

# POWERGRIP® PULLEYS AND TOOTHED BELTS

## FOR SYNCHRONOUS DRIVES

Toothed belts and pulleys are of major importance in synchronous drives based on flexible components. These components enable problems to be overcome efficiently and very economically, problems that would otherwise require the use of kinematic motion gearing or transmissions with articulated link chains.

In fact, the performance provided by synchronous belt drives is analogous to the characteristic performance of both chains and gearing however belts and pulleys by comparison have additional advantages deriving from their structural features.

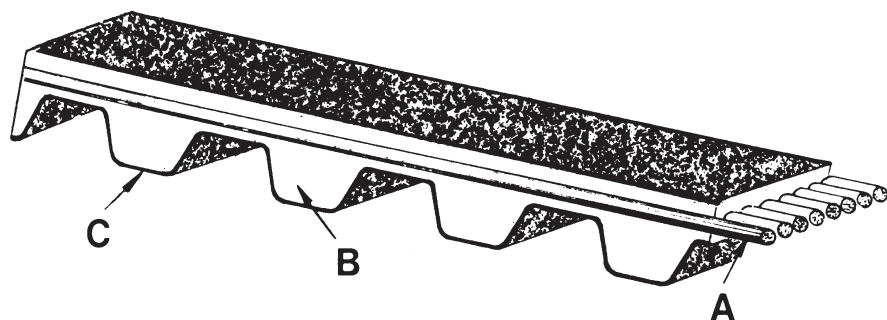
This evident versatility in application is essentially due to the operating characteristics that are common to all toothed belt synchronous drives, and they can be summarised as follows:

- Transmission of absolute asynchronous motion due to the complete absence of slipping.
- Regular and constant motion, since the toothed belt is free from polygonal winding and the consequent speed variation typical of chain transmissions.
- Non-extendable belt that transmits the motion without significant stretching and therefore without lost motion.
- Moderate assembly pre-tension, since adhesion is not required between the belt and the pulley.
- Minimum radial load on the shafts and on the bearings.
- High capacity to transmit power and high torques at low speed.
- Silent running, good performance, minimum overall dimensions and limited maintenance requirements.

The quality of synchronous transmission depends to an equal extent on the characteristics of both the belt and the pulley, which therefore must comply with demanding design and construction criteria.

**CHIARAVALLI Trasmissioni spa** avails of the technical collaboration of the most qualified manufacturers of belts worldwide and produces the Company's complete range of toothed pulleys in compliance with current Standards, but implementing a series of adjustments designed to improve the matching characteristics with the belt.

# POWERGRIP® GATES® BELTS FOR TIMING BELT PULLEYS



## Structural Features

The following components can be identified in the structure of the toothed belts:

- A - Reinforcing insert
- B - Polychloroprene belt body
- C - Teeth lining

## DIMENSIONS

### XL PITCH CODE 1/5" (5.08 mm.)

Belt type	No. of teeth	Extension	
		inches	mm.
60 XL	30	6.00	152.40
70 XL	35	7.00	177.80
80 XL	40	8.00	203.20
90 XL	45	9.00	228.60
100 XL	50	10.00	254.00
110 XL	55	11.00	279.40
120 XL	60	12.00	304.80
130 XL	65	13.00	330.20
140 XL	70	14.00	355.60
150 XL	75	15.00	381.00
156 XL	78	15.60	396.20
160 XL	80	16.00	406.40
170 XL	85	17.00	431.80
180 XL	90	18.00	457.20
190 XL	95	19.00	482.60
200 XL	100	20.00	508.00
210 XL	105	21.00	533.40
220 XL	110	22.00	558.80
230 XL	115	23.00	584.20
240 XL	120	24.00	609.60
250 XL	125	25.00	635.00
260 XL	130	26.00	660.40
270 XL	135	27.00	685.80
280 XL	140	28.00	711.20
290 XL	145	29.00	736.60
300 XL	150	30.00	762.00
310 XL	155	31.00	787.40
316 XL	158	31.60	802.60
330 XL	165	33.00	838.20
344 XL	172	34.40	873.80
352 XL	176	35.20	894.10
380 XL	190	38.00	965.20
384 XL	192	38.40	975.40
390 XL	195	39.00	990.60

### L PITCH CODE 3/8" (9.525 mm.)

Belt type	No. of teeth	Extension	
		inches	mm.
124 L	33	12.37	314.33
150 L	40	15.00	381.00
187 L	50	18.75	476.25
202 L	54	20.25	514.35
210 L	56	21.00	533.40
225 L	60	22.50	571.50
240 L	64	24.00	609.60
255 L	68	25.50	647.70
270 L	72	27.00	685.80
285 L	76	28.50	723.90
300 L	80	30.00	762.00
322 L	86	32.25	819.15
345 L	92	34.50	876.30
367 L	98	36.75	933.45
390 L	104	39.00	990.60
420 L	112	42.00	1066.80
450 L	120	45.00	1143.00
480 L	128	48.00	1219.20
510 L	136	51.00	1295.40
540 L	144	54.00	1371.60
600 L	160	60.00	1524.00

### STANDARDISED WIDTHS

Code	inches	mm.
031	5/16	7.94
037	3/8	9.52

### STANDARDISED WIDTHS

Code	inches	mm.
050	1/2	12.70
075	3/4	19.05
100	1	25.40

# POWERGRIP® GATES® BELTS FOR TIMING BELT PULLEYS

## DIMENSIONS

H PITCH CODE 1/2" (12.7 mm.)			
Belt type	No. of teeth	Extension	
		inches	mm.
240 H	48	24.00	609.60
270 H	54	27.00	685.80
300 H	60	30.00	762.00
330 H	66	33.00	838.20
360 H	72	36.00	914.40
390 H	78	39.00	990.60
420 H	84	42.00	1066.80
450 H	90	45.00	1143.00
480 H	96	48.00	1219.20
510 H	102	51.00	1295.40
540 H	108	54.00	1371.60
570 H	114	57.00	1447.80
600 H	120	60.00	1524.00
630 H	126	63.00	1600.20
660 H	132	66.00	1676.40
700 H	140	70.00	1778.00
750 H	150	75.00	1905.00
800 H	160	80.00	2032.00
850 H	170	85.00	2159.00
900 H	180	90.00	2286.00
1000 H	200	100.00	2540.00
1100 H	220	110.00	2794.00
1250 H	250	125.00	3175.00
1400 H	280	140.00	3556.00
1700 H	340	170.00	4318.00

STANDARDISED WIDTHS		
Code	inches	mm.
075	3/4	19.05
100	1	25.40
150	1 1/2	38.10
200	2	50.80
300	3	76.20

XH PITCH CODE 7/8" (22.225 mm.)			
Belt type	No. of teeth	Extension	
		inches	mm.
507 XH	58	50.75	1289.05
560 XH	64	56.00	1422.40
630 XH	72	63.00	1600.20
700 XH	80	70.00	1778.00
770 XH	88	77.00	1955.80
840 XH	96	84.00	2133.60
980 XH	112	98.00	2489.20
1120 XH	128	112.00	2844.80
1260 XH	144	126.00	3200.40
1400 XH	160	140.00	3556.00
1540 XH	176	154.00	3911.60
1750 XH	200	175.00	4445.00

STANDARDISED WIDTHS			
	Code	inches	mm.
200	2	50.80	
300	3	76.20	
400	4	101.60	

XXH PITCH CODE 1" 1/4 (31.75 mm.)			
Belt type	No. of teeth	Extension	
		inches	mm.
700 XXH	56	70.00	1778.00
800 XXH	64	80.00	2032.00
900 XXH	72	90.00	2286.00
1000 XXH	80	100.00	2540.00
1200 XXH	96	120.00	3048.00
1400 XXH	112	140.00	3556.00
1600 XXH	128	160.00	4064.00
1800 XXH	144	180.00	4572.00

STANDARDISED WIDTHS			
	Code	inches	mm.
200	2	50.80	
300	3	76.20	
400	4	101.60	
500	5	127.00	

# DUAL POWERGRIP® GATES® BELTS

## L PITCH CODE 3/8" (9.525 mm.) DUAL

Belt type	No. of teeth	Extension	
		inches	mm.
210 L DUAL	56	21.00	533.40
240 L DUAL	64	24.00	609.60
255 L DUAL	68	25.50	647.70
270 L DUAL	72	27.00	685.80
285 L DUAL	76	28.50	723.90
300 L DUAL	80	30.00	762.00
322 L DUAL	86	32.25	819.15
345 L DUAL	92	34.50	876.30
367 L DUAL	98	36.75	933.45
390 L DUAL	104	39.00	990.60
420 L DUAL	112	42.00	1066.80
450 L DUAL	120	45.00	1143.00
480 L DUAL	128	48.00	1219.20
510 L DUAL	136	51.00	1295.40
540 L DUAL	144	54.00	1371.60
600 L DUAL	160	60.00	1524.00
660 L DUAL	176	66.00	1676.40

## H PITCH CODE 1/2" (12.7 mm.) DUAL

Belt type	No. of teeth	Extension	
		inches	mm.
240 H DUAL	48	24.00	609.60
270 H DUAL	54	27.00	685.80
300 H DUAL	60	30.00	762.00
360 H DUAL	72	36.00	914.40
390 H DUAL	78	39.00	990.60
420 H DUAL	84	42.00	1066.80
450 H DUAL	90	45.00	1143.00
480 H DUAL	96	48.00	1219.20
510 H DUAL	102	51.00	1295.40
540 H DUAL	108	54.00	1371.60
570 H DUAL	114	57.00	1447.80
600 H DUAL	120	60.00	1524.00
630 H DUAL	126	63.00	1600.20
660 H DUAL	132	66.00	1676.40
700 H DUAL	140	70.00	1778.00
750 H DUAL	150	75.00	1905.00
800 H DUAL	160	80.00	2032.00
850 H DUAL	170	85.00	2159.00
900 H DUAL	180	90.00	2286.00
1000 H DUAL	200	100.00	2540.00
1100 H DUAL	220	110.00	2794.00
1250 H DUAL	250	125.00	3175.00
1400 H DUAL	280	140.00	3556.00

## POSITIVE BELT PITCH SELECTION

