

# PULLEYS

## 1. GROOVE SPECIFICATIONS FOR V-BELT PULLEYS

Figure 3 - Groove dimension nomenclature for V-belts

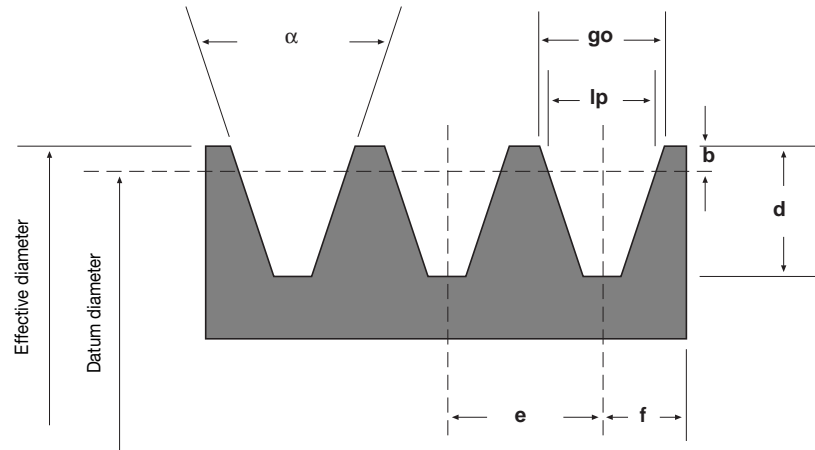


Table No. 15 - Groove dimensions and tolerances for Hi-Power® PowerBand® according to RMA engineering standards

Cross-section	Effective diam. range mm	Groove angle a	go mm	d mm	e* mm	f mm
A - PowerBand®	< 140	34° ± 1/2°	12.55 ± 0.13	12.45 ± 0.79	15.88 ± 0.60	9.53 (+1.78/-0)
	> 140	38° ± 1/2°	12.80 ± 0.13	12.45 ± 0.79	15.88 ± 0.60	9.53 (+1.78/-0)
B - PowerBand®	< 180	34° ± 1/2°	16.18 ± 0.13	14.73 ± 0.79	19.05 ± 0.60	12.70 (+3.80/-0)
	> 180	38° ± 1/2°	16.51 ± 0.13	14.73 ± 0.79	19.05 ± 0.60	12.70 (+3.80/-0)
C - PowerBand®	< 200	34° ± 1/2°	22.33 ± 0.18	19.81 ± 0.79	25.40 ± 0.60	17.48 (+3.80/-0)
	200 to 315	36° ± 1/2°	22.53 ± 0.18	19.81 ± 0.79	25.40 ± 0.60	17.48 (+3.80/-0)
	> 315	38° ± 1/2°	22.73 ± 0.18	19.81 ± 0.79	25.40 ± 0.60	17.48 (+3.80/-0)
D - PowerBand®	< 355	34° ± 1/2°	31.98 ± 0.18	26.67 ± 0.79	36.53 ± 0.60	22.23 (+6.35/-0)
	355 to 450	36° ± 1/2°	32.28 ± 0.18	26.67 ± 0.79	36.53 ± 0.60	22.23 (+6.35/-0)
	> 450	38° ± 1/2°	32.59 ± 0.18	26.67 ± 0.79	36.53 ± 0.60	22.23 (+6.35/-0)

\* Summation of the deviations from "e" for all grooves in any pulley shall not exceed ± 1.2 mm.

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**Table No. 16 - Groove dimensions and tolerances for Super HC® PowerBand® according to ISO 5290 engineering standards**

Section	Effective diameter mm	Groove angle a	go mm	d mm	e* mm	f mm
9J PowerBand®	< 90	36° ± 1/4°	8.9 ± 0.13	8.9 (+0.25/-0)	10.3 ± 0.40	9 (+2.4/-0)
	90 to 150	38° ± 1/4°	8.9 ± 0.13	8.9 (+0.25/-0)	10.3 ± 0.40	9 (+2.4/-0)
	151 to 300	40° ± 1/4°	8.9 ± 0.13	8.9 (+0.25/-0)	10.3 ± 0.40	9 (+2.4/-0)
	> 300	42° ± 1/4°	8.9 ± 0.13	8.9 (+0.25/-0)	10.3 ± 0.40	9 (+2.4/-0)
15J PowerBand®	< 250	38° ± 1/4°	15.2 ± 0.13	15.2 (+0.25/-0)	17.5 ± 0.40	13 (+3.2/-0)
	250 to 400	40° ± 1/4°	15.2 ± 0.13	15.2 (+0.25/-0)	17.5 ± 0.40	13 (+3.2/-0)
	> 400	42° ± 1/4°	15.2 ± 0.13	15.2 (+0.25/-0)	17.5 ± 0.40	13 (+3.2/-0)
25J PowerBand®	< 400	38° ± 1/4°	25.4 ± 0.13	25.4 (+0.25/-0)	28.6 ± 0.40	19 (+6.3/-0)
	400 to 560	40° ± 1/4°	25.4 ± 0.13	25.4 (+0.25/-0)	28.6 ± 0.40	19 (+6.3/-0)
	> 560	42° ± 1/4°	25.4 ± 0.13	25.4 (+0.25/-0)	28.6 ± 0.40	19 (+6.3/-0)

\* Summation of the deviations from "e" for all grooves in any pulley shall not exceed ± 0.5 mm for 9J and 15J, ± 0.8 mm for 25J.

**Table No. 17 - Groove dimensions and tolerances for Super HC® PowerBand® according to RMA engineering standards**

Section	Datum width mm	Effective diam. range mm	Groove angle a	go mm	d mm (minimum)	e* mm	f mm	b mm
3V/3VX and PowerBand®	8.45	< 90	36° ± 1/4°	8.89 ± 0.13	8.6	10.32 ± 0.40	8.73 (+2.4/-0)	0.65
		90 to 150	38° ± 1/4°	8.89 ± 0.13	8.6	10.32 ± 0.40	8.73 (+2.4/-0)	0.65
		151 to 300	40° ± 1/4°	8.89 ± 0.13	8.6	10.32 ± 0.40	8.73 (+2.4/-0)	0.65
		> 300	42° ± 1/4°	8.89 ± 0.13	8.6	10.32 ± 0.40	8.73 (+2.4/-0)	0.65
5V/5VX and PowerBand®	14.4	< 250	38° ± 1/4°	15.24 ± 0.13	15.0	17.46 ± 0.40	12.7 (+3.2/-0)	1.25
		250 to 400	40° ± 1/4°	15.24 ± 0.13	15.0	17.46 ± 0.40	12.7 (+3.2/-0)	1.25
		> 400	42° ± 1/4°	15.24 ± 0.13	15.0	17.46 ± 0.40	12.7 (+3.2/-0)	1.25
8V/8VK and PowerBand®	23.65	< 400	38° ± 1/4°	25.4 ± 0.13	25.1	28.58 ± 0.40	19.05 (+6.3/-0)	2.54
		400 to 560	40° ± 1/4°	25.4 ± 0.13	25.1	28.58 ± 0.40	19.05 (+6.3/-0)	2.54
		> 560	42° ± 1/4°	25.4 ± 0.13	25.1	28.58 ± 0.40	19.05 (+6.3/-0)	2.54

\* Summation of the deviations from "e" for all grooves in any pulley shall not exceed ± 0.79 mm.

Groove dimensions and tolerances for Super HC® PowerBand® according to the ISO 4183 engineering standards are shown in table No. 18 (SPB-PB/SPC-PB) on page 40.



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**Table No. 18 - Groove dimensions and tolerances according to ISO 4183, DIN 2211 and DIN 2217 engineering standards**

Belt section	Datum width lp mm	Datum diameter mm	Groove angle a	go mm	d mm	e mm	f* mm	b mm
D** mm	27	355 to 500 > 500	36° ± 1/2° 38° ± 1/2°	32 32	28 (min.) 28 (min.)	37 ± 0.60 37 ± 0.60	24 (±2) 24 (±2)	8.1 8.1
E** mm	32	500 to 630 > 630	36° ± 1/2° 38° ± 1/2°	40 40	33 (min.) 33 (min.)	44.5 ± 0.70 44.5 ± 0.70	29 (±2) 29 (±2)	12 12
Z** SPZ*** XPZ	8.5	63 to 80 > 80	34° ± 1° 38° ± 1°	9.72 9.88	11 (+0.25/-0) 11 (+0.25/-0)	12 ± 0.30 12 ± 0.30	8 ± 0.6 8 ± 0.6	2 2
A** SPA*** XPA	11	90 to 118 > 118	34° ± 1° 38° ± 1°	12.68 12.89	13.75 (+0.25/-0) 13.75 (+0.25/-0)	15 ± 0.30 15 ± 0.30	10 ± 0.6 10 ± 0.6	2.75 2.75
B** SPB*** SPB-PB XPB	14	140 to 190 > 190	34° ± 1° 38° ± 1°	16.14 16.41	17.5 (+0.25/-0) 17.5 (+0.25/-0)	19 ± 0.40 19 ± 0.40	12.5 ± 0.8 12.5 ± 0.8	3.5 3.5
C** SPC*** SPC-PB XPC	19	224 to 315 > 315	34° ± 1/2° 38° ± 1/2°	21.94 22.31	24 (+0.25/-0) 24 (+0.25/-0)	25.5 ± 0.50 25.5 ± 0.50	17 ± 1.0 17 ± 1.0	4.8 4.8

Tolerances on datum diameters can be calculated by applying the tolerance (+ 1.6 / - 0%) to the nominal value of the datum diameter in mm.

- \* These tolerances have to be taken into account when aligning the pulleys.
- \*\* According to DIN 2217.
- \*\*\* According to DIN 2211 and ISO 4183.

## Important

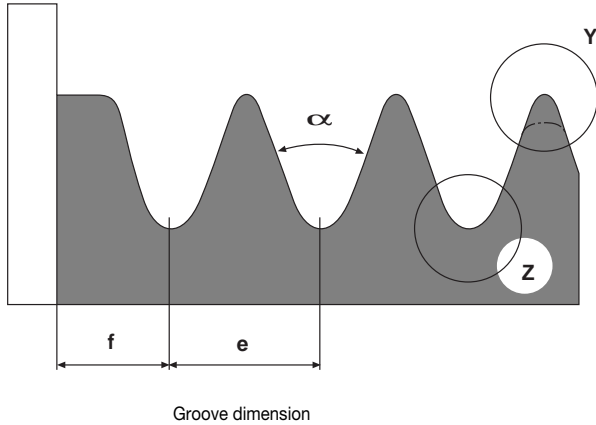
For PowerBands other than SPB-PB and SPC-PB, refer to tables 15 to 17 (pages 38 to 39).



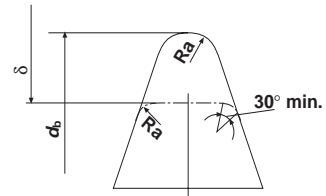
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## 2. GROOVE SPECIFICATIONS FOR MICRO-V® BELT PULLEYS

Figure 4 - Groove dimension nomenclature for Micro-V® belts

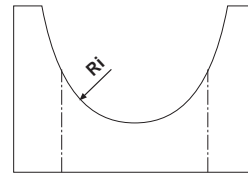


Detail Y: Groove top



The design of the groove top may not exceed indicated minimum and maximum values (depending on pulley manufacture).

Detail Z: Groove bottom



The groove bottom design may not exceed the indicated  $Ri$  value (depending on pulley manufacture).

Table No. 19 - Groove dimensions and tolerances for Micro-V® according to DIN 7867 and ISO 9982 engineering standards

Section	Groove angle $a$	$e^*$ mm	$Ri$ mm max.	$Ra$ mm min.	$f$ mm min.
PJ	$40 \pm 1/2^\circ$	$2.34 \pm 0.03$	0.40	0.20	1.8
PL	$40 \pm 1/2^\circ$	$4.70 \pm 0.05$	0.40	0.40	3.3
PM	$40 \pm 1/2^\circ$	$9.40 \pm 0.08$	0.75	0.75	6.4

\* Summation of the deviations from "e" for all grooves in any pulley shall not exceed  $\pm 0.30$  mm.

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## 3. GROOVE SPECIFICATIONS FOR POLYFLEX® JB™ BELT PULLEYS

Figure 5 - Groove dimension nomenclature for Polyflex® JB™ belts

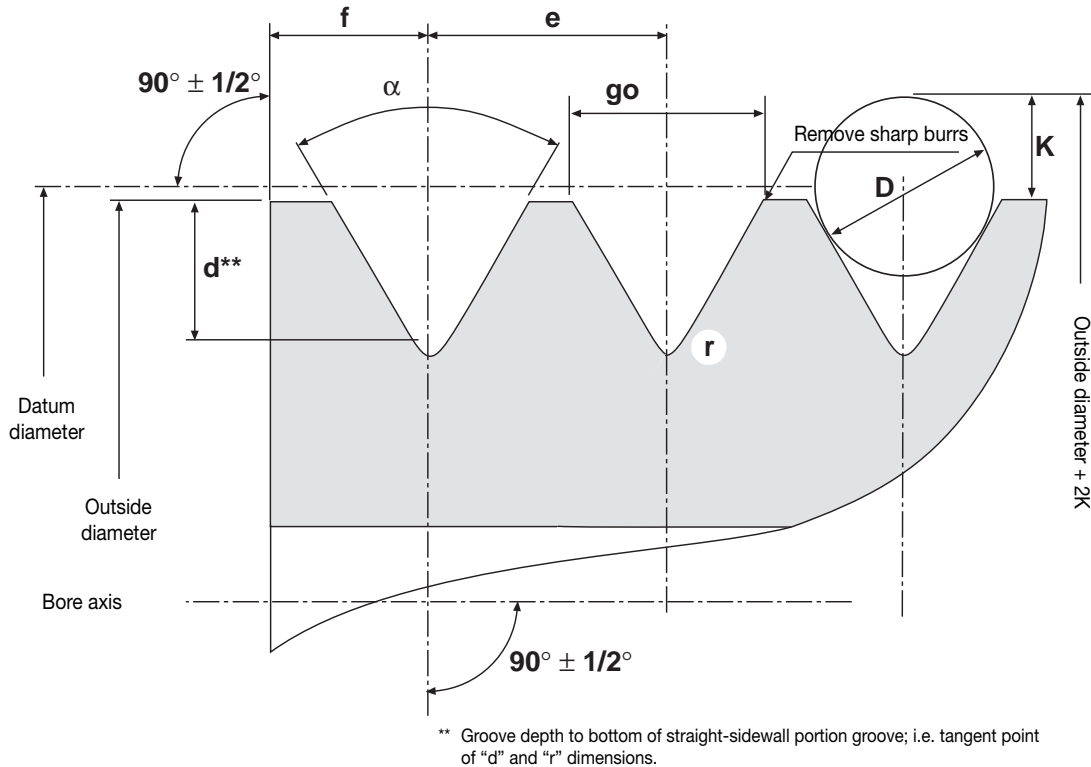


Table No. 20 - Groove dimensions and tolerances for Polyflex® JB™

Groove designation	Outside diameter	Groove angle a	go mm	d** mm	e mm	f mm	r mm	2K mm	D mm
5M	26-32	60° (± 1/4°)	4.50 (± 0.05 mm)	3.28	5.30 (+0.13/-0.05)	3.45	0.4	5.71	4.50
	33-97	62° (± 1/4°)	4.50 (± 0.05 mm)	3.15	5.30 (+0.13/-0.05)	3.45	0.4	5.75	4.50
	> 97	64° (± 1/4°)	4.50 (± 0.05 mm)	3.05	5.30 (+0.13/-0.05)	3.45	0.4	5.79	4.50
7M	42-76	60° (± 1/4°)	7.10 (± 0.05 mm)	5.28	8.50 (+0.13/-0.05)	5.65	0.6	10.20	7.50
	> 76	62° (± 1/4°)	7.10 (± 0.05 mm)	5.08	8.50 (+0.13/-0.05)	5.65	0.6	10.25	7.50
11M	67-117	60° (± 1/4°)	11.20 (± 0.05 mm)	8.51	13.20 (+0.13/-0.05)	8.60	0.8	15.10	11.50
	> 117	62° (± 1/4°)	11.20 (± 0.05 mm)	8.20	13.20 (+0.13/-0.05)	8.60	0.8	15.19	11.50

### NOTES

- The sides of the groove shall not exceed 3 micron (RMS) roughness.
- The summation of the deviations from "e" for all grooves in any pulley shall not exceed ± 0.30 mm.
- The tolerance on the outside diameter is:
  - 0.13 mm for pulleys with 26 mm up through 125 mm outside diameter;
  - 0.38 mm for pulleys with 126 mm up through 250 mm outside diameter;
  - 0.76 mm for pulleys with 251 mm up through 500 mm outside diameter;
  - 1.27 mm for pulleys with 501 mm outside diameter and more.
- Radial run-out shall not exceed 0.13 mm TIR\* for outside diameters up through 250 mm. Add 0.01 mm TIR\* per 25 mm of outside diameter more than 250 mm.
- Axial run-out shall not exceed 0.03 mm TIR\* per 25 mm of outside diameter for diameters up through 500 mm. Add 0.01 mm TIR\* per 25 mm of outside diameter for diameters more than 500 mm.

\* TIR: Total Indicator Reading.

\*\* Groove depth to bottom of straight-sidewall portion groove; i.e. tangent point of "d" and "r" dimensions.