

(II) Super torque synchronous belt (STS · Double STS)

1. An Introduction to STS (Rubber · Polyurethane) Products

As the STS is equipped with arc-shaped teeth, the belt and pulleys do not disturb one another, and meshing is smooth. Stable performance is ensured, no matter whether you are operating at low speeds or at high speeds.

Possesses a number of advantages, such as strong transmission capabilities and relatively narrow belt width.

The STS Principle of Meshing

The Bando STS displays the following unique meshing features.

Contact between the tips of the belt's teeth and the bottom of the pulley's grooves.

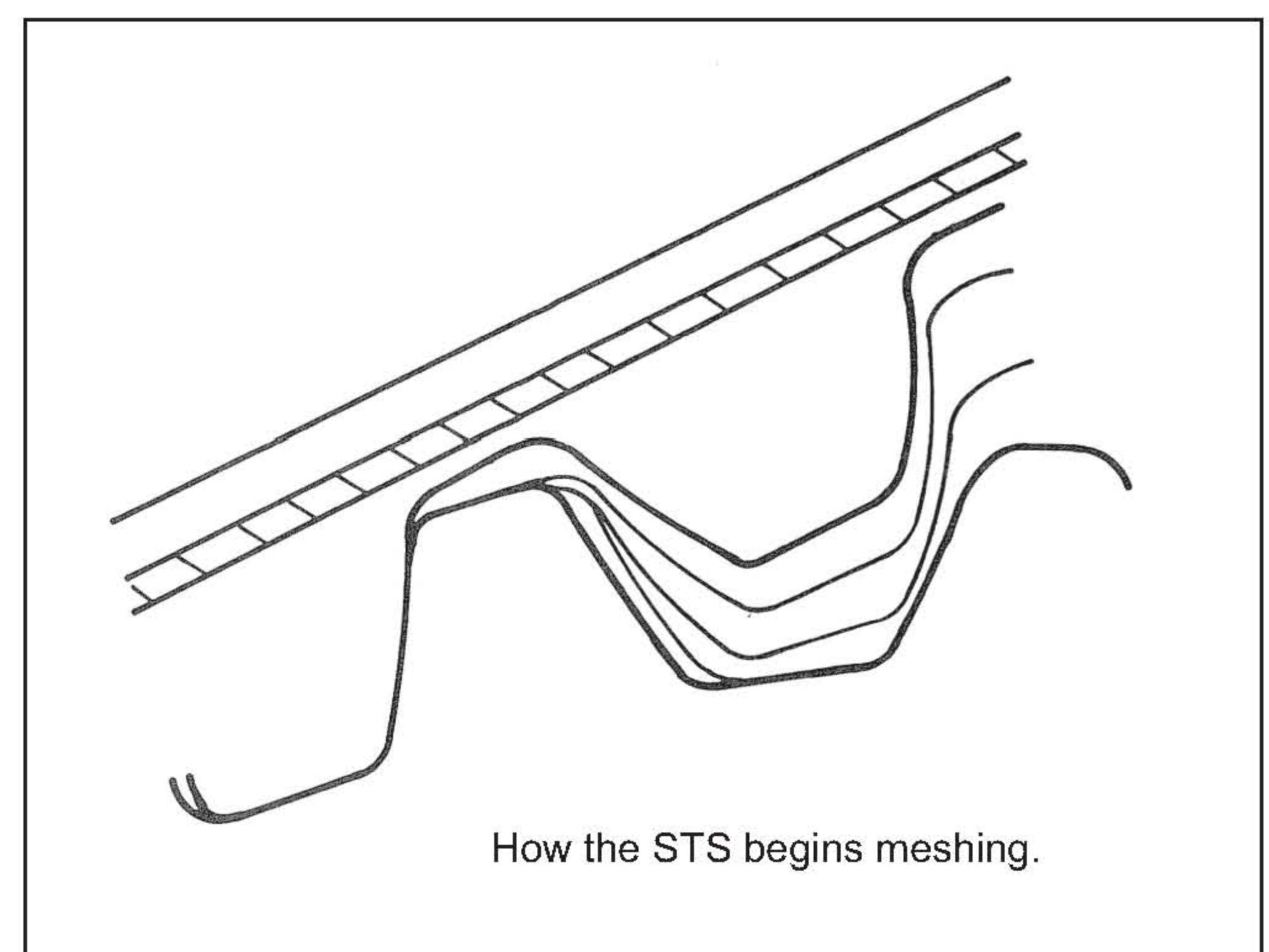
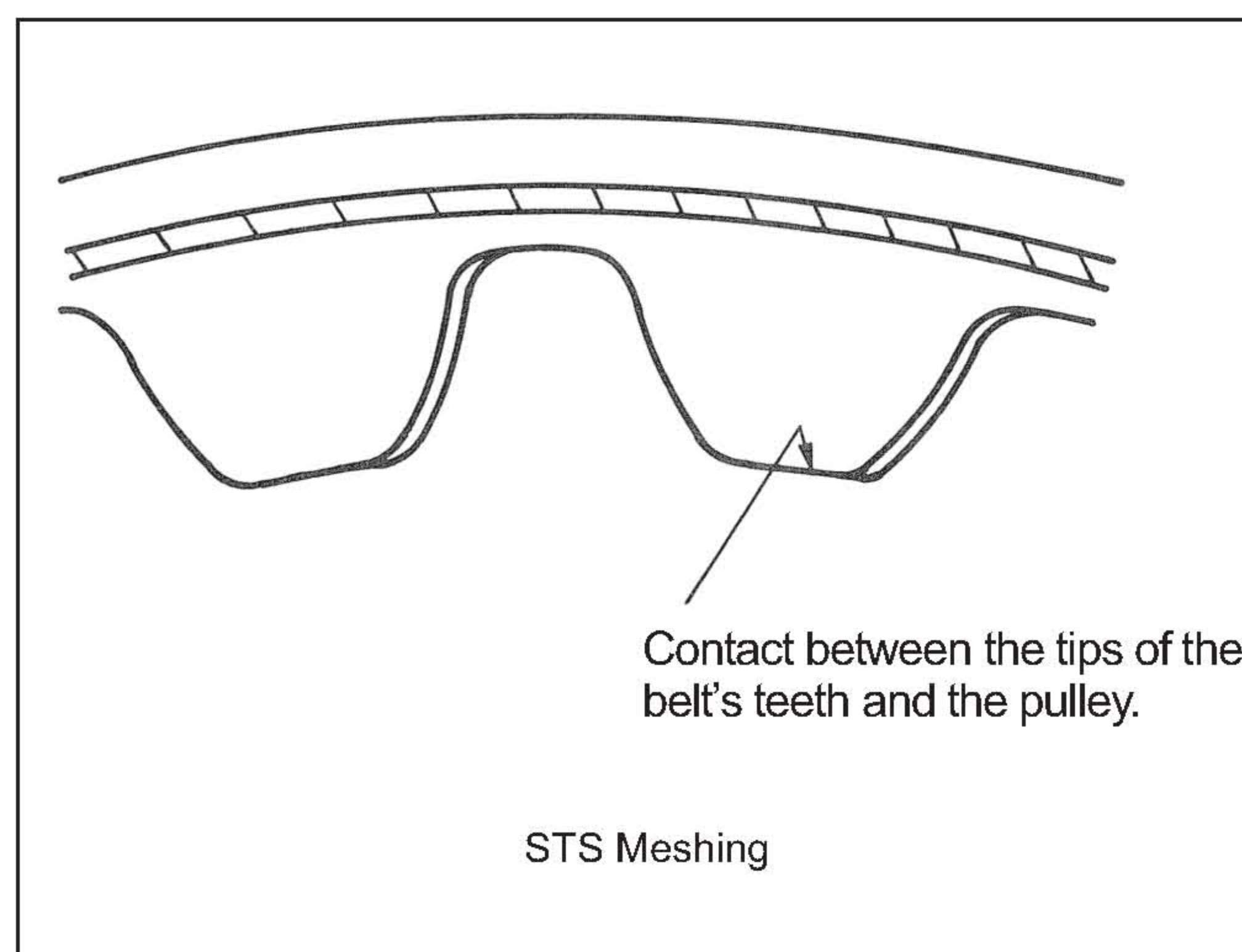
The tips of the STS belt's teeth mesh closely with the bottom of pulleys' grooves. This means that the power exerted upon the belt is dispersed in an even, balanced manner. Additionally, the belt's tensile members mesh in a smooth arc-like manner, thus avoiding bending or warping (as may occur with sharper angles). The tensile member's bending fatigue is drastically decreased, thereby extending the belt's service life.

A profile of the pulley shows that its grooves are curved, so that smooth and tight contact can be established with the belt.

Teeth Shapes Ideal for Smooth Meshing

One way to enhance synchronous belts' transmission capacity is to make their teeth larger. However, in traditional synchronous belts, if the teeth are made larger, the teeth and the pulleys will tend to irritate one another, shortening their service life.

Thanks to the curved shape of the STS' teeth, smooth arc-shaped meshing based on enhanced tooth sizes is able to be realized, while any pulley interference is avoided, guaranteeing superior smoothness.



Features

(1) Rubber STS

- Due to its unique meshing principle and tooth shape, it is able to realize high-torque transmission (and save space).
- Thanks to smooth meshing between the belt and the pulley, contact is established between the tip of the belt's teeth and the pulley's grooves, minimizing noise.
- The belt's tensile members experience relatively little fatigue, thereby extending the belt's service life in comparison to traditional synchronous belts.

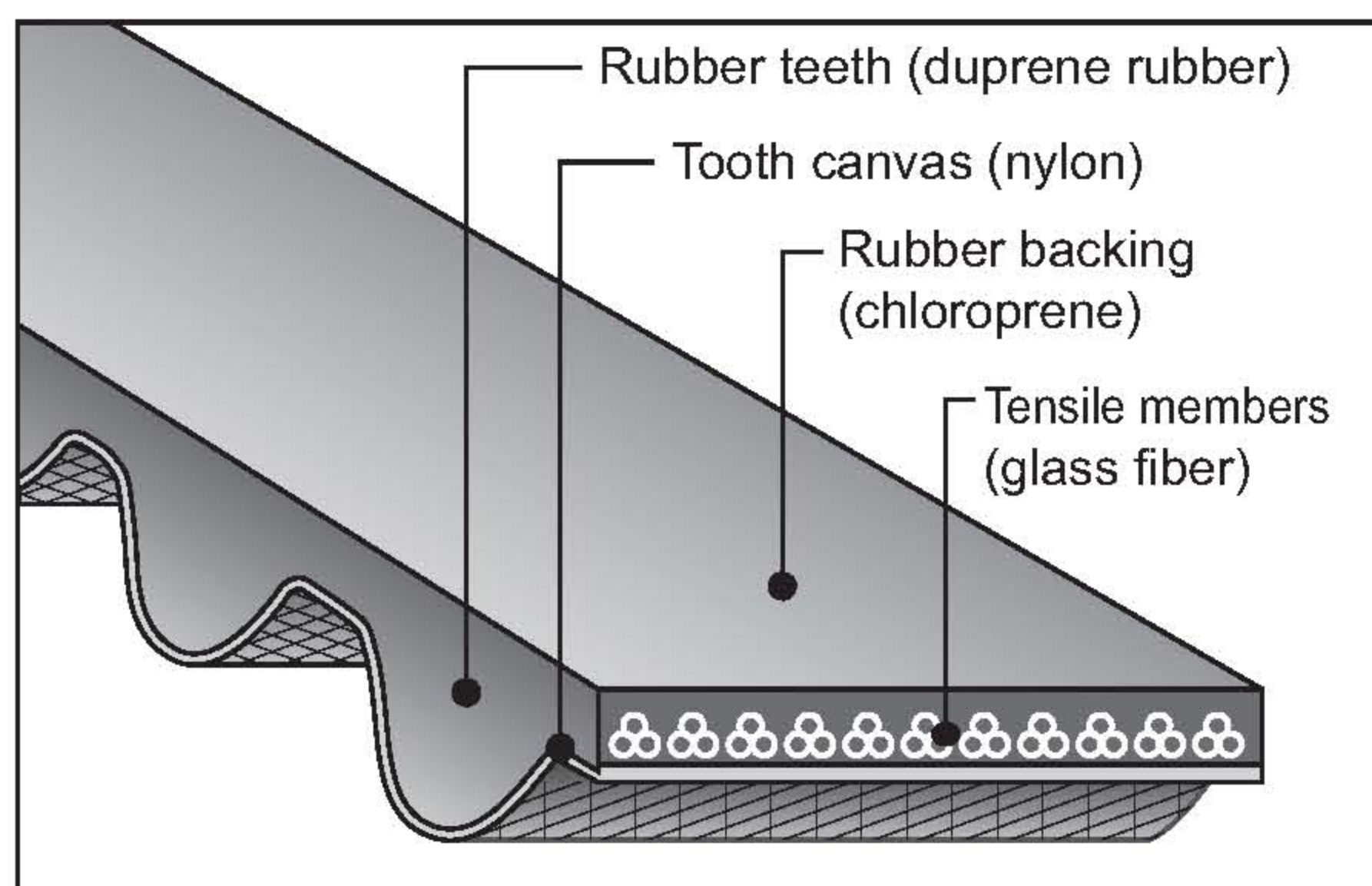
(2) Bancollan STS (Polyurethane)

- Able to realize high-torque transmission (saving space), cutting down on losses of torque during start-up.
- No gaps in meshing between the belt and the pulley, for high-precision positioning.
- Smooth meshing, so that it can be used in the transmission of smaller loads.

- As with chains, elongation does not apply, so there is no need to frequently perform re-tensioning. There is also no need to apply any lubricants.
- Our product series has been extended to include the STS S5M, which can be used not only with the kinds of light loads seen in OA equipment, automated vending machines, and home appliances, but also in such high-load applications as machine-tools and robots.
- Because polyurethane materials are used, teeth are able to remain clean and tidy. The product also features strong resistance to oil, wear, and ozone.
- Best-suited for use with OA machinery, precision machinery, and automated equipment.

Structure and Teeth Dimensions

(1) Rubber STS



Rubber Backing: Chloroprene rubber with outstanding resistance to the climate, as well as resistance to wear. This rubber protects the belt's tensile members.

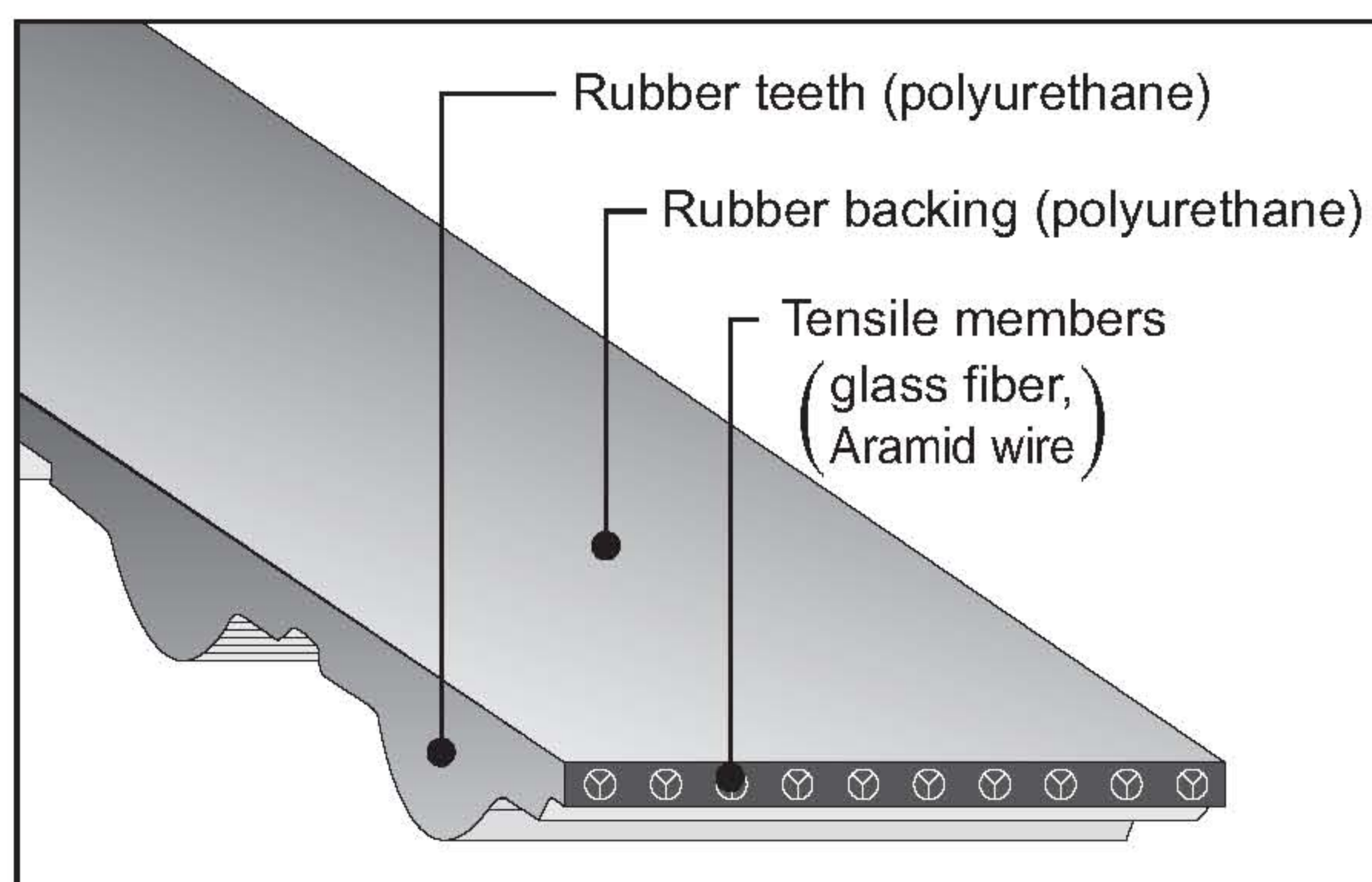
Tensile members: High-strength glass fiber cords are twisted back-and-forth to form a spiraled and criss-crossed bound shape. The relatively small degree of elongation in these members serves to prevent belts from tilting.

Belt type	Dimensions (mm)	Belt label
S1.5M		60 S1.5M 204 Belt's pitch perimeter (204mm) Belt model (S1.5M type) Belt's Nominal Width (6mm)
S2M		60 S2M 200 Belt's pitch perimeter (200mm) Belt model (S2M type) Belt's Nominal Width (6mm)
S3M		100 S3M 200 Belt's pitch perimeter (300mm) Belt model (S3M type) Belt's Nominal Width (10mm)
S5M		150 S5M 630 Belt's pitch perimeter (630mm) Belt model (S5M type) Belt's Nominal Width (15mm)

Rubber teeth: Chloroprene rubber, connected with the rubber backing. Used to protect the belt's tensile members, these rubber teeth display a strong resistance to bending fatigue, as well as outstanding resistance to heat, oil, and climate.

Tooth canvas: This canvas is made of nylon, with an outstanding resistance to wear. This canvas protects teeth and ensures their smooth meshing with pulley's grooves.

(2) Bancollan STS (Polyurethane)



Rubber Backing and Rubber Teeth:

Both components are made from polyurethane, which has a high resistance to cutting, wear, oil, and harsh climates. (During the winter, white powder may appear on the belt's surface. While this will have no effect on the belt's use, please avoid using the belt's backing to transmit paper, etc.)

Standard Belt Width

Nominal width (mm)	40	60	100	150	200	250
S1.5M	●	●	●			
S2M	●	●	●			
S3M		●	●	●		
S5M				●	●	●

Belt type	Dimensions (mm)	Belt label
S2M		60 S2M 200 Belt's pitch perimeter (200mm) Belt model (S2M type) Belt's Nominal Width (6mm)
S3M		100 S3M 200 Belt's pitch perimeter (300mm) Belt model (S3M type) Belt's Nominal Width (10mm)

Tensile members:

glass fiber

High-strength glass fiber cords are twisted back-and-forth to form a spiraled and criss-crossed bound shape. The relatively small degree of elongation in these members serves to prevent belts from tilting.

Aramid wire

Strong resistance to pulling and outstanding resistance to bending fatigue. However, it may experience changes in its dimensions when used in humid environments, so please confirm its axle load, SKIP torque, and other features prior to use.

Standard STS Belt Lengths

R: Rubber STS
U: Bancollan STS

S1.5M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S1.5M 92	91.50	61	○	-
93	93.00	62	○	-
95	94.50	63	○	-
98	97.50	65	○	-
99	99.00	66	○	-
101	100.50	67	○	-
102	102.00	68	○	-
108	108.00	72	○	-
119	118.50	79	○	-
134	133.50	89	○	-
150	150.00	100	○	-
158	157.50	105	○	-
161	160.50	107	○	-
164	163.50	109	○	-
165	165.00	110	○	-
168	168.00	112	○	-
174	174.00	116	○	-
180	180.00	120	○	-
185	184.50	123	○	-
186	186.00	124	○	-
204	204.00	136	○	-
206	205.50	137	○	-
210	210.00	140	○	-
224	223.50	149	○	-
225	225.00	150	○	-
236	235.50	157	○	-
240	240.00	160	○	-
255	255.00	170	○	-
261	261.00	174	○	-
263	262.50	175	○	-
273	273.00	182	○	-
281	280.50	187	○	-
288	288.00	192	○	-
290	289.50	193	○	-
303	303.00	202	○	-
305	304.50	203	○	-
315	315.00	210	○	-
335	334.50	223	○	-
390	390.00	260	○	-
441	441.00	294	○	-
444	444.00	296	○	-
480	480.00	320	○	-
1116	1116.00	744	○	-

S2M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S2M 76	76.0	38	-	○
78	78.0	39	-	○
80	80.0	40	-	○
86	86.0	43	○	○
88	88.0	44	○	-
90	90.0	45	○	○
92	92.0	46	○	○
98	98.0	49	○	-
100	100.0	50	○	○
102	102.0	51	○	○
106	106.0	53	-	○
108	108.0	54	○	-
110	110.0	55	-	○
112	112.0	56	○	○
114	114.0	57	○	○
116	116.0	58	○	○
118	118.0	59	○	-
120	120.0	60	○	○
122	122.0	69	○	○
124	124.0	62	○	-
126	126.0	63	○	○
128	128.0	64	○	○
130	130.0	65	○	-
132	132.0	66	○	-
134	134.0	67	○	-
138	138.0	69	○	○
140	140.0	70	○	○
142	142.0	71	○	○
144	144.0	72	○	○
148	148.0	74	○	○
150	150.0	75	○	-
152	152.0	76	○	-
158	158.0	79	○	○
160	160.0	80	○	○
162	162.0	81	○	-
164	164.0	82	○	○
166	166.0	83	○	○
168	168.0	84	○	○
170	170.0	85	○	○
172	172.0	86	○	○
174	174.0	87	○	-
176	176.0	88	○	○
180	180.0	90	○	○
184	184.0	92	○	○
186	186.0	94	○	○
190	190.0	95	○	○
192	192.0	96	○	-
198	198.0	99	○	-
200	200.0	100	○	○
202	202.0	101	○	-
204	204.0	102	○	-
206	206.0	103	-	○
210	210.0	105	○	-
212	212.0	106	○	-
214	214.0	107	○	○
216	216.0	108	○	○
218	218.0	109	-	○
220	220.0	110	○	○
222	222.0	111	○	-
224	224.0	112	○	○
230	230.0	115	○	○
234	234.0	117	○	○
236	236.0	118	○	○
238	238.0	119	-	○
240	240.0	120	○	○
242	242.0	121	○	-

S2M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S2M 244	244.0	122	○	-
248	248.0	124	○	-
250	250.0	125	○	○
254	254.0	127	○	-
256	256.0	128	○	○
258	258.0	129	-	○
260	260.0	130	○	○
262	262.0	131	○	-
264	264.0	132	-	○
266	266.0	133	○	○
272	272.0	136	○	-
274	274.0	137	○	-
280	280.0	140	○	○
284	284.0	142	○	-
288	288.0	144	○	-
290	290.0	145	○	○
292	292.0	146	○	-
296	296.0	148	○	○
300	300.0	150	○	○
308	308.0	154	○	-
310	310.0	155	○	-
312	312.0	156	○	-
314	314.0	157	○	○
316	316.0	158	○	○
320	320.0	160	○	○
322	322.0	161	○	-
324	324.0	162	○	-
328	328.0	164	○	-
330	330.0	165	○	-
332	332.0	166	○	-
334	334.0	167	-	○
340	340.0	170	○	○
342	342.0	171	○	-
344	344.0	172	○	-
350	350.0	175	○	-
354	354.0	177	-	○
360	360.0	180	-	○
364	364.0	182	○	-
370	370.0	185	○	○
372	372.0	186	○	-
376	376.0	188	○	-
380	380.0	190	○	○
386	386.0	193	○	-
396	396.0	198	○	○
400	400.0	200	○	○
406	406.0	203	○	-
408	408.0	204	○	-
416	416.0	208	○	-
420	420.0	210	○	-
426	426.0	213	○	-
436	436.0	218	-	○
438	438.0	219	○	-
440	440.0	220	-	○
448	448.0	224	○	○
452	452.0	226	○	-
454	454.0	227	○	○
460	460.0	230	○	○
468	468.0	234	○	-
474	474.0	237	○	○
480	480.0	240	-	○
486	486.0	243	○	-
488	488.0	244	-	○
490	490.0	245	○	-
494	494.0	247	○	○
500	500.0	250	○	○
504	504.0	252	-	○

S2M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S2M 520	520.0	260	○	○
530	530.0	265	○	-
540	540.0	270	○	-
544	544.0	272	-	○
548	548.0	274	-	○
550	550.0	275	○	-
558	558.0	279	○	-
560	560.0	280	○	○
572	572.0	286	○	-
580	580.0	290	-	○
594	594.0	297	○	-
596	596.0	298	○	-
600	600.0	300	○	○
620	620.0	310	○	○
630	630.0	315	○	○
650	650.0	325	○	-
652	652.0	326	○	-
654	654.0	327	-	○
656	656.0	328	○	-
668	668.0	334	○	-
676	676.0	338	○	-
700	700.0	350	○	-
710	710.0	355	○	○
742	742.0	371	○	-
752	752.0	376	○	-
754	754.0	377	○	○
766	766.0	383	○	-
790	790.0	395	-	○
796	796.0	398	○	-
800	800.0	400	○	○
806	806.0	403	-	○
810	810.0	405	○	-
828	828.0	414	-	○
898	898.0	449	○	-
900	900.0	450	○	○
940	940.0	470	○	-
946	946.0	473	○	-
950	950.0	475	○	-
976	976.0	488	-	○
984	984.0	492	○	-
1000	1000.0	500	○	○
1032	1032.0	516	○	-
1036	1036.0	518	○	-
1066	1066.0	533	○	-
1074	1074.0	537	○	-
1100	1100.0	550	○	-
1110	1110.0	555	○	-
1136	1136.0	568	○	-
1154	1154.0	577	○	-
1166	1166.0	583	○	-
1224	1224.0	612	○	-
1228	1228.0	614	○	-
2250	2250.0	1125	-	○

S3M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S3M 120	120.0	40	-	○
123	123.0	41	○	-
129	129.0	43	○	-
144	144.0	48	○	○
150	150.0	50	○	○
156	156.0	52	○	-
159	159.0	53	○	○
162	162.0	54	○	○
168	168.0	56	○	-
171	171.0	57	○	○
174	174.0	58	○	○
177	177.0	59	○	○
180	180.0	60	○	-
186	186.0	62	○	○
189	189.0	63	○	-
192	192.0	64	○	○
195	195.0	65	-	○
198	198.0	66	○	-
201	201.0	67	○	○
204	204.0	68	○	○
207	207.0	69	○	-
210	210.0	70	○	○
213	213.0	71	○	○
219	219.0	73	○	○
222	222.0	74	○	○
225	225.0	75	○	○
228	228.0	76	○	-
234	234.0	78	○	○
237	237.0	79	○	○
240	240.0	80	○	○
243	243.0	81	○	-
246	246.0	82	○	○
249	249.0	83	○	-
252	252.0	84	○	○
255	255.0	85	○	○
258	258.0	86	○	-
264	264.0	88	○	○
267	267.0	89	○	○
270	270.0	90	○	○
273	273.0	91	○	-
276	276.0	92	○	○
279	279.0	93	○	-
285	285.0	95	○	○
288	288.0	96	○	-
291	291.0	97	○	-
297	297.0	99	○	-
300	300.0	100	○	○
303	303.0	101	○	-
309	309.0	103	○	-
312	312.0	104	○	○
315	315.0	105	○	-
318	318.0	106	○	○
324	324.0	108	○	-
327	327.0	109	○	○
330	330.0	110	○	-
339	339.0	113	○	○
342	342.0	114	○	○
351	351.0	117	○	-
354	354.0	118	○	○
360	360.0	120	○	○
363	363.0	121	○	-
366	366.0	122	○	-
369	369.0	123	○	-
372	372.0	124	○	-
375	375.0	125	○	-
378	378.0	126	○	○
384	384.0	128	○	○
387	387.0	129	○	-

S3M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S3M 390	390.0	130	○	○
396	396.0	132	-	○
399	399.0	133	○	-
402	402.0	134	○	○
405	405.0	135	○	○
408	408.0	136	○	-
417	417.0	139	○	○
420	420.0	140	○	○
423	423.0	141	○	-
426	426.0	142	○	-
432	432.0	144	○	○
438	438.0	146	○	-
444	444.0	148	○	-
447	447.0	149	○	○
453	453.0	151	○	○
459	459.0	153	○	○
468	468.0	156	○	-
471	471.0	157	○	-
480	480.0	160	○	-
486	486.0	162	○	○
489	489.0	163	○	-
492	492.0	164	○	-
501	501.0	167	○	○
504	504.0	168	-	-
507	507.0	169	○	○
513	513.0	171	-	○
516	516.0	172	○	○
519	519.0	173	○	○
522	522.0	174	○	-
525	525.0	175	○	-
534	534.0	178	○	-
537	537.0	179	○	○
540	540.0	180	○	-
549	549.0	183	○	-
552	552.0	184	○	-
555	555.0	185	○	○
564	564.0	188	○	○
573	573.0	191	○	-
579	579.0	193	○	-
588	588.0	196	○	○
597	597.0	199	○	-
600	600.0	200	○	○
609	609.0	203	○	○
621	621.0	207	○	-
633	633.0	211	○	○
648	648.0	216	○	-
657	657.0	219	○	-
660	660.0	220	○	○
666	666.0	222	○	○
681	681.0	227	○	○
690	690.0	230	○	-
699	699.0	233	○	○
726	726.0	242	○	-
735	735.0	245	○	-
741	741.0	247	○	-
750	750.0	250	○	○
765	765.0	255	-	○
768	768.0	256	○	-
771	771.0	257	○	-
774	774.0	258	-	○
789	789.0	263	○	○
804	804.0	268	○	○
810	810.0	270	○	○
825	825.0	275	○	-
852	852.0	284	○	-

S3M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S3M 882	882.0	294	○	-
885	885.0	295	○	○
888	888.0	296	○	-
900	900.0	300	○	○
918	918.0	306	○	-
927	927.0	309	○	-
936	936.0	312	○	○
951	951.0	317	-	○
990	990.0	330	○	-
1005	1005.0	335	-	○
1050	1050.0	350	-	○
1119	1119.0	373	○	-
1134	1134.0	378	○	-
1146	1146.0	382	○	○
1188	1188.0	396	○	-
1260	1260.0	420	-	○
1299	1299.0	433	○	-
1383	1383.0	461	-	-
1419	1419.0	473	○	-
1530	1530.0	510	○	-
1596	1596.0	532	-	○
1800	1800.0	600	-	○
2100	2100.0	700	-	○

S5M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S5M 225	225.0	45	○	-
255	255.0	51	○	-
275	275.0	55	○	-
295	295.0	59	○	-
300	300.0	60	○	-
320	320.0	64	○	-
325	325.0	65	○	-
350	350.0	70	○	-
375	375.0	75	○	-
380	380.0	76	○	-
390	390.0	78	○	-
400	400.0	80	○	-
410	410.0	82	○	-
420	420.0	84	○	-
425	425.0	85	○	-
435	435.0	87	○	-
440	440.0	88	○	-
445	445.0	89	○	-
450	450.0	90	○	-
475	475.0	95	○	-
490	490.0	98	○	-
500	500.0	100	○	-
520	520.0	104	○	-
525	525.0	105	○	-
550	550.0	110	○	-
560	560.0	112	○	-
565	565.0	113	○	-
570	570.0	114	○	-
575	575.0	115	○	-
600	600.0	120	○	-
625	625.0	125	○	-
635	635.0	127	○	-
645	645.0	129	○	-
650	650.0	130	○	-
665	665.0	133	○	-
670	670.0	134	○	-
675	675.0	135	○	-
695	695.0	139	○	-
700	700.0	140	○	-
710	710.0	142	○	-

S5M Type

Belt's nominal length	Pitch perimeter (mm)	Number of teeth	Able to be manufactured or not	
			R	U
S5M 725	725.0	145	○	-
740	740.0	148	○	-
750	750.0	150	○	-
765	765.0	153	○	-
770	770.0	154	○	-
775	775.0	155	○	-
800	800.0	160	○	-
810	810.0	162	○	-
830	830.0	166	○	-
850	850.0	170	○	-
860	860.0	172	○	-
870	870.0	174	○	-
900	900.0	180	○	-
920	920.0	184	○	-
940	940.0	188	○	-
950	950.0	190	○	-
965	965.0	193	○	-
975	975.0	195	○	-
1000	1000.0	200	○	-
1025	1025.0	205	○	-
1050	1050.0	210	○	-
1125	1125.0	225	○	-
1135	1135.0	227	○	-
1145	1145.0	229	○	-
1195	1195.0	239	○	-
1225	1225.0	245	○	-
1250	1250.0	250	○	-
1260	1260.0	252	○	-
1270	1270.0	254	○	-
1295	1295.0	259	○	-
1350	1350.0	270	○	-
1420	1420.0	284	○	-
1595	1595.0	319	○	-
1715	1715.0	343	○	-
1800	1800.0	360	○	-
2000	2000.0	400	○	-

Permitted Deviations in Dimensions

■ **Belt Width (Rubber STS)**

Unit: mm

Belt width	Permitted deviations
Less than 6	± 0.3
More than 6, less than 10	± 0.4
More than 10, less than 20	± 0.5
More than 20, less than 30	± 0.6
More than 30, less than 40	± 0.7
More than 40, less than 60	± 0.8

■ **Belt Lengths**

Unit: mm

Pitch perimeter	Permitted deviations in spacing between axles
Less than 256	± 0.20
More than 256, less than 384	± 0.23
More than 384, less than 512	± 0.25
More than 512, less than 760	± 0.30
More than 760, less than 1016	± 0.33
More than 1016, less than 1272	± 0.38
More than 1272, less than 1528	± 0.41
More than 1528, less than 1776	± 0.43
More than 1776, less than 2000	± 0.46

■ **Bancollan S2M · S3M**

Unit: mm

Pitch perimeter	Range of widths and permitted deviations		
	3.0 ~ 6.8	6.1 ~ 11.0	10.1 ~ 25.0
~ 350	± 0.15	± 0.20	± 0.25
351 ~ 840	± 0.15	± 0.20	± 0.30
842 ~ 1680	± 0.25	± 0.30	± 0.40
1682 ~ 1920	± 0.30	± 0.40	± 0.50
1922 ~	± 0.40	± 0.50	± 0.60

Note) The figures for permitted deviations in spacing between axles were obtained by our company under pre-set testing conditions.

2. Introduction to the Double STS

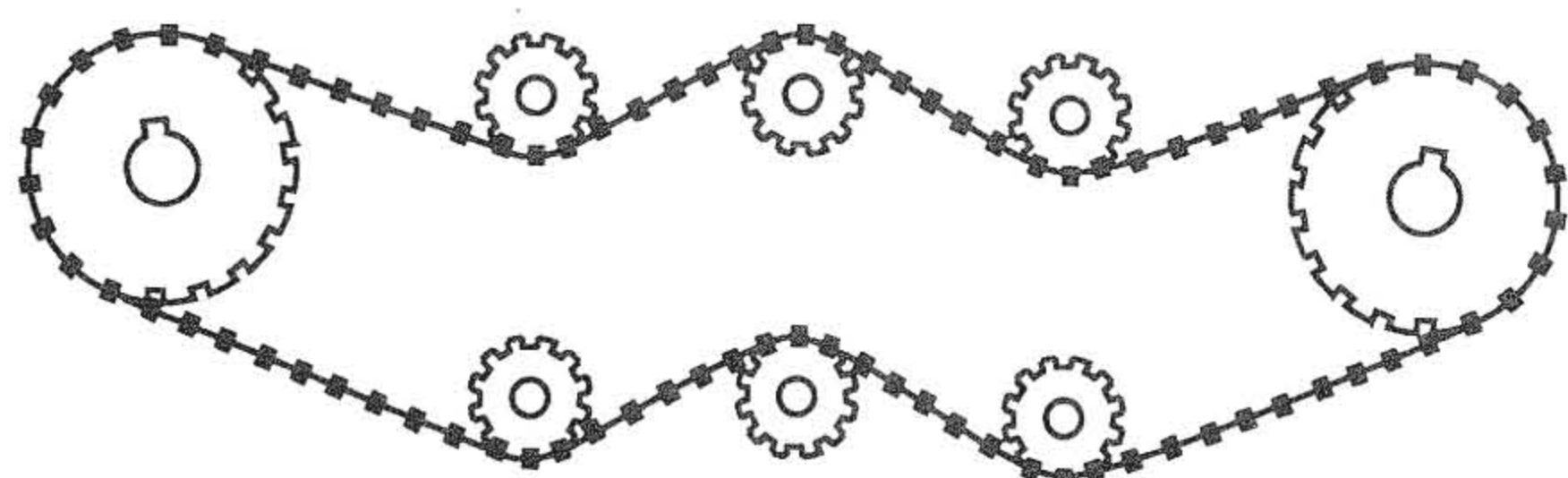
The double STS is a high powered double synchronous belt model. The double STS is recommended in situations where transmission space is limited or a relatively longer service life

is needed, and where the use of a double transmission belt or chain would be too noisy.

Features

• **Synchronous Transmission on Multiple Axles**

A single belt is able to realize synchronous transmission on multiple axles.



• **Simple Maintenance**

Unlike chains, there is no need to perform re-tensing or to apply lubricant, making maintenance easy.

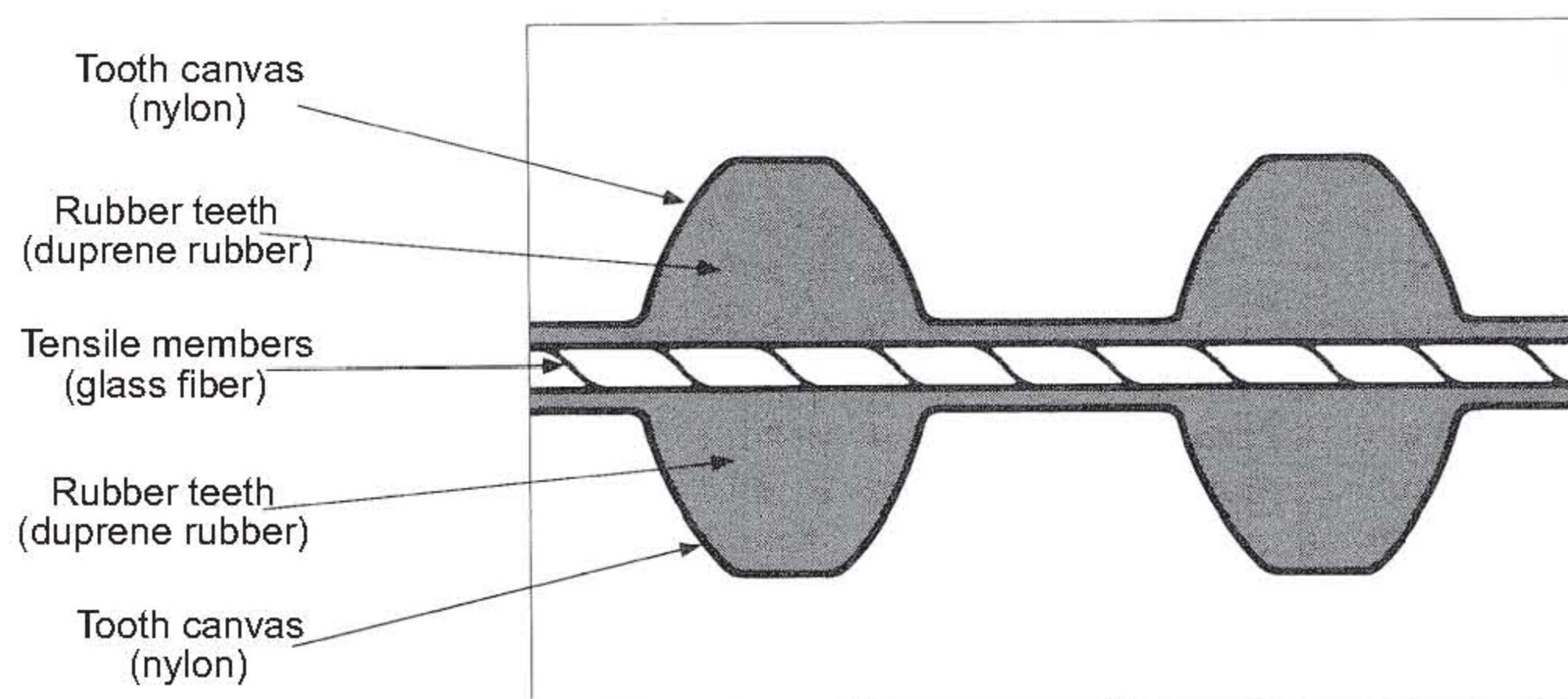
• **Low-noise**

As there is no contact between metals, quiet transmission is achieved.

• **Clean**

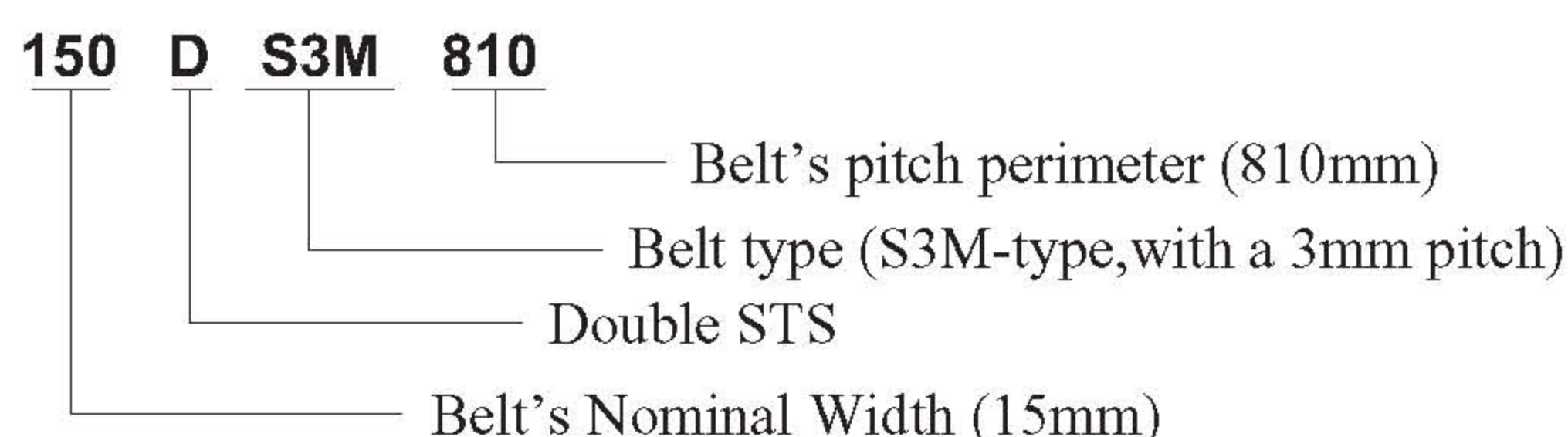
Unlike with chains or gears, there is no need to apply lubricants. With no oil splashing around, the area around the belt is able to remain clean.

Structure



Labeling

• **Double STS**



Standard Double STS Belt Lengths

DS2M type			
Standard Belt Width			
Nominal width (mm)	40	60	100
Width (mm)	4	6	10
Belt dimensions			
Name	Pitch perimeter (mm)	Number of teeth	
DS2M300	300.0	150	
DS2M308	308.0	154	
DS2M310	310.0	155	
DS2M312	312.0	156	
DS2M316	316.0	158	
DS2M318	318.0	159	
DS2M320	320.0	160	
DS2M322	322.0	161	
DS2M324	324.0	162	
DS2M326	326.0	163	
DS2M328	328.0	164	
DS2M330	330.0	165	
DS2M332	332.0	166	
DS2M338	338.0	169	
DS2M340	340.0	170	
DS2M342	342.0	171	
DS2M344	344.0	172	
DS2M350	350.0	175	
DS2M360	360.0	180	
DS2M364	364.0	182	
DS2M370	370.0	185	
DS2M372	372.0	186	
DS2M374	374.0	187	

Permitted Deviations in Dimensions

DS2M type		
Belt dimensions		
Name	Pitch perimeter (mm)	Number of teeth
DS2M376	376.0	188
DS2M380	380.0	190
DS2M386	386.0	193
DS2M390	390.0	195
DS2M396	396.0	198
DS2M400	400.0	200
DS2M406	406.0	203
DS2M408	408.0	204
DS2M416	416.0	208
DS2M420	420.0	210
DS2M426	426.0	213
DS2M428	428.0	214
DS2M438	438.0	219
DS2M448	448.0	224
DS2M452	452.0	226
DS2M454	454.0	227
DS2M460	460.0	230
DS2M474	474.0	237
DS2M486	486.0	243
DS2M490	490.0	245
DS2M494	494.0	247
DS2M500	500.0	250
DS2M520	520.0	260
DS2M530	530.0	265
DS2M532	532.0	266
DS2M540	540.0	270
DS2M550	550.0	275
DS2M558	558.0	279
DS2M560	560.0	280
DS2M572	572.0	286
DS2M580	580.0	290
DS2M594	594.0	297
DS2M596	596.0	298
DS2M600	600.0	300

For more information on permitted deviations in belts' dimensions, such as their length and width, please refer to page S-8.

DS2M type		
Belt dimensions		
Name	Pitch perimeter (mm)	Number of teeth
DS2M604	604.0	302
DS2M606	606.0	303
DS2M620	620.0	310
DS2M630	630.0	315
DS2M632	632.0	316
DS2M652	652.0	326
DS2M656	656.0	328
DS2M668	668.0	334
DS2M676	676.0	338
DS2M692	692.0	346
DS2M700	700.0	350
DS2M710	710.0	355
DS2M742	742.0	371
DS2M752	752.0	376
DS2M754	754.0	377
DS2M766	766.0	383
DS2M796	796.0	398
DS2M800	800.0	400
DS2M810	810.0	405
DS2M826	826.0	413
DS2M898	898.0	449
DS2M900	900.0	450
DS2M940	940.0	470
DS2M946	946.0	473
DS2M950	950.0	475
DS2M984	984.0	492
DS2M1000	1000.0	500
DS2M1032	1032.0	516
DS2M1036	1036.0	518
DS2M1066	1066.0	533
DS2M1074	1074.0	537
DS2M1100	1100.0	550
DS2M1110	1110.0	555
DS2M1136	1136.0	568
DS2M1154	1154.0	577

(II) Super Torque Synchronous Belt (STS • Double STS)

1. An Introduction to the STS

As the STS is equipped with arc-shaped teeth, the belt and pulleys do not disturb one another, and meshing is smooth. Stable performance is ensured, no matter whether you are

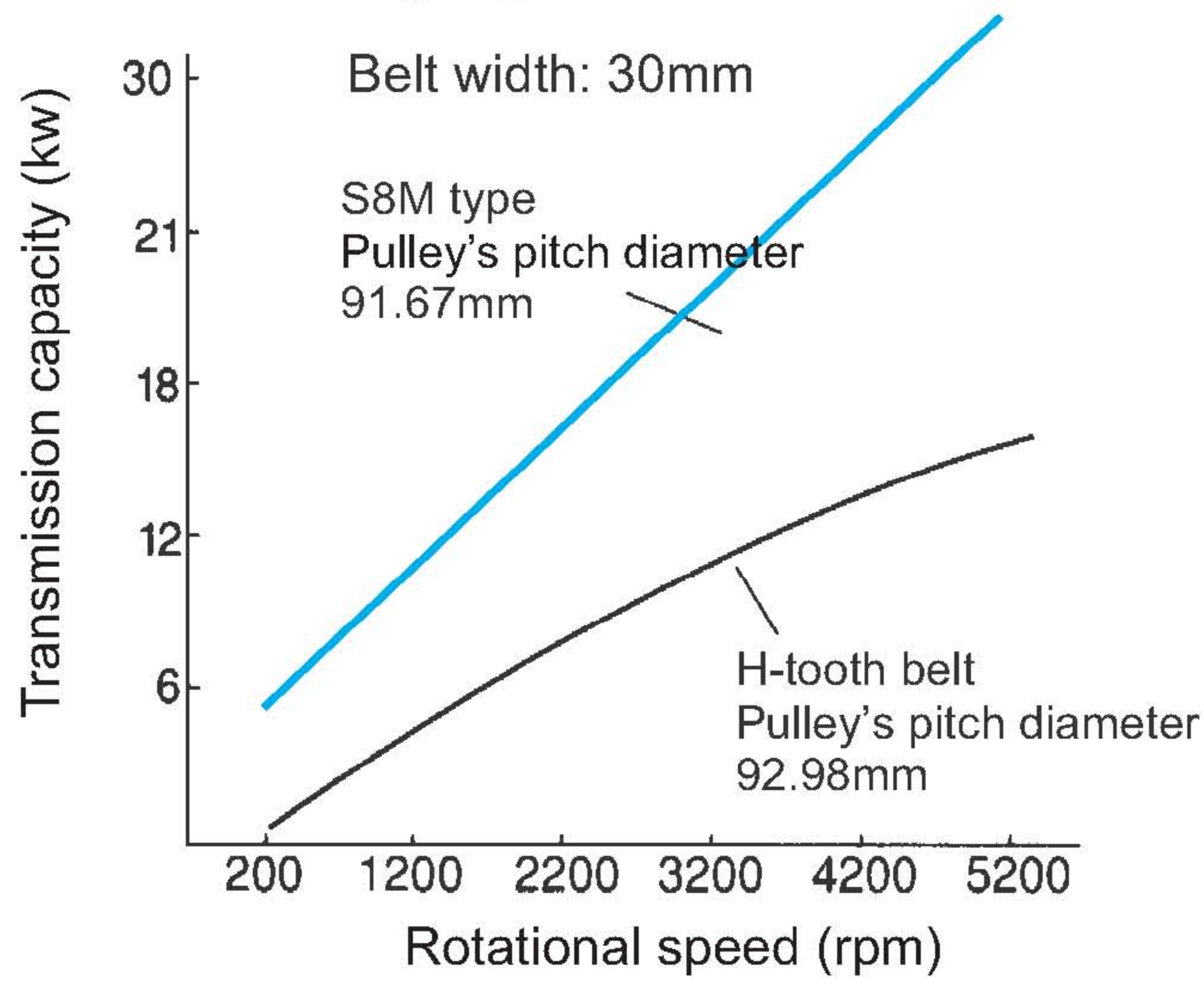
operating at low speeds or at high speeds.

Possesses a number of advantages, such as strong transmission capabilities and relatively narrow belt width.

Features

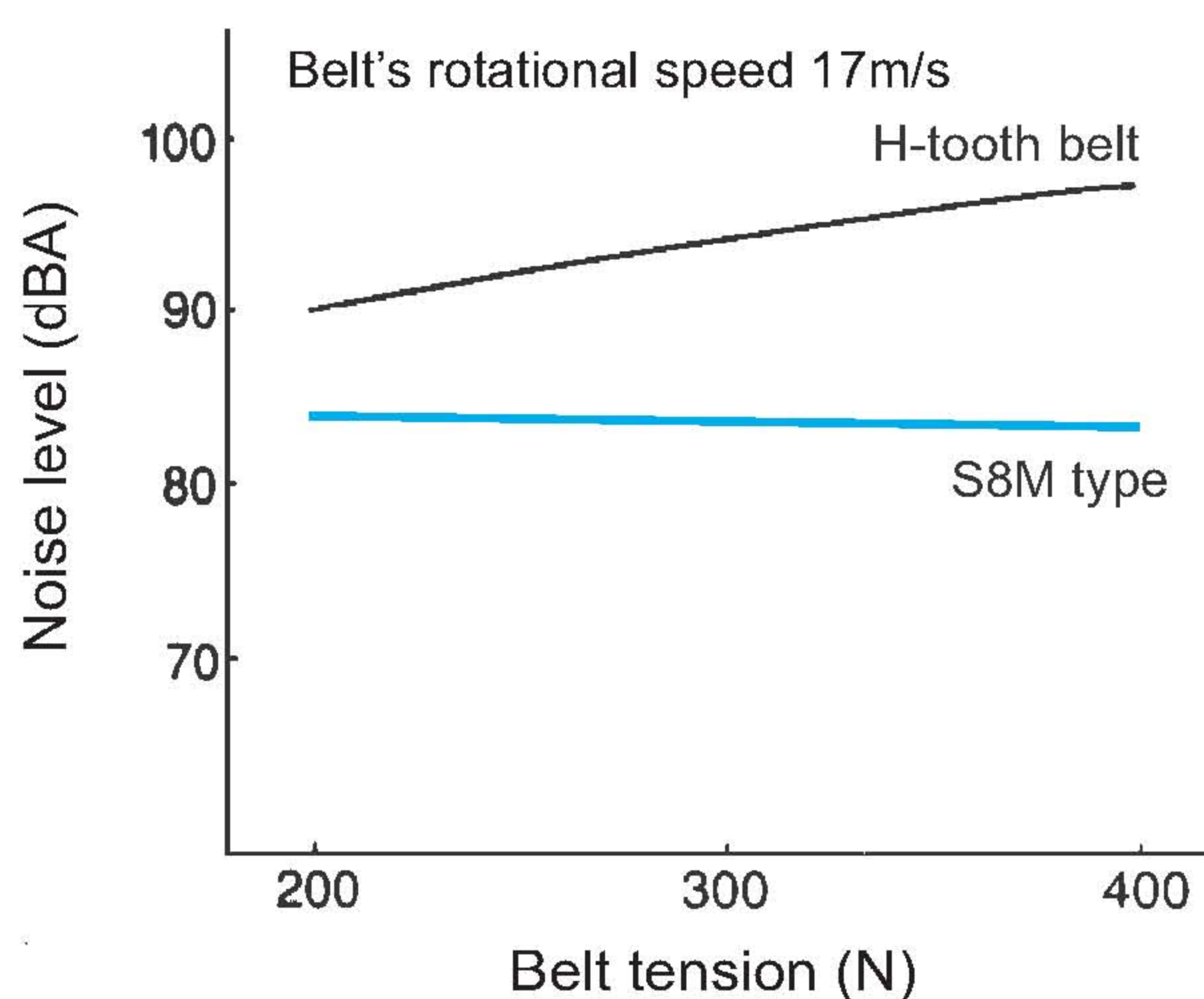
High-torque Transmission

Thanks to its unique tooth meshing methods, this product is able to realize high-torque transmission. Even when operating at high-speeds, the STS's transmission capabilities show no sign of dropping, so that you can enjoy stable performance at both low and high speeds.



Low-noise

This belt enjoys smooth meshing with pulleys. The tips of the belt's teeth are able to attain direct contact with the bottom of pulley's grooves, lowering the level of noise released.



Longer Service Life

Less stress is exerted upon the belt's tensile members. In identical layouts, the product's service life is longer than that of traditional synchronous belts.

No Maintenance

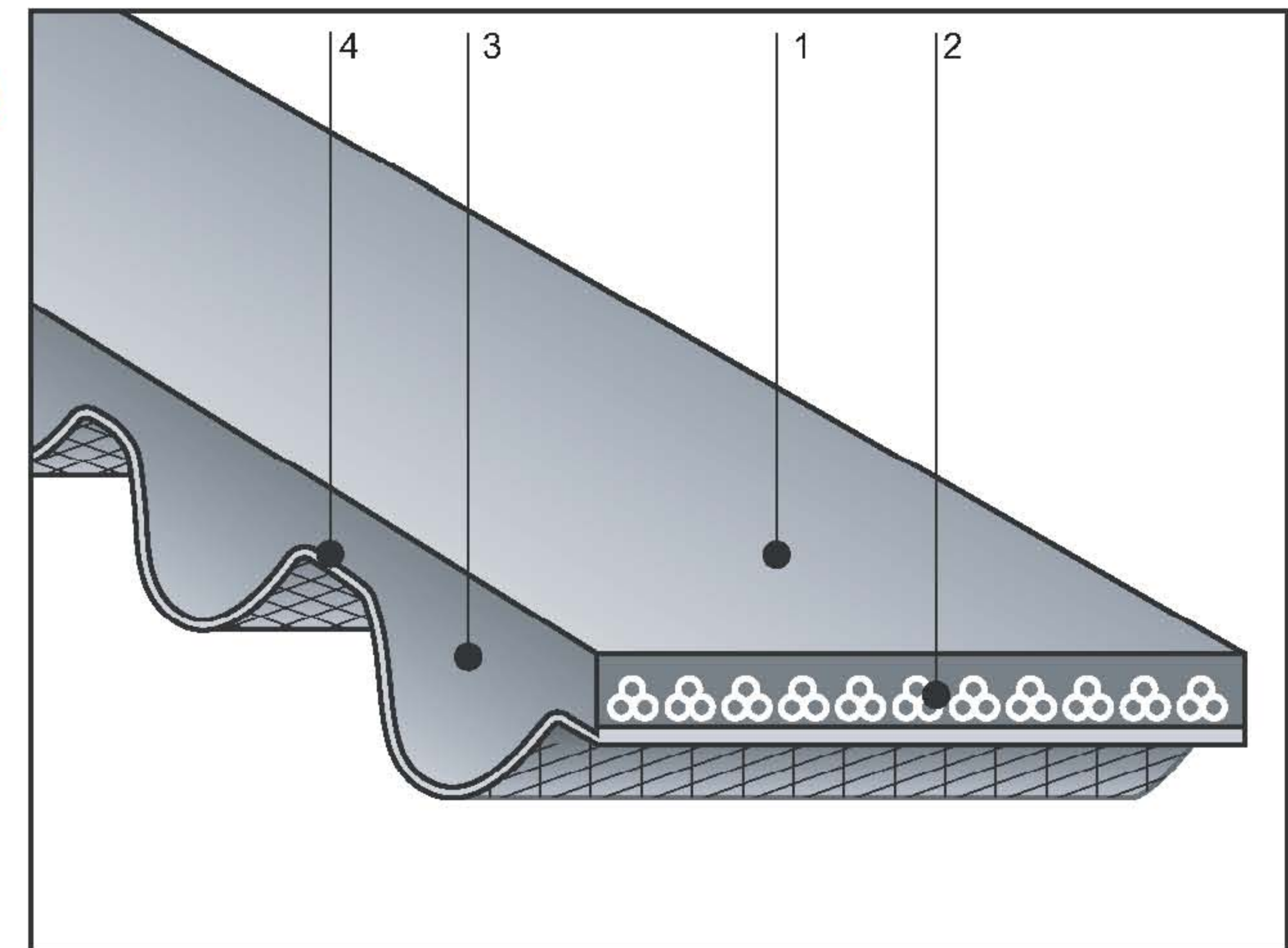
Elongation of the STS is relatively small, so there is no need to perform re-tension frequently. Additionally, no lubrication is required.

Lower Costs

Because its transmission capabilities are strong, this belt can be about 30~40% narrower than traditional synchronous belts. Additionally, in contrast to chains or gears, there is no need to lubricate the equipment, thus effectively lowering equipment costs.

Structure

STS Belt



- 1. Rubber Backing
- 2. Tensile Members
- 3. Rubber Tooth
- 4. Tooth Canvas

● **Rubber Backing:** Chloroprene rubber with outstanding resistance to the climate, as well as resistance to wear. This rubber protects the belt's tensile members.

● **Tensile Members:** High-strength glass fiber cords are twisted back-and-forth to form a spiraled and criss-crossed bound shape. The relatively small degree of elongation in these members serves to prevent belts from tilting.

● **Rubber Teeth:** Chloroprene rubber, connected with the rubber backing. Used to protect the belt's tensile members, these rubber teeth display a strong resistance to bending fatigue, as well as outstanding resistance to heat, oil, and climate.

● **Tooth Canvas:** This canvas is made of nylon, with an outstanding resistance to wear. This canvas protects teeth and ensures their smooth meshing with pulley's grooves.

Tooth Dimensions and Labeling

Belt type	Dimensions (mm)	Belt label
S4.5M		150 S4.5M 630 — Belt's pitch perimeter (630mm) — Belt model (S4.5M type) — Belt's Nominal Width (15.0mm)
S5M		150 S5M 630 — Belt's pitch perimeter (630mm) — Belt model (S5M type) — Belt's Nominal Width (15.0mm)
S8M		600 S8M 1000 — Belt's pitch perimeter (1000mm) — Belt model (S8M type) — Belt's Nominal Width (60.0mm)
S14M		800 S14M 1400 — Belt's pitch perimeter (1400mm) — Belt model (S14M type) — Belt's Nominal Width (80.0mm)

Standard STS Belt Lengths

S5M Type

Belt name	Pitch perimeter (mm)	Number of teeth
S5M 225	225.0	45
S5M 230	230.0	46
S5M 255	255.0	51
S5M 275	275.0	55
S5M 295	295.0	59
S5M 300	300.0	60
S5M 320	320.0	64
S5M 325	325.0	65
S5M 350	350.0	70
S5M 375	375.0	75
S5M 380	380.0	76
S5M 390	390.0	78
S5M 400	400.0	80
S5M 410	410.0	82
S5M 420	420.0	84
S5M 425	425.0	85
S5M 435	435.0	87
S5M 440	440.0	88
S5M 445	445.0	89
S5M 450	450.0	90
S5M 475	475.0	95
S5M 490	490.0	98
S5M 500	500.0	100
S5M 520	520.0	104
S5M 525	525.0	105
S5M 550	550.0	110
S5M 560	560.0	112
S5M 565	565.0	113
S5M 570	570.0	114
S5M 575	575.0	115
S5M 600	600.0	120
S5M 625	625.0	125
S5M 635	635.0	127
S5M 645	645.0	129
S5M 650	650.0	130
S5M 665	665.0	133
S5M 670	670.0	134
S5M 675	675.0	135
S5M 695	695.0	139
S5M 700	700.0	140
S5M 710	710.0	142
S5M 725	725.0	145
S5M 740	740.0	148
S5M 750	750.0	150
S5M 765	765.0	153
S5M 770	770.0	154
S5M 775	775.0	155
S5M 800	800.0	160
S5M 810	810.0	162
S5M 830	830.0	166
S5M 850	850.0	170
S5M 860	860.0	172
S5M 870	870.0	174
S5M 900	900.0	180
S5M 920	920.0	184
S5M 940	940.0	188
S5M 950	950.0	190
S5M 965	965.0	193
S5M 975	975.0	195
S5M1000	1000.0	200
S5M1025	1025.0	205
S5M1050	1050.0	210
S5M1125	1125.0	225
S5M1135	1135.0	227
S5M1145	1145.0	229

S5M Type

Belt name	Pitch perimeter (mm)	Number of teeth
S5M1195	1195.0	239
S5M1225	1225.0	245
S5M1250	1250.0	250
S5M1260	1260.0	252
S5M1270	1270.0	254
S5M1295	1295.0	259
S5M1350	1350.0	270
S5M1420	1420.0	284
S5M1595	1595.0	319
S5M1715	1715.0	343
S5M1800	1800.0	360
S5M2000	2000.0	400

S8M Type

Belt name	Pitch perimeter (mm)	Number of teeth
S8M 352	352.0	44
S8M 384	384.0	48
S8M 408	408.0	51
S8M 424	424.0	53
S8M 456	456.0	57
S8M 480	480.0	60
S8M 520	520.0	65
S8M 528	528.0	66
S8M 560	560.0	70
S8M 584	584.0	73
S8M 600	600.0	75
S8M 632	632.0	79
S8M 640	640.0	80
S8M 656	656.0	82
S8M 672	672.0	84
S8M 680	680.0	85
S8M 712	712.0	89
S8M 720	720.0	90
S8M 728	728.0	91
S8M 760	760.0	95
S8M 800	800.0	100
S8M 824	824.0	103
S8M 840	840.0	105
S8M 848	848.0	106
S8M 880	880.0	110
S8M 888	888.0	111
S8M 896	896.0	112
S8M 920	920.0	115
S8M 944	944.0	118
S8M 960	960.0	120
S8M 976	976.0	122
S8M 984	984.0	123
S8M1000	1000.0	125
S8M1032	1032.0	129
S8M1040	1040.0	130
S8M1056	1056.0	132
S8M1096	1096.0	137
S8M1120	1120.0	140
S8M1136	1136.0	142
S8M1152	1152.0	144
S8M1160	1160.0	145
S8M1184	1184.0	148
S8M1192	1192.0	149
S8M1200	1200.0	150
S8M1216	1216.0	152

S8M Type

Belt name	Pitch perimeter (mm)	Number of teeth
S8M1224	1224.0	153
S8M1240	1240.0	155
S8M1248	1248.0	156
S8M1272	1272.0	159
S8M1280	1280.0	160
S8M1296	1296.0	162
S8M1312	1312.0	164
S8M1344	1344.0	168
S8M1352	1352.0	169
S8M1384	1384.0	173
S8M1392	1392.0	174
S8M1400	1400.0	175
S8M1424	1424.0	178
S8M1440	1440.0	180
S8M1480	1480.0	185
S8M1520	1520.0	190
S8M1552	1552.0	194
S8M1600	1600.0	200
S8M1728	1728.0	216
S8M1760	1760.0	220
S8M1776	1776.0	222
S8M1800	1800.0	225
S8M1808	1808.0	226
S8M1880	1880.0	235
S8M1952	1952.0	244
S8M2000	2000.0	250
S8M2120	2120.0	265
S8M2160	2160.0	270
S8M2240	2240.0	280
S8M2304	2304.0	288
S8M2400	2400.0	300
S8M2496	2496.0	312
S8M2560	2560.0	320
S8M2600	2600.0	325
S8M2800	2800.0	350
S8M2880	2880.0	360
S8M2944	2944.0	368
S8M3200	3200.0	400
S8M3600	3600.0	450
S8M3720	3720.0	465
S8M3904	3904.0	488
S8M4400	4400.0	550

S4.5M Type

Belt name	Pitch perimeter (mm)	Number of teeth
S4.5M 162	162.0	36
S4.5M 180	180.0	40
S4.5M 198	198.0	44
S4.5M 225	225.0	50
S4.5M 239	238.5	53
S4.5M 252	252.0	56
S4.5M 279	279.0	62
S4.5M 284	283.5	63
S4.5M 315	315.0	70
S4.5M 324	324.0	72
S4.5M 351	351.0	78
S4.5M 383	382.5	85
S4.5M 396	396.0	88
S4.5M 450	450.0	100
S4.5M 491	490.5	109
S4.5M 504	504.0	112
S4.5M 518	517.5	115
S4.5M 558	558.0	124
S4.5M 563	562.5	125
S4.5M 612	612.0	136
S4.5M 630	630.0	140
S4.5M 711	711.0	158
S4.5M 729	729.0	162
S4.5M 801	801.0	178
S4.5M1031	1030.5	229

S14M type

Belt name	Pitch perimeter (mm)	Number of teeth
S14M1008	1008.0	72
S14M1120	1120.0	80
S14M1190	1190.0	85
S14M1246	1246.0	89
S14M1400	1400.0	100
S14M1540	1540.0	110
S14M1610	1610.0	115
S14M1652	1652.0	118
S14M1778	1778.0	127
S14M1806	1806.0	129
S14M1890	1890.0	135
S14M1904	1904.0	138
S14M1960	1960.0	245
S14M2002	2002.0	143
S14M2100	2100.0	150
S14M2240	2240.0	160
S14M2310	2310.0	165
S14M2380	2380.0	170
S14M2450	2450.0	175
S14M2506	2506.0	179
S14M2590	2590.0	185
S14M2660	2660.0	190
S14M2800	2800.0	200
S14M3150	3150.0	225
S14M3248	3248.0	232
S14M3500	3500.0	250
S14M3556	3556.0	254
S14M3850	3850.0	275
S14M4004	4004.0	286
S14M4060	4060.0	290
S14M4326	4326.0	309
S14M4508	4508.0	322
S14M5012	5012.0	358

2. Introduction to the Double STS

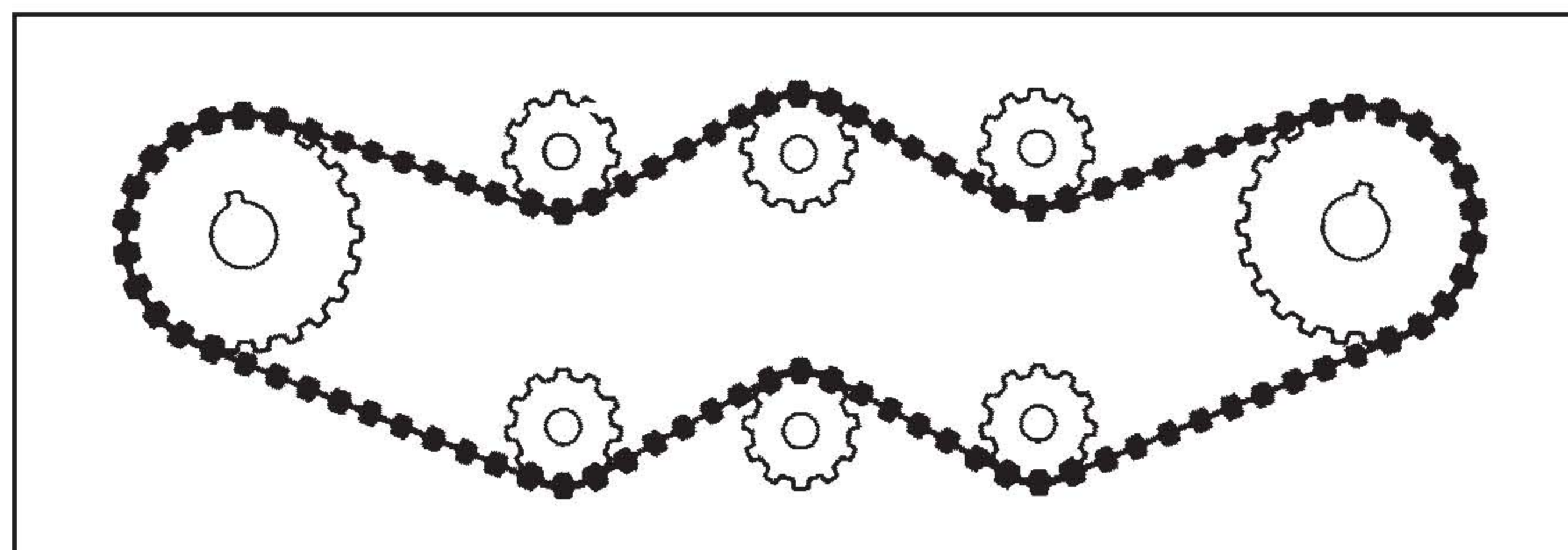
The double STS is a high powered double synchronous belt model. The double STS is recommended in situations where transmission space is limited or a relatively longer service life

is needed, and where the use of a double transmission belt or chain would be too noisy.

Features

● **Synchronous Transmission on Multiple Axles**

A single belt is able to realize synchronous transmission on multiple axles.



● **Simple Maintenance**

Unlike chains, there is no need to perform re-tensing or to apply lubricant, making maintenance easy.

● **Low-noise**

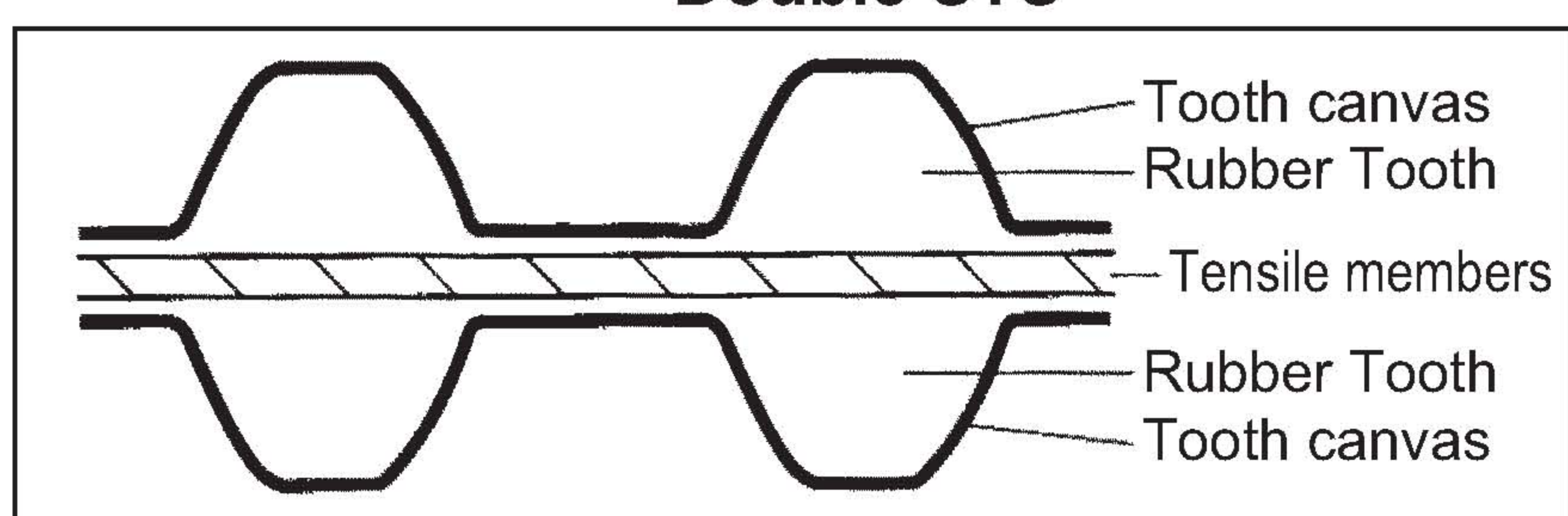
As there is no contact between metals, quiet transmission is achieved.

● **Clean**

Unlike with chains or gears, there is no need to apply lubricants. With no oil splashing around, the area around the belt is able to remain clean.

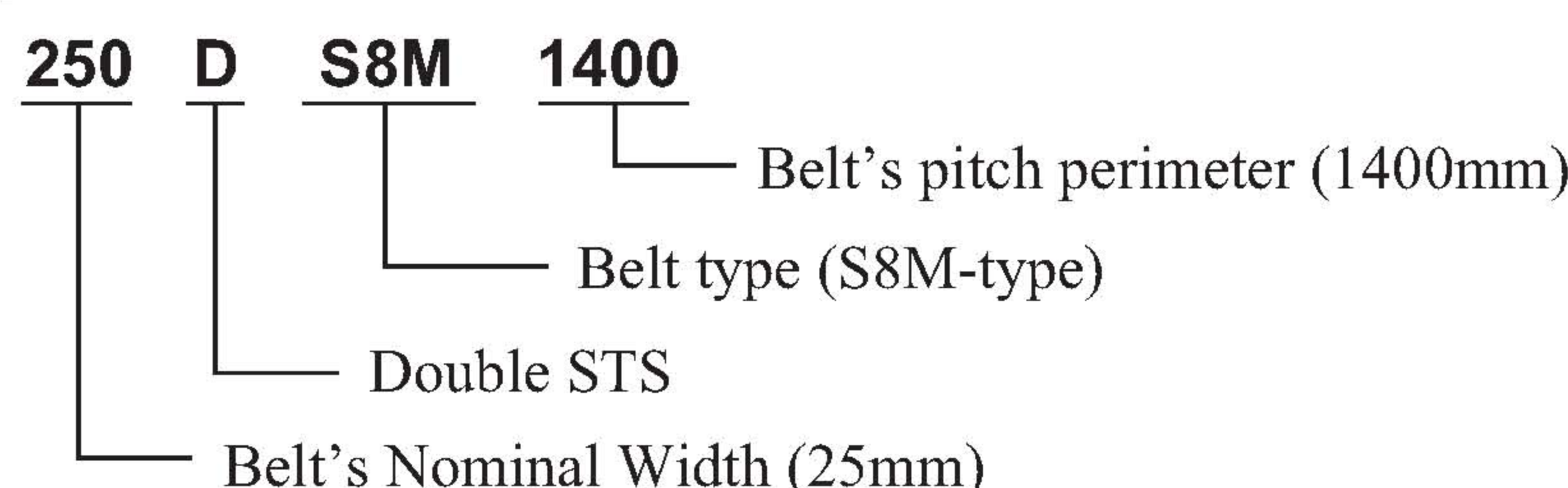
Structure

Double STS



Labeling

● **Double STS**



Standard Length of Double STS Belts

DS4.5M Type			
Standard belt width			
Nominal width	60	100	150
Width (mm)	6	10	15
Belt dimensions			
Name	Pitch perimeter (mm)	Number of teeth	
DS4.5M 450	450.0	100	
DS4.5M 491	490.5	109	
DS4.5M 504	504.0	112	
DS4.5M 518	517.5	115	
DS4.5M 558	558.0	124	
DS4.5M 563	562.5	125	
DS4.5M 612	612.0	136	
DS4.5M 630	630.0	140	
DS4.5M 711	711.0	158	
DS4.5M 729	729.0	162	
DS4.5M 801	801.0	178	
DS4.5M1031	1030.5	229	

DS8M Type				
Standard belt width				
Nominal width	150	250	400	600
Width (mm)	15	25	40	60
Belt dimensions				
Name	Pitch perimeter (mm)	Number of teeth		
DS8M 424	424.0	53		
DS8M 440	440.0	55		
DS8M 456	456.0	57		
DS8M 480	480.0	60		
DS8M 520	520.0	65		
DS8M 560	560.0	70		
DS8M 584	584.0	73		
DS8M 600	600.0	75		
DS8M 632	632.0	79		
DS8M 640	640.0	80		
DS8M 656	656.0	82		
DS8M 672	672.0	84		
DS8M 680	680.0	85		
DS8M 712	712.0	89		
DS8M 720	720.0	90		
DS8M 728	728.0	91		
DS8M 760	760.0	95		
DS8M 800	800.0	100		
DS8M 824	824.0	103		
DS8M 840	840.0	105		
DS8M 848	848.0	106		
DS8M 880	880.0	110		
DS8M 888	888.0	111		
DS8M 896	896.0	112		
DS8M 920	920.0	115		
DS8M 944	944.0	118		
DS8M 960	960.0	120		
DS8M 984	984.0	123		
DS8M1000	1000.0	125		
DS8M1032	1032.0	129		
DS8M1040	1040.0	130		
DS8M1056	1056.0	132		
DS8M1096	1096.0	137		

Belt dimensions		
Name	Pitch perimeter (mm)	Number of teeth
DS8M1120	1120.0	140
DS8M1136	1136.0	142
DS8M1152	1152.0	144
DS8M1160	1160.0	145
DS8M1184	1184.0	148
DS8M1192	1192.0	149
DS8M1200	1200.0	150
DS8M1216	1216.0	152
DS8M1224	1224.0	153
DS8M1240	1240.0	155
DS8M1248	1248.0	156
DS8M1272	1272.0	159
DS8M1280	1280.0	160
DS8M1296	1296.0	162
DS8M1312	1312.0	164
DS8M1344	1344.0	168
DS8M1352	1352.0	169
DS8M1384	1384.0	173
DS8M1392	1392.0	174
DS8M1400	1400.0	175
DS8M1424	1424.0	178
DS8M1440	1440.0	180
DS8M1480	1480.0	185
DS8M1520	1520.0	190
DS8M1552	1552.0	194
DS8M1600	1600.0	200
DS8M1728	1728.0	216
DS8M1760	1760.0	220
DS8M1776	1776.0	222
DS8M1800	1800.0	225
DS8M1808	1808.0	226
DS8M1880	1880.0	235
DS8M1952	1952.0	244
DS8M2000	2000.0	250
DS8M2120	2120.0	265
DS8M2160	2160.0	270
DS8M2240	2240.0	280
DS8M2304	2304.0	288
DS8M2400	2400.0	300
DS8M2496	2496.0	312
DS8M2560	2560.0	320
DS8M2600	2600.0	325
DS8M2800	2800.0	350
DS8M2880	2880.0	360
DS8M3200	3200.0	400
DS8M3600	3600.0	450
DS8M3720	3720.0	465
DS8M3904	3904.0	488
DS8M4400	4400.0	550

DS14M Type					
Standard belt width					
Nominal width	400	600	800	1000	1200
Width (mm)	40	60	80	100	120
Belt dimensions					
Name	Pitch perimeter (mm)	Number of teeth			
DS14M1400	1400.0	100			
DS14M1540	1540.0	110			
DS14M1610	1610.0	115			
DS14M1652	1652.0	118			
DS14M1778	1778.0	127			
DS14M1806	1806.0	129			
DS14M1890	1890.0	135			
DS14M1904	1904.0	136			
DS14M2002	2002.0	143			
DS14M2100	2100.0	150			
DS14M2240	2240.0	160			
DS14M2310	2310.0	165			
DS14M2380	2380.0	170			
DS14M2450	2450.0	175			
DS14M2506	2506.0	179			
DS14M2590	2590.0	185			
DS14M2660	2660.0	190			
DS14M2800	2800.0	200			
DS14M3150	3150.0	225			
DS14M3248	3248.0	232			
DS14M3500	3500.0	250			
DS14M3556	3556.0	254			
DS14M3850	3850.0	275			
DS14M4004	4004.0	286			
DS14M4060	4060.0	290			
DS14M4326	4326.0	309			
DS14M4508	4508.0	322			
DS14M5012	5012.0	358			

Note) For information on the permitted deviations in belt length and width, please refer to page S-21.