

2. Synchronous Belt (Rubber/Polyurethane) Product Introduction

The synchronous belts are belts for synchronous power transmission that combine the features of gears, chains, and flat belts. They are available in abundant types and sizes and are therefore easy to design for a wide range of applications from light duty to heavy duty. They are available in synthetic rubber type and polyurethane type (Bancollan); select them based on their respective features.

(1) Synchronous Belt (rubber)

Features

■ Accurate power transmission

The belt and pulleys mesh accurately and therefore provide revolutions and the amount of movement as calculated.

■ Economical power transmission

- No metal-to-metal contact eliminates the necessity for lubrication devices.
- As high initial tension is unnecessary, the bearing and motor can be miniaturized.

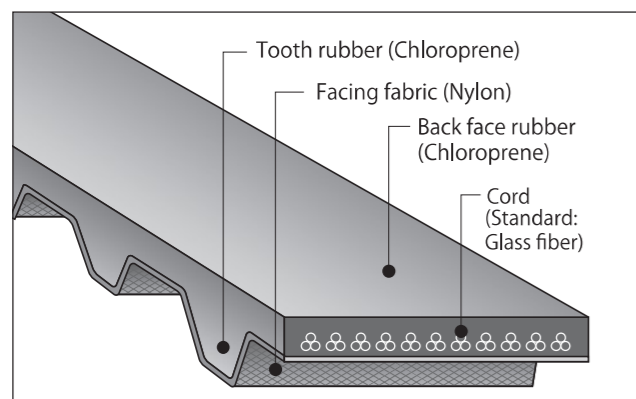
■ Wide range of operating conditions

In addition to the standard specifications, we manufacture the following special specification synchronous belts.

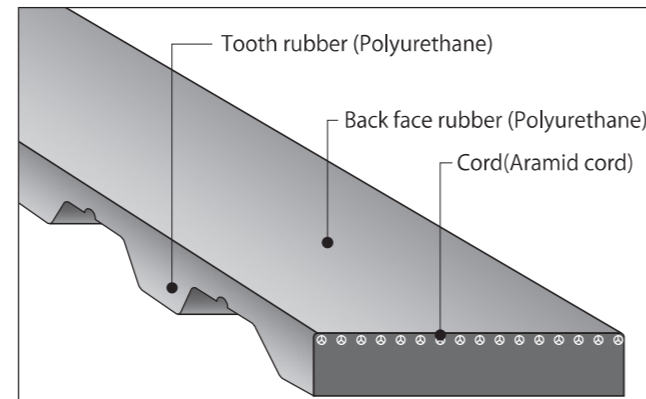
- Oil-resistant synchronous belt
(when the belt is used where it is subject to a large amount of oil)
- Heat-resistant synchronous belt
(when the belt is used at high temperatures from 90°C to 120°C)
- High-electrical-resistance synchronous belt
(when insulation of 100 MΩ or more is required)

Structure

(1) Synchronous Belt (rubber)



(2) Bancollan Synchronous Belt (polyurethane)



*Glass fiber cords are also available; please contact us.

(2) Bancollan Synchronous Belt (polyurethane)

Features

■ Resistant to oil and ozone

Non-occurrence of swelling by oil and of cracking by ozone makes the belt most suitable for the following applications.

- Applications in which the oil from gears and bearings adhere to the belt, such as metal working machines and printing machines
- Applications that involve ozone generation, such as optical machines, copiers, and developers

■ Clean power transmission and conveyance

The beautiful color and the non-dispersion of rubber pieces allow sections around the belt to be kept clean. The belt is suitable for OA equipment and food packaging machines.

Belt dimensions and indication method

(1) Synchronous Belt (rubber)

| Belt type | Dimension (mm) | Belt indication method |
|-----------|----------------|---|
| Type MXL | | B 250 MXL 6.4 Belt No. of teeth of belt (250 teeth: 508.0 mm) Belt type (Type MXL) Belt width (6.4mm) |
| Type XXL | | 60 XXL 4.8 No. of teeth of belt (60 teeth: 190.5 mm) Belt type (Type XXL) Belt width (4.8mm) |
| Type XL | | 250 XL 025 G Belt nominal length (25 inches: 635 mm) Belt type (Type XL) Belt nominal width (0.25 inches: 6.4 mm) Cord symbol |
| Type L | | 300 L 100 G Belt nominal length (30 inches: 762 mm) Belt type (Type L) Belt nominal width (1.0 inches: 25.4 mm) Cord symbol |
| Type H | | 600 H 200 G Belt nominal length (60 inches: 1524 mm) Belt type (Type H) Belt nominal width (2.0 inches: 50.8 mm) Cord symbol |
| Type XH | | 700 XH 400 G Belt nominal length (70 inches: 1778 mm) Belt type (Type XH) Belt nominal width (4.0 inches: 101.6 mm) Cord symbol |
| Type XXH | | 1200 XXH 600 G Belt nominal length (120 inches: 3048 mm) Belt type (Type XXH) Belt nominal width (6.0 inches: 152.4 mm) Cord symbol |

Bancollan Synchronous Belt (polyurethane) standard lengths

Type T2.5 Pitch: 2.5 mm

| Belt nominal length | Pitch length (mm) | No. of teeth | R | U |
|---------------------|-------------------|--------------|---|---|
| T2.5-120 | 120.0 | 48 | - | ○ |
| T2.5-145 | 145.0 | 58 | - | ○ |
| T2.5-160 | 160.0 | 64 | - | ○ |
| T2.5-177.5 | 177.5 | 71 | - | ○ |
| T2.5-182.5 | 182.5 | 73 | - | ○ |
| T2.5-200 | 200.0 | 80 | - | ○ |
| T2.5-230 | 230.0 | 92 | - | ○ |
| T2.5-245 | 245.0 | 98 | - | ○ |
| T2.5-265 | 265.0 | 106 | - | ○ |
| T2.5-285 | 285.0 | 114 | - | ○ |
| T2.5-305 | 305.0 | 122 | - | ○ |
| T2.5-317.5 | 317.5 | 127 | - | ○ |
| T2.5-330 | 330.0 | 132 | - | ○ |
| T2.5-380 | 380.0 | 152 | - | ○ |
| T2.5-420 | 420.0 | 168 | - | ○ |
| T2.5-480 | 480.0 | 192 | - | ○ |
| T2.5-492.5 | 492.5 | 197 | - | ○ |
| T2.5-500 | 500.0 | 200 | - | ○ |
| T2.5-600 | 600.0 | 240 | - | ○ |
| T2.5-620 | 620.0 | 248 | - | ○ |
| T2.5-650 | 650.0 | 260 | - | ○ |
| T2.5-780 | 780.0 | 312 | - | ○ |
| T2.5-915 | 915.0 | 366 | - | ○ |
| T2.5-950 | 950.0 | 380 | - | ○ |

Type T5 Pitch: 5.0 mm

| Belt nominal length | Pitch length (mm) | No. of teeth | R | U |
|---------------------|-------------------|--------------|---|---|
| T5-165 | 165.0 | 33 | - | ○ |
| T5-185 | 185.0 | 37 | - | ○ |
| T5-200 | 200.0 | 40 | - | ○ |
| T5-215 | 215.0 | 43 | - | ○ |
| T5-220 | 220.0 | 44 | - | ○ |
| T5-225 | 225.0 | 45 | - | ○ |
| T5-245 | 245.0 | 49 | - | ○ |
| T5-250 | 250.0 | 50 | - | ○ |
| T5-255 | 255.0 | 51 | - | ○ |
| T5-260 | 260.0 | 52 | - | ○ |
| T5-270 | 270.0 | 54 | - | ○ |
| T5-275 | 275.0 | 55 | - | ○ |
| T5-280 | 280.0 | 56 | - | ○ |
| T5-295 | 295.0 | 59 | - | ○ |
| T5-300 | 300.0 | 60 | - | ○ |
| T5-305 | 305.0 | 61 | - | ○ |
| T5-325 | 325.0 | 65 | - | ○ |
| T5-330 | 330.0 | 66 | - | ○ |
| T5-340 | 340.0 | 68 | - | ○ |
| T5-350 | 350.0 | 70 | - | ○ |
| T5-355 | 355.0 | 71 | - | ○ |
| T5-365 | 365.0 | 73 | - | ○ |
| T5-375 | 375.0 | 75 | - | ○ |
| T5-390 | 390.0 | 78 | - | ○ |
| T5-400 | 400.0 | 80 | - | ○ |
| T5-410 | 410.0 | 82 | - | ○ |
| T5-420 | 420.0 | 84 | - | ○ |
| T5-425 | 425.0 | 85 | - | ○ |
| T5-450 | 450.0 | 90 | - | ○ |
| T5-455 | 455.0 | 91 | - | ○ |
| T5-465 | 465.0 | 93 | - | ○ |
| T5-475 | 475.0 | 95 | - | ○ |
| T5-480 | 480.0 | 96 | - | ○ |
| T5-500 | 500.0 | 100 | - | ○ |
| T5-510 | 510.0 | 102 | - | ○ |
| T5-525 | 525.0 | 105 | - | ○ |
| T5-545 | 545.0 | 109 | - | ○ |
| T5-550 | 550.0 | 110 | - | ○ |
| T5-560 | 560.0 | 112 | - | ○ |
| T5-575 | 575.0 | 115 | - | ○ |
| T5-600 | 600.0 | 120 | - | ○ |
| T5-610 | 610.0 | 122 | - | ○ |
| T5-620 | 620.0 | 124 | - | ○ |
| T5-630 | 630.0 | 126 | - | ○ |
| T5-640 | 640.0 | 128 | - | ○ |
| T5-650 | 650.0 | 130 | - | ○ |
| T5-660 | 660.0 | 132 | - | ○ |
| T5-675 | 675.0 | 135 | - | ○ |
| T5-690 | 690.0 | 138 | - | ○ |
| T5-695 | 695.0 | 139 | - | ○ |
| T5-700 | 700.0 | 140 | - | ○ |
| T5-720 | 720.0 | 144 | - | ○ |
| T5-750 | 750.0 | 150 | - | ○ |
| T5-780 | 780.0 | 156 | - | ○ |
| T5-800 | 800.0 | 160 | - | ○ |
| T5-815 | 815.0 | 163 | - | ○ |
| T5-840 | 840.0 | 168 | - | ○ |
| T5-850 | 850.0 | 170 | - | ○ |
| T5-900 | 900.0 | 180 | - | ○ |
| T5-940 | 940.0 | 188 | - | ○ |
| T5-990 | 990.0 | 198 | - | ○ |
| T5-1000 | 1000.0 | 200 | - | ○ |
| T5-1075 | 1075.0 | 215 | - | ○ |
| T5-1100 | 1100.0 | 220 | - | ○ |
| T5-1140 | 1140.0 | 228 | - | ○ |
| T5-1215 | 1215.0 | 243 | - | ○ |
| T5-1380 | 1380.0 | 276 | - | ○ |
| T5-1440 | 1440.0 | 288 | - | ○ |

Type T10 Pitch: 10.0 mm

| Belt nominal length | Pitch length (mm) | No. of teeth | R | U |
|---------------------|-------------------|--------------|---|---|
| T10-260 | 260.0 | 26 | - | ○ |
| T10-370 | 370.0 | 37 | - | ○ |
| T10-400 | 400.0 | 40 | - | ○ |
| T10-410 | 410.0 | 41 | - | ○ |
| T10-440 | 440.0 | 44 | - | ○ |
| T10-450 | 450.0 | 45 | - | ○ |
| T10-500 | 500.0 | 50 | - | ○ |
| T10-530 | 530.0 | 53 | - | ○ |
| T10-560 | 560.0 | 56 | - | ○ |
| T10-610 | 610.0 | 61 | - | ○ |
| T10-630 | 630.0 | 63 | - | ○ |
| T10-660 | 660.0 | 66 | - | ○ |
| T10-690 | 690.0 | 69 | - | ○ |
| T10-700 | 700.0 | 70 | - | ○ |
| T10-720 | 720.0 | 72 | - | ○ |
| T10-750 | 750.0 | 75 | - | ○ |
| T10-780 | 780.0 | 78 | - | ○ |
| T10-810 | 810.0 | 81 | - | ○ |
| T10-840 | 840.0 | 84 | - | ○ |
| T10-880 | 880.0 | 88 | - | ○ |
| T10-890 | 890.0 | 89 | - | ○ |
| T10-900 | 900.0 | 90 | - | ○ |
| T10-920 | 920.0 | 92 | - | ○ |
| T10-960 | 960.0 | 96 | - | ○ |
| T10-970 | 970.0 | 97 | - | ○ |
| T10-980 | 980.0 | 98 | - | ○ |
| T10-1000 | 1000.0 | 100 | - | ○ |
| T10-1010 | 1010.0 | 101 | - | ○ |
| T10-1080 | 1080.0 | 108 | - | ○ |
| T10-1100 | 1100.0 | 110 | - | ○ |
| T10-1110 | 1110.0 | 111 | - | ○ |
| T10-1140 | 1140.0 | 114 | - | ○ |
| T10-1150 | 1150.0 | 115 | - | ○ |
| T10-1210 | 1210.0 | 121 | - | ○ |
| T10-1240 | 1240.0 | 124 | - | ○ |
| T10-1250 | 1250.0 | 125 | - | ○ |
| T10-1300 | 1300.0 | 130 | - | ○ |
| T10-1320 | 1320.0 | 132 | - | ○ |
| T10-1350 | 1350.0 | 135 | - | ○ |
| T10-1390 | 1390.0 | 139 | - | ○ |
| T10-1400 | 1400.0 | 140 | - | ○ |
| T10-1420 | 1420.0 | 142 | - | ○ |
| T10-1440 | 1440.0 | 144 | - | ○ |
| T10-1450 | 1450.0 | 145 | - | ○ |
| T10-1460 | 1460.0 | 146 | - | ○ |
| T10-1500 | 1500.0 | 150 | - | ○ |
| T10-1560 | 1560.0 | 156 | - | ○ |
| T10-1610 | 1610.0 | 161 | - | ○ |
| T10-1750 | 1750.0 | 175 | - | ○ |
| T10-1780 | 1780.0 | 178 | - | ○ |
| T10-1880 | 1880.0 | 188 | - | ○ |
| T10-1960 | 1960.0 | 196 | - | ○ |
| T10-2250 | 2250.0 | 225 | - | ○ |

R: Rubber
U: Polyurethane

Rubber Synchronous Belt standard widths

| Nominal width | | | 025 | 031 | 037 | 050 | 075 | 100 | 150 | 200 | 300 | 400 | 500 | 600 |
|---------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|-------|-------|-------|
| Width (mm) | 3.2 | 4.8 | 6.4 | 7.9 | 9.5 | 12.7 | 19.1 | 25.4 | 38.1 | 50.8 | 76.2 | 101.6 | 127.0 | 152.4 |
| MXL | ● | ● | ● | | ● | ● | | | | | | | | |
| XL(DXL) | | | ● | ● | ● | ● | ● | | | | | | | |
| L(DL) | | | | | | ● | ● | ● | ● | ● | | | | |
| H(DH) | | | | | | | ● | ● | ● | ● | ● | | | |
| XH | | | | | | | | | | ● | ● | ● | ● | ● |
| XXH | | | | | | | | | | ● | ● | ● | ● | ● |

Rubber Synchronous Belt length tolerances

(Unit: mm)

| MXL nominal length | Tolerance |
|-------------------------|-----------|
| Over 45 to 71 or less | ±0.15 |
| Over 71 to 180 or less | ±0.20 |
| Over 180 to 250 or less | ±0.25 |
| Over 250 to 379 or less | ±0.30 |
| Over 379 to 480 or less | ±0.35 |
| Over 480 to 550 or less | ±0.40 |
| 551 or more | ±0.45 |

Note) The effective length tolerance is the tolerance of center distance in length measurement.

(Unit: mm)

| XL/L/H/XH/XXH nominal length | Tolerance |
|------------------------------|-----------|
| Over 60 to 100 or less | ±0.20 |
| Over 100 to 150 or less | ±0.23 |
| Over 150 to 200 or less | ±0.25 |
| Over 200 to 300 or less | ±0.30 |
| Over 300 to 390 or less | ±0.33 |
| Over 390 to 480 or less | ±0.38 |
| Over 480 to 600 or less | ±0.40 |
| Over 600 to 700 or less | ±0.43 |
| Over 700 to 800 or less | ±0.45 |
| Over 800 to 900 or less | ±0.48 |
| Over 900 to 1000 or less | ±0.51 |
| Over 1000 to 1100 or less | ±0.53 |
| Over 1100 to 1200 or less | ±0.56 |
| Over 1200 to 1300 or less | ±0.58 |
| Over 1300 to 1400 or less | ±0.61 |
| Over 1400 to 1500 or less | ±0.64 |
| Over 1500 to 1600 or less | ±0.66 |
| Over 1600 to 1700 or less | ±0.68 |
| Over 1700 to 1800 or less | ±0.71 |
| 1801 or more | ±0.75 |

Note) The effective length tolerance is the tolerance of center distance in length measurement.

Rubber Double-Sided Synchronous Belt length tolerances

(Unit: mm)

| DXL/DL/DH nominal length | Tolerance |
|---------------------------|--------------|
| 100 or less | +0.40, -0.20 |
| Over 100 to 150 or less | +0.46, -0.23 |
| Over 150 to 200 or less | +0.50, -0.25 |
| Over 200 to 300 or less | +0.60, -0.30 |
| Over 300 to 390 or less | +0.66, -0.33 |
| Over 390 to 480 or less | +0.76, -0.38 |
| Over 480 to 600 or less | +0.80, -0.40 |
| Over 600 to 700 or less | +0.86, -0.43 |
| Over 700 to 800 or less | +0.90, -0.45 |
| Over 800 to 900 or less | +0.96, -0.48 |
| Over 900 to 1000 or less | +1.02, -0.51 |
| Over 1000 to 1100 or less | +1.06, -0.53 |
| Over 1100 to 1200 or less | +1.12, -0.56 |
| Over 1200 to 1300 or less | +1.16, -0.58 |
| Over 1300 to 1400 or less | +1.21, -0.61 |
| Over 1400 to 1500 or less | +1.28, -0.64 |
| Over 1500 to 1600 or less | +1.32, -0.66 |
| Over 1600 to 1700 or less | +1.36, -0.68 |

Note) The effective length tolerance is the tolerance of center distance in length measurement.

Rubber Synchronous Belt width tolerances

(Unit: mm)

| XL/L/H nominal width | Tolerance | MXL nominal width | Tolerance |
|----------------------|-----------|-------------------|--------------|
| 025 | ±0.4 | 3.2 | +0.3 -0.6 |
| 031 | | 4.8 | |
| 037 | | 8.4 | |
| 050 | ±0.5 | 9.5 | +0.4, -0.8 |
| 075 | | 12.7 | |
| 100 | ±0.7 | | |
| 150 | | | |
| 200 | ±0.8 | | |
| 250 | | | |
| 300 | ±1.3 | | |

*The tolerance for Types XH and XXH is ±2.0 mm regardless of the nominal width.