

Polyurethane Timing Belts, Pulleys & Accessories

“power transmission engineers”

P.I.E.S. Australia Pty Ltd is the leading Australasian distributor for polyurethane timing belts and pulleys. A wholly Australian owned, family business formed in 1978, PIES is the sole Australian agents for Synchroflex®, Breco® and Brecoflex® polyurethane belting products. Pies also design, manufacture, import and export timing belts and pulleys.

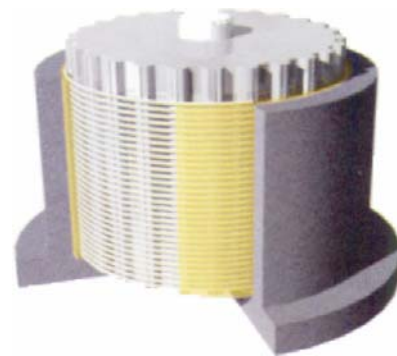
Contents		Page No.
Introduction		3
T Type Belts & Pulleys	T2, M	4
	T2.5	5
	T5	6
	T10	8
	T20	11
AT High Performance Belts & Pulleys	AT3	13
	AT5	14
	AT10	16
	AT20	18
ATL Linear Belts		20
Breco Imperial Belts		22
Special Belts	TK10 Self Tracking Belts & Pulleys	23
	Belts With Profiles	24
	Gen III, 'E' & Kevlar Tension Cords	29
	ATN Integrated Profiles Belting	30
	Belts With Backings	32
Formulae		39
Components	Idler Pulleys	40
	Slider Beds	42
	Tension Plates	43
	Locking devices	44
Tensioning		46
Contact Details		48

Belt	Power Range	R.P.M	Speed
M/T2/T2.5	0-0.5 kW	0-40,000 rpm	0-80 m/s
T5	0-5 kW	0-40,000 rpm	0-80 m/s
T10	0-30 kW	0-15,000 rpm	0-60 m/s
T20	0-100 kW	0-6,000 rpm	0-40 m/s
AT3	0-5 kW	0-40,000 rpm	0-80 m/s
AT5	0-15 kW	0-40,000 rpm	0-80 m/s
AT10	0-70 kW	0-15,000 rpm	0-60 m/s
AT20	0-250 kW	0-6,000 rpm	0-40 m/s

Synchroflex® timing belts are made from a wear resistant Contilam polyurethane with high quality steel tension members. The excellent bond between the two creates a belt with high load bearing properties and exceptional span rigidity which means no post elongation. The moulding process produces close tolerance timing belts allowing them to be run smoothly at high rotational speeds. Synchroflex® belts can also be used for indexing and conveying and can also have lugs welded to the belt back.

Properties:

- positive fit, synchronous operation
- low noise
- constant length, no post elongation
- maintenance free
- extremely wear resistant
- efficiency up to 98%
- highly flexible
- belt speeds up to 80 m/sec
- temperature range -30° to + 80°C
- temporarily higher than 120°C
- resistant to fats, oils and petrols
- resistant to some acids and alkalis
- hydrolysis resistant
- low tension
- high positional and angular accuracy



Breco® / Brecoflex®

Breco® belts come in three styles.

Breco-M®: Open length belting mainly used for linear drives. Reels are extruded to 50 and 100m lengths, although shorter lengths can be cut.

Breco-V®: Joined to length belting are made from lengths of Breco-M® and are used for indexing, conveying and power transmission applications particularly when long centre distances are involved. Profiles and backings can also be applied to these belts.

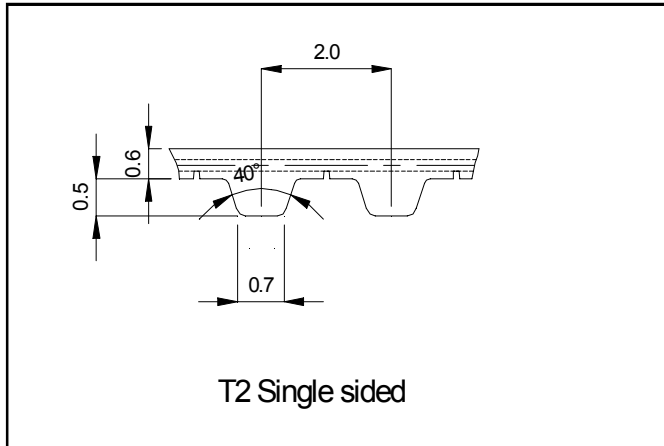
Brecoflex®: Fully moulded endless timing belts used for power transmission applications. These belts have no joint and a continuous steel tension member.



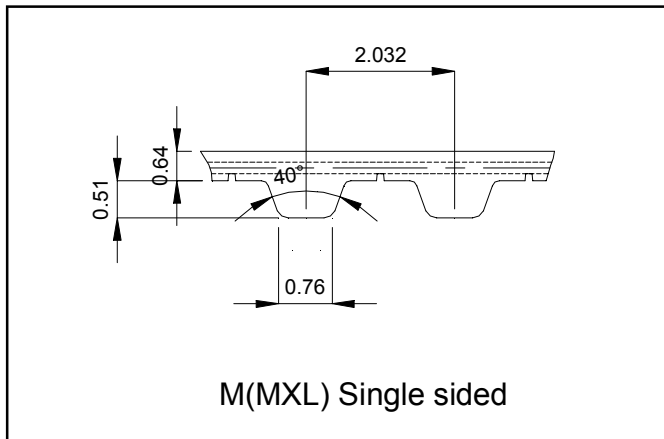
Synchroflex / Breco T2/M belts



T2 (2mm pitch)



M (2.032mm pitch)



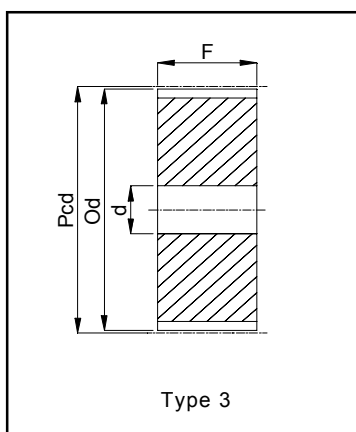
Standard Belt widths	4	6	10
Example Part Number	6T2/360 width / type pitch / length (mm)		

T2 TYPE			M (MXL) TYPE		
Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
T2/90	90	45	M 111	111.76	55
T2/108	108	54	M 113	113.79	56
T2/118	118	59	M 121	121.92	60
T2/120	120	60	M 132	132.08	65
T2/138	138	69	M 142	142.24	70
T2/140	140	70	M 144	144.27	71
T2/144	144	72	M 162	162.56	80
T2/150	150	75	M 182	182.88	90
T2/160	160	80	M 197	197.10	97
T2/180	180	90	M 203	203.20	100
T2/200	200	100	M 209	209.30	103
T2/220	220	110	M 213	213.36	105
T2/240	240	120	M 243	243.86	120
T2/256	256	128	M 256	256.03	126
T2/262	262	131	M 264	264.16	130
T2/280	280	140	M 284	284.48	140
T2/292	292	146	M 304	304.80	150
T2/320	320	160	M 355	355.60	175
T2/360	360	180	M 373	373.89	184
T2/600	600	300	M 449	449.07	221
T2/710	710	355	M 503	503.94	248
			M 520	520.19	256
			M 599	599.44	295
			M 731	731.52	360
			M 1178	1178.56	580

Belt weight	T2	M
Per 10mm of belt width	0.011kg/m	0.012kg/m
Other options and features available		
*Coloured		
*With Kevlar tension members		
*Anti-static		
*With profiles welded		

Max. Tensile Load (N)			
Width (mm)	4	6	10
Synchroflex	24	40	80

T2 Pulley to suit 6mm wide Belt

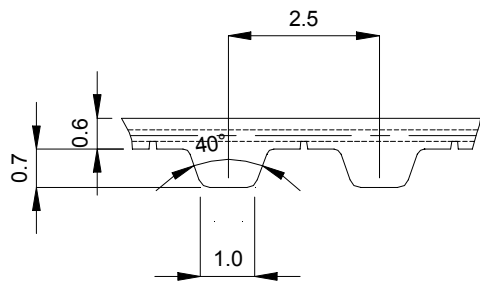


Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
T2										
AL16T2/15-0	3	15	9.55	9.00	-	-	16	-	3	
AL16T2/16-0	3	16	10.19	9.64	-	-	16	-	3	
AL16T2/20-0	3	20	12.73	12.18	-	-	16	-	3	
AL16T2/24-2	6F	24	15.28	14.73	10	18	10	16	3	
AL16T2/32-2	6F	32	20.37	19.82	14	24	10	16	3	
AL16T2/48-2	6F	48	30.56	30.01	20	35	10	16	4	
M										
AL16M/15-0	3	15	9.70	9.19	-	-	16	-	3	
AL16M/16-0	3	16	10.35	9.84	-	-	16	-	3	
AL16M/20-0	3	20	12.94	12.43	-	-	16	-	3	
AL16M/24-2	6F	24	15.52	15.01	10	18	10	16	3	
AL16M/32-2	6F	32	20.70	20.19	14	24	10	16	3	
AL16M/48-2	6F	48	31.05	30.54	20	35	10	16	4	

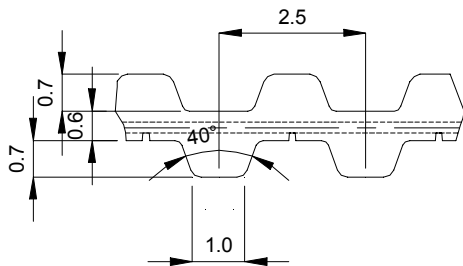
Synchroflex / Breco T2.5 belts



T2.5 (2.5mm pitch)



T2.5 Single sided



T2.5-DL Double Sided

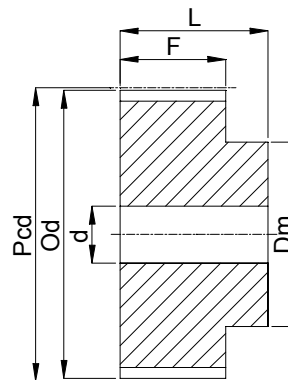
Max. Tensile Load (N)

Width (mm)	4	6	10
Synchroflex	39	65	117
Breco- M	32	55	98

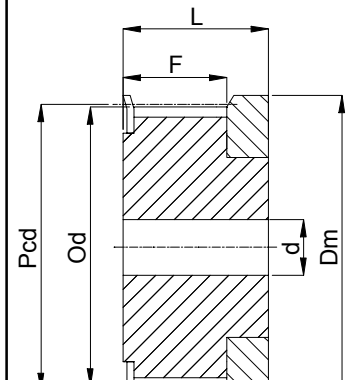
Standard Belt widths	4	6	10
Example Part Number	6T2.5/600 width / type pitch / length (mm)		

Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
T2.5/55	55	22	T2.5/330	330	132
T2.5/120	120	48	T2.5/380	380	152
T2.5/145	145	58	T2.5/395	395	158
T2.5/160	160	64			
T2.5/177.5	177.5	71	T2.5/420	420	168
			T2.5/480	480	192
T2.5/180	180	72	T2.5/500	500	200
T2.5/182.5	182.5	73	T2.5/540	540	216
T2.5/200	200	80	T2.5/600	600	240
T2.5/210	210	84			
T2.5/225	225	90	T2.5/620	620	248
			T2.5/650	650	260
T2.5/230	230	92	T2.5/780	780	312
T2.5/245	245	98	T2.5/950	950	380
T2.5/265	265	106	T2.5/1300	1300	520
T2.5/285	285	114	T2.5/1475	1475	590
T2.5/290	290	116			
			DOUBLE SIDED		
T2.5/305	305	122	T2.5/317.5-DL	317.5	127
T2.5/317.5	317.5	127	T2.5/415-DL	415	166
			T2.5/457.5-DL	457.5	183

Belt weight	T2.5	T2.5-DL
Per 10mm of belt width	0.015kg/m	0.016kg/m

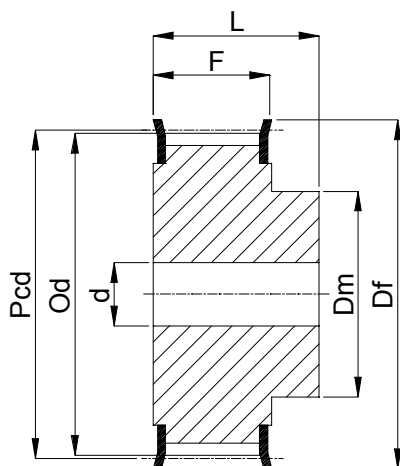


Type 6



Type 1F

T2.5 Pulley to suit 6mm wide Belt



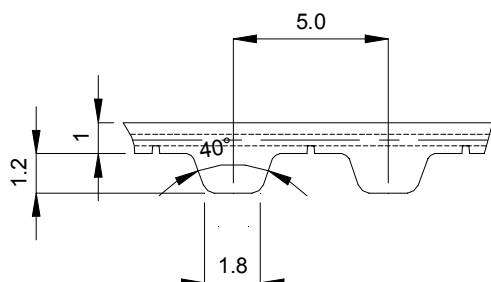
Type 6F

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL16T2.5/10-2	1F	10	7.96	7.45	10	10	10	16	-	0.002
AL16T2.5/12-2	1F	12	9.55	9.00	12	12	10	16	-	0.003
AL16T2.5/14-2	1F	14	11.14	10.60	14	14	10	16	-	0.004
AL16T2.5/15-2	1F	15	11.94	11.40	15	15	10	16	-	0.005
AL16T2.5/16-2	1F	16	12.73	12.20	16	16	10	16	-	0.005
AL16T2.5/18-2	6F	18	14.32	13.80	10	17.5	10	16	4	0.006
AL16T2.5/19-2	6F	19	15.12	14.60	10	18	10	16	4	0.007
AL16T2.5/20-2	6F	20	15.92	15.40	12	19.5	10	16	4	0.008
AL16T2.5/22-2	6F	22	17.51	17.00	12	23	10	16	4	0.009
AL16T2.5/24-2	6F	24	19.10	18.55	14	23	10	16	4	0.012
AL16T2.5/25-2	6F	25	19.89	19.35	14	23	10	16	4	0.013
AL16T2.5/26-2	6F	26	20.69	20.15	14	25	10	16	4	0.014
AL16T2.5/28-2	6F	28	22.28	21.75	14	25	10	16	4	0.016
AL16T2.5/30-2	6F	30	23.87	23.35	16	28	10	16	6	0.018
AL16T2.5/32-2	6F	32	25.46	24.95	16	32	10	16	6	0.020
AL16T2.5/36-2	6F	36	28.65	28.15	20	36	10	16	6	0.026
AL16T2.5/40-2	6F	40	31.83	31.30	22	38	10	16	6	0.032
AL16T2.5/44-0	6	44	35.01	34.51	24	-	10	16	6	0.040
AL16T2.5/48-0	6	48	38.20	37.70	26	-	10	16	6	0.048
AL16T2.5/60-0	6	60	47.75	47.25	34	-	10	16	8	0.073
AL16T2.5/72-0	6	72	57.30	56.80	40	-	10	16	8	0.087
AL16T2.5/90-0	6	90	71.62	71.10	50	-	10	16	8	0.137

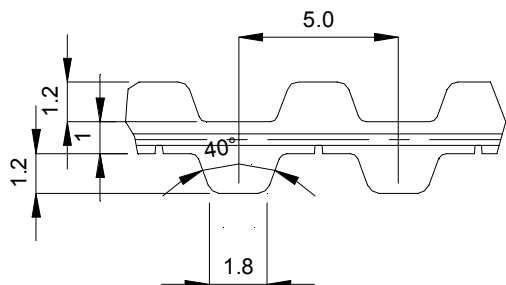
Synchroflex / Breco T5 belts



T5 (5mm pitch)



T5 Single sided

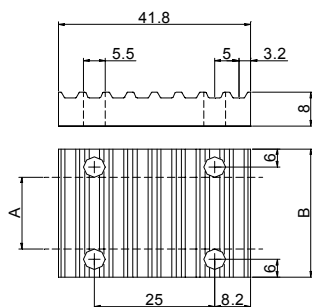


T5-DL Double sided

Belt weight	T5	T5-DL
Per 10mm of belt width	0.024kg/m	0.027kg/m

Other options and features available

- *Coloured
- *With Kevlar tension members
- *Anti-static
- *With "E" Tension members
- *With profiles welded



T5-Clamp Plate

Code No	Part No	Belt Width "A"	Clamp Width "B"
270310	10T5-Clamp	10mm	29mm
270316	16T5-Clamp	16mm	35mm
270325	25T5-Clamp	25mm	44mm

Standard Belt widths	10	16	25
Example Part Number	16T5/1100 width / type pitch / length (mm)		

Belt No	Length	No. of	Belt No	Length	No. of
T5/100	100	20	T5/630	630	126
T5/150	150	30	T5/650	650	130
T5/165	165	33	T5/690	690	138
T5/180	180	36	T5/700	700	140
T5/185	185	37	T5/720	720	144
T5/200	200	40	T5/725	725	145
T5/210	210	42	T5/750	750	150
T5/215	215	43	T5/765	765	153
T5/220	220	44	T5/780	780	156
T5/225	225	45	T5/800	800	160
T5/245	245	49	T5/815	815	163
T5/250	250	50	T5/840	840	168
T5/255	255	51	T5/900	900	180
T5/260	260	52	T5/920	920	184
T5/270	270	54	T5/925	925	185
T5/280	280	56	T5/940	940	188
T5/295	295	59	T5/990	990	198
T5/305	305	61	T5/1075	1075	215
T5/330	330	66	T5/1100	1100	220
T5/340	340	68	T5/1160	1160	232
T5/355	355	71	T5/1215	1215	243
T5/365	365	73	T5/1315	1315	263
T5/390	390	78	T5/1380	1380	276
T5/400	400	80	T5/1500	1500	300
T5/410	410	82	Double sided T5-DL		
T5/420	420	84	T5/150 DL	150	30
T5/455	455	91	T5/260 DL	260	52
T5/460	460	92	T5/300 DL	300	60
T5/480	480	96	T5/410 DL	410	82
T5/500	500	100	T5/460 DL	460	92
T5/505	505	101	T5/515 DL	515	103
T5/510	510	102	T5/525 DL	525	105
T5/525	525	105	T5/590 DL	590	118
T5/545	545	109	T5/620 DL	620	124
T5/550	550	110	T5/625 DL	625	125
T5/560	560	112	T5/750 DL	750	150
T5/575	575	115	T5/815 DL	815	163
T5/590	590	118	T5/860 DL	860	172
T5/610	610	122	T5/940 DL	940	188
T5/620	620	124	T5/1100 DL	1100	220
			T5/1325 DL	1325	265

Breco-M Long length Open belting Breco- V Joined belting

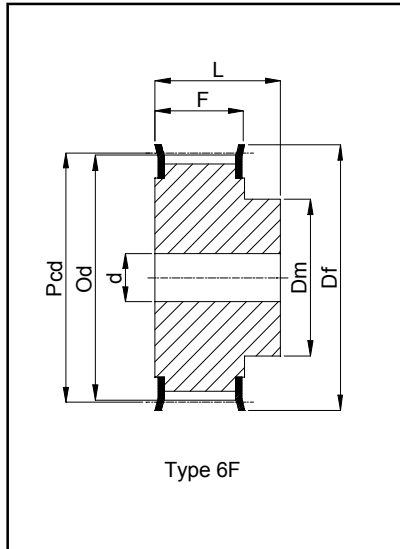
Max. Tensile Load (N)

Width (mm)	6	10	16	25	32	50
Synchroflex	180	330	570	930	1200	1920
Breco- M	180	300	540	840	1080	1680
Breco- V	90	150	270	420	540	840
Brecoflex	180	330	570	930	1200	1920

T5 (5mm pitch)

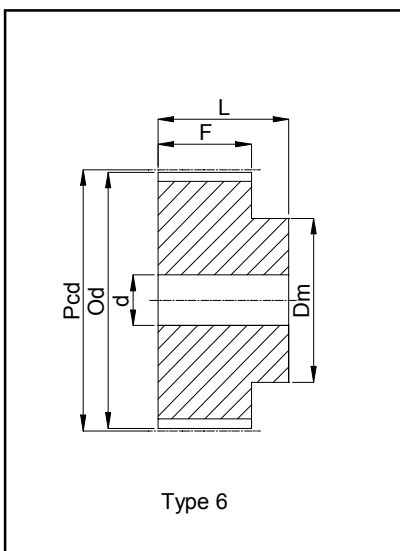
T5 Pulley to suit 10mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL21T5/10-2	6F	10	15.92	15.05	8	19.5	15	21	-	0.012
AL21T5/12-2	6F	12	19.10	18.25	11	23.0	15	21	-	0.016
AL21T5/14-2	6F	14	22.29	21.45	14	25.0	15	21	-	0.016
AL21T5/15-2	6F	15	23.88	23.05	16	28.0	15	21	6	0.021
AL21T5/16-2	6F	16	25.47	24.60	18	32.0	15	21	6	0.025
AL21T5/18-2	6F	18	28.65	27.80	20	32.0	15	21	6	0.031
AL21T5/19-2	6F	19	30.25	29.40	22	36.0	15	21	6	0.036
AL21T5/20-2	6F	20	31.83	31.00	23	36.0	15	21	6	0.038
AL21T5/22-2	6F	22	35.02	34.25	24	38.0	15	21	6	0.046
AL21T5/24-2	6F	24	38.21	37.40	26	42.0	15	21	6	0.054
AL21T5/25-2	6F	25	39.80	39.00	26	44.0	15	21	6	0.058
AL21T5/26-2	6F	26	41.39	40.60	26	44.0	15	21	6	0.062
AL21T5/27-2	6F	27	42.98	42.20	30	48.0	15	21	8	0.064
AL21T5/28-2	6F	28	44.58	43.75	32	48.0	15	21	8	0.071
AL21T5/30-2	6F	30	47.76	46.95	34	51.0	15	21	8	0.075
AL21T5/32-2	6F	32	50.94	50.10	38	54.0	15	21	8	0.088
AL21T5/36-2	6F	36	57.31	56.45	38	63.0	15	21	8	0.114
AL21T5/40-2	6F	40	63.66	62.85	40	66.0	15	21	8	0.138
AL21T5/48-0	6	48	76.42	75.55	50	-	15	21	8	0.200
AL21T5/60-0	6	60	95.52	94.65	65	-	15	21	8	0.307



T5 Pulley to suit 16mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL27T5/10-2	6F	10	15.92	15.05	8	19.5	21	27	-	0.016
AL27T5/12-2	6F	12	19.10	18.25	11	23.0	21	27	-	0.022
AL27T5/14-2	6F	14	22.29	21.45	14	25.0	21	27	-	0.026
AL27T5/15-2	6F	15	23.88	23.05	16	28.0	21	27	6	0.029
AL27T5/16-2	6F	16	25.47	24.60	18	32.0	21	27	6	0.035
AL27T5/18-2	6F	18	28.65	27.80	20	32.0	21	27	6	0.043
AL27T5/19-2	6F	19	30.25	29.40	22	36.0	21	27	6	0.049
AL27T5/20-2	6F	20	31.83	31.00	23	36.0	21	27	6	0.053
AL27T5/22-2	6F	22	35.02	34.25	24	38.0	21	27	6	0.054
AL27T5/24-2	6F	24	38.21	37.40	26	42.0	21	27	6	0.076
AL27T5/25-2	6F	25	39.80	39.00	26	44.0	21	27	6	0.081
AL27T5/26-2	6F	26	41.39	40.60	26	44.0	21	27	6	0.085
AL27T5/27-2	6F	27	42.98	42.20	30	48.0	21	27	8	0.090
AL27T5/28-2	6F	28	44.58	43.75	32	48.0	21	27	8	0.092
AL27T5/30-2	6F	30	47.76	46.95	34	51.0	21	27	8	0.105
AL27T5/32-2	6F	32	50.94	50.10	38	54.0	21	27	8	0.123
AL27T5/36-2	6F	36	57.31	56.45	38	63.0	21	27	8	0.160
AL27T5/40-2	6F	40	63.66	62.85	40	66.0	21	27	8	0.193
AL27T5/48-0	6	48	76.42	75.55	50	-	21	27	8	0.280
AL27T5/60-0	6	60	95.52	94.65	65	-	21	27	8	0.430



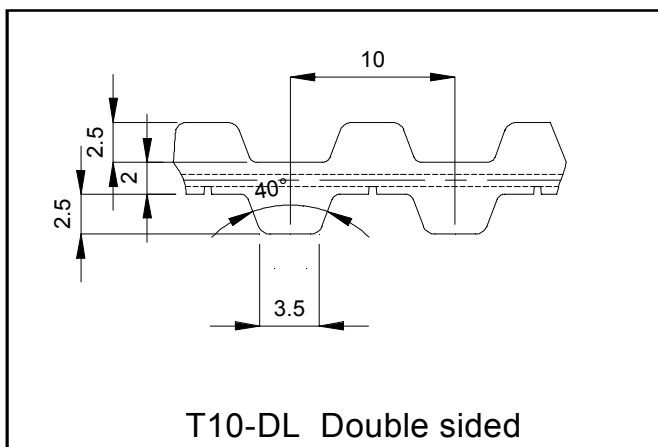
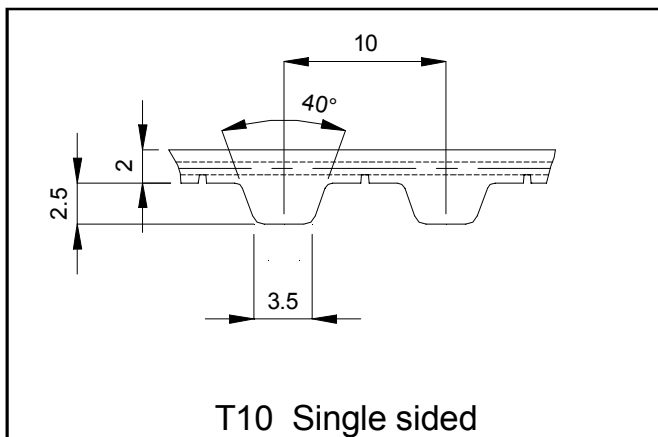
T5 Pulley to suit 25mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL36T5/10-2	6F	10	15.92	15.05	8	19.5	30	36	-	0.023
AL36T5/12-2	6F	12	19.10	18.25	11	23.0	30	36	-	0.031
AL36T5/14-2	6F	14	22.29	21.45	14	25.0	30	36	-	0.037
AL36T5/15-2	6F	15	23.88	23.05	16	28.0	30	36	6	0.041
AL36T5/16-2	6F	16	25.47	24.60	18	32.0	30	36	6	0.050
AL36T5/18-2	6F	18	28.65	27.80	20	32.0	30	36	6	0.061
AL36T5/19-2	6F	19	30.25	29.40	22	36.0	30	36	6	0.070
AL36T5/20-2	6F	20	31.83	31.00	23	36.0	30	36	6	0.076
AL36T5/22-2	6F	22	35.02	34.25	24	38.0	30	36	6	0.080
AL36T5/24-2	6F	24	38.21	37.40	26	42.0	30	36	6	0.109
AL36T5/25-2	6F	25	39.80	39.00	26	44.0	30	36	6	0.116
AL36T5/26-2	6F	26	41.39	40.60	26	44.0	30	36	6	0.120
AL36T5/27-2	6F	27	42.98	42.20	30	48.0	30	36	8	0.128
AL36T5/28-2	6F	28	44.58	43.75	32	48.0	30	36	8	0.126
AL36T5/30-2	6F	30	47.76	46.95	34	51.0	30	36	8	0.150
AL36T5/32-2	6F	32	50.94	50.10	38	54.0	30	36	8	0.176
AL36T5/36-2	6F	36	57.31	56.45	38	63.0	30	36	8	0.230
AL36T5/40-2	6F	40	63.66	62.85	40	66.0	30	36	8	0.276
AL36T5/48-0	6	48	76.42	75.55	50	-	30	36	8	0.400
AL36T5/60-0	6	60	95.52	94.65	65	-	30	36	8	0.614

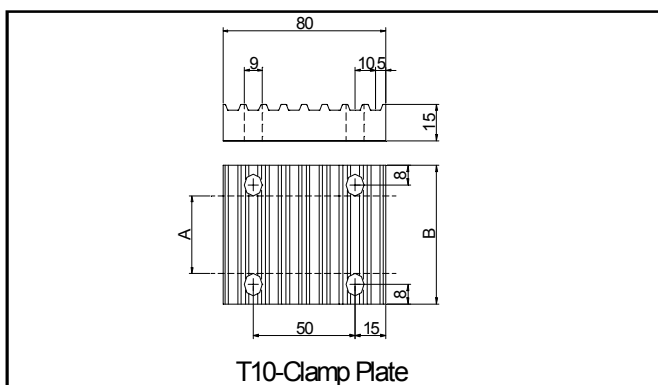
Synchroflex / Breco T10 belts



T10 (10mm pitch)



Belt weight	T10	T10-DL
Per 10mm of belt width	0.048kg/m	0.057kg/m
Other options and features available		
*Coloured		
*With Kevlar tension members		
*Anti-static		
*With "E" Tension members		
*With profiles welded		



Code No	Part No	Belt Width "A"	Clamp Width "B"
270416	16T10-Clamp	16mm	41mm
270425	25T10-Clamp	25mm	50mm
270432	32T10-Clamp	32mm	57mm
270450	50T10-Clamp	50mm	75mm

Standard Belt widths	16	25	32	50
Example Part Number	32T10/1500 width / type pitch / length (mm)			

Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
T10/260	260	26	T10/1350	1350	135
T10/350	350	35	T10/1390	1390	139
T10/370	370	37	T10/1400	1400	140
T10/410	410	41	T10/1420	1420	142
T10/440	440	44	T10/1450	1450	145
T10/450	450	45	T10/1460	1460	146
T10/500	500	50	T10/1500	1500	150
T10/530	530	53	T10/1560	1560	156
T10/560	560	56	T10/1610	1610	161
T10/600	600	60	T10/1750	1750	175
T10/610	610	61	T10/1780	1780	178
T10/630	630	63	T10/1880	1880	188
T10/660	660	66	T10/1960	1960	196
T10/680	680	68	T10/2250	2250	225
T10/690	690	69	T10/3100	3100	310
T10/700	700	70	T10/4780	4780	478
T10/720	720	72	Double sided T10-DL		
T10/730	730	73	T10/260 DL	260	26
T10/750	750	75	T10/530 DL	530	53
T10/760	760	76	T10/630 DL	630	63
T10/780	780	78	T10/660 DL	660	66
T10/810	810	81	T10/720 DL	720	72
T10/840	840	84	T10/840 DL	840	84
T10/850	850	85	T10/980 DL	980	98
T10/880	880	88	T10/1210DL	1210	121
T10/890	890	89	T10/1240DL	1240	124
T10/920	920	92	T10/1250DL	1250	125
T10/960	960	96	T10/1320DL	1320	132
T10/970	970	97	T10/1350DL	1350	135
T10/980	980	98	T10/1420DL	1420	142
T10/1010	1010	101	T10/1610DL	1610	161
T10/1080	1080	108	T10/1880DL	1880	188
T10/1110	1110	111	T10/4780DL	4780	478
T10/1140	1140	114			
T10/1150	1150	115			
T10/1210	1210	121			
T10/1240	1240	124			
T10/1250	1250	125			
T10/1300	1300	130			
T10/1320	1320	132			

Breco-M Breco- V		Long length Open belting Joined belting				
Max. Tensile Load (N)						
Width (mm)	16	25	32	50	75	100
Synchroflex	1200	2000	2700	4300	6600	8800
Breco- M	1300	2400	2600	4200	4900	6800
Breco- V	650	1200	1300	2100	2450	3400
Brecoflex	1000	1800	2300	3800	5800	7800

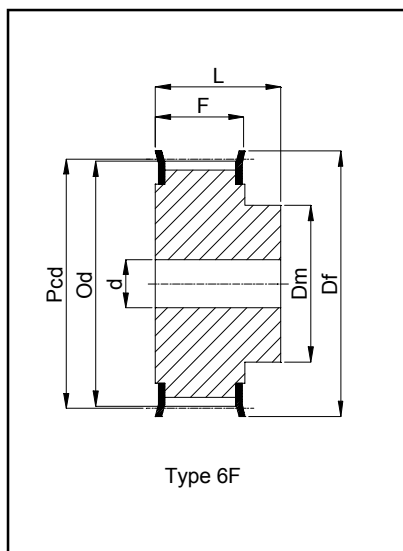
PIES T10 pulleys



T10 (10mm pitch)

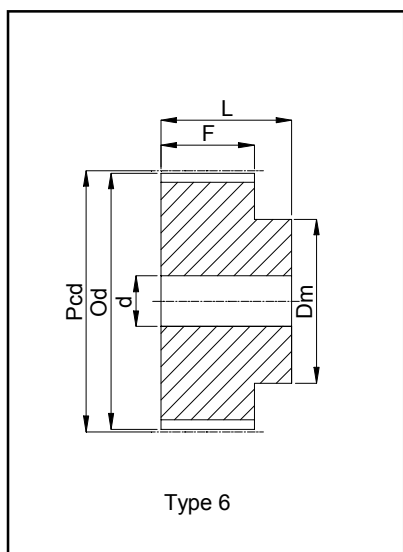
T10 Pulley to suit 16mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL31T10/10-2	6F	10	31.83	29.98	20	36	21	31	6	0.060
AL31T10/12-2	6F	12	38.20	36.35	28	42	21	31	8	0.076
AL31T10/14-2	6F	14	44.56	42.70	32	48	21	31	8	0.104
AL31T10/15-2	6F	15	47.75	45.90	32	51	21	31	8	0.116
AL31T10/16-2	6F	16	50.93	49.05	35	54	21	31	8	0.134
AL31T10/18-2	6F	18	57.29	55.45	40	60	21	31	8	0.167
AL31T10/19-2	6F	19	60.48	58.60	44	66	21	31	8	0.184
AL31T10/20-2	6F	20	63.66	61.80	46	66	21	31	8	0.208
AL31T10/22-2	6F	22	66.84	68.15	52	75	21	31	8	0.253
AL31T10/24-2	6F	24	76.39	74.55	58	83	21	31	8	0.288
AL31T10/25-2	6F	25	79.58	77.70	60	83	21	31	8	0.310
AL31T10/26-2	6F	26	82.76	80.90	60	87	21	31	8	0.357
AL31T10/27-2	6F	27	85.95	84.10	60	91	21	31	8	0.364
AL31T10/28-2	6F	28	89.12	87.25	60	93	21	31	8	0.401
AL31T10/30-2	6F	30	95.49	93.65	60	97	21	31	8	0.441
AL31T10/32-2	6F	32	101.86	100.00	65	106	21	31	10	0.493
AL31T10/36-2	6F	36	114.59	112.75	70	119	21	31	10	0.623
AL31T10/40-2	6F	40	127.32	125.45	80	131	21	31	10	0.767
AL31T10/48-0	6	48	152.78	150.95	95	—	21	31	16	1.090
AL31T10/60-0	6	60	190.98	189.10	100	—	21	31	16	1.701



T10 Pulley to suit 25mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL40T10/10-2	6F	10	31.83	29.98	20	36	30	40	6	0.080
AL40T10/12-2	6F	12	38.20	36.35	28	42	30	40	8	0.099
AL40T10/14-2	6F	14	44.56	42.70	32	48	30	40	8	0.134
AL40T10/15-2	6F	15	47.75	45.90	32	51	30	40	8	0.152
AL40T10/16-2	6F	16	50.93	49.05	35	54	30	40	8	0.176
AL40T10/18-2	6F	18	57.29	55.45	40	60	30	40	8	0.224
AL40T10/19-2	6F	19	60.48	58.60	44	66	30	40	8	0.247
AL40T10/20-2	6F	20	63.66	61.80	46	66	30	40	8	0.276
AL40T10/22-2	6F	22	66.84	68.15	52	75	30	40	8	0.337
AL40T10/24-2	6F	24	76.39	74.55	58	83	30	40	8	0.392
AL40T10/25-2	6F	25	79.58	77.70	60	83	30	40	8	0.422
AL40T10/26-2	6F	26	82.76	80.90	60	87	30	40	8	0.477
AL40T10/27-2	6F	27	85.95	84.10	60	91	30	40	8	0.536
AL40T10/28-2	6F	28	89.12	87.25	60	93	30	40	8	0.540
AL40T10/30-2	6F	30	95.49	93.65	60	97	30	40	8	0.640
AL40T10/32-2	6F	32	101.86	100.00	65	106	30	40	10	0.693
AL40T10/36-2	6F	36	114.59	112.75	70	119	30	40	10	0.873
AL40T10/40-2	6F	40	127.32	125.45	80	131	30	40	10	1.067
AL40T10/48-0	6	48	152.78	150.95	95	—	30	40	16	1.516
AL40T10/60-0	6	60	190.98	189.10	100	—	30	40	16	2.339



T10 Pulley to suit 32mm wide Belt

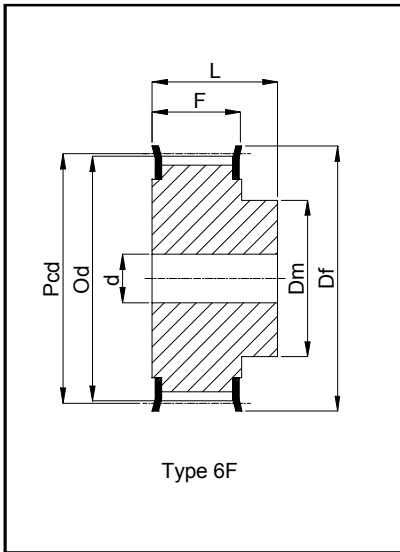
Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL50T10/14-2	6F	14	44.56	42.70	32	48	40	50	12	0.155
AL50T10/15-2	6F	15	47.75	45.90	32	51	40	50	12	0.180
AL50T10/16-2	6F	16	50.93	49.05	35	54	40	50	12	0.203
AL50T10/18-2	6F	18	57.29	55.45	40	60	40	50	12	0.253
AL50T10/19-2	6F	19	60.48	58.60	44	66	40	50	12	0.286
AL50T10/20-2	6F	20	63.66	61.80	46	66	40	50	12	0.322
AL50T10/22-2	6F	22	66.84	68.15	52	75	40	50	12	0.393
AL50T10/24-2	6F	24	76.39	74.55	58	83	40	50	12	0.475
AL50T10/25-2	6F	25	79.58	77.70	60	83	40	50	12	0.527
AL50T10/26-2	6F	26	82.76	80.90	60	87	40	50	12	0.564
AL50T10/27-2	6F	27	85.95	84.10	60	91	40	50	12	0.602
AL50T10/28-2	6F	28	89.12	87.25	60	93	40	50	12	0.642
AL50T10/30-2	6F	30	95.49	93.65	60	97	40	50	12	0.740
AL50T10/32-2	6F	32	101.86	100.00	65	106	40	50	12	0.844
AL50T10/36-2	6F	36	114.59	112.75	70	119	40	50	16	1.063
AL50T10/40-2	6F	40	127.32	125.45	80	131	40	50	16	1.317
AL50T10/48-0	6	48	152.78	150.95	95	—	40	50	16	1.931
AL50T10/60-0	6	60	190.98	189.10	100	—	40	50	16	3.004

PIES T10 pulleys



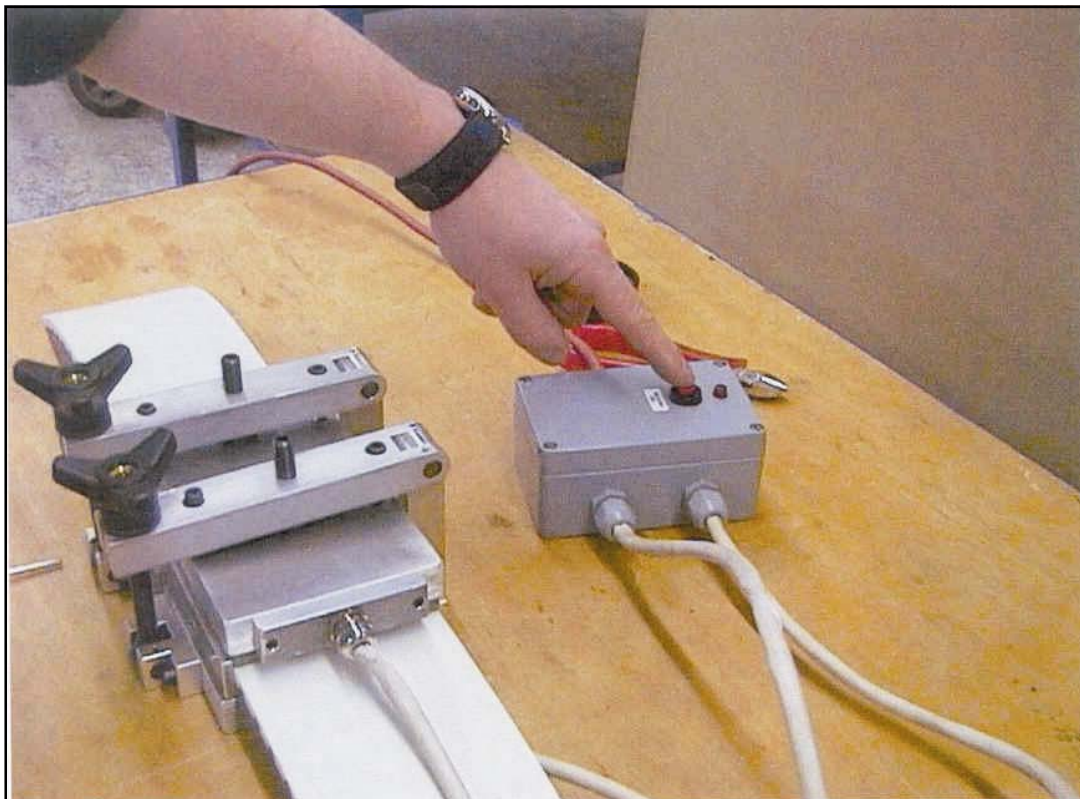
T10 (10mm pitch)

T10 Pulley to suit 50mm wide Belt



Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL66T10/14-2	6F	14	44.56	42.70	32	48	56	66	8	0.250
AL66T10/15-2	6F	15	47.75	45.90	32	51	56	66	8	0.270
AL66T10/16-2	6F	16	50.93	49.05	35	54	56	66	8	0.350
AL66T10/18-2	6F	18	57.29	55.45	40	60	56	66	8	0.422
AL66T10/19-2	6F	19	60.48	58.60	44	66	56	66	8	0.466
AL66T10/20-2	6F	20	63.66	61.80	46	66	56	66	8	0.520
AL66T10/22-2	6F	22	66.84	68.15	52	75	56	66	8	0.570
AL66T10/24-2	6F	24	76.39	74.55	58	83	56	66	8	0.736
AL66T10/25-2	6F	25	79.58	77.70	60	83	56	66	8	0.766
AL66T10/26-2	6F	26	82.76	80.90	60	87	56	66	8	0.816
AL66T10/27-2	6F	27	85.95	84.10	60	91	56	66	8	0.946
AL66T10/28-2	6F	28	89.12	87.25	60	93	56	66	8	0.960
AL66T10/30-2	6F	30	95.49	93.65	60	97	56	66	8	1.169
AL66T10/32-2	6F	32	101.86	100.00	65	106	56	66	10	1.300
AL66T10/36-2	6F	36	114.59	112.75	70	119	56	66	10	1.637
AL66T10/40-2	6F	40	127.32	125.45	80	131	56	66	10	1.999
AL66T10/48-0	6	48	152.78	150.95	95	—	56	66	16	2.830
AL66T10/60-0	6	60	190.98	189.10	100	—	56	66	16	4.366

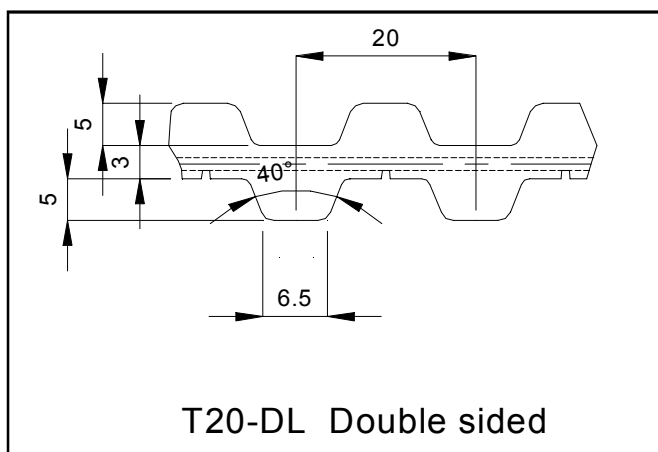
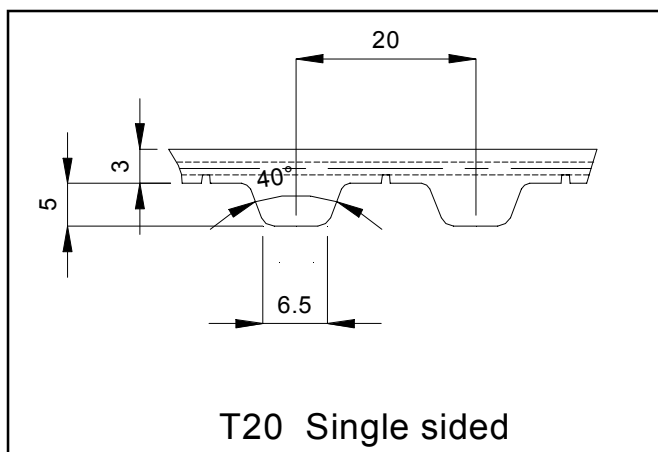
On site belt joining available T10 and AT10
up to 100mm wide.



Synchroflex / Breco T20 belts



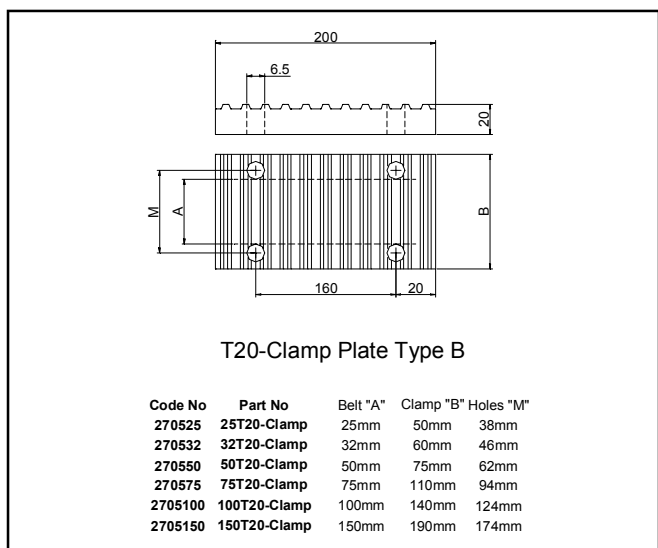
T20 (20mm pitch)



Belt weight	T20	T20-DL
Per 10mm of belt width	0.084kg/m	0.111kg/m
Other options and features available		
*Coloured		
*With Kevlar tension members		
*Anti-static		
*With "E" Tension members		
*With profiles welded		

Standard Belt widths	32	50	75	100
Example Part Number	50T20/2600 width / type pitch / length (mm)			

Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
T20/1260	1260	63	Double sided T20-DL		
T20/1460	1460	73			
T20/1780	1780	89			
T20/1880	1880	94			
T20/2360	2360	118			
T20/2600	2600	130	T20/2600 DL	2600	130
T20/3100	3100	155			
T20/3620	3620	181			
			T20/3620 DL	3620	181



Breco-M Breco- V		Long length Open belting Joined belting				
Max. Tensile Load (N)						
Width (mm)	25	32	50	75	100	150
Synchroflex	3700	4750	7750	12000	16000	24500
Breco- M	3500	4500	6500	10000	14000	20000
Breco- V	1750	2250	3250	5000	7000	10000
Brecoflex	3700	4750	7750	12000	16000	24500

PIES T20 pulleys



T20 (20mm pitch)

T20 Pulley to suit 32mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL53T20/18-2	6F	18	114.59	111.75	80	119	38	53	15	
AL53T20/20-2	6F	20	127.32	124.45	90	138	38	53	15	
AL53T20/22-2	6F	22	140.05	137.20	90	146	38	53	15	
AL53T20/24-2	6F	24	152.78	149.95	95	160	38	53	15	
AL53T20/25-2	6F	25	159.15	156.30	95	168	38	53	15	
AL53T20/30-2	6F	30	190.98	188.15	110	198	38	53	15	
AL53T20/32-2	6F	32	203.71	200.85	110	216	38	53	18	
AL53T20/36-2	6	36	229.18	226.35	110	-	38	53	18	
AL53T20/40-2	6	40	254.64	251.80	110	-	38	53	20	
AL53T20/48-0	6	48	305.57	302.70	130	-	38	53	20	
AL53T20/60-0	6	60	381.96	379.10	130	-	38	53	20	
AL53T20/72-0	6	72	451.99	455.50	140	-	38	53	20	

T20 Pulley to suit 50mm wide Belt

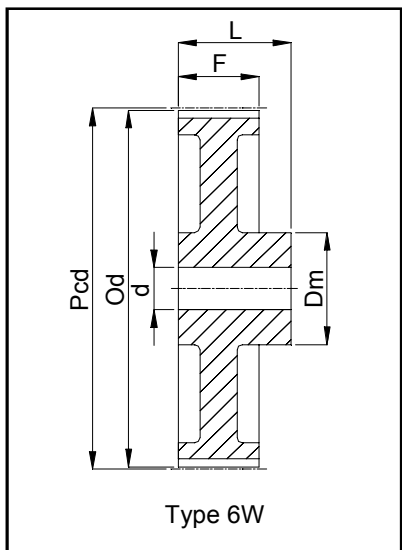
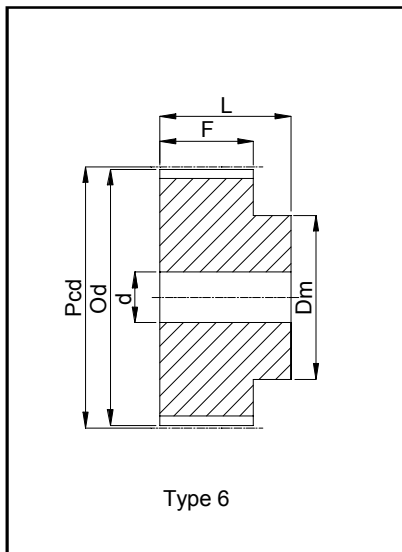
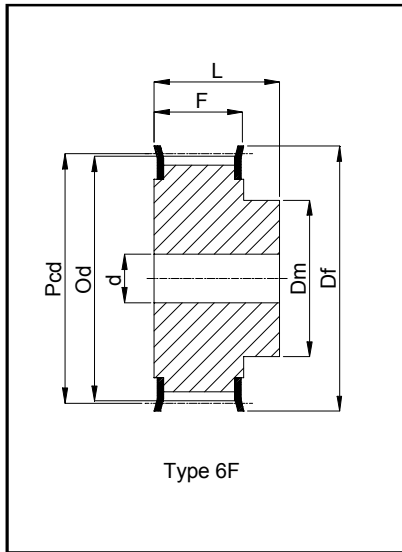
Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL71T20/18-2	6F	18	114.59	111.75	80	119	56	71	18	
AL71T20/20-2	6F	20	127.32	124.45	90	138	56	71	18	
AL71T20/22-2	6F	22	140.05	137.20	90	146	56	71	18	
AL71T20/24-2	6F	24	152.78	149.95	95	160	56	71	18	
AL71T20/25-2	6F	25	159.15	156.30	95	168	56	71	18	
AL71T20/30-2	6F	30	190.98	188.15	110	198	56	71	18	
AL71T20/32-2	6F	32	203.71	200.85	110	216	56	71	20	
AL71T20/36-0	6	36	229.18	226.35	110	-	56	71	20	
AL71T20/40-0	6	40	254.64	251.80	110	-	56	71	20	
AL71T20/48-0	6	48	305.57	302.70	130	-	56	71	24	
AL71T20/60-0	6	60	381.96	379.10	130	-	56	71	24	
AL71T20/72-0	6	72	451.99	455.50	140	-	56	71	24	

T20 Pulley to suit 75mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL96T20/18-2	6F	18	114.59	111.75	80	119	81	96	24	
AL96T20/20-2	6F	20	127.32	124.45	90	138	81	96	24	
AL96T20/22-2	6F	22	140.05	137.20	90	146	81	96	24	
AL96T20/24-2	6F	24	152.78	149.95	95	160	81	96	24	
AL96T20/25-2	6F	25	159.15	156.30	95	168	81	96	24	
AL96T20/30-2	6F	30	190.98	188.15	110	198	81	96	24	
AL96T20/32-0	6	32	203.71	200.85	110	216	81	96	32	
AL96T20/36-0	6	36	229.18	226.35	110	-	81	96	32	
AL96T20/40-0	6	40	254.64	251.80	110	-	81	96	32	
AL96T20/48-0	6	48	305.57	302.70	130	-	81	96	32	
AL96T20/60-0	6	60	381.96	379.10	130	-	81	96	32	
AL96T20/72-0	6	72	451.99	455.50	140	-	81	96	32	

T20 Pulley to suit 100mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL108T20/18-2	6F	18	114.59	111.75	80	119	108	123	24	
AL108T20/20-2	6F	20	127.32	124.45	90	138	108	123	24	
AL108T20/22-2	6F	22	140.05	137.20	90	146	108	123	24	
AL108T20/24-2	6F	24	152.78	149.95	95	160	108	123	24	
AL108T20/25-2	6F	25	159.15	156.30	95	168	108	123	24	
AL108T20/30-2	6F	30	190.98	188.15	110	198	108	123	24	
AL108T20/32-2	6F	32	203.71	200.85	110	216	108	123	32	
AL108T20/36-0	6	36	229.18	226.35	110	-	108	123	32	
AL108T20/40-0	6	40	254.64	251.80	110	-	108	123	32	
AL108T20/48-0	6	48	305.57	302.70	130	-	108	123	32	
AL108T20/60-0	6	60	381.96	379.10	130	-	108	123	32	
AL108T20/72-0	6	72	451.99	455.50	140	-	108	123	32	

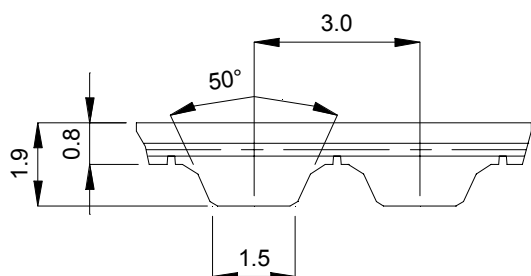


T20 20mm Pitch pulleys are not available from stock and can be manufactured to your personal requirements..

Synchroflex / Breco AT3 belts

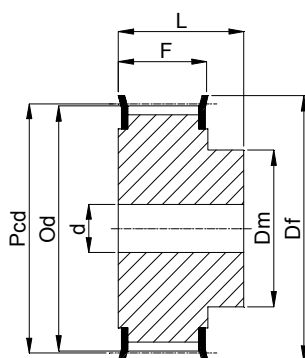


AT3 (3mm pitch)

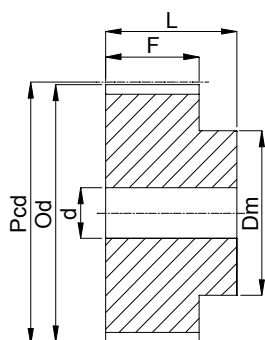


AT3 Single sided

Belt weight	AT3
Per 10mm of belt width	0.023kg/m
Other options and features available	
*Coloured	
*With Kevlar tension members	
*Anti-static	
*With "E" Tension members	
*With profiles welded	
*Generation III	



Type 6F



Type 6

Standard Belt widths	6	10	16
Example Part Number	16AT3/600 width / type pitch / length (mm)		

Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
AT3/150	150	50	AT3/450	450	150
AT3/201	201	67	AT3/501	501	167
AT3/252	252	84	AT3/549	549	183
AT3/267	267	89	AT3/600	600	200
AT3/270	270	90	AT3/639	639	213
AT3/300	300	100	AT3/648	648	216
AT3/351	351	117	AT3/816	816	272
AT3/399	399	133	AT3/900	900	300
AT3/417	417	139	AT3/1011	1011	337

Breco-M Long length Open belting

Max. Tensile Load (N)						
Width (mm)	6	8	10	16	20	25
Synchroflex	190	280	380	646	790	1102
Breco- M	180	260	360	570	725	-
Breco- V	90	130	180	285	360	-

AT3 Pulley to suit 6mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL16AT3/15-2	6F	15	14.32	14.02	10	19	10	16	4	
AL16AT3/16-2	6F	16	15.28	14.98	10	20	10	16	4	
AL16AT3/18-2	6F	18	17.19	16.89	12	23	10	16	4	
AL16AT3/20-2	6F	20	19.10	18.80	14	24	10	16	4	
AL16AT3/24-2	6F	24	22.92	22.62	14	28	10	16	6	
AL16AT3/25-2	6F	25	23.87	23.57	16	30	10	16	6	
AL16AT3/30-2	6F	30	28.65	28.35	20	33	10	16	6	
AL16AT3/32-2	6F	32	30.56	30.26	20	36	10	16	6	
AL16AT3/36-2	6F	36	34.38	34.08	22	39	10	16	6	
AL16AT3/40-2	6F	40	38.20	37.90	26	43	10	16	6	
AL16AT3/48-0	6	48	45.84	54.54	34	-	10	16	6	
AL16AT3/60-0	6	60	57.30	57.00	38	-	10	16	6	
AL16AT3/72-0	6	72	68.75	68.45	50	-	10	16	6	

AT3 Pulley to suit 10mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL21AT3/15-2	6F	15	14.32	14.02	10	19	15	21	4	
AL21AT3/16-2	6F	16	15.28	14.98	10	20	15	21	4	
AL21AT3/18-2	6F	18	17.19	16.89	12	23	15	21	4	
AL21AT3/20-2	6F	20	19.10	18.80	14	24	15	21	4	
AL21AT3/24-2	6F	24	22.92	22.62	14	28	15	21	6	
AL21AT3/25-2	6F	25	23.87	23.57	16	30	15	21	6	
AL21AT3/30-2	6F	30	28.65	28.35	20	33	15	21	6	
AL21AT3/32-2	6F	32	30.56	30.26	20	36	15	21	6	
AL21AT3/36-2	6F	36	34.38	34.08	22	39	15	21	6	
AL21AT3/40-2	6F	40	38.20	37.90	26	43	15	21	6	
AL21AT3/48-0	6	48	45.84	54.54	34	-	15	21	6	
AL21AT3/60-0	6	60	57.30	57.00	38	-	15	21	6	
AL21AT3/72-0	6	72	68.75	68.45	50	-	15	21	6	

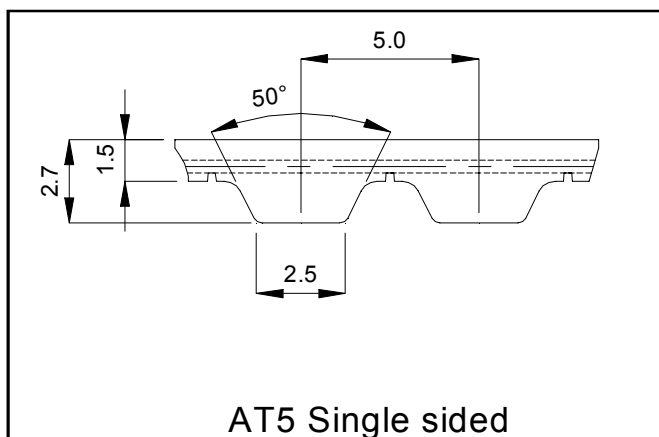
AT3 Pulley to suit 16mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL28AT3/15-2	6F	15	14.32	14.02	10	19	22	28	4	
AL28AT3/16-2	6F	16	15.28	14.98	10	20	22	28	4	
AL28AT3/18-2	6F	18	17.19	16.89	12	23	22	28	4	
AL28AT3/20-2	6F	20	19.10	18.80	14	24	22	28	4	
AL28AT3/24-2	6F	24	22.92	22.62	14	28	22	28	6	
AL28AT3/25-2	6F	25	23.87	23.57	16	30	22	28	6	
AL28AT3/30-2	6F	30	28.65	28.35	20	33	22	28	6	
AL28AT3/32-2	6F	32	30.56	30.26	20	36	22	28	6	
AL28AT3/36-2	6F	36	34.38	34.08	22	39	22	28	6	
AL28AT3/40-2	6F	40	38.20	37.90	26	43	22	28	6	
AL28AT3/48-0	6	48	45.84	54.54	34	-	22	28	6	
AL28AT3/60-0	6	60	57.30	57.00	38	-	22	28	6	
AL28AT3/72-0	6	72	68.75	68.45	50	-	22	28	6	

Synchroflex / Breco AT5 belts



AT5 (5mm pitch)

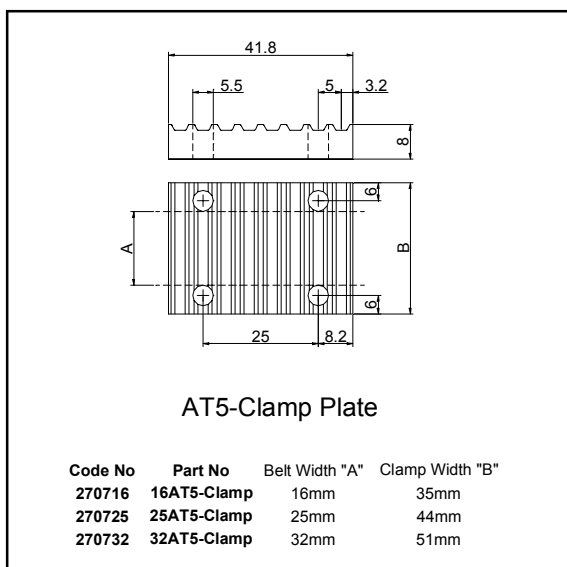


AT5 Single sided

Belt weight	AT5
Per 10mm of belt width	0.034kg/m
Other options and features available	
*Coloured	
*With Kevlar tension members	
*Anti-static	
*With "E" Tension members	
*With profiles welded	
*Generation III	

Standard Belt widths	10	16	25	32
Example Part Number	16AT5/1125 width / type pitch / length (mm)			

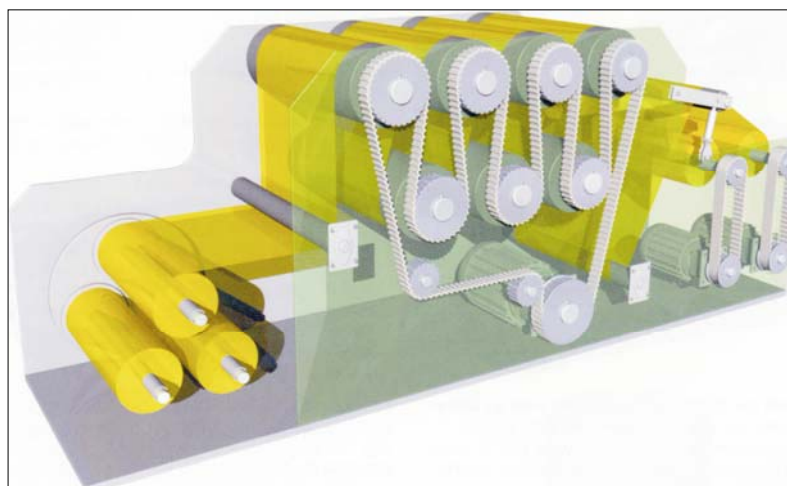
Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
AT5/225	225	45	AT5/660	660	132
AT5/255	255	51	AT5/710	710	142
AT5/260	260	52	AT5/720	720	144
AT5/280	280	56	AT5/750	750	150
AT5/300	300	60	AT5/780	780	156
AT5/330	330	66	AT5/825	825	165
AT5/340	340	68	AT5/860	860	172
AT5/375	375	75	AT5/900	900	180
AT5/390	390	78	AT5/920	920	184
AT5/420	420	84	AT5/975	975	195
AT5/450	450	90	AT5/1050	1050	210
AT5/455	455	91	AT5/1125	1125	225
AT5/480	480	96	AT5/1230	1230	246
AT5/500	500	100	AT5/1500	1500	300
AT5/525	525	105	AT5/1750	1750	350
AT5/545	545	109	AT5/2000	2000	400
AT5/600	600	120	AT5/3350	3350	670
AT5/610	610	122	AT5/3800	3800	760
AT5/620	620	124			
AT5/630	630	126			



AT5-Clamp Plate

Code No	Part No	Belt Width "A"	Clamp Width "B"
270716	16AT5-Clamp	16mm	35mm
270725	25AT5-Clamp	25mm	44mm
270732	32AT5-Clamp	32mm	51mm

Breco-M Breco- V		Long length Open belting Joined belting				
Max. Tensile Load (N)						
Width (mm)	6	10	16	25	32	50
Synchroflex	350	700	1260	2030	2660	4200
Breco- M	-	700	1120	1820	2240	3500
Breco- V	-	350	560	910	1120	1750
Brecoflex	-	700	1260	2030	2660	4200



AT5 (5mm pitch)

AT5 Pulley to suit 16mm wide Belt

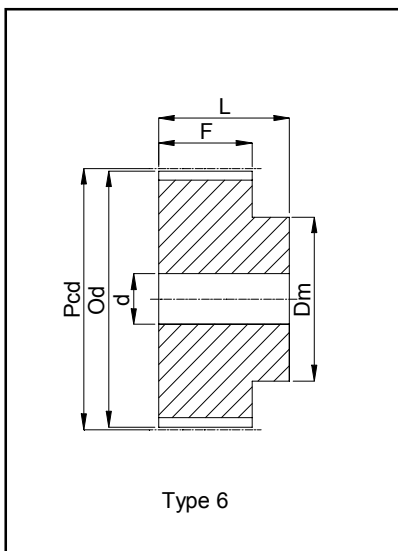
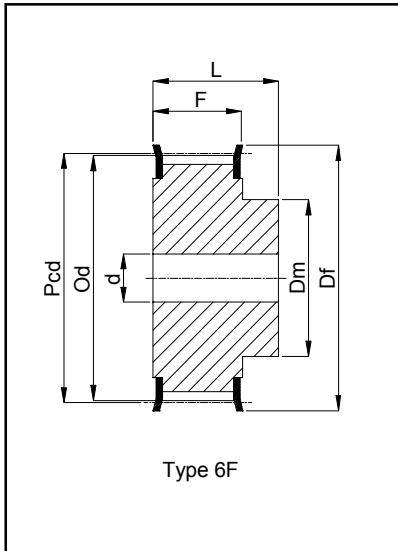
Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL27AT5/12-2	6F	12	19.10	17.85	11	23.0	21	27	-	0.022
AL27AT5/14-2	6F	14	22.29	21.05	14	25.0	21	27	-	0.026
AL27AT5/15-2	6F	15	23.88	22.65	16	28.0	21	27	-	0.029
AL27AT5/16-2	6F	16	25.47	24.20	18	32.0	21	27	6	0.035
AL27AT5/18-2	6F	18	28.65	27.40	20	32.0	21	27	6	0.043
AL27AT5/19-2	6F	19	30.25	29.00	22	36.0	21	27	6	0.049
AL27AT5/20-2	6F	20	31.83	30.60	23	36.0	21	27	6	0.053
AL27AT5/22-2	6F	22	35.02	33.75	24	38.0	21	27	6	0.054
AL27AT5/24-2	6F	24	38.21	36.95	26	42.0	21	27	6	0.076
AL27AT5/25-2	6F	25	39.80	38.55	26	44.0	21	27	6	0.081
AL27AT5/26-2	6F	26	41.39	40.15	26	44.0	21	27	6	0.085
AL27AT5/27-2	6F	27	42.98	41.75	30	48.0	21	27	6	0.090
AL27AT5/28-2	6F	28	44.58	43.35	32	48.0	21	27	8	0.092
AL27AT5/30-2	6F	30	47.76	46.5	34	51.0	21	27	8	0.105
AL27AT5/32-2	6F	32	50.94	49.70	38	54.0	21	27	8	0.123
AL27AT5/36-2	6F	36	57.31	56.05	38	63.0	21	27	8	0.160
AL27AT5/40-2	6F	40	63.66	62.45	40	66.0	21	27	8	0.193
AL27AT5/44-0	6	44	70.05	68.80	45	-	21	27	8	0.280
AL27AT5/48-0	6	48	76.42	75.15	50	-	21	27	8	0.280
AL27AT5/60-0	6	60	95.52	94.25	65	-	21	27	8	0.430

AT5 Pulley to suit 25mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL38AT5/12-2	6F	12	19.10	17.85	11	23.0	32	38	-	0.031
AL38AT5/14-2	6F	14	22.29	21.05	14	25.0	32	38	-	0.037
AL38AT5/15-2	6F	15	23.88	22.65	16	28.0	32	38	-	0.041
AL38AT5/16-2	6F	16	25.47	24.20	18	32.0	32	38	6	0.041
AL38AT5/18-2	6F	18	28.65	27.40	20	32.0	32	38	6	0.050
AL38AT5/19-2	6F	19	30.25	29.00	22	36.0	32	38	6	0.070
AL38AT5/20-2	6F	20	31.83	30.60	23	36.0	32	38	6	0.076
AL38AT5/22-2	6F	22	35.02	33.75	24	38.0	32	38	6	0.078
AL38AT5/24-2	6F	24	38.21	36.95	26	42.0	32	38	6	0.109
AL38AT5/25-2	6F	25	39.80	38.55	26	44.0	32	38	6	0.116
AL38AT5/26-2	6F	26	41.39	40.15	26	44.0	32	38	6	0.120
AL38AT5/27-2	6F	27	42.98	41.75	30	48.0	32	38	6	0.128
AL38AT5/28-2	6F	28	44.58	43.35	32	48.0	32	38	8	0.136
AL38AT5/30-2	6F	30	47.76	46.50	34	51.0	32	38	8	0.160
AL38AT5/32-2	6F	32	50.94	49.70	38	54.0	32	38	8	0.176
AL38AT5/36-2	6F	36	57.31	56.05	38	63.0	32	38	8	0.230
AL38AT5/40-2	6F	40	63.66	62.45	40	66.0	32	38	8	0.276
AL38AT5/44-0	6	44	70.05	68.80	45	-	32	38	8	0.349
AL38AT5/48-0	6	48	76.42	75.15	50	-	32	38	8	0.400
AL38AT5/60-0	6	60	95.52	94.25	65	-	32	38	8	0.624

AT5 Pulley to suit 32mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL46AT5/12-2	6F	12	19.10	17.85	11	23.0	40	46	-	0.038
AL46AT5/14-2	6F	14	22.29	21.05	14	25.0	40	46	-	0.045
AL46AT5/15-2	6F	15	23.88	22.65	16	28.0	40	46	-	0.050
AL46AT5/16-2	6F	16	25.47	24.20	18	32.0	40	46	6	0.060
AL46AT5/18-2	6F	18	28.65	27.40	20	32.0	40	46	6	0.074
AL46AT5/19-2	6F	19	30.25	29.00	22	36.0	40	46	6	0.084
AL46AT5/20-2	6F	20	31.83	30.60	23	36.0	40	46	6	0.083
AL46AT5/22-2	6F	22	35.02	33.75	24	38.0	40	46	6	0.096
AL46AT5/24-2	6F	24	38.21	36.95	26	42.0	40	46	6	0.117
AL46AT5/25-2	6F	25	39.80	38.55	26	44.0	40	46	6	0.127
AL46AT5/26-2	6F	26	41.39	40.15	26	44.0	40	46	6	0.145
AL46AT5/27-2	6F	27	42.98	41.75	30	48.0	40	46	6	0.154
AL46AT5/28-2	6F	28	44.58	43.35	32	48.0	40	46	8	0.157
AL46AT5/30-2	6F	30	47.76	46.50	34	51.0	40	46	8	0.193
AL46AT5/32-2	6F	32	50.94	49.70	38	54.0	40	46	8	0.217
AL46AT5/36-2	6F	36	57.31	56.05	38	63.0	40	46	8	0.280
AL46AT5/40-2	6F	40	63.66	62.45	40	66.0	40	46	8	0.329
AL46AT5/44-0	6	44	70.05	68.80	45	-	40	46	8	0.478
AL46AT5/48-0	6	48	76.42	75.15	50	-	40	46	8	0.510
AL46AT5/60-0	6	60	95.52	94.25	65	-	40	46	8	0.774

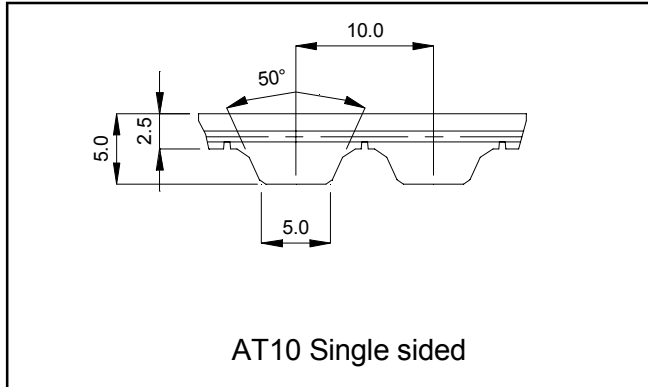


Synchroflex / Breco AT10 belts



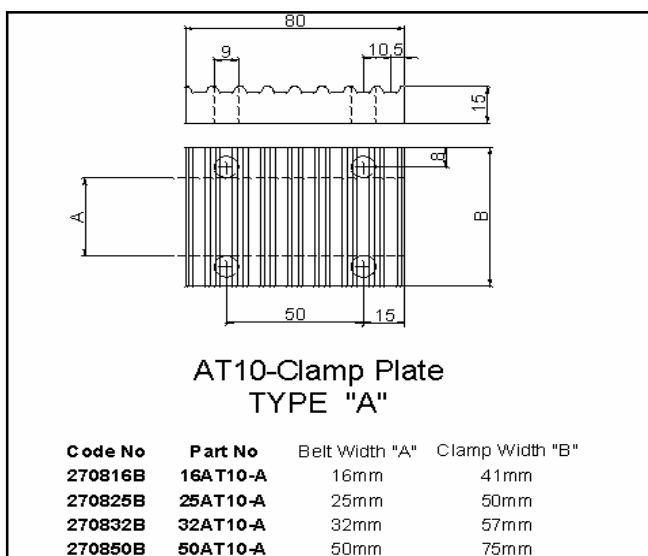
AT10 (10mm pitch)

Standard Belt widths	25	32	50	75	100
Example Part Number	32AT10/1500 width / type pitch / length (mm)				



Belt weight	AT10
Per 10mm of belt width	0.063kg/m
Other options and features available	
*Coloured	
*With Kevlar tension members	
*Anti-static	
*With "E" Tension members	
*With profiles welded	
*Generation III	

Belt No	Length mm	No. of Teeth	Belt No	Length mm	No. of Teeth
AT10/500	500	50	AT10/1100	1100	110
AT10/560	560	56	AT10/1150	1150	115
AT10/580	580	58	AT10/1200	1200	120
AT10/600	600	60	AT10/1210	1210	121
AT10/610	610	61	AT10/1250	1250	125
AT10/660	660	66	AT10/1280	1280	128
AT10/700	700	70	AT10/1300	1300	130
AT10/730	730	73	AT10/1320	1320	132
AT10/780	780	78	AT10/1350	1350	135
AT10/800	800	80	AT10/1360	1360	136
AT10/840	840	84	AT10/1400	1400	140
AT10/880	880	88	AT10/1480	1480	148
AT10/890	890	89	AT10/1500	1500	150
AT10/920	920	92	AT10/1600	1600	160
AT10/960	960	96	AT10/1700	1700	170
AT10/980	980	98	AT10/1720	1720	172
AT10/1000	1000	100	AT10/1800	1800	180
AT10/1010	1010	101	AT10/1860	1860	186
AT10/1050	1050	105	AT10/1940	1940	194
AT10/1080	1080	108			

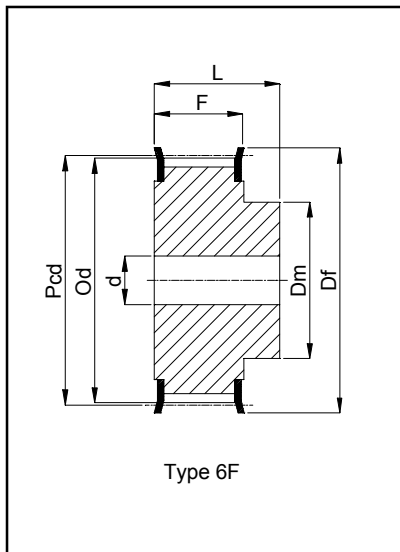


Breco-M Breco- V		Long length Open belting Joined belting				
Max. Tensile Load (N)						
Width (mm)	16	25	32	50	75	100
Synchroflex	2000	3500	4750	7750	12000	16000
Breco- M	-	4250	5500	8500	12750	17000
Breco- V	-	2125	2750	4250	6375	8500
Brecoflex	-	3500	4750	7750	12000	16000

AT10 (10mm pitch)

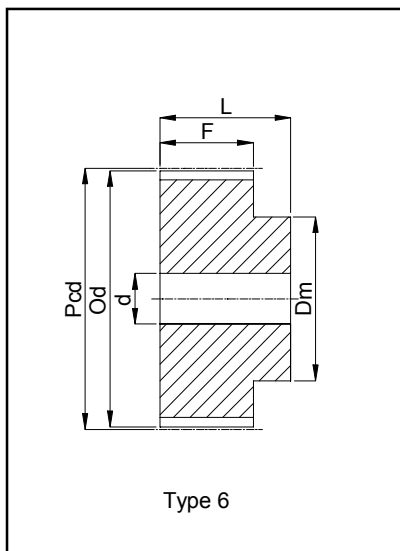
AT10 Pulley to suit 25mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL42AT10/15-2	6F	15	47.75	45.90	32	51	32	42	8	0.152
AL42AT10/16-2	6F	16	50.93	49.10	35	54	32	42	8	0.176
AL42AT10/18-2	6F	18	57.29	55.45	40	60	32	42	8	0.224
AL42AT10/19-2	6F	19	60.48	58.65	44	66	32	42	8	0.247
AL42AT10/20-2	6F	20	63.66	61.80	46	66	32	42	8	0.276
AL42AT10/22-2	6F	22	70.03	68.20	52	75	32	42	8	0.337
AL42AT10/24-2	6F	24	76.39	74.55	58	83	32	42	8	0.392
AL42AT10/25-2	6F	25	79.58	77.75	60	83	32	42	8	0.422
AL42AT10/26-2	6F	26	82.76	80.90	60	87	32	42	8	0.477
AL42AT10/27-2	6F	27	85.95	84.10	60	91	32	42	8	0.536
AL42AT10/28-2	6F	28	89.12	87.25	60	93	32	42	8	0.540
AL42AT10/30-2	6F	30	95.49	93.65	60	97	32	42	8	0.640
AL42AT10/32-2	6F	32	101.86	100.00	65	106	32	42	10	0.693
AL42AT10/36-2	6F	36	114.59	112.75	70	119	32	42	10	0.873
AL42AT10/40-2	6F	40	127.32	125.45	80	131	32	42	10	1.067
AL42AT10/44-0	6	44	140.05	138.20	88	-	32	42	10	1.350
AL42AT10/48-0	6	48	152.78	150.95	95	-	32	42	16	1.516
AL42AT10/60-0	6	60	190.98	189.15	110	-	32	42	16	2.339



AT10 Pulley to suit 32mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL50AT10/15-2	6F	15	47.75	45.90	32	51	40	50	6	
AL50AT10/16-2	6F	16	50.93	49.10	35	54	40	50	8	
AL50AT10/18-2	6F	18	57.29	55.45	40	60	40	50	8	0.253
AL50AT10/19-2	6F	19	60.48	58.65	44	66	40	50	8	0.286
AL50AT10/20-2	6F	20	63.66	61.80	46	66	40	50	8	0.322
AL50AT10/22-2	6F	22	70.03	68.20	52	75	40	50	8	0.393
AL50AT10/24-2	6F	24	76.39	74.55	58	83	40	50	8	0.475
AL50AT10/25-2	6F	25	79.58	77.75	60	83	40	50	8	0.527
AL50AT10/26-2	6F	26	82.76	80.90	60	87	40	50	8	0.564
AL50AT10/27-2	6F	27	85.95	84.10	60	91	40	50	8	0.602
AL50AT10/28-2	6F	28	89.12	87.25	60	93	40	50	8	0.642
AL50AT10/30-2	6F	30	95.49	93.65	60	97	40	50	8	0.740
AL50AT10/32-2	6F	32	101.86	100.00	65	106	40	50	10	0.844
AL50AT10/36-2	6F	36	114.59	112.75	70	119	40	50	10	1.063
AL50AT10/40-2	6F	40	127.32	125.45	80	131	40	50	10	1.317
AL50AT10/44-0	6	44	140.05	138.20	88	-	40	50	10	1.611
AL50AT10/48-0	6	48	152.78	150.95	95	-	40	50	16	1.931
AL50AT10/60-0	6	60	190.98	189.15	110	-	40	50	16	3.004



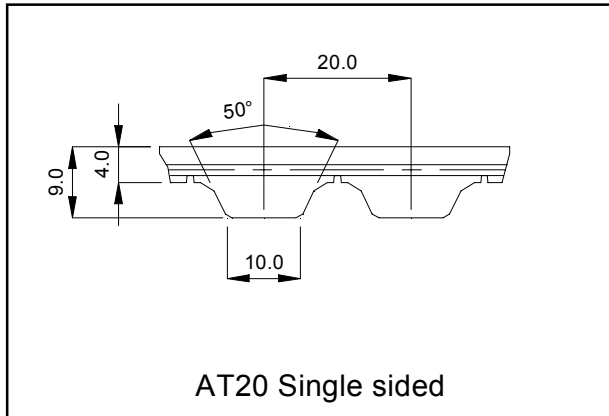
AT10 Pulley to suit 50mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL70AT10/15-2	6F	15	47.75	45.90	32	51	60	70		
AL70AT10/16-2	6F	16	50.93	49.10	35	54	60	70		
AL70AT10/18-2	6F	18	57.29	55.45	40	60	60	70	12	0.422
AL70AT10/19-2	6F	19	60.48	58.65	44	66	60	70	12	0.466
AL70AT10/20-2	6F	20	63.66	61.80	46	66	60	70	12	0.520
AL70AT10/22-2	6F	22	70.03	68.20	52	75	60	70	12	0.570
AL70AT10/24-2	6F	24	76.39	74.55	58	83	60	70	12	0.736
AL70AT10/25-2	6F	25	79.58	77.75	60	83	60	70	12	0.766
AL70AT10/26-2	6F	26	82.76	80.90	60	87	60	70	12	0.816
AL70AT10/27-2	6F	27	85.95	84.10	60	91	60	70	12	0.946
AL70AT10/28-2	6F	28	89.12	87.25	60	93	60	70	12	0.960
AL70AT10/30-2	6F	30	95.49	93.65	60	97	60	70	12	1.169
AL70AT10/32-2	6F	32	101.86	100.00	65	106	60	70	12	1.300
AL70AT10/36-2	6F	36	114.59	112.75	70	119	60	70	12	1.637
AL70AT10/40-2	6F	40	127.32	125.45	80	131	60	70	12	1.999
AL70AT10/44-0	6	44	140.05	138.20	88	-	60	70	12	2.357
AL70AT10/48-0	6	48	152.78	150.95	95	-	60	70	16	2.830
AL70AT10/60-0	6	60	190.98	189.15	110	-	60	70	16	4.366

Synchroflex / Breco AT20 belts



AT20 (20mm pitch)



Standard Belt widths	32	50	75	100
Example Part Number	50AT20/2600 width / type pitch / length (mm)			

Belt No	Length mm	No. of Teeth
AT20/1000	1000	50
AT20/1100	1100	55
AT20/1200	1200	60
AT20/1260	1260	63
AT20/1500	1500	75
AT20/1600	1600	80
AT20/1700	1700	85
AT20/1760	1760	88
AT20/1800	1800	90
AT20/1900	1900	95
AT20/1960	1960	98

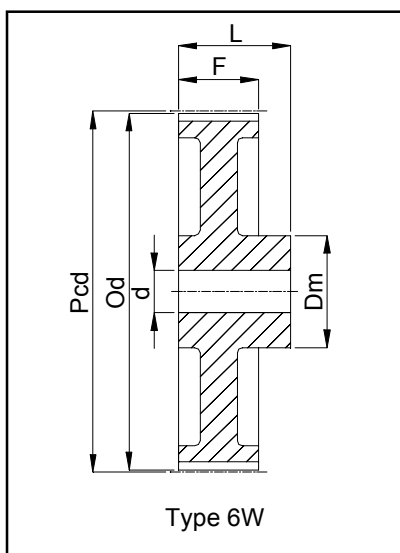
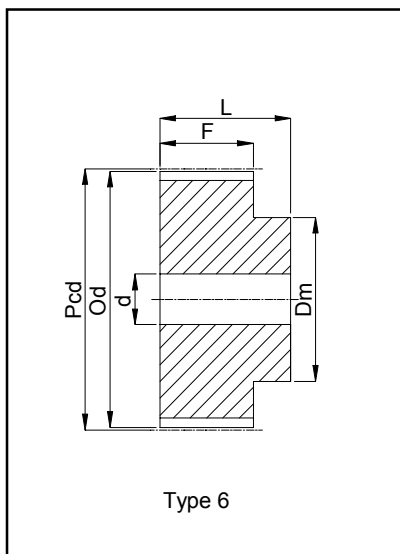
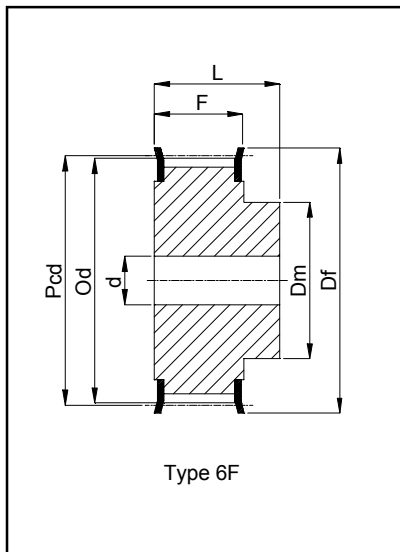
Belt weight	AT20
Per 10mm of belt width	0.106 kg/m
Other options and features available *Coloured *With Kevlar tension members *Anti-static *With "E" Tension members *With profiles welded	

AT20-Clamp Plate Type B

Code No	Part No	Belt "A"	Clamp "B" Holes "M"
2709025B	25AT20-B	25mm	50mm 38mm
2709032B	32AT20-B	32mm	60mm 46mm
2709050B	50AT20-B	50mm	75mm 62mm
2709075B	75AT20-B	75mm	110mm 94mm
2709100B	100AT20-B	100mm	140mm 124mm
2709150B	150AT20-B	150mm	190mm 174mm

Breco-M Breco- V		Long length Open belting Joined belting			
Max. Tensile Load (N)					
Width (mm)	32	50	75	100	150
Synchroflex	6750	11250	17550	23850	36450
Breco- M	7200	11700	18000	25000	36000
Breco- V	3600	5800	9000	12500	18000
Brecoflex	6000	10000	15600	21200	32400

AT20 (20mm pitch)



AT20 Pulley to suit 32mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL53AT20/18-2	6F	18	114.59	111.75	80	119	38	53	15	
AL53AT20/20-2	6F	20	127.32	124.45	90	138	38	53	15	
AL53AT20/22-2	6F	22	140.05	137.20	90	146	38	53	15	
AL53AT20/24-2	6F	24	152.78	149.95	95	160	38	53	15	
AL53AT20/25-2	6F	25	159.15	156.30	95	168	38	53	15	
AL53AT20/30-2	6F	30	190.98	188.15	110	198	38	53	15	
AL53AT20/32-2	6F	32	203.71	200.85	110	216	38	53	18	
AL53AT20/36-0	6	36	229.18	226.35	110	-	38	53	18	
AL53AT20/40-0	6	40	254.64	251.80	110	-	38	53	20	
AL53AT20/48-0	6	48	305.57	302.70	130	-	38	53	20	
AL53AT20/60-0	6	60	381.96	379.10	130	-	38	53	20	
AL53AT20/72-0	6	72	451.99	455.50	140	-	38	53	20	

AT20 Pulley to suit 50mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL71AT20/18-2	6F	18	114.59	111.75	80	119	56	71	18	
AL71AT20/20-2	6F	20	127.32	124.45	90	138	56	71	18	
AL71AT20/22-2	6F	22	140.05	137.20	90	146	56	71	18	
AL71AT20/24-2	6F	24	152.78	149.95	95	160	56	71	18	
AL71AT20/25-2	6F	25	159.15	156.30	95	168	56	71	18	
AL71AT20/30-2	6F	30	190.98	188.15	110	198	56	71	18	
AL71AT20/32-2	6F	32	203.71	200.85	110	216	56	71	20	
AL71AT20/36-0	6	36	229.18	226.35	110	-	56	71	20	
AL71AT20/40-0	6	40	254.64	251.80	110	-	56	71	20	
AL71AT20/48-0	6	48	305.57	302.70	130	-	56	71	24	
AL71AT20/60-0	6	60	381.96	379.10	130	-	56	71	24	
AL71AT20/72-0	6	72	451.99	455.50	140	-	56	71	24	

AT20 Pulley to suit 75mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL96AT20/18-2	6F	18	114.59	111.75	80	119	81	96	24	
AL96AT20/20-2	6F	20	127.32	124.45	90	138	81	96	24	
AL96AT20/22-2	6F	22	140.05	137.20	90	146	81	96	24	
AL96AT20/24-2	6F	24	152.78	149.95	95	160	81	96	24	
AL96AT20/25-2	6F	25	159.15	156.30	95	168	81	96	24	
AL96AT20/30-2	6F	30	190.98	188.15	110	198	81	96	24	
AL96AT20/32-2	6F	32	203.71	200.85	110	216	81	96	32	
AL96AT20/36-0	6	36	229.18	226.35	110	-	81	96	32	
AL96AT20/40-0	6	40	254.64	251.80	110	-	81	96	32	
AL96AT20/48-0	6	48	305.57	302.70	130	-	81	96	32	
AL96AT20/60-0	6	60	381.96	379.10	130	-	81	96	32	
AL96AT20/72-0	6	72	451.99	455.50	140	-	81	96	32	

AT20 Pulley to suit 100mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	Dm	Df	F	L	d	Weight
AL123AT20/18-2	6F	18	114.59	111.75	80	119	108	123	24	
AL123AT20/20-2	6F	20	127.32	124.45	90	138	108	123	24	
AL123AT20/22-2	6F	22	140.05	137.20	90	146	108	123	24	
AL123AT20/24-2	6F	24	152.78	149.95	95	160	108	123	24	
AL123AT20/25-2	6F	25	159.15	156.30	95	168	108	123	24	
AL123AT20/30-2	6F	30	190.98	188.15	110	198	108	123	24	
AL123AT20/32-2	6F	32	203.71	200.85	110	216	108	123	32	
AL123AT20/36-0	6	36	229.18	226.35	110	-	108	123	32	
AL123AT20/40-0	6	40	254.64	251.80	110	-	108	123	32	
AL123AT20/48-0	6	48	305.57	302.70	130	-	108	123	32	
AL123AT20/60-0	6	60	381.96	379.10	130	-	108	123	32	
AL123AT20/72-0	6	72	451.99	455.50	140	-	108	123	32	

AT20 20mm Pitch pulleys are not available from stock and can be manufactured to your personal requirements..

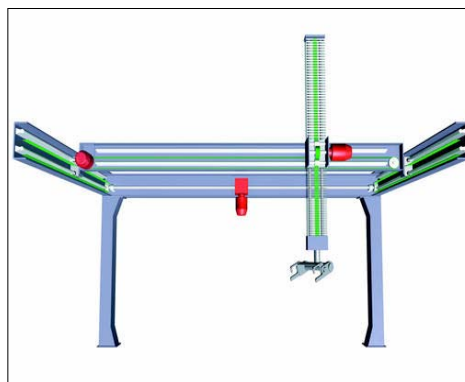
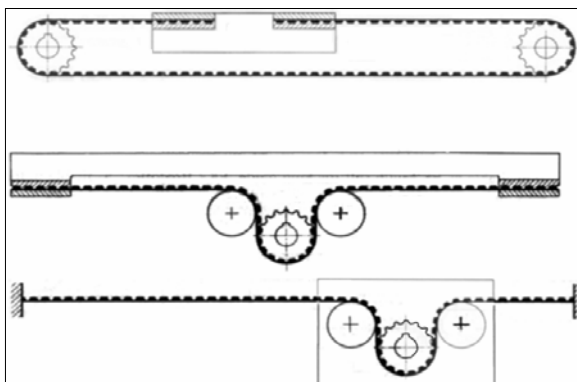
Linear drives often require extremely high positioning repeatability and accuracy. Breco ATL belts are optimised for linear drives. ATL belts are available in open reels and cannot be joined. They are connected using clamp plates and/or tension plates.

These belts use extra strength high flexibility tension cords, designed for increased pre-tension, yet are suitable to run in standard AT pulleys. They are manufactured to a negative length tolerance, so that the belt and pulley mesh correctly when the belt is under pre-tension and working load.

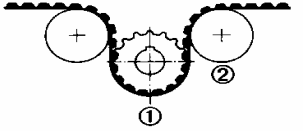

Linear Carriage

Linear Table

Linear Omega Drive



Minimum Diameters

REVERSE BENDING	MIN. PULLEY & IDLER DIA.		(1)	(2)
		ATL5	Z = 25	ø = 60
		ATL10	Z = 25	ø = 150
		ATL20	Z = 25	ø = 250
NORMAL USE	MIN. PULLEY & IDLER DIA.		(1)	(2)
		ATL5	Z = 25	ø = 40
		ATL10	Z = 25	ø = 80
		ATL20	Z = 25	ø = 160

Technical Information

ATL5				
Belt Width	16	25	32	50
Allowable tensile load (N)	1300	2400	2600	4200
Specific spring rate (N)	$0.33 \cdot 10^6$	$0.50 \cdot 10^6$	$0.65 \cdot 10^6$	$1.05 \cdot 10^6$
Weight per metre (kg/m)	0.059	0.090	0.119	0.187

ATL10				
Belt Width	32	50	75	100
Allowable tensile load (N)	7200	11200	16800	22400
Specific spring rate (N)	$1.8 \cdot 10^6$	$2.8 \cdot 10^6$	$4.2 \cdot 10^6$	$5.6 \cdot 10^6$
Weight per metre (kg/m)	0.22	0.34	0.51	0.68

ATL20				
Belt Width	32	50	75	100
Allowable tensile load (N)	9800	15400	23800	31500
Specific spring rate (N)	$2.36 \cdot 10^6$	$3.71 \cdot 10^6$	$5.74 \cdot 10^6$	$7.59 \cdot 10^6$
Weight per metre (kg/m)	0.35	0.55	0.84	1.11

Angular Drives

Synchroflex®, Breco®, & Brecoflex® belts can be used in angular drives as a crossed (twisted) drive but not as a radially displaced drive.

With crossed timing belt applications, the outer tension members suffer greater elongation than the middle ones.

At a ratio of $I_T > 20 \cdot b$ there is no power reduction and no special design considerations need to be made.

If a ratio of $I_T < 20 \cdot b$ is necessary, please contact our technical department.

$$I_T > 20 \cdot b$$

b = Belt Width

I_T = Span Length



Two Axis Angular Drive



Three Axis Angular Drive

Flanges

Timing belts must be guided with flanges to eliminate the wandering off effect of side loads and as a rule this is done with flanges. The correct design of the belt guiding system incorporating the minimum of side loads and frictional losses is of fundamental importance for a trouble free drive. The direction of rotation and the span length are of equal importance.

It is more cost effective to have flanges on the small pulley rather than the large one.



Idler pulleys can be used to guide the belt. An idler pulley is usually positioned next to the drive pulley especially where there is a long span length. The idler pulley is preferably positioned on the slack side of the drive.



With bi-directional drives, the idler pulleys should be positioned in the middle of the span length. Short span lengths before the belt lead-in should be avoided.



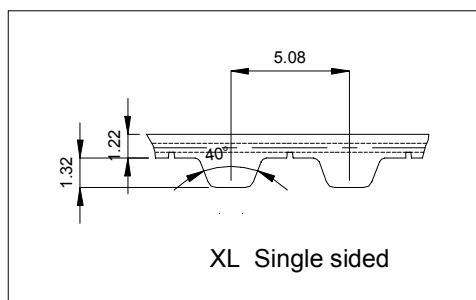
Belt width(b) relates to the pulley width(B) to give sufficient side clearance. This clearance is not specific. See pages 4 to 19 for our standards.



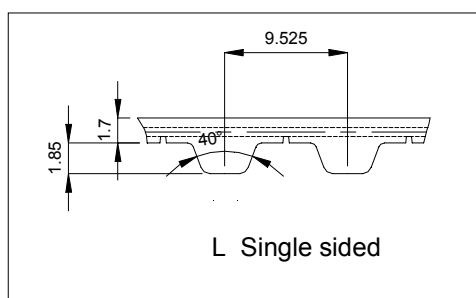
Breco Imperial belts



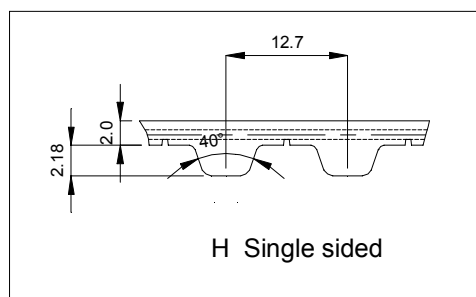
Standard Belt widths	6.35	9.53	12.7	19.1	25.4	38.1	50.8	76.2	101.6
Imperial Code	025	037	050	075	100	150	200	300	400



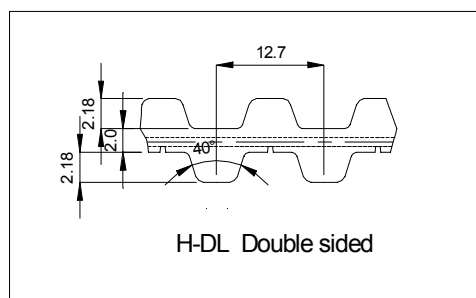
Belt No.	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
XL025-M or -V	210	105
XL037-M or -V	330	165
XL050-M or -V	390	195
XL075-M or -V	630	315
XL100-M or -V	840	420
Weight	0.025 kg/10mm belt width	



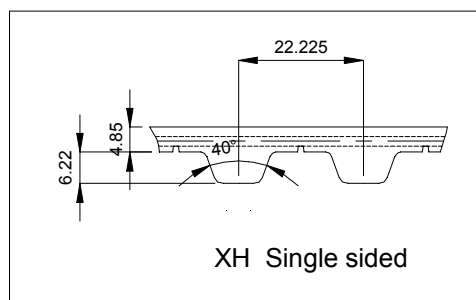
Belt No.	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
L037-M or -V	630	315
L050-M or -V	840	420
L075-M or -V	1260	630
L100-M or -V	1680	840
L150-M or -V	2520	1260
L200-M or -V	3150	1570
Weight	0.040 kg/10mm belt width	



Belt No.	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
H050-M or -V	1000	500
H075-M or -V	1600	800
H100-M or -V	2000	1000
H150-M or -V	3200	1600
H200-M or -V	4200	2100
H300-M or -V	5200	2600
H400-M or -V	6600	3300
Weight	0.042 kg/10mm belt width	

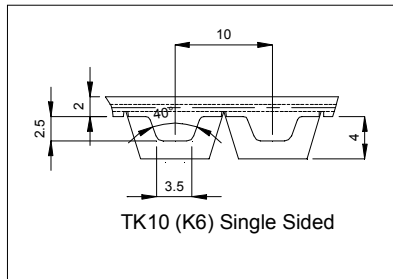


Belt No.	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
H100-DL-M or -V	2000	1000
H150-DL-M or -V	3200	1600
H200-DL-M or -V	4200	2100
H300-DL-M or -V	5200	2600
H400-DL-M or -V	6600	3300
Weight	0.042 kg/10mm belt width	



Belt No.	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
XH100-M or -V	3500	1750
XH150-M or -V	5250	2625
XH200-M or -V	7000	3500
XH300-M or -V	10500	5250
XH400-M or -V	14000	7000
Weight	0.109 kg/10mm belt width	

Breco Self tracking belts



Standard Belt widths	25	32	50	75	100
Breco -V	•	•	•		
Example Part Number	50TK10(K6) /1600-V				
Belt weight	0.059 kg/ 10mm belt width				
Endless joined minimum length: 1000mm					

Self Tracking Belts

The combination of steel reinforced belts with moulded or welded V belts produces accurate, linear belts. They are unparalleled for:

- Conveyors for indexing, transferring and positioning
- Production lines for linear product processes
- Automation and production processes
- Constant belt tracking unaffected by side loads
- Slipless, stable
- High positional and angular accuracy

TK10K6 Pulley to suit 25mm wide Belt

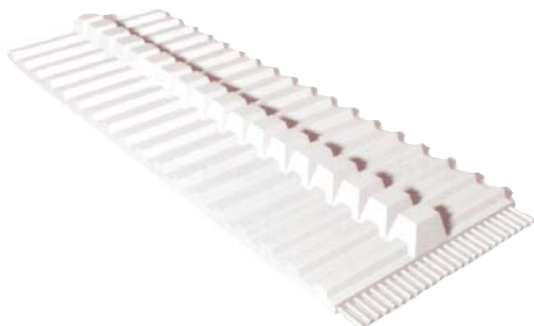
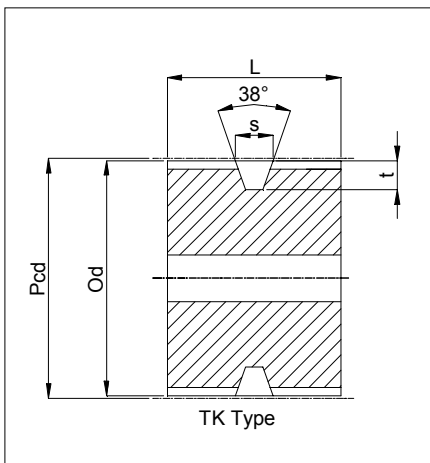
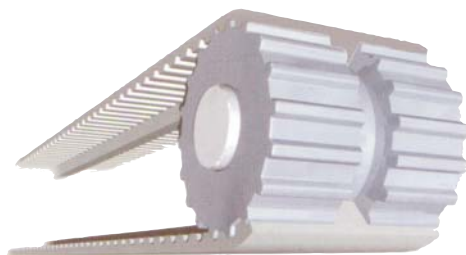
Pulley No.	Type	teeth	Pcd	Od	S	t	L	d
AL 30TK10K6 /20	TK	20	63.66	61.80	6.5	5	30	12
AL 30TK10K6 /24	TK	24	76.39	74.55	6.5	5	30	12
AL 30TK10K6 /25	TK	25	79.58	77.75	6.5	5	30	12
AL 30TK10K6 /27	TK	27	85.94	84.10	6.5	5	30	12
AL 30TK10K6 /30	TK	30	95.49	93.65	6.5	5	30	12
AL 30TK10K6 /32	TK	32	101.86	100.00	6.5	5	30	12
AL 30TK10K6 /36	TK	36	114.59	112.75	6.5	5	30	16
AL 30TK10K6 /40	TK	40	127.32	125.45	6.5	5	30	16
AL 30TK10K6 /48	TK	48	152.79	150.95	6.5	5	30	16
AL 30TK10K6 /60	TK	60	190.99	189.15	6.5	5	30	16

TK10K6 Pulley to suit 32mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	S	t	L	d
AL 37TK10K6 /20	TK	20	63.66	61.80	6.5	5	37	12
AL 37TK10K6 /24	TK	24	76.39	74.55	6.5	5	37	12
AL 37TK10K6 /25	TK	25	79.58	77.75	6.5	5	37	12
AL 37TK10K6 /27	TK	27	85.94	84.10	6.5	5	37	12
AL 37TK10K6 /30	TK	30	95.49	93.65	6.5	5	37	12
AL 37TK10K6 /32	TK	32	101.86	100.00	6.5	5	37	12
AL 37TK10K6 /36	TK	36	114.59	112.75	6.5	5	37	16
AL 37TK10K6 /40	TK	40	127.32	125.45	6.5	5	37	16
AL 37TK10K6 /48	TK	48	152.79	150.95	6.5	5	37	16
AL 37TK10K6 /60	TK	60	190.99	189.15	6.5	5	37	16

TK10K6 Pulley to suit 50mm wide Belt

Pulley No.	Type	teeth	Pcd	Od	S	t	L	d
AL 55TK10K6 /20	TK	20	63.66	61.80	6.5	5	55	12
AL 55TK10K6 /24	TK	24	76.39	74.55	6.5	5	55	12
AL 55TK10K6 /25	TK	25	79.58	77.75	6.5	5	55	12
AL 55TK10K6 /27	TK	27	85.94	84.10	6.5	5	55	12
AL 55TK10K6 /30	TK	30	95.49	93.65	6.5	5	55	12
AL 55TK10K6 /32	TK	32	101.86	100.00	6.5	5	55	12
AL 55TK10K6 /36	TK	36	114.59	112.75	6.5	5	55	16
AL 55TK10K6 /40	TK	40	127.32	125.45	6.5	5	55	16
AL 55TK10K6 /48	TK	48	152.79	150.95	6.5	5	55	16
AL 55TK10K6 /60	TK	60	190.99	189.15	6.5	5	55	16



Belts With Profiles



- Synchroflex and Breco belts can be supplied with special profiles on the back to offer designers infinite solutions to conveying, handling, and positioning drives.
- Profiles are thermally welded to the belt back according to customer requirements.
- The standard pitch tolerance of profiles is $\pm 0.5\text{mm}$.

Initial Design

Drive parameters must first be determined, thus establishing the belt pitch, length, and size of pulleys. Profiles can be welded to any pitch belt.

For transport applications it is advisable to use Breco belts with PAZ nylon coating(see page 29). This coating gives a reduced frictional coefficient, thus better running and less wear when used with support plates.

Choice of Profile

The type of product to be conveyed and the method of transportation will influence the choice of profile.

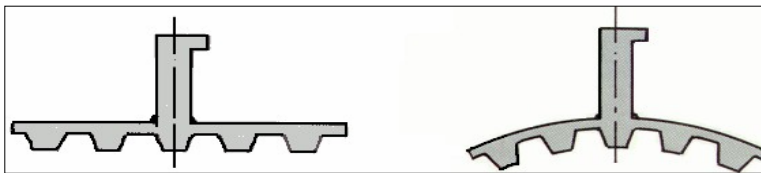
- Standard profiles. See page 28.
- Profiles cut from sheet polyurethane.
- Special profiles can be made from a new mould. There will be a tooling charge for this service.

Profile Material

Polyurethane (92° shore). The same material used for the Breco/Brecoflex belts.

Positioning of Profile

The belt flexibility relies on the tooth gap. In order to maintain the belt flexibility around the pulleys it is advisable to position the profiles over the belt teeth.



Profile and Belt Pitches

If possible the pitch of the profiles should be a multiple of the belt pitch. If this is not possible, ensure that the sum of the profile pitches is equal to the belt length.



Belts With Profiles

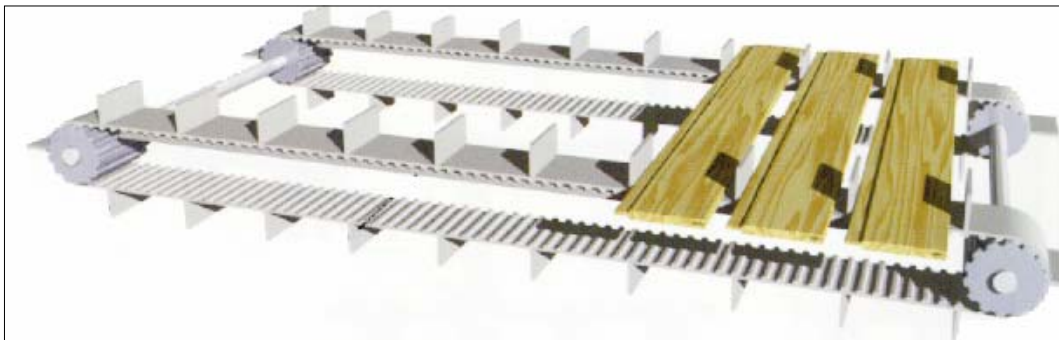
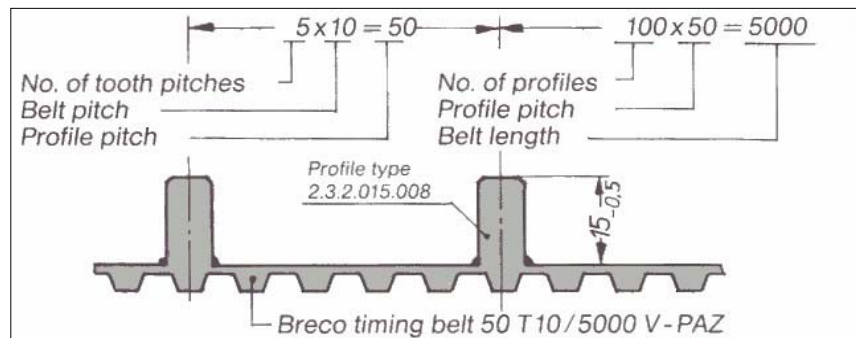


Tolerances

The standard pitch to pitch tolerance between profiles is $\pm 0.5\text{mm}$. Standard height tolerance is -0.5mm .

Ordering Example

A drawing of the profiled belt is preferred when ordering.
However a profiled belt can be ordered by description.
e.g. Breco belt 50T10/5000-V-PAZ-FN100 profile type 2.3.3.015.008
profile pitch 50mm over tooth form.



Flash

Flash occurs between the belt back and the profile as a result of the welding process. The flash radius can be between 0.5 and 2mm depending on the profile size and thickness. If the flash will impair the function of the profile, please order "with flash removed"



Belts With Profiles



Profile Thickness

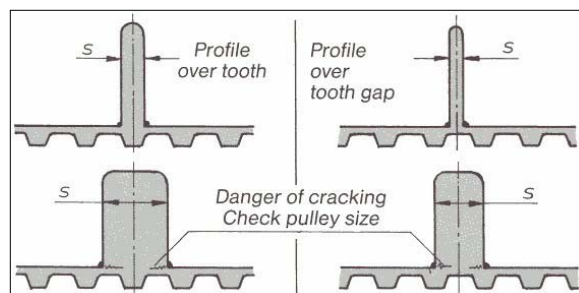
The belt flexibility can be affected by the profile thickness. As a rule the thickness should be as small as possible. The following table represents the relationship between profile thickness and the chosen pulley size.

Max. thickness in mm - profile over tooth form							
Max. thickness in mm - (profile over tooth gap)							
	Number of teeth in pulley						
Pitch	20	25	30	40	50	60	100
T5	5 (2)	6 (2)	6 (3)	8 (4)	9 (6)	10 (8)	12 (10)
T10	8 (3)	9 (4)	10 (4)	12 (6)	14 (9)	15 (12)	20 (20)
T20	12 (5)	13 (5)	15 (6)	18 (8)	20 (12)	23 (20)	30 (30)
AT5	5 (2)	6 (2)	6 (3)	8 (4)	9 (6)	10 (8)	12 (10)
AT10	8 (3)	9 (4)	10 (4)	12 (6)	14 (9)	15 (12)	20 (20)
AT20	12 (5)	13 (5)	15 (6)	18 (8)	20 (12)	23 (20)	30 (30)
XL	5 (2)	6 (2)	6 (3)	8 (4)	9 (6)	10 (8)	12 (10)
L	6 (3)	7 (3)	8 (4)	10 (5)	12 (7)	13 (10)	16 (16)
H	8 (4)	9 (5)	10 (6)	12 (7)	14 (10)	15 (12)	20 (20)
XH	13 (5)	14 (5)	15 (6)	18 (8)	20 (12)	23 (20)	30 (30)

Example for determining the profile thickness on a T10 belt running around a 20 tooth pulley.

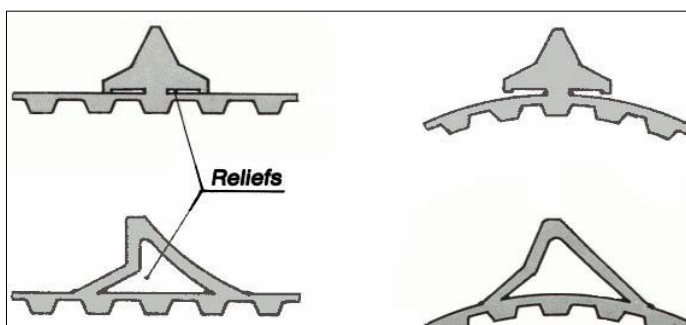
- For profiles over tooth form, profile thickness $\leq 8\text{mm}$
- For profiles over tooth gap, profile thickness $\leq 3\text{mm}$

NB. With intermediate sizes (eg 22 teeth) it is recommended to take the max. profile thickness from the nearest smaller size.



Profiles with Reliefs

The flexibility of the belt will not be affected if reliefs are designed into the profile.

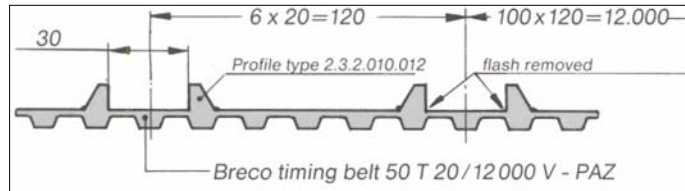


Belts With Profiles



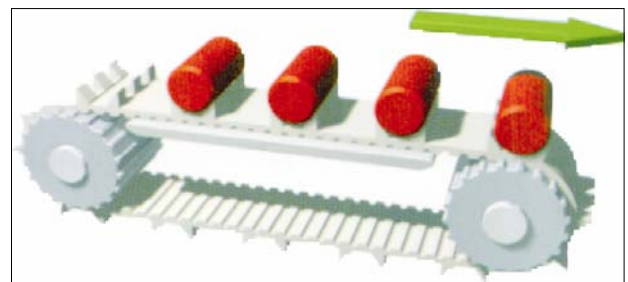
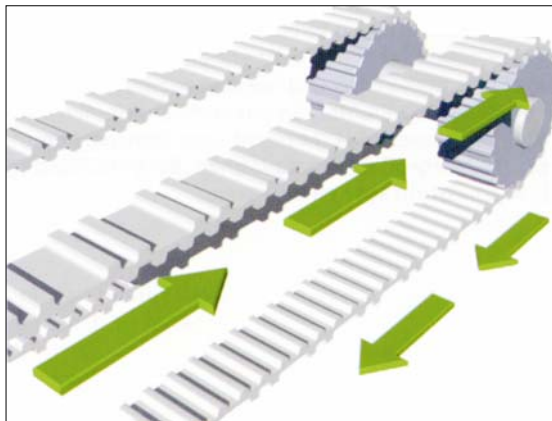
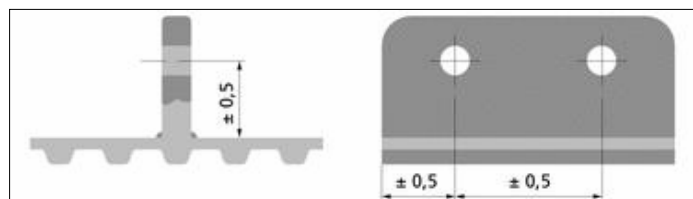
Profile Pairs

Profiles in pairs are preferred for transporting when positioning or depositing is required. Standard tolerance between profile pairs $\pm 0.5\text{mm}$. A tolerance of $\pm 0.2\text{mm}$ is attainable using special tooling. There is a tooling charge for this service.



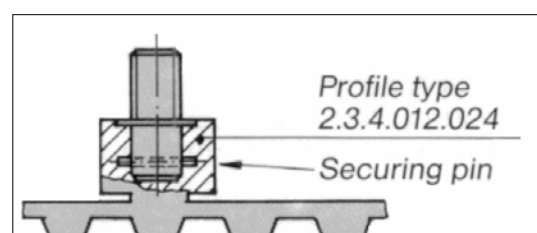
Profiles with Drilled Holes

Holes can be drilled into profiles to suit special applications. Standard tolerances as below. NB. The profiles are drilled before they are welded to the belt.



Profiles with Inserts

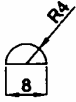
For special applications profiles can be manufactured with moulded inserts. Standard inserts can be drilled, tapped, and threaded in a wide variety of sizes.



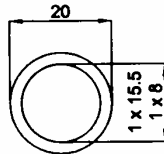
Belts With Profiles



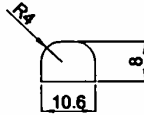
This is a small selection of the standard profiles available:



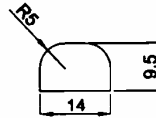
100 lg
2.3.1.008.004



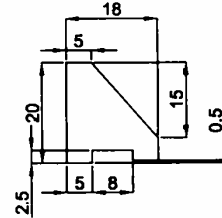
50 lg
2.3.1.015.020



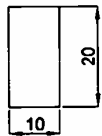
100 lg
2.3.2.008.010



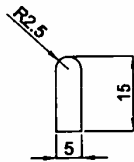
64 and 100 lg
2.3.2.009.014



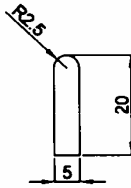
100 lg
2.3.5.043



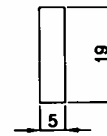
100 lg
2.3.010.020



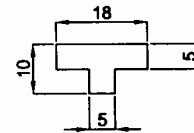
195 lg
2.3.2.015.005



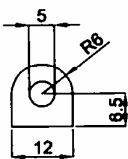
100 lg
2.3.2.020.005



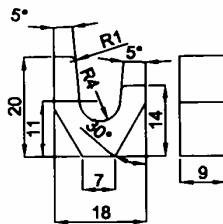
64 lg
2.3.2.019.005



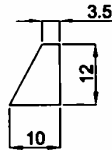
100 lg
2.3.3.010.018



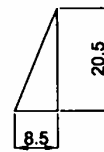
50 lg
2.3.2.012.012



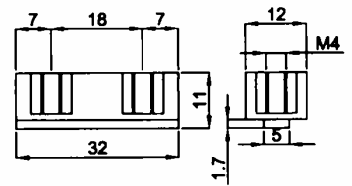
2.3.2.018.020



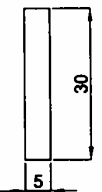
130 lg
2.3.2.010.012



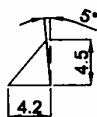
100 lg
2.3.2.008.020



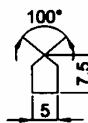
2.3.4.012.010
with inserts



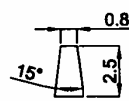
100 lg
2.3.2.030.005



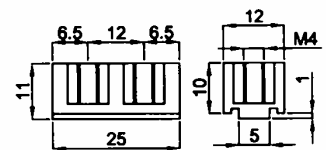
101.6 lg
2.3.2.004.004



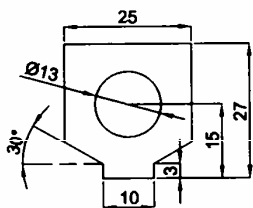
100 lg
2.3.2.005.007



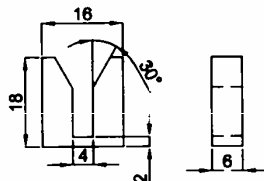
64 lg
2.3.2.001.002



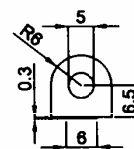
2.3.5.425.000
with inserts



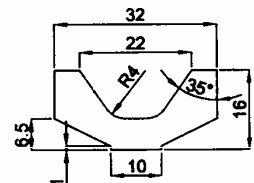
50 lg
2.3.2.025.027



2.3.2.016.018



50 lg
2.3.2.012.012b



15 lg
2.3.3.016.032

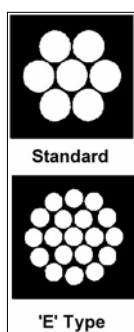
Gen III

Synchroflex Generation III timing belts.

- The new generation Synchroflex belts.
- Improve power transmission by up to 25%.
- Improved tracking.
- Less flange wear due to bifilar steel cord tension members.
- Running noise is minimised by using a smaller belt width.
- Belts are currently available in AT style only.
- High performance red polyurethane



'E' Tension members



The thinner the individual wire the greater the flexibility of the belt. With 'E' tension members the reduced cross section allows more individual wires and therefore reduces the tensile stress in the tension member. The advantage of 'E' tension members is a reduction in minimum pulley and idler diameters for reverse bending drives, due to the better fatigue strength. The smallest pulley diameter can be reduced by up to 30% over standard tension members. Belts with 'E' tension members are recommended for multi-shaft drives with severe reverse bending (contraflexure).

Available Pitches: AT3, AT5, AT10, AT20, T5, T10, T20

Summary.

- thinner individual wires in the steel tension member.
- higher dynamic capabilities.
- Extremely high fatigue strength under reverse bending.
- Longer life
- Smaller pulley and idler diameters.

Drive Type	T5	T10	T20	AT3	AT5	AT10
Without Contraflexure						
Min. No. Teeth	10	10	12	15	12	12
Min. Idler Ømm	18	50	80	20	18	50
With Contraflexure						
Min. No. Teeth	12	15	20	20	20	20
Min. Idler Ømm	18	50	120	20	50	80

Kevlar Tension Members

Synchroflex, Breco, and Brecoflex belts are also available with Kevlar tension members.

- Non-magnetic, for use in drives with metal detectors.
- Widely used in the food industry.
- Pulley and idler diameters as per standard steel tension members.

Timing belts with Integrated Profile

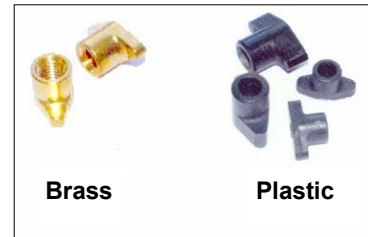
ATN has been devised specifically for use in conveyor technology. The exchangeable profile attachment in the belt tooth allows for a rapid assembly and changing of profiles. As such, using the same timing belts on a conveyor, equipped with different attachments, different goods can be transported as needed.

Profiles are produced individually to suit each conveyor application.

FDA approved polyurethane also available on request.

Available Inserts

	Plastic	Brass
Material	Polymide	MS 58F 36
Areas of Use	<ul style="list-style-type: none"> Small to medium loads Normal temperatures 	<ul style="list-style-type: none"> Medium to large loads Low Temperatures

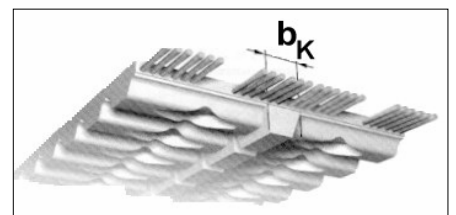
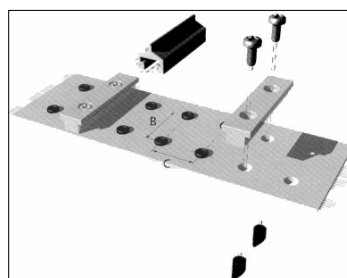
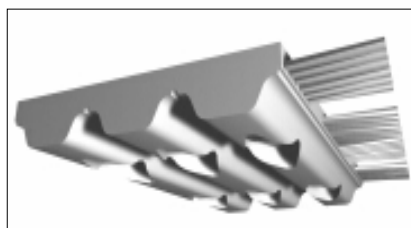
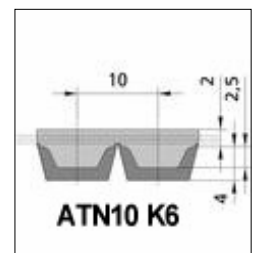
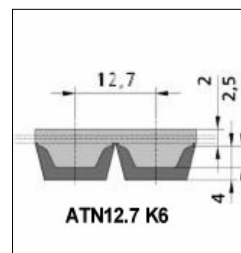
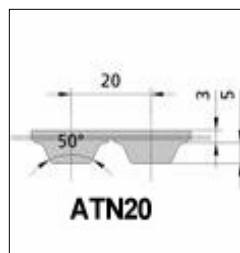
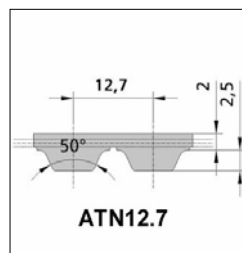
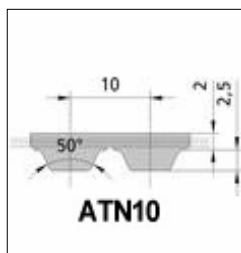


Convincing Benefits:

- Variable profile divisions with high accuracy
- Different profile materials can be used (eg. plastic, metal, ceramics)
- High shearing power

Convincing Benefits:

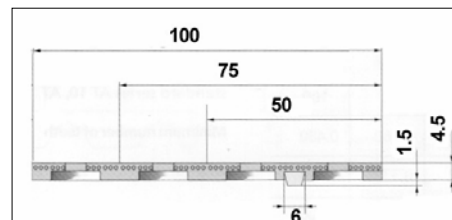
- Rapid, easy profile replacement when conveyed goods are changed or as a result of wear.
- No belt disassembly required to change profiles
- Standard timing pulleys can be used



	Part No.	Profile	Pitch (mm)	V-guide b_K	Min. Teeth on Pulley	Available Belt Widths (mm)				Coating	
						25	50	75	100	PAR	PAZ
Standard	ATN10	ATN	10	-	25	25	50	75	100	•	-
	ATN12.7	ATN	12.7	-	20	25	50	75	100	•	-
	ATN20	ATN	20	-	20		50	75	100	•	-
With V-guide	ATN10 K6	ATN	10	6	25		50	75	100	•	-
	ATN12.7 K6	ATN	12.7	6	20		50	75	100	•	-
No. of indentations per tooth across width						1	2	3	4		

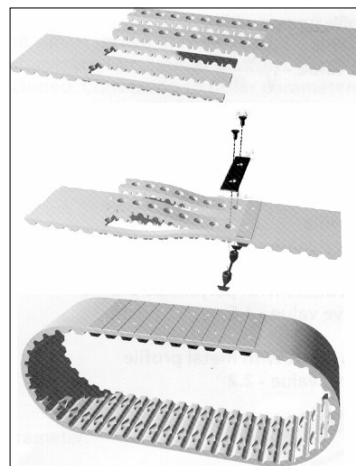
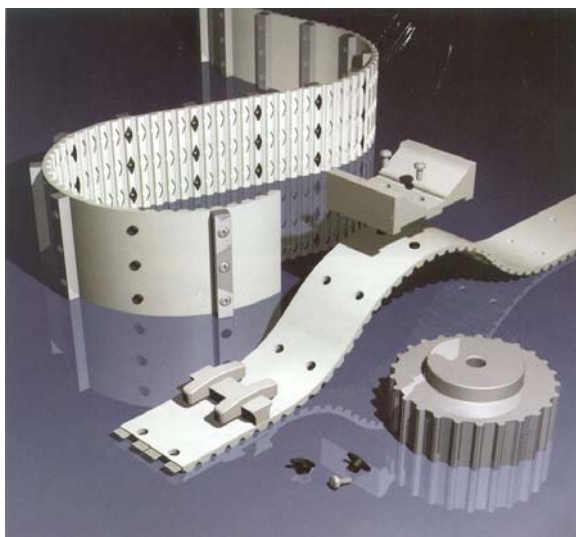
Timing belts with Integrated Profile

Breco-M Long length Open belting Breco- V Joined belting		
Belt No	Max. Allowable Tensile Load (N)	
	Breco-M	Breco-V
25ATN10	3000	1000
50ATN10	6000	2000
75ATN10	9000	3000
100ATN10	12000	4000
25ATN12.7	3000	1000
50ATN12.7	6000	2000
75ATN12.7	9000	3000
100ATN12.7	12000	4000
25ATN20	-	-
50ATN20	8000	2700
75ATN20	12000	4000
100ATN20	16000	5400



The ATN belt with V-groove is used when flanges cannot be used for design reasons.

Due to manufacturing reasons the V-groove is only symmetrical on the 50mm wide belts. See drawing above..



ATN Timing Belt Lock

The timing belt seal developed specially for the ATN is a separable connection that is used wherever the belt can only be joined on the machine due to design reasons.

Connection elements made of reinforced polyimide and sheets of spring steel ensure that the belt ends are securely connected.



Available widths and permitted tensile strengths (N)				
	Belt width (mm)			
	25	50	75*	100
ATN10	-	750	-	1500
ATN12.7	-	750	-	1500
ATN20*	-	-	-	-

* In development

Belts With Backings



Anti-static Belts

The use of timing belts will always lead to static emissions being generated by the two moving surfaces of the pulley and belt.

A special conductive coating can be applied to polyurethane belts for when static electricity is undesirable. Problems that may arise from static discharge are:

- Interference with electronic equipment.
- Risk of ignition or explosion of flammable materials.
- Risks of shock to the operator from high voltages which can be generated.

Properties of Anti-static belt

- Surface resistance R of $\leq 10^6$ Ohms.
- Black in colour.

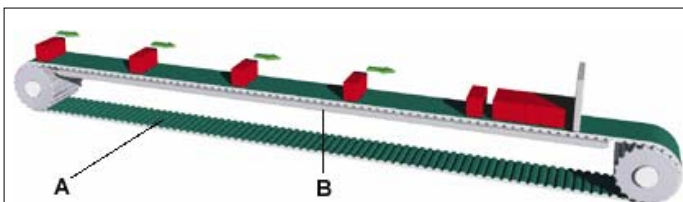
Ordering Example: 25T5/630 Anti-static coating.

Nylon Coating

A nylon fabric coating extruded during manufacture, can give a reduced coefficient of friction, facilitating easier meshing with the pulleys and a reduction in noise. This coating is ideal for transport applications when support plates or guide rails are used.

Availability

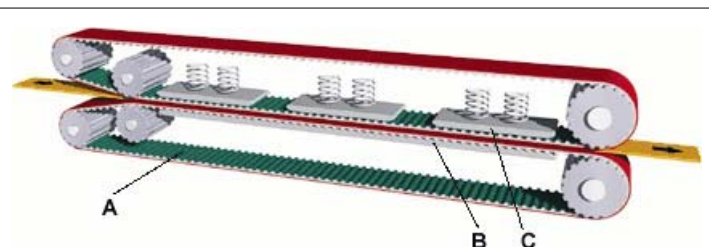
- | | |
|--------------------------------------|------------------------|
| • Breco-V, M, and Brecoflex belts. | |
| • Tooth side of belt. | Ordering code: PAZ |
| • Back of the belt. | Ordering code: PAR |
| • Tooth side and belt back. | Ordering code: PAZ-PAR |
| • Inside only of double sided belts. | Ordering code: PAZ |



Accumulation Conveyor

Any length up to 50M possible.

- A:** Nylon facing on belt back and teeth. PAZ-PAR
B: Support plate.



Haul-Off Belt

- A:** Nylon facing on tooth side; PAZ = Low friction
B: Back of belt with transport backing. = High friction
C: Pressure plates

Belts With Backings



T version (extruded)

Material	Polyurethane
Colour	Transparent
Hardness	85 shore A
Temp. Resistance	80°C
Available Thickness	2mm
Min. Pulley Dia.	80mm
Resistances	Simple oils and fats
Characteristics	Highest wear resistance
Applications	Transport of mechanically aggressive parts



NP385

Material	Polyurethane
Colour	Transparent
Hardness	85 shore A
Temp. Resistance	80°C
Available Thickness	4mm
Min. Pulley Dia.	120mm
Resistances	Simple oils and fats
Characteristics	Tip contact with product to be transported
Applications	Transport with oil contact



FG 385

Material	Polyurethane
Colour	Transparent
Hardness	85 shore A
Temp. Resistance	80°C
Available Thickness	4mm
Min. Pulley Dia.	120mm
Resistances	Simple oils and fats
Characteristics	Linear contact with product to be transported
Applications	Transport with oil contact



PUR 385

Material	Polyurethane
Colour	Transparent
Hardness	85 shore A
Temp. Resistance	80°C
Available Thickness	3mm 4mm 5mm 6mm
Min. Pulley Dia.	80mm 120mm 150mm 180mm
Resistances	Petrol, ozone, and simple oils and fats
Characteristics	Highest wear resistance, high coefficient of friction
Applications	Transport of parts showing a coarse surface or burrs



Sylomer

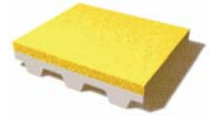
Material	FKM
Colour	Blue Green Brown
Density (g/dm³)	220 380 400
Temp. Resistance	80°C
Available Thickness	3 to 25 3 to 25 3 to 25
Min. Pulley Dia.	80 to 120 80 to 120 80 to 120
Resistances	Some oils and fats
Characteristics	Good wear resistance
Applications	Transport of lightweight parts



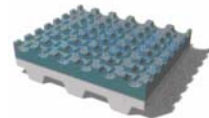
Belts With Backings



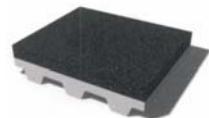
PU Yellow				
Material	Polyurethane			
Colour	Yellow			
Hardness	Approx. 60 shore A			
Temp. Resistance	60°C			
Available Thickness	2mm	3mm	4mm	5mm
Min. Pulley Dia.	60mm	60mm	80mm	100mm
Resistances	Simple oils and fats			
Characteristics	Good wear resistance			
Applications	Vacuum transport belts subject to high loads.			



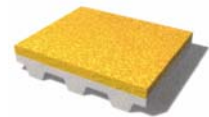
Supergrip				
Material	PVC			
Colour	Green or Blue			
Hardness	Approx. 30 shore A			
Temp. Resistance	60°C			
Available Thickness	4mm			
Min. Pulley Dia.	60mm			
Resistances	Green: Steadily against simple oils and fats (Blue: Not oil resistant)			
Characteristics	High wear resistance, high coefficient of friction			
Applications	Well suited to inclined conveying.			



Porol				
Material	Celular rubber			
Colour	Black			
Density	190 g/dm ³			
Temp. Resistance	60°C			
Available Thickness	2mm	3mm	5mm	
Min. Pulley Dia.	30mm	40mm	60mm	
Resistances	Limited against simple oils and fats			
Characteristics	Soft foam quality			
Applications	Transport of sensitive parts.			



Celloflex				
Material	PU foam			
Colour	Brown			
Density	350g/dm ³			
Temp. Resistance	80°C			
Available Thickness	2mm	3mm	5mm	
Min. Pulley Dia.	40mm	40mm	40mm	
Resistances	Limited against simple oils and fats			
Characteristics	Highly flexible			
Applications	Transport of sensitive parts.			



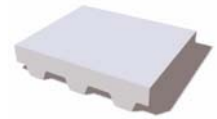
HV1-Film				
Material	Polyurethane			
Colour	Transparent			
Hardness	Approx. 80 shore A			
Temp. Resistance	80°C			
Available Thickness	1mm			
Min. Pulley Dia.	60mm			
Resistances	Some cleaning agents.			
Characteristics	Good wear resistance			
Applications	Foodstuff industry.			



Belts With Backings



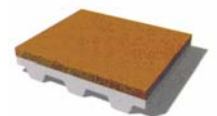
Chrome Leather	
Material	Leather
Colour	Grey-blue
Hardness	-
Temp. Resistance	60°C
Available Thickness	2mm 3mm
Min. Pulley Dia.	80mm 100mm
Resistances	Simple oils and fats
Characteristics	Good friction, good abrasiveness.
Applications	Transport of parts implying contact with fats and oils.



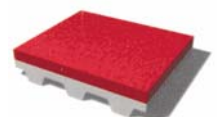
Viton	
Material	FKM mix
Colour	Black
Hardness	Approx. 75 shore A
Temp. Resistance	max. 200°C (coating only)
Available Thickness	2mm
Min. Pulley Dia.	80mm
Resistances	High heat resistance
Characteristics	Simple oils and fats, high heat resistance
Applications	Short time transport of parts having high residual heat.



Correx	
Material	Gum rubber
Colour	Brown
Hardness	Approx. 35 - 40 shore A
Temp. Resistance	Up to Approx. 70°C
Available Thickness	6mm 10mm
Min. Pulley Dia.	80mm 120mm
Resistances	Limited against oils and fats
Characteristics	Wear resistant, good carrying quality
Applications	General transport



Linatex	
Material	Natural rubber
Colour	Red
Hardness	Approx. 40 shore A
Temp. Resistance	Up to Approx. 60°C
Available Thickness	1.6mm 2.4mm 3.2mm 4.8mm 6.4mm 12.7mm 20mm
Min. Pulley Dia.	25mm 30mm 40mm 40mm 40mm 60mm 80mm
Resistances	Some oils
Characteristics	High wear resistance, resistant to rupture
Applications	Transport and haul-off belts subject to high friction.



Polythan D44	
Material	Polyurethane
Colour	Transparent/yellow
Hardness	70 shore A
Temp. Resistance	80°C
Available Thickness	2-5mm
Min. Pulley Dia.	60mm
Resistances	Simple oils and fats
Characteristics	Good wear resistance
Applications	General transport tasks



Belts With Backings




PVC White					
Material	PVC				
Colour	White				
Hardness	Approx. 40 shore A				
Temp. Resistance	80°C				
Available Thickness	2mm	3mm	4mm	5mm	6mm
Min. Pulley Dia.	60mm	60mm	80mm	80mm	120mm
Resistances	Limited against oils and fats				
Characteristics	FDA approved for contact with foodstuff.				
Applications	Foodstuff industry.				

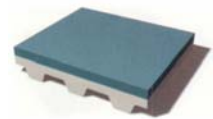


PVC Herringbone					
Material	PVC				
Colour	White				
Hardness	Approx. 40 shore A				
Temp. Resistance	80°C				
Available Thickness	4mm				
Min. Pulley Dia.	80mm				
Resistances	Limited against oils and fats				
Characteristics	FDA approved for contact with foodstuff.				
Applications	Foodstuff industry.				

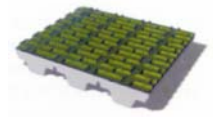


PVC Blue		
Material	PVC	
Colour	Blue	
Hardness	Approx. 40 shore A	
Temp. Resistance	80°C	
Available Thickness	1mm	2mm
Min. Pulley Dia.	30mm	30mm
Resistances	Limited against oils and fats	
Characteristics	High coefficient of friction	
Applications	Transport of paper, film and, wood	

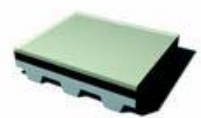




PVC Minigrip					
Material	PVC				
Colour	Green				
Hardness	Approx. 40 shore A				
Temp. Resistance	80°C				
Available Thickness	1mm				
Min. Pulley Dia.	30mm				
Resistances	Limited against oils and fats				
Characteristics	High coefficient of friction.				
Applications	Transport of parts implying contact with oil.				



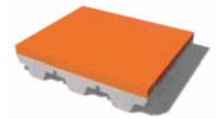
Composite Coating					
Material	eg. HV1 Film on Porol foam				
Colour	Transparent/black				
Hardness	85/15 shore A				
Temp. Resistance	60°C				
Available Thickness	5mm + 1mm				
Min. Pulley Dia.	60mm				
Resistances	In accordance with materials used.				
Characteristics	Soft support with wear resistant surface.				
Applications	Transport of varying parts.				



Belts With Backings



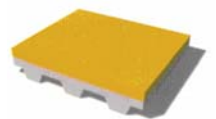
Linatrilite	
Material	Vulcanisate based on nitrile
Colour	Orange
Hardness	55 shore A
Temp. Resistance	-20°C to + 110°C
Available Thickness	3-35mm
Min. Pulley Dia.	Depends on density selected
Resistances	Oil, grease, and other chemicals
Characteristics	Good resistance to abrasion, ageing, and fatigue
Applications	Drawing-off bands in textile industry, transportation of matter containing paraffin



TT 60	
Material	Polyester fleece
Colour	Black
Hardness	-
Temp. Resistance	80°C
Available Thickness	2mm
Min. Pulley Dia.	120mm
Resistances	Oils and grease
Characteristics	Electrostatic properties
Applications	Glass industry as transport belt in hot environment



RP 400	
Material	Rubber
Colour	Yellow
Hardness	35 shore A
Temp. Resistance	- 10°C to + 80°C
Available Thickness	2mm 3mm 4mm 5mm 6mm
Min. Pulley Dia.	30mm 40mm 40mm 60mm 60mm
Resistances	Oils and grease under most conditions
Characteristics	Very high wear resistance
Applications	Glass and steel industry, abrasive material to size 40mm



NBR	
Material	Nitrile butadiene rubber
Colour	Black
Hardness	65 ± 5 shore A
Temp. Resistance	-20°C to +70°C
Available Thickness	1.5mm
Min. Pulley Dia.	60mm
Resistances	Good oil and petrol resistance
Characteristics	Resistant to acids and lyes under most conditions
Applications	General transportation purposes



Composite Coating	
Material	eg. PUR/silicone
Colour	White
Hardness	60/50 shore A
Temp. Resistance	Depends on materials used, silicone short term +180°C
Available Thickness	2.4mm
Min. Pulley Dia.	60mm
Resistances	In accordance with materials used.
Characteristics	Anti sticking
Applications	Light transportation, air filter, textile and wood industries



Reworked Belts



Synchroflex, Breco, and Brecoflex belts can be mechanically reworked for special applications in handling and transportation. Belts with a thicker back are especially suited for reworking. Please note that belt flexibility is greatly reduced with a thicker backed belt. Cross grooves can be ground into belt to help improve flexibility.

Back Cross Milling

Back cross milling enhances belt flexibility. Milled grooves are used to improve safe loading and secure positioning of the products on the belts.



Back Longitudinal Milling

Belt back shaping offers a wide variety of designs. A profile can be machined precisely for the function required. Dimensions are to be indicated as depth measure x in relation to the belt back.



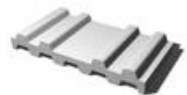
Back Grinding

The backs of all Brecoflex timing belts are ground. For reasons of precision or in order to obtain a roughened surface, all other timing belts of the Synchroflex and Breco delivery range can be ground. Here the overall thickness x must not fall below a minimum thickness, otherwise the tension members could be damaged.



Removing Individual Teeth

The removal of individual teeth or groups of teeth is possible and practical due to the high dimensional precision meshing, when the remaining teeth are to serve as precise position load areas.

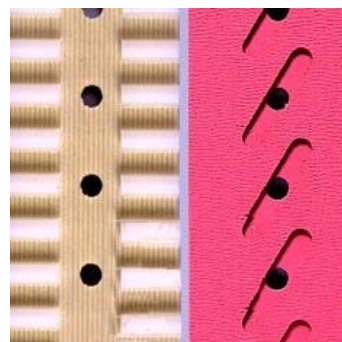


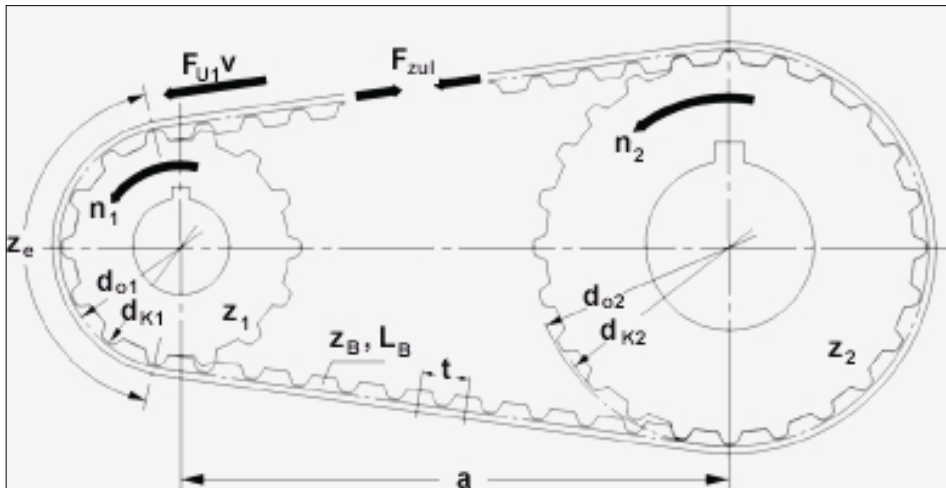
Holes In Timing Belts

Holes can be drilled into timing belts for purposes of vacuum or air film conveying, and as clearance for assembly mechanisms. Holes can also be used to attach stops and cams. Standard hole tool diameters are 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, and 12. Other holes and rectangular holes available on request. Tooling charge may apply.



Synchroflex kevlar cord belt with teeth reworked.
Linatex backing mechanically reworked with grooves and holes for vacuum application.





Center Distance	a	(mm)	Allowable Tensile Load	F _{zul}	(N)
Acceleration Torque	M _B	(Nm)	Pulley Width	B	(mm)
Acceleration Time	t _B	(s)	Pitch	t	(mm)
Bore	d	(mm)	Velocity	v	(m/s)
Density	ρ	(kg/dm ³)	Peripheral Force	F _u	(N)
Torque	M _B	(Nm)	Angular Velocity	ω	(s ⁻¹)
Rpm	n	(min ⁻¹)	Pitch Circle Diameter	d _o	(mm)
Outside Diameter	d _k	(mm)	No. of Teeth when i=1	Z ₁	
Power	P	(kW)	No. of Teeth of Small Pulley	Z ₁	
Moment of Inertia	J	(kgm ²)	No. of Teeth of Large Pulley	Z _B	
Belt Length	L _B	(mm)	No. of Teeth in Mesh	Z _e	
Ratio	i				

Belt length when i ≠ 1

$$L_B \approx \frac{t}{2} (Z_2 + Z_1) + 2a + \frac{1}{4a} \left[\frac{(Z_2 - Z_1)t}{\pi} \right]^2$$

Belt length when i = 1

$$L_B = 2a + \pi \cdot d_o$$

$$L_B = 2a + z \cdot t$$

Pitch circle diameter

$$d_o = \frac{Z \cdot t}{\pi}$$

Peripheral force

$$F_U = \frac{2 \cdot 10^3 \cdot M}{d_o}$$

$$= \frac{19.1 \cdot 10^6 \cdot P}{n \cdot d_o}$$

$$= \frac{10^3 \cdot P}{v}$$

Torque

$$M = \frac{d_o \cdot F_U}{2 \cdot 10^3}$$

$$= \frac{9.55 \cdot 10^3 \cdot P}{n}$$

$$= \frac{d_o \cdot P}{2 \cdot v}$$

Power

$$P = \frac{M \cdot n}{9.55 \cdot 10^3}$$

$$= \frac{F_U \cdot d_o \cdot n}{19.1 \cdot 10^6}$$

$$= \frac{F_U \cdot v}{10^3}$$

Angular velocity

$$\omega = \frac{\pi \cdot n}{30}$$

Rpm

$$v = \frac{19.1 \cdot 10^3 \cdot v}{d_o}$$

Velocity

$$v = \frac{d_o \cdot n}{19.1 \cdot 10^3}$$

Acceleration torque

$$M_B = \frac{J \cdot \Delta n}{9.55 \cdot t_B}$$

Mass moment of inertia

$$J = 98.2 \cdot 10^{-15} \cdot B \cdot \rho \cdot (d_K^4 - d^4)$$

Only the units listed above should be used in the formulae as they are the approved SI units. The unit of force, the Newton, is very important: 1 N is the force required to accelerate a body with a mass of 1 kg to 1 m/s². → 1 N = kg • 1 m/s²

Force

$$1kp = 1kg \cdot 9.81m/s^2 = 9.81N \approx 1daN$$

Torque

$$1kpm = 9.81kgm^2/s^2 = 9.81Nm \approx 1daNm$$

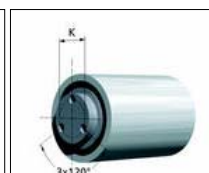
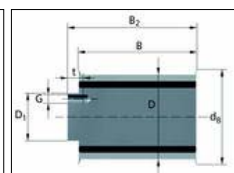
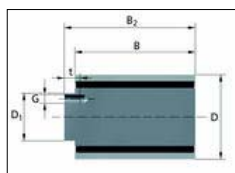
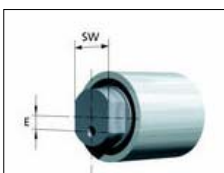
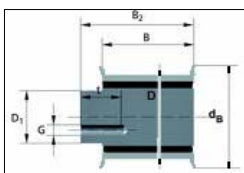
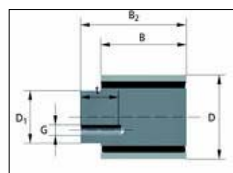
Power

$$1PS = 75kpm/s = 0.736kW$$

Centrifugal force

$$1[GD^2] = 4[J] \text{ if } GD^2 \text{ in kpm and } J \text{ in kgm}^2$$

Idler Pulleys

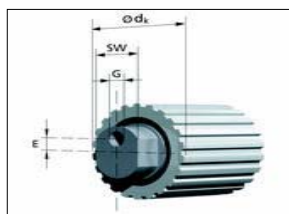
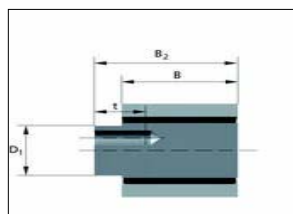


Type B/E with eccentric adjustment

Type B/F fixed centre

Idler pulleys type B run on two deep groove roller bearings. The bearings are lubricated and sealed for life. Normal operating temperatures up to 70°C without reduction in life and temporary peak temperatures up to 120°C are allowable. The shafts are made from steel and the rollers and flanges are aluminium.

Part	Type	Max. belt Width (mm)	B	D	d _B	B ₂	E	K	G	t	SW	D ₁	Load Ratings		Max. RPM
													C _{dyn.}	C _{stat.}	
B 34/32-0	B/E0	25	34	32	-	42	5	-	M6	10	17	20	7950	3920	30000
B 34/32-2	B/E2	25	34	32	41.5	42	5	-	M6	10	17	20	7950	3920	30000
B 40/60-0	B/E0	32	40	60	-	50	5	-	M12	20	27	30	19300	13100	15000
B 40/60-2	B/E2	32	40	60	71	50	5	-	M12	20	27	30	19300	13100	15000
B 64/60-0	B/E0	40	64	60	-	74	5	-	M12	20	27	30	19300	13100	15000
B 64/60-2	B/E2	40	64	60	71	74	5	-	M12	20	27	30	19300	13100	15000
B 40/80-0	B/E0	32	40	80	-	50	5	-	M12	20	27	30	19300	13100	15000
B 40/80-2	B/E2	32	40	80	91	50	5	-	M12	20	27	30	19300	13100	15000
B 64/80-0	B/E0	50	64	80	-	74	5	-	M12	20	27	30	19300	13100	15000
B 64/80-2	B/E2	50	64	80	91	74	5	-	M12	20	27	30	19300	13100	15000
B 70/120-0	B/E0	50	70	120	-	85	5	-	M20	30	36	45	70500	48000	7500
B 70/120-2	B/E2	50	70	120	137	85	5	-	M20	30	36	45	70500	48000	7500
B 114/60-0	B/F0	100	114	60	-	124	-	34	M8 (3x)	15	-	45	19300	13100	15000
B 114/60-2	B/F2	100	114	60	71	124	-	34	M8 (3x)	15	-	45	19300	13100	15000
B 114/80-0	B/F0	100	114	80	-	124	-	34	M8 (3x)	15	-	45	19300	13100	15000
B 114/80-2	B/F2	100	114	80	91	124	-	34	M8 (3x)	15	-	45	19300	13100	15000
B 117/120-0	B/F0	100	117	120	-	131	-	65	M12 (3x)	24	-	85	70500	48000	7500
B 117/120-2	B/F2	100	117	120	137	131	-	65	M12 (3x)	24	-	85	70500	48000	7500
B 117/180-0	B/F0	100	117	180	-	131	-	80	M20 (3x)	25	-	106	106000	76000	6300
B 117/180-2	B/F2	100	117	180	204	131	-	80	M20 (3x)	25	-	106	106000	76000	6300

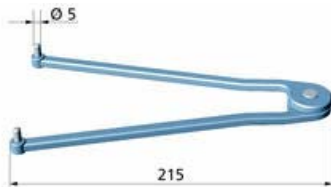


Part	Type	Max. belt Width (mm)	B	d _K	B ₂	E	G	t	SW	D ₁	Load Ratings		Max. RPM
											C _{dyn.}	C _{stat.}	
AL 34T5/22-0	B/E0	25	34	34.15	42	5	M6	10	17	20	7950	3920	30000
AL 34AT5/22-0	B/E0	25	34	33.79	42	5	M6	10	17	20	7950	3920	30000
AL 40T10/20-0	B/E0	32	40	61.80	50	5	M12	20	27	30	19300	13100	15000
AL 40AT10/20-0	B/E0	32	40	61.84	50	5	M12	20	27	30	19300	13100	15000
AL 64T10/20-0	B/E0	50	64	61.80	74	5	M12	20	27	30	19300	13100	15000
AL 64AT10/20-0	B/E0	50	64	61.84	74	5	M12	20	27	30	19300	13100	15000

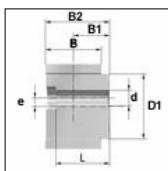
Idler Pulleys



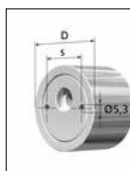
The MULCO tension roller Type M is an innovative development. It is available in 7 standard sizes. The tension rollers are distinguished by a rigid, vibration-resistant load bearing design. The forces acting by the belt pull are reliably absorbed by the generously dimensioned D_1 base diameter. The ball race and the load bearing structure are made of AlCuMgPb (F38). The tension rollers are over-mounted on the machine wall. The eccentrical fitting results in an easy adjustment of the belt pre-tension force. To ensure the swivel motion around the mounting axle, the face spanner (pictured below) can be used.



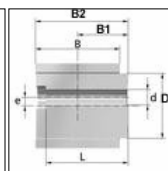
The MULCO tension rollers are fitted with high quality grooved ball bearings. The first filling of the bearings consists of a high-performance lithium saponified grease to ensure life time service. The greases are short-time temperature resistant up to 120°C. Permanent temperatures of 70°C and above will lead to a reduced useful life of the grease. The stated load bearing parameters refer to the entire tension roller on the basis of a centred belt load.



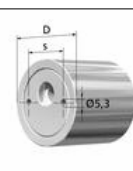
Type 1



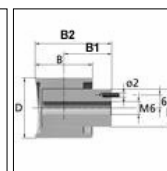
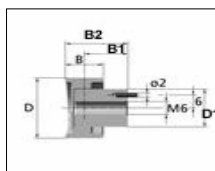
Type 2



BSR 71-100



BSR 73-100



Part	Weight Kg	Dimensions									Type	Load Ratings		Max. RPM	Recommended Applications		
		B	B ₁	B ₂	D	D ₁	L	e	s	d		C _{dyn} (N)	C _{stat} (N)		Max. BeltWidth	On Belt Back	On Teeth
BSR 71100	0.06	14	16	23	28	18	-	-	-	-	1	4050	1710	8000	10	T2.5/T5	T2.5/T5/AT5
BSR 73100	0.10	27	26	40	28	18	-	-	-	-	2	6200	3450	15000	25	T2.5/T5	T2.5/T5/AT5
M 40/ 60-0	0.40	40	26	46	60	46	37.5	6	35	11	1	11200	5600	15000	32	AT5/T10	AT10/T10
M 60/ 60-0	0.50	60	36	66	60	46	57.5	6	35	11	2	19300	11200	15000	50	AT5/T10	AT10/T10
M 110/ 60-0	0.80	110	61	116	60	46	107	5	35	13	2	19300	11200	15000	100	AT5/T10	AT10/T10
M 60/ 120-0	2.40	60	35	70	120	94	57.5	17	70	17	2	51000	36600	6700	50	AT10/T20	AT20
M 110/ 120-0	3.90	110	60	120	120	94	108	17	70	17	2	51000	36600	6700	100	AT10/T20	AT20
M 85/ 180-0	7.00	85	45	95	180	137	78.5	30	70	26	2	100000	78000	4800	75	AT20	T20
M 160/ 180-0	10.80	160	83	170	180	137	154	30	70	26	2	100000	78000	4800	150	AT20	T20

Part	Cheese Head Screw			
	Size	Strength	Torque	
BSR 71100	M6	8.8	10	Cheese-head screws according to DIN 6912 can be used for machine wall mounting. The appropriate screw length depends on the fitting situation and the surrounding structure. The table shows thread sizes and the recommended strength of the cheese-head screws.
BSR 73100	M6	8.8	10	
M 40/ 60-0	M10	8.8	49	
M 60/ 60-0	M10	10.9	69	
M 110/ 60-0	M12	12.9	145	
M 60/ 120-0	M16	8.8	210	
M 110/ 120-0	M16	12.9	355	
M 85/ 180-0	M24	8.8	710	
M 160/ 180-0	M24	12.9	1200	

Minimum Idler Ømm	On Teeth	On Belt Back
T2	18	15
M	18	15
T2.5	18	15
T5	30	30
T10	60	60
T20	120	120
AT3	20	20
AT5	25	60
AT10	50	120
AT20	120	180

Slider Beds

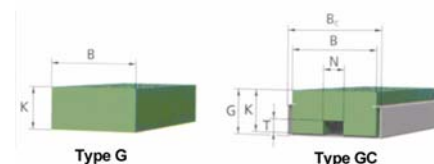


Slider beds are available as a standard range, matched to the timing belt width. The preferred delivery length is 2000 mm. Cuts to length shorter than 2000 mm are available. The material is UHMW polyethylene. This material has a low friction coefficient and is also wear resistant. The sliding friction value between standard polyurethane and low-pressure polyethylene is $\mu \sim 0.3$. The C profile is made of zinc plated sheet steel. The cut out is intended for fastening screws. The C profile has no bore holes. Due to the relatively large expansion of the sliding material under temperature, provide expansion gaps on the rail structure.

Approximate formula for the linear expansion is 2mm/10°C temperature difference over 1000 mm of length.

Slider Beds Without Edge Guide

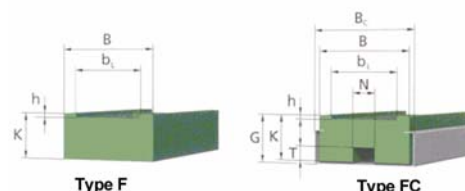
Slider beds without edge guiding can be used with all our polyurethane timing belts. They are recommended for all conveying applications with minimal side loads.



Part Numbers		B	B _c	K	G	N	T	Recommended For Belt Width	
Type G	Type GC	mm	mm	mm	mm	mm	mm		
G 32	GC 32	45	50	22	23.5	11	7	32mm	
G 50	GC 50	68	75	32	34.5	14	9	50mm/2"	
G 75	GC 75	93	100	32	34.5	14	9	75mm/3"	
G 100	GC 100	118	125	32	34.5	14	9	100mm/4"	

Slider Beds With Edge Guide

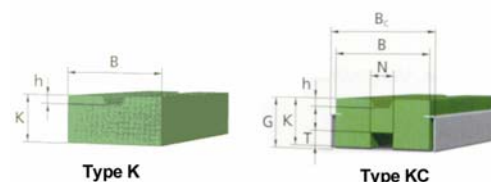
Slider beds with edge guiding are recommended for applications where the timing belt must be guided due to side thrusts.



Part Numbers		B	B _c	b _L	K	h	G	N	T	Recommended For Belt Width	
		mm	mm	mm	mm	mm	mm	mm	mm		
F 32 x 2	FC 32 x 2	45	50	33	22	2	23.5	11	7	32AT5	32T5
F 50 x 2	FC 50 x 2	68	75	51	32	2	34.5	14	9	50AT5	50T5
F 75 x 2	FC 75 x 2	93	100	76	32	2	34.5	14	9	75AT5	75T5
F 100 x 2	FC 100 x 2	118	125	101	32	2	34.5	14	9	100AT5	100T5
F 32 x 4	FC 32 x 4	45	50	33	22	4	23.5	11	7	32AT10	32T10
F 50 x 4	FC 50 x 4	68	75	51	32	4	34.5	14	9	50AT10	50T10
F 75 x 4	FC 75 x 4	93	100	76	32	4	34.5	14	9	75AT10	75T10
F 100 x 4	FC 100 x 4	118	125	101	32	4	34.5	14	9	100AT10	100T10
F 50 x 7	FC 50 x 7	68	75	51	32	7	34.5	14	9	50AT20	50T20
F 75 x 7	FC 75 x 7	93	100	76	32	7	34.5	14	9	75AT20	75T20
F 100 x 7	FC 100 x 7	118	125	101	32	7	34.5	14	9	100AT20	100T20

Slider Beds For Self Tracking Belts

Slider beds with V- groove are used in conjunction with self tracking belts.



Part Numbers		B	B _c	K	h	G	N	T	Recommended For Self Tracking Belts	
		mm	mm	mm	mm	mm	mm	mm		
K 32 x 4	KC 32 x 4	45	50	22	4	23.5	11	7	32ATK5	32TK5
K 50 x 4	KC 50 x 4	68	75	32	4	34.5	14	9	50ATK5	50TK5
K 32 x 4.5	KC 32 x 4.5	45	50	22	4.5	23.5	11	7	32ATK10	32TK10
K 50 x 4.5	KC 50 x 4.5	68	75	32	4.5	34.5	14	9	50ATK10	50TK10
K 75 x 4.5	KC 75 x 4.5	93	100	32	4.5	34.5	14	9	75ATK10	75TK10
K 100 x 4.5	KC 100 x 4.5	118	125	32	4.5	34.5	14	9	100ATK10	100TK10
K 50 x 2	KC 50 x 2	68	75	32	2	34.5	14	9	50ATK20	50TK20
K 75 x 2	KC 75 x 2	93	100	32	2	34.5	14	9	75ATK20	75TK20
K 100 x 2	KC 100 x 2	118	125	32	2	34.5	14	9	100ATK20	100TK20

Tension Plates

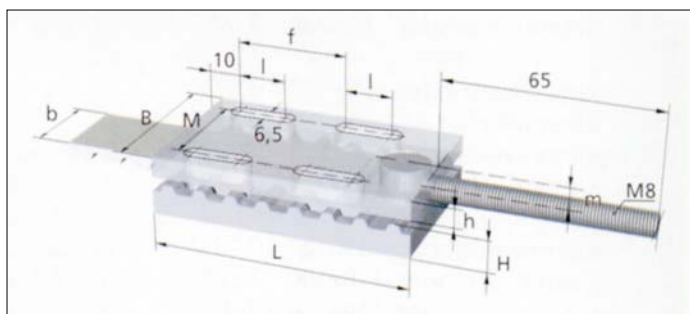


Tension Plate Type L

Tension plates are used when you need to tension the belt at the end connections. LE is the length of the belt which can be clamped in the tension plate of length L.

Type L plates have slotted holes on top and bottom and are made of aluminium.

Ordering Example 50 x 80 AT5 L

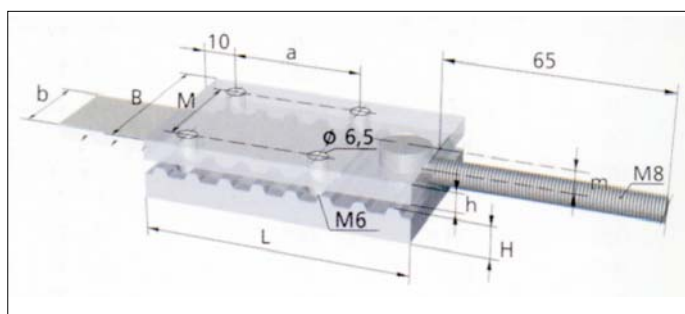


Tension Plate Type G

Type G tension plates have M6 tapped holes in the cover plate and 6.5mmØ holes in the toothed plate.

They are made of aluminium.

Ordering Example 50 x 80 AT5 G



Order Code	Belt Width	B	L	M	LE	a	H	h	m	l	f	Belt Type
50 x 80 AT5	25	50	80	38	60	40	10	6	7	15	25	25AT5
50 x 80 T5												25T5
50 x 80 AT10												25AT10
50 x 80 T10												25T10
50 x 130 AT20	25	50	130	38	100	70	20	8	9.5	25	55	25AT20
50 x 130 T20												25T20
60 x 80 AT5	32	60	80	46	60	40	10	6	7	15	25	32AT5
60 x 80 T5												32T5
60 x 80 AT10												32AT10
60 x 80 T10												32T10
60 x 130 AT20	32	60	130	46	100	70	20	8	9.5	25	55	32AT20
60 x 130 T20												32T20
75 x 80 AT5	50	75	80	62	60	40	10	6	7	15	25	50AT5
75 x 80 T5												50T5
75 x 80 AT10												50AT10
75 x 80 T10												50T10
75 x 130 AT20	50	75	130	62	100	70	20	8	9.5	25	55	50AT20
75 x 130 T20												50T20
110 x 80 AT5	75	110	80	94	60	40	10	6	7	15	25	75AT5
110 x 80 T5												75T5
110 x 80 AT10												75AT10
110 x 80 T10												75T10
110 x 130 AT20	75	110	130	94	100	70	20	8	9.5	25	55	75AT20
110 x 130 T20												75T20
140 x 80 AT5	100	140	80	124	60	40	10	6	7	15	25	100AT5
140 x 80 T5												100T5
140 x 80 AT10												100AT10
140 x 80 T10												100T10
140 x 130 AT20	100	140	130	124	100	70	20	8	9.5	25	55	100AT20
140 x 130 T20												100T20
190 x 80 AT10	150	190	80	174	60	40	10	6	7	15	25	150AT10
190 x 130 AT20	150	190	130	174	100	70	20	8	9.5	25	55	150AT20
190 x 130 T20												150T20
50 x 80 T1/5" (XL)	25.4	50	80	38	60	40	10	6	7	15	25	XL100
50 x 80 T3/8" (L)	25.4	50	80	38	60	40	10	6	7	15	25	L100
50 x 90 T1/2" (H)	25.4	50	90	38	70	50	10	6	7	15	35	H100
63 x 80 T3/8" (L)	38.1	63	80	51	60	40	10	6	7	15	25	L150
63 x 90 T1/2" (H)	38.1	63	90	51	70	50	10	6	7	15	35	H150
75.5 x 80 T3/8" (L)	50.8	75.5	80	63.5	60	40	10	6	7	15	25	L200
75.5 x 90 T1/2" (H)	50.8	75.5	90	63.5	70	50	10	6	7	15	35	H200
101 x 90 T1/2" (H)	76.2	101	90	89	70	50	10	6	7	15	35	H300
126 x 90 T1/2" (H)	101.6	126	90	114	70	50	10	6	7	15	35	H400
126 x 140 T7/8" (XH)	101.6	126	140	114	110	70	20	8	10.5	25	55	XH400

Shaft Locking Devices

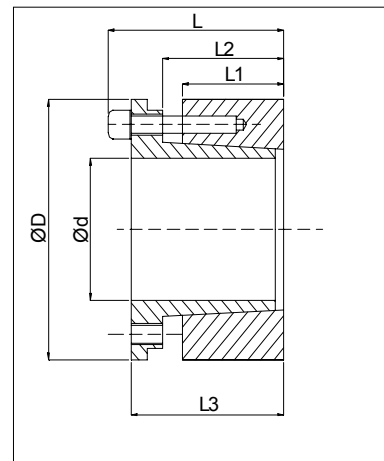
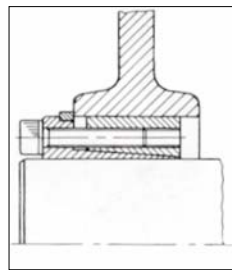
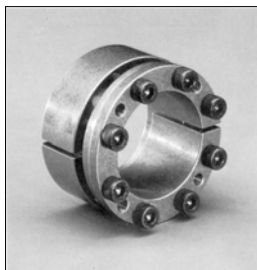


Shaft locking devices are used to connect components onto a shaft, giving them the capability to transmit torque and support axial thrust. The devices clamp the components securely to the shaft with no backlash, and without the need for high tolerance bores. They can be used for such items as pulleys, gears, sprockets, and flywheels etc. Simple assembly and disassembly is a major feature of the devices, thus enabling overall cost reductions. They are used to replace conventional fastening methods such as weldings, splines, keyways and taper bushes.

The recommended machining tolerances for surfaces are:

Shaft diameter h8

Hub bore H8

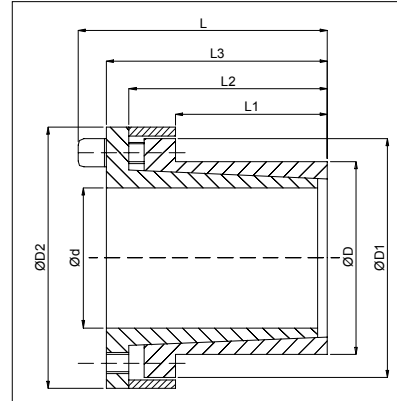
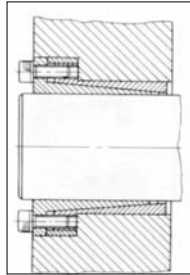
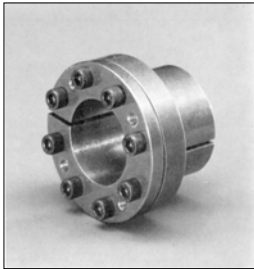


RCK 70

- Applicable where concentricity and orthogonal positioning is required.
- Designed for medium-high torque ratings.
- Self centering.

Type	Dimensions (mm)						Torque Nm	Clamping Screws			Pressures	
	d	D	L1	L2	L3	L		No.	Type	Torque Nm	Shaft N/mm ²	Hub N/mm ²
RCK70 19/47	19	47	26	31	39	45	350	4	M6x25	17	228	98
RCK70 20/47	20	47	26	31	39	45	390	4	M6x25	17	231	100
RCK70 22/47	22	47	26	31	39	45	440	4	M6x25	17	220	95
RCK70 24/50	24	50	26	31	39	45	519	6	M6x25	17	215	102
RCK70 25/50	25	50	26	31	39	45	590	6	M6x25	17	230	105
RCK70 28/55	28	55	26	31	39	45	700	6	M6x25	17	220	110
RCK70 30/55	30	55	26	31	39	45	760	6	M6x25	17	200	120
RCK70 32/60	32	60	26	31	39	45	930	8	M6x25	17	230	114
RCK70 35/60	35	60	26	31	39	45	1030	8	M6x25	17	200	119
RCK70 38/65	38	65	26	31	39	45	1240	8	M6x25	17	210	124
RCK70 40/65	40	65	26	31	39	45	1350	8	M6x25	17	200	125
RCK70 42/75	42	75	30	36	47	55	2170	6	M8x30	41	236	140
RCK70 45/75	45	75	30	36	47	55	2350	6	M8x30	41	236	140
RCK70 48/80	48	80	30	36	47	55	2510	6	M8x30	41	218	135
RCK70 50/80	50	80	30	36	47	55	2580	6	M8x30	41	218	135
RCK70 55/85	55	85	30	36	47	55	3200	8	M8x30	41	223	145
RCK70 60/90	60	90	30	36	47	55	3380	8	M8x30	41	198	157
RCK70 65/95	65	95	30	36	47	55	4160	8	M8x30	41	213	140
RCK70 70/110	70	110	40	46	57	67	6840	8	M10x35	83	225	143
RCK70 75/115	75	115	40	46	62	72	7500	8	M10x35	83	210	138
RCK70 80/120	80	120	40	46	62	72	8100	8	M10x35	83	200	130
RCK70 85/125	85	125	40	46	62	72	9700	10	M10x35	83	210	145
RCK70 90/130	90	130	40	46	62	72	10300	10	M10x35	83	200	138
RCK70 95/135	95	135	40	46	62	72	12100	10	M10x35	83	210	148
RCK70 100/145	100	145	46	52	77	89	15700	8	M12x45	145	216	148

Shaft Locking Devices



RCK 80

- Suitable for assemblies on hubs with thin walls.
- Designed to accommodate axial displacements.
- Self centering.

Type	Dimensions (mm)								Torque Nm	Clamping Screws			Pressures	
	d	D	D1	D2	L1	L2	L3	L		No.	Type	Torque Nm	Shaft N/mm ²	Hub N/mm ²
RCK80 10/16	10	16	25	28	14	23.5	27.5	31.5	35	3	M4x12	5	140	85
RCK80 12/18	12	18	28	32	14	23.5	27.5	31.5	58	4	M4x12	5	150	100
RCK80 14/23	14	23	35	39	14	23.5	27.5	31.5	69	4	M4x12	5	140	80
RCK80 15/24	15	24	40	45	16	29.5	36.5	42.5	170	4	M6x18	17	158	98
RCK80 16/24	16	24	40	45	16	29.5	36.5	42.5	180	4	M6x18	17	148	98
RCK80 18/26	18	26	42	47	19	32.5	39.5	45.5	200	4	M6x18	17	180	125
RCK80 19/27	19	27	43	49	19	32.5	39.5	45.5	210	4	M6x18	17	170	120
RCK80 20/28	20	28	44	50	19	32.5	39.5	45.5	220	4	M6x18	17	160	115
RCK80 22/32	22	32	48	54	26	39.5	46.5	52.5	250	4	M6x18	17	115	80
RCK80 24/34	24	34	50	56	26	39.5	46.5	52.5	395	6	M6x18	17	146	102
RCK80 25/34	25	34	50	56	26	39.5	46.5	52.5	410	6	M6x18	17	140	102
RCK80 28/39	28	39	55	61	25.5	39.5	46.5	52.5	465	6	M6x18	17	135	98
RCK80 30/41	30	41	57	62	25.5	39.5	46.5	52.5	510	6	M6x18	17	127	90
RCK80 32/43	32	43	59	65	25.5	39.5	46.5	52.5	705	8	M6x18	17	146	108
RCK80 35/47	35	47	62	69	31.5	45.5	52.5	58.5	790	8	M6x18	17	105	80
RCK80 38/50	38	50	66	72	31.5	45.5	52.5	58.5	860	8	M6x18	17	100	76
RCK80 40/53	40	53	69	75	31.5	45.5	52.5	58.5	900	8	M6x18	17	96	72
RCK80 42/55	42	55	71	78	31.5	45.5	52.5	58.5	940	8	M6x18	17	90	70
RCK80 45/59	45	59	80	86	45	62.5	71	79	1840	8	M8x22	41	110	85
RCK80 48/62	48	62	81	87	45	62.5	71	79	2000	8	M8x22	41	105	80
RCK80 50/65	50	65	86	92	45	62.5	71	79	2100	8	M8x22	41	100	75
RCK80 55/71	55	71	92	98	55	72.5	81	89	2580	9	M8x22	41	85	65
RCK80 60/77	60	77	98	104	55	72.5	81	89	2800	9	M8x22	41	75	60
RCK80 65/84	65	84	105	111	55	72.5	81	89	3050	9	M8x22	41	70	55
RCK80 70/90	70	90	113	119	65	86.5	96.5	107	5250	9	M10x25	83	90	70
RCK80 75/95	75	95	119	126	65	86.5	96.5	107	5600	9	M10x25	83	80	65
RCK80 80/100	80	100	125	131	65	86.5	96.5	107	8000	12	M10x25	83	100	80
RCK80 85/106	85	106	131	137	65	86.5	96.5	107	8500	12	M10x25	83	95	75
RCK80 90/112	90	112	137	144	65	86.5	96.5	107	9000	12	M10x25	83	90	75
RCK80 95/120	95	120	142	149	65	86.5	96.5	107	11000	12	M10x25	83	100	80

The purpose of pre-tension is to allow the belt to run without sagging. The pre-tension is correctly set when the slack span remains taut under the maximum operating loads, ensuring trouble free meshing with the pulleys. Without the correct pre-tension the belt can run up over the teeth of the driven pulley, and thus increase friction, leading to high noise, wear, and poor positional accuracy. In order to reduce bearing loads the pre-tension should not be set too high.

The ideal pre-tension F_V is determined mathematically as a function of the maximum peripheral force F_U , as shown in the table below.

Dive Type	No. of Teeth in Belt Z_B	Pre-Tension per Span
Two Pulley Drive	$Z_B < 60$	$F_V = F_U/3$
	$60Z_B < 150$	$F_V = F_U/2$
	$150 < Z_B$	$F_V = 2F_U/3$
Multiple Pulley Drive	Loaded Span < Unloaded Span	$F_V = F_U$
	Loaded Span > Unloaded Span	$F_V > F_U$
Linear Drives	All Belts	$F_V = F_U$

Influencing Factors

Belt Stiffness

The frictional forces caused by tooth meshing, especially on the non-load carrying span, cause an increase in the span load, which in turn cause the belt to elongate in proportion to its stiffness, causing additional wear. The stiffness and high resistance to elongation in Synchroflex, Breco, and Brecoflex belts reduces the need for high tension.

Peripheral Force

The elongation of the load carrying side of the belt is proportional to the power and peripheral force. Too much slack can be avoided if the peripheral force is taken into account when pre-tensioning. NB. Multiple shaft and linear drives require the pre-tension and peripheral force to be added together to arrive at the total working load.

Belt Length

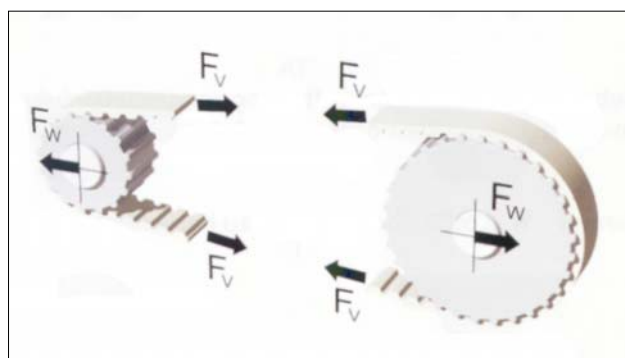
The elongation of the belt, due to the peripheral forces is proportional to the belt length, which is a factor affecting tooth jumping. Even a short belt which is not subject to high peripheral forces will elongate to some extent. Such short belts will benefit from a small amount of pre-tensioning to avoid tooth jumping. It should be noted that with short belts any pulley concentricity problems can produce large variations in tension giving extreme peak values.

Span Length Ratio

In multiple shaft designs the loaded span is usually longer than the slack span, resulting in less elongation in the loaded span coupled with reduced tension in the slack span. The pre-tension in such drives should be somewhat higher than the peripheral force.

Transmission Accuracy

Synchroflex, Breco, and Brecoflex belts used in a reversing drives (where the loaded and slack spans alternate) can achieve high levels of positional accuracy when the pre-tension matches the maximum peripheral force.



Pre-Tension



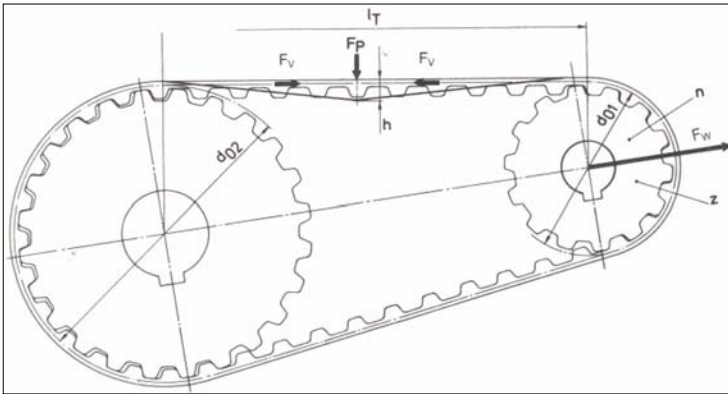
Measurement using Span Deflection

By applying the test load F_P (N) in the middle of the belt span and measuring the span deflection h , it is possible to check the pre-tension. (a minimum of one pulley must be able to turn freely)

$$h = 1.66 \cdot 10^{-2} \cdot I_T$$

$$F_P = \frac{P \cdot 6.48 \cdot 10^5}{n_1 \cdot d_{01}} + f_0 \cdot b \cdot \frac{I_T}{L_B}$$

$$I_T = \sqrt{a^2 - \left(\frac{d_{02} - d_{01}}{2} \right)^2}$$



F_P	Test load N
F_W	Shaft load
P	in kW
n	R.P.M
d_0	Pitch circle diameter (mm)
f_0	Elongation factor N/mm
b	Belt width (mm)
I_T	Span length (mm)
a	Centre distance (mm)
h	Span deflection (mm)
L_B	Belt length (mm)
k	Constant specific to each belt
m	Belt weight kg/m

Elongation Factor	
K1.5, T2, M, T2.5	0.200
T5, T5-DL	0.285
T10, T10-DL	0.514
T20	1.210
T20-DL	1.820
AT5	0.470
AT10	1.210
AT20	1.820

Measurement with Belt Tension Meter

The correct static tension (F_{pt}) can be determined where the peripheral force is known. The tension meter measures the natural frequency of vibration (f) in the belt span. The pre-tension can then be calculated using the formulae below.

$$F_{pt} = 4 \cdot m \cdot I_T^2 \cdot f^2$$

$$F_{pt} = \frac{k \cdot b \cdot I_T^2 \cdot f^2}{100}$$

With the pre-tension known, the corresponding natural frequency can be found.

$$f = \sqrt{\frac{F_{pt}}{4 \cdot m \cdot I_T^2}}$$

$$f = \sqrt{\frac{100 F_{pt}}{k \cdot b \cdot I_T^2}}$$



SM4 Tension Meter

- Accuracy $\pm 5\%$
- Range 6 - 350 Hz
- We recommend that several readings be taken to obtain an average for increased accuracy.
- Comes with a 9V battery, leather cover, and plastic case.
- The tension of all belt types can be measured

Constant k		
Type	Single sided	Double sided
T2-M	0.40	
T2.5	0.42	
AT3	0.90	
T5	0.90	1.20
AT5	1.35	1.40
T10	1.90	2.30
AT10	2.50	2.80
T20	3.00	4.00
AT20	4.00	5.30
XL	1.00	
L	1.50	1.80
H	1.80	1.90
XH	4.20	
For TK and ATK add +0.25		

Distributed by

P.I.E.S. AUSTRALIA PTY LTD

49 Freight Drive, Somerton

Tel: 03 9303 2000 Fax: 03 9303 2099

www.piesau.com.au

sales@piesau.com.au