



TPU BELTS

THERMOPLASTIC POLYURETHANE

SYNCHRO-POWER™

GPP BELT

DESIGNED FOR HIGH SPEED AND HIGH LOAD

GATES PARABOLIC PROFILE (GPP) HIGH STRENGTH AND LOW NOISE

Our Synchro-Power GPP belts are high performance, top quality belts designed for high speed precision accuracy to improve your operating efficiency.

Standard GPP belts utilise strong steel reinforcement cord to deliver full tensile strength and allow very small pulley diameters. Reinforced RSL belts have very high tensile strength and stiffness for highly dynamic positioning and vertical lifting applications.

A wear-resistant nylon fabric on the tooth side allows Synchro-Power GPP belts to operate smoothly with high abrasion resistance.

Gates Synchro-Power GPP belts are high-performance, precision-engineered thermoplastic polyurethane (TPU) synchronous belts designed for demanding linear motion, transport, and lifting applications.

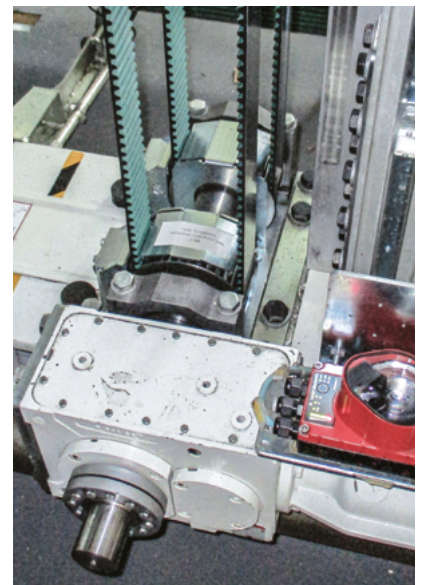
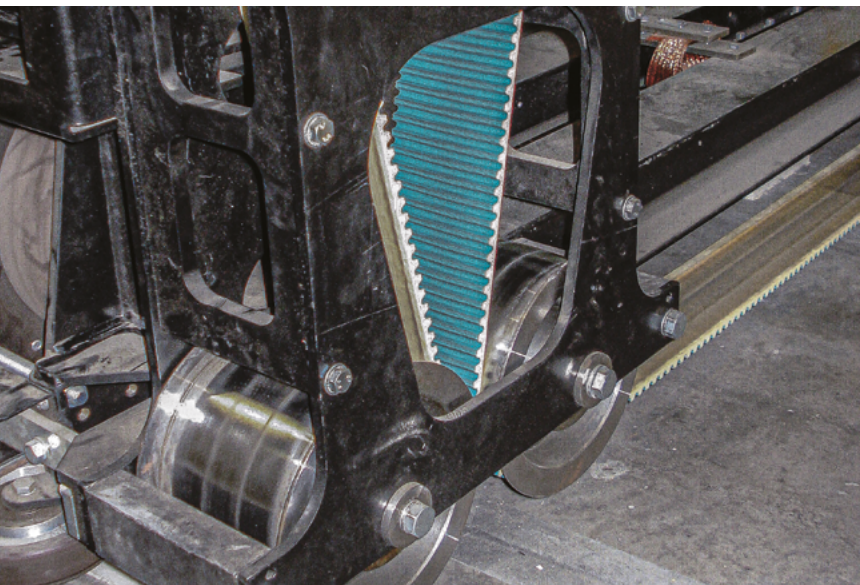
HF versions are built with highly flexible steel cords, they support small pulley diameters while delivering excellent tensile strength. RSL versions offer enhanced stiffness and strength for high-load, dynamic positioning and vertical movement. A wear-resistant nylon tooth fabric ensures low noise and high abrasion resistance.

Available in standard and low-temperature urethanes, GPP belts operate reliably in a wide range of environments, including deep freeze and outdoor conditions. Compatible with RPP*, HTD, and HTD SG pulleys, Gates Synchro-Power GPP belts offer exceptional durability, reduced downtime, and consistent performance, making them the top choice for thermoplastic polyurethane synchronous belt solutions.

FEATURES + BENEFITS

- GPP8 or GPP14 pitch
- RPP* or HTD pulleys
- Standard belts for medium load capacity
- Reinforced RSL belts for high load applications
- Standard tooth side Nylon fabric
- Optional back side Nylon fabric
- GPP8 in widths up to 150 mm
- GPP14 in widths up to 200 mm
- Small pulley diameters

* RPP is a trademark of The Timken Company



SYNCHRO-POWER GPP8

Our basic 8M pitch parabolic profile belt is ideal for light and medium linear actuation applications, door opening systems, and any application requiring an endless welded belt system for transportation.

- Highly flexible steel cord construction is designed for very small pulley diameters
- Optional stainless steel cord construction for highly corrosive environments
- Durable and abrasion resistant standard 92°ShoreA urethane for -5 to +70°C temperatures
- Optional low temp urethane for low temperature applications – deep freeze warehousing or outdoor equipment
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric back side
- GPP8 belt runs in RPP8* as well HTD8M pulleys



SYNCHRO-POWER GPP8-RSL

In the same dimensions of the GPP8, our RSL belt is equipped with high strength steel cord. A GPP8-RHF belt is available for small pulley diameters.

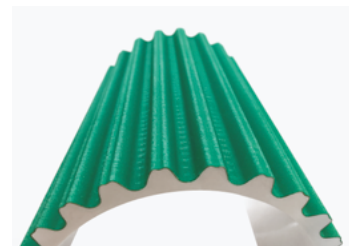
- Higher tensile strength and higher stiffness is perfect for high-precision and very dynamic light to middle load linear applications as well as medium weight lifting
- Standard Applications: RPP8* or HTD8M pulleys
- High Load Applications: HTD8M SG (shallow groove) pulleys recommended for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric back side



SYNCHRO-POWER GPP14

Using a special cord construction, our basic 14M pitch parabolic profile belt delivers great tensile strength and extremely high stiffness for less elastic elongation.

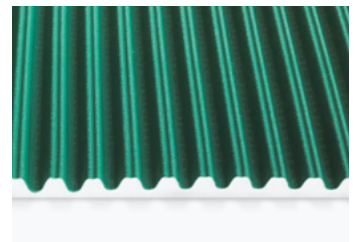
- GPP14 belt runs in RPP14* or HTD14M pulleys
- High Load Applications: HTD14M SG (shallow groove) pulleys recommended for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric on tooth and back side



SYNCHRO-POWER GPP14-RSL

Extremely high strength makes our GPP14-RSL belt perfect for heavy lifting and highly dynamic linear movement applications such as high load stacker cranes in automated warehouses – including deep freeze – and material elevators in the automotive industry.

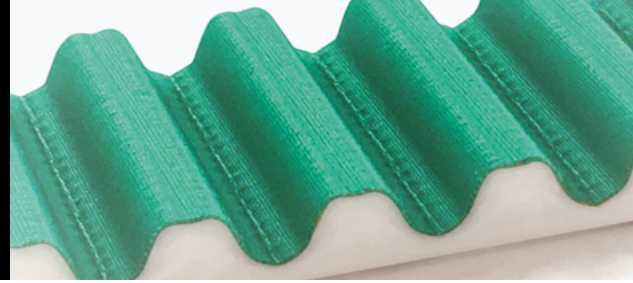
- High Load Applications: Use HTD14M SG (shallow groove) pulleys for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric on tooth and back side



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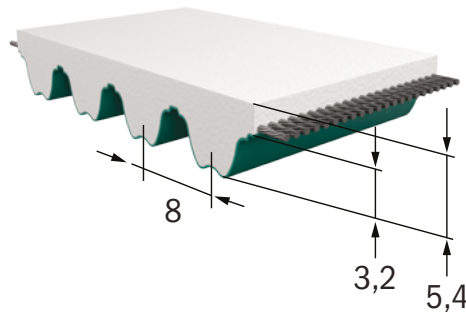
SYNCHRO-POWER GPP8



PRODUCT SPECIFICATIONS

PITCH	8 mm
STANDARD THICKNESS	5,4 mm
WIDTH TOLERANCE	±0,50 mm
MINIMUM WELDED BELT LENGTH	960 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP8




PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE °C	FEATURE
STANDARD	R1	92	-5 to +70	Standard
OPTIONAL	R23T	90	-30 to +50	Low Temperature

MIN PULLEY TOOTH COUNT AND DIAMETER

			STEEL (SL)	STEEL (HF)	STAINLESS (NIRO)
No back bending		z min	18 teeth	16 teeth	25 teeth
		d min	46 mm	41 mm	64 mm
Back bending		z min	20 teeth	18 teeth	30 teeth
		d min	120 mm	100 mm	150 mm

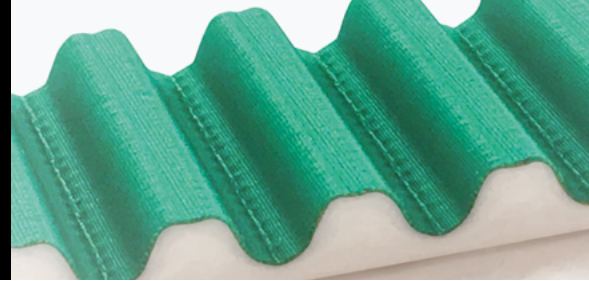
PULLEY DEFINITION

GPP8 belt runs in RPP8* and HTD8M pulley profile.



TPU BELTS

SYNCHRO-POWER GPP8



TECHNICAL DATA

STANDARD WIDTH (mm)		10	15	20	25	30	50	85	100	150
Breaking Force (Average Value)										
Steel (SL)	[N]	5.700	8.550	12.350	15.200	19.000	32.300	56.050	66.500	98.800
Steel (HF)	[N]	5.190	7.785	11.245	13.840	17.300	29.410	51.035	60.550	89.960
Stainless (NIRO)	[N]	4.275	6.413	9.263	11.400	14.250	24.225	42.038	49.875	74.100
Allowable Belt Force (Open Ended)										
Steel (SL)	[N]	1.403	2.104	3.040	3.741	4.676	7.950	13.795	16.367	24.317
Steel (HF)	[N]	1.296	1.944	2.808	3.456	4.320	7.344	12.744	15.120	22.464
Stainless (NIRO)	[N]	1.052	1.578	2.280	2.806	3.507	5.962	10.346	12.275	18.237
Allowable Belt Force (Endless Welded)										
Steel (SL)	[N]	701	1.052	1.520	1.871	2.338	3.975	6.897	8.183	12.158
Steel (HF)	[N]	648	972	1.404	1.728	2.160	3.672	6.372	7.560	11.232
Stainless (NIRO)	[N]	526	798	1.140	1.403	1.754	2.981	5.173	6.138	9.119
Allowable Effective Force (Min. 12 teeth in mesh)										
	[N]	920	1.380	1.840	2.300	2.760	4.600	7.820	9.200	13.800
Belt Weight										
Steel (SL)	[kg/m]	0,05	0,08	0,10	0,13	0,15	0,25	0,42	0,50	0,75
Steel (HF)	[kg/m]	0,05	0,07	0,09	0,12	0,14	0,23	0,39	0,47	0,70
Stainless (NIRO)	[kg/m]	0,05	0,07	0,10	0,12	0,15	0,25	0,42	0,50	0,74
Specific Belt Stiffness										
Steel (SL)	[N]	350.719	526.078	759.891	935.250	1.169.063	1.987.406	3.448.734	4.091.719	6.079.125
Steel (HF)	[N]	324.000	486.000	702.000	864.000	1.080.000	1.836.000	3.186.000	3.780.000	5.616.000
Stainless (NIRO)	[N]	263.039	394.559	569.918	701.438	876.797	1.490.555	2.586.551	3.068.789	4.559.344

Gates® TPU BELTS

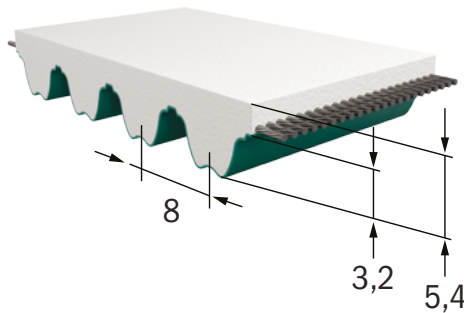
SYNCHRO-POWER GPP8-RSL



PRODUCT SPECIFICATIONS

PITCH	8 mm
STANDARD THICKNESS	5,4 mm
WIDTH TOLERANCE	±0,50 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP8-RSL




PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE	FEATURE
			°C	
STANDARD	R1	92	-5 to +70	Standard
OPTIONAL	R23T	90	-30 to +50	Low Temperature

MIN PULLEY TOOTH COUNT AND DIAMETER

			STEEL (RSL)	STEEL (RHF)
No back bending		z min	31 teeth	25 teeth
		d min	80 mm	64 mm
Back bending		z min	38 teeth	32 teeth
		d min	150 mm	130 mm

PULLEY DEFINITION

GPP8-RSL require special shallow groove pulleys. Please contact Gates TPU application engineering for more information.



TPU BELTS

SYNCHRO-POWER GPP8-RSL

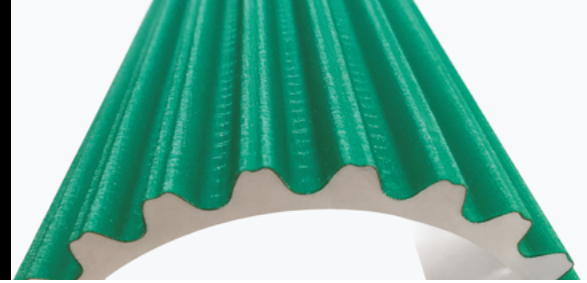


TECHNICAL DATA

STANDARD WIDTH (mm)		15	20	25	30	50	85	100	150
Breaking Force (Average Value)									
Steel (RSL)	[N]	13.840	19.030	25.950	31.140	51.900	91.690	103.800	155.700
Steel (RHF)	[N]	15.400	21.175	28.875	34.650	57.750	102.025	115.500	173.250
Allowable Belt Force (Open Ended)									
Steel (RSL)	[N]	3.349	4.604	6.279	7.534	12.557	22.184	25.114	37.671
Steel (RHF)	[N]	2.902	3.991	5.442	6.530	10.884	19.228	21.767	32.651
Allowable Effective Force (Min. 12 teeth in mesh)									
	[N]	1.380	1.840	2.300	2.760	4.600	7.820	9.200	13.800
Belt Weight									
Steel (RSL)	[kg/m]	0,11	0,15	0,18	0,22	0,37	0,63	0,72	1,09
Steel (RHF)	[kg/m]	0,11	0,15	0,18	0,22	0,37	0,63	0,72	1,09
Specific Belt Stiffness									
Steel (RSL)	[N]	837.143	1.151.071	1.569.643	1.883.571	3.139.286	5.546.071	6.278.571	9.417.857
Steel (RHF)	[N]	725.571	997.661	1.360.446	1.632.536	2.720.893	4.806.911	5.441.786	8.162.679

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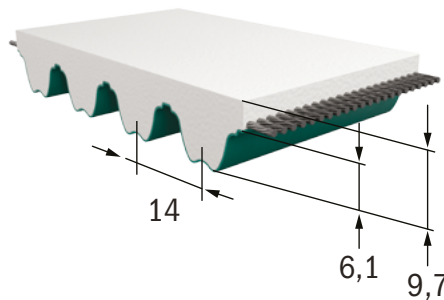
SYNCHRO-POWER GPP14



PRODUCT SPECIFICATIONS

PITCH	14 mm
STANDARD THICKNESS	9,7 mm
WIDTH TOLERANCE	±1,0 mm
MINIMUM WELDED BELT LENGTH	NA
STANDARD ROLL LENGTH (TOLERANCE ±1%)	50 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP14




PITCH	POLYURETHANE	HARDNESS [·SHORE A]	TEMPERATURE RANGE	FEATURE
			·C	
STANDARD	R1	92	-5 to +70	Standard
OPTIONAL	R23T	90	-30 to +50	Low Temperature

MIN PULLEY TOOTH COUNT AND DIAMETER

		STEEL (SL)	
No back bending		z min	32 teeth
		d min	140 mm
Back bending		z min	32 teeth
		d min	200 mm

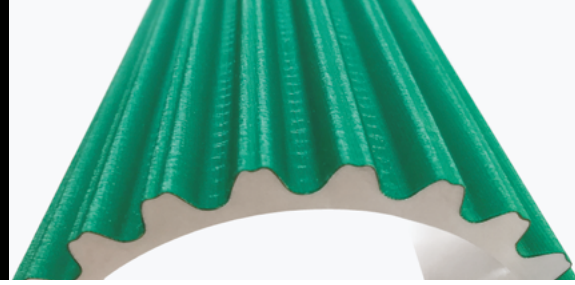
PULLEY DEFINITION

GPP14 belt runs in RPP14* and HTD14M pulley profiles, for heavy lifting and high dynamic application please contact our application engineers.



TPU BELTS

SYNCHRO-POWER GPP14

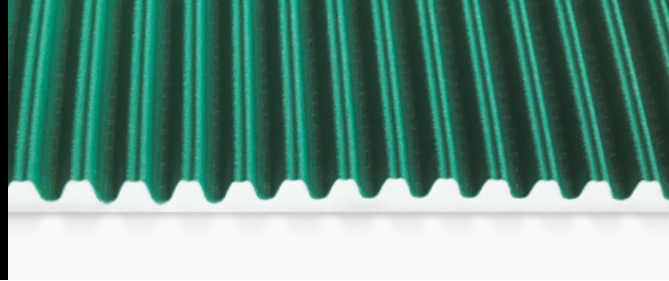


TECHNICAL DATA

STANDARD WIDTH (mm)		40	55	85	115	150	170
Breaking Force (Average Value)							
Steel (SL)	[N]	64.600	87.400	136.800	186.200	247.000	273.600
Allowable Belt Force (Open Ended)							
Steel (SL)	[N]	17.850	24.150	37.800	51.450	68.250	75.600
Allowable Effective Force (Min. 12 teeth in mesh)							
	[N]	6.900	9.488	14.663	19.838	25.875	29.325
Belt Weight							
Steel (SL)	[kg/m]	0,50	0,69	1,07	1,44	1,88	2,13
Specific Belt Stiffness							
Steel (SL)	[N]	4.462.500	6.037.500	9.450.000	12.862.500	17.062.500	18.900.000

Gates® TPU BELTS

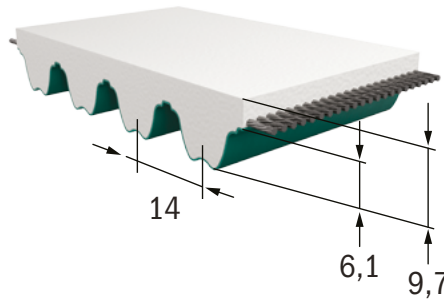
SYNCHRO-POWER GPP14-RSL



PRODUCT SPECIFICATIONS

PITCH	14 mm
STANDARD THICKNESS	9,7 mm
WIDTH TOLERANCE	±1,0 mm
MINIMUM WELDED BELT LENGTH	NA
STANDARD ROLL LENGTH (TOLERANCE ±1%)	50 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP14-RSL




PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE °C	FEATURE
STANDARD	R1	92	-5 to +70	Standard
OPTIONAL	R23T	90	-30 to +50	Low Temperature

MIN PULLEY TOOTH COUNT AND DIAMETER

		STEEL (RSL)	
No back bending		z min	34 teeth
		d min	152 mm
Back bending		z min	34 teeth
		d min	250 mm

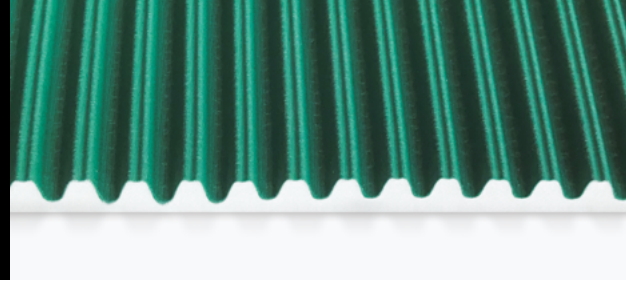
PULLEY DEFINITION

GPP14-RSL belt requires a special pulley profile, please contact our application engineers.



TPU BELTS

SYNCHRO-POWER GPP14-RSL



TECHNICAL DATA

STANDARD WIDTH (mm)		40	55	85	115	150	200
Breaking Force (Average Value)							
Steel (RSL)	[N]	82.500	112.500	180.000	247.500	322.500	427.500
Allowable Belt Force (Open Ended)							
Steel (RSL)	[N]	19.621	26.756	42.810	58.864	76.701	101.674
Allowable Effective Force (Min. 12 teeth in mesh)							
	[N]	6.900	9.488	14.663	19.838	25.875	34.500
Belt Weight							
Steel (RSL)	[kg/m]	0,56	0,76	1,18	1,60	2,08	2,78
Specific Belt Stiffness							
Steel (RSL)	[N]	4.905.312	6.689.062	10.702.499	14.715.936	19.175.311	25.418.435



TPU BELTS

THERMOPLASTIC POLYURETHANE

Gates is a leading manufacturer of innovative thermoplastic polyurethane solutions, trusted worldwide for delivering superior quality, reliability, and optimal lead times.

EMEA

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