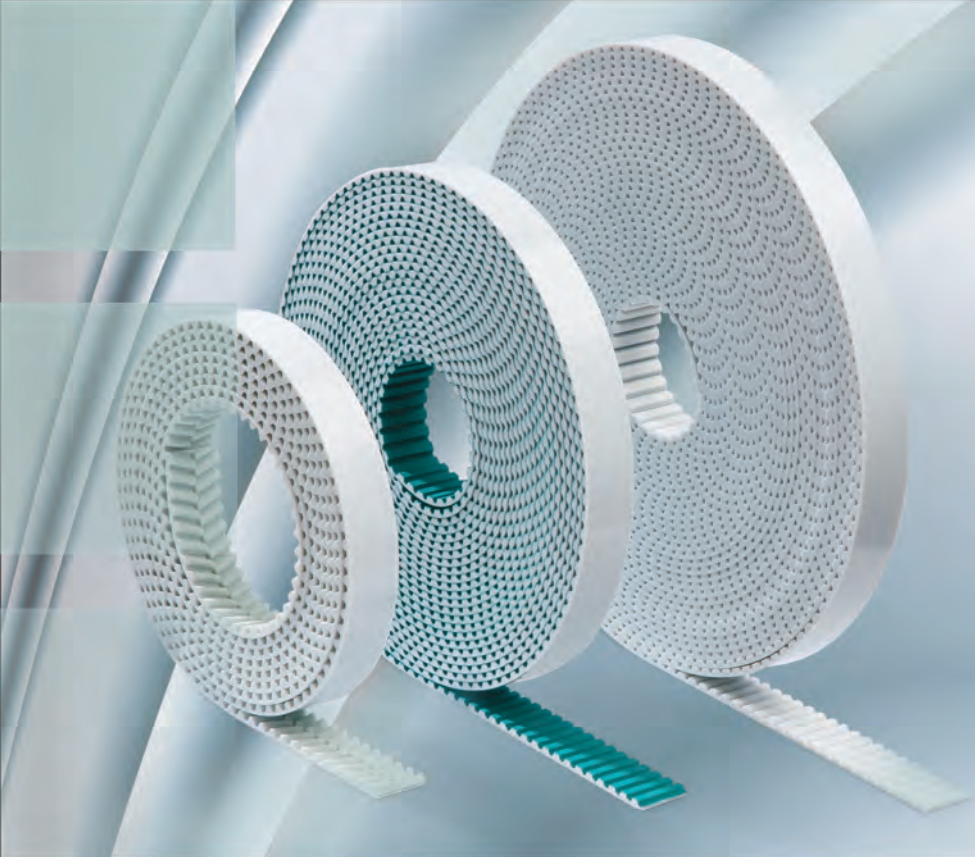
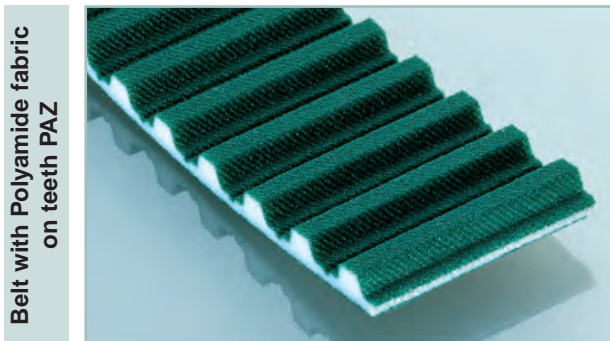


ELATECH® M and V




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:

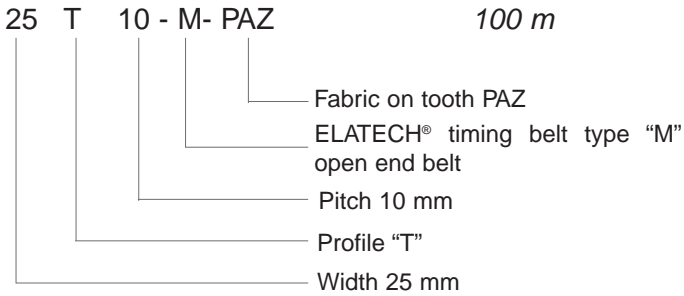
- Hydrolysis
- Ozone
- UVA
- Ageing
- Oils, greases and fats
- Gasoline
- Good resistance to acids
- Working temperatures range for standard material -10°C +80°C (peaks up to 110°C).
For very low temperature special compound material is available on request (see dedicated table)
- Silicon free production

Executions

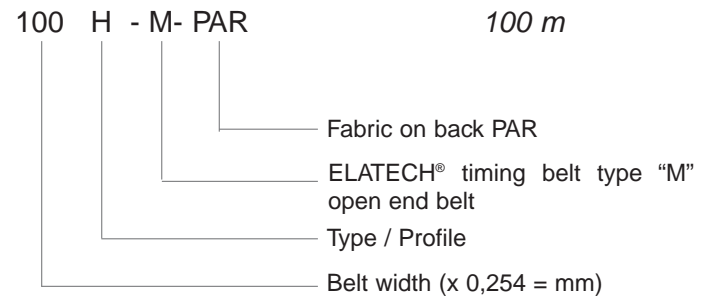
ELATECH® M

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

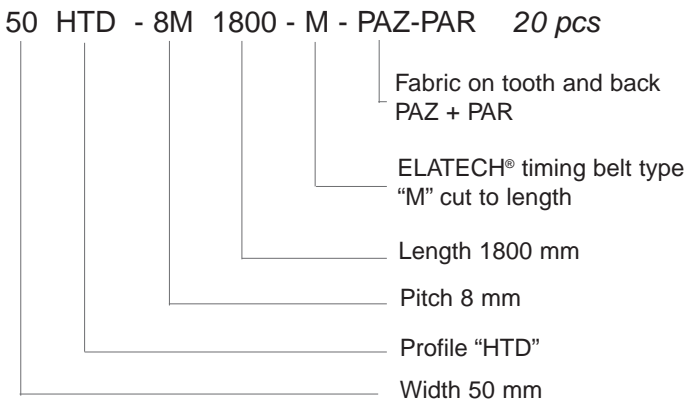
Ordering example T :



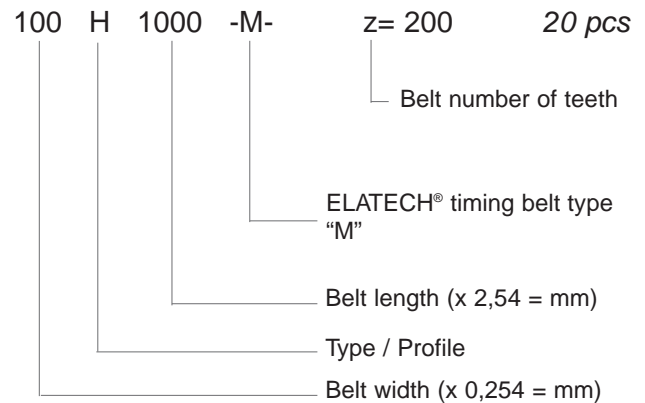
Ordering example H :



Ordering example HTD cut to length:



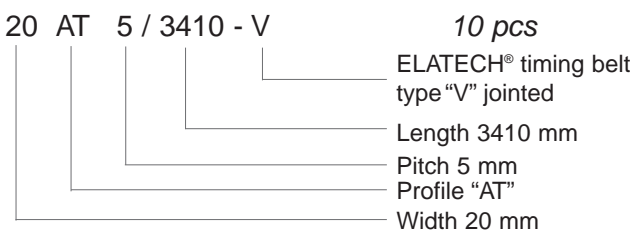
Ordering example H cut to length:



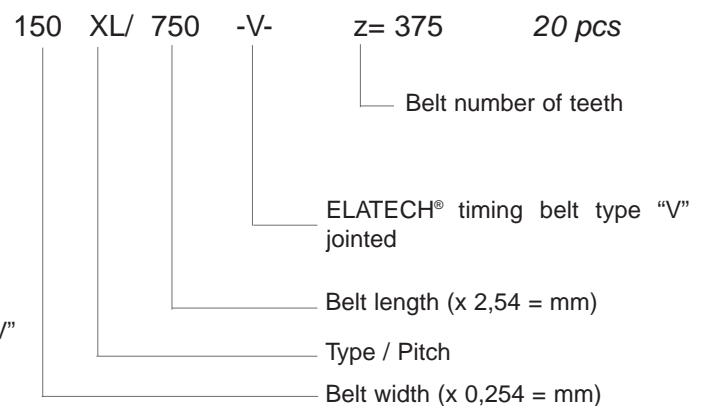
ELATECH® V

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.

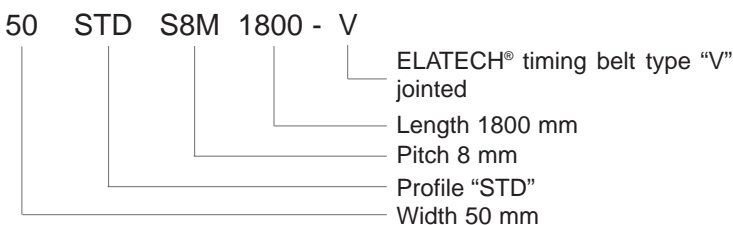
Ordering example AT :

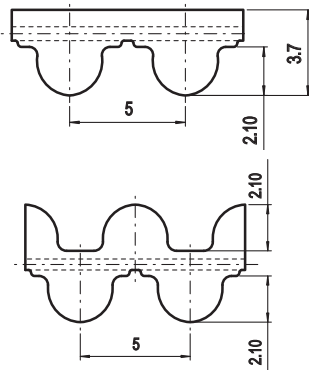


Ordering example XL :



Ordering example STD :





Belt characteristics

- Polyurethane timing belt with round tooth profile and high tensile load tension cords. Produced according to ISO 13050
- Metric pitch 5 mm
- The round tooth profile allows a uniform load distribution that guarantees high performances, high transmissible torque and precise tooth engagement
- Widely used in linear positioning, light power transmission applications
- Double sided tooth construction available

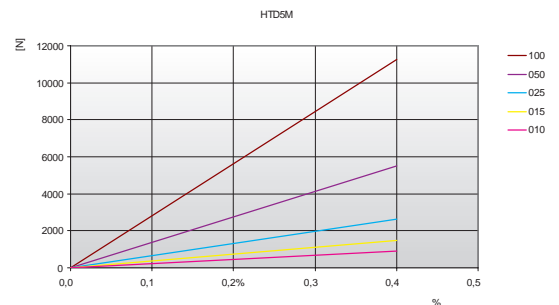
- Width tolerance: $\pm 0,5$ [mm]
- Length tolerance: $\pm 0,5$ [mm/m]
- Thickness tolerance: $\pm 0,2$ [mm]

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	920	460	3360	230000	0,050
15	1500	750	5460	375000	0,070
25	2650	1325	9660	662500	0,120
50	5520	2760	20160	1380000	0,240
100	11270	5635	41160	2817500	0,480

Other widths are available on request.

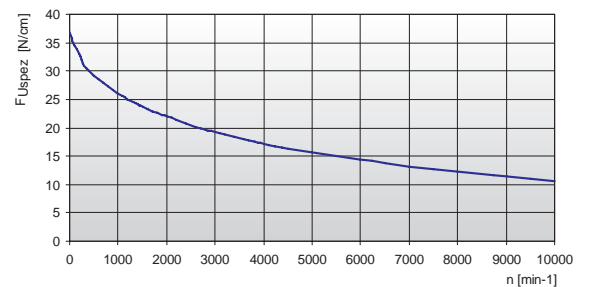
Load / Elongation [%]



Tooth shear strength

rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]
0	36,80	800	27,21	1900	22,24	4500	16,40
20	36,25	900	26,61	2000	21,91	5000	15,64
40	35,75	1000	26,05	2200	21,30	5500	14,95
60	35,30	1100	25,52	2400	20,72	6000	14,32
80	34,89	1200	25,03	2600	20,19	6500	13,74
100	34,52	1300	24,56	2800	19,69	7000	13,19
200	33,13	1400	24,13	3000	19,23	7500	12,68
300	30,87	1440	23,96	3200	18,78	8000	12,20
400	30,10	1500	23,71	3400	18,37	8500	11,75
500	29,31	1600	23,32	3600	17,97	9000	11,33
600	28,56	1700	22,94	3800	17,59	9500	10,92
700	27,86	1800	22,58	4000	17,23	10000	10,53

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:

$$F_U [N] = F_{Uspez} \cdot Z_e \cdot b$$


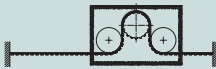
- F_U [N] = peripheral force
- F_{Uspez} [N/cm] = specific load
- Z_e = number of teeth in mesh in the small pulley
- Z_{emax} = max. no of teeth in mesh to be considered for the calculation of the drive
- Z_{emax} = 12 for ELATECH® M
- Z_{emax} = 6 for ELATECH® V
- b [cm] = belt width in cm

HTD 5M

Specialties

Belt width b [mm]	ARAMID CORD		STAINLESS STEEL	
	F _{Tzul} [N] M type	F _{Br} [N]	F _{Tzul} [N] M type	F _{Br} [N]
10	880	3600	600	2400
15	1430	5850	980	3900
25	2530	10350	1730	6900
50	5280	21600	3600	14400

Flexibility

Minimum pulley number of teeth and minimum idler diameter		Type of cord		
		STANDARD	ARAMID	STAINLESS
Drive without reverse bending 	Timing pulley z _{min}	16	16	18
	Flat idler running on belt teeth d _{min}	30 mm	30 mm	40 mm
Drive with reverse bending 	Timing pulley z _{min}	25	25	25
	Flat idler running on belt back d _{min}	60 mm	60 mm	65 mm

Timing pulleys

z	da	dw	z	da	dw	z	da	dw	z	da	dw
10	14,77	15,91	40	62,52	63,66	70	110,27	111,41	100	158,01	159,15
11	16,36	17,50	41	64,11	65,25	71	111,86	113,00	101	159,61	160,75
12	17,96	19,10	42	65,70	66,84	72	113,45	114,59	102	161,2	162,34
13	19,55	20,69	43	67,29	68,43	73	115,04	116,18	103	162,81	163,95
14	21,14	22,28	44	68,88	70,02	74	116,63	117,77	104	164,38	165,52
15	22,73	23,87	45	70,47	71,61	75	118,22	119,36	105	165,97	167,11
16	24,32	25,46	46	72,06	73,20	76	119,81	120,95	106	167,56	168,70
17	25,91	27,05	47	73,65	74,79	77	121,40	122,54	107	169,09	170,23
18	27,51	28,65	48	75,24	76,38	78	122,99	124,13	108	170,75	171,89
19	29,09	30,23	49	76,84	77,98	79	124,58	125,72	109	172,34	173,48
20	30,69	31,83	50	78,44	79,58	80	126,18	127,32	110	173,93	175,07
21	32,28	33,42	51	80,03	81,17	81	127,77	128,91	111	175,52	176,66
22	33,87	35,01	52	81,62	82,76	82	129,36	130,50	112	177,11	178,25
23	35,46	36,60	53	83,21	84,35	83	130,95	132,09	113	178,70	179,84
24	37,06	38,20	54	84,80	85,94	84	132,54	133,68	114	180,29	181,43
25	38,64	39,78	55	86,39	87,53	85	134,14	135,28	115	181,88	183,02
26	40,24	41,38	56	87,98	89,12	86	135,73	136,87	116	183,47	184,61
27	41,83	42,97	57	89,57	90,71	87	137,32	138,46	117	185,07	186,21
28	43,42	44,56	58	91,17	92,31	88	138,91	140,05	118	186,66	187,80
29	45,01	46,15	59	92,76	93,90	89	140,51	141,65	119	188,25	189,39
30	46,61	47,75	60	94,35	95,49	90	142,10	143,24	120	189,84	190,98
31	48,19	49,33	61	95,94	97,08	91	143,69	144,83			
32	49,79	50,93	62	97,53	98,67	92	145,28	146,42			
33	51,38	52,52	63	99,12	100,26	93	146,87	148,01			
34	52,97	54,11	64	100,72	101,86	94	148,46	149,60			
35	54,56	55,70	65	102,31	103,45	95	150,06	151,20			
36	56,16	57,30	66	103,90	105,04	96	151,64	152,78			
37	57,75	58,89	67	105,49	106,63	97	153,24	154,38			
38	59,34	60,48	68	107,08	108,22	98	154,83	155,97			
39	60,93	62,07	69	108,67	109,81	99	156,42	157,56			

