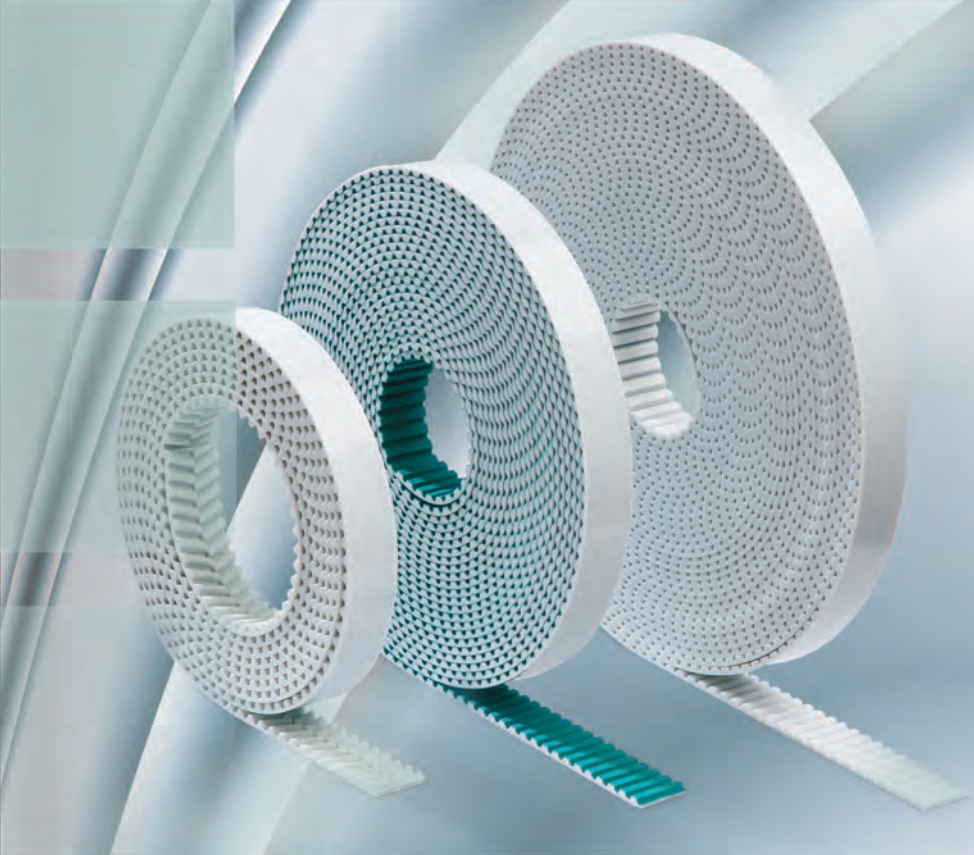
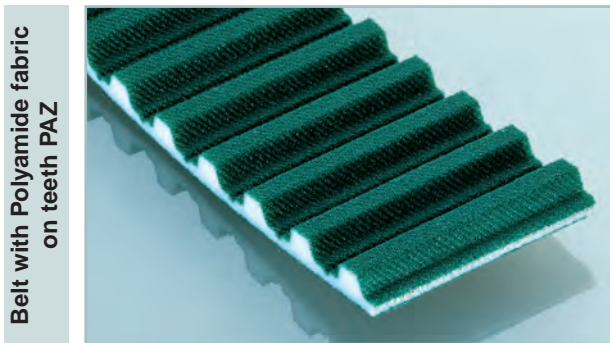
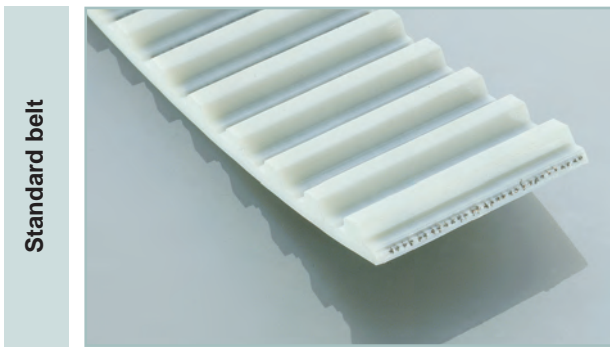


ELATECH® M and V




Technology in Motion.

The timing belts manufactured by ELATECH® have been designed to comply with every need of the design engineer in linear motion, power transmission and in conveying applications where precise synchronisation is needed. ELATECH® timing belts are manufactured with the body in thermoplastic polyurethane with excellent wear resistance and with high tensile strength steel cords. A special polyamide fabric on the tooth (on request) reduces the coefficient of friction, improves the tooth engagement and reduces noise.



Product certification

- ELATECH® belts are certified to be according RoHS 2002/95/EC
- On request, it is possible to deliver belts:
 - according to 94/9/CE ATEX  II2G-22D
 - with antistatic properties

Colour

The standard colour ELATECH® timing belt is white. On demand it is possible to deliver belts in different colours.

Tension Cords

In order to maximize the application of ELATECH® timing belts, construction with special cords is available on request:



- **HPL** high performance cords: the cord cross section is increased compared with standard. This results in a lower belt elongation and more precise positioning accuracy.
- **HFE** high Flexibility cords: the cord cross section is spread on a higher number of single filaments. This results in a lower bending stress and therefore in a higher resistance at reverse bending of the cords. They allow using pulleys and idlers up to 30% smaller in diameter compared to standard.
- **INOX** stainless steel cords are suitable for application in aggressive environments. They have lower tensile strength than standard cords.
- **ARAMID**: increases belt flexibility and decreases belt weight.

It is to be noted that steel cords offer the best technical performances and dimensional stability of the belts.

Belt length tolerances are valid for steel cord reinforcement. In case of other material (aramid, fibreglass) length tolerance may change.

For application with special cords ask our engineering department.

Mechanical properties:

- Excellent dimensional stability
- High abrasion resistance
- Low pretension and shaft load
- Maintenance free
- High linear and angular positioning precision
- High efficiency

Chemical properties:

High resistance to:

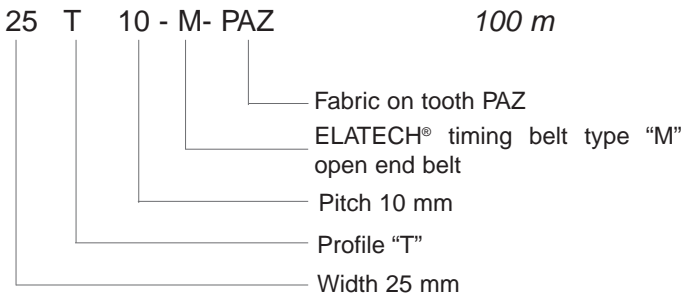
- Hydrolysis
- Ozone
- UVA
- Ageing
- Oils, greases and fats
- Gasoline
- Good resistance to acids
- Working temperatures range for standard material -10°C +80°C (peaks up to 110°C). For very low temperature special compound material is available on request (see dedicated table)
- Silicon free production

Executions

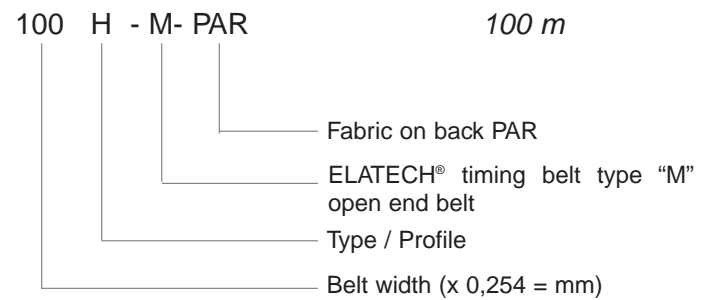
ELATECH® M

They are manufactured in rolls with standard length of 100 m. On request longer or shorter lengths are available. Main applications are linear drives.

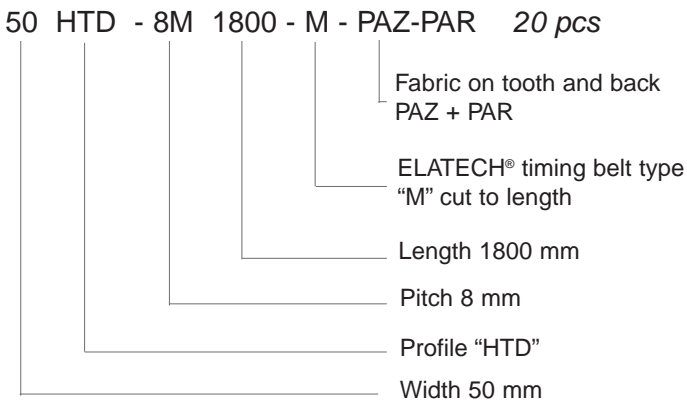
Ordering example T :



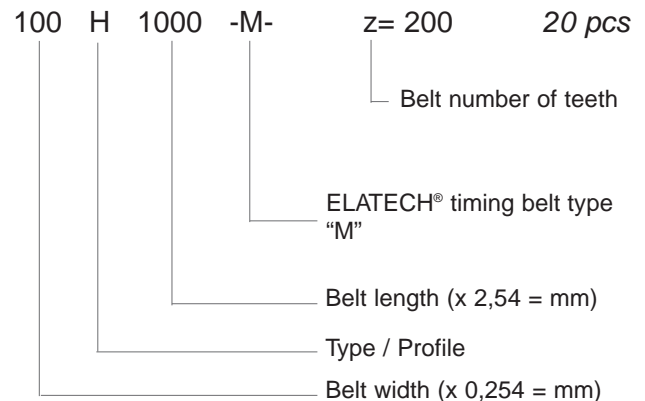
Ordering example H :



Ordering example HTD cut to length:



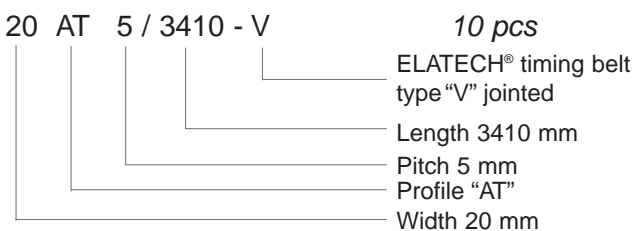
Ordering example H cut to length:



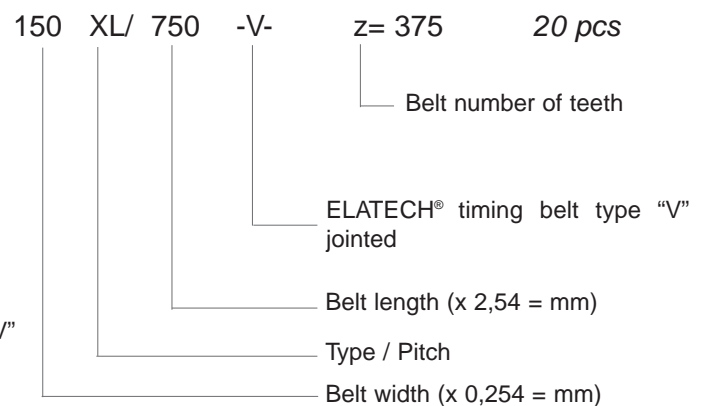
ELATECH® V

They are jointed belts manufactured from open-end ELATECH® belts. Thanks to the specific manufacturing process, any length may be obtained tooth by tooth with a minimum of 800 mm length. Free combinations with special backing materials and welded profiles, make ELATECH® V belts ideal in synchronized conveying and highly specialised applications.

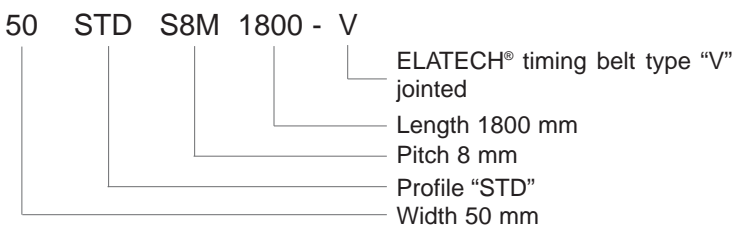
Ordering example AT :

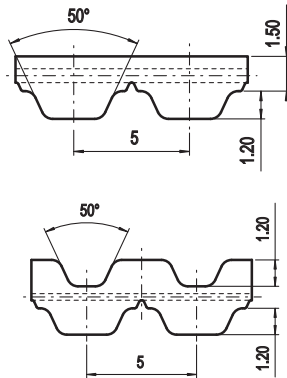


Ordering example XL :



Ordering example STD :





Belt characteristics

- Polyurethane timing belt with steel tension cords
- Metric pitch 5 mm
- Tooth profile and dimension are optimised to guarantee uniform load distribution and minimum deformation under load
- High resistance and low stretch steel cords to guarantee high stability and low elongation
- Reduced polygonal effect with reduced drive vibration
- Particularly suitable for linear drives and light power transmission applications with high axial and angular positioning accuracy
- Double sided tooth construction available
- Negative length tolerance available on request

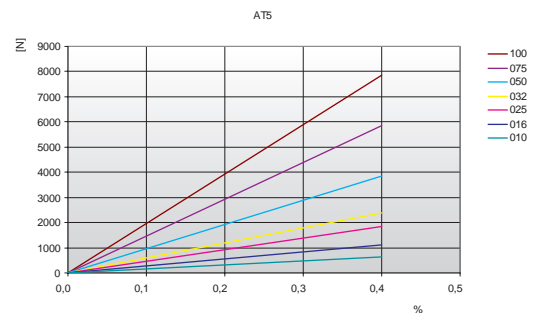
- Width tolerance: $\pm 0,5$ [mm]
- Length tolerance: $\pm 0,5$ [mm/m]
- Thickness tolerance: $\pm 0,2$ [mm]

Technical Data

Belt width b [mm]	Allowable tensile load Type M F_{Tzul} [N]	Allowable tensile load Type V F_{Tzul} [N]	Breaking load Type M F_{Br} [N]	Specific spring rate C_{spez} [N]	Weight [kg/m]
10	640	320	2160	160000	0,03
16	1120	560	3780	280000	0,05
25	1840	920	6210	460000	0,09
32	2400	1200	8100	600000	0,11
50	3840	1920	12960	960000	0,17
75	5840	2920	19710	1460000	0,26
100	7840	3920	26460	1960000	0,34

Other widths are available on request.

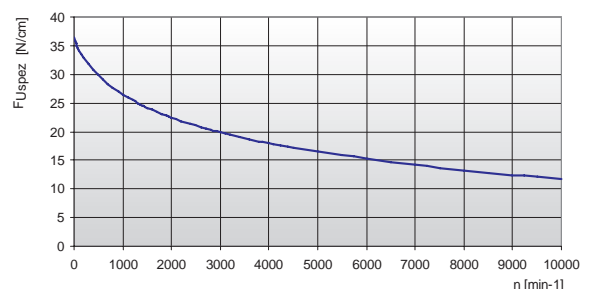
Load / Elongation [%]



Tooth shear strength

rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]
0	36,40	800	27,69	1900	22,73	4500	17,18
20	35,88	900	27,06	2000	22,42	5000	16,47
40	35,40	1000	26,49	2200	21,82	5500	15,83
60	34,97	1100	25,96	2400	21,28	6000	15,24
80	34,59	1200	25,47	2600	20,77	6500	14,69
100	34,24	1300	25,01	2800	20,29	7000	14,18
200	32,92	1400	24,57	3000	19,85	7500	13,71
300	31,92	1440	24,41	3200	19,43	8000	13,26
400	30,89	1500	24,16	3400	19,03	8500	12,85
500	29,95	1600	23,78	3600	18,66	9000	12,45
600	29,12	1700	23,41	3800	18,30	9500	12,07
700	28,37	1800	23,07	4000	17,96	10000	11,72

Tooth shear strength / rpm



The specific load F_{Uspez} is the maximum load which one single belt tooth 1 cm wide can withstand in all operating conditions. This force is related to the drive rpm.

The total load F_u transmissible by the belt in the drive is calculated by:

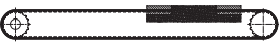
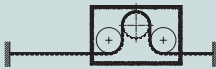
$$F_u [N] = F_{Uspez} \cdot z_e \cdot b$$

- F_u [N] = peripheral force
- F_{Uspez} [N/cm] = specific load
- z_e = number of teeth in mesh in the small pulley
- z_{emax} = max. no of teeth in mesh to be considered for the calculation of the drive
- z_{emax} = 12 for ELATECH® M
- z_{emax} = 6 for ELATECH® V
- b [cm] = belt width in cm

Specialties

Belt width b [mm]	ARAMID CORD		STAINLESS STEEL		HFE High Flexibility	
	F_{Tzul} [N] M type	F_{Br} [N]	F_{Tzul} [N] M type	F_{Br} [N]	F_{Tzul} [N] M type	F_{Br} [N]
10	880	3600	600	2400	960	3440
16	1540	6300	1050	4200	1680	6020
25	2530	10350	1730	6900	2760	9890
32	3300	13500	2250	9000	3600	12900
50	5280	21600	3600	14400	5760	20640
75	8030	32850	-	-	-	-
100	10780	44100	-	-	-	-

Flexibility

Minimum pulley number of teeth and minimum idler diameter		Type of cord			
		STANDARD	ARAMID	STAINLESS	HFE
Drive without reverse bending 	Timing pulley z_{min}	15	15	18	15
	Flat idler running on belt teeth d_{min}	30 mm	30 mm	40 mm	25 mm
Drive with reverse bending 	Timing pulley z_{min}	25	25	25	20
	Flat idler running on belt back d_{min}	60 mm	60 mm	65 mm	50 mm

Timing pulleys

z	da	dw	z	da	dw	z	da	dw	z	da	dw
15	22,65	23,88	45	70,40	71,64	75	118,15	119,40	105	165,90	167,16
16	24,20	25,47	46	72,00	73,23	76	119,75	120,99	106	167,50	168,75
17	25,80	27,06	47	73,55	74,82	77	121,35	122,58	107	169,10	170,34
18	27,40	28,65	48	75,15	76,42	78	122,90	124,18	108	170,70	171,94
19	29,00	30,25	49	76,75	78,01	79	124,50	125,77	109	172,25	173,53
20	30,60	31,83	50	78,35	79,60	80	126,10	127,36	110	173,85	175,12
21	32,20	33,43	51	79,95	81,19	81	127,70	128,95	111	175,45	176,71
22	33,80	35,02	52	81,55	82,78	82	129,30	130,54	112	177,05	178,30
23	35,40	36,62	53	83,10	84,38	83	130,90	132,14	113	178,65	179,84
24	37,00	38,21	54	84,70	85,97	84	132,45	133,73	114	180,25	181,49
25	38,60	39,80	55	86,30	87,54	85	134,05	135,32	115	181,85	183,08
26	40,20	41,39	56	87,90	89,15	86	135,65	136,91	116	183,45	184,67
27	41,80	42,98	57	89,50	90,74	87	137,25	138,50	117	185,00	186,26
28	43,35	44,58	58	91,10	92,34	88	138,85	140,10	118	186,60	187,86
29	44,95	46,17	59	92,65	93,93	89	140,45	141,69	119	188,20	189,45
30	46,55	47,76	60	94,25	95,52	90	142,05	143,28	120	189,80	191,04
31	48,15	49,35	61	95,85	97,11	91	143,60	144,87			
32	49,70	50,94	62	97,45	98,70	92	145,20	146,46			
33	51,30	52,54	63	99,05	100,30	93	146,80	148,06			
34	52,85	54,13	64	100,65	101,89	94	148,40	149,65			
35	54,45	55,72	65	102,25	103,48	95	150,00	151,24			
36	56,05	57,31	66	103,80	105,07	96	151,60	152,83			
37	57,65	58,90	67	105,40	106,66	97	153,15	154,42			
38	59,25	60,50	68	107,00	108,26	98	154,75	156,02			
39	60,85	62,09	69	108,60	109,85	99	156,35	157,61			
40	62,45	63,66	70	110,20	111,44	100	157,95	159,20			
41	64,00	65,27	71	111,80	113,03	101	159,55	160,79			
42	65,60	66,86	72	113,35	114,62	102	161,15	162,38			
43	67,30	68,46	73	114,95	116,22	103	162,70	163,97			
44	68,80	70,05	74	116,55	117,81	104	164,30	165,57			

