

# HVAC

**CARLISLE**

BELTS BY TIMKEN

Industrial Distribution – HVAC

**YOUR SOURCE  
FOR ENERGY SAVINGS**

**UP TO 98% EFFICIENT**

**STATE-OF-THE-ART  
ENGINEERING & TECHNOLOGY**

**MADE IN USA**

**TIMKEN**



# Energy Saving Solutions

Getting the most out of every kilowatt dollar doesn't happen by accident. Premium energy efficient motors and high efficiency air moving equipment are all part of a sound game plan to reduce ever-increasing energy costs.

Another key component in that game plan is the power transmission system that connects the motor to the driven equipment – the drive belt.

Carlisle® belts by Timken have a long history of quality and innovation and a reputation for being among the finest drive belts in the industry. In fact, we developed the first raw edge v-belt in 1921 and patented the raw edge cog-belt in 1926.

The unique and varied applications that exist in the HVAC industry demand a wide selection of belts to achieve maximum efficiency and reliable performance. Carlisle belts meet those needs with a comprehensive offering of belts, pulleys and sprockets to service complete drive systems.

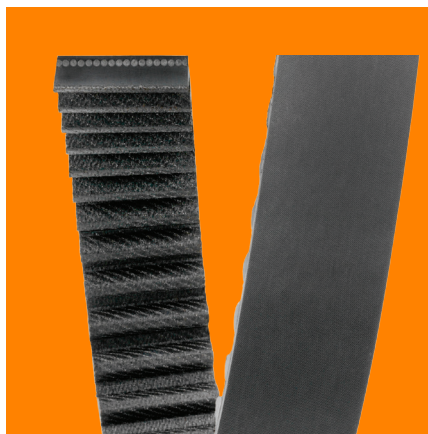
- **Extensive inventories are ready for immediate delivery**
- **Reduce downtime and save energy with Carlisle belts by Timken**



## HVAC Synchronous Belts

EFFICIENT

### Panther®XT



### PANTHER<sup>XT</sup>

- Drive efficiency of 98%
- Allows for more compact drive designs and reduced metal costs
- Panther®XT belts are engineered to achieve higher power ratings than Panther® and competitive belts
- High modulus carbon fiber cord construction for minimal stretch and increased durability
- Fabric is engineered to be low-friction and abrasion-resistant for extended belt life
- Oil and heat resistant (-40°F to 248°F)
- HSN rubber combines high elasticity and hardness for improved performance in harsh environments
- Rubber construction and special fabric design reduce high frequency noise when compared to polyurethane belt construction

### Panther®



### Strong. Resilient. Efficient.

- The energy efficient Panther synchronous belt performs at 98% operating efficiency for reduced energy consumption
- Panther belts shrug off shock loads by incorporating Ultra-Cord®, a non-aramid fiber tensile belt component that delivers strength and dimensional stability, into the belt design
- Uniquely engineered teeth are made of high performance polychloroprene, an advanced polymer compound which increases both the strength and abrasion resistance of the teeth
- Panther belts offer higher power ratings than conventional rubber synchronous belts
- Made in USA

EFFICIENT

# HVAC Premium V-Belts

# Belts Built to Last

## Gold-Ribbon® Cog-Belt®

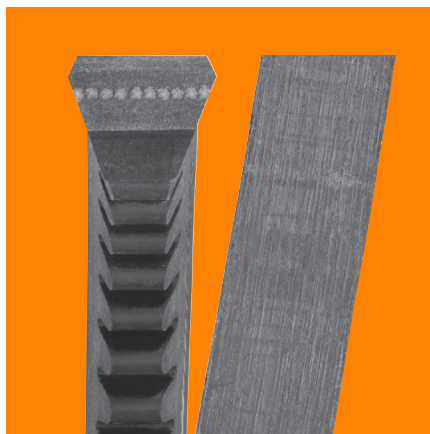


### The Energy Saver!

The unique construction of Carlisle's Gold-Ribbon Cog-Belt combines the superior flexing of precision molded cogs with the tenacious gripping power of raw edge sidewalls to provide higher energy efficiency, increased power ratings, and longer belt life.

- Energy efficient
- Quality EPDM construction
- Higher horsepower ratings
- Design flexibility
- Durable for longer belt life
- Heat resistant
- Static conductive
- Resists hardening and glazing
- Broader operating temperature range
- Built to Chek Mate® belt tolerances for a matched set
- Made in the USA

## Power-Wedge® Cog-Belt®

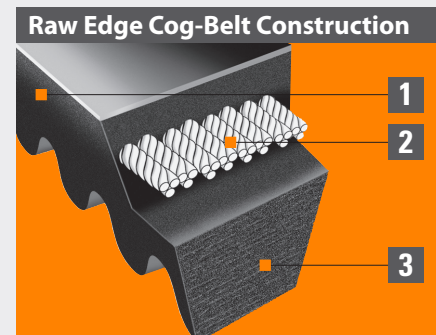


### More Grip, Less Slip!

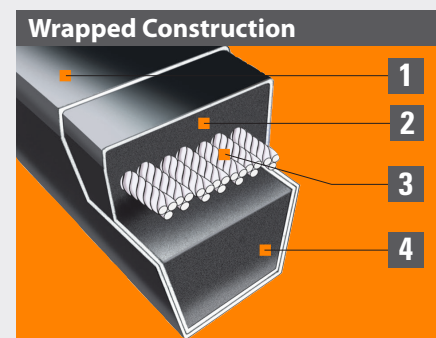
Energy efficient EPDM Power-Wedge Cog-Belts are specially designed for optimum performance. Raw edge construction contributes to outstanding operating efficiency. The result: reduced downtime and energy costs.

- Energy efficient
- Quality EPDM construction
- Higher horsepower ratings
- Design flexibility
- Durable for longer belt life
- Heat resistant
- Static conductive
- Resists hardening and glazing
- Broader operating temperature range
- Built to Chek Mate® belt tolerances for a matched set
- Made in the USA

## Belt Construction



1. Raw edge sidewalls provide uniform anti-slip surface, greater flexibility and allows more cord width
2. Synthetic high-modulus cords form the strength member to carry high loads with minimum stretching
3. Exclusive stiff-flex rubber compounds and precision molded cogs increase flexibility while supporting cords evenly



1. Woven fabric impregnated with engineered rubber compounds
2. Synthetic rubber specially formulated to stretch as belt bends around sheaves
3. High-strength, synthetic fiber cords carry the horsepower load and minimize stretching
4. Synthetic rubber developed to support cords evenly and compress while bending around sheaves

# Belts that Better the Bottom Line

With today's rising energy costs, easy, energy-efficient solutions can be hard to find. Drive system performance is at the mercy of its weakest link.

Through research and development, intensive efforts have been made to improve the efficiency and productivity of motors and driven equipment in industrial applications, while relatively little attention is given to the belt drive that connects the components.

Energy efficient Carlisle belts by Timken improve drive system performance.

- Payback is significant and begins immediately
- Higher horsepower capacity and longer belt life reduce maintenance intervals and critical down time

Energy savings escalate with the number of drives, and with the increased horsepower within those drives. Installing Gold-Ribbon or Power-Wedge Cog-Belts on existing v-belt drives will deliver immediate energy savings without changing sheaves or modifying drives.

- Conventional wrapped v-belts achieve a nominal efficiency of 93%
- Gold-Ribbon and Power-Wedge Cog-Belts maintain a 95% energy efficiency rating
- Synchronous belts consistently achieve a 98% efficiency rating

## 94% EFFICIENT HVAC Performance V-Belts

### Super II® V-Belt



#### The Problem Solver!

Super II® v-belts are better than ordinary wrapped belts. Super II belts end the constant, costly problem of replacing or re-tensioning belts. Super II belts offer greater strength, longer life and better heat dissipation. The secret to Super II v-belts is their unique construction. The raw edge belt grips pulleys, minimizes belt slip, noise and drive vibration. Don't take our word for it! Compare Super II v-belts to the belt you are currently using.

- Longer belt life
- Greater strength
- Superior stretch resistance
- Better heat dissipation
- Less drive maintenance
- Improved flexibility
- Oil, heat and ozone resistant

### Durapower® II FHP V-Belt



#### Lasts Longer & Resists Stretch!

Raw edge technology makes Durapower® II belts heavyweights in the light duty v-belt arena. The secret to superior strength and lasting power is combining the advantages of raw edge v-belts with a centralized neutral axis (CNA) construction. Durapower II belts last longer and resist stretch better than ordinary wrapped light duty v-belts.

- Stress-relieved bias-cut fabric provides maximum flexibility
- High-modulus polyester cord is specially treated to maintain belt loads without stretching
- Raw edge belt side walls grip pulleys, minimizing belt slip, noise and drive vibration
- Special compounds support cords evenly and resist flex fatigue

# HVAC Standard V-Belts

# HVAC Specialty Belts

# The Synchronous Advantage

## Super Blue Ribbon®



## Workhorse of Classical V-Belts

The finest wrapped belt in the industry, the heavy-duty fabric cover on our Super Blue Ribbon® belts means longer, more dependable performance than other wrapped belts – providing positive flex fatigue characteristics and extending load life capacity.

Super Blue Ribbon v-belts operate within a wide range of load capacities and speeds.

Super Blue Ribbon belts are the ideal choice for dependable performance on an extremely wide range of applications.

- Resists oil, heat, weather and aggressive environmental conditions
- Built to Chek Mate® belt tolerances for a matched set
- Long belt life, more dependable performance

## Air Cool Heat Exchange



## Special "Z" Twist Construction

Timken manufactures special "Z" twist construction synchronous belts designed for air cooled heat exchangers. Because the drive has a vertical shaft, the Air Cool Heat Exchange (ACHE) belt is built with "Z" twist cords only. This gives the belt an upward direction of lateral movement which reduces excessive wear on the bottom side of the belt.

The cord in a synchronous belt is made up of a number of small fiber strands twisted together. These strands can be twisted either clockwise or counterclockwise. The two twist directions are referred to as "S" twist and "Z" twist. To reduce lateral movement, most synchronous belts are constructed by alternately spiraling "S" and "Z" type cords. With the ACHE belt, only "Z" twist cords are used to predetermine the lateral movement of the belt.

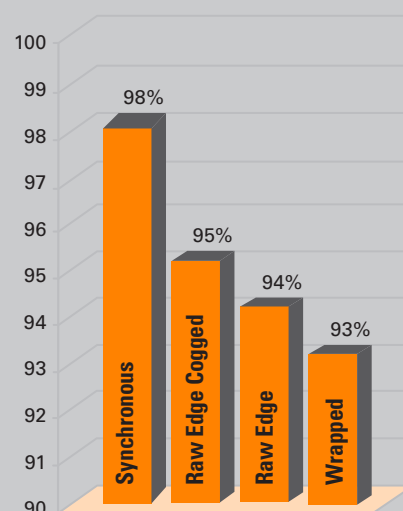
Synchronous belts are designed for maximum energy efficiency with positive engagement between the belt tooth and sprocket, eliminating slippage and speed loss common to v-belts.

Synchronous belts maintain 98% efficiency throughout the life of the drive as compared to 95% efficiency from raw edge cog-belts or 93% from standard wrapped v-belts. Unlike v-belts, synchronous belts do not need re-tensioning, resulting in reduced maintenance costs and downtime.

Consider switching existing v-belt drives to the compact drive design of Panther or PantherXT belts to achieve significant savings in energy, maintenance costs, and reduced downtime.

Carlisle's PowerMiser online calculator will quickly and easily reveal the savings potential you can realize by installing Carlisle synchronous belts by Timken.

## % Belt Efficiency by Construction



# Timken – Your HVAC Resource

Now part of The Timken Company, Carlisle belts bring the Timken advantage to the HVAC market by meeting not just your belt needs, but your bearing needs as well.

## Timken Ball Bearing Housed Units for HVAC

Timken® Fafnir® housed units are the ideal solution for the Heating, Ventilation and Air Conditioning industry. They help reduce vibration, are easy to install and run cooler at higher speeds to extend grease life. Timken housed units keep lubricants in and contaminants out. Designed to maximize performance, a housed unit combines the bearing, housing, seal and locking system into one device for easy installation and operation. Installed in a sturdy housing, each bearing provides shaft support for radial, thrust or combination loads to reduce friction in applications.

For more information scan the QR code below to download the product information sheet:



# Timken – The Belt Experts

## Belt Experts Since 1905

- USA manufacturer since 1905
- Global tier one supplier to industrial distribution, OEM and HVAC markets
- ISO 9001 multi-site registered
- Innovative product development
- Dedicated to customer satisfaction
- Focus on quality, performance, service, durability and value

## Committed to Customer Satisfaction

- Highest quality products backed by the Timken Ironclad Guarantee
- Products proudly made in the USA
- Technical problem solving and drive design
- Latest technology materials and construction
- Long-term durability and performance
- Energy saving solutions
- Solutions and service from an experienced sales force
- Designed and built to rigid specifications
- Extensive inventories for immediate availability
- Complete offering of belts, pulleys and sprockets for one-stop shopping
- Engineered and manufactured in ISO 9001 facilities

## Unsurpassed Technical Expertise

- Dedicated drive belt Technical Center
- Advanced research and material science technology
- Expert application engineering, drive design and analysis
- New product development and custom applications
- Rigorous product testing under real world operating conditions
- Energy testing and research
- Cutting edge process engineering and development

## EPDM Construction

Ethylene Propylene Diene Monomer is a synthetic rubber with outstanding properties used in many Carlisle belts.

EPDM is:

- Durable
- Static conductive
- Resistant to hardening and glazing
- Broader operating temperature range: -50°F/-45°C to +250°F/121°C

# Martin Metal Components

## The Timken Commitment

## Iron Clad Guarantee



- Superior Quality
- Superior Performance
- Superior Support
- Superior Service
- Superior Savings

Customers not completely satisfied with the performance any Carlisle belt that's been properly installed on their drive can return it to their authorized Timken distributor who will replace the product or refund the original purchase price.

We're confident that customers who try Carlisle belts by Timken will never be satisfied with anything less.



Timken is proud to partner with Martin Sprocket & Gear, Inc. to fulfill all your HVAC belt drive needs.

The following Martin sprockets, sheaves and bushings are available along with Carlisle's full offering of belts engineered for HVAC applications.

- Sprockets
  - HTS® Sprockets (use with Panther® belts)
  - MPC® Sprockets (use with Panther®XT belts)
- Sheaves
  - QD Sheaves
  - MST® and Taper Bushed Sheaves
  - Fractional Horsepower Sheaves
- Bushings
  - QD Bushings
  - Taper Bushed Bushings
  - MST® Bushings

For optimum performance and increased belt life, choose Carlisle belts by Timken and Martin Sprocket & Gear.

Together, we're your single source for HVAC belt drive solutions:

- Product
- Service
- On-time delivery
- Quality
- Engineering support

HTS® is a registered trademark of Gates Corporation. MPC® and MST® are registered trademarks of Martin Sprocket & Gear, Inc.

# Energy Efficiency at Your Fingertips

## Timken's PowerMiser™ Efficiency Calculator

Through the variety of energy efficient drive belts for HVAC applications, Timken provides improved system-wide performance.

Use PowerMiser to calculate your savings. The greater the number of drives and higher the horsepower of the drive, the more you save!

Download the PowerMiser energy conservation tool at: [www.carlislebelts.com/powermiser](http://www.carlislebelts.com/powermiser) to calculate the energy savings you'll enjoy when using Carlisle belts by Timken.



## Drive Engineer™

Drive Engineer is a Windows®-based program that is user friendly, and facilitates both new drive selection as well as existing drive analysis.

The package includes information about part numbers, pricing, horsepower capacity, warnings for drive limits, service factors, hub loads, bushings, diameters, center distance and tensioning – in short, everything needed to design a maximum-efficiency drive system.

Go to [carlislebelts.com/drive-engineer](http://carlislebelts.com/drive-engineer) to download this handy tool and begin designing, analyzing and improving your HVAC drive system efficiency today.



## Industrial V-Belt Drives Service Manual

Proper belt tensioning and alignment are also important for energy efficiency and drive life. Consult the Timken "Industrial V-Belt Drives Service Manual" for Carlisle belts to access helpful tips on proper installation and maintenance of belt drives.

Available at: <http://www.carlislebelts.com/media/downloads>, or scan the QR code below:



# TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets high-performance mechanical components, including bearings, gears, chain, belts and related mechanical power transmission products and services.

**Stronger. By Design.**

[www.carlislebelts.com](http://www.carlislebelts.com)