

QUARRY INDUSTRY

ROCK SOLID SOLUTIONS FOR BELT DRIVE APPLICATIONS

The Driving Force in Power Transmission®



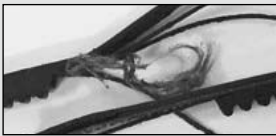

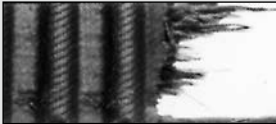

HOW TO AVOID LOSS OF TONS DUE TO BELT FAILURE



When aggregate crusher and shaker screen equipment breaks down and halts your operations, the downtime can cost you thousands of dollars in lost tonnage production per hour.

One way to prevent downtime is the use of high quality Gates belts on your processing equipment drive systems. Belt failures occur due to six common problems: Improper tension, misalignment, improper handling, hardware, environmental factors, and drive design.

HERE ARE A FEW COMMON CAUSES OF BELT FAILURE AND SHORTENED BELT LIFE:

	FAILURE	CAUSE	CORRECTIVE ACTION
	<p>SHOCK LOAD FAILURE Belt pulls apart or breaks.</p>	<ol style="list-style-type: none"> 1. Slippage. 2. Shock load exceeded the load capacity of the belt. 3. Under-designed drive. 	<ol style="list-style-type: none"> 1. Tension belts to manufacturing recommendations. 2&3. Redesign drive for sufficient load carrying capacity or upgrade to Predator® belts.
	<p>CHUNK OUT Pieces of belt material missing.</p>	<ol style="list-style-type: none"> 1. Excessive heat, age or stress causing belt to harden. 2. Debris such as rock pieces. 3. Excessive slippage. 	<ol style="list-style-type: none"> 1. Eliminate source of excessive heat build-up or use higher temperature rated belts. 2. Provide adequate guard or drive protection. 3a. Tension belts to manufacture's recommendations. 3b. If correctly tensioned, use Predator® belts to protect from slippage.
	<p>BROKEN BELT A smooth or jagged break across the width of the belt.</p>	<ol style="list-style-type: none"> 1. Severe shock load. 2. Belt rolled or prised onto pulley. 3. Object falling into drive. 4. Underdesigned drive (limitation on space). 	<ol style="list-style-type: none"> 1. Redesign to accommodate shock load. 2. Use drive take-up when installing. 3. Provide adequate guard or drive protection. 4. Redesign using Gates Poly Chain GT Carbon or Predator.
	<p>PULLEY WEAR V-groove becomes rounded and shiny, won't fully support belt sidewalls causing belt failure.</p>	<ol style="list-style-type: none"> 1. Fine abrasive particles between belt sidewall and metal pulley. 2. Excessive Slippage. 	<ol style="list-style-type: none"> 1a. Check metal wear with pulley gauge, replace pulley when 0.8mm gap or more is seen. 1b. Minimise infiltration of abrasive debris with adequate drive guards. 2. Tension belts to manufacturing specifications.



HOW TO AVOID LOSS OF TONS DUE TO BELT FAILURE



Gates offers more types of belts than ever before. This broad choice of product allows you to select the belt that provides the best performance and the best value on your crusher and screen equipment.

PREDATOR® BELTS Best Belts Available for Crusher Equipment

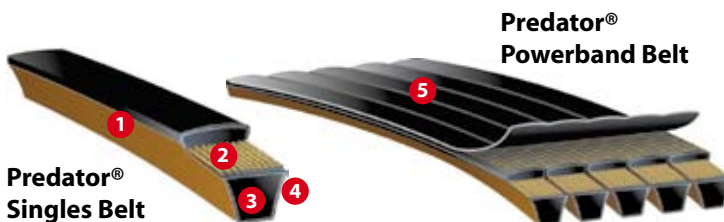
Gates Predator belt drives have proved themselves in the toughest, dirtiest and most aggressive applications.

- Reduce drive cost up to 35% ✓
- Reduce drive width up to 50% ✓
- Reduce drive weight up to 50% ✓

Predator V-belts can handle 1.4-2.2 times more power than the equivalent size standard V-belt. So you can design a more compact drive that weighs less, puts less strain on costlier components, and uses fewer belts. All of which saves you money.

High power motors? Shock loads from sudden starts and stops? Dirty operating environments? High heat? Contamination from oil and solvents? Predator® V-belts handle them all.

Here's why:



Predator Singles - SPBP/5VP, SPCP, 8VP, AP, BP, CP
Predator Powerband - SPBP, SPCP, 3VP, 5VP, 8VP

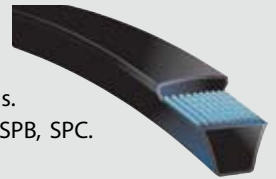
- 1 Reduce friction and heat buildup under shock load with abrasion and puncture-resistant bareback (non-rubber) double-layer fabric cover.
- 2 Minimal need for retensioning due to stronger-than-steel aramid fibre tensile cords that reduce belt stretch by 50% over standard V-belts.
- 3 Oil and heat resistant chloroprene compound body, rated for 82°C, outperforms other rubbers in harsh operating conditions.
- 4 Extend drive life with the patented curved sidewall that allows the belt to enter the pulley groove cleanly and smoothly, reducing sidewall wear on belt and pulley.
- 5 Multiple-layer tie band joins belts together into a Predator PowerBand® that provides lateral rigidity for reduced vibration and belt turn-over on multi-groove pulleys.

OTHER GATES BELTS FOR QUARRY EQUIPMENT DRIVE APPLICATIONS.

Super HC® V-Belt

- **Shaker Screens, Pump Drive, Secondary Crushers**

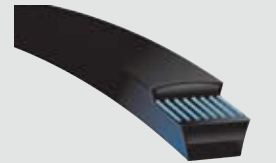
- Service up to 1000 kW.
- Single belts: SPZ, SPA, SPB, SPC, 3V, 5V, 8V cross sections.
- PowerBand belts: 3V, 5V, 8V, SPB, SPC.



Hi-Power® II V-Belt

- **Older Crusher Equipment, General Low Capacity drives**

- Good general purpose V-belt.
- Single belts: A, B, C, D and E cross sections.
- PowerBand Belts: A, B, C, D



Poly Chain® GT® Carbon Synchronous Belt

- **Shaker Screens, Conveyors, Roller Chain replacement**

- Clean-running, high-powered polyurethane belt drive alternative to roller chain.
- Ideal for low and high speed, high-torque applications.
- Virtually immune to abrasion.
- 8mm pitch – 12mm, 21mm, 36mm and 62mm widths.
- 14mm pitch – 20mm, 37mm, 68mm and 125mm widths.
- Maintenance free operation.
- Carbon Fibre Tensile Cords.



SINGLE OR POWERBAND® BELTS?

Use Powerband belts when:

- Drives have inherent vibration causing belt roll over.
- The centre distance is in the order of 8 times the diameter of the smallest pulley in the system.
- Larger than 10mm debris particles can enter the drive.



COUNT ON GATES TO HELP SOLVE YOUR PROBLEMS AND SAVE YOU MONEY

To maximise the service life of your belts and belt drive systems, enhance performance, and create value for your drive investment, here's what your local Gates representative and distributor can do to help:

- Survey each belt drive at your quarry or plant.
- Make recommendations on belt selections and drive designs for specific applications.
- Provide tensioning information and demonstrate maintenance tools.
- Conduct a free Preventive Maintenance Seminar.
- Recommend belt inventories for your stockroom.



If you require any further information on products, please don't hesitate to contact Gates Australia Customer Service on (03) 9797 9688. For technical support please contact the technical department gatetech@gates.com and for product availability please use your standard supply channels.

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