



# Industrial Belt Design - Drive Detail Report

Design Flex® Pro by the Gates Corporation

**Designed For:** Stephane Bordeleau  
 Motion Canada (Trois Rivieres)  
 stephane.bordeleau@motioncanada.com  
 819-374-2788 Phone  
 819-374-0723 Fax

**Provided By:** Casey Padden  
 Gates Canada Inc.  
 225 Henry St. Bldg #8  
 Brantford, Ontario N3S 7R4  
 Canada  
 cpadden@gates.com  
 519-759-4141 ext. 2220 Phone  
 519-759-5561 Fax

Application: **Design #1**

## INPUT

### Drive Information

Known Belt: Poly Chain Carbon - 8MGT-1600 - 62.00 mm  
 Speed Ratio: 3.68 Down  
 Input Load: 93 hp  
 Service Factor: 1.6  
 Design Power: 148.8 hp  
 Center Distance: 16.69 in

**DriveR**  
 Known Size: 38 Teeth  
 RPM: 2000.0  
 Maximum Rim Speed: 6500 ft/min  
 Shaft Diameter: 2.25 in  
 Bushings Checked: Any  
 Belts Checked: Poly Chain Carbon

**DriveN**  
 140 Teeth  
 542.9  
 6500 ft/min  
 3.0 in

Electric Motor

## SELECTED DRIVE

Belt Type: **Poly Chain Carbon - 8M**

	<b>Belt</b>	<b>DriveR</b>	<b>DriveN</b>
Part No:	8MGT-1600-62	PB8MX-38S-62	8MX-140S-62
Product No:	9274-3200	7715-6038	7718-6140
Top Width:	--	2.97 in	2.97 in
Weight:	1.0 lb	7.4 lb	55 lb
Rim/Belt Speed:	1995 ft/min	1962 ft/min	1986 ft/min
RPM:	380.0	2000.0	542.9
Bushing Part No:	--	MPB	3525 3
Bore:	--	1.0 in - 2.4375 in	1.1875 in - 3.9375 in
Pitch Diameter:	--	3.81 in	14.04 in

Speed Ratio: **3.68 Down**  
 dN RPM: **542.9**  
 Rated Load: **150.05 hp, ODR: 1.01**  
 Belt Pull: **1941 lb**  
 Center Distance: 16.69 in  
 Install/Take-Up Range: 15.73 in to 16.73 in  
 Noise: 89 dB @ 1267 Hz

## TENSION

	<b>New Belt</b>	<b>Used Belt</b>
Static Tension (Per rib/strand):	1033 to 1127 lb	751 to 845 lb
Rib/Strand Deflection Distance:	0.25 in	0.25 in
Rib/Strand Deflection Force:	70 to 76 lb	52 to 58 lb
Sonic Tension Meter:	4596 to 5013 N	3342 to 3760 N
Belt Frequency:	155 to 162 Hz	133 to 141 Hz

505C/507C Model STM Settings: Weight: 4.7 g/m, Width: 62 mm/#R, Span: 404 mm

When planning to re-install used belts, measure and record the tension before removing and re-install at the recorded tension.

## NOTES

- The belt length was user specified.
- The belt width was user specified.
- NEMA min dia recommendations do not exist for the HP/RPM selected. Consult with the Motor Manufacturer to confirm that the belt pull is acceptable.
- The DriveR pulley must be bored to the required size. Allow proper lead times.
- The DriveR bore & shaft should meet a Class LC2 clearance fit. The shaft must penetrate 100%.
- The DriveN pulley/bushing weight exceeds 50 lb. Exercise care during installation.
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