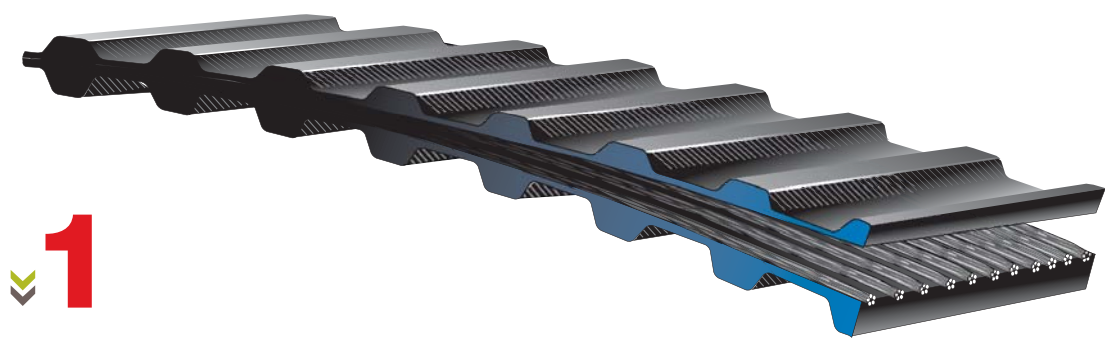


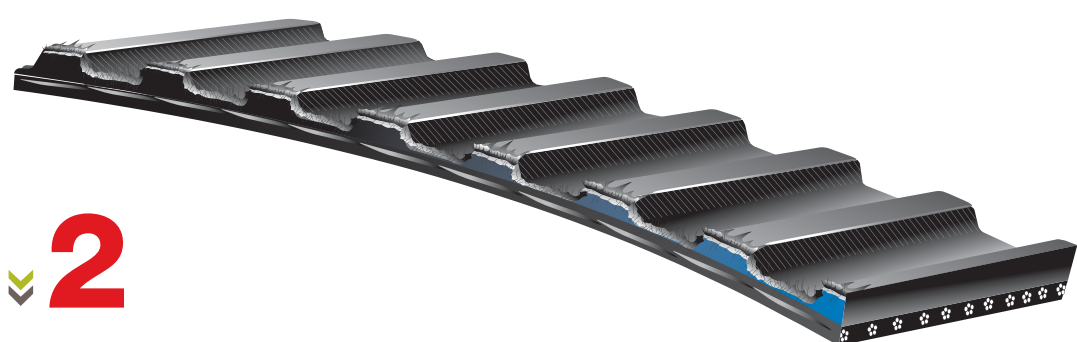


SYNCHRONOUS Drive Failure Analysis

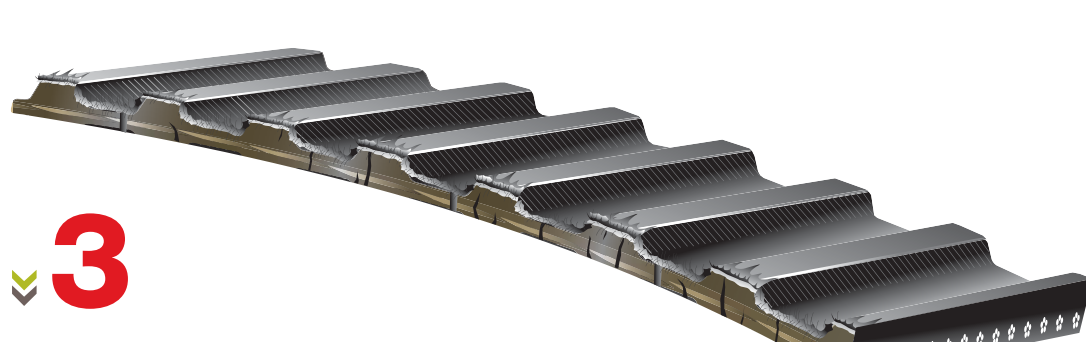
This chart is designed to more accurately identify and troubleshoot synchronous drive problems and failures.



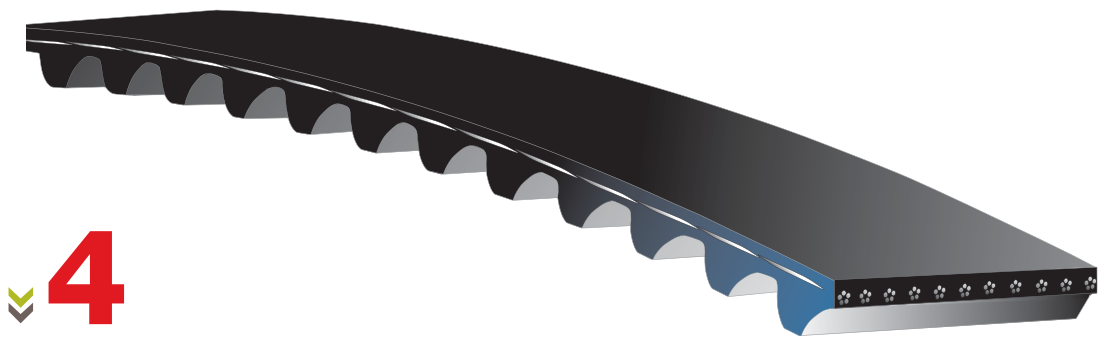
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Delamination



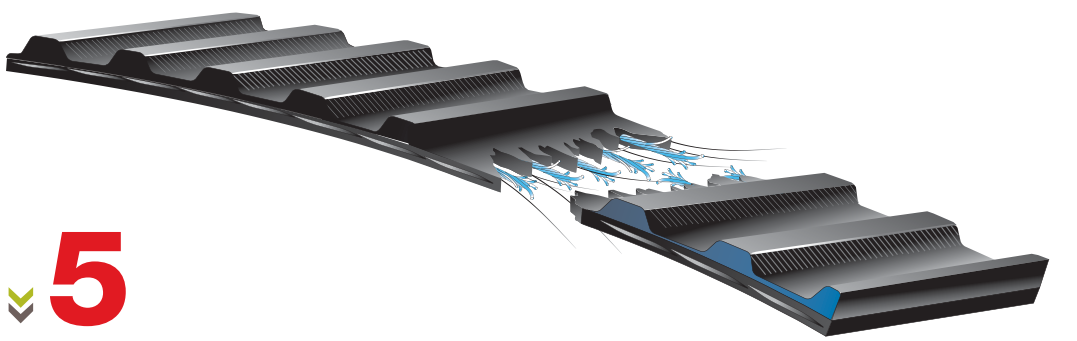
2
Tracking



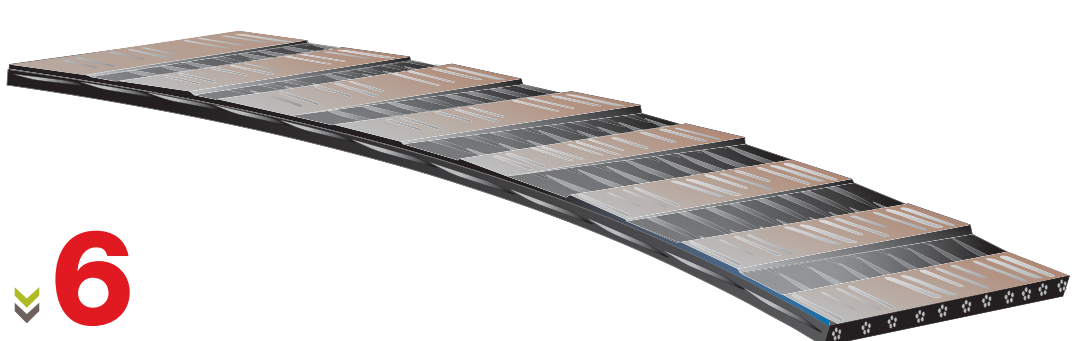
3
Excessive Belt Edge Wear



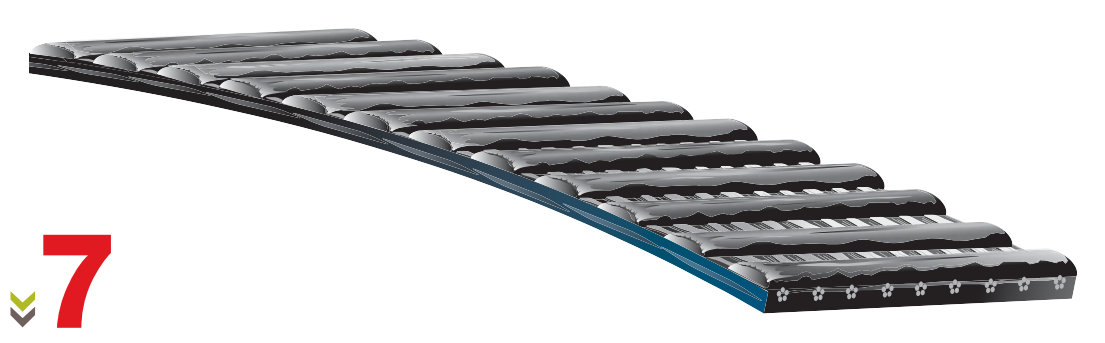
4
Excessive Tooth Wear



5
Tensile Break



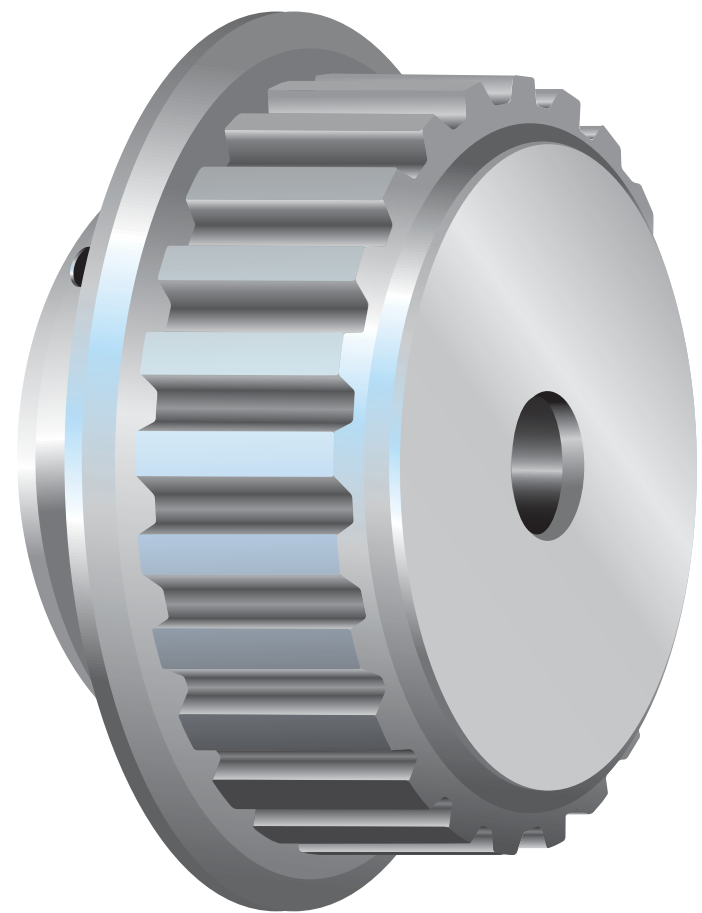
6
Tooth Shear



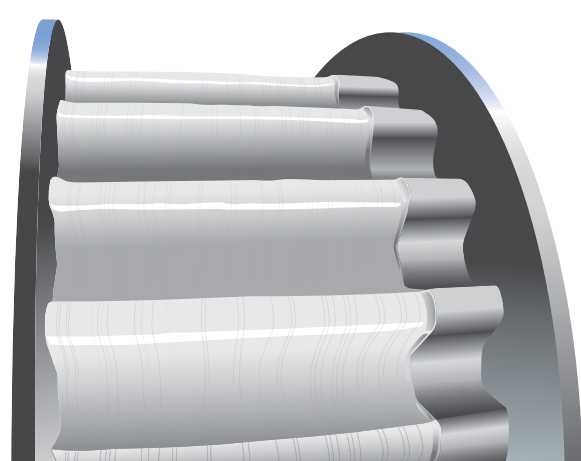
7
Land Area Worn



8
Unusually Loud Drive



Flange Failure
Flanges can be forced off by belts due to drive misalignment or improper flange attachment. Realign the drive and replace the sprocket.



Worn Sprockets
Sprocket grooves wear due to length of service, misalignment, debris, drive overloading, or improper belt tensioning. If a ridge can be detected between the worn and unworn areas of the groove, the sprocket should be replaced.

Symptom	Probable Cause	Corrective Action
1 Delamination	(1) Excessive shockload. (2) Less than 6 teeth in mesh. (3) Extreme sprocket run-out. (4) Worn sprockets. (5) Backside idler. (6) Incorrect sprocket groove profile. (7) Misaligned drive. (8) Belt undertensioned.	(1) Redesign to manufacturer's recommendations. (2) Redesign drive to manufacturer's recommendations. (3) Replace sprocket. (4) Replace sprocket. (5) Use inside idler. (6) Use proper belt/sprocket combination. (7) Realign drive. (8) Retension to manufacturer's recommendations.
2 Tracking	(1) Misaligned drive. (2) Centre distance exceeds 8X small sprocket diameter.	(1) Realign drive. (2) Redesign drive or realign existing drive.
3 Excessive Belt Edge Wear	(1) Misaligned belt drive. (2) Damage due to belt mishandling. (3) Flange damage. (4) Belt too wide for sprocket. (5) Rough flange surface finish. (6) Improper belt tracking. (7) Belt rubbing against guard or drive structure.	(1) Realign drive. (2) Follow proper handling instructions. (3) Repair flange or replace sprocket. (4) Use proper belt width for sprocket. (5) Replace or repair flange. (6) Realign drive. (7) Remove obstruction or realign drive.
4 Excessive Tooth Wear	(1) Belt tension too low or too high. (2) Belt running partly off unflanged sprocket. (3) Misaligned drive. (4) Incorrect belt/sprocket match. (5) Worn, rough, or damaged sprocket. (6) Belt rubbing against drive bracketry, or other obstruction. (7) Excessive load.	(1) Retension to manufacturer's recommendations. (2) Realign drive. (3) Realign drive. (4) Use proper belt/sprocket combination. (5) Replace sprocket. (6) Remove obstruction or alter belt path. (7) Redesign drive to manufacturer's recommendations.

Symptom	Probable Cause	Corrective Action
5 Tensile Break	(1) Crimp failure-improper belt handling and storage prior to installation. (2) Excessive shockload. (3) Sub-minimal diameter. (4) Debris or foreign object in drive. (5) Extreme sprocket run-out. (6) Too low or too high belt tension.	(1) Follow proper handling and storage procedures. (2) Redesign drive to manufacturer's recommendations. (3) Redesign drive to use larger sprockets. (4) Protect drive. (5) Replace sprockets. (6) Retension to manufacturer's recommendations.
6 Tooth Shear	(1) Excessive shockload. (2) Less than 6 teeth in mesh. (3) Extreme sprocket run-out. (4) Worn sprockets. (5) Backside idler. (6) Incorrect sprocket groove profile. (7) Misaligned drive. (8) Belt undertensioned.	(1) Redesign drive to manufacturer's recommendations. (2) Redesign drive to manufacturer's recommendations. (3) Replace sprocket. (4) Replace sprocket. (5) Use inside idler. (6) Use proper belt/sprocket combination. (7) Realign drive. (8) Retension to manufacturer's recommendations.
7 Land Area Worn	(1) Excessive tension. (2) Excessive sprocket wear. (3) Debris in sprockets.	(1) Retension to manufacturer's recommendations. (2) Replace sprocket. (3) Eliminate and guard against debris.
8 Unusually Loud Drive	(1) Incorrect belt/sprocket match. (2) Incorrect tension. (3) Worn sprockets. (4) Debris in sprockets.	(1) Use proper belt/sprocket match. (2) Retension to manufacturer's recommendations. (3) Replace sprockets. (4) Eliminate and guard against debris.

Helpful preventive maintenance tools...for every application!

Double Barrel Tension Tester (30kg)
Product No. 7401-0075

Single Barrel Tension Tester (15kg)
Product No. 7401-0076

507C Sonic Tension Meter
Product No. 7420-0507

Belt & Pulley Gauges
Product No. 7401-0015

EZAlign Laser Alignment Tool
Product No. 7420-1000