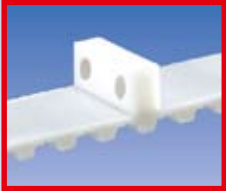


SECA[®] SECAflex[®]



Precision for Motion

- synchronization
- conveying
- power transmission

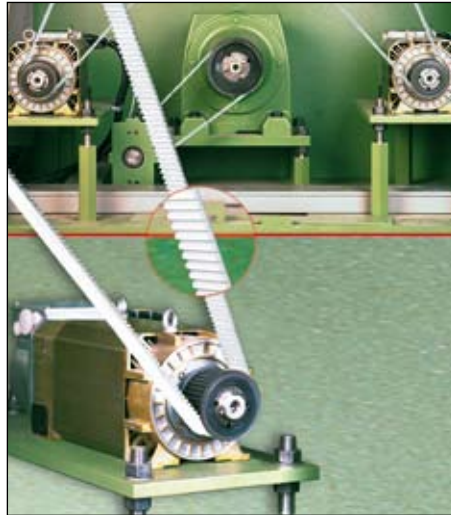
SECA[®] and SECAflex[®] Timing Belts

For more than 25 years NSW (Norddeutsche Seekabelwerke GmbH) has manufactured SECA[®] steel and Aramid-reinforced thermoplastic polyurethane timing belts. Constant improvements led to the development of SECAflex[®] high-performance timing belts. The use of high-quality materials and a high standard of quality assurance laid the foundation for a range of successful products that covers a broad spectrum of applications.

Non-elongating tensile members ensure minimum pitch tolerances and allow the use of SECA[®] and SECAflex[®] belts in high-precision applications.

Abrasion-resistant polyurethane provides the belts with a long service life.

Endless and welded-endless timing belts are available in all lengths.



- Material: Thermoplastic polyurethane elastomer
- Shore hardness: 92°A
- Tensile members:
 - Steel cords in various versions
 - Aramid fibers
- Color: White
- Available as:
 - Open-length SECA[®] M, 50 and 100 m standard lengths, special lengths on request
 - Welded endless SECA[®] V, with or without value-added processing
 - Truly endless SECAflex[®], with or without value-added processing, lengths from 1,500 to 24,000 mm
- Properties:
 - Abrasion-resistant polyurethane
 - Maintenance-free
 - Synchronous timing
 - High efficiency (to 98%)
 - Low noise and low mass
 - Operating temperature from -5°C to +80°C (standard material), polyurethane for cold storage areas (-30°C) on request
 - Unaffected by moisture, UV and ozone
 - Resistant to greases, oils and benzene
- Note: Timing belts in accordance with DIN 7721 or DIN-ISO 5296 standards

SECA® and SECAflex® Timing Belts

Products



Applications

- Linear drives in automation and material handling equipment
- Sheet glass and sheet metal transport systems
- Woodworking machines
- Ceramic tile machines
- Baggage conveyors
- Packing machines
- Car washes
- Automatic systems for opening and closing doors and gates
- Fitness equipment
- Textile machines

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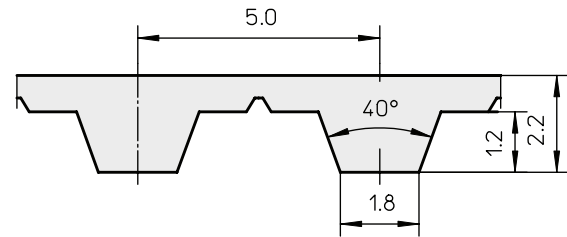
SECA® and SECAflex® Timing Belts

T 5 Steel Cords

SECA® M

SECA® V

SECAflex®



Product Details

Shore hardness: 92° A

Tensile members: Steel cords, 0.3 mm diameter

Width tolerance: ± 0.5 mm

Height tolerance: ± 0.2 mm

Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 24 g/10 mm belt width

Minimum number of teeth on pulley: 10

Pulley diameter: 15.05 mm

Tension idler outside diameter: 30 mm

T 5

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	310	150	310
12			360
16	460	230	490
20			620
25	830	410	800
32	930	460	1,010
50	1,660	830	1,610
75	2,490		2,410
100	3,320		3,220

Unit Load Table

Speed n [min ⁻¹]	T 5		Speed n [min ⁻¹]	T 5	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	24.0	0.0191	2,000	13.6	0.0108
20	23.4	0.0186	2,200	13.4	0.0106
40	22.9	0.0181	2,400	13.1	0.0104
60	22.4	0.0178	2,600	12.8	0.0102
80	22.1	0.0175	2,800	12.5	0.0101
100	21.7	0.0172	3,000	12.3	0.0098
200	20.3	0.0161	3,200	12.1	0.0096
300	19.3	0.0153	3,400	11.9	0.0095
400	18.5	0.0147	3,600	11.7	0.0093
500	17.9	0.0142	3,800	11.5	0.0092
600	17.4	0.0138	4,000	11.4	0.0091
700	16.9	0.0134	4,500	11.1	0.0087
800	16.5	0.0131	5,000	10.6	0.0085
900	16.2	0.0128	5,500	10.3	0.0082
1,000	15.8	0.0126	6,000	10.1	0.0081
1,100	15.5	0.0124	6,500	9.8	0.0078
1,200	15.3	0.0121	7,000	9.5	0.0076
1,300	15.1	0.0119	7,500	9.3	0.0074
1,400	14.8	0.0118	8,000	9.1	0.0072
1,500	14.6	0.0116	8,500	8.9	0.0071
1,600	14.4	0.0114	9,000	8.7	0.0069
1,700	14.2	0.0113	9,500	8.5	0.0067
1,800	14.1	0.0112	10,000	8.3	0.0066
1,900	13.8	0.0111			

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	1,260	630	1,260
12			1,470
16	1,900	950	1,990
20			2,500
25	3,360	1,680	3,250
32	3,780	1,890	4,100
50	6,720	3,360	6,500
75	10,000		9,760
100	13,400		13,000

For examples of how to order, see page 31 B.

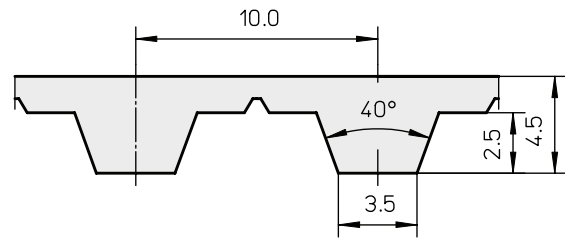
SECA® and SECAflex® Timing Belts

T 10 Steel Cords

SECA® M

SECA® V

SECAflex®



Product Details

Shore hardness: 92° A

Tensile members: Steel cords, 0.6 mm diameter

Width tolerance: ± 0.5 mm

Height tolerance: ± 0.2 mm

Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 48 g/10 mm belt width

Minimum number of teeth on pulley: 12

Pulley diameter: 36.35 mm

Tension idler outside diameter: 50 mm

T 10

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10			700
12			900
16	1,300	650	1,200
20			1,500
25	2,200	1,100	2,000
32	2,600	1,300	2,500
50	4,400	2,200	4,000
75	6,600	3,300	6,000
100	8,800	4,400	8,100

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10			2,700
12			3,550
16	5,130	2,560	4,740
20			5,900
25	8,690	4,340	7,900
32	10,270	5,130	9,870
50	17,380	8,690	15,800
75	26,070	13,030	23,700
100	34,760	17,380	31,990

Unit Load Table

Speed n [min ⁻¹]	T 10		Speed n [min ⁻¹]	T 10	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

For examples of how to order, see page 31 B.

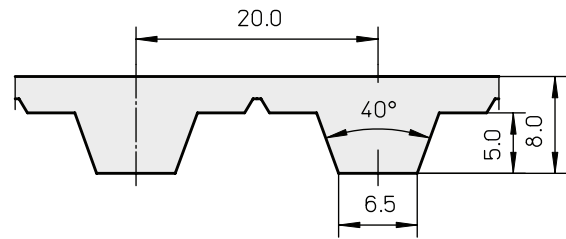
SECA® and SECAflex® Timing Belts

T 20-Steel Cords

SECA® M

SECA® V

SECAflex®



Product Details

Shore hardness: 92° A

Tensile members: Steel cords, 0.9 mm diameter

Width tolerance: ± 0.5 mm

Height tolerance: ± 0.2 mm

Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 77 g/10 mm belt width

Minimum number of teeth on pulley: 15

Pulley diameter: 92.65 mm

Tension idler outside diameter: 120 mm

T 20

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
16			2,400
20			3,120
25	3,360	1,680	3,840
32	4,320	2,160	5,040
50	6,720	3,360	7,920
75	10,080	5,040	12,000
100	13,440	6,720	16,080

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
16			9,500
20			12,300
25	13,300	6,650	15,200
32	17,100	8,550	19,950
50	26,600	13,300	31,350
75	39,900	19,950	47,500
100	53,200	26,600	63,650

Unit Load Table

Speed n [min ⁻¹]	T 20		Speed n [min ⁻¹]	T 20	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	101.5	0.323	2,000	45.3	0.144
20	98.1	0.312	2,200	43.6	0.138
40	95.3	0.303	2,400	42.1	0.134
60	92.8	0.295	2,600	40.7	0.129
80	90.7	0.289	2,800	39.4	0.125
100	88.7	0.282	3,000	38.1	0.121
200	81.2	0.259	3,200	37.0	0.117
300	75.9	0.242	3,400	35.9	0.114
400	71.8	0.229	3,600	34.9	0.110
500	68.4	0.218	3,800	33.8	0.107
600	65.6	0.209	4,000	33.0	0.104
700	63.1	0.201	4,500	30.8	0.098
800	60.9	0.194	5,000	28.9	0.092
900	59.0	0.187	5,500	27.2	0.086
1,000	57.2	0.182	6,000	25.6	0.081
1,100	55.6	0.177	6,500	24.2	0.076
1,200	54.2	0.172			
1,300	52.8	0.168			
1,400	51.5	0.164			
1,500	50.3	0.160			
1,600	49.2	0.156			
1,700	48.2	0.153			
1,800	47.2	0.150			
1,900	46.2	0.147			

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

AT 5 Steel Cords

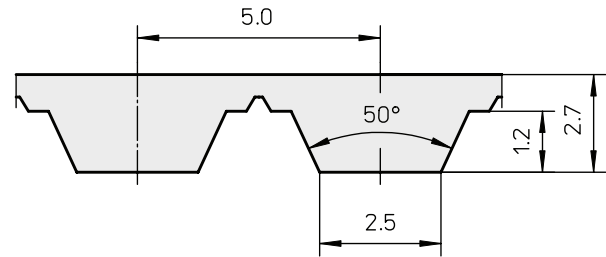
SECA® M

SECA® V

SECAflex®

Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 0.51 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m



Weight per meter: Approx. 30 g/10 mm belt width
 Minimum number of teeth on pulley: 15
 Pulley diameter: 22.65 mm
 Tension idler outside diameter: 60 mm

AT 5

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	640	320	720
12			880
16	1,120	560	1,200
20			1,500
25	1,840	920	1,920
32	2,240	1,120	2,480
50	3,680	1,840	3,920
75	5,500		5,840
100	7,350		7,840

Unit Load Table

Speed n [min ⁻¹]	AT 5		Speed n [min ⁻¹]	AT 5	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	35.3	0.0281	2,000	21.9	0.0174
20	34.9	0.0278	2,200	21.3	0.0169
40	34.5	0.0275	2,400	20.8	0.0165
60	34.1	0.0272	2,600	20.3	0.0161
80	33.8	0.0269	2,800	19.8	0.0157
100	33.5	0.0266	3,000	19.4	0.0154
200	32.0	0.0255	3,200	19.1	0.0151
300	30.9	0.0246	3,400	18.6	0.0148
400	29.8	0.0237	3,600	18.3	0.0145
500	29.0	0.0230	3,800	17.9	0.0142
600	28.2	0.0224	4,000	17.6	0.0140
700	27.5	0.0219	4,500	16.8	0.0134
800	26.8	0.0214	5,000	16.2	0.0128
900	26.3	0.0209	5,500	15.5	0.0123
1,000	25.7	0.0205	6,000	15.1	0.0119
1,100	25.2	0.0201	6,500	14.5	0.0115
1,200	24.8	0.0197	7,000	13.9	0.0111
1,300	24.3	0.0194	7,500	13.5	0.0107
1,400	23.9	0.0190	8,000	13.1	0.0104
1,500	23.5	0.0187	8,500	12.7	0.0101
1,600	23.2	0.0184	9,000	12.3	0.0098
1,700	22.8	0.0182	9,500	11.9	0.0095
1,800	22.5	0.0178	10,000	11.6	0.0092
1,900	22.2	0.0176			

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	2,160	1,080	2,430
12			2,970
16	3,780	1,890	4,050
20	6,210		5,100
25	7,560	3,105	6,480
32	12,420	3,780	8,370
50	18,600	6,210	13,230
75	24,800		19,710
100			26,460

For examples of how to order, see page 31 B.

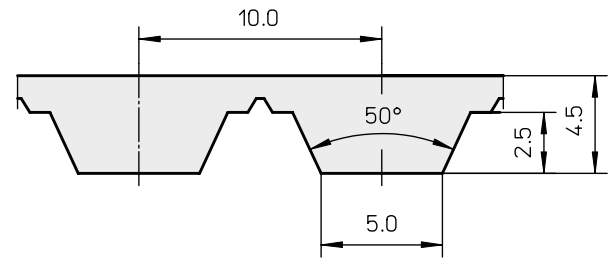
SECA® and SECAflex® Timing Belts

AT 10 Steel Cords

SECA® M
SECA® V
SECAflex®

Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 0.9 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m



Weight per meter: Approx. 64 g/10 mm belt width
Minimum number of teeth on pulley: 15
Pulley diameter: 45.9 mm
Tension idler outside diameter: 120 mm

AT 10

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12			1,680
16	2,400	1,200	2,400
20			2,850
25	3,840	1,920	3,840
32	4,560	2,280	5,040
50	7,680	3,840	7,920
75	11,520	5,760	12,000
100	15,360	7,680	16,080
150	26,100	13,050	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12			6,650
16	9,500	4,750	9,500
20			11,400
25	15,200	7,600	15,200
32	18,050	9,025	19,950
50	30,400	15,200	31,350
75	45,600	22,800	47,500
100	60,800	30,400	63,650
150	103,500	51,750	

Unit Load Table

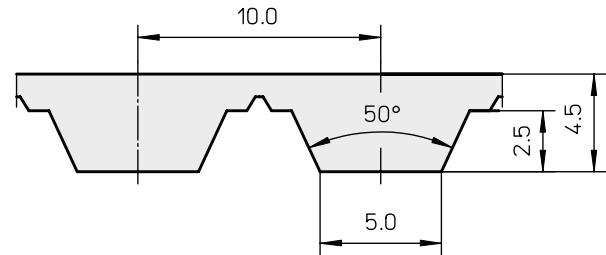
Speed n [min ⁻¹]	AT 10		Speed n [min ⁻¹]	AT 10	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	73.5	0.117	2,000	40.3	0.064
20	72.4	0.115	2,200	39.0	0.062
40	71.4	0.114	2,400	37.8	0.060
60	70.5	0.112	2,600	36.6	0.058
80	69.6	0.111	2,800	35.5	0.057
100	68.7	0.109	3,000	34.5	0.055
200	65.0	0.104	3,200	33.6	0.054
300	62.1	0.099	3,400	32.7	0.052
400	59.5	0.095	3,600	31.9	0.051
500	57.4	0.091	3,800	31.1	0.050
600	55.5	0.088	4,000	30.3	0.048
700	53.7	0.086	4,500	28.5	0.045
800	52.2	0.083	5,000	26.9	0.043
900	50.8	0.081	5,500	25.5	0.041
1,000	49.5	0.079	6,000	24.2	0.038
1,100	48.3	0.077	6,500	23.0	0.037
1,200	47.2	0.075	7,000	21.8	0.035
1,300	46.2	0.074	7,500	20.8	0.033
1,400	45.2	0.072	8,000	19.7	0.032
1,500	44.3	0.071	8,500	18.4	0.030
1,600	43.4	0.070	9,000	17.5	0.029
1,700	42.6	0.068	9,500	17.2	0.027
1,800	41.8	0.067	10,000	16.2	0.026
1,900	41.0	0.065			

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

AT 10 E Steel Cords

SECA® M
SECA® V
SECAflex®



Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 0.9 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 64 g/10 mm belt width
Minimum number of teeth on pulley: 12
Pulley diameter: 36.35 mm
Tension idler outside diameter: 100 mm

AT 10 E

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10			1,100
12			1,350
16	1,950	970	1,950
20			2,340
25	3,120	1,560	3,120
32	3,700	1,850	4,090
50	6,200	3,100	6,430
75	9,360	4,680	9,750
100	12,480	6,240	13,060

Unit Load Table

Speed n [min ⁻¹]	AT 10 E		Speed n [min ⁻¹]	AT 10 E	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	65.98	0.100	2,000	29.45	0.045
20	63.77	0.098	2,200	28.34	0.043
40	61.95	0.096	2,400	27.37	0.041
60	60.32	0.095	2,600	26.46	0.040
80	58.96	0.093	2,800	25.61	0.038
100	57.66	0.092	3,000	24.77	0.036
200	52.78	0.086	3,200	24.05	0.035
300	49.34	0.080	3,400	23.34	0.033
400	46.67	0.077	3,600	22.69	0.032
500	44.46	0.073	3,800	21.97	0.030
600	42.64	0.070	4,000	21.45	0.029
700	41.02	0.067	4,500	20.02	0.027
800	39.59	0.065	5,000	18.79	0.024
900	38.35	0.062	5,500	17.68	0.021
1,000	37.18	0.060	6,000	16.64	0.020
1,100	36.14	0.058	6,500	15.73	0.018
1,200	35.23	0.057			
1,300	34.32	0.055			
1,400	33.48	0.053			
1,500	32.70	0.052			
1,600	31.98	0.050			
1,700	31.33	0.049			
1,800	30.68	0.048			
1,900	30.03	0.047			

Maximum Load (N)

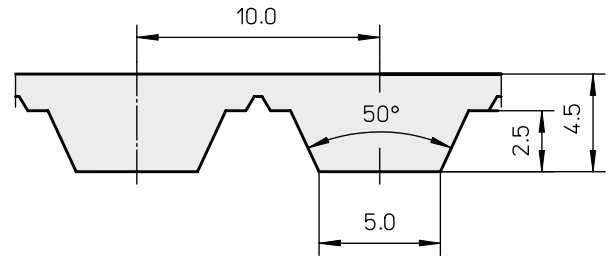
Belt width in mm	SECA® M	SECA® V	SECAflex®
10			4,500
12			5,300
16	7,600	3,800	7,600
20			9,100
25	12,160	6,080	12,160
32	14,440	7,220	15,960
50	24,320	12,160	25,080
75	36,480	18,240	38,000
100	48,640	24,320	50,920

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

AT 10 L Steel Cords

SECA® M
SECA® V
SECAflex®



Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 1.21 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 68 g/10 mm belt width
Minimum number of teeth on pulley: 25
Pulley diameter: 77.7 mm
Tension idler outside diameter: 150 mm

AT 10 L

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10			2,760
12			3,300
16	4,400	1,200	4,400
20			5,500
25	6,600	1,900	7,150
32	8,800	2,250	9,350
50	14,300	3,800	14,850
75	22,550	5,700	22,000
100	30,250	7,600	29,700

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10			6,750
12			8,100
16	10,800	5,400	10,800
20			13,500
25	16,200	7,600	17,550
32	21,600	9,000	22,950
50	35,100	15,200	36,450
75	55,350	22,800	54,000
100	74,250	30,400	72,900

Unit Load Table

Speed n [min ⁻¹]	AT 10 L		Speed n [min ⁻¹]	AT 10 L	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	73.5	0.117	2,000	40.3	0.064
20	72.4	0.115	2,200	39.0	0.062
40	71.4	0.114	2,400	37.8	0.060
60	70.5	0.112	2,600	36.6	0.058
80	69.6	0.111	2,800	35.5	0.057
100	68.7	0.109	3,000	34.5	0.055
200	65.0	0.104	3,200	33.6	0.054
300	62.1	0.099	3,400	32.7	0.052
400	59.5	0.095	3,600	31.9	0.051
500	57.4	0.091	3,800	31.1	0.050
600	55.5	0.088	4,000	30.3	0.048
700	53.7	0.086	4,500	28.5	0.045
800	52.2	0.083	5,000	26.9	0.043
900	50.8	0.081	5,500	25.5	0.041
1,000	49.5	0.079	6,000	24.2	0.038
1,100	48.3	0.077	6,500	23.0	0.037
1,200	47.2	0.075	7,000	21.8	0.035
1,300	46.2	0.074	7,500	20.8	0.033
1,400	45.2	0.072	8,000	19.7	0.032
1,500	44.3	0.071	8,500	18.4	0.030
1,600	43.4	0.070	9,000	17.5	0.029
1,700	42.6	0.068	9,500	17.2	0.027
1,800	41.8	0.067	10,000	16.2	0.026
1,900	41.0	0.065			

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

AT 20 Steel Cords

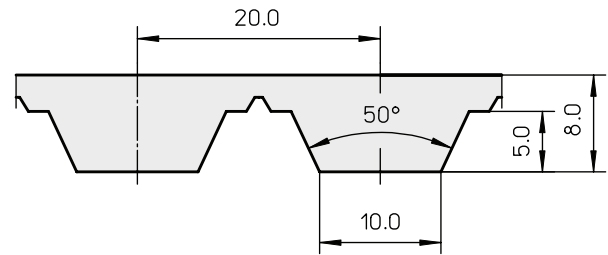
SECA® M

SECA® V

SECAflex®

Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 1.21 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m



Weight per meter: Approx. 100 g/10 mm belt width
 Minimum number of teeth on pulley: 18
 Pulley diameter: 111.75 mm
 Tension idler outside diameter: 180 mm

AT 20

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
16			4,400
25	6,600	3,300	7,150
32	8,800	4,400	9,350
50	13,200	6,600	14,850
75	19,800	9,900	22,000
100	26,400	13,200	29,700
150	46,200	23,100	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
16			10,800
25	16,200	8,100	17,550
32	21,600	10,800	22,950
50	32,400	16,200	36,450
75	48,600	24,300	54,000
100	64,800	32,400	72,900
150	113,400	56,700	

Unit Load Table

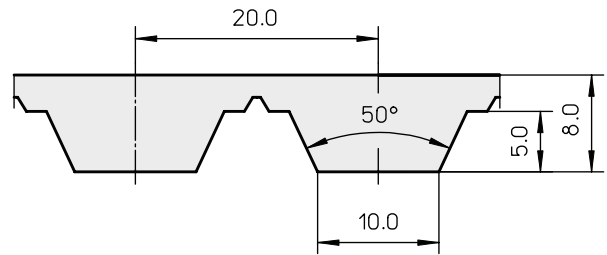
Speed n [min ⁻¹]	AT 20		Speed n [min ⁻¹]	AT 20	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	147	0.468	2,000	66.7	0.212
20	144.2	0.459	2,200	63.6	0.202
40	141.7	0.451	2,400	60.7	0.193
60	139.3	0.443	2,600	58.0	0.184
80	137.0	0.436	2,800	55.5	0.176
100	134.9	0.429	3,000	53.1	0.169
200	125.8	0.400	3,200	50.9	0.162
300	118.5	0.377	3,400	48.8	0.155
400	112.4	0.358	3,600	46.8	0.149
500	107.2	0.341	3,800	45.0	0.143
600	102.6	0.327	4,000	43.2	0.137
700	98.5	0.314	4,500	39.0	0.124
800	94.8	0.302	5,000	35.3	0.112
900	91.5	0.291	5,500	32.0	0.101
1,000	88.4	0.281	6,000	28.9	0.091
1,100	85.6	0.272	6,500	26.0	0.082
1,200	82.9	0.264			
1,300	80.5	0.256			
1,400	78.2	0.249			
1,500	76.0	0.242			
1,600	73.9	0.235			
1,700	72.0	0.229			
1,800	70.1	0.223			
1,900	68.4	0.218			

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

AT 20 L Steel Cords

SECA® M
SECAflex®



Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 1.7 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 110 g/10 mm belt width
Minimum number of teeth on pulley: 22
Pulley diameter: 140.05 mm
Tension idler outside diameter: 220 mm

AT 20 L

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	8,000		8,000
32	10,000		10,000
50	17,000		16,000
75	26,000		24,000
100	35,000		33,000
150	53,000		

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	23,200		23,200
32	29,000		29,000
50	49,300		46,400
75	75,400		69,600
100	101,500		95,700
150	153,700		

Unit Load Table

Speed n [min ⁻¹]	AT 20 L		Speed n [min ⁻¹]	AT 20 L	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	147	0.468	2,000	66.7	0.212
20	144.2	0.459	2,200	63.6	0.202
40	141.7	0.451	2,400	60.7	0.193
60	139.3	0.443	2,600	58.0	0.184
80	137.0	0.436	2,800	55.5	0.176
100	134.9	0.429	3,000	53.1	0.169
200	125.8	0.400	3,200	50.9	0.162
300	118.5	0.377	3,400	48.8	0.155
400	112.4	0.358	3,600	46.8	0.149
500	107.2	0.341	3,800	45.0	0.143
600	102.6	0.327	4,000	43.2	0.137
700	98.5	0.314	4,500	39.0	0.124
800	94.8	0.302	5,000	35.3	0.112
900	91.5	0.291	5,500	32.0	0.101
1,000	88.4	0.281	6,000	28.9	0.091
1,100	85.6	0.272	6,500	26.0	0.082
1,200	82.9	0.264			
1,300	80.5	0.256			
1,400	78.2	0.249			
1,500	76.0	0.242			
1,600	73.9	0.235			
1,700	72.0	0.229			
1,800	70.1	0.223			
1,900	68.4	0.218			

For examples of how to order, see page 31 B.

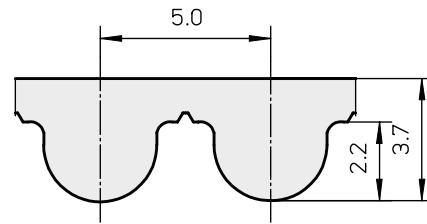
SECA® and SECAflex® Timing Belts

HTD 5 M Steel Cords

SECA® M

SECA® V

SECAflex®



Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 0.51 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 48 g/10 mm belt width
 Minimum number of teeth on pulley: 15
 Pulley diameter: 22.73 mm
 Tension idler outside diameter: 60 mm

5 M

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	640	320	720
12			880
15	1,120	560	1,120
20			1,500
25	1,840	920	1,920
32			2,480
50	3,680	1,340	3,920
75			5,840
100			7,840

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	2,160	1,080	2,430
12			2,970
15	3,780	1,890	3,780
20			5,130
25	6,210	3,100	6,480
32			8,370
50	12,420	6,210	13,230
75			19,710
100			26,460

Unit Load Table

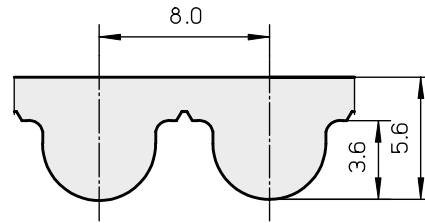
Speed n [min ⁻¹]	HTD 5 M		Speed n [min ⁻¹]	HTD 5 M	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	35.3	0.0281	2,000	21.9	0.0174
20	34.9	0.0278	2,200	21.3	0.0169
40	34.5	0.0275	2,400	20.8	0.0165
60	34.1	0.0272	2,600	20.3	0.0161
80	33.8	0.0269	2,800	19.8	0.0157
100	33.5	0.0266	3,000	19.4	0.0154
200	32.0	0.0255	3,200	19.1	0.0151
300	30.9	0.0246	3,400	18.6	0.0148
400	29.8	0.0237	3,600	18.3	0.0145
500	29.0	0.0230	3,800	17.9	0.0142
600	28.2	0.0224	4,000	17.6	0.0140
700	27.5	0.0219	4,500	16.8	0.0134
800	26.8	0.0214	5,000	16.2	0.0128
900	26.3	0.0209	5,500	15.5	0.0123
1,000	25.7	0.0205	6,000	15.1	0.0119
1,100	25.2	0.0201	6,500	14.5	0.0115
1,200	24.8	0.0197	7,000	13.9	0.0111
1,300	24.3	0.0194	7,500	13.5	0.0107
1,400	23.9	0.0190	8,000	13.1	0.0104
1,500	23.5	0.0187	8,500	12.7	0.0101
1,600	23.2	0.0184	9,000	12.3	0.0098
1,700	22.8	0.0182	9,500	11.9	0.0095
1,800	22.5	0.0178	10,000	11.6	0.0092
1,900	22.2	0.0176			

For examples of how to order, see page 31 B.

SECA[®] and SECAflex[®] Timing Belts

HTD 8 M Steel Cords

SECA[®] M
SECA[®] V
SECAflex[®]



Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 0.9 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 69 g/10 mm belt width
Minimum number of teeth on pulley: 18
Pulley diameter: 44.47 mm
Tension idler outside diameter: 120 mm

8 M

Maximum Tensile Strength (N)

Belt width in mm	SECA [®] M	SECA [®] V	SECAflex [®]
10	1,200	600	
15	1,920	960	
20	2,880	1,440	3,120
25	3,840	1,920	3,840
30	4,800	2,400	4,800
50	7,680	3,840	7,920
85	14,640	7,320	13,440
100			15,360

Maximum Load (N)

Belt width in mm	SECA [®] M	SECA [®] V	SECAflex [®]
10	4,750	2,370	
15	7,600	3,800	
20	11,400	5,700	12,350
25	15,200	7,600	15,200
30	19,000	9,500	19,000
50	30,400	15,200	31,350
85	57,950	28,975	53,200
100			60,800

Unit Load Table

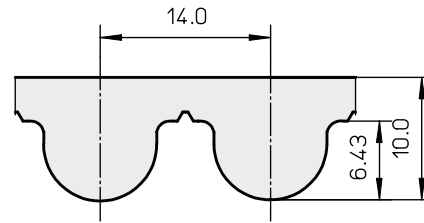
Speed n [min ⁻¹]	HTD 8 M		Speed n [min ⁻¹]	HTD 8 M	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	52.8	0.067	2,000	23.6	0.030
20	51.0	0.065	2,200	22.7	0.029
40	49.6	0.063	2,400	21.9	0.028
60	48.3	0.061	2,600	21.2	0.027
80	47.2	0.060	2,800	20.5	0.026
100	46.1	0.059	3,000	19.8	0.025
200	42.2	0.054	3,200	19.2	0.024
300	39.5	0.050	3,400	18.7	0.024
400	37.3	0.047	3,600	18.1	0.023
500	35.6	0.045	3,800	17.6	0.022
600	34.1	0.043	4,000	17.2	0.022
700	32.8	0.042	4,500	16.0	0.020
800	31.7	0.040	5,000	15.0	0.019
900	30.7	0.039	5,500	14.1	0.018
1,000	29.7	0.038	6,000	13.3	0.017
1,100	28.9	0.037	6,500	12.6	0.016
1,200	28.2	0.038			
1,300	27.5	0.035			
1,400	26.8	0.034			
1,500	26.2	0.033			
1,600	25.6	0.032			
1,700	25.1	0.032			
1,800	24.5	0.031			
1,900	24.0	0.031			

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

HTD 14 M Steel Cords

SECA® M
SECA® V
SECAflex®



Product Details

Shore hardness: 92° A
Tensile members: Steel cords, 1.21 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 110 g/10 mm belt width
Minimum number of teeth on pulley: 25
Pulley diameter: 108.7 mm
Tension idler outside diameter: 180 mm

14 M

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	6,600	3,300	7,150
40	11,000	5,500	11,550
55	15,950	7,970	15,950
85	25,300	12,650	24,750
115	35,200	17,600	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	16,200	8,100	17,550
40	27,000	13,500	28,350
55	39,150	19,570	39,150
85	62,100	31,050	60,750
115	86,400	43,200	

Unit Load Table

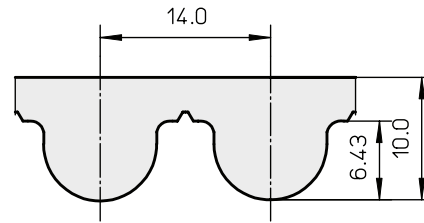
Speed n [min ⁻¹]	HTD 14 M		Speed n [min ⁻¹]	HTD 14 M	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	124.8	0.277	2,000	55.7	0.124
20	120.7	0.268	2,200	53.6	0.119
40	117.2	0.260	2,400	51.8	0.115
60	114.1	0.253	2,600	50.1	0.111
80	111.6	0.248	2,800	48.5	0.108
100	109.1	0.242	3,000	46.9	0.104
200	99.9	0.222	3,200	45.5	0.101
300	93.4	0.207	3,400	44.2	0.098
400	88.3	0.196	3,600	42.9	0.095
500	84.1	0.187	3,800	41.6	0.092
600	80.7	0.179	4,000	40.6	0.090
700	77.6	0.172	4,500	37.9	0.084
800	74.9	0.166	5,000	35.5	0.079
900	72.6	0.161	5,500	33.5	0.074
1,000	70.4	0.156	6,000	31.5	0.070
1,100	68.4	0.152	6,500	29.8	0.066
1,200	66.7	0.148			
1,300	64.9	0.144			
1,400	63.3	0.141			
1,500	61.9	0.137			
1,600	60.5	0.134			
1,700	59.3	0.132			
1,800	58.1	0.129			
1,900	56.8	0.128			

For examples of how to order, see page 31 B.

SECA® Timing Belts

HTD 14 M L Steel Cords

SECA® M



Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 1.7 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 120 g/10 mm belt width
 Minimum number of teeth on pulley: 34
 Pulley diameter: 148 mm
 Tension idler outside diameter: 220 mm

14 M L

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
55	19,000		
85	29,000		
115	40,000		
150	53,000		

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
55	55,100		
85	84,100		
115	116,000		
150	153,700		

Unit Load Table

Speed n [min ⁻¹]	HTD 14 M L		Speed n [min ⁻¹]	HTD 14 M L	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	147	0.468	2,000	66.7	0.212
20	144.2	0.459	2,200	63.6	0.202
40	141.7	0.451	2,400	60.7	0.193
60	139.3	0.443	2,600	58.0	0.184
80	137.0	0.436	2,800	55.5	0.176
100	134.9	0.429	3,000	53.1	0.169
200	125.8	0.400	3,200	50.9	0.162
300	118.5	0.377	3,400	48.8	0.155
400	112.4	0.358	3,600	46.8	0.149
500	107.2	0.341	3,800	45.0	0.143
600	102.6	0.327	4,000	43.2	0.137
700	98.5	0.314	4,500	39.0	0.124
800	94.8	0.302	5,000	35.3	0.112
900	91.5	0.291	5,500	32.0	0.101
1,000	88.4	0.281	6,000	28.9	0.091
1,100	85.6	0.272	6,500	26.0	0.082
1,200	82.9	0.264			
1,300	80.5	0.256			
1,400	78.2	0.249			
1,500	76.0	0.242			
1,600	73.9	0.235			
1,700	72.0	0.229			
1,800	70.1	0.223			
1,900	68.4	0.218			

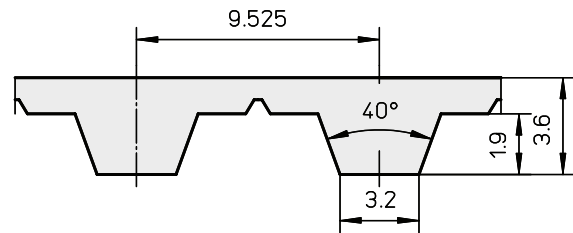
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 3/8" (L) Steel Cords

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 0.6 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 39 g/10 mm belt width
 Minimum number of teeth on pulley: 12
 Pulley diameter: 35.66 mm
 Tension idler outside diameter: 60 mm



Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
19.1	1,600	800	
25.4	2,200	1,100	
38.1	3,200	1,600	
50.8	4,400	2,200	
76.2	6,600	3,300	
101.6	8,800	4,400	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
19.1	6,320	3,160	
25.4	8,690	4,345	
38.1	12,640	6,320	
50.8	17,380	8,690	
76.2	26,040	13,020	
101.6	34,760	17,380	

Unit Load Table

Speed n [min ⁻¹]	T 3/8" (L)		Speed n [min ⁻¹]	T 3/8" (L)	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

For examples of how to order, see page 31 B.

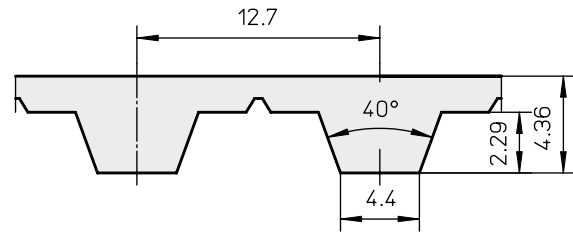
SECA® and SECAflex® Timing Belts

T 1/2" (H) Steel Cords

SECA® M

SECA® V

SECAflex®



Product Details

Shore hardness: 92° A

Tensile members: Steel cords, 0.6 mm diameter

Width tolerance: ± 0.5 mm

Height tolerance: ± 0.2/ -0.25 mm

Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 45 g/10 mm belt width

Minimum number of teeth on pulley: 14

Pulley diameter: 55.25 mm

Tension idler outside diameter: 80 mm

H

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12.7	1,000	500	1,000
19.1	1,600	800	1,500
25.4	2,200	1,100	2,000
38.1	3,200	1,600	3,000
50.8	4,400	2,200	4,000
76.2	6,600	3,300	6,000
101.6	8,800	4,400	8,100

Unit Load Table

Speed n [min ⁻¹]	T 1/2" (H)		Speed n [min ⁻¹]	T 1/2" (H)	
	F _i [$\frac{N}{cm}$]	M _i [$\frac{Nm}{cm}$]		F _i [$\frac{N}{cm}$]	M _i [$\frac{Nm}{cm}$]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12.7	3,950	1,970	3,950
19.1	6,320	3,160	5,930
25.4	8,690	4,345	7,900
38.1	12,640	6,320	11,850
50.8	17,380	8,690	15,800
76.2	26,040	13,020	23,700
101.6	34,760	17,380	32,000

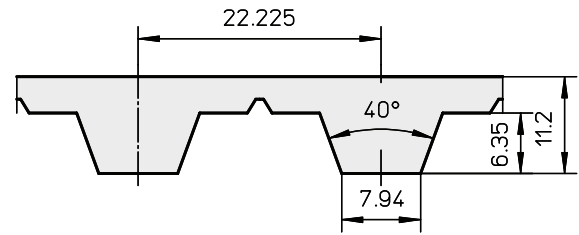
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 7/8" (XH) Steel Cords

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Steel cords, 0.9 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 100 g/10 mm belt width
 Minimum number of teeth on pulley: 18
 Pulley diameter: 124.53 mm
 Tension idler outside diameter: 150 mm

XH

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25.4	3,360	1,680	
50.8	6,720	3,360	
75.2	10,080	5,040	
101.6	13,440	6,720	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25.4	13,300	6,650	
50.8	26,600	13,300	
75.2	39,900	19,950	
101.6	53,200	26,600	

Unit Load Table

Speed n [min ⁻¹]	T 7/8" (XH)		Speed n [min ⁻¹]	T 7/8" (XH)	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	101.5	0.323	2,000	45.3	0.144
20	98.1	0.312	2,200	43.6	0.138
40	95.3	0.303	2,400	42.1	0.134
60	92.8	0.295	2,600	40.7	0.129
80	90.7	0.289	2,800	39.4	0.125
100	88.7	0.282	3,000	38.1	0.121
200	81.2	0.259	3,200	37.0	0.117
300	75.9	0.242	3,400	35.9	0.114
400	71.8	0.229	3,600	34.9	0.110
500	68.4	0.218	3,800	33.8	0.107
600	65.6	0.209	4,000	33.0	0.104
700	63.1	0.201	4,500	30.8	0.098
800	60.9	0.194	5,000	28.9	0.092
900	59.0	0.187	5,500	27.2	0.086
1,000	57.2	0.182	6,000	25.6	0.081
1,100	55.6	0.177	6,500	24.2	0.076
1,200	54.2	0.172			
1,300	52.8	0.168			
1,400	51.5	0.164			
1,500	50.3	0.160			
1,600	49.2	0.156			
1,700	48.2	0.153			
1,800	47.2	0.150			
1,900	46.2	0.147			

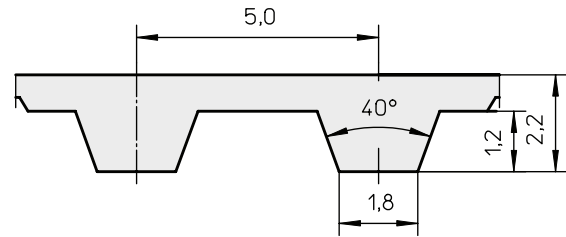
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 5 Aramid

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Aramid 0.3 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.15 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 20 g/10 mm belt width
 Minimum number of teeth on pulley: 10
 Pulley diameter: 15.05 mm
 Tension idler outside diameter: 25 mm

T 5

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
6	230	110	
8	320	160	
10	430	210	
12	480	240	
16	610	300	
20	800	400	
25	980	490	
32	1,200	600	
50	1,800	900	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
6	1,140	570	
8	1,520	760	
10	1,900	950	
12	2,280	1,140	
16	3,040	1,520	
20	3,800	1,900	
25	4,750	2,370	
32	6,080	3,040	
50	9,500	4,750	

Unit Load Table

Speed n [min ⁻¹]	T 5		Speed n [min ⁻¹]	T 5	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	24.0	0.0191	2,000	13.6	0.0108
20	23.4	0.0186	2,200	13.4	0.0106
40	22.9	0.0181	2,400	13.1	0.0104
60	22.4	0.0178	2,600	12.8	0.0102
80	22.1	0.0175	2,800	12.5	0.0101
100	21.7	0.0172	3,000	12.3	0.0098
200	20.3	0.0161	3,200	12.1	0.0096
300	19.3	0.0153	3,400	11.9	0.0095
400	18.5	0.0147	3,600	11.7	0.0093
500	17.9	0.0142	3,800	11.5	0.0092
600	17.4	0.0138	4,000	11.4	0.0091
700	16.9	0.0134	4,500	11.1	0.0087
800	16.5	0.0131	5,000	10.6	0.0085
900	16.2	0.0128	5,500	10.3	0.0082
1,000	15.8	0.0126	6,000	10.1	0.0081
1,100	15.5	0.0124	6,500	9.8	0.0078
1,200	15.3	0.0121	7,000	9.5	0.0076
1,300	15.1	0.0119	7,500	9.3	0.0074
1,400	14.8	0.0118	8,000	9.1	0.0072
1,500	14.6	0.0116	8,500	8.9	0.0071
1,600	14.4	0.0114	9,000	8.7	0.0069
1,700	14.2	0.0113	9,500	8.5	0.0067
1,800	14.1	0.0112	10,000	8.3	0.0066
1,900	13.8	0.0111			

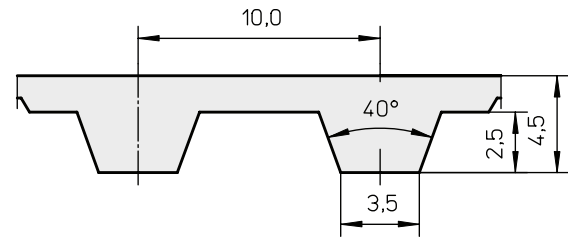
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 10 Aramid

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Aramid 0.6 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 40 g/10 mm belt width
 Minimum number of teeth on pulley: 12
 Pulley diameter: 36.35 mm
 Tension idler outside diameter: 50 mm

T 10

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	700	350	
12	850	420	
16	1,000	500	
20	1,300	650	
25	1,750	870	
32	2,350	1,170	
40	2,970	1,480	
50	3,970	1,980	
75	4,900	2,450	
100	6,700	3,350	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
10	2,590	1,290	
12	3,600	1,800	
16	4,800	2,400	
20	5,800	2,900	
25	7,500	3,750	
32	9,600	4,800	
40	12,000	6,000	
50	15,200	7,600	
75	22,400	11,200	
100	31,500	15,750	

Unit Load Table

Speed n [min ⁻¹]	T 10		Speed n [min ⁻¹]	T 10	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

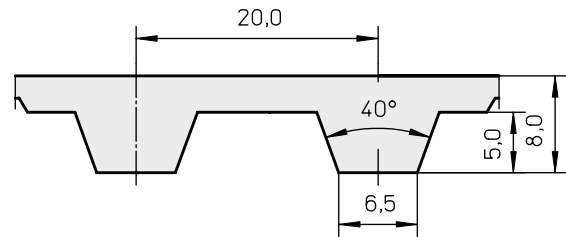
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 20 Aramid

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Aramid 1.2 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 64 g/10 mm belt width
 Minimum number of teeth on pulley: 15
 Pulley diameter: 92.65 mm
 Tension idler outside diameter: 120 mm

T 20

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	2,900	1,450	
32	3,750	1,870	
50	5,700	2,850	
75	8,400	4,200	
100	11,000	5,500	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
25	12,250	6,120	
32	15,680	7,840	
50	24,000	12,000	
75	31,000	15,500	
100	43,000	21,500	

Unit Load Table

Speed n [min ⁻¹]	T 20		Speed n [min ⁻¹]	T 20	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	101.5	0.323	2,000	45.3	0.144
20	98.1	0.312	2,200	43.6	0.138
40	95.3	0.303	2,400	42.1	0.134
60	92.8	0.295	2,600	40.7	0.129
80	90.7	0.289	2,800	39.4	0.125
100	88.7	0.282	3,000	38.1	0.121
200	81.2	0.259	3,200	37.0	0.117
300	75.9	0.242	3,400	35.9	0.114
400	71.8	0.229	3,600	34.9	0.110
500	68.4	0.218	3,800	33.8	0.107
600	65.6	0.209	4,000	33.0	0.104
700	63.1	0.201	4,500	30.8	0.098
800	60.9	0.194	5,000	28.9	0.092
900	59.0	0.187	5,500	27.2	0.086
1,000	57.2	0.182	6,000	25.6	0.081
1,100	55.6	0.177	6,500	24.2	0.076
1,200	54.2	0.172			
1,300	52.8	0.168			
1,400	51.5	0.164			
1,500	50.3	0.160			
1,600	49.2	0.156			
1,700	48.2	0.153			
1,800	47.2	0.150			
1,900	46.2	0.147			

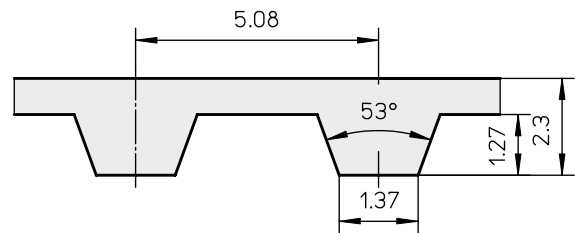
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 1/5" (XL) Aramid

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Aramid 0.3 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.15 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 18 g/10 mm belt width
 Minimum number of teeth on pulley: 10
 Pulley diameter: 15.68 mm
 Tension idler outside diameter: 25 mm

XL

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
6.4	250	120	
7.9	320	160	
9.5	410	200	
12.7	500	250	
19.1	780	390	
25.4	1,000	500	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
6.4	1,250	620	
7.9	1,590	790	
9.5	1,900	950	
12.7	2,500	1,250	
19.1	3,700	1,850	
25.4	5,000	2,500	

Unit Load Table

Speed n [min ⁻¹]	T 1/5" (XL)		Speed n [min ⁻¹]	T 1/5" (XL)	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	24.0	0.0191	2,000	13.6	0.0108
20	23.4	0.0186	2,200	13.4	0.0106
40	22.9	0.0181	2,400	13.1	0.0104
60	22.4	0.0178	2,600	12.8	0.0102
80	22.1	0.0175	2,800	12.5	0.0101
100	21.7	0.0172	3,000	12.3	0.0098
200	20.3	0.0161	3,200	12.1	0.0096
300	19.3	0.0153	3,400	11.9	0.0095
400	18.5	0.0147	3,600	11.7	0.0093
500	17.9	0.0142	3,800	11.5	0.0092
600	17.4	0.0138	4,000	11.4	0.0091
700	16.9	0.0134	4,500	11.1	0.0087
800	16.5	0.0131	5,000	10.6	0.0085
900	16.2	0.0128	5,500	10.3	0.0082
1,000	15.8	0.0126	6,000	10.1	0.0081
1,100	15.5	0.0124	6,500	9.8	0.0078
1,200	15.3	0.0121	7,000	9.5	0.0076
1,300	15.1	0.0119	7,500	9.3	0.0074
1,400	14.8	0.0118	8,000	9.1	0.0072
1,500	14.6	0.0116	8,500	8.9	0.0071
1,600	14.4	0.0114	9,000	8.7	0.0069
1,700	14.2	0.0113	9,500	8.5	0.0067
1,800	14.1	0.0112	10,000	8.3	0.0066
1,900	13.8	0.0111			

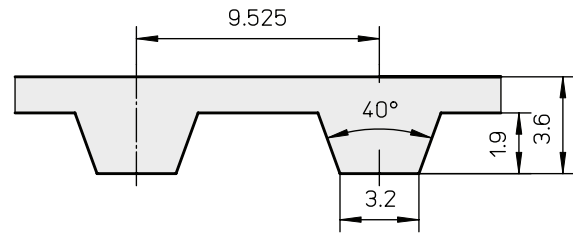
For examples of how to order, see page 31 B.

SECA® Timing Belts

T 3/8" (L) Aramid

SECA® M

SECA® V



Product Details

Shore hardness: 92° A
 Tensile members: Aramid 0.6 mm diameter
 Width tolerance: ± 0.5 mm
 Height tolerance: ± 0.2 mm
 Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 32 g/10 mm belt width
 Minimum number of teeth on pulley: 14
 Pulley diameter: 55.25 mm
 Tension idler outside diameter: 65 mm

L

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
9.5	620	310	
12.7	830	410	
19.1	1,250	620	
25.4	1,660	830	
38.1	2,480	1,240	
50.8	3,320	1,660	
76.2	4,960	2,480	
101.6	6,640	3,320	

Unit Load Table

Speed n [min ⁻¹]	T 3/8" (L)		Speed n [min ⁻¹]	T 3/8" (L)	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

Maximum Load (N)

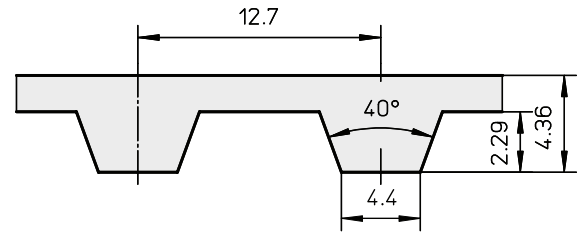
Belt width in mm	SECA® M	SECA® V	SECAflex®
9.5	2,660	1,330	
12.7	3,550	1,770	
19.1	5,340	2,670	
25.4	7,100	3,550	
38.1	10,650	5,320	
50.8	14,220	7,110	
76.2	21,300	10,650	
101.6	28,440	14,220	

For examples of how to order, see page 31 B.

SECA® Timing Belts

T 1/2" (H) Aramid

SECA® M
SECA® V



Product Details

Shore hardness: 92° A
Tensile members: Aramid 0.6 mm diameter
Width tolerance: ± 0.5 mm
Height tolerance: ± 0.2/-0.25 mm
Length tolerance: ± 0.5 mm/m

Weight per meter: Approx. 35 g/10 mm belt width
Minimum number of teeth on pulley: 14
Pulley diameter: 55.25 mm
Tension idler outside diameter: 65 mm

H

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12.7	830	410	
19.1	1,250	620	
25.4	1,660	830	
38.1	2,480	1,240	
58.8	3,320	1,660	
76.2	4,900	2,450	
101.6	6,300	3,150	

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
12.7	3,550	1,770	
19.1	5,340	2,670	
25.4	7,100	3,550	
38.1	10,650	5,320	
58.8	14,220	7,110	
76.2	22,780	11,390	
101.6	30,350	15,170	

Unit Load Table

Speed n [min ⁻¹]	T 1/2" (H)		Speed n [min ⁻¹]	T 1/2" (H)	
	Fi [N/cm]	Mi [Nm/cm]		Fi [N/cm]	Mi [Nm/cm]
0	50.5	0.080	2,000	25.4	0.040
20	49.0	0.078	2,200	24.6	0.039
40	47.7	0.076	2,400	23.9	0.038
60	46.6	0.074	2,600	23.3	0.037
80	45.7	0.072	2,800	22.7	0.036
100	44.8	0.071	3,000	22.2	0.035
200	41.4	0.066	3,200	21.7	0.034
300	39.1	0.062	3,400	21.2	0.033
400	37.2	0.059	3,600	20.7	0.033
500	35.7	0.056	3,800	20.3	0.032
600	34.4	0.054	4,000	19.8	0.031
700	33.3	0.053	4,500	18.9	0.030
800	32.4	0.051	5,000	18.0	0.028
900	31.5	0.050	5,500	17.2	0.027
1,000	30.7	0.048	6,000	16.5	0.026
1,100	30.0	0.047	6,500	15.9	0.025
1,200	29.3	0.046	7,000	15.3	0.024
1,300	28.7	0.045	7,500	14.7	0.023
1,400	28.2	0.044	8,000	14.2	0.022
1,500	27.6	0.043	8,500	13.7	0.021
1,600	27.1	0.043	9,000	13.2	0.021
1,700	26.7	0.042	9,500	12.8	0.020
1,800	26.2	0.041	10,000	12.4	0.019
1,900	25.8	0.041			

For examples of how to order, see page 31 B.

SECA® Flat Belts

FL 2 Steel Cords

SECA® M



Product Details

Shore hardness: 92° A

Tensile members: Steel cords, 0.9 mm diameter

Width tolerance: ± 0.5 mm

Height tolerance: ± 0.2 mm

Weight per meter: Approx. 45 g/10 mm belt width

Pulley diameter: 50 mm

Tension idler

outside diameter: 120 mm

FL 2

Maximum Tensile Strength (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
15	2,160		
25	3,840		
30	4,320		
40	6,400		
50	7,600		
75	11,520		
100	15,360		

Maximum Load (N)

Belt width in mm	SECA® M	SECA® V	SECAflex®
15	8,500		
25	15,200		
30	17,102		
40	25,600		
50	30,400		
75	45,600		
100	60,800		

For examples of how to order, see page 31 B.

SECA® and SECAflex® Timing Belts

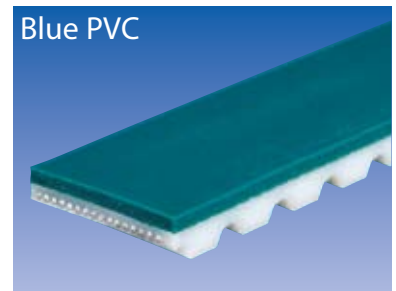
Backings



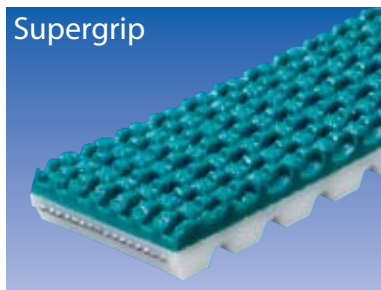
Naps
 Shore hardness: Approx. 40 A
 Thickness: Approx. 2 mm
 Material: Rubber
 Properties: High coefficient of friction



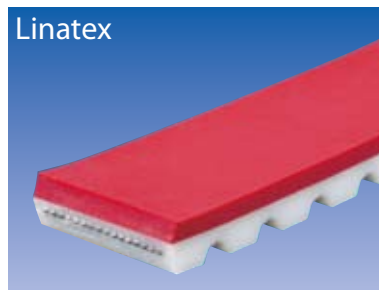
Clear Polyurethane
 Shore hardness: Approx. 80 A
 Thicknesses: 1 / 2 / 3 mm
 Material: Polyurethane
 Properties: High abrasion resistance



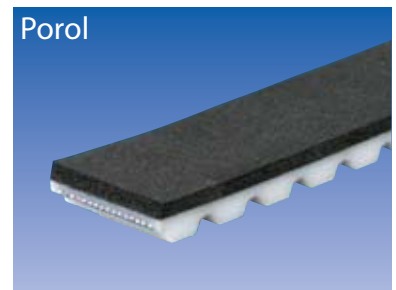
Blue PVC
 Shore hardness: Approx. 40 A
 Thicknesses: 1 / 2 / 3 mm
 Material: PVC
 Properties: Good traction



Supergrip
 Shore hardness: Approx. 30 A
 Thickness: Approx. 4 mm
 Material: PVC
 Properties: High coefficient of friction



Linatex
 Shore hardness: Approx. 40 A
 Thicknesses: 1.6 - 9.6 mm
 Material: Natural rubber
 Properties: High coefficient of friction, tough



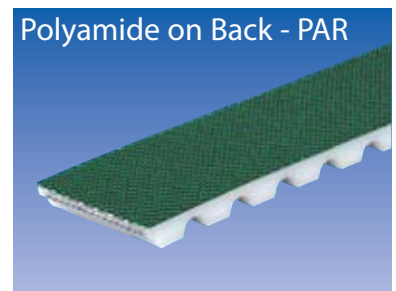
Porol
 Shore hardness: Approx. 15 A
 Thicknesses: 2 / 3 / 4 / 5 mm
 Material: Open cellular rubber
 Properties: High coefficient of friction



Perbunan
 Shore hardness: Approx. 65 A
 Thickness: 2 mm
 Material: Nitril rubber
 Properties: Resistant to oil and grease



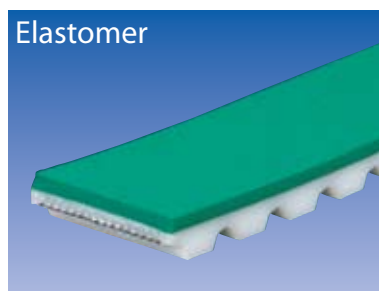
White PVC - FDA
 Shore hardness: Approx. 65 A
 Thicknesses: 1 / 2 mm
 Material: PVC
 Properties: Resistant to oil and grease, FDA quality



Polyamide on Back - PAR
 Shore hardness: Approx. 0.3 mm
 Thickness: Approx. 0.3 mm
 Material: Polyamide
 Properties: Low-noise, low coefficient of friction



Polyurethane 06 yellow
 Shore hardness: Approx. 55 A
 Thicknesses: Approx. 2 / 4 / 8 mm
 Material: Polyurethane
 Properties: High coefficient of friction, highly adhesive, tough



Elastomer
 Shore hardness: Approx. 65 A
 Thicknesses: 1 / 2 mm
 Material: Rubber
 Properties: Good traction, abrasion resistant

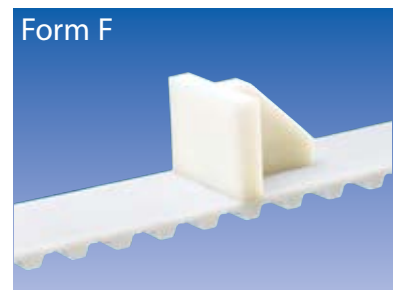
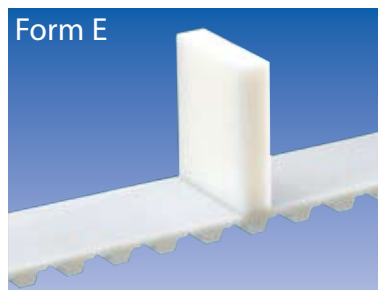
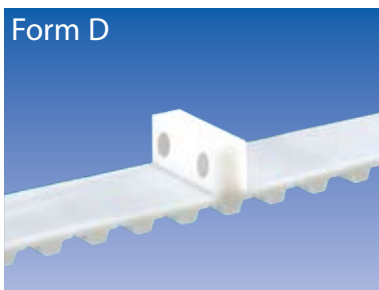
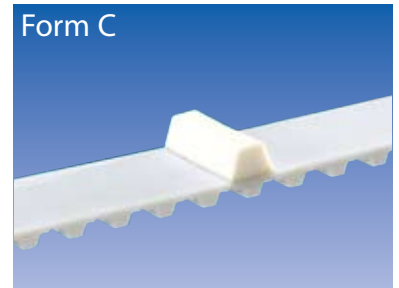
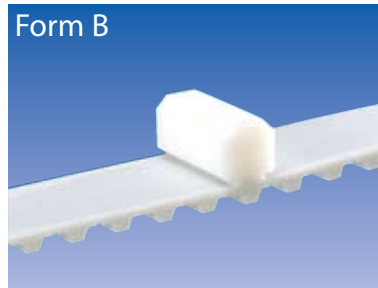
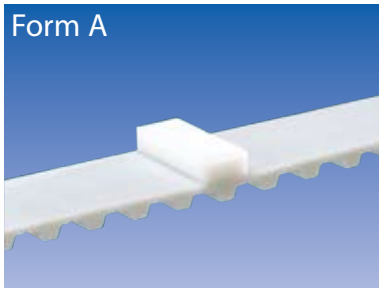


Fishbone - FDA
 Shore hardness: Approx. 70 A
 Thickness: 3 mm
 Material: PVC
 Properties: FDA quality

SECA® and SECAflex® Timing Belts

Welded Cleats

The pictures below show sample cleat shapes. If desired, NSW can also supply special cleats manufactured to the customer's drawings.



Cleat material:

Polyurethane

Cleat mounting:

Thermal welding without a bead at the base of the cleat

Welding position:

Best opposite a tooth to ensure greater flexibility

Welding tolerance:

± 0.5 mm from target position for each cleat

Cleat tolerance (height, width, thickness):

± 0.2 mm

Ordering:

- With drawing
- With precise specification of the number, height, width, and thickness of the cleats

Determining Cleat Thickness (in mm)

Number of teeth \ Pitch	T 5	T 10	T 20	AT 5	AT 10	AT 20	XL	L	H	XH	8 M	14 M
10	3.5						3.5	4				
12	4	6		4			4	5				
14	4	7		4			4	5	7			
16	4	7	10	4	7	10	4	5	7			
18	5	8	11	5	8	11	5	6	8	12	7	
20	5	8	12	5	8	12	5	6	8	13	8	
25	6	9	13	6	9	13	6	7	9	14	8	13
30	6	10	15	6	10	15	6	8	10	15	9	14
40	8	12	18	8	12	18	8	10	12	18	10	15
50	9	14	20	9	14	20	9	12	14	20	12	16
60	10	15	23	10	15	23	10	13	15	23	14	18

The values given in the table are the maximum cleat thickness in mm if the cleat is welded opposite a tooth. If the cleats are welded opposite a space, the number of teeth on the pulley increases.

SECA® and SECAflex® Timing Belts

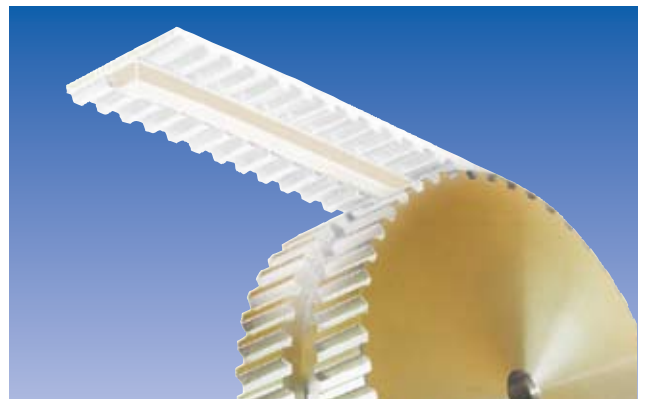
Special Designs

SECA® Self-Tracking Timing Belts

These special timing belts ensure continuous tracking. The centered V-guide prevents lateral movement.

Ordering keyword: Tracking timing belt

All sizes are available as tracking timing belts.



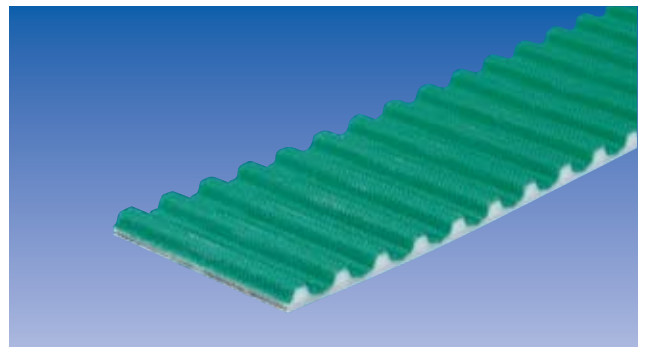
SECA® Timing Belts with Polyamide Fabric (PAZ)

The advantages of having PAZ on the tooth side include:

- Low coefficient of friction – enables gliding
- Low noise
- Wear resistant

Ordering keyword: PAZ

Sizes available on request.

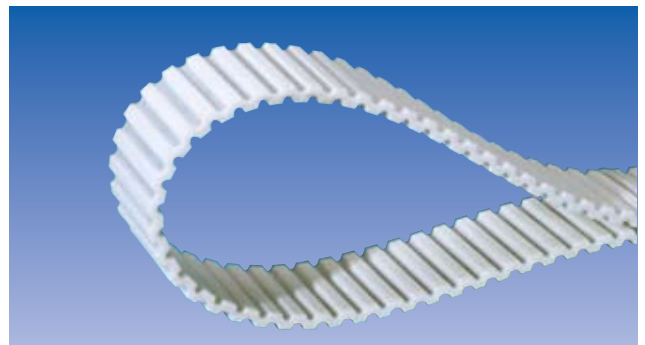


SECAflex® Double-Sided Timing Belt

Used primarily for power transmission applications.

Ordering keyword: Double-sided timing belt

Sizes available on request.

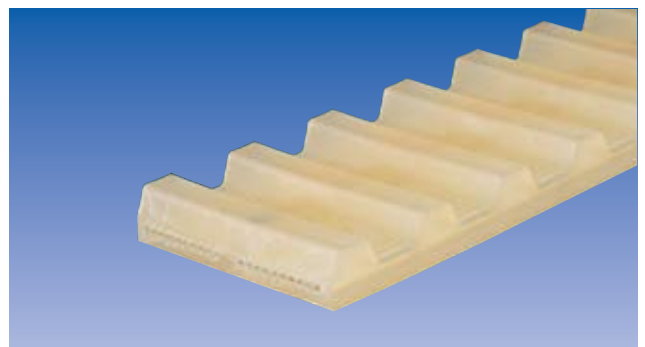


SECA® FDA Timing Belts

These timing belts, manufactured from FDA-approved polyurethane, are used in food-industry applications.

Ordering keyword: FDA

Sizes available on request.



SECA® Timing Belts

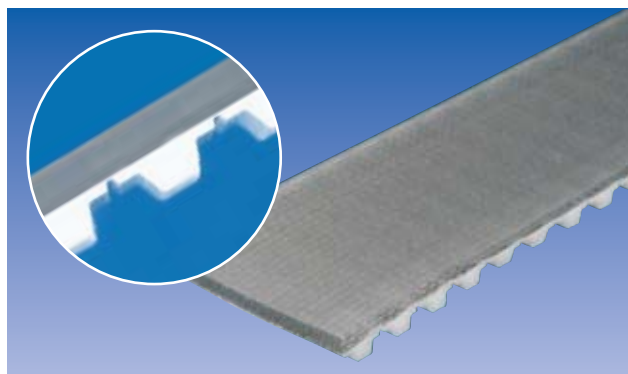
Special Designs

SECA® Dual Duro Timing Belts

Manufactured from two polyurethane materials having different Shore hardness values. The back of the belts and the base belt form an integral unit. The back of the belt, with a lower Shore hardness, ensures good traction with the conveyed material.

Ordering keyword: DD

Sizes available on request.

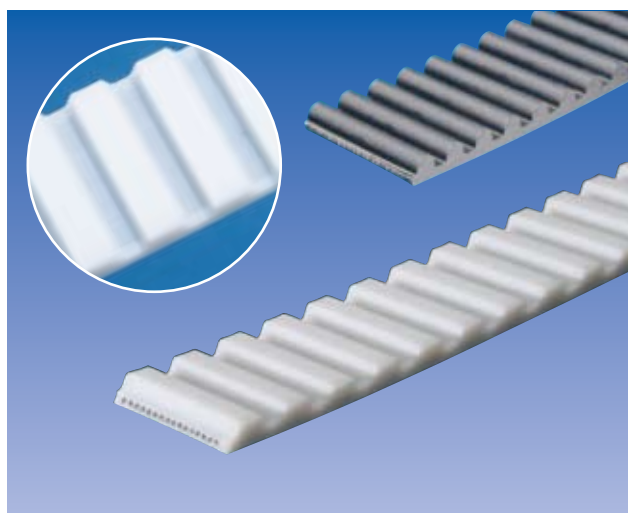


SECA® Timing Belts Without Groove

In these timing belts, the tensile members are completely enclosed in polyurethane. The groove (transverse groove in the tooth space) present in standard timing belts is eliminated. This makes these timing belts ideally suited for applications in wet areas, such as car washes.

Ordering keyword: Without groove

Sizes available on request.



Other Special Designs

- HTD 8 M + 14 M, black.
- SECAflex® timing belts with stainless-steel tensile members.
- SECAflex® timing belts with different cord designs.
- SECA® and SECAflex® timing belts made of polyurethane suitable for cold-storage areas.
- 10 TT 5 timing belts for circular knitting machines.

SECA® and SECAflex® Timing Belts

Sample Calculations

Given:	Power:	6 kW
	Speed:	400 rev/min
	Pulley:	z 30
	Timing Belt:	AT 10

What is the required belt width?

Calculation for a linear drive with SECA® endless timing belt

$$M = \frac{P}{2 \cdot \pi \cdot n}$$

$$M = \frac{6,000 \text{ Nm} \cdot 60 \text{ sec}}{\text{sec} \cdot 2 \cdot \pi \cdot 400 \text{ rev}} = 143 \text{ Nm}$$

$$F_u = \frac{2 \cdot M}{d}$$

$$F_u = \frac{2 \cdot 143 \text{ Nm}}{0,095 \text{ m}} = 3010 \text{ N}$$

$$F_u = F_i \cdot z_e \cdot b$$

Using the Unit Load Table of AT 10 for 400 U/min we find

$$F_i = 59,5 \text{ N/cm}$$

$$b = \frac{F_u}{F_i \cdot z_e}$$

$$b = \frac{3010 \text{ Ncm}}{59,5 \text{ N} \cdot 12} > b = 4,2 \text{ cm}$$

Choose the next larger belt width:

50 AT 10 M

Calculation for a circular system with a SECAflex® timing belt

Crown gear z = 30

d = 93.6 mm

Using the AT 10 torque table for 400 rpm, we find

Mi = 0.095 Nm/cm belt width.

$$M = \frac{M_i \cdot d \cdot \pi \cdot z_e \cdot b}{t}$$

$$\text{Belt width } b = \frac{t \cdot M}{M_i \cdot d \cdot \pi \cdot z_e}$$

$$b = \frac{10 \text{ mm} \cdot 143 \text{ Nm} \cdot \text{cm}}{0,095 \text{ Nm} \cdot 93,6 \text{ mm} \cdot \pi \cdot 12} = 4,26 \text{ cm}$$

Choose the next larger belt width:

50 AT 10 Sfx

For longer periods of operation and high loads, the safety factors of 1.2 to 2.5 commonly used in engineering should be employed to ensure functional reliability.

Timing Belt Design

Peripheral force calculation:	$F_u = F_i \cdot z_e \cdot b$
Torque calculation:	$M = \frac{M_i \cdot d \cdot \pi \cdot z_e \cdot b}{t}$
Pitch diameter calculation:	$d = \frac{z \cdot t}{\pi}$
Calculation of number of engaged teeth:	$z_e = \frac{z_1}{180} \cdot \arccos \frac{(z_2 - z_1) \cdot t}{2 \pi a}$
Maximum number of engaged teeth:	$z_{e \max} = 12$ (for SECA [®] M and SECAflex [®]) $z_{e \max} = 6$ (for SECA [®] V)
Power calculation:	$P = F_u \cdot v$

n = Rotational speed (rev/sec)

v = Belt speed (m/sec)

P = Power (in Watts)

z_1 = Number of teeth on small pulley

z_2 = Number of teeth on large pulley

t = Pitch (mm)

a = Centerline distance (mm)

F_u = Peripheral force of timing belt

F_i = Specific peripheral force per engaged tooth and per cm of belt width

M = Torque capacity of timing belt

M_i = Torque capacity per engaged tooth and per cm of belt width

z_e = Number of teeth engaged

$z_{e \max}$ = Maximum number of teeth engaged that can be used for timing belt calculation

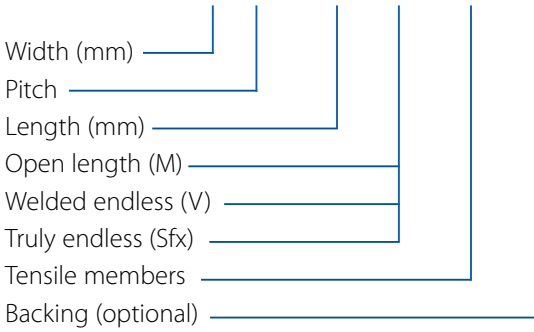
d = Pitch diameter (mm)

b = Belt width (cm)

Ordering Examples

Metric

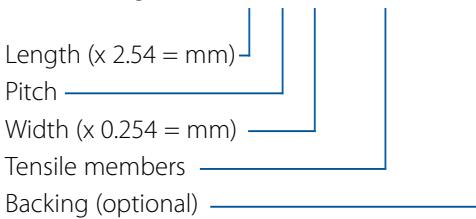
SECA[®] timing belts 25 AT 10 / 2.500 M / Steel / PAZ
SECA[®] timing belts 25 AT 10 / 2.500 V / Steel / Supergrip
SECAflex[®] 25 AT 10 / 2.500 Sfx



Standard rolls: 100 m 25 AT 10

Standard

SECA[®] timing belts 1,000 H 100 / Steel / Supergrip



Open length: 1,000 H 100 M

Standard rolls: 100 m H 100

Minimum order quantities for SECA[®] and SECAflex[®] on request.

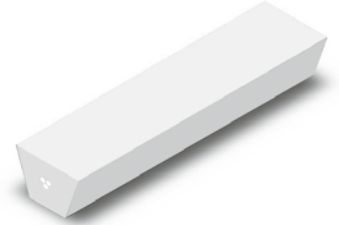
SECAflex[®] lengths: 1,500 - 24,000 mm

SECA®
SECAflex®

NSW Profile Belts



DIN 2215/ISO 4184 standard V-belt



DIN 2215/ISO 4184 standard V-belt
with reinforcing tensile member



NSW-specification round belt



NSW-specification round belt
with reinforcing tensile member



NSW-specification ridge top V-belt



NSW-specification ridge top V-belt
with reinforcing tensile member



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belts@nsw.com
www.nsw.com

Other profiles are also available.

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