# Poly-V Pulleys & Belt Drives

Poly-V is a multi rib belt drive whose special construction allows it to be used with very small pulley diameters, reducing noise and vibrations. It solves many drive problems in a number of applications such as machine tools, wood working machines, fitness machines, compressors, fans etc. SIT pulleys have been designed to guarantee optimal drive performances and life. They are ideal high ratio or high torque drives. With only 1 belt, tensioning is easy and you do not have to worry about matching belts. For further information or help in selecting a drive contact Naismith Engineering.

Characteristics:
- Suitable for transmitting power up to approx. 600 kW
- Wide range of section for every drive requirement: J , L & M
- Suitable for small size pulleys diameter (20 mm), achieving very high peripheral speed (up to 60 m/s)
- The belt can counter flex and work on the backside
- Wide range of pulleys for taper bush available from stock
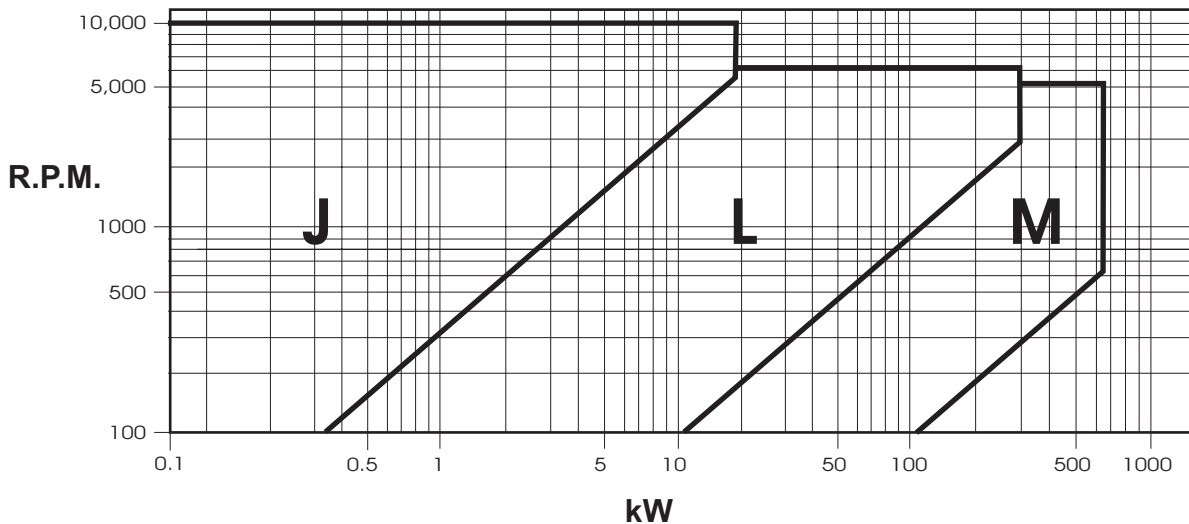
Identifying a Poly-V Pulley

To identify a Poly-V pulley the following information must be known:

Bore: Naismith Engineering carries small diameter pulleys in pilot bore and the larger diameters in taper bore.

Pitch: This is the distance from the centre of one groove to the centre of the next groove. Naismith Engineering stock the pitch sizes of 'J' and 'L'. 'M' section pulleys available on request.

Grooves: Number of Grooves

O.D.: The outside diameter of the pulley

PYB063J4

Poly V / J Section
O.D.   4 Grooves
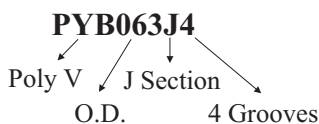
Identifying a Poly-V Belt

To size up a Poly-V belt the following information must be known:

Pitch: This is the distance from the centre of one groove to the centre of the next groove. Naismith Engineering stock the pitch sizes of 'J' , 'L' & 'M'.

Grooves: Number of Grooves

Pitch Length: The pitch length of the belt expressed in inches.

-815L12

L Section
81.5" Long   12 Ribs
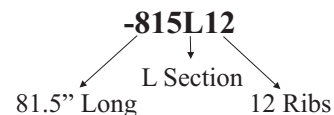
Features of Poly-V Drives

Poly-V Drives are the compact alternative to the standard Vee-Pulley Drives. Naismith Engineering carry all of the Poly-V pulleys and belts in this Catalogue on the shelf and if special diameter pulleys are required they can be made in our factory.

The ribbed belt combines the high flexibility of flat belts with the high performance of V-belts. The V-shaped parallel ribs are made from a wear-resistant rubber compound. The high strength tension cord is designed for the many applications of ribbed belt. It is embedded in a rubber adhesive mixture and covers the entire width of the ribbed belt. Fiber reinforced, wear resistant rubber compounds ensure quiet operation, oil and heat resistance and a long belt life.

Other features of the Poly-V drive systems include being able to transmit up to 600kW with just one belt. Poly-V belts can be up to 98% efficient. High speed ratios can be achieved, up to 20:1 with off the shelf sizes and up to 60:1 with special pulleys. Due to the single belt design, uniform tension is put on the belt across all grooves. Noise levels can also be reduced by changing over to Poly-V drives. Less maintenance is required on Poly-V drives and you do not have the problem of one belt wearing faster than the other because there is only one belt.

All of the pulleys that Naismith Engineering carry are made in Cast Iron, the smaller pulleys have blank or pilot bores while the larger ones are machined to suit a taper lock. Poly-V belts should be run on grooved pulleys for the best transmission of power, however flat pulleys can be used as idlers or even drive pulleys if required. Due to the flexibility of the Poly-V belt, flat drive pulleys can also be placed on the back side of the belt to make quite complicated serpentine drives all driven from the one drive shaft. It should be noted that when using a flat pulley the transmittable torque will be reduced.

'J' & 'L' Section Poly-V Belts
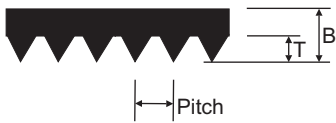
	Pitch	Thickness (B)	Height (T)
'J'	2.34	3.50	1.60
'L'	4.70	7.00	3.80

'J' Section

Stock No.	Effective Length	Stock No.	Effective Length
-110J	280.0	-473J	1200.0
-130J	330.0	-480J	1222.0
-140J	356.0	-490J	1244.0
-150J	381.0	-500J	1270.0
-160J	406.0	-515J	1309.0
-170J	432.0	-520J	1321.0
-180J	457.0	-534J	1355.0
-190J	483.0	-550J	1397.0
-200J	508.0	-562J	1428.0
-220J	559.0	-580J	1473.0
-230J	584.0	-610J	1549.0
-240J	610.0	-630J	1600.0
-260J	660.0	-650J	1651.0
-280J	711.0	-690J	1752.0
-285J	723.0	-730J	1854.0
-300J	762.0	-752J	1910.0
-320J	813.0	-760J	1930.0
-329J	836.0	-770J	1956.0
-340J	864.0	-785J	1992.0
-360J	914.0	-820J	2083.0
-369J	938.0	-870J	2210.0
-376J	955.0	-920J	2337.0
-380J	965.0	-980J	2489.0
-400J	1016.0	Standard widths of:-	
-430J	1092.0	4 Ribs	
-435J	1105.0	8 Ribs	
-442J	1123.0	12 Ribs	
-445J	1130.0	16 Ribs	
-453J	1150.0	Off standard widths are	
-460J	1168.0	available on request.	

200J8 = 20.0" (508mm Long), 8 Ribs

'L' Section

Stock No.	Effective Length	Stock No.	Effective Length
-500L	1270.0	1120L	2845.0
-525L	1333.0	1140L	2895.0
-540L	1371.0	1150L	2921.0
-550L	1397.0	1180L	2997.0
-560L	1422.0	1215L	3086.0
-615L	1562.0	1230L	3124.0
-635L	1613.0	1295L	3289.0
-655L	1664.0	1310L	3327.0
-675L	1715.0	1375L	3492.0
-695L	1764.0	1455L	3696.0
-710L	1803.0	1595L	4051.0
-725L	1841.0	1650L	4191.0
-765L	1943.0	1760L	4470.0
-780L	1981.0	1820L	4622.0
-795L	2020.0	1980L	5029.0
-815L	2070.0	2120L	5385.0
-825L	2096.0	2400L	6096.0
-840L	2134.0	Standard widths of:-	
-865L	2197.0	6 Ribs	
-880L	2235.0	8 Ribs	
-915L	2324.0	10 Ribs	
-930L	2362.0	12 Ribs	
-975L	2476.0	16 Ribs	
-990L	2515.0	20 Ribs	
1065L	2705.0	Off standard widths are	
1080L	2743.0	available on request.	

840L16 = 84.0" (2134mm Long), 16 Ribs

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'M' Section Poly-V Belts
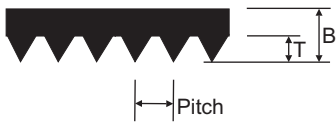
	Pitch	Thickness (B)	Height (T)
'M'	9.40	12.00	7.30

'M' Section

Stock No.	Effective Length	Stock No.	Effective Length
-900M	2286.0	2710M	6883.0
-940M	2388.0	3010M	7646.0
-990M	2515.0	3310M	8408.0
1060M	2693.0	3610M	9169.0
1115M	2832.0	3910M	9931.0
1150M	2921.0	4210M	10693.0
1185M	3010.0	4810M	12217.0
1230M	3124.0	5410M	13741.0
1310M	3327.0	6010M	15266.0
1390M	3531.0	Standard widths of:-
1470M	3734.0	8 Ribs
1610M	4089.0	12 Ribs
1650M	4191.0	16 Ribs
1760M	4470.0	20 Ribs
1830M	4648.0	24 Ribs
1980M	5029.0	Off standard widths are
2130M	5410.0	available on request.
2410M	6121.0	

1310M8 = 131.0" (3327mm Long), 8 Ribs

'J' Section Poly-V Pulleys 4 Groove

Type 1
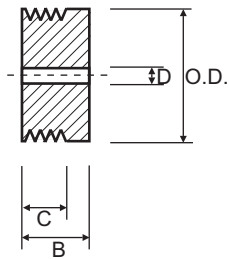
Type 6
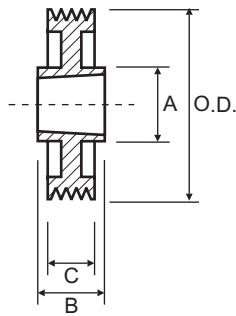

Type 7
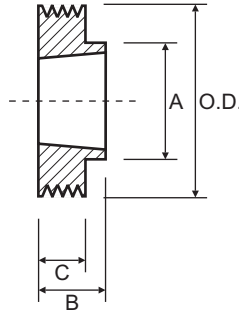
Type 8
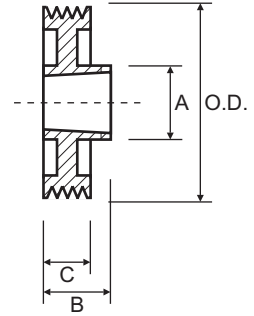
Type 9
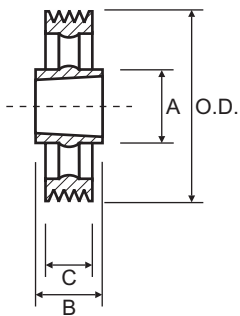
	4 Groove					C = 13.5		4 Groove					C = 13.5
Part No.	O.D.	Type	Bush	A	B	D	Part No.	O.D.	Type	Bush	A	B	D
PYB020J4	20.0	1	-	-	22.5	5.0	PYB100J4	100.0	7	1610	82.0	26.0	-
PYB025J4	25.0	1	-	-	22.5	5.0	PYB106J4	106.0	7	1610	88.0	26.0	-
PYB030J4	30.0	1	-	-	22.5	9.5	PYB112J4	112.0	7	1610	90.0	26.0	-
PYB035J4	35.0	1	-	-	22.5	9.5	PYB118J4	118.0	7	1610	90.0	26.0	-
PYB040J4	40.0	1	-	-	22.5	12.0	PYB125J4	125.0	8	1610	90.0	26.0	-
PYB045J4	45.0	1	-	-	22.5	12.0	PYB132J4	132.0	8	1610	90.0	26.0	-
PYB050J4	50.0	1	-	-	22.5	12.0	PYB140J4	140.0	8	1610	90.0	26.0	-
PYB056J4	56.0	7	1108	50.0	23.0	-	PYB160J4	160.0	8	2012	110.0	32.0	-
PYB060J4	60.0	7	1108	50.0	23.0	-	PYB180J4	180.0	6	2012	110.0	32.0	-
PYB063J4	63.0	7	1108	50.0	23.0	-	PYB200J4	200.0	6	2012	110.0	32.0	-
PYB067J4	67.0	7	1108	50.0	23.0	-	PYB224J4	224.0	6	2012	110.0	32.0	-
PYB071J4	71.0	7	1108	60.0	23.0	-	PYB250J4	250.0	9	2012	110.0	32.0	-
PYB075J4	75.0	7	1108	60.0	23.0	-	PYB280J4	280.0	9	2012	110.0	32.0	-
PYB080J4	80.0	7	1310	70.0	26.0	-	PYB315J4	315.0	9	2012	110.0	32.0	-
PYB085J4	85.0	7	1310	70.0	26.0	-	PYB355J4	355.0	9	2517	120.0	45.0	-
PYB090J4	90.0	7	1610	82.0	26.0	-	PYB400J4	400.0	9	2517	120.0	45.0	-
PYB095J4	95.0	7	1610	82.0	26.0	-							

'J' Section Poly-V Pulleys 8 Groove

Type 1

Type 3

Type 6

Type 7

Type 8

Type 9
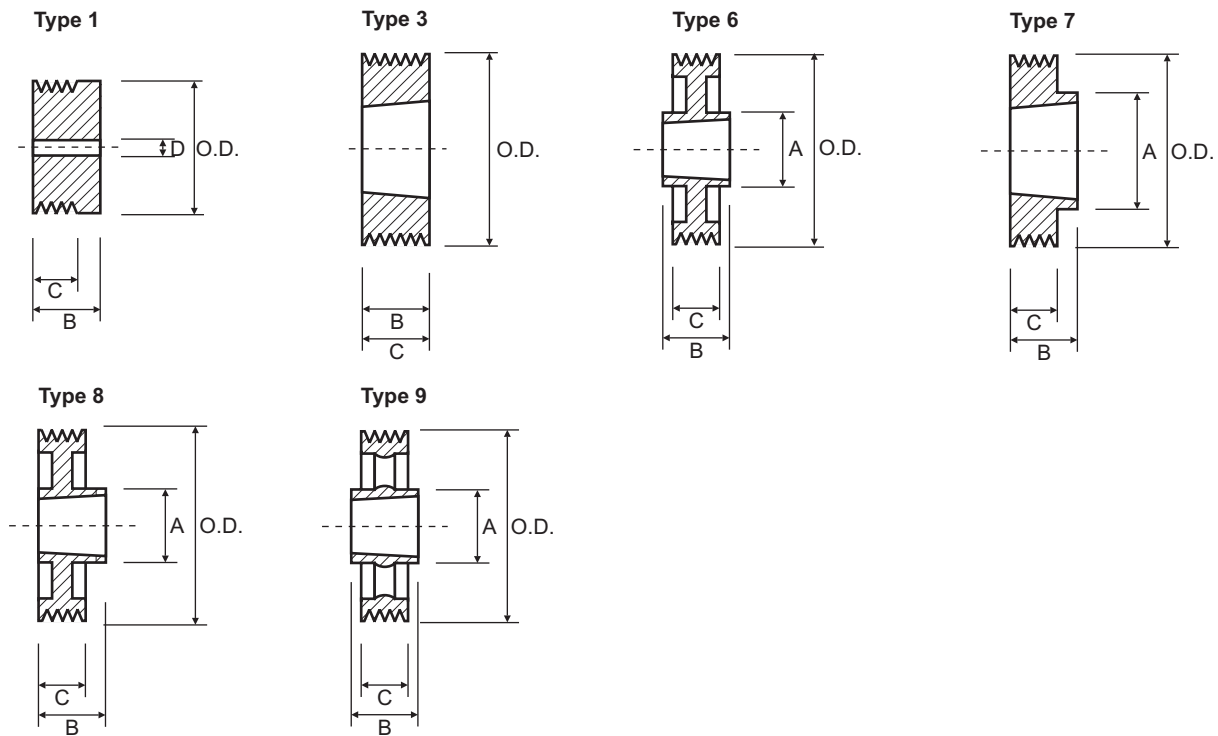
8 Groove							8 Groove					
						C = 23.0						C = 23.0
Part No.	O.D.	Type	Bush	A	B	D	Part No.	O.D.	Type	Bush	A	B	D
PYB020J8	20.0	1	-	-	32.0	5.0	PYB100J8	100.0	7	1610	82.0	26.0	-
PYB025J8	25.0	1	-	-	32.0	5.0	PYB106J8	106.0	7	1610	88.0	26.0	-
PYB030J8	30.0	1	-	-	32.0	9.5	PYB112J8	112.0	7	1610	90.0	26.0	-
PYB035J8	35.0	1	-	-	32.0	9.5	PYB118J8	118.0	7	1610	90.0	26.0	-
PYB040J8	40.0	1	-	-	32.0	12.0	PYB125J8	125.0	8	1610	90.0	26.0	-
PYB045J8	45.0	1	-	-	32.0	12.0	PYB132J8	132.0	8	1610	90.0	26.0	-
PYB050J8	50.0	1	-	-	32.0	12.0	PYB140J8	140.0	8	1610	90.0	26.0	-
PYB056J8	56.0	3	1108	-	23.0	-	PYB160J8	160.0	8	2012	110.0	32.0	-
PYB060J8	60.0	3	1108	-	23.0	-	PYB180J8	180.0	6	2012	110.0	32.0	-
PYB063J8	63.0	3	1108	-	23.0	-	PYB200J8	200.0	6	2012	110.0	32.0	-
PYB067J8	67.0	3	1108	-	23.0	-	PYB224J8	224.0	6	2012	110.0	32.0	-
PYB071J8	71.0	3	1108	-	23.0	-	PYB250J8	250.0	9	2012	110.0	32.0	-
PYB075J8	75.0	3	1108	-	23.0	-	PYB280J8	280.0	9	2012	110.0	32.0	-
PYB080J8	80.0	7	1310	70.0	26.0	-	PYB315J8	315.0	9	2012	110.0	32.0	-
PYB085J8	85.0	7	1310	70.0	26.0	-	PYB355J8	355.0	9	2517	120.0	45.0	-
PYB090J8	90.0	7	1610	82.0	26.0	-	PYB400J8	400.0	9	2517	120.0	45.0	-
PYB095J8	95.0	7	1610	82.0	26.0	-							

'J' Section Poly-V Pulleys 12 Groove

Type 1

Type 2

Type 6

Type 7

Type 8

Type 9
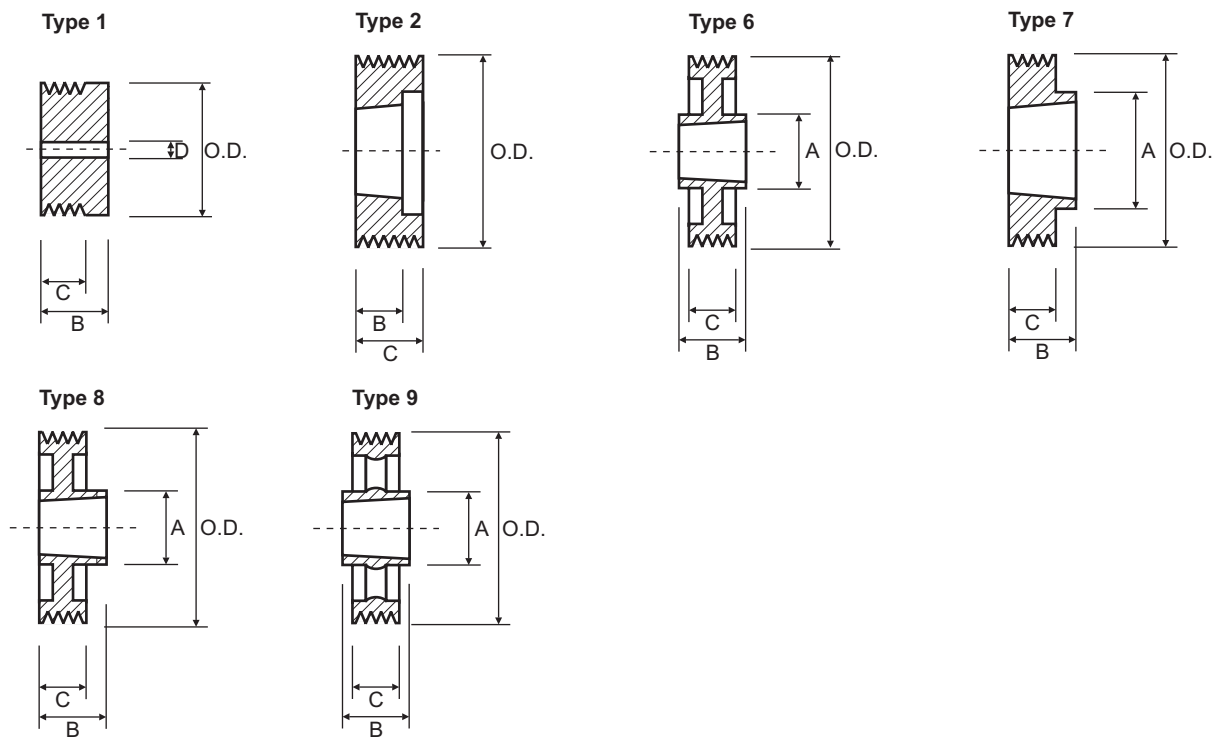
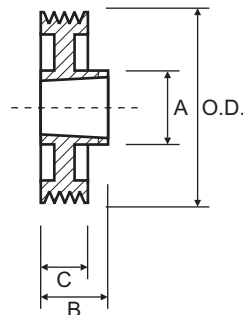| 12 Groove							12 Groove					
						C = 32.5						**C = 32.5**
Part No.	O.D.	Type	Bush	A	B	D	Part No.	O.D.	Type	Bush	A	B	D
PYB020J12	20.0	1	-	-	41.5	5.0	PYB100J12	100.0	2	1610	-	26.0	-
PYB025J12	25.0	1	-	-	41.5	5.0	PYB106J12	106.0	2	1610	-	26.0	-
PYB030J12	30.0	1	-	-	41.5	9.5	PYB112J12	112.0	2	1610	-	26.0	-
PYB035J12	35.0	1	-	-	41.5	9.5	PYB118J12	118.0	2	2012	-	32.0	-
PYB040J12	40.0	1	-	-	41.5	12.0	PYB125J12	125.0	2	2012	-	32.0	-
PYB045J12	45.0	1	-	-	41.5	12.0	PYB132J12	132.0	2	2012	-	32.0	-
PYB050J12	50.0	1	-	-	41.5	12.0	PYB140J12	140.0	7	2517	120.0	45.0	-
PYB056J12	56.0	1	-	-	41.5	12.0	PYB160J12	160.0	8	2517	120.0	45.0	-
PYB060J12	60.0	2	1108	-	23.0	-	PYB180J12	180.0	6	2517	120.0	45.0	-
PYB063J12	63.0	2	1108	-	23.0	-	PYB200J12	200.0	6	2517	120.0	45.0	-
PYB067J12	67.0	2	1108	-	23.0	-	PYB224J12	224.0	6	2517	120.0	45.0	-
PYB071J12	71.0	2	1108	-	23.0	-	PYB250J12	250.0	6	2517	120.0	45.0	-
PYB075J12	75.0	2	1210	-	26.0	-	PYB280J12	280.0	9	2517	120.0	45.0	-
PYB080J12	80.0	2	1610	-	26.0	-	PYB315J12	315.0	9	2517	120.0	45.0	-
PYB085J12	85.0	2	1610	-	26.0	-	PYB355J12	355.0	9	2517	120.0	45.0	-
PYB090J12	90.0	2	1610	-	26.0	-	PYB400J12	400.0	9	2517	120.0	45.0	-
PYB095J12	95.0	2	1610	-	26.0	-							

'J' Section Poly-V Pulleys 16 Groove

Type 1
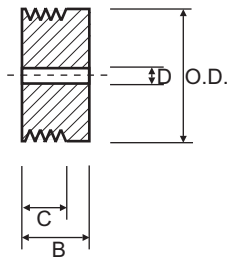
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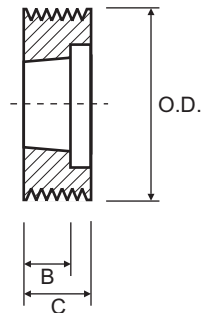
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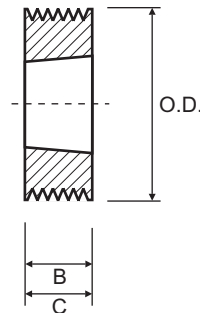
Type 6
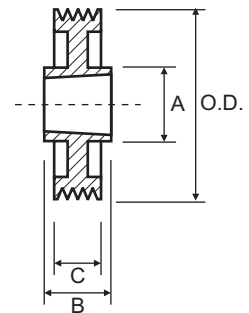
Type 7
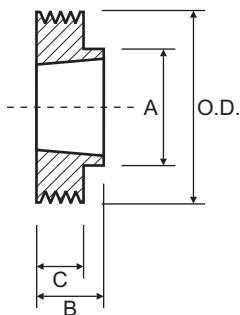
Type 8

Type 9
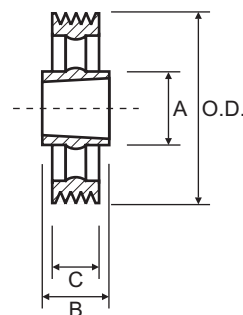
16 Groove							16 Groove					
						C = 42.0						C = 42.0
Part No.	O.D.	Type	Bush	A	B	D	Part No.	O.D.	Type	Bush	A	B	D
PYB020J16	20.0	1	-	-	51.0	5.0	PYB100J16	100.0	2	1610	-	26.0	-
PYB025J16	25.0	1	-	-	51.0	5.0	PYB106J16	106.0	2	1610	-	26.0	-
PYB030J16	30.0	1	-	-	51.0	9.5	PYB112J16	112.0	2	1610	-	26.0	-
PYB035J16	35.0	1	-	-	51.0	9.5	PYB118J16	118.0	2	2012	-	32.0	-
PYB040J16	40.0	1	-	-	51.0	12.0	PYB125J16	125.0	2	2012	-	32.0	-
PYB045J16	45.0	1	-	-	51.0	12.0	PYB132J16	132.0	2	2012	-	32.0	-
PYB050J16	50.0	1	-	-	51.0	12.0	PYB140J16	140.0	7	2517	120.0	45.0	-
PYB056J16	56.0	1	-	-	51.0	12.0	PYB160J16	160.0	8	2517	120.0	45.0	-
PYB060J16	60.0	1	-	-	51.0	12.0	PYB180J16	180.0	6	2517	120.0	45.0	-
PYB063J16	63.0	1	-	-	51.0	12.0	PYB200J16	200.0	6	2517	120.0	45.0	-
PYB067J16	67.0	1	-	-	51.0	12.0	PYB224J16	224.0	6	2517	120.0	45.0	-
PYB071J16	71.0	3	1215	-	42.0	-	PYB250J16	250.0	6	2517	120.0	45.0	-
PYB075J16	75.0	2	1610	-	26.0	-	PYB280J16	280.0	9	2517	120.0	45.0	-
PYB080J16	80.0	2	1610	-	26.0	-	PYB315J16	315.0	9	2517	120.0	45.0	-
PYB085J16	85.0	2	1610	-	26.0	-	PYB355J16	355.0	9	3020	146.0	52.0	-
PYB090J16	90.0	2	1610	-	26.0	-	PYB400J16	400.0	9	3020	146.0	52.0	-
PYB095J16	95.0	2	1610	-	26.0	-							

'L' Section Poly-V Pulleys 6 & 8 Groove

Type 2

Type 5

Type 6

Type 7

Type 8

Type 9
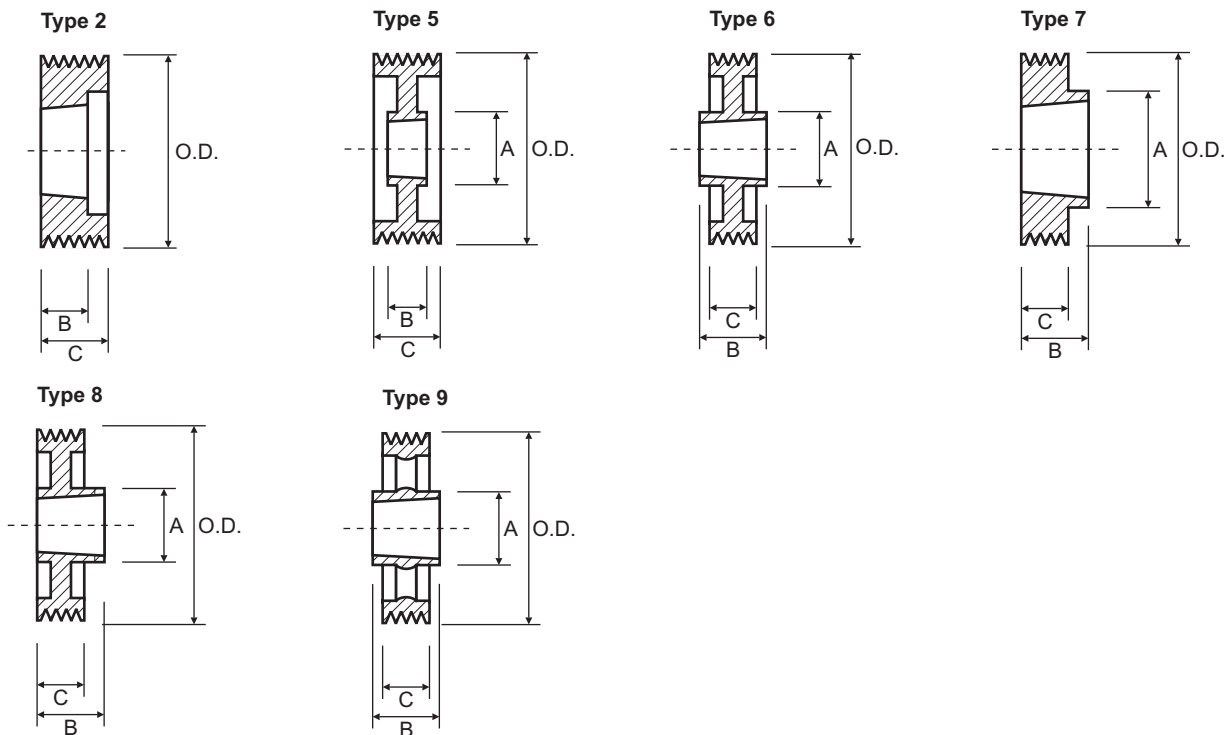
	6 Groove			C = 38.5			8 Groove			C = 48.0	
Part No.	O.D.	Type	Bush	A	B	Part No.	O.D.	Type	Bush	A	B
PYB075L6	75.0	2	1210	-	26.0	PYB075L8	75.0	2	1210	-	26.0
PYB080L6	80.0	2	1210	-	26.0	PYB080L8	80.0	2	1210	-	26.0
PYB085L6	85.0	2	1210	-	26.0	PYB085L8	85.0	2	1210	-	26.0
PYB090L6	90.0	2	1210	-	26.0	PYB090L8	90.0	2	1210	-	26.0
PYB095L6	95.0	2	1210	-	26.0	PYB095L8	95.0	2	1210	-	26.0
PYB100L6	100.0	2	1610	-	26.0	PYB100L8	100.0	2	1610	-	26.0
PYB106L6	106.0	2	1610	-	26.0	PYB106L8	106.0	2	1610	-	26.0
PYB112L6	112.0	2	1610	-	26.0	PYB112L8	112.0	2	1610	-	26.0
PYB118L6	118.0	2	2012	-	32.0	PYB118L8	118.0	2	2012	-	32.0
PYB125L6	125.0	2	2012	-	32.0	PYB125L8	125.0	2	2012	-	32.0
PYB132L6	132.0	2	2012	-	32.0	PYB132L8	132.0	2	2012	-	32.0
PYB140L6	140.0	7	2517	120.0	45.0	PYB140L8	140.0	2	2517	-	45.0
PYB150L6	150.0	7	2517	120.0	45.0	PYB150L8	150.0	2	2517	-	45.0
PYB160L6	160.0	7	2517	120.0	45.0	PYB160L8	160.0	2	2517	-	45.0
PYB170L6	170.0	8	2517	120.0	45.0	PYB170L8	170.0	2	2517	-	45.0
PYB180L6	180.0	6	2517	120.0	45.0	PYB180L8	180.0	5	2517	120.0	45.0
PYB190L6	190.0	6	2517	120.0	45.0	PYB190L8	190.0	5	2517	120.0	45.0
PYB200L6	200.0	6	2517	120.0	45.0	PYB200L8	200.0	5	2517	120.0	45.0
PYB212L6	212.0	6	2517	120.0	45.0	PYB212L8	212.0	5	2517	120.0	45.0
PYB224L6	224.0	6	2517	120.0	45.0	PYB224L8	224.0	5	2517	120.0	45.0
PYB236L6	236.0	6	2517	120.0	45.0	PYB236L8	236.0	5	2517	120.0	45.0
PYB250L6	250.0	9	2517	120.0	45.0	PYB250L8	250.0	5	2517	120.0	45.0
PYB280L6	280.0	6	2517	120.0	45.0	PYB280L8	280.0	6	3020	146.0	52.0
PYB315L6	315.0	9	2517	120.0	45.0	PYB315L8	315.0	9	3020	146.0	52.0
PYB355L6	355.0	9	3020	146.0	52.0	PYB355L8	355.0	9	3020	146.0	52.0
PYB400L6	400.0	9	3020	146.0	52.0	PYB400L8	400.0	9	3020	146.0	52.0

'L' Section Poly-V Pulleys 10 & 12 Groove

Type 2

Type 4

Type 5

Type 6

Type 9
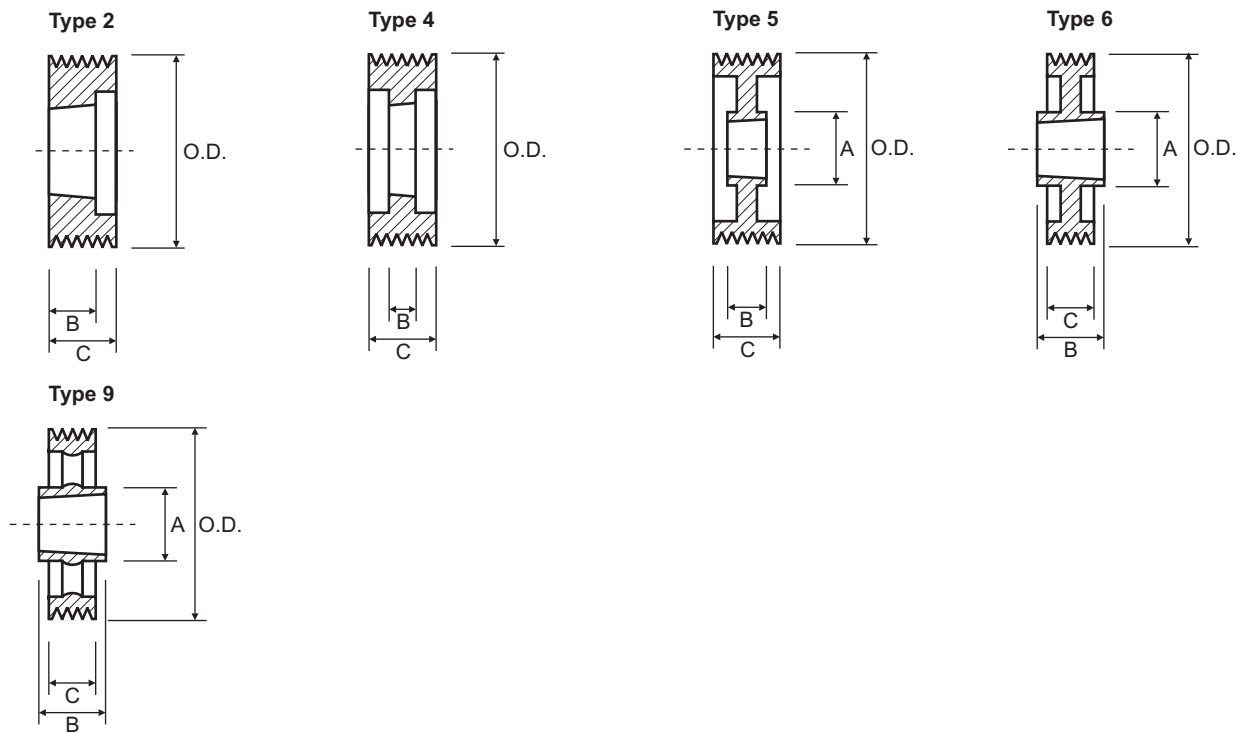
	10 Groove						12 Groove				
				C = 57.0						**C = 67.0**	
Part No.	O.D.	Type	Bush	A	B	Part No.	O.D.	Type	Bush	A	B
PYB075L10	75.0	2	1215	-	42.0	PYB075L12	75.0	2	1215	-	42.0
PYB080L10	80.0	2	1215	-	42.0	PYB080L12	80.0	2	1215	-	42.0
PYB085L10	85.0	2	1215	-	42.0	PYB085L12	85.0	2	1215	-	42.0
PYB090L10	90.0	2	1215	-	42.0	PYB090L12	90.0	2	1215	-	42.0
PYB095L10	95.0	2	1215	-	42.0	PYB095L12	95.0	2	1215	-	42.0
PYB100L10	100.0	2	2012	-	32.0	PYB100L12	100.0	2	2012	-	32.0
PYB106L10	106.0	2	2012	-	32.0	PYB106L12	106.0	2	2012	-	32.0
PYB112L10	112.0	2	2012	-	32.0	PYB112L12	112.0	2	2012	-	32.0
PYB118L10	118.0	4	2517	-	45.0	PYB118L12	118.0	4	2517	-	45.0
PYB125L10	125.0	4	2517	-	45.0	PYB125L12	125.0	4	2517	-	45.0
PYB132L10	132.0	4	2517	-	45.0	PYB132L12	132.0	4	2517	-	45.0
PYB140L10	140.0	4	2517	-	45.0	PYB140L12	140.0	4	2517	-	45.0
PYB150L10	150.0	4	2517	-	45.0	PYB150L12	150.0	4	2517	-	45.0
PYB160L10	160.0	4	2517	-	45.0	PYB160L12	160.0	4	2517	-	45.0
PYB170L10	170.0	4	2517	-	45.0	PYB170L12	170.0	4	2517	-	45.0
PYB180L10	180.0	5	2517	120.0	45.0	PYB180L12	180.0	5	2517	120.0	45.0
PYB190L10	190.0	5	2517	120.0	45.0	PYB190L12	190.0	5	2517	120.0	45.0
PYB200L10	200.0	5	3020	146.0	52.0	PYB200L12	200.0	5	3020	146.0	52.0
PYB212L10	212.0	5	3020	146.0	52.0	PYB212L12	212.0	5	3020	146.0	52.0
PYB224L10	224.0	5	3020	146.0	52.0	PYB224L12	224.0	5	3020	146.0	52.0
PYB236L10	236.0	5	3020	146.0	52.0	PYB236L12	236.0	5	3020	146.0	52.0
PYB250L10	250.0	5	3020	146.0	52.0	PYB250L12	250.0	5	3020	146.0	52.0
PYB280L10	280.0	5	3020	146.0	52.0	PYB280L12	280.0	5	3020	146.0	52.0
PYB315L10	315.0	6	3535	178.0	89.0	PYB315L12	315.0	6	3535	178.0	89.0
PYB355L10	355.0	9	3535	178.0	89.0	PYB355L12	355.0	9	3535	178.0	89.0
PYB400L10	400.0	9	3535	178.0	89.0	PYB400L12	400.0	9	3535	178.0	89.0

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'L' Section Poly-V Pulleys 16 & 20 Groove

Type 4

Type 5

Type 6

Type 9

Type 10
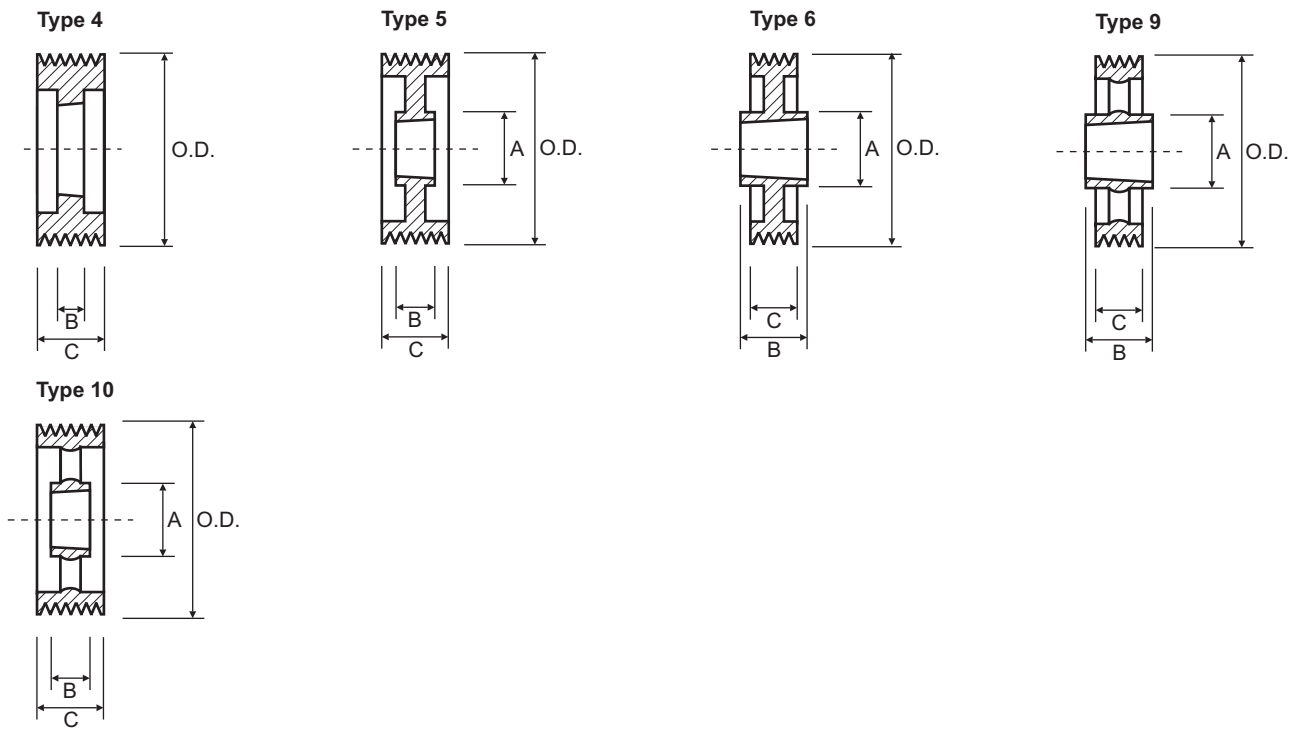
16 Groove				C = 86.0		20 Groove				C = 105.0	
Part No.	O.D.	Type	Bush	A	B	Part No.	O.D.	Type	Bush	A	B
PYB085L16	85.0	4	1215	-	42.0	PYB118L20	118.0	4	2517	-	45.0
PYB090L16	90.0	4	1215	-	42.0	PYB125L20	125.0	4	2517	-	45.0
PYB095L16	95.0	4	1215	-	42.0	PYB132L20	132.0	4	2517	-	45.0
PYB100L16	100.0	4	2012	-	32.0	PYB140L20	140.0	4	3020	-	52.0
PYB106L16	106.0	4	2012	-	32.0	PYB150L20	150.0	4	3020	-	52.0
PYB112L16	112.0	4	2012	-	32.0	PYB160L20	160.0	4	3020	-	52.0
PYB118L16	118.0	4	2517	-	45.0	PYB170L20	170.0	4	3020	-	52.0
PYB125L16	125.0	4	2517	-	45.0	PYB180L20	180.0	4	3020	-	52.0
PYB132L16	132.0	4	2517	-	45.0	PYB190L20	190.0	5	3020	146.0	52.0
PYB140L16	140.0	4	2517	-	45.0	PYB200L20	200.0	4	3535	-	89.0
PYB150L16	150.0	4	2517	-	45.0	PYB212L20	212.0	4	3535	-	89.0
PYB160L16	160.0	4	3020	-	52.0	PYB224L20	224.0	5	3535	178.0	89.0
PYB170L16	170.0	4	3020	-	52.0	PYB236L20	236.0	5	3535	178.0	89.0
PYB180L16	180.0	4	3020	-	52.0	PYB250L20	250.0	5	3535	178.0	89.0
PYB190L16	190.0	5	3020	146.0	52.0	PYB280L20	280.0	5	3535	178.0	89.0
PYB200L16	200.0	5	3020	146.0	52.0	PYB315L20	315.0	5	4040	215.0	102.0
PYB212L16	212.0	5	3020	146.0	52.0	PYB355L20	355.0	5	4040	215.0	102.0
PYB224L16	224.0	5	3020	146.0	52.0	PYB400L20	400.0	10	4040	215.0	102.0
PYB236L16	236.0	5	3020	146.0	52.0						
PYB250L16	250.0	5	3020	146.0	52.0						
PYB280L16	280.0	6	3535	178.0	89.0						
PYB315L16	315.0	6	3535	178.0	89.0						
PYB355L16	355.0	9	3535	178.0	89.0						
PYB400L16	400.0	9	3535	178.0	89.0						

NAISMITH Engineering & Manufacturing Co. Pty. Ltd.

Taper Bushes

Taper bushes are designed to give the following:-
1. Easy assembly.
2. Rapid dismantling of the pulley and other transmission equipment.
3. No special tool requirement except hexagonal allan key.
A large range of bores are available off the shelf which ensures that an immediate assembly can be made, thus avoiding costly factory down-time.
The bushes are machined with standard keyways. This, in addition to clamping screws is sufficient to meet the required torque.

Part No.		Stock Bore Sizes	OD	L
1008	mm	12, 14, 15, 16, 18, 19, 20, 22, 24, 25	35.0	22.2
	inch	1/2", 5/8", 3/4", 7/8", 1"		
1108	mm	12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28	38.0	22.2
	inch	1/2", 5/8", 3/4", 7/8", 1", 1 1/8"		
1210	mm	12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32	47.5	25.4
	inch	1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4"		
1215	mm	12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32	47.5	38.1
	inch	1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4"		
1610	mm	12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	57.0	25.4
	inch	1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8"		
1615	mm	12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42	57.0	38.1
	inch	1/2", 5/8", 3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8"		
2012	mm	16,19,20,22,24,25,28,30,32,35,38,40,42,45,48,50	70.0	31.8
	inch	3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2"		
2017	mm	19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50	70.0	44.4
	inch	3/4", 7/8", 1", 1 1/8", 1 3/8"		
2517	mm	19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60	85.5	44.5
	inch	3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8",		
	inch	2 1/4", 2 3/8", 2 1/2"		
2525	mm	19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60	85.6	63.5
	inch	3/4", 7/8", 1", 1 1/8"		
3020	mm	24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75	108.0	50.8
	inch	1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8",		
		2 1/2", 2 5/8", 2 3/4", 2 7/8", 3"		
3030	mm	32, 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75	108.0	76.2
	inch	1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2",		
	inch	2 5/8", 2 3/4", 2 2/8", 3"		
3525	mm	35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90	108.0	63.5
3535	mm	35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90	127.0	88.9
	inch	1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2", 2 5/8", 2 3/4",		
	inch	2 7/8", 3", 3 1/8", 3 1/4", 3 3/8", 3 1/2"		
4030	mm	40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100	146.0	76.2
4040	mm	40, 42, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100	146.0	101.6
	inch	1 3/8", 1 3/4, 1 7/8", 2", 2 1/8", 2 1/4", 2 1/2", 2 5/8", 2 3/4",		
	inch	3", 3 1/4", 3 1/2", 3 3/4", 4"		
4535	mm	60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110	162.0	88.9
4545	mm	60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110	162.0	114.3
	inch	3", 3 1/8", 3 1/4", 3 3/8", 3 1/2", 3 3/4", 4 1/2"		
5040	mm	70, 95, 100, 110, 115, 120, 125	177.5	101.6
5050	mm	70, 95, 100, 110, 115, 120, 125	177.5	127.0

The first 2 digits of the part number are the maximum bore size in inches.
The second 2 digits of the part number are the length through bore in inches.

NAISMITH Engineering & Manufacturing Co. Pty. Ltd.

Useful Information

PULLEY DIAMETER - SPEED

When choosing a pulley that is made of cast iron care must be taken not to exceed pulley rim speed of 30 m/s. Centrifugal forces developed beyond this speed may prohibit the use of stock cast iron pulleys. For rim speeds exceeding 30 m/s, contact Naismith Engineering for recommendations. The formula below will help you work out what the rim speed of your pulley will be.

$$\text{Metres/Sec} = \frac{(\text{O.D. X .001}) \times 3.142 \times \text{RPM}}{60}$$

O.D. is in millimetres

IDLERS

Use of idlers should be restricted to those cases in which they are functionally necessary. Idlers are usually used to apply tension when centres are not adjustable.
Idlers should be located on the slack side of the belt drive as close to the motor as possible. For inside idlers, grooved pulleys are recommended.
Outside or backside idlers should be flat and uncrowned. Diameters should generally not be smaller than the smallest loaded pulley in the system.
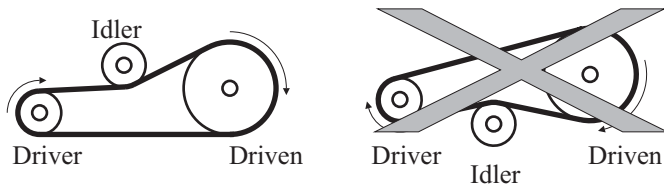
For Poly-V Pulleys, the idler width should be equal to the pulley width plus twice the rib pitch for less than 10 ribs, or plus four times the rib pitch for 10 or more ribs.

BALANCING OF PULLEYS AND IDLERS

Poor balancing creates premature wear of bearings and can be the origin of severe vibratory problems. In extreme cases unbalanced components can cause shaft breakage.
Static balancing is done by the pulley manufacturer.
In addition, dynamic balancing is required when the belt speed exceeds 30 m/s.

BELT STORAGE AND HANDLING

For storage, the belt should be protected from moisture, oil, temperature extremes, direct sunlight and high ozone environments. The belt should be stored in its original package where applicable, avoiding any sharp bends or crimping which will damage the belt.

FITTING AND TAKE-UP RECOMMENDATIONS FOR POLY-V PULLEYS

Margins are defined by the following table:

L (mm)	PJ M	PJ T	PL M	PL T	PM M	PM T
<750	-10	+10				
750 to 1200	-10	+10	-15	+20		
1200 to 2000	-15	+20	-20	+25		
2000 to 3500	-20	+30	-30	+35	-40	+50
3500 to 6000			-40	+60	-50	+70
>6000					-100	+130
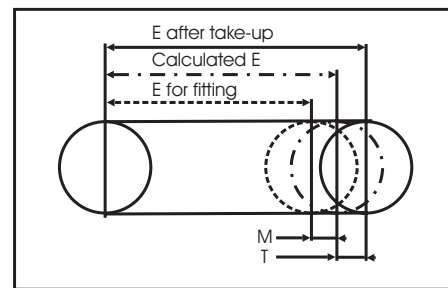
TENSIONING THE BELT

POLY-V Belts must be tensioned correctly and with great care. Under or over-tensioning can cause functional problems and lead to premature belt failure.

ELONGATION METHOD

Requires no special equipment.
It is used for high power drives or centre distances greater than 1m.

- Fit the belt on the pulleys with no tension.
- Draw 2 lines perpendicularly across the back of the belt, one full span apart (one metre apart if possible).
- Increase the distance between the 2 lines by 0.7% (7mm for 1m).
- Run the drive under load for about ten minutes.
- Check the tension of the belt (i.e. The spacing between the 2 lines) and readjust to the following values if necessary:

PJ	PL	PM
0.5%	0.6%	0.6%

Information on this page has been sourced from the following catalogues
Gates Design Manual E2/20099
Hutchinson Poly V Belt Drives Design Manual

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