19	520	A73	1890
A20	540	A74	1910
A21	570	A75	1940
A22	590	A76	1960
A23	620	A77	1990
A24	640	A78	2010
A25	670	A79	2040
A26	690	A80	2070
A27	720	A81	2090
A28	740	A82	2120
A29	770	A83	2140
A30	800	A84	2170
A31	820	A85	2190
A32	850	A86	2220
A33	870	A87	2240
A34	900	A88	2270
A35	920	A89	2290
A36	950	A90	2320
A37	970	A91	2340
A38	1000	A92	2370
A39	1020	A93	2400
A40	1050	A94	2420
A41	1070	A95	2450
A42	1100	A96	2470
A43	1130	A98	2520
A44	1150	A100	2570
A45	1180	A105	2700
A46	1200	A108	2780
A47	1230	A110	2830
A48	1250	A112	2880
A49	1280	A115	2950
A50	1300	A116	2980
A51	1330	A118	3030
A52	1350	A120	3080
A53	1380	A124	3180
A54	1400	A125	3210
A55	1430	A128	3280
A56	1460	A130	3340
A57	1480	A134	3440
A58	1510	A136	3490
A59	1530	A140	3590
A60	1560	A144	3690
A61	1580	A158	4050
A62	1610	A160	4100
A63	1630	A162	4150
A64	1660	A168	4300
A65	1680	A173	4430
A66	1710	A174	4450
A67	1730	A18 0	4610
A68	1760		
A69	1790		
A70	1810		
A71	1840		
A72	1860		

Section B (17 × 11)

Size	Pitch Length(mm)	Size	Pitch Length(mm)
B20	550	B78	2020
B21	580	B79	2050
B22	600	B80	2080
B23	630	B81	2100
B24	650	B82	2130
B25	680	B83	2150
B26	700	B84	2180
B27	730	B85	2200
B28	750	B86	2230
B29	780	B87	2250
B30	810	B88	2280
B31	830	B89	2300
B32	860	B90	2330
B33	880	B91	2350
B34	910	B92	2380
B35	930	B93	2410
B36	960	B94	2430
B37	980	B95	2460
B38	1010	B96	2480
B39	1030	B97	2510
B40	1060	B98	2530
B41	1080	B100	2580
B42	1110	B102	2630
B43	1140	B104	2680
B44	1160	B105	2710
B45	1190	B108	2790
B46	1210	B110	2840
B47	1240	B112	2890
B48	1260	B115	2960
B49	1290	B116	2990
B50	1310	B118	3040
B51	1340	B120	3090
B52	1360	B122	3140
B53	1390	B124	3200
B54	1410	B128	3290
B55	1440	B130	3350
B56	1470	B132	3400
B57	1490	B134	3450
B58	1520	B136	3500
B59	1540	B140	3600
B60	1570	B142	3650
B61	1590	B144	3700
B62	1620	B146	3750
B63	1640	B148	3800
B64	1670	B150	3850
B65	1690	B152	3900
B66	1720	B156	4010
B67	1740	B158	4060
B68	1770	B162	4160
B69	1800	B168	4310
B70	1820	B169	4340
B71	1850	B173	4440
B72	1870	B180	4620
B73	1900	B190	4870
B74	1920	B195	5000
B75	1950	B210	5380
B76	1970	B238	6090
B77	2000	B275	7030

Section C (22 × 14)

Size	Pitch Length(mm)	Size	Pitch Length(mm)
C36	970	C116	3000
C37	1000	C118	3050
C38	1020	C120	3100
C39	1050	C124	3210
C40	1070	C126	3260
C41	1100	C128	3310
C42	1120	C130	3360
C43	1150	C136	3510
C44	1170	C140	3610
C45	1200	C144	3710
C46	1220	C150	3870
C47	1250	C152	3920
C48	1280	C158	4070
C49	1300	C162	4170
C50	1330	C173	4450
C51	1350	C180	4630
C52	1380	C185	4760
C53	1400	C190	4880
C54	1430	C195	5010
C55	1450	C204	5240
C56	1480	C210	5390
C57	1500	C225	5770
C58	1530	C238	6100
C59	1550	C268	6860
C60	1580	C298	7630
C61	1610	C328	8390
C62	1630	C358	9150
C63	1660	C418	10670
C64	1680		
C65	1710		
C66	1730		
C67	1760		
C68	1780		
C69	1810		
C70	1830		
C71	1860		
C72	1880		
C73	1910		
C74	1940		
C75	1960		
C76	1990		
C77	2010		
C78	2040		
C79	2060		
C80	2090		
C81	2110		
C85	2220		
C90	2340		
C93	2420		
C96	2490		
C100	2600		
C105	2720		
C108	2800		
C112	2900		

Section D (32 × 19)

Size	Pitch Length(mm)
D75	1990
D88	2320
D90	2370
D95	2500
D120	3130
D128	3330
D144	3740
D158	4100
D162	4200
D173	4480
D180	4650
D195	5040
D204	5260
D210	5420
D238	6130
D268	6890
D298	7650
D314	8060
D328	8410
D358	9180
D390	9990
D418	10700
D450	11510
D478	12220
D538	13750
D598	15270

Section E (38 × 23)

Size	Pitch Length(mm)
E180	4660
E195	5040
E210	5420
E238	6100
E268	6850
E298	7650
E328	8430
E358	9150
E394	10100
E418	10710
E478	12230
E538	13750
E598	15280

SpacesaVer Wedge Belts

Fenner POLY-F PLUS PB — THE MATCHLESS PERFORMER   **SpacesaVer Wedge Belts**

Continuous research work and efforts in development of V-Belts have been made to introduce the latest type of SpacesaVer Wedge Belts. This line of Wedge Belt drives is engineered to utilize in full, all the performance capabilities of modern man-made fibres and synthetic rubbers. Four sections of Wedge Belts SPZ, SPA, SPB & SPC confirm to BS3790.

In combination with Fenner Dual Duty Taper Lock® Pulleys machined to close limits from high grade materials, these Wedge Belts result in drives which are extraordinarily compact. They are capable of handling even more than twice as much power in a given space as traditional V-Belt drives.

Special Polyester Cord Cables provide the strength and flexibility needed for immense load carrying capacity of these small sections and an exclusive process of bonding the cables to the rubber element of the belts ensures that all parts of the belts act in unshakable union under conditions of severest flexing.

The benefits of Wedge Belts go beyond compactness and low initial cost. Every Wedge Belt is highly resistant to heat, oil and exposure to weather and has adequate electrical conductivity to deal with normal static hazards.

Wedge belts are narrow V-Belts with an aspect ratio around 0.8. (Aspect ratio = Topwidth/ Height of the belt cross section). The Top width is the same but the height is significantly larger than that of classical belts. Please refer to Table below.

Classical Belts		Wedge Belts	
Section	Cross section (mm)	Section	Cross Section (mm)
Z	10X6	SPZ	10X8
A	13X8	SPA	13X10
B	17X11	SPB	17X14
C	22X14	SPC	22X18

● Lesser number of Wedge belts for transmitting the same power means lesser shaft overhang, lower shaft moments and lower load on bearings, apart from compactness of design.

● Increased height of the cross section ensures better and even support for all the cable cords leading to uniform distribution of stresses and consequently power. Higher belt velocities are possible with wedge belts, the recommended limit being 40 m/sec.

SPZ (10 × 8)	SPA (13 × 10)	SPB (16 × 13)	SPC (22 × 18)
Size	**Size**	**Size**	**Size**
SPZ630	SPA800	SPB1250	SPC2000
SPZ670	SPA825	SPB1320	SPC2120
SPZ710	SPA850	SPB1340	SPC2240
SPZ750	SPA875	SPB1400	SPC2360
SPZ760	SPA900	SPB1500	SPC2500
SPZ800	SPA950	SPB1550	SPC2650
SPZ825	SPA975	SPB1600	SPC2800
SPZ850	SPA1000	SPB1700	SPC3000
SPZ900	SPA1030	SPB1800	SPC3150
SPZ940	SPA1060	SPB1900	SPC3350
SPZ950	SPA1090	SPB2000	SPC3550
SPZ1000	SPA1120	SPB2020	SPC3750
SPZ1010	SPA1150	SPB2120	SPC4000
SPZ1060	SPA1180	SPB2150	SPC4250
SPZ1080	SPA1220	SPB2240	SPC4500
SPZ1120	SPA1250	SPB2280	SPC4750
SPZ1140	SPA1280	SPB2360	SPC5000
SPZ1180	SPA1320	SPB2410	SPC5300
SPZ1200	SPA1360	SPB2500	SPC5480
SPZ1250	SPA1400	SPB2530	SPC5600
SPZ1270	SPA1450	SPB2650	SPC6000
SPZ1320	SPA1457	SPB2680	SPC6300
SPZ1340	SPA1500	SPB2800	SPC6700
SPZ1348	SPA1550	SPB2840	SPC7100
SPZ1358	SPA1600	SPB3000	SPC7500
SPZ1400	SPA1650	SPB3150	SPC8000
SPZ1420	SPA1700	SPB3170	SPC8500
SPZ1470	SPA1750	SPB3350	SPC9000
SPZ1500	SPA1800	SPB3550	SPC9500
SPZ1520	SPA1850	SPB3750	SPC10000
SPZ1560	SPA1900	SPB3800	SPC10600
SPZ1600	SPA1925	SPB4000	SPC11200
SPZ1650	SPA1950	SPB4060	SPC11800
SPZ1700	SPA2000	SPB4250	SPC12500
SPZ1800	SPA2060	SPB4310	
SPZ1850	SPA2120	SPB4500	
SPZ1900	SPA2180	SPB4560	
SPZ2000	SPA2240	SPB4750	
SPZ2030	SPA2280	SPB4820	
SPZ2120	SPA2300	SPB5000	
SPZ2160	SPA2360	SPB5070	
SPZ2240	SPA2430	SPB5300	
SPZ2280	SPA2500	SPB5380	
SPZ2360	SPA2580	SPB5600	
SPZ2410	SPA2650	SPB5880	
SPZ2500	SPA2720	SPB6000	
SPZ2540	SPA2800	SPB6300	
SPZ2650	SPA2900	SPB6340	
SPZ2680	SPA3000	SPB6700	
SPZ2800	SPA3150	SPB7100	
SPZ2840	SPA3350	SPB7500	
SPZ3000	SPA3550	SPB8000	
SPZ3150	SPA3750		
SPZ3170	SPA4040		
SPZ3350	SPA4250		
SPZ3550	SPA4500		

Fenner — POLY-F PLUS — THE MATCHLESS PERFORMER — SpacesaVer Wedge Belts

Delta/3V Belts (10 x 8 mm)

Belt Designation		Effective Outside Length	
RMA (Imperial)	Delta (Metric)	RMA (Inches)	Delta (mm)
3V200	SPZ500	20.0	500
3V250	SPZ630	25.0	630
3V265	SPZ670	26.5	670
3V270	SPZ680	27.0	680
3V280	SPZ710	28.0	710
3V300	SPZ760	30.0	760
3V315	SPZ800	31.5	800
3V320	SPZ810	32.0	810
3V330	SPZ830	33.0	830
3V350	SPZ880	35.0	880
3V360	SPZ910	36.0	910
3V370	SPZ940	37.0	940
3V380	SPZ960	38.0	960
3V400	SPZ1010	40.0	1010
3V420	SPZ1060	42.0	1060
3V450	SPZ1140	45.0	1140
3V470	SPZ1190	47.0	1190
3V480	SPZ1210	48.0	1210
3V500	SPZ1270	50.0	1270
3V510	SPZ1290	51.0	1290
3V530	SPZ1340	53.0	1340
3V560	SPZ1420	56.0	1420
3V575	SPZ1460	57.5	1460
3V600	SPZ1520	60.0	1520
3V630	SPZ1600	63.0	1600
3V670	SPZ1700	67.0	1700
3V710	SPZ1800	71.0	1800
3V750	SPZ1900	75.0	1900
3V800	SPZ2040	80.0	2030
3V850	SPZ2160	85.0	2150
3V900	SPZ2280	90.0	2280
3V950	SPZ2410	95.0	2410
3V1000	SPZ2540	100.0	2540
3V1060	SPZ2690	106.0	2690
3V1120	SPZ2840	112.0	2840
3V1180	SPZ3010	118.0	2990
3V1200	SPZ3040	120.0	3040
3V1320	SPZ3350	132.0	3350
3V1400	SPZ3550	140.0	3550
3V1450	SPZ3680	145.0	3680
3V1500	SPZ3800	150.0	3810

Delta/5V Belts (16x13mm)

Belt Designation		Effective Outside Length	
RMA (Imperial)	Delta (Metric)	RMA (Inches)	Delta (mm)
5V420	SPB1060	42.0	1060
5V430	SPB1090	43.0	1090
5V450	SPB1140	45.0	1140
5V480	SPB1210	48.0	1210
5V500	SPB1260	50.0	1270
5V530	SPB1340	53.0	1340
5V600	SPB1520	60.0	1520
5V630	SPB1600	63.0	1600
5V710	SPB1800	71.0	1800
5V750	SPB1900	75.0	1900
5V800	SPB2020	80.0	2030
5V850	SPB2150	85.0	2150
5V900	SPB2280	90.0	2280
5V1000	SPB2530	100.0	2540
5V1060	SPB2680	106.0	2690
5V1120	SPB2840	112.0	2840
5V1180	SPB3000	118.0	2990
5V1250	SPB3170	125.0	3170
5V1320	SPB3350	132.0	3350
5V1400	SPB3550	140.0	3550
5V1500	SPB3800	150.0	3810
5V1600	SPB4060	160.0	4060
5V1700	SPB4310	170.0	4310
5V1800	SPB4560	180.0	4570
5V1900	SPB4820	190.0	4820
5V2000	SPB5070	200.0	5080
5V2030	SPB5150	203.0	5150
5V2120	SPB5380	212.0	5380
5V2240	SPB5680	224.0	5690
5V2360	SPB6000	236.0	5990
5V2500	SPB6340	250.0	6350
5V2650	SPB6730	265.0	6730
5V2800	SPB7100	280.0	7110
5V3000	SPB7620	300.0	7620
5V3150	SPB8000	315.0	8000
5V3350	SPB8500	335.0	8500
5V3450	SPB8760	345.0	8760
5V3750	SPB9520	375.0	9520
5V4000	SPB10160	400.0	10160
5V4250	SPB10790	425.0	10790
5V4500	SPB11430	450.0	11430
5V4750	SPB12060	475.0	12060
5V5000	SPB12700	500.0	12700
5V5500	SPB13970	550.0	13970
5V5650	SPB14350	565.0	14350
5V5700	SPB14470	570.0	14470

Delta/8V/25N Belts (25x23mm)

Belt Designation		Effective Outside Length	
RMA (Imperial)	Delta (Metric)	RMA (Inches)	Delta (mm)
8V-1000	25N-2540	100	2540
8V-1060	25N-2690	106	2690
8V-1120	25N-2840	112	2840
8V-1180	25N-3000	118	3000
8V-1250	25N-3180	125	3180
8V-1320	25N-3350	132	3350
8V-1400	25N-3550	140	3550
8V-1500	25N-3810	150	3810
8V-1600	25N-4060	160	4060
8V-1700	25N-4320	170	4320
8V-1800	25N-4570	180	4570
8V-1900	25N-4830	190	4830
8V-2000	25N-5080	200	5080
8V-2120	25N-5380	212	5380
8V-2240	25N-5690	224	5690
8V-2360	25N-6000	236	6000
8V-2500	25N-6350	250	6350
8V-2550	25N-6480	255	6480
8V-2650	25N-6730	265	6730
8V-2800	25N-7100	280	7100
8V-3000	25N-7620	300	7620
8V-3150	25N-8000	315	8000
8V-3350	25N-8500	335	8500
8V-3550	25N-9000	355	9000
8V-3750	25N-9500	375	9500
8V-4000	25N-10160	400	10160
8V-4250	25N-10800	425	10800
8V-4500	25N-11430	450	11430
8V-4750	25N-12060	475	12060
8V-5000	25N-12700	500	12700

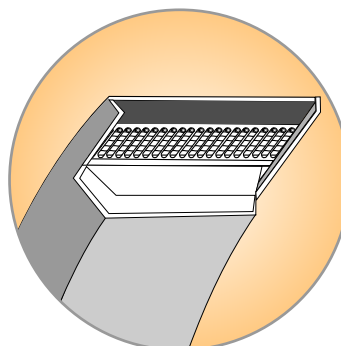## Fenner Fractional Horse Power Belts (FHP Belts).

Fenner FHP belts are intended and specifically designed to give satisfaction when used with small diameter pulleys under the conditions of load, usage and service requirements associated with fractional horse power electric motors. Typical applications are Domestic washing machines, Refrigerators, Small fans, Blowers and Centrifugal pumps, Oil Burners and stokers, Meat slicers, Cream seperators, Garage equipment, Model makers, Metal and wood working machines.

Applications of FHP belts

F.H.P V-Belts 2000 Series
Section 9.5 x 5.5mm

Size	Size	Size	Size
2170	2280	2380	2500
2180	2290	2390	2510
2190	2300	2395	2520
2200	2310	2400	2530
2210	2320	2410	2540
2220	2330	2420	2549
2230	2334	2430	2560
2240	2340	2440	2580
2245	2350	2450	2594
2250	2355	2460	2664
2260	2360	2475	
2270	2370	2480	
2275	2375	2490	

Power Loom Belts

Size	Size	Size	Size	Size
A32	A81	A116	B48	B84
A42	A82	A118	B50	B85
A51	A83	A120	B51	B88
A52	A84	A144	B52	B90
A60	A85	A158	B55	B92
A61	A86	A160	B56	B93
A62	A87	A168	B58	B94
A63	A88	A170	B60	B95
A64	A89	A173	B62	B96
A65	A90		B64	B98
A66	A91		B65	B100
A67	A92		B66	B102
A68	A93		B68	B104
A69	A94		B70	B106
A70	A95		B71	B108
A71	A96		B72	B110
A72	A98		B73	B112
A73	A100		B74	B114
A74	A102		B75	B116
A75	A104		B76	B118
A76	A105		B77	B120
A77	A106		B78	
A78	A108		B80	
A79	A110		B81	
A80	A112		B82	

Harvester Combine Belts

Harvestor Combine Belts

Size
114x6x3200
114x6x3350
114x6x3400
114x6x3450
114x6x3550
138x6x3895
138x6x3925
138x6x3930
QX1140
R2020
R2150
R2170
R2850
R2920
R3000
R3175

Sewing Machine Belts

Size
6X375
9X375

Wet Grinder Belts

Size	Size
A23	A48
A24	A49
A25	A50
A26	A60
A27	
A28	B36
A29	B37
A30	B38
A31	B39
A32	B40
A33	B41
A34	B42
A35	B43
A36	B44
A37	B45
A38	B46
A39	B47
A40	B48
A41	B49
A42	B50
A43	B51
A44	B52
A45	
A46	
A47	

POLY-F PLUS PB

THE MATCHLESS PERFORMER
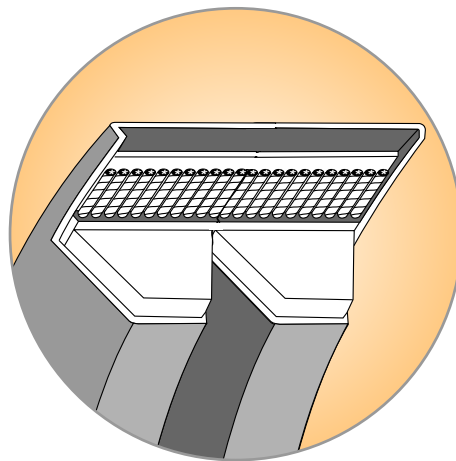

Fenner Banded Belts

Banded belt consists of multiple belts of standard cross sections like A,B,C,D / SPZ, SPA, SPB,SPC / 3V,5V or 8V etc. are joined together at the top to form a band. This construction provides the following unique benefits:

1. In drives having excessive vibrations such as those encountered in reciprocating drives (Reciprocating Compressors or reciprocating engines driven equipment etc) these belts provide effective damping of vibrations.

2. Since the belts have a common top band, effectively it is a single belt and therefore the problems of matching of individual belts in a multiple belt drive are not present.

The prefix 'J' (denoting Joined) is used before the belt cross section for all banded belts. Thus a band of 3 belts of B-81 will be designated as 3JB-81 and a band of 4 belts of SPB 2680 as 4JSPB 2680 etc.

Avantages :

● Eliminate belt whip, belt twist and belt turn over
● Ideal for drives where pulsating loads are present
● do not require special pulleys
● reduced stretch & longer life

Banded Belts
Classical & Wedge Sections

Applications:

Some of the identified applications for Banded Belts :

1. **Harvestor Combines** used for Paddy harvesting, where the application peculiarity involves reverse bending of the belt.
2. **Surface Miners**, used in Lime Stone quarries attached to Cement plants.
3. **Reciprocating Compressor Application:** Banded Belts are most suited for Reciprocating Compressor Application where high vibrations cause severe belt flapping problem.

Wrapped Banded Belts Range
(Li: Inside Length Le: Effective Length Lp: Pitch Length)

Section	Size Range	Belt Width (mm)	Thickness (mm)	Pitch (mm)	Max No. of Belts /Band (N)
JA	42"-120" Li	15.90 X N	11.00	15.90	6
JB	42"-173" Li	19.30 X N	13.50	19.30	6
JB	174"-420" Li	19.30 X N	13.50	19.30	5
JC	70"-120" Li	25.55 X N	17.50	25.55	4
JC	121"-420" Li	25.55 X N	17.50	25.55	6
JD	150"–270" Li	36.60 X N	21.50	36.60	5
JSPZ	1100-1900 MM Lp	12.00 X N	10.50	12.00	5
JSPA	1100-3500 MM Lp	15.00 X N	12.00	15.00	5
JSPB	2350-4500 MM Lp	19.00 X N	15.50	19.00	6
JSPB	4501-10600 MM Lp	19.00 X N	15.50	19.00	5
JSPC	2500-10600 MM Lp	25.55 X N	16.00	25.55	5
J3V	42" –120" Le	10.30 X N	10.50	10.30	5
J5V	95" – 175" Le	17.50 X N	16.00	17.50	6
J5V	176" – 420" Le	17.50 X N	16.00	17.50	5
J8V	100" – 500" Le	28.58 X N	26..50	28.58	5

Banded Cogged Belts Range

Banded belts are available in Cogged construction -AX, BX, SPZX, SPAX, SPBX, 3VX & 5VX Sections

Section	Size Range	Belt Top Width (mm)	Thickness (mm ± 0.8)	Groove / Pitch (mm)	Max No. of Belts / Band (N)
JSPZX	1100-3000 mm	(12.0 X N) -1.50	10	12.0 ± 0.15	8
JSPAX	1100-3000 mm	(15.0 X N) - 1.5	10.5	15.0 ± 0.15	8
JSPBX	1100-3000 mm	(19.05 X N) - 1.5	15	19.05 ± 0.15	6
JSPCX	2280-3000 mm	(25.5 X N) - 3.0	19	25.5± 0.15	5
J3VX	43 -118 inches	(10.3XN)- 0.50	10	10.3 ± 0.15	8
J5VX	43 -118 inches	(17.50XN)- 1.00	16.5	17.5 ± 0.15	6
JAX	43 -118 inches	(15.88XN)- 2.0	10.5	15.88 ± 0.15	8
JBX	43 -118 inches	(19.05XN)-1.50	13	19.05 ± 0.15	6
JCX	44 -118 inches	(25.5XN)-3.0	16.5	25.5± 0.15	5
JAV10X	1100-3000 mm	(12.6 X N) -1.5	9.5	12.6 ± 0.15	8
JAV13X	1100-3000 mm	(16.0 X N) -1.5	10.5	16.0 ± 0.15	8

Belts for
Ceramic Tile Industry

Belts for ceramic tiles applications.

In ceramic tile plants, most of the V-Belts and Timing belts also double up as Conveyor belts for carrying tiles on their top surface.

V-Crested Belts (also known as Pentagon Belts / Diamond Cut belts / Conical belts) of B& C section are used for applications in ceramic tiles manufacturing for conveying tiles from one process to another.

The tiles are supported on top edge of the two belts.

Features:

- Perfect matching of lengths to enable tiles to be carried smoothly.
- Hard and rough surface texture for improved life.
- Improved abrasion resistance by providing extra layers of jacket on the sides.
- Much better life.
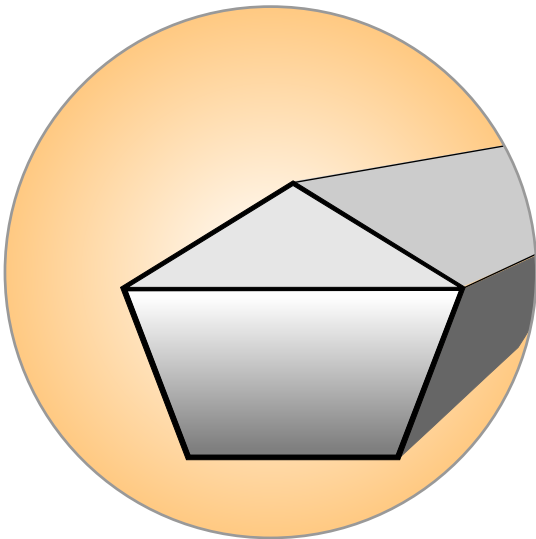
V- Crested Belts for Ceramic Tile Industry

V-Crested Belt Sizes

B-Section	C-Section	C-Section
B90	C90	C195
B100	C93	C200
B105	C95	C210
B110	C102	C216
B120	C110	C218
B150	C115	C220
B160	C118	C225
B168	C120	C228
B180	C130	C230
B200	C144	C234
B210	C150	C240
B225	C153	C250
B275	C160	C260
	C180	C270
	C190	C275

Hexagonal Belts

Hexagonal belts as the name implies, are hexagonal in cross section, primarily used in agricultural applications. They are also called Double sided V Belts.
Basically the construction of the belt will have two classical sections joined together at the top side, the top belt being inverted and joined to the bottom belt over its own top.
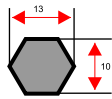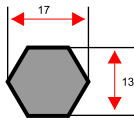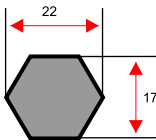
The hexagonal belts consist of layers of cord reinforcement located in the middle of the belt section. There is a jacket wrapped around the belt. The area above and below the cords consists of base rubber compound. The Hexagonal belt can drive on both sides and consequently be used to drive a number of devices with the drive path having reverse bends. The drive is also called "Serpentine drive".

The sudden direction changes in belt travel put unique stresses and demands on the belt carcass and structure and such loads are reliably handled by these anti-static and oil resistant belts.

Hexagonal belt sections are designated with a double alphabet while denoting their sections, e.g. AA,BB,CC etc.

Jacket
Cord
Base
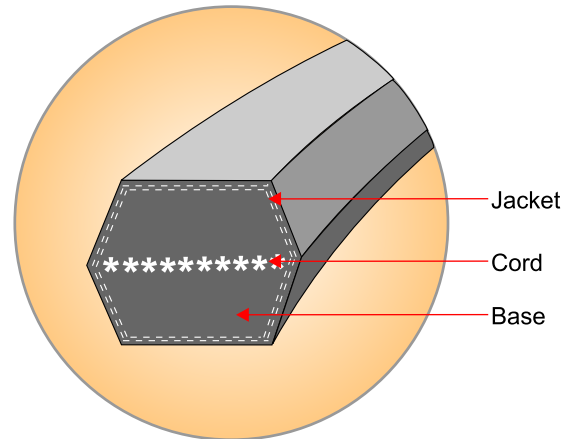
Hexagonal Belts

Nomenclature	Dimensions	Std. Belt Length (inches)
AA	13 / 10	62 -175
BB	17 / 13	62 - 270
CC	22 / 17	83 - 270

HEXAGONAL BELTS	
Size	Size
AA96	BB94
AA120	BB96
AA128	BB100
	BB120
BB75	BB122
BB78	BB124
BB80	BB136
BB82	
BB83	CC112
BB84	CC114
BB85	CC166
BB90	CC176
BB92	CC254

POWERTRAN®
Green Cover Belts

SPC-PT 4750

FENNER POWERTRAN
FENNER

The Three Star Advantage Belts

★ **Extra Power**
40% higher Power than normal Belts
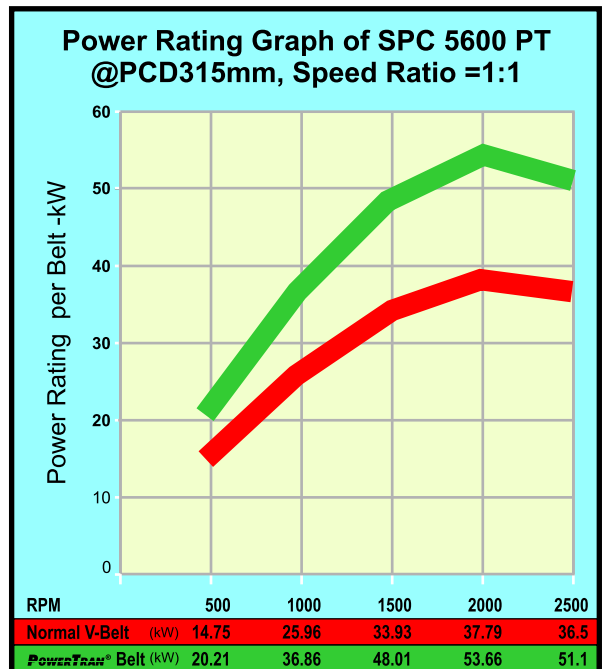
★ **Extra Life**
Much longer life than normal belts

★ **Extra Saving**
18% - 20% saving in Drive Cost

Fenner
Belt Advantages:

- Reduce drive cost up to 20%
- Reduce drive width up to 30%
- Reduce drive weight up to 25%
- Maintenance free; optimum tension throughout service life
- In built Match Set, can be used in sets without further measurement
- Up to 97% drive efficiency
- Up to 40% more power
- High resistance to shock loads

Power Rating Graph of SPC 5600 PT @PCD315mm, Speed Ratio =1:1

Power Rating per Belt -kW

RPM	500	1000	1500	2000	2500
Normal V-Belt (kW)	14.75	25.96	33.93	37.79	36.5
POWERTRAN® Belt (kW)	20.21	36.86	48.01	53.66	51.1

Speciality Belts - Green Cover Belts

POWERTRAN® Green Cover Belts

Savings with Fenner POWERTRAN® Green Cover Belts

Particulars	Fenner SPC Belt Drive	Fenner POWERTRAN® SPC Belt Drive	Savings with POWERTRAN® Belt Drive
Motor Pulley Driven Pulley Belt Size	375mm PCD X10 SPC 710mm PCD X10 SPC 10XSPC 4500	375mm PCD X 7 SPC - PT 710mm PCD X 7 SPC - PT 7 X SPC - PT 4500	
Motor Pulley Price(Rs/each) Driven Pulley Price(Rs/each) Belt Price(Rs/each)	25105 47315 2028 x10 20280	16560 36035 3448x7 24136	34% 24% -19% Net Saving
Total Package Value(Rs)	92700	76728	17%

* Note: Prices are only indicative for illustrative purpose.

Fenner POWERTRAN® Suitable for Heavy-Duty Applications :

With triple advantage

★ Extra Power

- *40% more power than normal transmission belts*
- *Improve drive efficiency up to 97%*

★ Extra Life

- *Reduce friction and heat build up*
- *Have high resistance to shock loads*
- *Maintenance free, optimum tension throughout service life*
- *Made with special superior quality chords*
- *Lateral rigidity*
- *Operating temperature range -30°C to +85°C*

★ Extra Savings

- *18% - 20% savings in drive cost*
- *Reduce drive weight up to 25%*
- *Reduce drive width up to 30%*

Fenner POWERTRAN® Wedge belt drives have proven themselves in the toughest applications in Agriculture, Mining, Construction and Manufacturing.

Tension Stability Study

Tension (%)

100

60

20

Sliding Limit

Premium Construction

Standard Construction
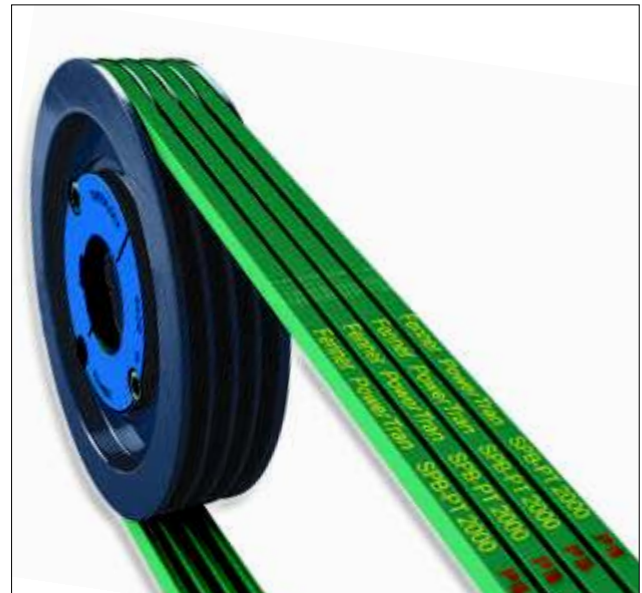
V Belt

Time
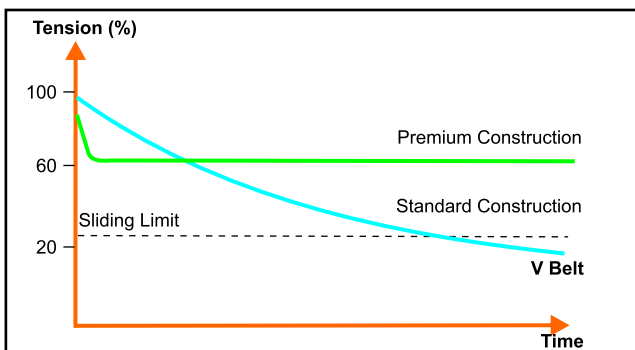
Fenner POWERTRAN® Belt Range :

Available in lengths from 1200 mm to 16000 mm and in belt sections SPA-PT, SPB-PT, SPC-PT, 5V-PT & 8V-PT. Also available in Banded version upto length 10400 mm.

Fenner POWERTRAN® Belts conform to :

ISO 4184, **DIN** 2215 and **BS** 3790, they meet **ISO** 1813 for static conductivity and have an operating temperature range -30°C to +85°C

POWERTRAN® Green Cover Belt Range

| SPA-PT 10/8	SPA-PT 10/8	SPB-PT 13/10	SPB-PT 16/13	SPB-PT 16/13	SPC-PT 22/18	SPCX 22/18
Size	**Size**	**Size**	**Size**	**Size**	**Size**	**Size**
SPA-PT800	SPA-PT2650	SPB-PT1250	SPB-PT6000	5V-PT420	SPC-PT2000	8V-PT1000
SPA-PT825	SPA-PT2720	SPB-PT1320	SPB-PT6300	5V-PT430	SPC-PT2120	8V-PT1060
SPA-PT850	SPA-PT2800	SPB-PT1340	SPB-PT6340	5V-PT450	SPC-PT2240	8V-PT1120
SPA-PT875	SPA-PT2900	SPB-PT1400	SPB-PT6700	5V-PT480	SPC-PT2360	8V-PT1180
SPA-PT900	SPA-PT3000	SPB-PT1500	SPB-PT7100	5V-PT500	SPC-PT2500	8V-PT1250
SPA-PT950	SPA-PT3150	SPB-PT1550	SPB-PT7500	5V-PT530	SPC-PT2650	8V-PT1320
SPA-PT975	SPA-PT3350	SPB-PT1600	SPB-PT8000	5V-PT600	SPC-PT2800	8V-PT1400
SPA-PT1000	SPA-PT3550	SPB-PT1700		5V-PT630	SPC-PT3000	8V-PT1500
SPA-PT1030	SPA-PT3750	SPB-PT1800		5V-PT710	SPC-PT3150	8V-PT1600
SPA-PT1060	SPA-PT4040	SPB-PT1900		5V-PT750	SPC-PT3350	8V-PT1700
SPA-PT1090	SPA-PT4250	SPB-PT2000		5V-PT800	SPC-PT3550	8V-PT1800
SPA-PT1120		SPB-PT2020		5V-PT850	SPC-PT3750	8V-PT1900
SPA-PT1150		SPB-PT2120		5V-PT900	SPC-PT4000	8V-PT2000
SPA-PT1180		SPB-PT2150		5V-PT1000	SPC-PT4250	8V-PT2120
SPA-PT1220		SPB-PT2240		5V-PT1060	SPC-PT4500	8V-PT2240
SPA-PT1250		SPB-PT2280		5V-PT1120	SPC-PT4750	8V-PT2360
SPA-PT1280		SPB-PT2360		5V-PT1180	SPC-PT5000	8V-PT2500
SPA-PT1320		SPB-PT2410		5V-PT1250	SPC-PT5300	8V-PT2550
SPA-PT1360		SPB-PT2500		5V-PT1320	SPC-PT5480	8V-PT2650
SPA-PT1400		SPB-PT2530		5V-PT1400	SPC-PT5600	8V-PT2800
SPA-PT1450		SPB-PT2650		5V-PT1500	SPC-PT6000	8V-PT3000
SPA-PT1457		SPB-PT2680		5V-PT1600	SPC-PT6300	8V-PT3070
SPA-PT1500		SPB-PT2800		5V-PT1700	SPC-PT6700	8V-PT3150
SPA-PT1550		SPB-PT2840		5V-PT1800	SPC-PT7100	8V-PT3350
SPA-PT1600		SPB-PT3000		5V-PT1900	SPC-PT7500	8V-PT3550
SPA-PT1650		SPB-PT3150		5V-PT2000	SPC-PT8000	8V-PT3750
SPA-PT1700		SPB-PT3170		5V-PT2030	SPC-PT8500	8V-PT4000
SPA-PT1750		SPB-PT3350		5V-PT2120	SPC-PT9000	8V-PT4250
SPA-PT1800		SPB-PT3750		5V-PT2240	SPC-PT9500	8V-PT4500
SPA-PT1850		SPB-PT3800		5V-PT2360	SPC-PT10000	8V-PT4750
SPA-PT1900		SPB-PT4000		5V-PT2500	SPC-PT10600	8V-PT5000
SPA-PT1925		SPB-PT4060		5V-PT2650	SPC-PT11000	
SPA-PT1950		SPB-PT4250		5V-PT2800	SPC-PT11200	
SPA-PT2000		SPB-PT4310		5V-PT3000	SPC-PT11800	
SPA-PT2060		SPB-PT4500		5V-PT3150	SPC-PT12500	
SPA-PT2120		SPB-PT4560		5V-PT3350		
SPA-PT2180		SPB-PT4750		5V-PT3450		
SPA-PT2240		SPB-PT4820		5V-PT3750		
SPA-PT2280		SPB-PT5000		5V-PT4000		
SPA-PT2300		SPB-PT5070		5V-PT4250		
SPA-PT2360		SPB-PT5300		5V-PT4500		
SPA-PT2430		SPB-PT5380		5V-PT4750		
SPA-PT2500		SPB-PT5600		5V-PT5000		
SPA-PT2580		SPB-PT5880		5V-PT5500		
				5V-PT5650		
				5V-PT5700		

Speciality Belts - Green Cover Belts

Belt Tensioning Method Using Fenner Belt Tension Indicator

1. Calculate the deflection distance in mm on a basis of 16 mm per metre of span.
   Centre Distance (m) x 16 = Deflection (mm)

2. Set the lower marker ring at the deflection distance required in mm on the lower scale.

3. Set the upper marker ring against the bottom edge of the top tube.

4. Place the belt tension indicator on top of the belt at the centre of the span. 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 the adjacent belt*
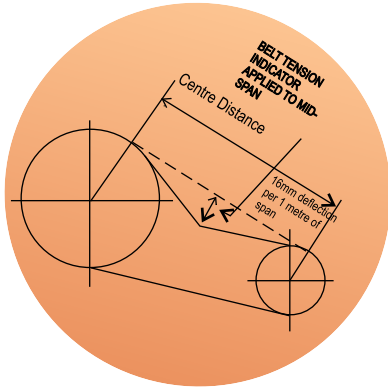
5. Read off the force value indicated by the top edge of the upper marker ring.

6. Compare this force to the kgf value shown in Table-1

* 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 lower value indicates under-tensioning. A new drive should be tensioned to the higher value to allow for the normal drop in tension during the running-in period. After the drive has been running for 30 minutes, the tension should be checked and readjusted to the higher value, if necessary.

The high performance and efficiency of Fenner Precision Built belts require correct tension. We recommend using the Fenner Belt Tension Indicator.
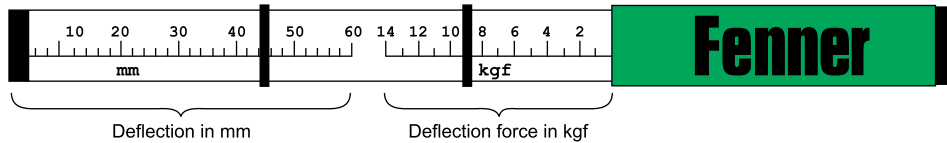
Deflection in mm   Deflection force in kgf

Table 2: Tensioning Forces

Belt Section	Force Required to deflect belt 16 mm per metre of span		
	Small Pulley Diameter (mm)	Newton (N)	Kilogram force (kgf)
SPZ	67 to 95	10 to 15	1.0 to 1.5
	100 to 140	15 to 20	1.5 to 2.0
SPA	100 to 132	20 to 27	2.0 to 2.7
	140 to 200	27 to 35	2.8 to 3.6
SPB	160 to 224	35 to 50	3.6 to 5.1
	236 to 315	50 to 65	5.1 to 6.6
SPC	224 to 355	60 to 90	6.1 to 9.2
	375 to 560	90 to 120	9.2 to 12.2
8V	335 & above	150 to 200	15.3 to 20.4
A	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
E	500 & above	120 to 180	12.2 to 18.3

Table 3: Installation Take-up Allowance Table

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

Table 4: Recommended Minimum Pulley Pitch Diameters (mm)

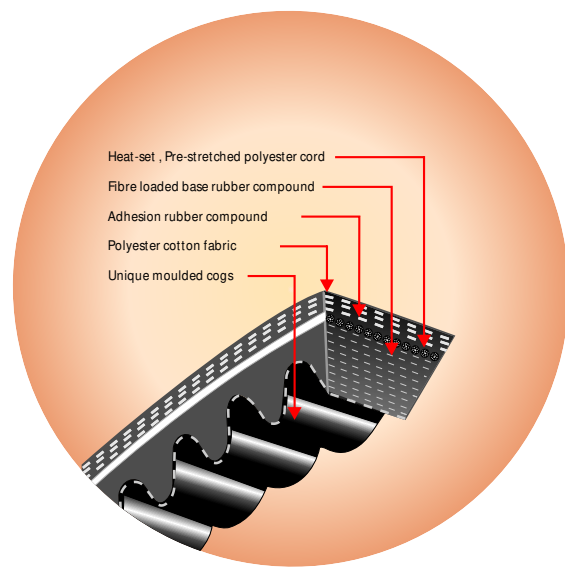| A	B	C	D	E	SPZ	SPA	SPB	SPC	8V
80	125	200	315	450	67	95	160	224	335

POWERFLEX

Raw Edge Cogged V-Belts

Raw edge V-Belts are also known as Cut edge Belts or simply Cut Belts. As the name signifies, the edges (sidewalls) are cut from sleeves and the sidewalls are not covered i.e. they are raw. There is no fabric wrapping on the sides as in the same of normal belts. Again Raw Edge Belts come in three basic designs. They are Raw Edge Plain(REP), Raw Edge Laminated (REL) and Raw Edge Cogged (REC).

Raw Edge Plain belt has one or two fabric layers situated above the cable cord and the bottom edge might or might not have a single fabric layer.

The efficiency of these belts has been so overwhelmingly attractive that these belts have started rapidly replacing other type of belts in the class of application for which they are suitable.

The cogged underside of the Raw Edge Cogged belts reduces bending resistance significantly, thereby enabling use of pulleys with even smaller diameters upto 20% less than for the same type of application. Further the decreased bending resistance reduces mechanical losses during bending. This means improved power transmission, lesser heat buildup and also reduced working temperature. Heat dissipation is expedited as the belt has a large surface area per unit

Heat-set , Pre-stretched polyester cord
Fibre loaded base rubber compound
Adhesion rubber compound
Polyester cotton fabric
Unique moulded cogs

Belt Dimensions

Section	Dimensions (w x h)(mm)	Min. Pulley Diameter PCD (mm)	Std. Belt Lengths (mm)
ZX	10 x 6	40	500 - 2310
AX	13 x 8	64	640 - 4500
BX	17 x 11	100	720 - 4500
CX	22 x 14	160	820 - 4500
SPZX / 3VX	10 x 8	45	550 - 4500
SPAX	13 x 10	72	650 - 4500
SPBX / 5VX	16 x 13	128	650 - 4800
SPCX	22 x 18	221	2240 - 4750

STANDARDS: RMA IP 20, ISO 4184, RMA IP 22, DIN 2215, BS 3790

length. Lastly heat transfer is also accelerated due to cogs inducing turbulence in the surrounding air resulting in a swirling action which enhances cooling. Pulleys and bearings run cooler on account of this.

The absence of fabric wrapping on the sides allows more space for the cable cord reinforcement leading to higher rating for the same cross section. The absence of Fabric reinforcement joints normally found in the wrapped belt leads to smoother running. Further, Raw edge belt base consists of anisotropically oriented fibre filled rubber composite which improves transverse rigidity and traction. All these add up to better performance of not only the belt but also the pulley bearing.

The lighter and stronger construction of Raw edge belts enables surface speeds upto 45 metres/second for raw edge belts of the wedge belt design and 35 metres/second for Raw edge classical design belts. All these add up to compactness, considerably increased power rating, longer life, cooler running and lesser power loss or a combination of all.

Raw edge Cogged belts- the construction

The Raw Edge Cogged belts has moulded construction and transverse rigidity in the wedging direction. They have low slippage in running , reducing the losses in the drive. Considering the drive can also be redesigned to be compact, it will result in lower overhung load on the shaft and reduced bearing loads which substantially increase their life.

Special Features

Top Layer: Specially woven poly - cotton fabric rubberised with Polychloroprene rubber which imparts ozone resistance and hence better resistance to flex crack development.

Cord: Special adhesive treated - High Modulus - Low Stretch (HMLS) polyester cable cord provides high tensile strength with minimum stretch which in turn gives V-Belt with good tension retention, superior resistance to fatigue and shock loads.

Compound: a) Polychloroprene used throughout the belt provides oil and heat resistance.
b) Fibre filled polychloroprene base compound gives increased power transmission capability, superior transverse stiffness and high wear resistance.

Precision: The edges are precisely cut and ground to exact dimensions to ensure uniform fit along the sides of the pulley grooves.

Properties:

1. Very high flexibility due to moulded cogs.
2. Excellent transverse rigidity because of polychlroprene rubber based compound with an-isotropic fibre orientation.
3. Very low stretch due to use of length stable polyester cords.
4. Higher power rating of upto 30% over wrapped V-Belts.
5. Low Slip due to better arc of contact and pulley to belt geometrical relationship.
6. Energy loss reduced to absolute minimum.

Advantages:

Cogged belts offer advantages to the existing users of V-Belts wanting to replace conventional wrapped belts with cogged belts as well as to the designers of new drives.

Replacement Drives

a) **No drive modifications** are necessary to accommodate cogged belts on the existing pulleys.

b) **Three times more life**. The higher power rating of powerflex means that they have more KW hours built into them. So they last three times longer when replacing conventional wrapped V- belts using existing pulleys.

c) **Energy saving.** Field Tests under actual working conditions have shown an energy saving of as much as 6%. Less Energy is wasted because of the combination of moulded cog and Raw Edge construction, which allows Cogged belts to bend more easily along the pulley.

New Drives

a) Less number of belts . The cogged belts transmit 28-30% more Kw Per Belt and therefore the number of belts for the same drives may be reduced from 4 to 3 or 3 to 2.

b) Small pulley diameter can be used due to greater flexibility.

c) Drive ratios of 1:12 are possible which can eliminate multistage drives.

Over and above these benefits, the 'Fit and Forget" "PB" specifications also apply to **Powerflex** which means no re-tensioning and no matching of codes.

Available in **Sections ZX, AX, BX, CX, SPZX, SPAX, SPBX, & SPCX** for industrial applications and **Sections 13 A, 15 A, 17 A and 20 A** for HEMM applications.

Energy Earning through Cogged belts

Powerflex Raw Edge Cogged Belts ensure energy savings of 3-6% over conventional wrapped belts. This is achieved due to:

● Moulded construction reduces slippage to minimum. Power consumed per unit output is reduced.

● Reduced tension required to transmit same power compared to wrapped belts.

● The higher power carrying capacity of the cogged belts ensures that the drives are more compact. The shaft overhang and thereby the load on the bearings is reduced.

Energy saved is energy earned and more and more industries are switching over to cogged belts.
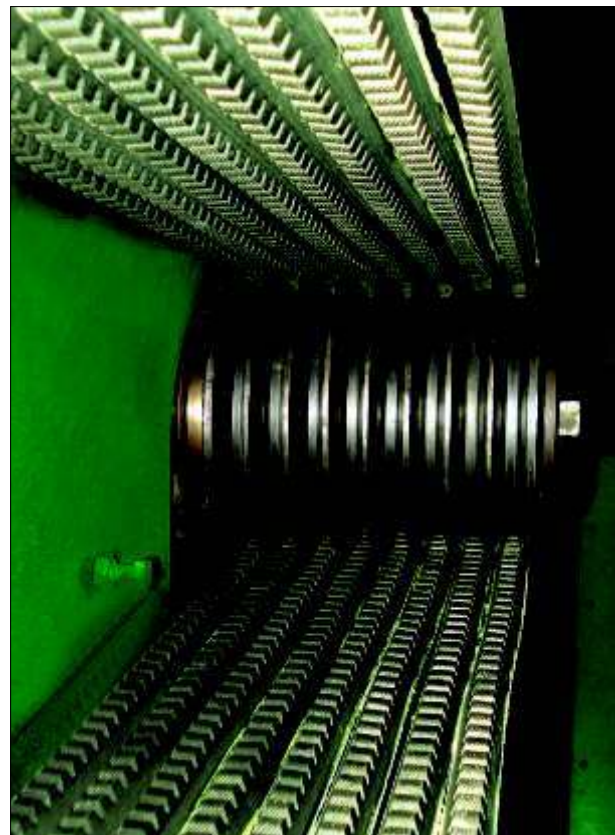
Energy saving Cogged Belt Drive
Textile Comber Toyoda CM 10

## Belt Range - Raw Edge Cogged Belts

ZX Section (10 × 6)

Size	Pitch Length (mm)	Size	Pitch Length (mm)
ZX 18	480	ZX 64	1650
ZX 19	510	ZX 65	1670
ZX 20	530	ZX 66	1700
ZX 21	560	ZX 67	1720
ZX 22	580	ZX 68	1750
ZX 23	610	ZX 69	1780
ZX 24	630	ZX 70	1800
ZX 25	660	ZX 71	1830
ZX 26	680	ZX 72	1850
ZX 27	710	ZX 73	1880
ZX 28	730	ZX 74	1900
ZX 29	760	ZX 75	1930
ZX 30	790	ZX 76	1950
ZX 31	810	ZX 77	1980
ZX 32	840	ZX 78	2000
ZX 33	860	ZX 79	2030
ZX 34	890	ZX 80	2060
ZX 35	910	ZX 81	2080
ZX 36	940	ZX 82	2110
ZX 37	960	ZX 83	2130
ZX 38	990	ZX 84	2160
ZX 39	1010	ZX 85	2180
ZX 40	1040	ZX 86	2210
ZX 41	1060	ZX 87	2230
ZX 42	1090	ZX 88	2260
ZX 43	1120	ZX 89	2280
ZX 44	1140	ZX 90	2310
ZX 45	1170		
ZX 46	1190		
ZX 47	1220		
ZX 48	1240		
ZX 49	1270		
ZX 50	1290		
ZX 51	1320		
ZX 52	1340		
ZX 53	1370		
ZX 54	1390		
ZX 55	1420		
ZX 56	1450		
ZX 57	1470		
ZX 58	1500		
ZX 59	1520		
ZX 60	1550		
ZX 61	1570		
ZX 62	1600		
ZX 63	1620		

AX Section (13 × 8)

Size	Pitch Length (mm)	Size	Pitch Length (mm)
AX19	520	Ax65	1680
AX20	540	Ax66	1710
AX21	570	AX67	1730
AX22	590	AX68	1760
AX23	620	AX69	1790
AX24	640	AX70	1810
AX25	670	AX71	1840
AX26	690	AX72	1860
AX27	720	AX73	1890
AX28	740	AX74	1920
AX29	770	AX75	1940
AX30	800	AX76	1960
AX31	820	AX77	1990
AX32	850	AX78	2020
AX33	870	AX79	2050
AX34	900	AX80	2070
AX35	920	AX81	2090
AX36	950	AX82	2120
Ax37	970	AX83	2140
AX38	1000	AX84	2170
AX39	1020	Ax85	2200
AX40	1050	AX90	2320
AX41	1070	AX95	2450
AX42	1100	AX100	2570
AX43	1130	AX120	3080
AX44	1150		
AX45	1180		
AX46	1200		
AX47	1230		
Ax48	1250		
AX49	1280		
AX50	1300		
AX51	1330		
AX52	1350		
AX53	1380		
AX54	1400		
AX55	1430		
AX56	1460		
AX57	1480		
AX58	1510		
AX59	1530		
AX60	1560		
AX61	1580		
AX62	1610		
AX63	1630		
AX64	1660		

BX Section (17 × 11)

Size	Pitch Length (mm)	Size	Pitch Length (mm)
BX28	750	BX74	1920
BX29	780	BX75	1950
BX30	800	BX76	1970
BX31	830	BX77	2000
BX32	860	BX78	2020
BX33	880	BX79	2050
BX34	910	BX80	2070
BX35	930	BX81	2100
BX36	960	BX82	2130
BX37	980	BX83	2150
BX38	1000	BX84	2180
BX39	1030	BX85	2200
BX40	1060	BX86	2230
BX41	1080	BX87	2250
BX42	1100	BX88	2280
BX43	1130	BX89	2300
BX44	1160	BX90	2330
BX45	1180	BX95	2460
BX46	1210	BX100	2580
BX47	1240	BX105	2710
BX48	1260	BX110	2840
BX49	1290	BX115	2960
BX50	1310	BX120	3090
BX51	1340	BX125	3220
BX52	1370	BX132	3400
BX53	1390	BX150	3850
BX54	1410	BX170	4360
BX55	1440		
BX56	1460		
BX57	1490		
BX58	1510		
BX59	1540		
BX60	1560		
BX61	1590		
BX62	1620		
BX63	1640		
BX64	1670		
BX65	1690		
BX66	1720		
BX67	1750		
BX68	1760		
BX69	1800		
BX70	1820		
BX71	1850		
BX72	1870		
BX73	1900		

CX Section (22 × 14)

Size	Pitch Length (mm)	Size	Pitch Length (mm)
CX32	870	CX77	2010
Cx33	890	CX78	2040
CX34	920	CX79	2060
CX35	940	CX80	2090
CX36	970	CX81	2110
CX37	1000	CX82	2140
CX38	1020	CX83	2160
CX39	1050	CX84	2190
CX40	1070	CX85	2220
CX41	1100	CX86	2240
CX42	1120	CX87	2260
CX43	1150	CX88	2290
CX44	1170	CX89	2310
CX45	1200	CX90	2340
CX46	1220	CX105	2720
CX47	1250	CX109	2820
CX48	1280	CX118	3050
CX49	1300	CX128	3310
CX50	1330	CX173	4450
CX51	1350		
CX52	1380		
CX53	1400		
CX54	1430		
CX55	1450		
CX56	1480		
CX57	1500		
Cx58	1530		
CX59	1550		
CX60	1580		
CX61	1610		
CX62	1630		
CX63	1660		
CX64	1680		
CX65	1710		
CX66	1730		
CX67	1760		
CX68	1780		
CX69	1810		
CX70	1830		
CX71	1860		
CX72	1880		
CX73	1910		
CX74	1940		
CX75	1960		
CX76	1990		

"For all unlisted sizes please consult Fenner"

Belt Range - Raw Edge Cogged Wedge Belts

SPZX	SPAX	SPBX	SPCX	3VX	5VX	AV10X	AV13X
10 / 8	13 / 10	16 / 13	22 / 18	10 / 8	13 / 10	16 / 13	22 / 18
Size	Size	Size	Size	Size	Size	Size	Size
SPZX550	SPAX600	SPBX670	SPCX2300	3VX-200	5VX-320	AV10X-500	AV13X-500
SPZX600	SPAX650	SPBX780	SPCX2360	3VX-250	5VX-350	AV10X-520	AV13X-550
SPZX700	SPAX700	SPBX820	SPCX2400	3VX-280	5VX-380	AV10X-600	AV13X-650
SPZX750	SPAX750	SPBX940	SPCX2450	3VX-300	5VX-400	AV10X-800	AV13X-800
SPZX800	SPAX800	SPBX1030	SPCX2500	3VX-330	5VX-420	AV10X-1000	AV13X-1050
SPZX850	SPAX850	SPBX1060	SPCX2550	3VX-350	5VX-480	AV10X-1200	AV13X-1250
SPZX900	SPAX900	SPBX1120	SPCX2600	3VX-400	5VX-500	AV10X-1320	AV13X-1360
SPZX950	SPAX950	SPBX1260	SPCX2650	3VX-420	5VX-560	AV10X-1400	AV13X-1450
SPZX1000	SPAX1000	SPBX1300	SPCX2700	3VX-450	5VX-670	AV10X-1800	AV13X-1600
SPZX1060	SPAX1050	SPBX1320	SPCX2750	3VX-500	5VX-830	AV10X-2000	AV13X-2000
SPZX1080	SPAX1080	SPBX1360	SPCX2800	3VX-560	5VX-1000	AV10X-2120	AV13X-2360
SPZX1180	SPAX1120	SPBX1400	SPCX3000	3VX-630	5VX-1030	AV10X-2500	AV13X-2500
SPZX1200	SPAX1180	SPBX1500	SPCX3150	3VX-900	5VX-1040	AV10X-2800	AV13X-2750
SPZX1250	SPAX1200	SPBX1600	SPCX3350	3VX-1000	5VX-1060	AV10X-3000	AV13X-3000
SPZX1270	SPAX1250	SPBX1700	SPCX3500	3VX-1180	5VX-1080	AV10X-3150	AV13X-3150
SPZX1320	SPAX1300	SPBX1800	SPCX3750	3VX-1250	5VX-1120	AV10X-3350	AV13X-3350
SPZX1400	SPAX1320	SPBX1900	SPCX4000	3VX-1320	5VX-1150	AV10X-3500	AV13X-3500
SPZX1500	SPAX1360	SPBX2000	SPCX4250	3VX-1400	5VX-1180	AV10X-3850	AV13X-3850
SPZX1540	SPAX1400	SPBX2100	SPCX4500	3VX-1500	5VX-1220	AV10X-4000	AV13X-4000
SPZX1600	SPAX1450	SPBX2200		3VX-1600	5VX-1230	AV10X-4300	AV13X-4300
SPZX1700	SPAX1500	SPBX2360		3VX-1700	5VX-1250	AV10X-4500	AV13X-4500
SPZX1750	SPAX1580	SPBX2500		3VX-1800	5VX-1320	AV10X-4850	AV13X-4850
SPZX1800	SPAX1600	SPBX2580		3VX-1900	5VX-1400		
SPZX1900	SPAX1700	SPBX2650			5VX-1500		
SPZX2000	SPAX1750	SPBX2750			5VX-1600		
SPZX2120	SPAX1800	SPBX3000			5VX-1700		
SPZX2280	SPAX1900	SPBX3150			5VX-1800		
SPZX3000	SPAX1950	SPBX3350					
SPZX3150	SPAX2000	SPBX3500					
SPZX3350	SPAX2120	SPBX3550					
SPZX3500	SPAX2200	SPBX3750					
SPZX3750	SPAX2300	SPBX4000					
SPZX4000	SPAX2360	SPBX4500					
SPZX4500	SPAX2500						
	SPAX2750						
	SPAX3000						
	SPAX3150						
	SPAX3350						
	SPAX3500						
	SPAX3750						
	SPAX4000						
	SPAX4500						

"For all unlisted sizes please consult Fenner"   "For all unlisted sizes please consult Fenner"

Raw Edge Cogged - Wedge Belts

Variable Speed Cogged Belts

Variable speed belts are used in machines which require variations in driven speed during operation.

These belts are moulded cogged in construction. The variable speed belts are wider in proportion to their thickness, hence they must have extreme transverse rigidity to prevent the belt from dishing in. The variable speed belts also require lengthwise flexibility to bend around small sheaves without excess strain that will shorten belt life.

The cogged design of the belt provides excellent flexibility, without sacrificing the crosswise rigidity required to properly position the tensile cords. Highly efficient power transmission allows to smoothly follow speed changes, creating excellent acceleration response. The result is precise speed control, a wide range of speed ratios and long dependable service.

Variable speed cogged belts are used in variety of applications:

1. Bottle filling and washing machines in soft drink bottling plants, Pharmaceutical units and breweries etc.
2. Painting presses
3. Cable industry for extruders and takeup drive.
4. Wire drawing industry
5. Paper Mills.
6. Coal feeders in Cement/ Thermal power plants.

Variable Speed Cogged Belt Range:

Top Width (mm)	Thickness (mm)	Inside Length Range (mm)
23	8	All sizes from 700 to 2260
28	8	All sizes from 700 to 2260
32	10	All sizes from 700 to 2260
38	10	All sizes from 700 to 2260
46	13	All sizes from 700 to 2260
50	14	All sizes from 700 to 2260
55	16	All sizes from 700 to 2260
65	16	All sizes from 700 to 2260

Variator Belts for Textile Ring Frame Application:

62 X 22 X 1745 Li
70 X 22 X 1700 Li

HEMM Belts

Raw Edge Cogged Belts for Heavy Earth Moving Machinery (HEMM) Applications.

These belts find application on Dumpers, Dozers, Excavators, Graders, Loaders, Shovels etc., which are powered by mainly Cummins and Komatsu Engines and also Caterpillar and Kirloskar engines. The main users are Mining and Construction Industry.

Features:
1. Heavy Duty construction to withstand the rigor of hot and dusty HEMM applications.
2. Trapezoidal cogs for flexibility & durability
3. Bottom Fabric
4. Extra Layers of Jacket and Cords.

The HEMM belts conform to SAE standard J-636.

The sections and Dimensions of HEMM belts:

Cummins		Komatsu	
Section	Cross-section (mm)	Section	Cross Section(mm)
11 A	11.9 x 8.0	MX	18.5 x 12.5
13 A	13.6 x 9.4	TX	25.4 x 14.5
15 A	16.7 x 10.3		
17 A	18.3 x 11.0		
20 A	21.5 x 12.7		

Cummins Engines			
11A1092	17A1015	20A1003	20A1460
13A965	17A1118	20A1092	20A1560
15A800	17A1145	20A1130	20A1727
15A889	17A1156	20A1207	20A1791
15A1003	17A1892	20A1245	20A1867
15A1270		20A1283	20A2070
15A1549		20A1308	20A2200
		20A1397	20A2235

BEML Komatsu Engines			
MX30	BX28	CX58	TX59
	BX50	CX68	TX65
	BX56	CX70	TX67
		CX72	TX68
			TX71
			TX78
			TX81

"For all unlisted sizes please consult Fenner"

Taperlock Dual duty Pulleys

Fenner Taperlock Dual duty pulleys are India's First standard range of metric pulleys. They eliminate reboring and keywaying problems since each pulley need not be finished according to different bore and keyway requirements. With Taperlock Bushes, changes in the diameter and position of pulleys are easily made. These metric pulleys are precision machined and have dual duty grooves to perfectly match Fenner "PB" Precision Built V-Belts as well as Fenner Spacesaver Wedge belts.

All Fenner pulleys are manufactured from superior quality cast iron in over 400 standard sizes. Also additional sizes against special requirements and special material grade can be provided. Fenner metric pulleys conform to IS and ISO groove specifications and standard sizes can transmit upto 250 kW of power at 1440 rpm with speed ratios upto 1:7. The products are made available with excellent pre and post-sales service through our branches and distributors across the country.

Range:

Section	Range of PCD	No. of Grooves
A / SPA	67 - 800 mm	1-6 Grooves
B / SPB	100 - 1250 mm	1-10 Grooves
C / SPC	200 - 1250 mm	3-10 Grooves
SPZ	67-800 mm	1-6 Grooves

Fenner Taper-Lock® Bushes

Using Fenner Taper-Lock® Bushes, it is possible for unskilled labour to achieve 'shrink fit' of pulleys, couplings, etc. on to shafts only using a hexagon wrench.

The arrangement of half-threaded holes and longitudinally split tapered bushes ensure maximum grip and fast, easy fitting. Tightening of the screws into the threaded holes in the hub forces the bush into the taper bored components, thereby effectively contracting the bore of the Taper-Lock® Bush until the equivalent of a shrink fit is obtained. Taper-Lock® Bushes are suitable for metric shafts and can also be supplied with Imperial Bores and Keyways.

Advantages :

- No re-boring and keywaying costs.
- Saves time and cost in fitting.
- Eliminates precision taper fitting keys.
- 239 bush size/bore combinations are available.
- Interchangeable between many products.
- Taper bored components can be transferred to other diameter shafts by fitting alternative bore bushes.
- Convenience in dismantling for maintenance and component replacement.
- Accommodates shaft limits of +0.051 mm / -0.127mm.

The benefits of using Taper-Lock® Bushes can be extended to include components which have a parallel bore by incorporating Taper-Lock® Adaptors, Taper-Lock® Bolt-on-Hubs or Taper-Lock® Weld-on-Hubs.
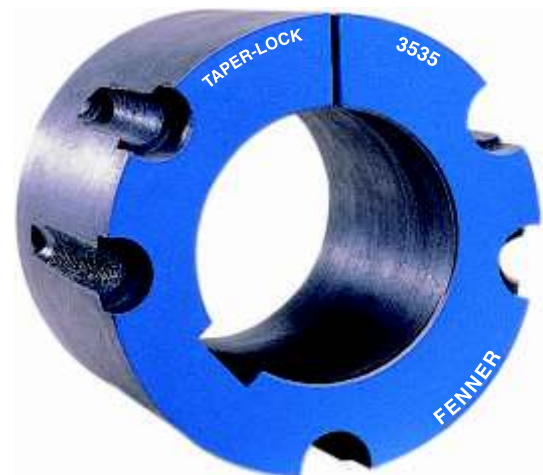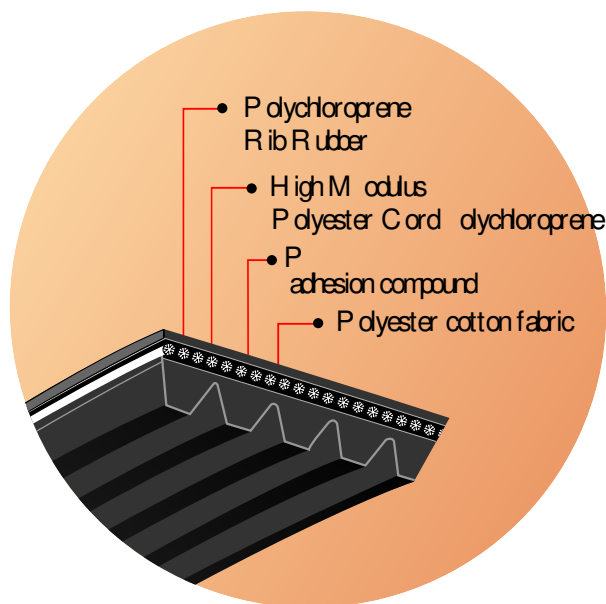
Fenner Multi Pull

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.

- Polychloroprene Rib Rubber
- High Modulus Polyester Cord olychloroprene
- P adhesion compound
- Polyester cotton fabric

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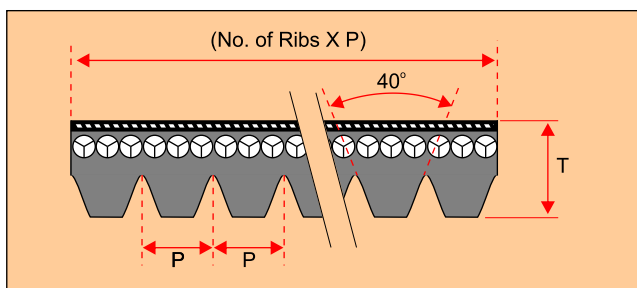
Section	Pitch(p) (mm)	Thickness(t) (mm)	Max .no of Ribs/sleeve
PH	1.60	2.90	24
PJ	2.34	3.80	24, 36, 48
PK	3.56	4.50	24
PL	4.70	7.00	50
PM	9.40	13.50	40

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
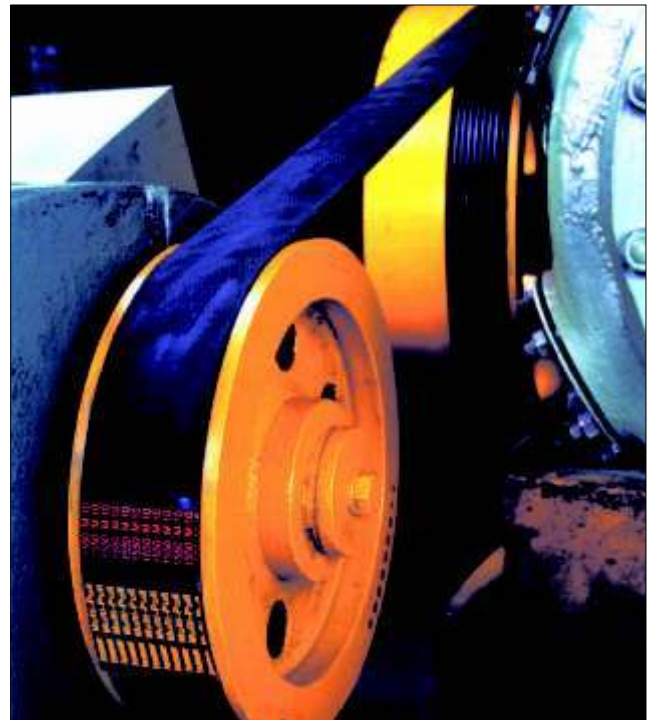
Multi-Pull Poly-V Drive
- Compressor Application

Standard Belt Lengths

PH Effective Length		PJ Effective Length		PK Effective Length		PK Effective Length		PL Effective Length		PM 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	818	32.20	2441	96.10	1803	71.00	3734	147.00
1892	74.50	914	36.00	841	33.10	2479	97.60	1842	72.50	4089	161.00
1905	75.00	940	37.00	871	34.30	2522	99.30	1943	76.50	4191	165.00
1930	76.00	965	38.00	884	34.80	2586	101.80	1981	78.00	4470	176.00
1956	77.00	1016	40.00	902	35.50	2611	102.80	2019	79.50	4648	183.00
1969	77.50	1054	41.50	914	36.00	2680	105.50	2070	81.50	5029	198.00
1981	78.00	1092	43.00	927	36.50	2835	111.60	2096	82.50	5410	213.00
1994	78.50	1105	43.50	940	37.00	2845	112.00	2134	84.00	6121	241.00
2007	79.00	1118	44.00	955	37.60	2896	114.00	2197	86.50	6883	271.00
2032	80.00	1130	44.50	970	38.20	2921	115.00	2235	88.00	7645	301.00
2057	81.00	1143	45.00	991	39.00	2997	118.00	2324	91.50	8407	331.00
2083	82.00	1168	46.00	1016	40.00			2362	93.00	9169	361.00
2108	83.00	1194	47.00	1031	40.60			2477	97.50	9931	391.00
2134	84.00	1219	48.00	1054	41.50			2515	99.00	10693	421.00
2159	85.00	1232	48.50	1080	42.50			2705	106.50	12217	481.00
2184	86.00	1245	49.00	1110	43.70			2743	108.00	13741	541.00
2210	87.00	1270	50.00	1146	45.10			2845	112.00	13970	550.00
2235	88.00	1283	50.50	1166	45.90			2896	114.00	13995	551.00
2261	89.00	1295	51.00	1194	47.00			2921	115.00		
2286	90.00	1308	51.50	1229	48.40			2997	118.00		
2311	91.00	1321	52.00	1257	49.50			3086	121.50		
2337	92.00	1346	53.00	1295	51.00			3124	123.00		
2362	93.00	1372	54.00	1334	52.50			3289	129.50		
2388	94.00	1397	55.00	1359	53.50			3327	131.00		
2413	95.00	1422	56.00	1387	54.60			3493	137.50		
2438	96.00	1473	58.00	1425	56.10			3696	145.50		
2464	97.00	1549	61.00	1461	57.50			4051	159.50		
2489	98.00	1588	62.50	1496	58.90			4191	165.00		
2515	99.00	1651	65.00	1529	60.20			4470	176.00		
2540	100.00	1664	65.50	1560	61.40			4623	182.00		
		1753	69.00	1626	64.00			5029	198.00		
		1854	73.00	1659	65.30			5385	212.00		
		1892	74.50	1681	66.20			6096	240.00		
		1905	75.00	1725	67.90			6121	241.00		
		1956	77.00	1760	69.30			6883	271.00		
		1969	77.50	1796	70.70			7645	301.00		
		1994	78.50	1829	72.00			8407	331.00		
		2083	82.00	1862	73.30			9169	361.00		
		2210	87.00	1900	74.80			9931	391.00		
		2261	89.00	1930	76.00			10693	421.00		
		2286	90.00					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.
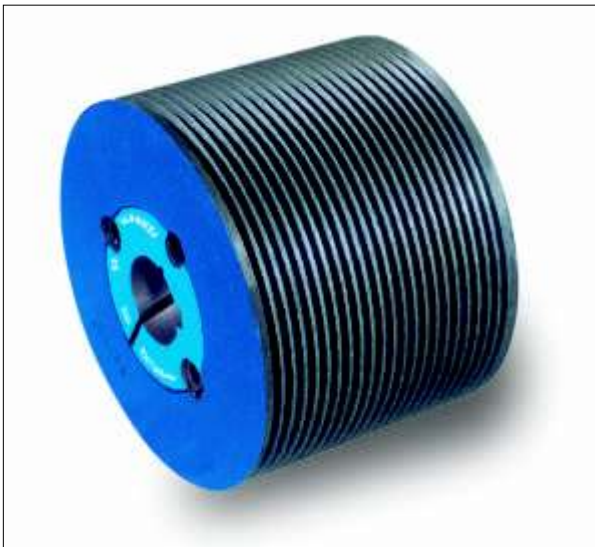
Designation of Belts

Metric :   6   PJ 1308

No.of ribs

Belt profile

Effective length (mm)

Imperial :   515   PJ   6

Effective length
(51.5 Inches)

Belt profile

No.of ribs

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.

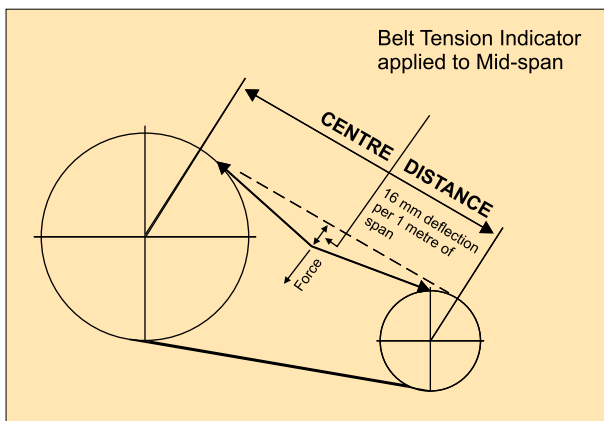| Section	Minimum Diameter (mm)	
	Idler on Inside	Idler on Outside
PJ	20	40
PK	38	75
PL	100	200
PM	224	375

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 how-ever 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.

Belt Tension Indicator applied to Mid-span

CENTRE DISTANCE

16 mm deflection per 1 metre of span

Force

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

1. Shafts are not parallel to one another.

2. Shafts are not in correct alignment although they appear parallel when seen from above.

End view of the above.

3. Shafts are parallel and in alignment but pulleys are not in alignment.

4. 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).

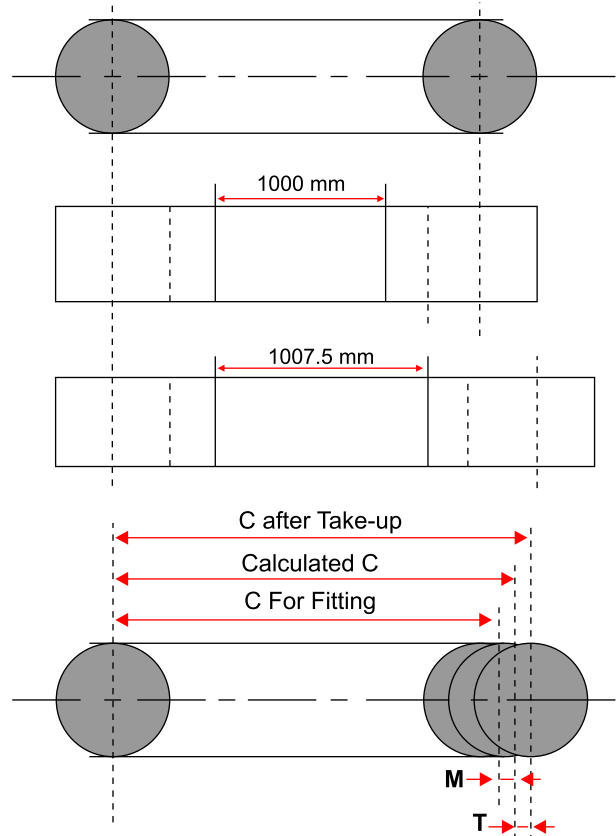Shaft parallelism must be kept within 2 degree.

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%

Multi-Pull Poly-V Drive

1000 mm

1007.5 mm

C after Take-up

Calculated C

C For Fitting

M

T

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
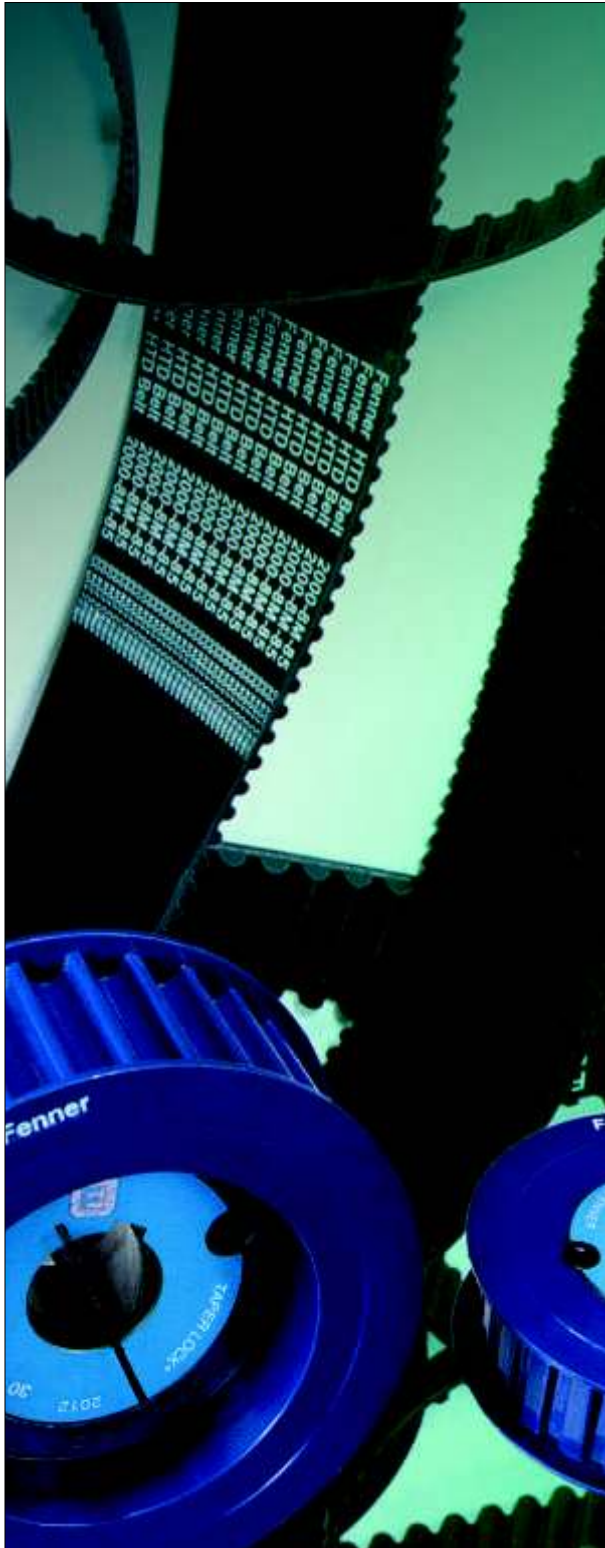
Synchronous Belts

Fenner Synchronous Belt Drives offer a comprehensive and integrated package of Belts of the highest quality and power capacity along with a versatile selection of standard Taper Lock Pulleys covering a variety of applications in the area of power transmission.

Fenner Synchronous belt range comprises Timing, High Torque Drive (HTD) and Fenner Extra Torque (FXT) belts covering drives upto 50 kW, 200 kW & 500 kW respectively.

The original trapezoidal cross section of timing belt has under gone considerable development culminating first in the introduction of High Torque Drive belts and then Torque Drive Plus belts with their associated pulleys. The HTD & FXT belts have curvilinear tooth profile which enables the strength of high tensile load bearing cords to be fully utilised. The shape of teeth gives more uniform stress distribution and allows higher overall loading. The belt teeth are precisely formed and accurately spaced to ensure correct engagement with teeth on the pulleys. Tooth root lines lie substantially on pitch line, thus circular pitch is not altered while flexing.

Accurately spaced polychloroprene teeth ensure smooth engagement with the pulley grooves. HTD & FXT Belt Drives do not depend on the thickness to develop high tensile strength. Being thin, heat build up is minimised without sacrificing inherent power transmission capacity. Synchronous Belt Drives work over a range of shaft speeds maintaining a high transmission efficiency and constant angular velocity. Fenner Synchronous Drives extend these advantages to higher powers and torques, making possible designing of more compact drives.

Fenner Synchronous Belt Drives use Fenner Timing Pulleys provided with the unique Taper Lock System used widely the world over for fixing pulleys on shafts.

Features

- Positive non-slip drive maintains exact speed ratio without creep or slip.
- Minimum heat build up results in cooler operations.
- Do not stretch in use and are corrosion free, clean operation makes them ideal for contamination sensitive applications.
- Moderate oil and heat resistant
- Can withstand temperatures between - 20° C to 100° C.

Advantages

- No maintenance, no lubrication is required. No re-tensioning. No need for adjustable motor bases. Reduced operating cost.
- Wide range of applications from FHP to 500 kW, speeds up to 20,000 rpm, speed ratio up to 20:1.
- Compact design with lesser weight. High flexibility allows the use of very small pulleys.
- Positioning accuracy at constant driven speeds with efficiencies up to 99%.
- Smooth operation and constant angular velocity with no jerk or vibration.
- Reduced belt tension. Longer drive bearing life.
- Optimized tooth design providing optimum meshing efficiency, energy loss reduced to an absolute minimum.
- Reduced noise levels.

Construction

Backing: A durable flexible backing made from polychloroprene that encases the load carrying tensile member. It protects the cords from oil, moisture also from frictional wear if power is transmitted from back of belt.

Tensile member: Fibreglass cord tensile member for high tensile strength exhibits excellent flex life and high resistance to elongation.

Polychloroprene backing

Tension member
Glass cord / Aramide

Polychloroprene Teeth

Polyamide fabric
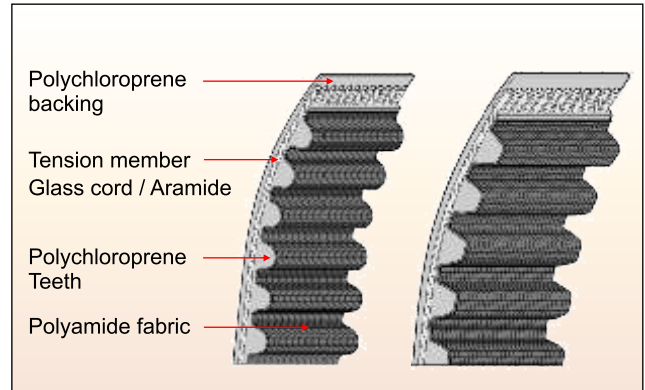
Teeth: Teeth moulded with backing made of shear resistant resistant polychloroprene compound. Precisely formed and accurately spaced to assure correct engagement with the pulley grooves.

Tooth Facing: Tough, wear resistant nylon fabric protects the tooth and gives low co-efficient of friction for smooth pulley interaction.

Range

- **Timing Belts:** Available in standard pitch MXL, XL, L, H, XH & XXH.

- **High Torque Drive Belts (HTD):** Available in standard pitch 3M, 5M, 8M, 14M & 20M.

- **Fenner Extra Torque Belts (TDP):** Available in standard pitch 8 M FXT & 14 M FXT.

- **Other ranges include :**
  - T2.5, T5, T10 & T20 series belts.
  - Double sided Timing and HTD Belts.

Timing Belts Range

'XL' Pitch 1/5"

Standard widths :
1/4" (Code 025)
5/16" (Code 031)
3/8" (Code 037)
1/2" (Code 050)
3/4" (Code 075)

Length Code	Pitch Length (inch)	No.of Teeth
60XL	6.0	30
70XL	7.0	35
80XL	8.0	40
90XL	9.0	45
94XL	9.4	47
100XL	10.0	50
110XL	11.0	55
120XL	12.0	60
128XL	12.8	64
130XL	13.0	65
140XL	14.0	70
142XL	14.2	71
150XL	15.0	75
160XL	16.0	80
170XL	17.0	85
180XL	18.0	90
190XL	19.0	95
200XL	20.0	100
210XL	21.0	105
212XL	21.2	106
220XL	22.0	110
230XL	23.0	115
240XL	24.0	120
250XL	25.0	125
260XL	26.0	130
280XL	28.0	140
290XL	29.0	145
300XL	30.0	150
390XL	39.0	195
424XL	42.4	212
450XL	45.0	225

'L' Pitch 3/8"

Standard widths :
1/2" (Code 050)
3/4" (Code 075)
1" (Code 100)
1 ½" (Code 150)
2" (Code 200)

Length Code	Pitch Length (inch)	No.of Teeth
124L	12.375	33
150L	15.000	40
154L	15.375	41
165L	16.500	44
173L	17.250	46
187L	18.750	50
191L	19.125	51
203L	20.250	54
210L	21.000	56
225L	22.500	60
240L	24.000	64
244L	24.375	65
255L	25.500	68
270L	27.000	72
285L	28.500	76
300L	30.000	80
322L	32.250	86
337L	33.750	90
345L	34.500	92
367L	36.750	98
390L	39.000	104
420L	42.000	112
439L	43.875	117
450L	45.000	120
480L	48.000	128
510L	51.000	136
540L	54.000	144
600L	60.000	160
660L	66.000	176
720L	72.000	192
765L	76.500	204

'H' Pitch 1/2"

Standard widths :
3/4" (Code 075)
1" (Code 100)
1 ½" (Code 150)
2" (Code 200)
3" (Code 300)

Length Code	Pitch Length (inch)	No.of Teeth
200H	20.0	40
220H	22.0	44
240H	24.0	48
255H	25.5	51
270H	27.0	54
300H	30.0	60
330H	33.0	66
340H	34.0	68
350H	35.0	70
360H	36.0	72
375H	37.5	75
390H	39.0	78
395H	39.5	79
400H	40.0	80
420H	42.0	84
450H	45.0	90
465H	46.5	93
480H	48.0	96
510H	51.0	102
540H	54.0	108
570H	57.0	114
600H	60.0	120
630H	63.0	126
660H	66.0	132
700H	70.0	140
725H	72.5	145
750H	75.0	150
800H	80.0	160
810H	81.0	162
830H	83.0	166
850H	85.0	170
900H	90.0	180
980H	98.0	196
1000H	100.0	200
1100H	110.0	220
1140H	114.0	228
1200H	120.0	240
1250H	125.0	250
1400H	140.0	280

'XH' Pitch 7/8"

Standard widths :
2" (Code 200)
3" (Code 300)
4" (Code 400)
5" (Code 500)

Length Code	Pitch Length (inch)	No.of Teeth
464XH	46.375	53
507XH	50.75	58
560XH	56.00	64
630XH	63.00	72
700XH	70.00	80
770XH	77.00	88
840XH	84.00	96
980XH	98.00	112
1120XH	112.00	128
1260XH	126.00	144
1400XH	140.00	160
1540XH	154.00	176
1750XH	175.00	200

Synchronous Belts

High Torque Drive (HTD) and Fenner Extra Torque (FXT) Belts

3M		
3 mm Pitch **Standard widths** **6mm, 9mm,** **15mm, 20mm &** **30mm**		
Length Code	Pitch Length (mm)	No.of Teeth
150-3M	150	50
174-3M	174	58
177-3M	177	59
201-3M	201	67
210-3M	210	70
225-3M	225	75
255-3M	255	85
264-3M	264	88
276-3M	276	92
300-3M	300	100
312-3M	312	104
384-3M	384	128
405-3M	405	135
495-3M	495	165
510-3M	510	170
555-3M	555	185
633-3M	633	211

5M		
5 mm Pitch **Standard widths** **9mm, 15mm,** **20mm, 25mm &** **30mm**		
Length Code	Pitch Length (mm)	No.of Teeth
210-5M	210	42
245-5M	245	49
280-5M	280	56
305-5M	305	61
400-5M	400	80
450-5M	450	90
500-5M	500	100
550-5M	550	110
575-5M	575	115
600-5M	600	120
635-5M	635	127
670-5M	670	134
710-5M	710	142
835-5M	835	167
925-5M	925	185
950-5M	950	190

8M		
8 mm Pitch **Standard widths** **20mm, 30mm,** **50mm &** **85mm**		
Length Code	Pitch Length (mm)	No.of Teeth
424-8M	424	53
480-8M	480	60
512-8M	512	64
536-8M	536	67
560-8M	560	70
600-8M	600	75
624-8M	624	78
632-8M	632	79
640-8M	640	80
680-8M	680	85
720-8M	720	90
760-8M	760	95
800-8M	800	100
840-8M	840	105
880-8M	880	110
960-8M	960	120
1000-8M	1000	125
1040-8M	1040	130
1120-8M	1120	140
1152-8M	1152	144
1200-8M	1200	150
1224-8M	1224	153
1264-8M	1264	158
1272-8M	1272	159
1280-8M	1280	160
1360-8M	1360	170
1440-8M	1440	180
1520-8M	1520	190
1600-8M	1600	200
1760-8M	1760	220
1800-8M	1800	225
2000-8M	2000	250
2104-8M	2104	263
2240-8M	2240	280
2400-8M	2400	300
2600-8M	2600	325
2800-8M	2800	350
3200-8M	3200	400
4400-8M	4400	550
5600-8M	5600	700

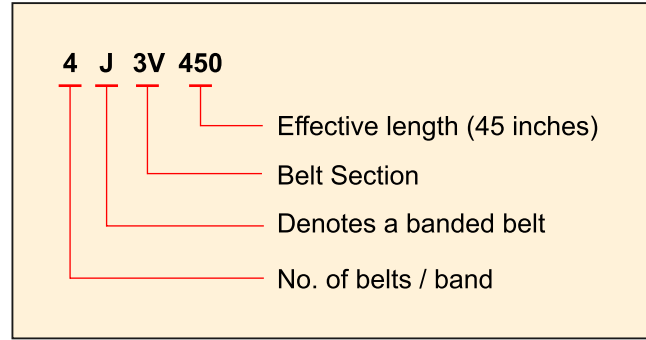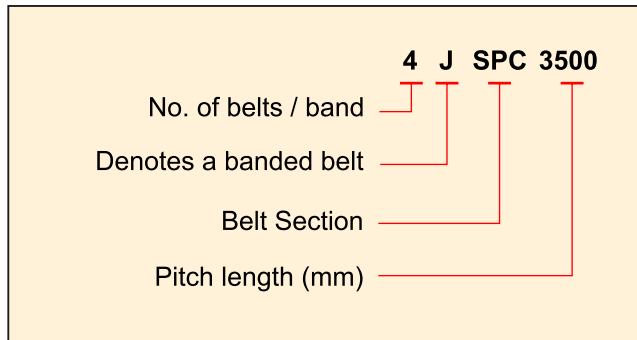| 14M		
14 mm Pitch **Standard widths** **40mm, 55mm,** **85mm, 115mm &** **170mm.**		
Length Code	Pitch Length (mm)	No.of Teeth
966-14M	966	69
1050-14M	1050	75
1190-14M	1190	85
1400-14M	1400	100
1540-14M	1540	110
1610-14M	1610	115
1778-14M	1778	127
1890-14M	1890	135
2100-14M	2100	150
2310-14M	2310	165
2450-14M	2450	175
2590-14M	2590	185
2660-14M	2660	190
2800-14M	2800	200
3150-14M	3150	225
3360-14M	3360	240
3500-14M	3500	250
3850-14M	3850	275
4326-14M	4326	309
4578-14M	4578	327
4760-14M	4760	340

For sizes in MXL, XXH, 20M, T2.5, T5, T10, T20 & Double sided Timing & HTD Belts and Fenner Extra Torque belts, please consult Fenner.

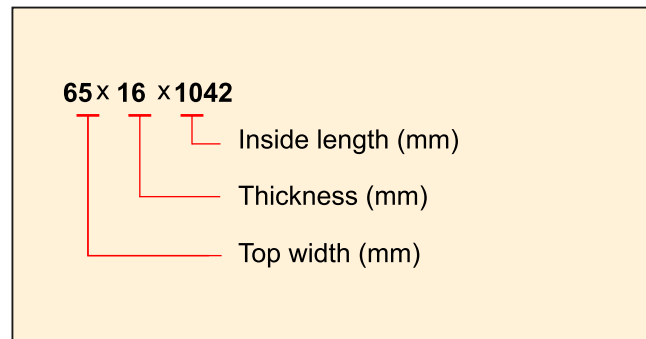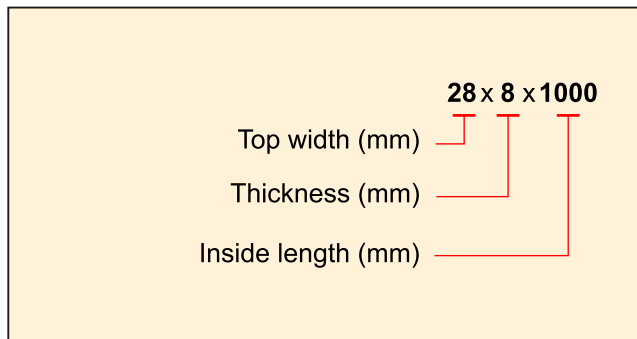Sizes not listed can also be supplied subject to minimum order Quantity.
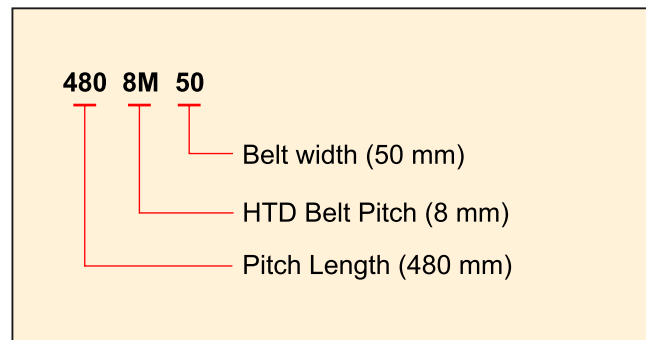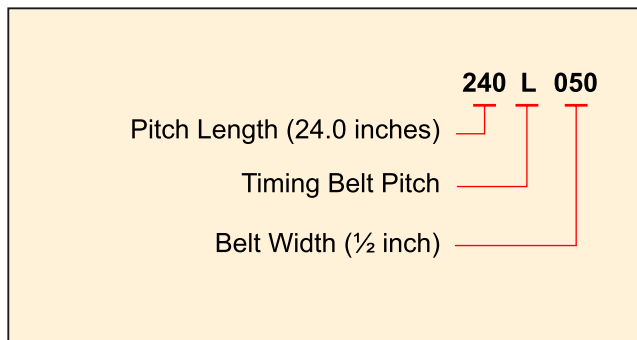
Designation of Belts

Banded Belts

4　J　SPC　3500

- No. of belts / band
- Denotes a banded belt
- Belt Section
- Pitch length (mm)

4　J　3V　450

- Effective length (45 inches)
- Belt Section
- Denotes a banded belt
- No. of belts / band

Variable Speed Cogged Belts

28 x 8 x 1000

- Top width (mm)
- Thickness (mm)
- Inside length (mm)

65 × 16 × 1042

- Inside length (mm)
- Thickness (mm)
- Top width (mm)

Timing & HTD Belts

240　L　050

- Pitch Length (24.0 inches)
- Timing Belt Pitch
- Belt Width (½ inch)

480　8M　50

- Belt width (50 mm)
- HTD Belt Pitch (8 mm)
- Pitch Length (480 mm)

Multi-pull Poly V-Belts

METRIC :

6　PJ　1308

- No. of ribs
- Belt profile
- Effective length (mm)

IMPERIAL :

515　PJ　6

- No. of ribs
- Belt profile
- Effective length (51.5 Inches)

Wrapped V-Belts- Classical
Standards: IS 2494, RMA IP 20, ISO 4184, BS 3790, API 1B

	Belt Width 'W' (mm)	Belt Thickness 'T' (mm)	Outside Length La (mm)		Pitch Length Lp (mm)		Inside Length Li (mm)
13/A	13	8	La = Lp+20	La = Li+50	Lp = Li+33	Lp = La-20	
17/B	17	11	La = Lp+26	La = Li+69	Lp = Li+43	Lp = La-26	
22/C	22	14	La = Lp+32	La = Li+88	Lp = Li+56	Lp = La-32	Nominal Length
32/D	32	19	La = Lp+37	La = Li+119	Lp = Li+82	Lp = La-37	
38/E	38	23	La = Lp+50	La = Li+145	Lp = Li+95	Lp = La+50	

Wrapped V-Belts- Wedge
Standards: ISO 4184, RMA IP 22, BS 3790, API 1B

SPZ	10	8	La = Lp+13	La = Li +50	Nominal Length		Li = Lp-37
SPA	13	10	La = Lp+17	La = Li +63			Li = Lp-46
SPB	17	14	La = Lp+32	La = Li +88			Li = Lp-56
SPC	22	18	La = Lp+32	La = Li +113			Li = Lp-81

Wrapped V-Belts
High Capacity Narrow V-Belts
(Space Saver Belts)
Standards: ISO 4184, RMA IP 22 BS 3790, API 1B

3 V	10	8	La = Lp +17	La = Li +63		Nominal Length	Li = La -63
5 V	17	14	La = Lp +32	La = Li +88			Li = La -88
8 V	25	23	La = Lp +32	La = Li +113			Li = La -113

Raw Edge Cogged-Industrial
Classical Section
Standards : DIN 7753, SAE J 636

AX	13	8	La = Lp +18	La = Li +57	Lp = Li + 33		Nominal Length
BX	17	11	La = Lp +22	La = Li +82	Lp = Li + 43		
CX	22	14	La = Lp +30	La = Li +107	Lp = Li + 56		

Raw Edge Cogged-Industrial
Wedge Section
Standards : DIN 7753, SAE J 636

SPZX / XPZ	10	8	La = Lp +13	La = Li +51	Nominal Length		Lp = Li+38
SPAX / XPA	13	10	La = Lp +18	La = Li +57			Lp = Li +39
SPBX / XPB	17	14	La = Lp +22	La = Li +82			Lp = Li +60
SPCX / XPC	22	18	La = Lp +30	La = Li +107			Lp = Li +77

Multi-Pull Poly V Belts
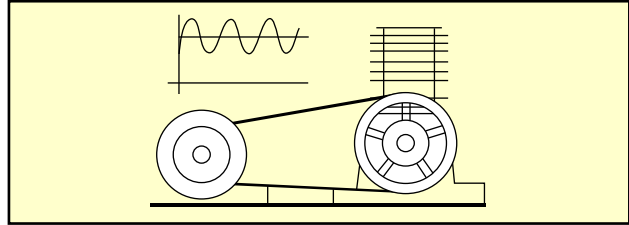Standards : ISO 9982, RMA IP 26, DIN 7867

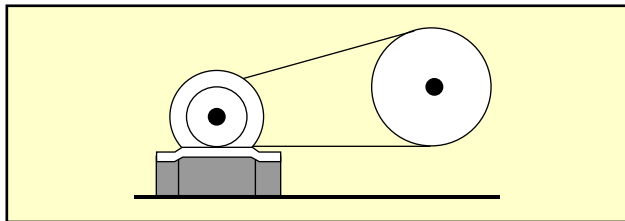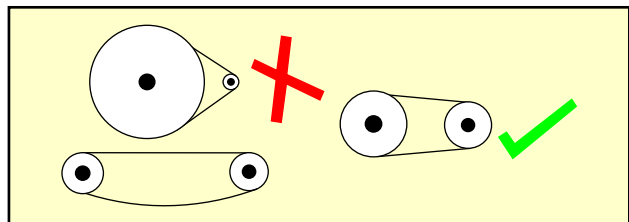|	Rib Pitch (mm)	Belt Thickness (mm)		Effective Length Le (mm)	Pitch Length Lp (mm)	
PJ	2.34	3.8	Lp = Le + 8	Nominal Length		
PK	3.56	4.5	Lp = Le + 10			
PL	4.70	7.0	Lp = Le + 19			
PM	9.40	13.5	Lp = Le + 25			

How to get maximum productivity from your Fenner V Belt drives

1. Drive designing : When assessing the power requirements of the drive, do not forget to apply the appropriate service factor for the combination of prime mover and driven machine. Consider not only the running characteristics of the machines (i.e smooth, heavy shock, pulsating) but also any normal loads applied during starting by high torque motors, or the inertia of the driven machine.
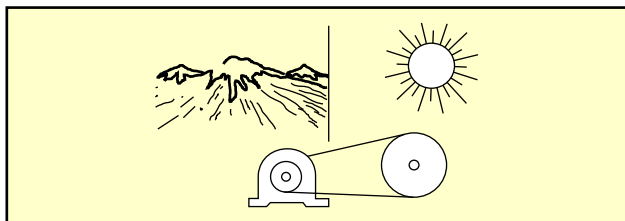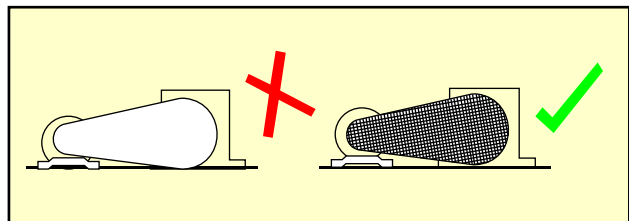
3. Belt Length Selection: For any combination of pulley diameters, a suitable length of belt should be chosen to maintain an adequate arc of contact on the small pulley. Unnecessarily long belts require more take-up adjustment and can cause problems with the catenary sag of the slack side of the drive. Choose a drive site which provides adequate room for belt tensioning procedures, a part of installation and maintenance routines.

5. Belt Guards: Drives should not be completely enclosed by guards. Open mesh guards which allow normal air circulation but prevent any accidental contact with the drive are recommended.

7. Jockey Pulley Tensioners: On fixed centre drives, it is the usual practice to tension the belts by Jockey Pulleys. If using a grooved Jockey Pulley, place it on inside of the V-Belts, mounted as near as possible to the larger pulley and on the slack side of the drive. Jockey Pulley diameters should be at least equal to that of the smaller pulley of the drive, ideally a little larger.

2. Pulley Diameter selection: Pulley diameters should be appropriate to the other components of the drive. Minimum diameter pulleys cause an unnecessary flexing of the belts and may lead to premature bearing failure on the machines. Large pulleys have obvious space and additional cost disadvantages.

4. Mounting of Belt Drive: The base-plate or mounting for the drive should be rigid to prevent variations in belt tension under load. Rubber mountings must not be used with either driven or driver machine. The base-plate should be designed to allow belt tensioning and enable the drive alignment to be easily maintained.

6. Belt Storage: Belts should not be subjected to extremes of heat and cold. Standard belts can tolerate a considerable range of temperatures between 18° C and 60° C without damage.

Power Transmission Accessories

Taper Lock Bush Pulleys

Standard Imperial Pulleys

Couplings & Shaft Fixings

Gear Boxes & Geared Motors