

There's nothing like a good set of teeth when it comes to synchronous belts.

The advantages of Gates PowerGrip® GT®2 belt drives are overwhelming

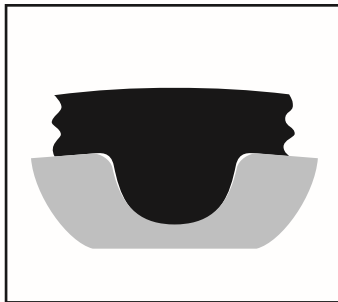
The PowerGrip® GT®2 Belt Drive System is an advance in product design over Gates older, standard HTD® system. The PowerGrip GT2 System, featuring a modified curvilinear belt tooth profile, provides timing and indexing accuracy equivalent to the conventional PowerGrip Trapezoidal Belt System. Plus, PowerGrip GT2 Belts have a higher capacity and longer belt life than trapezoidal belts.

It's difficult to make a true quantitative comparison between the backlash of a trapezoidal tooth drive and a PowerGrip GT2 tooth drive due to the difference in “sprocket to belt tooth” fit. (See illustrations below). Trapezoidal belts contact the sprocket in the root radius– upper flank area only, while the PowerGrip GT2 system permits full flank contact.

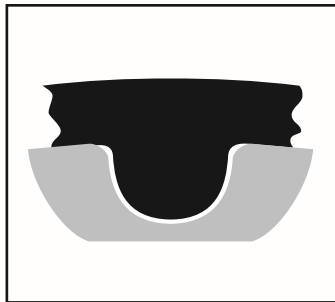
The main stress line in a trapezoidal tooth timing belt is at the base of the teeth. During operation this stress greatly reduces belt life. The PowerGrip GT2 system overcomes this condition with its complete tooth flank contact which eliminates the tooth stress line area. This greatly increases belt life and prevents tooth distortion caused by drive torque. In addition, the conventional timing belt has a chordal effect as it wraps small sprockets. This is significantly reduced in the PowerGrip GT2 system because there's full tooth support along the sprocket. Full support improves meshing, reduces vibration and minimizes tooth deformation.

On drives using a low installation tension, small pulleys, and light loads, the backlash of the PowerGrip GT2 system will be slightly better than the trapezoidal timing belt system. However, with increased tension and/or loads and/or sprocket sizes the performance of the PowerGrip GT2 system becomes significantly better than the trapezoidal timing belt system.

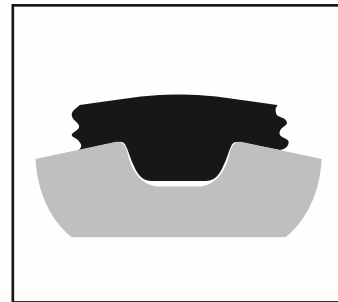
The PowerGrip GT2 system is an extension of the HTD system with improved load-carrying capacity. HTD was developed for high torque drive applications, but is not acceptable for most precision indexing or registration applications. The HTD design requires substantial belt tooth to sprocket groove clearance (backlash) to perform. As smaller diameter sprockets are used, the clearance required to operate properly is increased. HTD drive clearance, using small diameter sprockets, is approximately four times greater than an equivalent timing belt drive.



**PowerGrip® GT2® Belt
Tooth/Groove Contact**



**PowerGrip® HTD® Belt
Tooth/Groove Contact**



**PowerGrip® Timing Belt
Tooth/Groove Contact**

Deep tooth profile makes the difference

The PowerGrip GT2 system's deep tooth design increases the contact area which provides improved resistance to ratcheting. The modified curvilinear teeth enter and exit the sprocket grooves cleanly resulting in reduced vibration. This tooth profile design results in parallel contact with the groove and eliminates stress concentrations and tooth deformation under load. The PowerGrip GT2 design improves registration characteristics and maintains high torque carrying capability.

The choice of industry for ultimate durability and precision

The Gates PowerGrip® GT®2 belt system combines the very best in technology and construction design to give improved performance and extended product life.

Strong fiberglass tensile cords wrapped in a durable Neoprene®* body gives it flexibility and increases service life. A deep tooth profile provides superior load-carrying strength and greatly reduces ratcheting when used with Gates designed sprockets.

Increases load-carrying capacity

Performance far exceeds HTD® and trapezoidal belt capabilities making PowerGrip GT2 belts the choice for accurate registration, heavy loads and small sprockets.

Sounds this quiet...

The PowerGrip GT2 belt's specially engineered teeth mesh cleanly with sprocket grooves to reduce noise and vibration. Clean meshing results in significant noise reduction when compared to PowerGrip Timing and HTD belts.



Precision registration

PowerGrip GT2 Belt Drive Systems provide timing and synchronization accuracy that make for flawless registration, with no loss of torque carrying capability.

When precision is critical, depend on PowerGrip GT2 belts

PowerGrip GT2 belts are specifically designed for applications where precision is critical. Applications such as robotics, conveyors and machine tools. We offer belts in a variety of sizes... custom built constructions are also available for individual applications that require maximum performance. Gates worldwide manufacturing capabilities assures you of prompt service for important markets.

PowerGrip GT2 belts are currently available in 5mm, 8mm and 14mm pitches.

See Pages 7-59 for PowerGrip GT2 Belt Drives.

Here are just some of the many applications of PowerGrip GT2 belts:

- machine tools
- hand power tools
- DC stepper/servo applications
- pumps
- floor care equipment
- medical diagnostic equipment
- centrifuges
- fans
- robotics equipment
- vending equipment
- conveyors
- compressors

* Neoprene is a trademark of Dupont