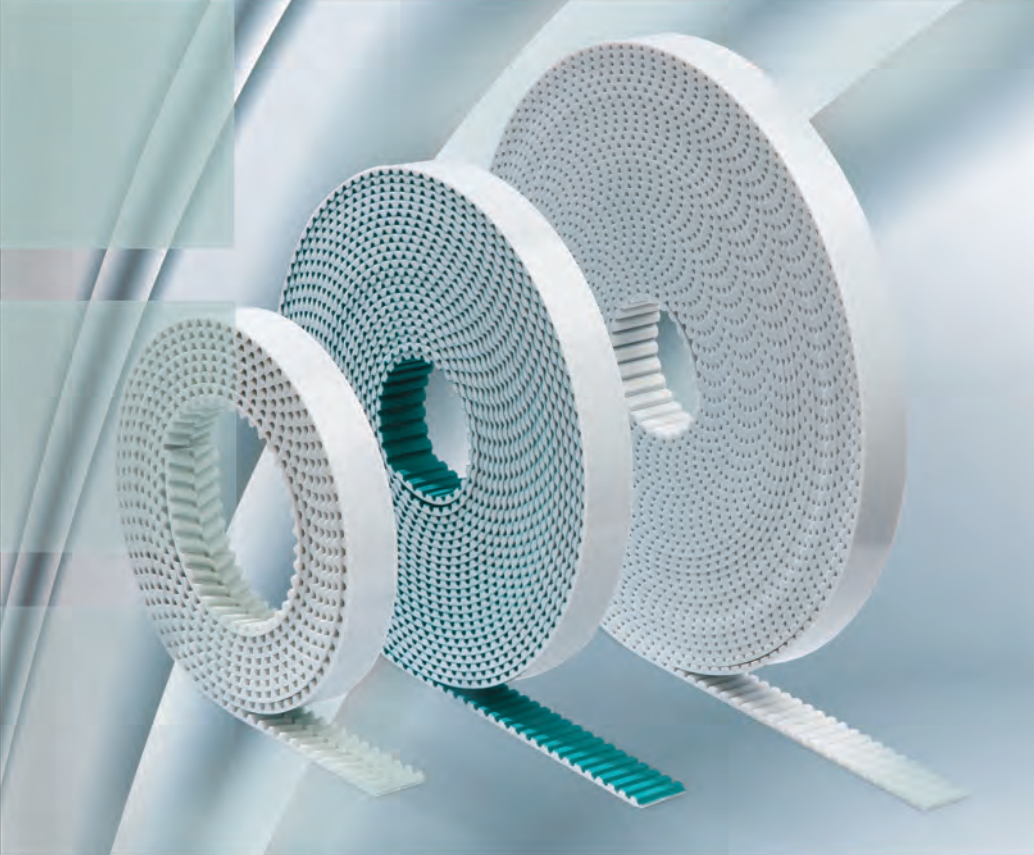
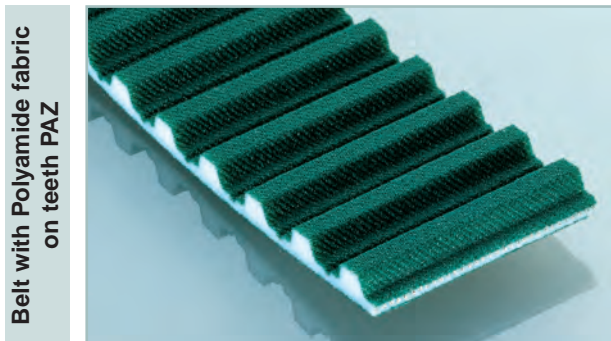


ELATECH® M and V




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:

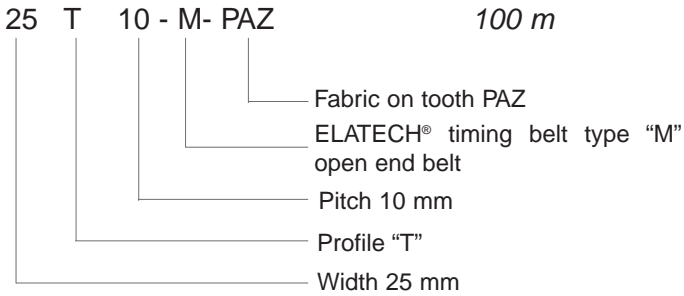
- Hydrolysis
- Ozone
- UVA
- Ageing
- Oils, greases and fats
- Gasoline
- Good resistance to acids
- Working temperatures range for standard material -10°C +80°C (peaks up to 110°C). For very low temperature special compound material is available on request (see dedicated table)
- Silicon free production

Executions

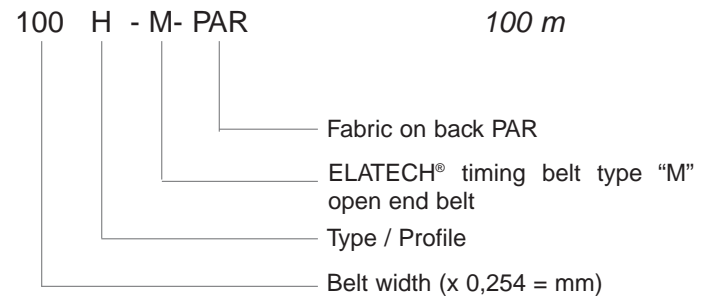
ELATECH® M

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

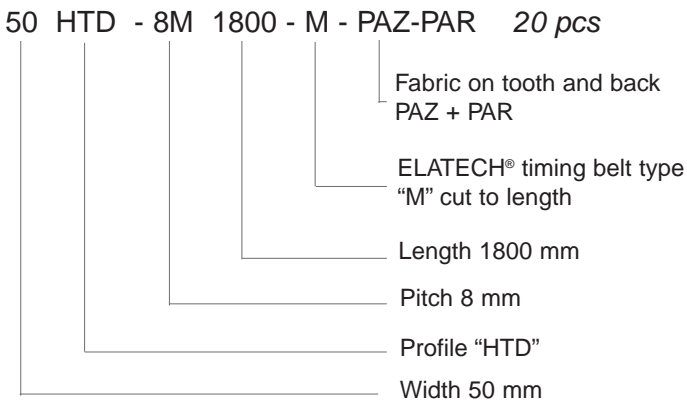
Ordering example T :



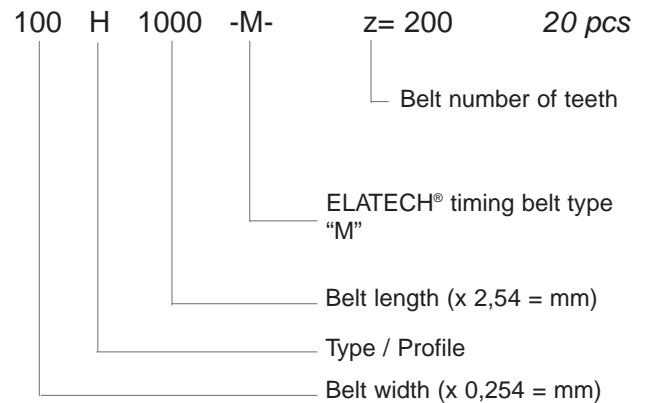
Ordering example H :



Ordering example HTD cut to length:



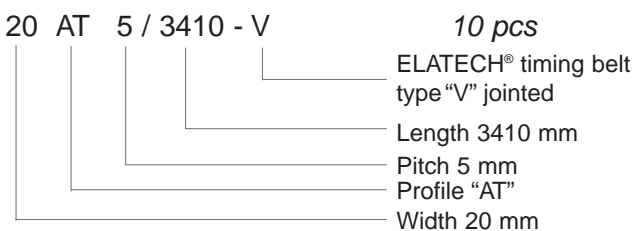
Ordering example H cut to length:



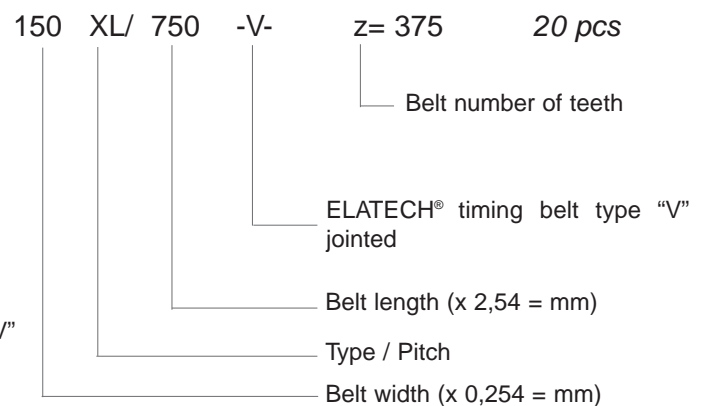
ELATECH® V

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.

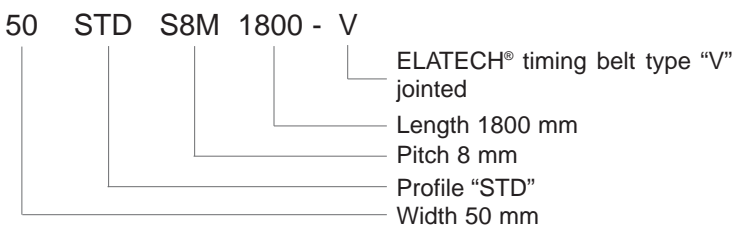
Ordering example AT :

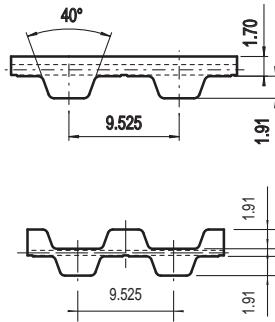


Ordering example XL :



Ordering example STD :





Belt characteristics

- Polyurethane timing belt with trapezoidal tooth profile according to DIN/ISO 5296 with steel tension cords
- Imperial pitch 3/8" = 9,525 mm
- Allow to use small diameter pulley
- Mainly used in applications where inch pitch is an advantage (USA / UK)

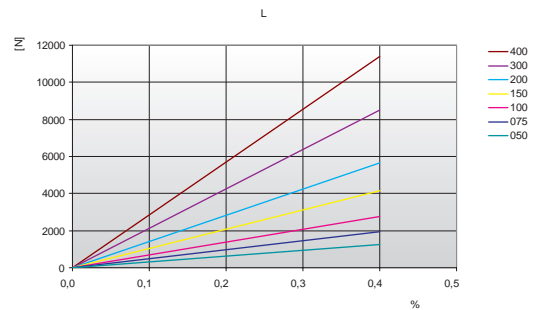
- Width tolerance: $\pm 0,5$ [mm]
- Length tolerance: $\pm 0,5$ [mm/m]
- Thickness tolerance: $\pm 0,2$ [mm]

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]
050 / 12,7	1270	635	4620	317500	0,049
075 / 19,1	1960	980	7140	490000	0,073
100 / 25,4	2760	1380	10080	690000	0,098
150 / 38,1	4260	2130	15540	1065000	0,146
200 / 50,8	5640	2820	20580	1410000	0,195
300 / 76,2	8510	4255	31080	2127500	0,293
400 / 101,6	11390	5695	41580	2847500	0,390

Other widths are available on request.

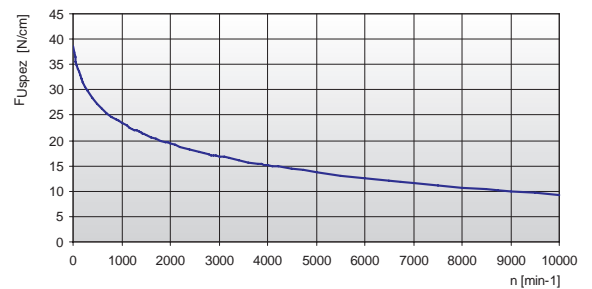
Load / Elongation [%]



Tooth shear strength

rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]	rpm	F_{Uspez} [N/cm]
0	38,6	800	24,7	1900	19,66	4500	14,36
20	37,42	900	24,04	2000	19,35	5000	13,7
40	36,4	1000	23,44	2200	18,77	5500	13,1
60	35,51	1100	22,89	2400	18,24	6000	12,55
80	34,74	1200	22,38	2600	17,76	6500	12,05
100	34,07	1300	21,91	2800	17,3	7000	11,58
200	31,59	1400	21,48	3000	16,88	7500	11,14
300	29,79	1440	21,31	3200	16,48	8000	10,73
400	28,39	1500	21,07	3400	16,1	8500	10,35
500	27,25	1600	20,69	3600	15,75	9000	9,98
600	26,28	1700	20,33	3800	15,41	9500	9,64
700	25,44	1800	19,98	4000	15,09	10000	9,31

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 Code / mm	ARAMID CORD		STAINLESS STEEL	
	F _{Tzul} [N] M type	F _{Br} [N]	F _{Tzul} [N] M type	F _{Br} [N]
050 / 12,7	1210	4950	830	3300
075 / 19,1	1870	7650	1280	5100
100 / 25,4	2640	10800	1800	7200
150 / 38,1	4080	16700	2700	10800
200 / 50,8	5390	22050	3680	14700
300 / 76,2	8140	33300	-	-
400 / 101,6	10890	44550	-	-

Flexibility

Minimum pulley number of teeth and minimum idler diameter		Type of cord		
		STANDARD	ARAMID	STAINLESS
Drive without reverse bending 	Timing pulley z _{min}	15	15	18
	Flat idler running on belt teeth d _{min}	60 mm	60 mm	65 mm
Drive with reverse bending 	Timing pulley z _{min}	20	20	20
	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	29,56	30,32	40	120,52	121,27	70	211,47	212,23	100	302,43	303,18
11	32,59	33,35	41	123,55	124,30	71	214,50	215,26	101	305,46	306,21
12	35,62	36,38	42	126,58	127,33	72	217,53	218,29	102	308,49	309,24
13	38,65	39,41	43	129,61	130,36	73	220,56	221,32	103	311,52	312,29
14	41,68	42,44	44	132,64	133,39	74	223,59	224,35	104	314,55	315,32
15	44,71	45,47	45	135,67	136,44	75	226,62	227,38	105	317,58	318,35
16	47,74	48,50	46	138,70	139,47	76	229,65	230,41	106	320,61	321,38
17	50,77	51,53	47	141,73	142,50	77	232,70	233,46	107	323,64	324,41
18	53,80	54,56	48	144,76	145,53	78	235,73	236,49	108	326,69	327,44
19	56,83	57,61	49	147,80	148,56	79	238,76	239,52	109	329,72	330,47
20	59,88	60,64	50	150,83	151,59	80	241,79	242,55	110	332,75	333,50
21	62,91	63,67	51	153,86	154,62	81	244,82	245,58	111	335,78	336,53
22	65,94	66,70	52	156,89	157,65	82	247,85	248,61	112	338,81	339,56
23	68,97	69,73	53	159,92	160,68	83	250,88	251,64	113	341,84	342,61
24	72,00	72,76	54	162,95	163,71	84	253,91	254,67	114	344,87	345,64
25	75,03	75,80	55	166,00	166,76	85	256,94	257,70	115	347,90	348,67
26	78,06	78,83	56	169,03	169,79	86	259,97	260,73	116	350,93	351,70
27	81,09	81,86	57	172,06	172,82	87	263,02	263,78	117	353,96	354,73
28	84,12	84,89	58	175,09	175,85	88	266,05	266,81	118	357,00	357,76
29	87,15	87,92	59	178,12	178,88	89	269,08	269,84	119	360,03	360,79
30	90,20	90,95	60	181,15	181,91	90	272,11	272,87	120	363,07	363,82
31	93,23	93,98	61	184,18	184,94	91	275,14	275,90			
32	96,26	97,01	62	187,21	187,97	92	278,17	278,93			
33	99,29	100,04	63	190,24	191,00	93	281,20	281,96			
34	102,32	103,07	64	193,27	194,03	94	284,23	285,00			
35	105,35	106,12	65	196,30	197,06	95	287,26	288,03			
36	108,38	109,15	66	199,33	200,11	96	290,30	291,06			
37	111,41	112,18	67	202,38	203,14	97	293,33	294,09			
38	114,44	115,21	68	205,41	206,17	98	296,36	297,12			
39	117,47	118,24	69	208,44	209,20	99	299,40	300,15			

