

1. Why you should use this preventive maintenance manual	
Components of a good maintenance programme	6
Sources of drive problems	7
2. How to maintain a safe working environment	
Safety first!	9
Ensure safety during belt drive inspection and maintenance	10
3. How to properly install a belt drive	
Belt identification	13
How to select the appropriate belt type	13
V-belts belt sections & nominal dimensions	17
Synchronous belts belt sections & nominal dimensions	19
Belt length finder & length conversion table	22
Belt storage	24
General guidelines on belt storage and handling	24
Methods of belt storage	25
Effects of belt storage	26
Belt and pulley installation	27
V-belt installation	27
Synchronous belt installation	29
Checking belt tension	31
Pulley installation & alignment	37
Upgrading drive performance	38
Improving poor drive performance & noise problems	39
4. How to maintain an effective preventive maintenance programme	
When & how often to inspect your drive	42
Routine preventive maintenance Quick drive inspection	43
Complete shutdown inspections Preventive maintenance step by step	44
5. How to diagnose and resolve belt drive problems	
Troubleshooting checklist	48
Troubleshooting methods	49
Problems on V-belt drives	50
Problems on synchronous belt drives	53
6. Technical data	
Cross reference list V-belts	56
Cross reference list synchronous belts	60
V-belt groove dimensions	64
Micro-V® belt groove dimensions	66
PolyFlex® (JB™) groove dimensions	67
Synchronous pulley groove	68
Minimum recommended idler diameters	70
Minimum installation and take up allowance	73
Synchronous belt tolerance	76
Use and positioning of idlers	77
Chain to belt conversion	80
Drive survey worksheet	82
Gates design IQ data worksheet	83
7. How Gates makes your job easier	
Gates tools	86
Analytical tools	88
How Gates supports your business	89

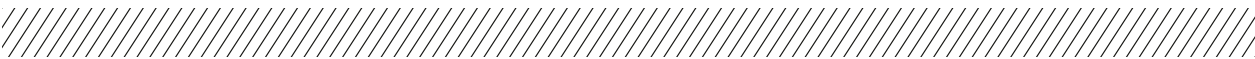
6. TECHNICAL DATA



DRIVEN BY POSSIBILITY™

CROSS REFERENCE LIST

V-BELTS



Belt Type	BRAND		
	GATES	Optibelt	ContiTech
V-belts single			
Premium Narrow banded-Aramid cord (SPBP, SPCP - 5VP/15JP, 8VP/25JP)	Predator®	Optibelt® Blue Power	Conti®V Power
Premium Narrow bandless-notched (XPZ, XPA, XPB, XPC - 3VX, 5VX)	Quad-Power® 4	Optibelt® Super X-Power Optibelt® Super E-Power	Conti®V FO Pioneer Conti®V FO Advance
Narrow bandless-notched (SPZ, SPA, SPB, SPC)	Super HC® MN		Conti®V FO DIN7753
Narrow banded (SPZ, SPA, SPB, SPC - 3V/9J, 5V/15J, 8V/25J)	Super HC® Delta Narrow™	Red Power 3 Optibelt® SK	Conti®V Advance Conti®V DIN7753
Classical bandless-notched (AX, BX, CX)	Tri-Power®	Optibelt® Super TX	Conti®V FO DIN2215
Classical banded (Z, A, B, C, D, E)	Hi-Power® Delta Classic™	Optibelt® VB	Conti®V DIN2215
Double V banded (AA, BB, CC, DD)	Dubl-V	Optibelt® DK	Conti®V Dual
Premium Fractional Horse Power banded-Aramid cord (2L, 3L, 4L, 5L)	PowerRated®	Optibelt® VB-LC	Conti®V Garden
Fractional Horse Power banded (2L, 3L, 4L, 5L)	TruFlex®		
V-belts joined			
Premium Joined Narrow banded - Aramid cord (SPBP, SPCP - 5VP/15JP, 8VP/25JP)	Predator® PowerBand®	Optibelt® KB Bleu Power	Conti®V Multibelt Power
Joined Premium Narrow bandless-notched (XPZ, XPA, XPB - 3VX, 5VX)	Quad-Power® 4 PowerBand®	Optibelt® Super KBX-Power	Conti®V Multibelt FO
Joined Narrow banded (SPB, SPC - 3V/9J, 5V/15J, 8V/25J)	Super HC® PowerBand®	KB Red Power 3 Optibelt® KB SK	Conti®V Multibelt Advance Conti®V Multibelt
Joined Classical bandless-notched (AX, BX, CX)	Tri-Power® PowerBand®	Optibelt® KBX	
Joined Classical banded (A, B, C)	Hi-Power® PowerBand®	Optibelt® KB VB	Conti®V Multibelt Advance Conti®V Multibelt
Polyurethane V-belt (60°) (3M, 5M, 7M, 11M)	PolyFlex®	Optibelt® KK	
Joined Polyurethane V-belt (60°) (3M-JB, 5M-JB, 7M-JB, 11M-JB)	PolyFlex® JB™		
Variable Speed bandless-notched	Multi-Speed®	Optibelt® Vario Power	Conti®V Varispeed Advance Conti®V Varispeed Power
V-ribbed (H, J, K, L, M - PH, PJ, PK, PLM, PM)	Micro-V®	Optibelt® RB	Conti®V Multirib Power Conti®V Multirib

CROSS REFERENCE LIST

V-BELTS



BRAND					
Megadyne	SIT	Dayco-Carlisle-Timken	Stomil	Bando	
		Aramax Xtra Duty	Super-K V-belts	Power Ace Aramid Combo	
Linea Gold XP Power Wedge VX		Gold-Ribbon Cog			
Linea X	SIT Torque Flex® CSX SIT Wedge CW MC	Power-Wedge Cog		Power Ace Cog	
Oleostatic (Gold) SP	SIT Excelite® ES CLSP SIT Wedge CW E	Super Power-Wedge	Super V-belts	Narrow SP Power Ace	
Gold Label X	SIT Torque Flex® CTX	Gold-Ribbon Cog		Power King Cog	
Oleostatic (Gold) Extra	SIT Excelite® ES CL	Super Blue Ribbon Super II	Classic V-belt	Power King	
EsaFlex		Double Angle	Double side V-belt	Double V	
XDV2		Durapower II Raw Edge FHP	Garden belts	UltraPower AG	
				Duraflex GL (FHP)	
		Aramax Wedge-Band			
PluriBand XP	SIT Banded MC	Gold-Ribbon Cog-Band Power-Wedge Cog-Band		Power Ace Cog Combo	
PluriBand SP	SIT Banded E	Wedge-Band	Power Bands	Power Ace Combo	
PluriBand		Super-Vee-Band	Power Bands	Power King Combo	
				Banflex	
				Banflex Combo	
Varisect	SIT Vario	Variable Speed Cog	Super VX V-belts	Power Max Variable Speed	
PV	Poly-V	Vee-Rib		Rib Ace	

Important notice

The purpose of above cross-reference lists is to give you an indication of possible changeovers to Gates belts.

Gates belts can replace listed competitors' products, however, when replacing Gates belts with listed products, problems may arise since certain Gates belts give proof of a higher power capacity.

CROSS REFERENCE LIST

V-BELTS



Belt Type	BRAND		
	GATES	Mitsuboshi	PIX
V-belts single			
Premium Narrow banded-Aramid cord (SPBP, SPCP - 5VP/15JP, 8VP/25JP)	Predator®		PIX-Terminator®-HXS
Premium Narrow bandless-notched (XPZ, XPA, XPB, XPC - 3VX, 5VX)	Quad-Power® 4		
Narrow bandless-notched (SPZ, SPA, SPB, SPC)	Super HC® MN	Maxstar wedge supreme	PIX-X'tra®
Narrow banded (SPZ, SPA, SPB, SPC - 3V/9J, 5V/15J, 8V/25J)	Super HC® Delta Narrow™	Maxstar wedge	PIX-X'set® PIX-Muscle®-XS3
Classical bandless-notched (AX, BX, CX)	Tri-Power®	Triplex	
Classical banded (Z, A, B, C, D, E)	Hi-Power® Delta Classic™	Conventional	Power Wrap
Double V banded (AA, BB, CC, DD)	Dubl-V		PIX-Duo®-XS
Premium Fractional Horse Power banded-Aramid cord (2L, 3L, 4L, 5L)	PowerRated®		PIX-X'set® Light Duty Belts
Fractional Horse Power banded (2L, 3L, 4L, 5L)	TruFlex®		PIX-X'set® Light Duty Belts
V-belts joined			
Premium Joined Narrow banded - Aramid cord (SPBP, SPCP - 5VP/15JP, 8VP/25JP)	Predator® PowerBand®		
Joined Premium Narrow bandless-notched (XPZ, XPA, XPB - 3VX, 5VX)	Quad-Power® 4 PowerBand®		
Joined Narrow banded (SPB, SPC - 3V/9J, 5V/15J, 8V/25J)	Super HC® PowerBand®	Multi Maxstar	PIX-DuraBand®-XS
Joined Classical bandless-notched (AX, BX, CX)	Tri-Power® PowerBand®	Multi Triplex	PIX-DuraBand®-XS
Joined Classical banded (A, B, C)	Hi-Power® PowerBand®	Conventional Banded	
Polyurethane V-belt (60°) (3M, 5M, 7M, 11M)	PolyFlex®	Polymax	
Joined Polyurethane V-belt (60°) (3M-JB, 5M-JB, 7M-JB, 11M-JB)	PolyFlex® JB™	Multi Polymax	
Variable Speed bandless-notched	Multi-Speed®		PIX-X'set®-VS
V-ribbed (H, J, K, L, M - PH, PJ, PK, PLM, PM)	Micro-V®	Ribstar	PIX-X'ceed®

CROSS REFERENCE LIST

V-BELTS



BRAND				
PTS Strongbelt	SKF	Colmant Cuveliers	Fenner	
		Veco 300		
			Fenner Quattro plus	
Strongbelt Maximum	Cogged raw edge wedge belt	Veco GTX Veco MX	Fenner Power CRE plus wedge belt	
Strongbelt Cursus	Wrapped wedge belt Wrapped narrow wedge	Veco Evolution Veco 200	Fenner Ultra Plus 150 Fenner Ultra Plus	
Moulded cogged, raw edge	Cogged raw edge classical belt			
Strongbelt Classis	Wrapped classical belt	Veco 100	Fenner-Classic V-belt	
Strongbelt Duplum	Double classical (Hex) belt	Ventico Garden		
		Ventico Garden		
		Ventico Garden		
Strongbelt Rubustus				
Strongbelt Rubustus	Banded wedge belt	Vecoband	Fenner Concord Plus	
Strongbelt Rubustus	Banded classical belt	Vecoband		
60° polyurethane-banded V-belt				
60° polyurethane-banded V-belt				
Strongbelt Varius		Variveco		
Strongbelt Forma	Ribbed belt		Fenner Polydrive Plus	

Important notice

The purpose of above cross-reference lists is to give you an indication of possible changeovers to Gates belts.

Gates belts can replace listed competitors' products, however, when replacing Gates belts with listed products, problems may arise since certain Gates belts give proof of a higher power capacity.

CROSS REFERENCE LIST

SYNCHRONOUS BELTS



Belt Type	BRAND		
	GATES	Optibelt	ContiTech
Synchronous belts			
Ultimate Performance, unbeaten Torque (5mm, 8mm, 14mm, 19mm)	Poly Chain® GT Carbon™ Poly Chain® Carbon™ Volt®	(DeltaChain® Carbon)	Conti® Synchrochain Carbon
High Performance, High Torque (8mm, 14mm)	Poly Chain® GT2	(DeltaChain®)	Conti® Synchrochain
Increase Power rating - reinforced cord (8mm, 14mm)	PowerGrip® GTX	Optibelt® Omega HL	Conti® Synchroforce CXA (HTD/STD) Conti Falcon Pd Conti® Synchroforce Extreme
Increase Power rating (2mm, 3mm, 5mm, 8mm, 14mm)	PowerGrip® GT3	Optibelt® Omega HP Optibelt® Omega FanPower	Conti® Synchroforce CXP (HTD/STD) Conti® Synchroforce Supreme
High Torque - HTD (3mm, 5mm, 8mm, 14mm, 20mm)	PowerGrip® HTD®	Optibelt® Omega Optibelt® STD	Conti® Synchrobelt (HTD/STD)
Trapezoidal (MXL, XL, L, H, XH, XXH)	PowerGrip®	Optibelt® ZR	Conti® Synchrobelt
Double Sided (XL, L, H - 3mm, 5mm, 8mm, 14mm)	Twin Power®	Optibelt® ZR double sided Optibelt® HTD double sided	Conti® Synchrotwin DH Conti® Synchrotwin CXP(III)
Open End - Rubber (MXL, XL, L - 2mm, 3 mm, 5mm, 8mm, 14mm)	Long Length™	Optibelt® HP Omega Linear Optibelt® Omega Linear Optibelt® ZR/HTD/STD linear	Conti® Synchroline
Paint and varnish compatible	PowerPaint™	Optibelt® Rainbow	Conti® Synchrocolor
Synchronous + Micro-V®	Mill-K	Optibelt® Omega Special	Conti® Synchririb

PU timing belts			
Metric pitch - sleeves (T2.5, T5, T10 - AT5, AT10)	Synchro-Power®	Optibelt® Alpha Power	
Metric pitch double sided - sleeves (DL-T5, DL-T10)	Synchro-Power®	Optibelt® Alpha-D	
Metric pitch - endless		Optibelt® Alphaflex	
Linear	Synchro-Power® Long Length™	Optibelt® Alpha linear	SynchroDrive®

CROSS REFERENCE LIST

SYNCHRONOUS BELTS



BRAND				
Megadyne	Stomil	Bando	Mitsuboshi	PIX
Isoran RPP Gold Isoran RPP Platinum			Giga Torque GX Mega Torque GII	
Isoran RPP Silver2		Synchro-Link® HPS	Mega Torque G	PIX-TorquePlus-XT2
Isoran RPP (Plus)		Synchro-Link® HT/STS	Super Torque	PIX-X'act HTD/STD
Isoran Imperial		Synchro-Link®	Timing Belt G	PIX-X'act CT
Isoran RPP DD Isoran DD		Synchro-Link® double sided		PIX-Dua XT
Isoran Open-end		Open end	Long Span	
MegaPaint®				PIX-PaintPro®-XT
Roller mill belts				PIX-Brawn-XT

		Synchro-Link Polyurethane		
		Synchro-Link Polyurethane		

Important notice

The purpose of above cross-reference lists is to give you an indication of possible changeovers to Gates belts.

Gates belts can replace listed competitors' products, however, when replacing Gates belts with listed products, problems may arise since certain Gates belts give proof of a higher power capacity.

CROSS REFERENCE LIST

SYNCHRONOUS BELTS



Belt Type	BRAND		
	GATES	PTS Strongbelt	SKF
Synchronous belts			
Ultimate Performance, unbeaten Torque (5mm, 8mm, 14mm, 19mm)	Poly Chain® GT Carbon™ Poly Chain® Carbon™ Volt®		
High Performance, High Torque (8mm, 14mm)	Poly Chain® GT2		
Increase Power rating - reinforced cord (8mm, 14mm)	PowerGrip® GTX		
Increase Power rating (2mm, 3mm, 5mm, 8mm, 14mm)	PowerGrip® GT3	Strongbelt® Premium	
High Torque - HTD (3mm, 5mm, 8mm, 14mm, 20mm)	PowerGrip® HTD®	Strongbelt® Motus	HiTD
Trapezoidal (MXL, XL, L, H, XH, XXH)	PowerGrip®	Timing belt - inch	Timing belt
Double Sided (XL, L, H - 3mm, 5mm, 8mm, 14mm)	Twin Power®	Double Timing belt - M	Double sided timing belt Double sided HiTD belt
Open End - Rubber (MXL, XL, L - 2mm, 3 mm, 5mm, 8mm, 14mm)	Long Length™	Open-ended timing belt	
Paint and varnish compatible	PowerPaint™		
Synchronous + Micro-V®	Mill-K		

PU timing belts			
Metric pitch - sleeves (T2.5, T5, T10 - AT5, AT10)	Synchro-Power®	Timing belt - T Timing belt - AT	
Metric pitch double sided - sleeves (DL-T5, DL-T10)	Synchro-Power®	Double timing belt - T	
Metric pitch - endless			
Linear	Synchro-Power® Long Length™		

CROSS REFERENCE LIST

SYNCHRONOUS BELTS



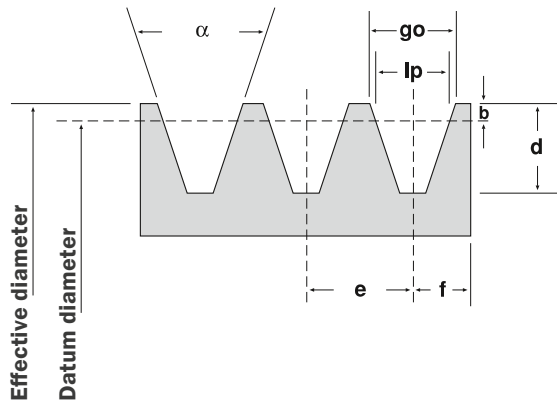
BRAND			
Colmant Cuveliers	Fenner	SIT	Dayco-Carlisle-Timken
		Mustang Torque	Panther XT
	Fenner® Torque Drive Plus3	Mustang Speed HTD Mustang Speed Super Torque	Panther ACHE Belt
Veco® Synchro HTB	Fenner® HTD	Top Drive® HTD	Synchro-Cog HT
Veco® Synchro Standard	Fenner® Classical	Classica	Synchro-Cog
		Mustang Speed Dual Top Drive® HTD Dual	Dual Synchronous Belt
		Open end	

Veco Synchro métrique	Metric timing		
Veco Synchro métrique	Double-sided metric		

Important notice

The purpose of above cross-reference lists is to give you an indication of possible changeovers to Gates belts. Gates belts can replace listed competitors' products, however, when replacing Gates belts with listed products, problems may arise since certain Gates belts give proof of a higher power capacity.

GROOVE DIMENSION NOMENCLATURE FOR V-BELTS



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 (α)	go (mm)	d (mm)	e (mm)	f^* (mm)	b (mm)
Z** SPZ*** XPZ	8.5	63 to 80 > 80	$34^\circ \pm 1^\circ$ $38^\circ \pm 1^\circ$	9.72 9.88	11 (+0.25/-0)	12 ± 0.30	8 ± 0.6	2.00
A** SPA*** XPA	11	90 to 118 > 118	$34^\circ \pm 1^\circ$ $38^\circ \pm 1^\circ$	12.68 12.89	13.75 (+0.25/-0)	15 ± 0.30	10 ± 0.6	2.75
B** SPB*** SPB-PB XPB	14	140 to 190 > 190	$34^\circ \pm 1^\circ$ $38^\circ \pm 1^\circ$	16.14 16.41	17.5 (+0.25/-0)	19 ± 0.40	12.5 ± 0.8	3.50
C** SPC*** SPC-PB XPC	19	224 to 315 > 315	$34^\circ \pm 1/2^\circ$ $38^\circ \pm 1/2^\circ$	21.94 22.31	24 (+0.25/-0)	25.5 ± 0.50	17 ± 1.0	4.80
D** mm	27	355 to 500 > 500	$36^\circ \pm 1/2^\circ$ $38^\circ \pm 1/2^\circ$	32.00	28 (min.)	37 ± 0.60	24 (± 2)	8.10
E** mm	32	500 to 630 > 630	$36^\circ \pm 1/2^\circ$ $38^\circ \pm 1/2^\circ$	40.00	33 (min.)	44.5 ± 0.70	29 (± 2)	12.00

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.

TECHNICAL DATA

V-BELT GROOVE DIMENSIONS



Groove dimensions and tolerances for Super HC® PowerBand® according to ISO 5290 engineering standards

Belt section	Effective diameter (mm)	Groove angle (α) ± 1/4°	go (mm) ± 0.13	d (mm) (+ 0.25/-0)	e* (mm) ± 0.40	f (mm)
3V/9J PowerBand®	< 90	36°	8.9	8.9	10.3	9 (+2.4/-0)
	90 to 150	38°				
	151 to 300	40°				
	> 300	42°				
5V/15J PowerBand®	< 250	38°	15.2	15.2	17.5	13 (+3.2/-0)
	250 to 400	40°				
	> 400	42°				
8V/25J PowerBand®	< 400	38°	25.4	25.4	28.6	19 (+6.3/-0)
	400 to 560	40°				
	> 560	42°				

* 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.

Groove dimensions and tolerances for Super HC® PowerBand® according to RMA engineering standards

Belt section	Datum width (mm)	Effective diameter (mm)	Groove angle (α) ± 1/4°	go (mm) ± 0.13	d (mm) (minimum)	e* (mm) ± 0.40	f (mm)	b (mm)
3V/3VX and PowerBand®	8.45	< 90	36°	8.89	8.6	10.32	8.73 (+2.4/-0)	0.65
		90 to 150	38°					
		151 to 300	40°					
		> 300	42°					
5V/5VX and PowerBand®	14.40	< 250	38°	15.24	15.0	17.46	12.70 (+3.2/-0)	1.25
		250 to 400	40°					
		> 400	42°					
8V/8VX and PowerBand®	23.65	< 400	38°	25.4	25.1	28.58	19.05 (+6.3/-0)	2.54
		400 to 560	40°					
		> 560	42°					

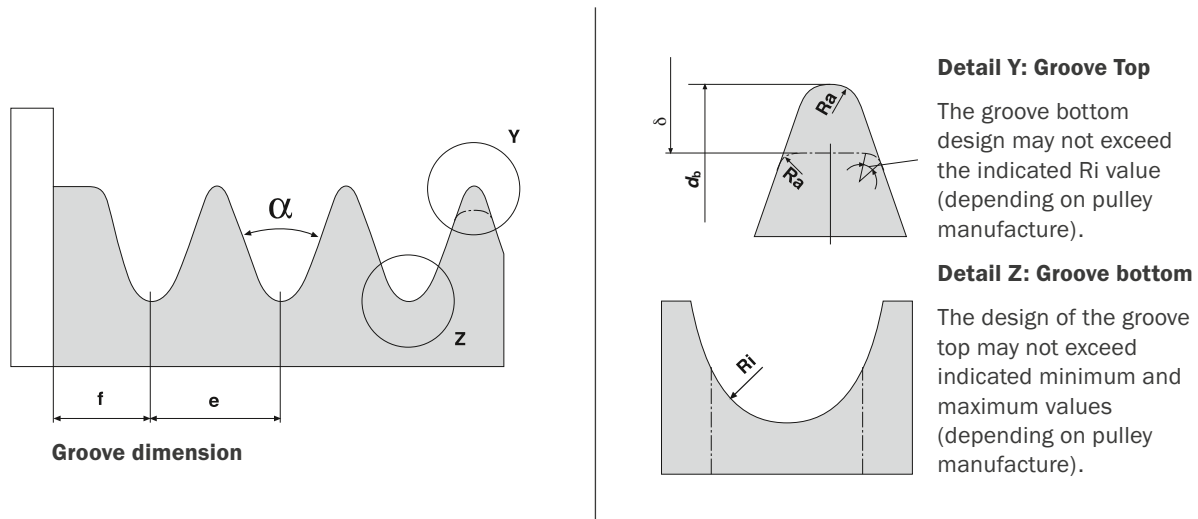
* Summation of the deviations from "e" for all grooves in any pulley shall not exceed ± 0.79 mm.

Groove dimensions and tolerances for Hi-Power® PowerBand® according to RMA engineering standards

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

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

GROOVE DIMENSION NOMENCLATURE FOR MICRO-V® BELTS

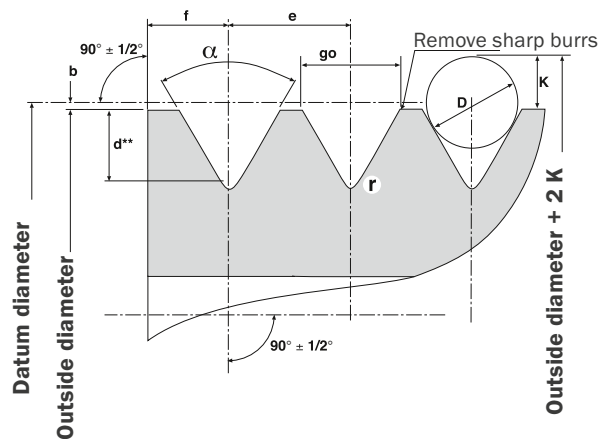


Groove dimensions and tolerances for Micro-V® according to DIN 7867 and ISO 9981 engineering standards

Belt section	Groove angle	e* (mm)	Ri (mm)	Ra (mm)	f (mm)
PJ	$40 \pm 1/2^\circ$	2.34 ± 0.03	0.40	0.20	1.8
PK	$40 \pm 1/2^\circ$	3.56 ± 0.05	0.50	0.25	2.5
PL	$40 \pm 1/2^\circ$	4.70 ± 0.05	0.40	0.40	3.3
PM	$40 \pm 1/2^\circ$	9.40 ± 0.08	0.75	0.75	6.4

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

GROOVE DIMENSION NOMENCLATURE FOR POLYFLEX® JB™ BELTS



** Groovedepth to bottom of straight-sidewall portion groove; i.e. tangentpoint of “d” and “r” dimensions.

Groove dimensions and tolerances for Polyflex® JB™

Groove designation	Outside diameter	Groove angle (α) ± 1/4°	go (mm) ± 0.05	d** (mm)	e* (mm) ± 0.13 / 0.05	f (mm) min.	r (mm) max.	2K (mm) ± 0.15	D (mm) ± 0.2	2b (mm)
3M	17-23	60°	2.80	1.97	3.35	2.23	0.3	4.15	3.00	0,6
	> 23	62°		1.90				4.16		
5M	26-32	60°	4.50	3.28	5.30	3.45	0.4	5.71	4.50	0,8
	33-97	62°		3.15				5.75		
7M	> 97	64°	7.10	3.05	8.50	5.65	0.6	5.79	7.50	0,9
	42-76	60°		5.28				10.20		
11M	> 76	62°	11.20	5.08	13.20	8.60	0.8	10.25	11.50	1,1
	67-117	60°		8.51				15.10		
	> 117	62°		8.20				15.19		

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 through 125 mm outside diameter
0.38 mm for pulleys with 126 mm through 250 mm outside diameter
0.76 mm for pulleys with 251 mm 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

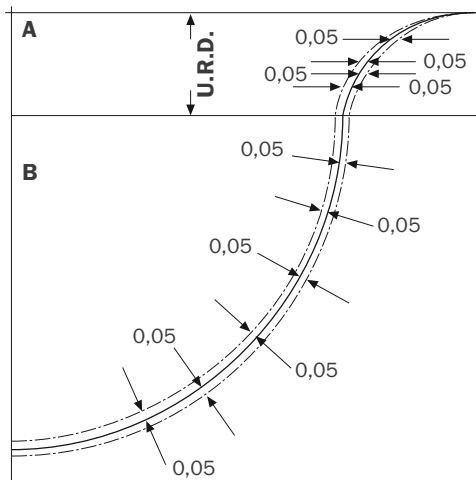
* TIR: Total Indicator Reading

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

PULLEY BORE/FACE DIAMETER TOLERANCE SPECIFICATIONS

Gates recommends that pulleys are precision made to close tolerances. Inaccurate manufacture or re boring may result in poor drive performance. Permissible tolerances for bore and for outside diameter are shown in the tables on this page. Working surface should be free from surface defects and be to 3.2µm or better.

Pulley tolerance band

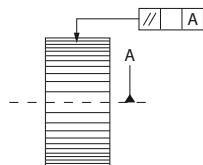


Pitch	U.R.D. (mm)
2mm	0.20
3mm	0.32
5mm	0.53
8mm	0.89
14mm	1.65
20mm	2.54

A: Concentric measurement

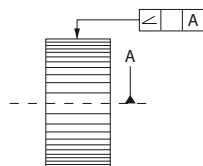
B: Perpendicular measurement

* 8M and 14M HTD® pulleys are suitable for PowerGrip® GT3 belts.



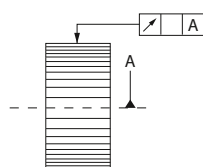
Parallelism of the teeth to the centre of axis

The parallelism of the teeth to the bore's centre of axis may not exceed a maximum deviation of 0.01mm at a wheel width of 10mm.



Draft

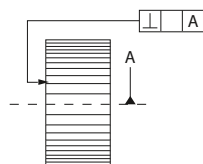
The maximum permissible draft is 0.01mm per 10mm of face width, but it must not exceed the outside diameter tolerance.



Eccentricity

Allowable amount from pulley bore to outside diameter is shown below.

Outside Diameter (mm)	Total Eccentricity
Up to 203	0.1
Over 203	0.005 per 10mm of diameter (may not exceed the tolerance on face diameter)

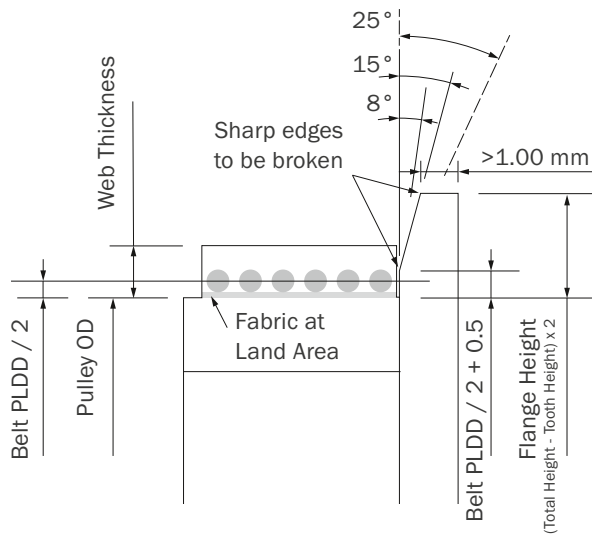


Perpendicularity

Bore of pulley to be perpendicular to vertical faces of pulley within 0.01mm per 10mm of radius with a maximum of 0.51mm T.I.R.



Pulley flange design



- Standard flanged synchronous pulleys will have flanges fitted on both sides.
- Pulley grooves should be parallel to the axis of the bore within 0.01 mm per 10 mm.
- Depending on the angle, the outer edge of the rim flange may not be flush with the front face of the timing belt pulley.

POWERGRIP® HTD & GT	
Belt Pitch (mm)	Pitch Line Differential Diameter (PLDD) (mm)
2	0.508
3	0.762
5	1.143
8	1.372
14	2.794

POLY CHAIN® GT	
Belt Pitch (mm)	Pitch Line Differential Diameter (PLDD) (mm)
5	1.143
8	1.600
14	2.800
19	3.800

TECHNICAL DATA

MINIMUM RECOMMENDED IDLER DIAMETERS



Minimum recommended idler diameters

	Belt section	Min O.D. of grooved inside idler		Min O.D. of flat outside idler	
		mm	inch	mm	inch
Predator®	SPBP	160	6.30	240	9.44
	SPCP	250	9.84	400	15.75
	8VP	317	12.48	445	17.52
Quad-Power® 4	XPZ / 3VX	56	2.20	80	3.15
	XPA	80	3.15	120	4.72
	XPB / 5VX	112	4.41	160	6.30
	XPC	180	7.09	250	9.84
Super HC® MN	SPZ	56	2.20	85	3.35
	SPA	80	3.15	120	4.72
	SPB	112	4.41	168	6.61
	SPC	180	7.09	270	10.63
Super HC®	SPZ / 3V	71	2.80	120	4.72
	SPA	100	3.94	160	6.30
	SPB / 5V	160	6.30	250	9.84
	SPC	250	9.84	350	13.78
	8V	317	12.48	450	17.72
Hi-Power®	Z	60	2.36	90	3.54
	A	85	3.35	110	4.33
	B	112	4.41	160	6.30
	C	160	6.30	220	8.66
	D	300	11.81	350	13.78
	E	500	19.69	600	23.62
Hi-Power® Dubl-V	AA	85	3.35	*	*
	BB	112	4.41	*	*
	CC	160	6.30	*	*
	DD	330	12.99	*	*
Delta Narrow™	SPZ	71	2.80	120	4.72
	SPA	100	3.94	160	6.30
	SPB	160	6.30	250	9.84
	SPC	250	9.84	400	15.75
Delta Classic™	Z	60	2.36	90	3.54
	A	85	3.35	110	4.33
	B	112	4.41	160	6.30
	C	160	6.30	220	8.66

TECHNICAL DATA

MINIMUM RECOMMENDED IDLER DIAMETERS



	Belt section	Min O.D. of grooved inside idler		Min O.D. of flat outside idler	
		mm	inch	mm	inch
Predator® PowerBand®	SPBP	160	6.30	250	9.84
	SPCP	250	9.84	400	15.75
	5VP/15JP	160	6.30	250	9.84
	8VP	317	12.48	445	17.52
Quad-Power® 4 PowerBand®	XPZ	56	2.20	80	3.15
	XPA	96	3.78	144	5.67
	XPB	135	5.31	192	7.56
	3VX	71	2.80	100	3.94
	5VX	112	4.41	180	7.09
Super HC® PowerBand®	SPB	160	6.30	250	9.84
	SPC	250	9.84	400	15.75
	3V/9J	71	2.80	108	4.25
	5V/15J	160	6.30	250	9.84
	8V/25J	317	12.48	445	17.52
Hi-Power® PowerBand®	B	137	5.39	180	7.09
	C	228	8.98	300	11.81
	D	330	12.99	430	16.93
PoweRated®	3L	38	1.50	50	1.97
	4L	64	2.52	83	3.27
	5L	89	3.50	116	4.57
Polyflex®	3M	17	0.67	*	*
	5M	26	1.02	*	*
	7M	42	1.65	*	*
	11M	67	2.64	*	*
Polyflex® JB™	3M-JB	17	0.67	*	*
	5M-JB	26	1.02	*	*
	7M-JB	42	1.65	*	*
	11M-JB	67	2.64	*	*
Micro-V®	PJ	20	0.79	32	1.26
	PK	50	1.97	90	3.54
	PL	75	2.95	115	4.53
	PM	180	7.09	270	10.63

TECHNICAL DATA

MINIMUM RECOMMENDED IDLER DIAMETERS



Minimum recommended pulley sizes for synchronous belts

	Belt pitch	Min. recommended pulley size (N° of grooves)	Min. back idler diameter (mm)
Poly Chain® Carbon™ Volt®	8MGT	22	85
	14MGT	28	190
Poly Chain® GT2	8MGT	22	*
	14MGT	28	*
PowerGrip® GTX	8MX	22	85
	14MX	28	190
PowerGrip® GT3	2MGT	10	10
	3MGT	16	25
	5MGT	18	45
	8MGT	22	85
	14MGT	28	190
PowerGrip® HTD®	3M	10	15
	5M	14	35
	8M	22	85
	14M	28	190
	20M	34	325
PowerGrip®	MXL	10	10
	XL	10	25
	L	10	45
	H	14	85
	XH	18	190
	XXH	18	260
	Belt pitch	Min. N° of grooves	N° of grooves
Twin Power®	XL	10	10
	L	10	10
	H	14	14
	5M	14	14
	8MGT	22	22
	14MGT	28	28

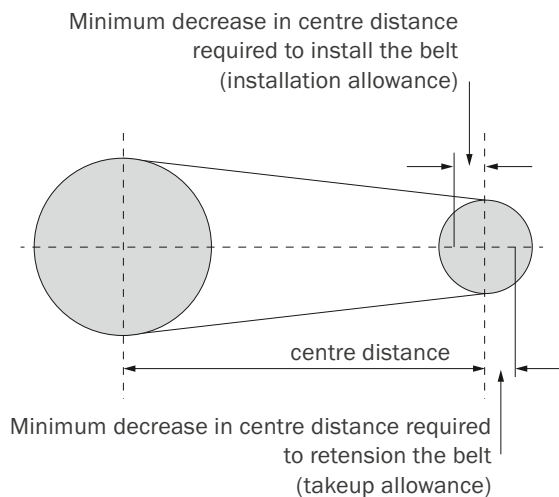
	Belt pitch	Min. recommended pulley size (N° of grooves)	Min. back idler diameter (mm)
Synchro-Power®	T2.5	12	20
	T5	10	30
	T10	14	80
	AT5	15	60
	AT10	15	120
	T5D	10	
Synchro-Power® LL	T10D	14	
	T5	10	30
	T10	14	80
	T10HF	12	60
	T20	15	120
	AT5	15	60
	AT10	15	120
	ATL10	25	150
	ATL10HF	20	130
	AT20	18	180
	ATL20	30	250
	HTD5M	14	60
	HTD8M	20	120
	HTD14M	28	180
	HTDL14M	43	250
	HPL14M	44	250
	STD5M	14	60
	STD8M	20	120
	XL	10	30
	L	10	60
	H	14	80
	XH	12	150

TECHNICAL DATA

MINIMUM INSTALLATION AND TAKE UP ALLOWANCE



Minimum installation and take up allowance (V-Belts, Micro-V® Belts, Polyflex® and Polyflex® JB™ Belts, Synchronous Belts)



Provide the minimum installation and take up allowances

- Find the minimum installation and take up allowances from the table
- If you can't adjust the centre distance to install or take up the belts, it is advisable to use an idler. Separate instructions on the use of idlers are given on **page 77**.

V-belts																	
Datum length (mm)	Minimum installation allowance (mm)																Minimum takeup allowance (mm) All sections
	V-belt section																
	XPZ 3VX SPZ 3V	XPA SPA	XPB 5VX SPB 5V	SPC XPC	8V	3V / 9J PB	5V / 15J PB 25J PB	8V PB 25J PB	Z	A	A PB	B	B PB SPB PB	C	C PB SPC PB	D	
	420 - 1199	15	20	-	-	-	30	-	-	15	20	30	25	35	40	50	
1200 - 1999	20	25	25	-	-	35	55	-	20	20	30	30	40	40	50	50	35
2000 - 2749	20	25	25	35	40	35	55	85	20	25	35	30	40	40	50	50	40
2750 - 3499	20	25	25	35	40	35	55	85	-	25	35	30	40	40	50	50	45
3500 - 4499	20	25	25	35	40	35	55	85	-	25	35	30	40	50	60	55	55
4500 - 5499	-	25	25	35	45	-	55	90	-	25	35	40	50	50	60	60	65
5500 - 6499	-	-	35	40	45	-	60	90	-	25	35	40	50	50	60	60	85
6500 - 7999	-	-	35	40	45	-	60	90	-	-	-	40	50	50	60	65	95
8000 -	-	-	35	45	50	-	60	100	-	-	-	-	50	50	60	65	110

PB = PowerBand®

TECHNICAL DATA

MINIMUM INSTALLATION AND TAKE UP ALLOWANCE



Micro-V® belts					
Effective length (mm)	Minimum installation allowance (mm)				Minimum takeup allowance (mm) All sections
	Micro-V® belt section				
	PJ	PK	PL	PM	
-500	10				10
501 - 1000	15	10			20
1001 - 1500	15	15	25		25
1501 - 2000	20	15	25		35
2001 - 2500	20	20	30	40	40
2501 - 3000		25	30	40	45
3001 - 4000		30	35	45	60
4001 - 5000				45	65
5001 - 6000				50	70
6001 - 7500				55	85
7501 - 9000				65	100
9001 -				70	115

Polyflex® and Polyflex® JB™ belts					
Effective length (mm)	Minimum installation allowance (mm)				Minimum takeup allowance (mm) All sections
	Polyflex® and Polyflex® JB™ belts				
	3M-JB	5M-JB	7M-JB	11M-JB	
180 - 272	5				
280 - 300	7.5	10			5
307 - 710	10	15	15	25	15
730 - 1090		25	25	30	30
1120 - 1500		30	30	35	35
1550 - 1900			30	40	35
1950 - 2300			40	50	45

Synchronous belts					
	Belt length (mm)	Min. standard installation allowance (flanged pulleys removed for installation) mm	Min. installation allowance (one pulley flanged) mm	Min. installation allowance (both pulleys flanged) mm	Min. tensioning allowance (any drive) mm
Poly Chain® Carbon™ Volt® 8MGT Poly Chain® GT2 8MGT	640 - 1000	2	24	35	1
	1001 - 1780	3	25	36	1
	1781 - 2540	3	25	37	1
	2541 - 3300	4	26	37	1
	3301 - 4600	5	27	39	1

TECHNICAL DATA

MINIMUM INSTALLATION AND TAKE UP ALLOWANCE



Synchronous belts					
	Belt length (mm)	Min. standard installation allowance (flanged pulleys removed for installation) mm	Min. installation allowance (one pulley flanged) mm	Min. installation allowance (both pulleys flanged) mm	Min. tensioning allowance (any drive) mm
Poly Chain® Carbon™ Volt® 14MGT Poly Chain® GT2 14MGT	640 - 1000	2	33	52	1
	1001 - 1780	3	34	53	1
	1781 - 2540	3	35	53	1
	2541 - 3300	4	35	54	1
	3301 - 4600	5	37	55	1
Poly Chain® Carbon™ / PowerGrip® GT3 5MGT PowerGrip® HTD® 5M	... - 500	1	15	20	1
	501 - 1000	1	15	20	1
	1001 - 1500	2	15	21	1
	1501 - 2260	2	16	21	1
	2261 - 3020	3	16	22	1
PowerGrip® GT3 8MGT PowerGrip® HTD® 8M	... - 500	1	23	34	1
	501 - 1000	1	23	34	1
	1001 - 1500	2	23	35	1
	1501 - 2260	2	24	35	1
	2261 - 3020	3	24	36	1
	3021 - 4020	4	25	36	1
	4021 - 4780	4	26	37	1
	4781 - 6860	5	27	38	1
PowerGrip® GT3 14MGT PowerGrip® HTD® 14M	... - 1000	1	37	60	1
	1001 - 1500	2	37	60	1
	1501 - 2260	2	38	61	1
	2261 - 3020	3	38	61	1
	3021 - 4020	4	39	62	1
	4021 - 4780	4	40	63	1
	4781 - 6860	5	41	64	1
PowerGrip® HTD® 20M	2000 - 2260	2	49	80	1
	2261 - 3020	3	50	80	1
	3021 - 4020	4	51	81	1
	4021 - 4780	4	51	82	1
	4781 - 6860	5	52	83	1
PowerGrip® MXL	90 - 127	1	9	13	1
	128 - 254	1	9	13	1
	255 - 508	1	10	13	1
	509 - 1016	1	10	14	1
	1017 - 1524	2	10	14	1
	1525 - 4572	3	14	14	2
PowerGrip® XL	90 - 127	1	12	19	1
	128 - 254	1	13	19	1
	255 - 508	1	13	19	1
	509 - 1016	1	13	19	1
	1017 - 1524	1	14	20	1
	1525 - 4572	3	15	21	2
PowerGrip® L	314 - 508	1	17	23	1
	509 - 1016	1	18	23	1
	1017 - 1524	2	18	23	1
	1525 - 4572	3	19	25	2
PowerGrip® H	609 - 1016	1	18	26	1
	1017 - 1524	2	18	26	1
	1525 - 4572	3	19	28	2
PowerGrip® XH	1289 - 1524	2	31	51	1
	1525 - 4572	3	32	52	2
PowerGrip® XXH	1778 - 4572	3	42	70	2



Synchronous belt tolerances

Belt width (mm)	Belt width tolerance (mm)		
	Belt lengths 0-838 (mm)	Belt lengths 838-1676 (mm)	Belt lengths 1676+ (mm)
3 - 10	+0.4	+0.4	
	-0.8	-0.8	
12 - 38	+0.8	+0.8	+0.8
	-0.8	-1.2	-1.2
39 - 51	+0.8	+1.2	+1.2
	-1.2	-1.2	-1.6
52 - 64	+1.2	+1.2	+1.6
	-1.2	-1.6	-1.6
65 - 76	+1.2	+1.6	+1.6
	-1.6	-1.6	-2.0
77 - 102	+1.6	+2.0	+2.0
	-1.6	-1.6	-2.0
103 - 178	+2.4	+2.4	+2.4
	-2.4	-2.8	-3.2
178+			+4.8
			-6.4

Belt length (mm)	Belt centre distance tolerance (mm)	
	PowerGrip® / PowerGrip® HTD®	PowerGrip® GT3
127 - 254	± 0.20	± 0.20
255 - 381	± 0.23	± 0.23
382 - 508	± 0.25	± 0.23
509 - 762	± 0.30	± 0.27
763 - 1016	± 0.33	± 0.30
1017 - 1270	± 0.38	± 0.32
1271 - 1524	± 0.41	± 0.36
1525 - 1778	± 0.43	± 0.39
1779	(± 0.43)	± 0.42
	(± 0.025 mm per 254 mm)	(± 0.025 mm per 250 mm)



Use of idlers should be restricted to those cases in which they are functionally necessary. Idlers are normally used to apply tension when centres are not adjustable.

Idlers should be located on the slack side of the belt drive. For inside idlers, grooved pulleys are recommended up to 40 grooves. On larger diameters, flat, uncrowned idlers may be used. Inside idler diameters should not be smaller than the smallest loaded pulley in the system. Outside or backside idlers should be flat and uncrowned; flanges are not recommended. Diameters should generally not be smaller than the smallest loaded pulley in the system. Slack side spring loaded idlers can be used, as long as care is taken to avoid resonant vibration conditions and load reversals.

IDLERS ON V-BELT DRIVES

An idler as used on V-belt drives, is a wheel that is not loaded and may be either a grooved or a flat pulley. Idlers are used on V-belt drives for various reasons:

1. To provide takeup for drives with fixed centre distance.
2. To clear obstructions.
3. To turn corners (as in mule pulley drives).
4. To break up long spans where belt vibration may be a problem.
5. To maintain tension.
6. To act as a clutching device.

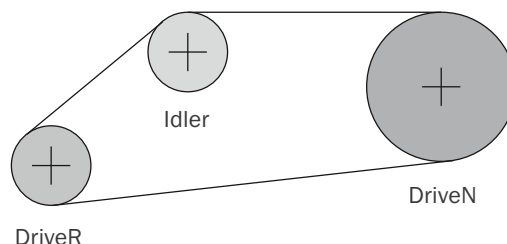
Idlers always impose additional bending stresses on the belts. Therefore it is recommended to avoid idlers if possible. If needed at all in the drive, idler dimensions and locations should be designed for a minimum reduction of belt life.

PLACEMENT OF IDLERS ON THE DRIVE

Inside or outside idlers

Idlers may be placed either inside or outside the drive. An inside idler decreases the arc of contact on the adjacent pulleys. Inside idlers can be either grooved or flat. Predator® PowerBand®, Super HC® PowerBand®, Hi-Power® (PowerBand®), Delta Classic™ and Micro-V® will run satisfactorily with flat inside idlers. Grooved inside idlers must always be used with Predator®, Quad-Power® 4 (PowerBand®), Super HC® (MN) and Delta Narrow™.

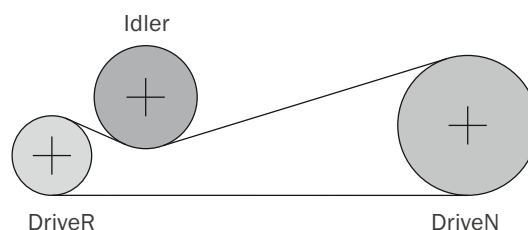
Inside idler



Outside idler

An outside idler increases the arc of contact but the amount of takeup is limited by the span on the opposite side. Outside idlers are always flat pulleys.

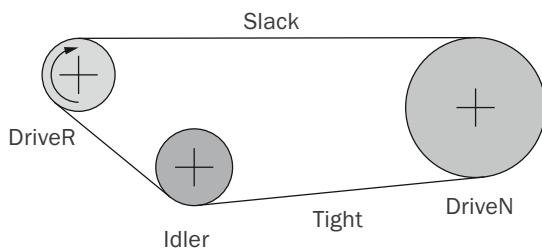
NOTE: the use of outside idlers is not recommended for Polyflex® JB™ belt drives.



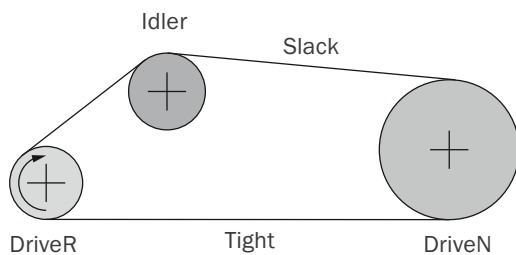
Tight or slack spans

Idlers should be placed, if at all possible, on the slack side of a drive, rather than on the tight side. Springloaded or weighted idlers should always be located on the slack side because the spring force, or weight, can be much less in this position. Also, such idlers should not be used on drives where the load can be reversed (i.e. where the slack side can become the tight side).

Tight side idler



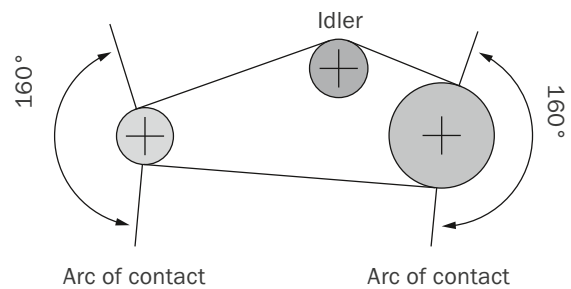
Slack side idler



Location of the idler in the span

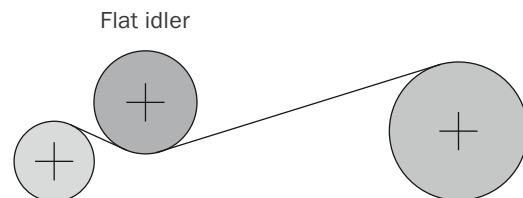
A grooved inside idler may be located at any point along the span, but preferably so that it results in nearly equal arcs of contact on the two adjacent pulleys.

Equal arcs



Locating flat idler

A flat idler pulley, whether it is inside or outside should be located as far as is practical from the next pulley the belt is entering. This is because V-belts move back and forth slightly on a flat pulley, and locating it as far away from the next pulley minimises the possibility of the belt entering that pulley in a misaligned condition. The use of flat idler pulleys on long span drives can cause severe belt whip, and should be avoided if possible.





FURTHER INFORMATION

Idler diameters

Inside idlers should be at least as large as the smallest power transmitting pulley. Outside idlers should be at least 50% larger than the smallest power transmitting pulley. Belt power ratings or belt life are reduced significantly when using idlers that are too small.

Belt length

A drive using an idler should be laid out to scale, the extreme installation and takeup positions established and the length measured in each position. Make sure that the belt you select allows sufficient installation and takeup.

Flat idlers

Flat idlers for V-belt drives should not be crowned. If flanging is used, the inside bottom corners should not be rounded since this may cause the belt to climb off the pulley. A general rule to determine the face width of a flat idler (between the flanges if flanged) is to add 1.5 times the nominal belt top width to the face width of the grooved pulley used.

Reduction of power rating

As stated above, the use of an idler (or several idlers) will have its effect on belt performance. So for equal belt life power rating should be reduced. If the above recommendations are used, it is possible to design satisfactory V-belt drives using idlers by multiplying the normal rating by the following factor:

Number of idlers	Multiplier
1	0.91
2	0.86
3	0.81

These factors are approximate. They apply only when idler diameters are in accordance with the above recommendations. If power rating is not reduced to account for an idler, belt life will be reduced. Belt life and power rating are much more reduced, when too small idlers are used, as the extra bending stress increases with decrease in diameter.

TECHNICAL DATA

CHAIN TO BELT CONVERSION



Roller Chain Coverage								
Chain	#35	#40	#50	2-#40	#60	3-#40	2-#50	3-#50
Width (mm)	12.7	17.0	21.1	31.5	26.4	45.7	39.4	57.4
8M-12	•	•	•					
8M-21			•	•	•	•	•	
8M-36							•	•
8M-62								
14M-20						•	•	•
14M-37								
14M-68								

Roller Chain Coverage												
Chain - ANSI	#35	#40	#50	2/#40	#60	3/#40	2/#50	2/#60	#80	3/#50	#100	3/#60
Width (in)	0.50	0.67	0.83	1.24	1.04	1.80	1.55	1.94	1.32	2.26	1.61	2.84
Chain - British Std	06B	08B	10B	08B-2	12B	08B-2	10B-2	12B-2	16B	10B-3	20B	12B-3
Pitch (mm)	9.525	12.7	15.875	12.7	19.05	12.7	15.875	19.05	25.4	15.875	31.75	19.05
8M-12	•	•	•									
8M-21		•	•	•	•	•	•					
8M-36						•	•	•	•	•		
8M-62										•	•	•
14M-20					•	•	•	•	•	•		
14M-37										•	•	•
14M-68												
14M-90												
14M-125												

Roller Chain Coverage								
Chain ANSI	2-#120	3-#100	#180	2-#140	3-#120	#200	2-#160	2-#180
Width (in)	3.79	4.43	2.88	4.07	5.58	3.12	4.85	5.48
Chain - British Std	24B-2	20B-3	40B	28B-2	24B-3	40B	32B-2	40B-2
Pitch (mm)	38.1	31.75	57.15	44.45	38.1	63.5	50.8	57.15
19M-100						•	•	•
19M-150								•
19M-200								
19M-250								
19M-300								

Notes

1. Chart Based On Current Poly Chain® GT Carbon™ Power Ratings
2. #35 - #100 Sizes Represent 99.2% Of Total Unit Sales
3. Maximum Chain Size Conversion With 8mm Pitch Belts Based On Diameters: #100
4. Maximum Chain Size Conversion With 14mm Pitch Belts Based On Diameters: #200
5. Chain Ratings Per American Chain Association
6. Chain Width Dimensions Represent Chain Pin Width

TECHNICAL DATA

CHAIN TO BELT CONVERSION



Roller Chain Coverage									
2-#60	#80	3-#60	#100	2-#80	#120	3-#80	2-#100	#140	#160
49.3	33.5	72.1	40.9	62.7	50.8	91.9	76.7	54.5	64.5
•	•								
	•	•	•	•					
•	•								
	•	•	•	•	•				
					•	•	•	•	•

Roller Chain Coverage													
2/#80	#120	2/#100	#140	3/#80	#160	#180	2/#120	3/#100	#200	2/#140	3/#120	2/#160	2/#180
2.47	2.00	3.02	2.14	3.62	2.54	2.88	3.79	4.43	3.12	4.07	5.58	4.85	5.48
16B-2	24B	20B-2	28B	16B-3	32B	40B	24B-2	20B-3	40B	28B-2	24B-3	32B-2	40B-2
25.4	38.1	31.75	44.45	25.40	50.8	57.15	38.1	31.75	63.5	44.45	38.1	50.8	57.15
•													
•	•												
	•	•	•	•	•	•	•	•					
							•	•	•	•	•		
											•	•	•

Roller Chain Coverage					
2-#200	2-#240	3-#200	3-#240	4-#200	5-#200
5.94	7.27	8.76	10.7	11.58	14.3
40B-2	48B-2	40B-3	48B-3	40B-4	40B-5
63.5	76.2	63.5	76.2	63.5	63.5
•					
•	•	•		•	
		•	•	•	•

DRIVE SURVEY WORKSHEET



CUSTOMER INFORMATION

Distributor:
Customer:

DRIVE INFORMATION

I.D. of Drive (location, number, etc.).....

Description of DriveN Equipment.....

Manufacturer of DriveN Equipment.....

Kilo Watt Rating of Motor..... Motor Shaft Dia. Drive Dhft Dia.

Speed:

DriveR RPM RPM - Measured with Contact or Strobe Tachometer ☐ Yes ☐ No

DriveN RPM RPM - Measured with Contact or Strobe Tachometer ☐ Yes ☐ No

Speed Ratio..... Speed Upor Speed Down

Center Distance:

Minimum Nominal Maximum

Existing Drive Components:

DriveR..... DriveN

Belts Belt Manufacturer

Ambient Conditions:

Temprature..... Moisture Oil, etc.

Abrasives..... Shock Load

Static Conductivity Required? ☐ Yes ☐ No

Maximum Sprocket Diameter (OD) and Width Limitations (for guard clearance):

DriveR: Max. OD..... Max Width

DriveN: Max. OD Max. Width

Guard Description

Motor Mount:

Double Screw Base? ☐ Yes ☐ No

Motor Mounted on Sheet Metal? ☐ Yes ☐ No

Duty Cycle:

Number of Starts/Stops..... times per (hour, day, week, etc...)

ENERGY SAVINGS INFORMATION

Energy Cost per KW-Hour.....

Hours of Operation:

..... Hours per Day Days per week Weeks per year

Are there any ATEX requirements for the drive? ☐ Yes ☐ No



Account:
Contact:
Address:
Title:
Phone:
Fax:
Email:

DESIGN PARAMETERS

DriveR:
Motor type & description: (servo, stepper, DC, AC, etc.)
Reversing: ☐ Yes ☐ No
Nominal Motor Torque / Power Output: rpm:
Max/Peak Motor Torque/Power Output: rpm:
Motor Stall Torque (if applicable):
..... Drive Rotation(CW / CCW / Rev)

DriveN's / idlers: (Specify appropriate units for each field; in, mm / hp; kw / lb-ft, lb-in, N-m, etc.)

Description	X	Y	Pulley Diameter	Pitch		Sprocket Grooves	Inside / Outside	rpm	Load (driven)	Units	Conditions		Shaft Diameter
											#	% Time	
Driver													

Note: For example drive layouts use additional pages as needed

Drive Sketch

Idler details				
Slot movement Spring: ☐ Yes ☐ No	Min position		Max position	
	X	Y	X	Y
Pivoting movement Spring: ☐ Yes ☐ No	Pivot point		Movement angle	
	X	Y	Min deg	Max deg
Pivot arm radius		inch		mm