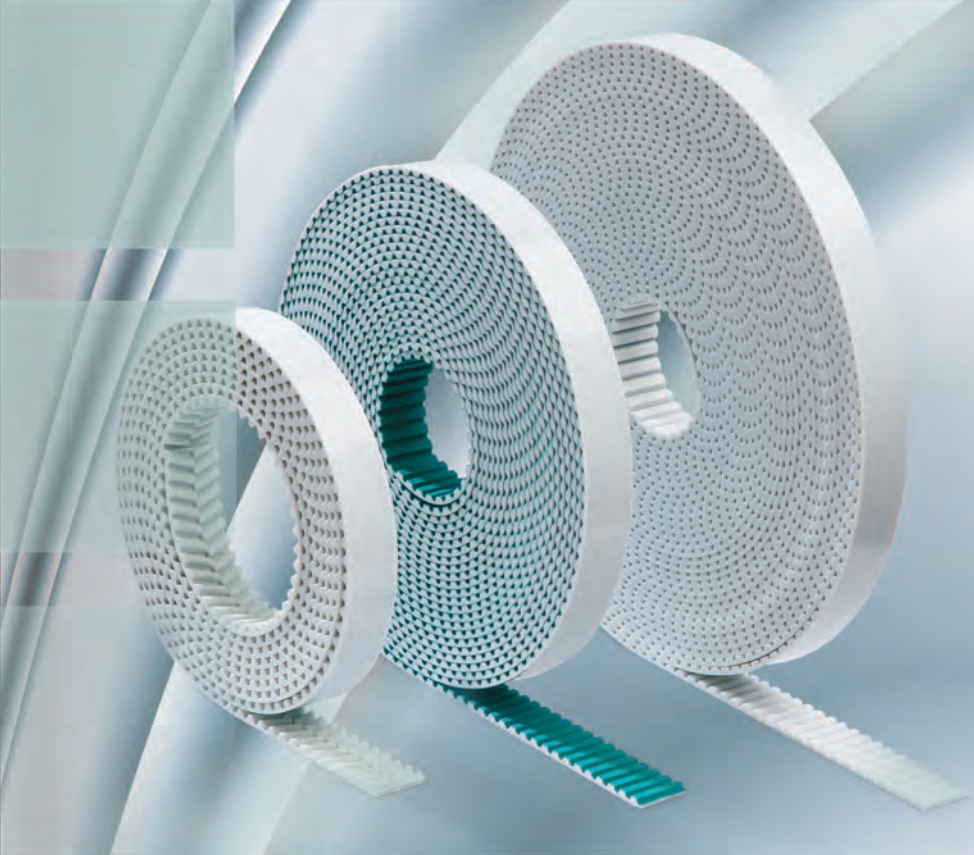
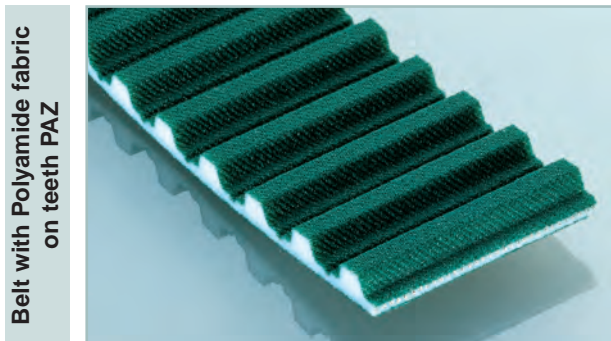


ELATECH® M and V




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:

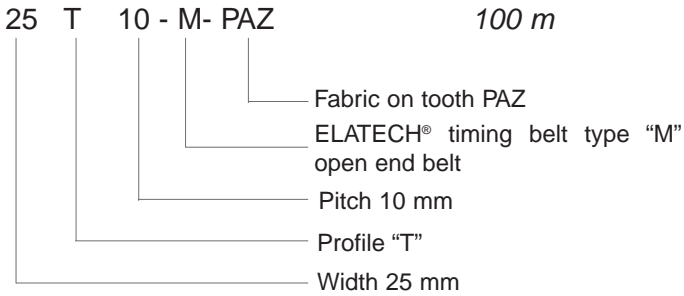
- Hydrolysis
- Ozone
- UVA
- Ageing
- Oils, greases and fats
- Gasoline
- Good resistance to acids
- Working temperatures range for standard material -10°C +80°C (peaks up to 110°C). For very low temperature special compound material is available on request (see dedicated table)
- Silicon free production

Executions

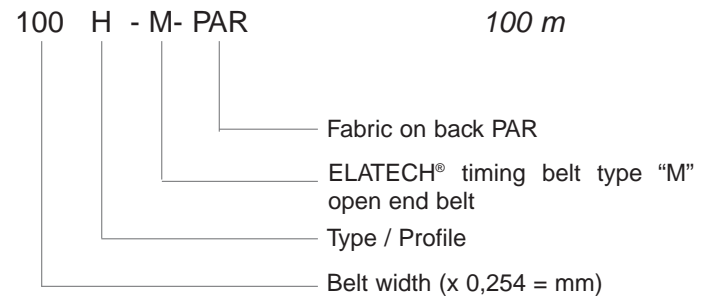
ELATECH® M

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

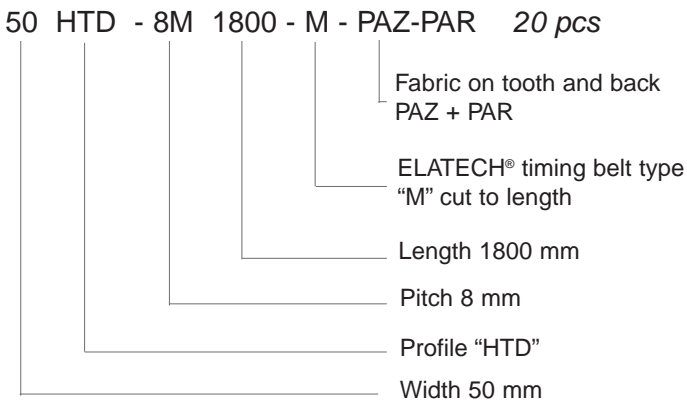
Ordering example T :



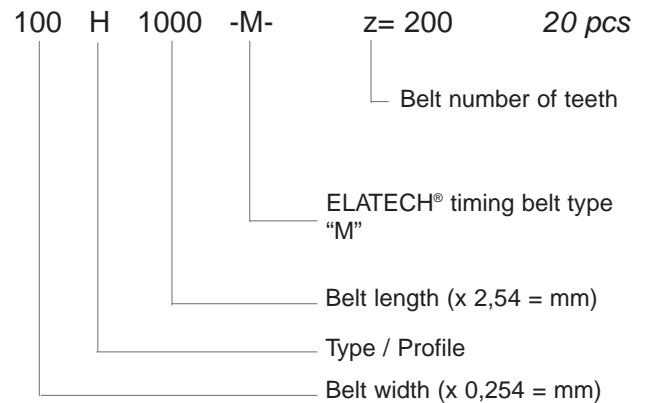
Ordering example H :



Ordering example HTD cut to length:



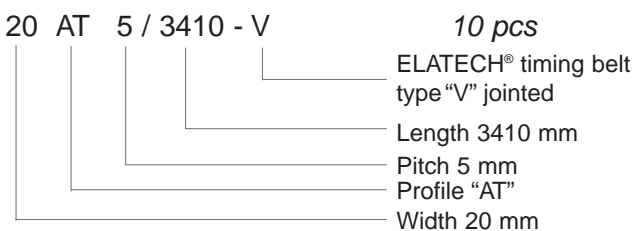
Ordering example H cut to length:



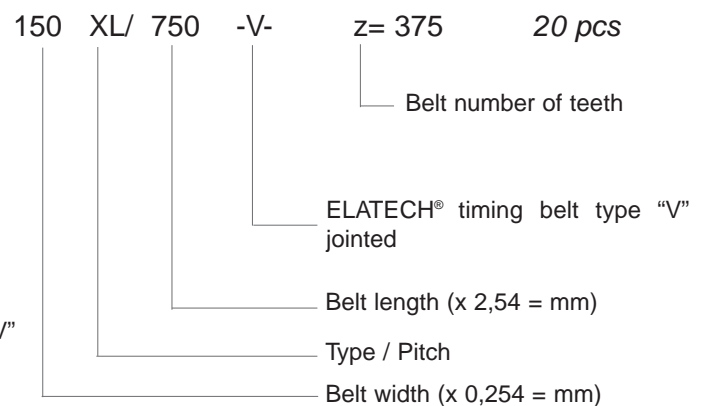
ELATECH® V

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.

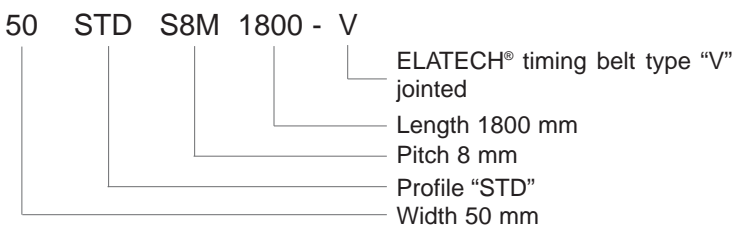
Ordering example AT :

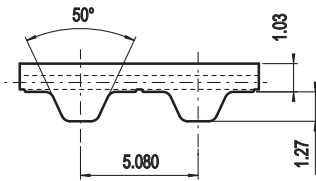


Ordering example XL :



Ordering example STD :





Belt characteristics

- Polyurethane timing belt with trapezoidal tooth profile according to DIN/ISO 5296 with steel tension cords
- Imperial pitch 1/5" = 5,08 mm
- Allow to use small diameter pulley
- Mainly used in applications where inch pitch is an advantage (USA / UK)

- Width tolerance: ±0,5 [mm]
- Length tolerance: ±0,5 [mm/m]
- Thickness tolerance: ±0,2 [mm]

Technical Data

Belt width b Code / 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]
025 / 6,35	190	95	750	47500	0,015
031 / 7,94	260	130	1000	65000	0,019
037 / 9,53	290	145	1125	72500	0,023
050 / 12,7	420	210	1625	105000	0,031
075 / 19,1	670	335	2625	167500	0,046
100 / 25,4	900	450	3500	225000	0,061
150 / 38,1	1410	705	5500	352500	0,092
200 / 50,8	1890	945	7375	472500	0,122
400 / 101,6	3840	1920	15000	960000	0,244

Other widths are available on request.

Tooth shear strength

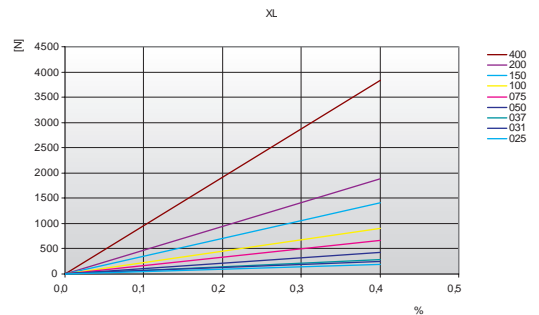
rpm	F _{Uspez} [N/cm]	rpm	F _{Uspez} [N/cm]	rpm	F _{Uspez} [N/cm]	rpm	F _{Uspez} [N/cm]
0	25,10	800	17,32	1900	14,46	4500	11,45
20	24,46	900	16,94	2000	14,28	5000	11,08
40	23,90	1000	16,60	2200	13,96	5500	10,74
60	23,42	1100	16,29	2400	13,66	6000	10,43
80	23,00	1200	16,01	2600	13,38	6500	10,14
100	22,63	1300	15,74	2800	13,12	7000	9,87
200	21,24	1400	15,49	3000	12,88	7500	9,63
300	20,22	1440	15,40	3200	12,65	8000	9,39
400	19,42	1500	15,26	3400	12,44	8500	9,17
500	18,77	1600	15,04	3600	12,24	9000	8,97
600	18,22	1700	14,84	3800	12,05	9500	8,77
700	17,74	1800	14,64	4000	11,87	10000	8,59

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:

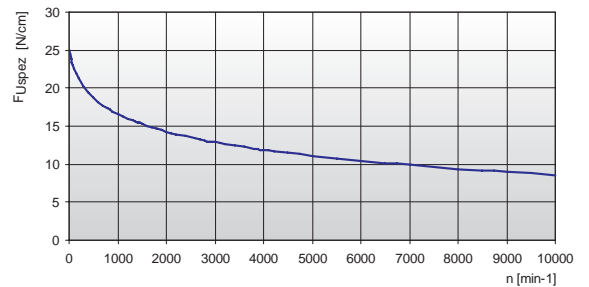
$$F_u [N] = F_{Uspez} \cdot Z_e \cdot b$$

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

Load / Elongation [%]





Tooth shear strength / rpm



Specialties

Belt width b	ARAMID CORD	
	F_{Tzul} [N] M type	F_{Br} [N]
025 / 6,35	420	1680
031 / 7,94	560	1230
037 / 9,53	630	2520
050 / 12,7	910	3640
075 / 19,1	1470	5880
100 / 25,4	1960	7840
150 / 38,1	3080	12320
200 / 50,8	4130	16520
400 / 101,6	8400	33600

Flexibility

Minimum pulley number of teeth and minimum idler diameter		Type of cord	
		STANDARD	ARAMID
Drive without reverse bending 	Timing pulley z_{min}	10	10
	Flat idler running on belt teeth d_{min}	30 mm	30 mm
Drive with reverse bending 	Timing pulley z_{min}	15	15
	Flat idler running on belt back d_{min}	30 mm	30 mm

Timing pulleys

z	da	dw	z	da	dw	z	da	dw	z	da	dw
10	15,66	16,17	40	64,17	64,68	70	112,68	113,19	100	161,19	161,70
11	17,28	17,79	41	65,79	66,30	71	114,30	114,81	101	162,81	163,32
12	18,89	19,40	42	67,40	67,91	72	115,92	116,43	102	164,42	164,93
13	20,51	21,02	43	69,02	69,53	73	117,53	118,04	103	166,04	166,55
14	22,13	22,64	44	70,64	71,15	74	119,15	119,66	104	167,66	168,17
15	23,74	24,25	45	72,26	72,77	75	120,77	121,28	105	169,28	169,79
16	25,36	25,87	46	73,87	74,38	76	122,38	122,89	106	170,89	171,40
17	26,98	27,49	47	75,49	76,00	77	124,00	124,51	107	172,51	173,02
18	28,60	29,11	48	77,11	77,62	78	125,62	126,13	108	174,13	174,64
19	30,21	30,72	49	78,72	79,23	79	127,23	127,74	109	175,74	176,25
20	31,83	32,34	50	80,34	80,85	80	128,85	129,36	110	177,36	177,87
21	33,45	33,96	51	81,96	82,47	81	130,47	130,98	111	178,98	179,49
22	35,06	35,57	52	83,57	84,08	82	132,08	132,59	112	180,59	181,10
23	36,68	37,19	53	85,19	85,70	83	133,70	134,21	113	182,21	182,72
24	38,30	38,81	54	86,81	87,32	84	135,32	135,83	114	183,83	184,34
25	39,92	40,43	55	88,42	88,93	85	136,93	137,44	115	185,44	185,95
26	41,53	42,04	56	90,04	90,55	86	138,55	139,06	116	187,06	187,57
27	43,15	43,66	57	91,66	92,17	87	140,17	140,68	117	188,68	189,19
28	44,77	45,28	58	93,28	93,79	88	141,75	142,30	118	190,30	190,81
29	46,38	46,89	59	94,89	95,40	89	143,36	143,91	119	191,91	192,42
30	48,00	48,51	60	96,51	97,02	90	145,02	145,53	120	193,53	194,04
31	49,62	50,13	61	98,13	98,64	91	146,64	147,15			
32	51,23	51,74	62	99,74	100,25	92	148,25	148,76			
33	52,85	53,36	63	101,36	101,87	93	149,87	150,38			
34	54,47	54,98	64	102,98	103,49	94	151,49	152,00			
35	56,09	56,60	65	104,60	105,11	95	153,11	153,62			
36	57,70	58,21	66	106,21	106,72	96	154,72	155,23			
37	59,32	59,83	67	107,83	108,34	97	156,34	156,85			
38	60,94	61,45	68	109,45	109,96	98	157,96	158,47			
39	62,55	63,06	69	111,06	111,57	99	159,57	160,08			

