RegalRexnord™

Belt Drives & Bearings Reference Guide

Browning™

POCKET GUIDE

Browning™

CONTENTS

Browning™

V-Belt Drives and Bearings

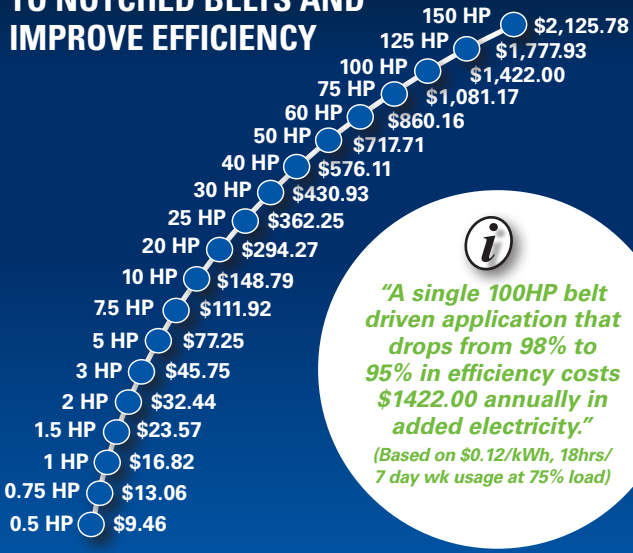
Electronic Tools for the HVAC Industry, visit regalrexnord.com/tools-resources:

- eCatalog
- Smart Interchange
- EDGE selection program

ENERGY RESPONSIBILITY
IN FOUR EASY STEPS

1. *Upgrade from wrapped to notched belts and improve efficiency*
2. *Worn sheaves allow belt slip. Inspect sheaves for wear. Wear greater than 1/32" can decrease efficiency 5% or more*
3. *Properly tension belts*
4. *Install Tenso-Set self-adjusting motor base*

UPGRADE FROM WRAPPED TO NOTCHED BELTS AND IMPROVE EFFICIENCY



"A single 100HP belt driven application that drops from 98% to 95% in efficiency costs $1422.00 annually in added electricity."

(Based on $0.12/kWh, 18hrs/ 7 day wk usage at 75% load)

Try Out Our Free Toolbox Technician™ App

- Energy Efficiency Calculator
- Conversion tools
- GPS-activated "Where To Buy"
- And many other great features

www.regalrexnord.com/browning

Visit our website for a full suite of installation instructions, product interchange software, downloadable catalogs and more.

YouTube.com/@ RegalRexnord

Linkedin.com Search "Browning™ Belt"

IT'S 150° F ON YOUR ROOFTOP TODAY. ARE YOU USING BROWNING™ TORQTITAN™ V-BELTS IN YOUR HIGH-PERFORMANCE AIR HANDLER?

For decades, customers have asked for greater temperature range due to high ambient and operating temperatures in many applications. Industry standard v-belts utilize polychloroprene synthetic rubber compounds which limit operating temperatures from -30° F to +140° F.

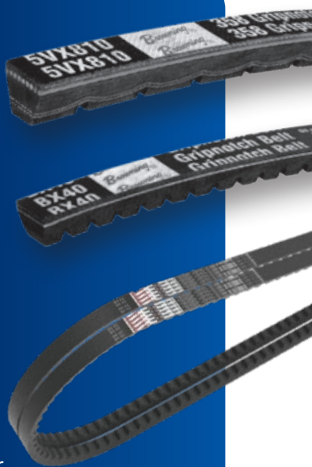
Our EPDM (Ethylene Propylene Diene Monomer) Browning v-belts expand that temperature range considerably. Operating temperatures for EPDM v-belts are -40° F to +248° F. This expanded range helps ensure long-life and reliable performance even in the most demanding climates and heat sensitive applications.

KEY FEATURES

- **WOVEN FABRIC BACKING**
  Tubular woven fabric increases transverse strength and stability.
- **UPDATED GEOMETRY**
  Taller height and improved side wall angle allow for secure fit in sheave grooves, reduces the chance of rollover during non-ideal installation conditions.
- **CODE 1 MATCHED BELTS**
  Designed to exceed the Association of Rubber Products Manufacturers (ARPM) matching limits.
- **HIGH HP CAPACITY**
  30% higher power vs Gripnotch™ Belts, enabling smaller, lighter drives that save money and increase efficiency
- **MINIMAL-ELONGATION POLYESTERTENSILE CORDS**
  Stable tension over the entire lifetime of the belt, requiring no additional re-tensioning after initial installation.
- **OIL/HEAT RESISTANCE & STATIC CONDUCTIVITY**
  Meets ARPM standards for oil and heat resistance as well as static conductivity.

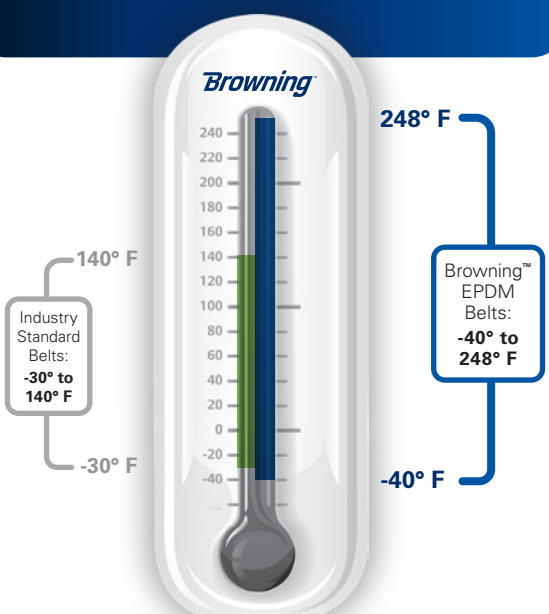
WHAT IS EPDM?

EPDM or Ethylene Propylene Diene Monomer, is a synthetic rubber compound. EPDM is strong, flexible,and resists decay. It is ozone, oxidation, humidity, and heat resistant. Operational temperature for EPDM V-belts are -40° F to 248° F.



ADVANTAGES

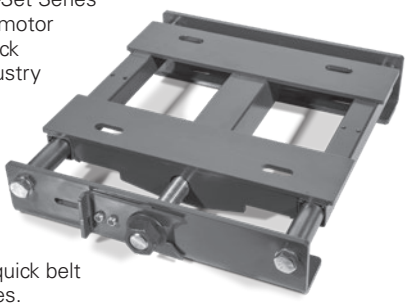
- Greater operating temperature range
- Increased efficiency up to 3% with 3VX, 5VX, 8VX, AX, BX
- Longer belt life
- Smoother running due to higher tolerance for misalignment



TENSO SET

SELF-TENSIONING MOTOR BASE

The Browning™ Tenso-Set Series 600 horizontal sliding motor base with optional quick release (QR) is an industry first for v-belt drives, enhancing technician convenience and belt drive efficiency by automatically maintaining belt tension for extended periods and allowing quick belt changes in just minutes.



BENEFITS

- Significantly reduces time required to change v-belts
- Promotes greater efficiency by constantly maintaining v-belt tension
- Tube rail and one-piece carriage design promotes and maintains superior drive alignment
- Improved safety. No need to cut off belts or roll them onto sheaves

FUNCTIONALITY

1. Closed latch and operating position
2. De-tensioned drive allows release lever gate to slide open
3. Motor carriage slides forward and tensioning bolt passes through frame allowing a significant reduction in time required to safely change v-belts and maintenance system

Constant spring tension automatically compensates for belt wear and reduces frequency of belt adjustments.

NEMA Base - Self-Adjusting			
Part Description	Base Number	NEMA Frame	HP Cap. 1800 or Equivalent
BSAMBN601	601	48-56	1
BSAMBN607	607	182-184	5
BSAMBN613	613	213-215	10
BSAMBN621	621	254-256	20
BSAMBN623	623	284-286	30
BSAMBN925	DX925	324-326	50
BSAMBN927	DX927	364-365	75
BSAMBN931	DX931	444-445	150
BSAMBN933	DX933	447	200

NEMA Base - Quick Release Self-Adjusting			
Part Description	Base Number	NEMA Frame	HP Cap. 1800 or Equivalent
BSAMBN601QR	601	48-56	1
BSAMBN605QR	605	143-145	2
BSAMBN607QR	607	182-184	5
BSAMBN613QR	613	213-215	10
BSAMBN621QR	621	254-256	20
BSAMBN623QR	623	284-286	30

IEC Base - Self-Adjusting			
Part Description	Base Number	IEC Frame	HP Cap. 1800 or Equivalent
BSAMBI601	601	N/A	N/A
BSAMBI605	605	90S-90L	2
BSAMBI613	613	132S-132M	10
BSAMBI623	623	180M-180L	30
BSAMBI925	DX925	200M-200L	50
BSAMBI927	DX927	225S-225M	75
BSAMBI929	DX929	250S-250M	100
BSAMBI931	DX931	280S-280M	150

IEC Base - Quick Release Self-Adjusting			
Part Description	Base Number	IEC Frame	HP Cap. 1800 or Equivalent
BSAMBI601QR	601	N/A	N/A
BSAMBI605QR	605	90S-90L	2
BSAMBI607QR	607	112S-112M	5
BSAMBI613QR	613	132S-132M	10
BSAMBI621QR	621	160M-160L	20
BSAMBI623QR	623	180M-180L	30

BELTS

Browning

A COMPLETE SELECTION

OF BROWNING™ PRODUCTS LEADS TO THE RIGHT V-BELT FOR EVERY APPLICATION

The Browning line offers the most extensive V-drive line available anywhere, which means maximum economy versatility and prompt availability for your every application... truly the right drive every time...for every service.

Browning™

CONTENTS

Browning™

V-BELTS

Unique design enhances performance and provides increased HP capacity in shorter center drives.

FHP

3L
3/8"

4L
1/2"

5L
21/32"
5L Available as B only

CLASSICAL

"A" Belts
1/2" x 5/16"

"B" Belts
21/32" x 7/16"

358

3V
3/8" x 5/16"

5V
5/8" x 17/32"

8V
1" x 29/32"

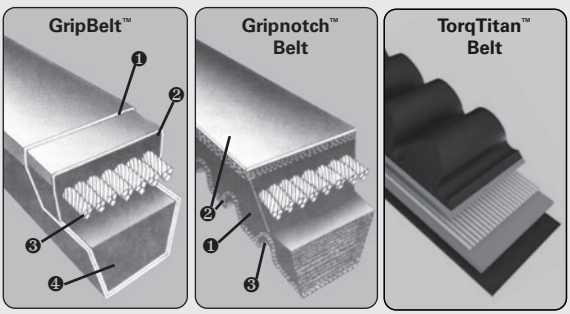
V-BELT DRIVE ADVANTAGES

V-belt drives provide many maintenance advantages that help in your daily struggle to reduce equipment repairs and to hold forced downtime to the lowest possible level.

1. They are rugged–they will give years of trouble-free performance when given just reasonable attention...even under adverse conditions.
2. They are clean–require no lubrication.
3. They are efficient–performing with an average of 94-98% efficiency.
4. They are smooth starting and running.
5. They cover extremely wide horsepower ranges.
6. They permit a wide range of driven speeds, using standard electric motors.
7. They dampen vibration between driving and driven machines.
8. They are quiet.
9. They act as a "safety fuse" in the power drive because they refuse to transmit a severe overload of power, except for a very brief time.
10. V-belts and sheaves **wear gradually** – making preventive corrective maintenance simple and easy.

V-BELT CONSTRUCTION

Unique design enhances performance provides increased HP capacity in shorter center drives.



Before we talk about "Avoiding Problems" and "Solving Problems" let's take a brief look at how V-belts are constructed.

There are basically two types of construction. One has a fabric wrapper (or jacket) surrounding it; the other – usually rated higher in horsepower – is made in a raw edged, cogged construction.

GRIPBELT™

1. **Double Fabric Design**
   - More flexible - use with subminimal pitch diameters.
   - Reduced overlap - reduces vibration
2. **Improved Cord Adhesion**
3. **Improved Flexibility Cords**
4. **SBR Construction**

TORQTITAN™ V-BELTS

1. **Ground Form**
   Reduces vibration, increases belt and bearing life.
2. **Fabric Top**
   Increases rigidity and stability. Reduces stress on the cord line, increases belt life.
3. **Wider Notch Spacing**
   Increases rigidity and stability. Reduces stress on the cord line increases belt life.

PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

DEFINITIONS OF ANSI SAFETY NOTIFICATIONS

⚠ DANGER	Indicates a hazard which, if not avoided, will result in serious injury or death.
⚠ WARNING	Indicates a hazard which, if not avoided, could result in serious injury. or death.
⚠ CAUTION	Indicates a hazard which, if not avoided, could result in minor or moderate personal injury.
NOTICE	Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

You will notice **reference key numbers** (such as **A-1**) appear throughout this section. These refer to a more detailed discussion with illustrations relating to the subject in Section 2 (Corrective Maintenance and Troubleshooting).

PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

1. SAFETY FIRST

Before doing any maintenance work on power drives, **be sure the controlling switch is in the off position–and locked if possible. Follow your plant's safety rules.**

2. SELECT REPLACEMENT BELTS B-1, B-2, B-3, B-4

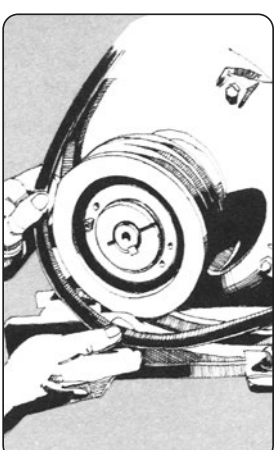
After you have made any necessary corrections in your V-belt drive elements, the next step is the selection of the correct replacement belts.

NOTICE: When replacing sets of V-belts, here are some **very important reminders:**

- Never mix new and used belts on a drive.
- Never mix belts from more than one manufacturer or different belt brands from the same manufacturer.
- Always replace with the right type of V-belt.
- Always observe V-belt matching limits.

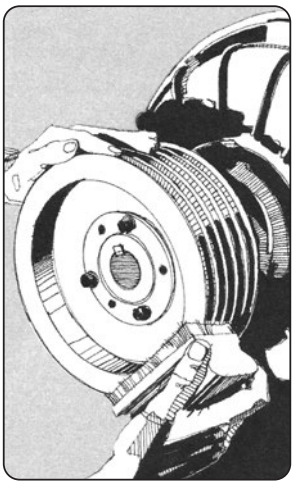
3. REMOVE BELT GUARD A-1

Clean and inspect belt guard thoroughly. After removing the drive guard, loosen the drive take-up and move the sheaves closer together to facilitate the removal of any old belts, and to ensure installation of the new belts without damage.



PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

4. INSPECT DRIVE ELEMENTS A-1, A-6



This is a good time to service the take-up rails by removing any rust, debris, or dirt. Lubricate the bearings as necessary so tensioning of the new belts will go smoothly and easily. This is also an excellent opportunity to inspect and replace faulty or damaged machine elements such as worn bearings and bent shafts.

These maintenance procedures not only reduce the likelihood of future mechanical trouble, but also ensure maximum service from the new belts.

PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

5. INSPECT SHEAVES
A-4, A-9

Sheave condition and alignment are vital to V-belt life and performance.

NOTICE: **New V-belts should never be installed without a careful and thorough inspection of the sheaves involved.**

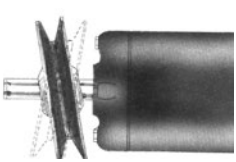
Particular attention should be given to these conditions. Replace sheaves if worn:

a. **Worn groove sidewalls**
b. **Shiny sheave groove bottom**
c. **Wobbling sheaves**
d. **Damaged sheaves**

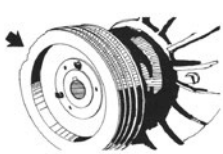
Sheaves should be carefully cleaned of any rust and foreign material. A wire brush followed up by wiping with a shop cloth will usually do the job.

Worn Groove Sidewalls

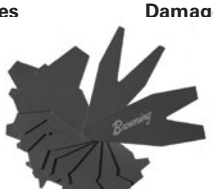
Shiny Sheave Groove Bottom



Wobbling Sheaves



Damaged Sheaves



Groove Gauge

PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

6. CHECK SHEAVE ALIGNMENT A-3

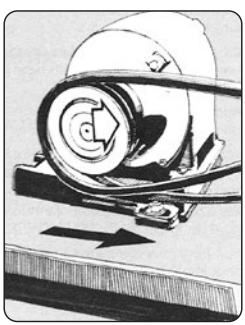
One of the great advantages of V-belt drives is the fact that perfect alignment of sheaves is not critical to the operation of the drive. However, the better the alignment, the better the performance.

Refer to Section 2, A-3, for information on proper alignment procedures and tolerances.

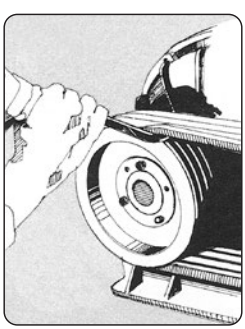
NOTICE: Sheaves should always be mounted as close to the bearings as practical to avoid excessive loads on bearings and shafts.

7. INSTALLING NEW BELTS A-1

Place the new belts on the sheaves, and be sure that the slack of each belt is on the same side. You can do this by pressing the belts with your hand to bring the slack on one side of the drive. Loosening the drive take-up in advance makes this easy.



Do not force the belts on the sheaves by using a pry bar or by rolling the sheaves. Move sheaves apart until the belts are seated in the grooves. Tighten drive until slack is taken up. (Tensioning suggestions follow in Step 8).



PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

8. APPLY TENSION
A-7, A-8

All V-belt drives must operate under proper tension to produce the wedging action of the belt against the groove sidewall. A well-established rule of thumb is that the best tension for a V-belt drive is the LEAST tension at which the drive will not slip under peak load. **Browning recommends using a belt tension checker to properly tension belts.**

9. RECHECK SHEAVE ALIGNMENT
A-3

Anytime sheaves have moved, recheck sheave alignment.

Refer to Section 2, A-3, for information on proper alignment procedures and tolerances.

10. REPLACE GUARD

Start drive. (Look and listen) Check tension after 8, 24 and 100 hours and periodically thereafter.

11. START DRIVE
A-7

Properly designed V-belt drives should not squeal under peak load conditions. If necessary, stop the drive, then start it again. If a squeal is heard, the belts should be tightened to the point where they do not squeal under peak load. Newly installed belts require about 24 hours to become fully seated in the groove.

Re-tension after 3 minutes, 8 hours, 24 hours, 100 hours, and periodically thereafter.

If using TorqTitan™ belts, check tension after 4 minutes of running, then no further tensioning should be required.

PREVENTIVE MAINTENANCE AND INSTALLATION OF V-BELT DRIVES

V-BELT INSTALLATION CHECK LIST:

1.	Turn off and lock out power source Observe all other safety procedures	☐
2.	Select proper replacement belts	☐
3.	Remove belt guard	☐
4.	Inspect drive elements–bearings, shaft, etc.	☐
5.	Inspect sheave grooves for wear	☐
6.	Check sheave alignment	☐
7.	Install new belts	☐
8.	Tension belts	☐
9.	Check sheave alignment (final)	☐
10.	Replace guard	☐
11.	Start drive (look & listen)	☐

CORRECTIVE MAINTENANCE AND TROUBLESHOOTING OF V-BELT DRIVES

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

The first section of this HVAC Pocket Reference Guide outlined a step-by-step procedure for the installation of replacement V-belts to help you prevent V-belt maintenance problems.

The reason behind these steps is **also** fundamental in the daily inspection and maintenance of V-belt drives. **Watching and listening** will alert you to warning signs of trouble, since one of the greatest advantages of V-belt drives is the fact that belts and sheaves **wear gradually**. You can spot potential problems in time to arrange short, **scheduled** maintenance downtime instead of experiencing a longer, costly interruption of production when unexpected trouble occurs.

You can compare V-belts to an electrical fuse – their unexpected failure is usually a signal that something **else** in the system is wrong. Even their patterns of gradual wear often indicate conditions needing corrections or improvements.

CORRECTIVE MAINTENANCE AND TROUBLESHOOTING OF V-BELT DRIVES

CURES / CAUSES / SYMPTOMS	A-1 Belts Pried On or Misplaced Slack	A-2 Belts Rubbing Guard	A-3 Sheaves Misalligned	A-4 Worn or Damaged Sheaves	A-5 Sheaves Too Far From Bearing
Rapid Sidewall Wear		●	●	●	
Worn Cover on Back	●				
Bell Turns Over Or Jumps Off Sheave	●				
Belt Soft, Swollen					
Belt Slips, Squeals (Spin Burn)				●	
Belt Cover Split	●				
Underside Cracked			●		
Tie-Band Damaged		●	●	●	
Repeated Breakage	●				
Belts Ride Too High					
Belts Bottoming				●	
Repeated Take-up Necesssary				●	
Belts Vibrate Excessively or Appear Mismatched			●	●	
Bearing Are Hot				●	●
Shafts Whip or Bend				●	●
Cracked Bushings				●	
Sheave Wobble				●	

● Indicates most common causes.

CORRECTIVE MAINTENANCE AND TROUBLESHOOTING OF V-BELT DRIVES

A-6	A-7	A-8	A-9	B-1	B-2	B-3	B-4	C-1	C-2	C-3	C-4	C-5	C-6	C-7	D-1	D-2	D-3	D-4	D-5
Poor Bearing or Shaft Condition	Insufficient Tension	Excessive Tension	Improper Sheave Installation	Belts Worn (Normal Service Life)	Wrong Belt Cross-Section or Type	Mismatched Belts or Mixed Brands	Machine-Induces Impulse or Shock	Improper or Prolonged Storage	Excessive heat	Excessive Oil or Grease	Use of Belt Dressing	Abrasive Environment	Foreign Objects in Grooves	Excessive Moisture	Overloaded Drive Underbelting	Drive Serioulsy Overbelted	Sheaves Too Small	Insufficient Wrap on Small Sheave	Backside Idler
	●				●			●	●	●	●	●		●					
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● Indicates most common causes.

TROUBLESHOOTING INSTALLATION PROBLEMS

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

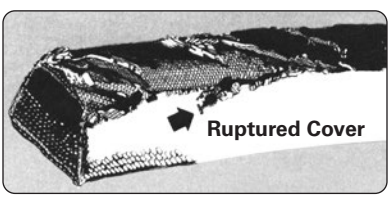
As pointed out in Section 1 of this manual, preventive maintenance by using proper installation techniques is important for long, trouble-free V-belt service.

Occasionally, however, you will find it necessary to correct problems caused by improper installation. This section deals with these problems and troubleshooting procedures.

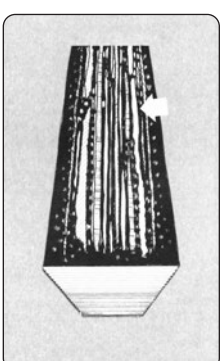
TROUBLESHOOTING INSTALLATION PROBLEMS

A-1 Prying or forcing V-belts onto the sheaves can, and usually does, break some of the load-carrying tensile cords (see illustration on **page 18**, Section A-1). When this happens, the belt may either break or turn over in the groove, usually within the first few minutes of operation. This method of installation may be evidenced by a rupture or split in the wrapped cover of the belt, caused by the prying tool or sheave edge. Broken cords are easily identifiable on raw-edge V-belts because it is usually the edge cords that break first.

Misplaced slack can also cause belt breakage, again usually on startup. This occurs on multiple-belt drives when all of the belt slack is not brought to the same side of the drive before tensioning. If some belts are tight on one side, and others are tight on the other side, the heavy shock load of starting will be borne by only some of the belts, thus weakening or breaking the load-carrying cords.



A-2 Belts rubbing against the metal guard or other obstruction will be evidenced by cut or worn fabric on the back or upper edge of the V-belt. Often just replacing missing bolts in guard brackets will remedy this situation.

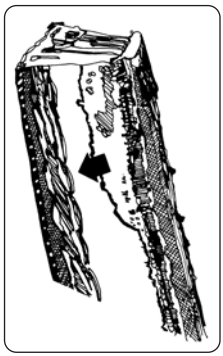


Fabric Worn on Backside

TROUBLESHOOTING INSTALLATION PROBLEMS

A-3 Misaligned sheaves can cause rapid wear of the V-belt sidewalls, considerably shortening service life of both belts and sheaves. Misalignment can also cause separation of the tie-band on banded belts, or apparent mismatching of individual belts. V-belt sheave alignment should be within a tolerance of **1/2° on notched belts and ±2° on wrapped belts.**

The three basic types of sheave and shaft misalignment are shown below. Suggested methods for checking and correcting each type are found on **page 27.**

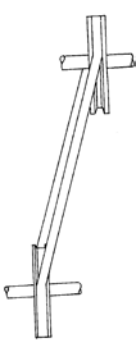


Sidewall Wear

Note: All three types may be present at the same time. Alignment should be checked and corrected in the order given.

Horizontal Angular

Vertical Angular



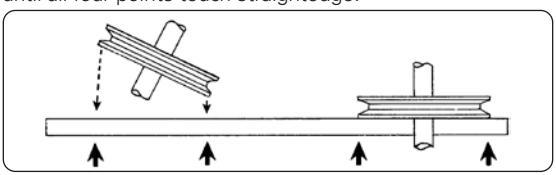
Parallel

TROUBLESHOOTING INSTALLATION PROBLEMS

1. **HORIZONTAL ANGULAR** (shafts in same horizontal plane but not parallel)

   To Check: Use straightedge or string near sheave centers.

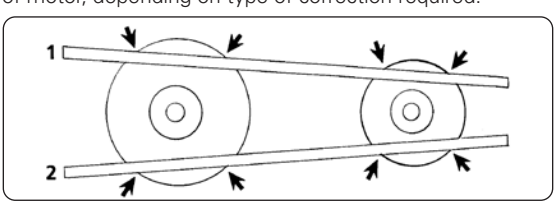
   To Correct: Loosen motor mounting bolts and rotate motor until all four points touch straightedge.



2. **VERTICAL ANGULAR** (shafts not in the same plane and not parallel)

   To Check: Place straightedge about 1/4 radius from the outside diameter of both sheaves as shown. Repeat on opposite side of shaft 2. Straightedge should touch four points indicated in each position.

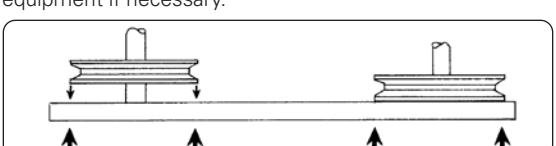
   To Correct: Use shims under motor base in front or rear of motor, depending on type of correction required.



3. **PARALLEL** (shafts are parallel; sheaves not in line)

   To Check: Use straightedge or string near sheave centers.

   To Correct: Loosen sheave so it slides easily on shaft until all four points touch straightedge. Retighten sheave in position. Important: Sheave should be mounted as close to bearing as possible to reduce overhung load on bearing. Relocate equipment if necessary.

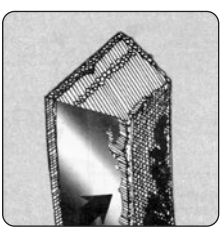


TROUBLESHOOTING INSTALLATION PROBLEMS

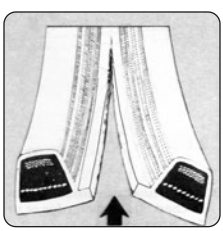
A-4 Worn or damaged sheaves are an even greater cause of rapid belt wear, slippage and vibration. Badly worn sheaves can cause over-tensioning of the drive to prevent slippage, indirectly causing over-heated bearings and shaft damage. If pieces of the sheave flange are missing, it will result in badly worn sidewalls of the belt, and the resulting sheave imbalance can damage bearings and create a safety hazard. When only some of the grooves are worn more than others, the effect is that the belts **appear** to be mismatched. It also causes "differential driving," where only some of the belts are carrying the entire load of the drive.

In the case of banded belts, worn grooves cause the belts to ride too low in the grooves, thus causing the tie-band to wear against the sheave flanges between the grooves. In severe cases, this can have the same effect as a circular blade, cutting the band and separating the belts.

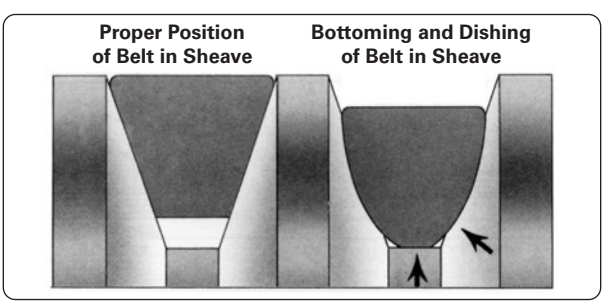
Sheave templates are available from your distributor, which can be used to check grooves accurately for wear. A flashlight held behind the template when placed in



Worn Sidewalls



Cut Tie-Band



TROUBLESHOOTING INSTALLATION PROBLEMS

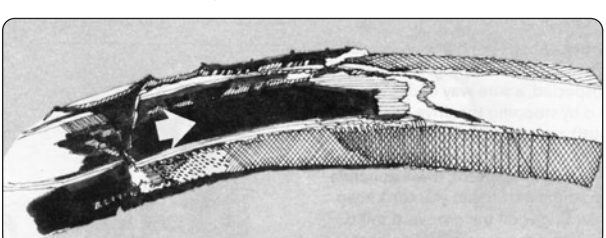
the groove will help you to observe the amount of wear. "Dishing" should not exceed 1/32" for individual sheave sidewalls. A shiny groove bottom is a sign that the belt or sheave, or both are badly worn and the belt is bottoming in the groove. Worn sheaves or shiny sheave groove bottoms will show up first on the smaller sheave.

The cost of replacing a worn sheave will be more than recovered in longer V-belt life, reduced maintenance and downtime.

A-5 **Sheaves mounted too far from the bearing** cause excessive overhung load on the bearing and overheating. This can also cause shafting to whip, bend or break. Sheaves should be mounted as close as possible to the bearing. If this affects alignment severely, it may be necessary to relocate the equipment to stay within alignment limits of 1/16" per 12" of shaft center-to-center distance.

A-6 **Bearing condition** and normal wear may well be the cause of overheating, rather than belt tension. They should be inspected for proper lubrication and wear according to the specifications of the bearing or equipment manufacturer. Shaft condition should also be checked and replaced if necessary, as bent shafts can be detrimental to bearings, belts and sheaves, as well as being a safety hazard due to the imbalance created. Sheave "wobble" may be caused by bent shafts.

A-7 **Insufficient belt tension** it's the leading cause of V-belt slippage and premature belt failure. This is often evidenced by "spin burn". The easiest and most practical way for maintenance personnel to judge proper belt tension is by use of a Browning™ belt tension checker.



Spin Burn

TROUBLESHOOTING INSTALLATION PROBLEMS

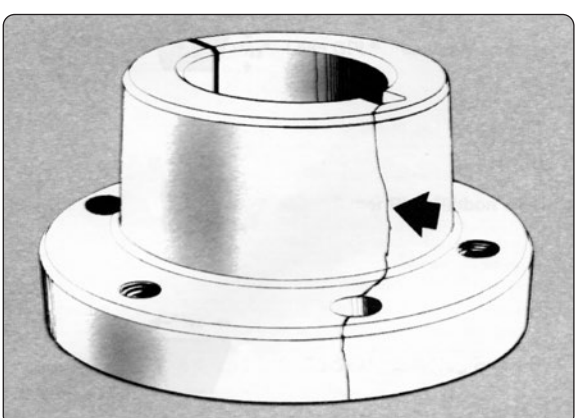
A-8 Excessive tension on V-belts can be even more detrimental than too little tension, affecting not only the belts, but also bearings and shafts. Again, the best rule is to apply only enough tension on the belts to keep them from slipping during startup or peak loading. Some indicators of excessive tensioning (but not always) are:

- **Repeated belt breakage**
- **Overheated bearings**
- **Excessive vibration**
- **Whipping or bent shafts**

A-9 Improper sheave and bushing installation can result in sheave "wobble" as well as causing sheave hubs to crack. When installing split-tapered bushings always follow manufacturer's instructions.

NOTICE: It is important to **never** lubricate the tapered surfaces before installing. The lubrication will permit recommended torque wrench values to increase the actual force on the bushing and hub. This usually results in cracking of the hub at the bolt hole or keyway.

On flanged bushing types, proper installation should result in a gap between the bushing flange and the hub face. The absence of a gap may indicate a problem. When removing split-tapered bushings, start at the jack-screw hole opposite the split to avoid cracking the bushing.



Cracked Bushing

TROUBLESHOOTING SELECTION PROBLEMS

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

The array of V-belt types, cross-sections and lengths on the market today are all part of technological efforts to provide more efficient, cost-saving answers to your drive requirements.

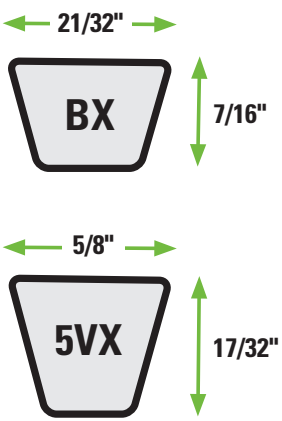
This category is intended to point out how you can be sure of applying the best V-belt type to your applications.

TROUBLESHOOTING SELECTION PROBLEMS

B-1 Worn V-belts may have gotten that way simply because they have delivered the service life built into them. Browning, strives to design V-belts with a "balanced" construction, so each element of the belt will last as long as all other elements. But the wide variety of industrial applications, environmental conditions and maintenance practices makes this impossible to achieve. However, the expected life of an industrial V-belt on a properly designed and maintained drive is three years.

B-2 Using the wrong V-belt cross-section or type can create problems for you...and it's not hard to do, since many belts have similar dimensions. For example, the following V-belts have approximately the same top width (5/8") and length (85" outside circumference).

And yet, the horsepower ratings of these belts range from as little as 2.2 HP per belt to as much as 11.9 HP per belt on a 5" diameter sheave and a 1750 RPM motor!



TROUBLESHOOTING SELECTION PROBLEMS

B-3 Mismatched belts or mixed brands from different manufacturers should not be matched together, and will not deliver the expected service life.

Although all manufacturers use similar belt numbering systems, different brands with the same number will differ slightly in dimensions and are not capable of being mixed in a set. Also, construction differences cause them to ride differently in the grooves, and to stretch differently.

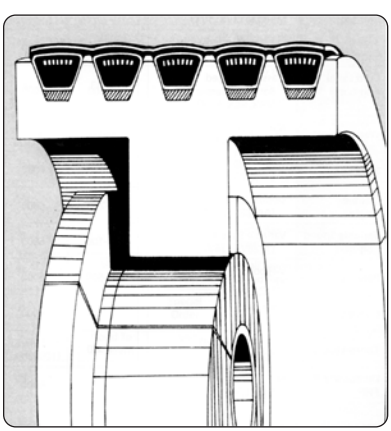
It should be noted that the majority of complaints regarding belt matching are due to other causes, such as misalignment and sheave wear. These factors should always be checked if belts seem to be mismatched.

B-4 Machine-induced vibration or shock loads frequently can cause V-belts to whip or even jump off the drive, creating a safety hazard, and of course, damaging the belts.

On multiple-belt drives, this whipping can be reduced or eliminated by using banded V-belts. A banded V-belt consists of from two to five individual V-belts joined together with a bonded, reinforced tie-band (see illustration).

These belts ride slightly higher in the sheave grooves to provide clearance between the band and the sheave flange. Because of this, sheave grooves should not be worn or "dished-out" more than 1/64". Also, because the belts are banded together, alignment of the sheaves is more critical.

(The chart on the next page will be helpful in selecting the best belt for an application.)



TROUBLESHOOTING SELECTION PROBLEMS

V-Belt Selection Guide

Generic Belt Type (Cross Sections)	Normal HP Range	Max. Belt Speed (FT/ Min)*	Normal Temp. Range (°F)		Oil/Heat Resistance	Static Dissi-pating	General Application
			min.	Max.			
Super Gripbelt™ (A, B, D)	1-500	6,500	-35	40	Good	✔	General-Purpose Heavy Duty Industrial Drives
TorqTitan™ Multiple (AX, BX)	1-500	6,500	-40	248	Excellent	✔	Longer Life, High Efficiency, Small Diameters
358 Gripbelts (3V, 5V, 8V)	1-1000	6,500	-35	140	Very Good	✔	High-Performance, Compact Industrial Drives, Long C.D.
358 TorqTitan (3VX, 5VX)	1-600	6,500	-40	248	Excellent	✔	High-Performance, Compact Industrial Drives, Short C.D.
Double-V Belts (AA, BB)	1-200	6,500	-35	140	Good	Special Order	Serpentine Drives
FHP (3L, 4L, 5L)	Light Duty	6,500	-35	140	Fair	Special Order	Light Duty Drives Using a Single Belt

* Normally limited by sheave materials.

TROUBLESHOOTING ENVIRONMENTAL PROBLEMS

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

"Environmental Protection" can be as important for a V-belt as for humans. This section deals with the effect of adverse environmental conditions on V-belts and how you can minimize these effects.

TROUBLESHOOTING ENVIRONMENTAL PROBLEMS

C-1 Improper or prolonged storage can reduce service life considerably. V-belts should be stored in a cool, dry place with no direct sunlight. On shelves, in boxes or piles, the stack should be small enough to avoid excess weight and distortion on the bottom belts. On pegs, the longer belts should be coiled in loops of suitable size to prevent distortion from the weight of the belt.

The following guide provided by the ARPM should be followed for optimum conditions:

Guide to Maximum Number of Coilings of V-Belts of Storage

Belt Cross Section	Belt Length (Inches)	Number of Coilings*	Number of Loops*
A, 3V and B	Under 60.0	None	1
	60.0 to 120.0	1	3
	120.0 to 180.0	2	5
	180.0 and up	3	7
5V	Under 75.0	None	1
	75.0 to 144.0	1	3
	144.0 to 240.0	2	5
	240.0 and up	3	7
8V	Under 180.0	None	1
	180.0 to 270.0	1	3
	270.0 to 390.0	2	5
	390.0 to 480.0	3	7
	480.0 and up	4	9

*One coiling results in three loops; two coilings result in five loops, etc.

The pegs should be crescent shaped in cross-section to avoid compression set dents in the belts from sharp corners and the pegs should be sufficiently large in cross-section to avoid compression setting to sharp bends resulting from the weight of the hanging belts.

It is recognized that belts are sometimes coiled in smaller loops than indicated in the above table, for packaging for shipment, but such packaging should not be for prolonged storage.

TROUBLESHOOTING ENVIRONMENTAL PROBLEMS

C-2 Excessive heat. Standard construction V-belts are compounded for moderate heat resistance and should give adequate service under normal conditions.

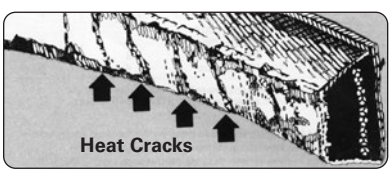
Belt temperature (not ambient or surrounding air temperature) is the determining factor when heat is a suspected cause of short belt life.

As a general rule service life of a V-belt is cut in half for every 35° F raise in belt temperature above 85° F.

Evidence of heat may be the appearance of small cracks on the underside of the belt.

What to do about excessive heat:

1. Check for slippage (see key number **A-7**)
2. Ventilate the drive or shield from heat source
3. Check to make sure the proper belt size is installed
4. Check the horsepower capacity of the drive



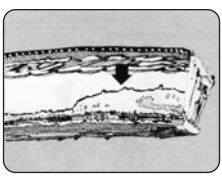
C-3 Excessive oil or grease. Standard construction V-belts are compounded for moderate grease and oil resistance. However, an excessive amount can cause softening, swelling and deterioration of the rubber compounds, as well as slippage.

What to do about oil or grease:

1. When there is occasional exposure from spillage or leakage, the belts and sheave grooves should be cleaned with a mixture of detergent and water – **after the drive has been turned off and locked out** and the cause of the leakage corrected.
2. When belts cannot be protected from oil, specially compounded oil-resistant V-belts should be used.

TROUBLESHOOTING ENVIRONMENTAL PROBLEMS

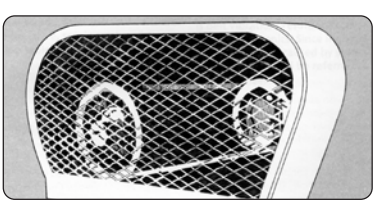
C-4 ***NOTICE:*** **Never** apply so-called "belt dressings" to V-belts. These compounds are usually made from a petroleum derivative and can have a destructive effect on rubber compounds and other components of the belt. If belts slip, check for adequate tension and/or worn sheave grooves (see **A-4, A-7**).



Abrasive Wear

C-5 **Abrasive conditions** from sand, dust or grit can accelerate wear of both belts and sheaves. This is especially true when slippage is present. Belt selection can be an important factor. Experience has shown that raw-edge constructions reduce this wear because they reduce the "sandpaper-effect" caused by slippage. Drive should be well-shielded against excessive abrasive particles as much as possible.

C-6 **Foreign objects,** such as wood chips, can create havoc with V-belt drives. Belt breakage and turnover are the most common symptoms. Shielding the drive is a necessity. Belt guards with expanded metalscreening are often used, but ventilation is some-times sacrificed, possibly requiring additional induced cooling. Banding belts are often effective, since they eliminate belt turn-over.



C-7 **Excessive moisture** can penetrate the fabric covering of a V-belt, causing deterioration. In addition, a large amount of water can reduce friction and cause slippage. Belt drives should be protected as much as possible when used outside or when subject to spray from washdown hoses, etc. Belt tension should be inspected regularly.

TROUBLESHOOTING DESIGN PROBLEMS

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

When normal corrective measures, as presented in the previous sections, do not seem to produce the desired results, an inherent design problem may be the culprit. The solutions to these are best left up to the Application Engineering. However, the discussion presented in this section will help identify symptoms caused by design problems.

TROUBLESHOOTING DESIGN PROBLEMS

D-1 Underbelting a drive, (using fewer belts than recommended by good design practice) results in excessive tension in each belt on the drive.

This is commonly evidenced by excessive stretching which requires frequent take-ups to prevent slippage. Another warning sign can be repeated belt breakage.

In many cases, underbelting can be corrected simply by using raw edge, cogged V-belts which have a higher horsepower rating. When these are used, drives should be identified to assure that future replacements are made with this type of belt. (Drive labels are available for this purpose.)

D-2 Drive overbelting, while usually resulting in longer V-belt life, can be just as serious as underbelting. The symptoms most commonly found are overheated bearings and bent shafts. This is especially true if belt tensioning devices are used without regard to design factors.

These devices, called tension-checkers, are quite helpful in determinimg proper belt tension, but tension values taken from published tables do not apply to all drives. Therefore, when these devices are used the deflection force values should be calculated, rather than taken from such tables. Contact Application Engineering at 800-626-2093 or PTSAppEng@regalrexnord.com for proper tensioning values.

Tensioning devices measure the individual belt tensions; so, when too many belts are on the drive, the total tension can be excessive when "table" values are used. On the other hand, when too few belts are on the drive, tension values from these tables may be inadequate.

Most design handbooks contain the formulas and procedures for making these simple calculations.

Another not-so-common symptom is belt vibration, resulting from tension harmonics. Since induced vibration can be caused by several factors, this should be referred to Application Engineering.

TROUBLESHOOTING DESIGN PROBLEMS

D-3 When sheaves are too small for the belt cross-section, the belt flexes beyond its normal limits. This is usually evidenced by cracks on the underside of the belt. Table A indicates the minimum recommended sheave diameter for flexing each belt cross-section. In most cases, use of a raw-edge cogged belt will improve service life greatly, due to its greater flexibility.

Table A — Minimum Recommended Sheave and Idler Diameters

V-Belt Cross Section	Minimum P.D. Sheave or Inside Idler*	Minimum O.D. Flat Backside Idler**
A	3.0	4.5
B	5.0	7.5
C	9.0	13.5
AX	2.6	4.0
BX	4.0	6.0
CX	7.0	10.5
3VX	2.2	-
5V	7.0	-
5VX	4.3	-
8V	12.4	-

* Inside Idler Sheave should be as large or larger than smallest driving sheave.
** Backside idlers are detrimental to V-belt service life.

Another problem caused by sheaves that are too small is overheating of motor bearings, or even bent shafts. NEMA publishes minimum recommended sheave diameters for use with electric motors to avoid excessive bearing loads. **Table B** shows these minimums for the most common motor types.

D-4 Insufficient wrap on the small sheave can require excessive belt tension to prevent slippage. This condition may require redesign, either using more belts, increasing the center distance or using a backside idler with longer belts. This is again a matter for Browning™ Application Engineering.

TROUBLESHOOTING DESIGN PROBLEMS

Table B — Application of V-Belt Sheave Dimensions to General-Purpose Motors

Frame No.	Integral-Horsepower Motors Polyphase Induction				V-Belt Sheave (Inches)	
	Horsepower at Synchronous Speed, Rpm				Conventional A & B Minimum Pitch Diameter (In.)	Narrow 3V, 5V & 8V Minimum Outside Diameter (In.)
	3600	1800	1200	900		
145T	2-3	1 1/2-2	1	3/4	2.4	2.4
182T	3	3	1 1/2	1	2.4	2.4
182T	5	-	-	-	2.6	2.4
184T	-	-	2	1 1/2	2.4	2.4
184T	5	-	-	-	2.6	2.4
184T	7 1/2	5	-	-	3.0	3.0
213T	7 1/2-10	7 1/2	3	2	3.0	3.0
215T	10	-	5	3	3.0	3.0
215T	15	10	-	-	3.8	3.8
254T	15	-	7 1/2	5	3.8	3.8
254T	20	15	-	-	4.4	4.4
256T	20-25	-	10	7 1/2	4.4	4.4
256T	-	20	-	-	4.6	4.4
284T	-	-	15	10	4.6	4.4
284T	-	25	-	-	5.0	4.4
286T	-	30	20	15	5.4	5.2
324T	-	40	25	-20	6.0	6.0
326T	-	50	30	25	6.8	6.8
364T	-	-	40	30	6.8	6.8
364T	-	60	-	-	7.4	7.4
365T	-	-	50	40	8.2	8.2
365T	-	75	-	-	9.0	8.6
404T	-	-	60	-	9.0	8.0
404T	-	-	-	50	9.0	8.4
404T	-	100	-	-	10.0	8.6
405T	-	-	75	60	10.0	10.0
405T	-	100	-	-	10.0	8.6
405T	-	125	-	-	11.5	10.5
444T	-	-	100	-	11.0	10.0
444T	-	-	-	75	10.5	9.5
444T	-	125	-	-	11.0	9.5
444T	-	150	-	-	-	10.5
445T	-	-	125	-	12.5	12.0
445T	-	-	-	100	10.5	12.0
445T	-	150	-	-	-	10.5
445T	-	200	-	-	-	13.2

*NEMA Standard, MG1-14.42

TROUBLESHOOTING DESIGN PROBLEMS

D-5 Backside idlers can create problems because they cause V-belts to bend opposite to the way they were designed. Care must be taken to see that a backside idler is large enough in diameter to reduce harmful stresses, which often cause cracks on the underside of the belt. Table A (under **D-3**) also shows these minimum recommended diameters.

DESIGN AND INSTALLATION SUGGESTIONS

Browning™ TorqTitan™ and Gripbelt™ "V" Drives are primarily intended for the transmission of power with relatively high speed driving units. Their acceptance by industry covers a broad field of applications including installations on a wide variety of different types of equipment, including speed increasing drives, V-flat drives, quarter-turn drives, multiple shaft drives and conveyors. Many such applications are regularly being designed and installed using stock parts.

Regardless of whether drives consist of stock or special items there are certain primary conditions to consider with respect to the design of satisfactory drives. Those most commonly encountered are:

1. Drives should always be installed with provision for center distance adjustment. This is essential, because an adjustment is necessary after the belt has set and seated properly in the groove of the sheave. If centers must be fixed, idlers should be used.
2. If possible, centers should not exceed 3 times the sum of the sheave diameters nor be less than the diameter of the large sheave.
3. If possible, the arc of contact of the belt on the smaller sheave should not be less than 120°.
4. Belt speeds with cast iron sheaves cannot exceed 6500 feet per minute. Another type of drive is usually more desirable for speeds under 1000 feet per minute.
5. Special or dynamic balance may need consideration for belts speeds exceeding 5000 feet per minute.
6. Full consideration and allowance for overload capacity in drives increases belt life and improves operation. Study the Overload Service Factors in this section carefully.
7. Severe temperature can have a major effect on belt life. There should be a full and free circulation of air around the drive. All drives operating in explosive atmospheres should be well grounded and use static conducting belts.

DESIGN AND INSTALLATION SUGGESTIONS

Watch these points particularly when installing drives:

1. Be sure that shafts are parallel and sheaves are in proper alignment. Check after eight hours of operation.
2. Do not drive sheaves on or off shafts. Be sure shaft and keyway are smooth and that bore and key are of correct size. Remove burrs by dressing lightly with finishing file. Wipe shaft, key and bore clean with oil. Tighten screws carefully. Recheck and re-tighten after eight hours of operation.
3. Belts should never be forced over sheaves. More belts are broken from this cause than from actual failure in service. See Table No. 1 and 1A on **page 36 and 37**.
4. In mounting belts, be sure that the slack in each and every belt is on the same side of the drive. This should be the slack side of the drive.
5. Belt tension should be reasonable. When in operation the tight side of belts should be in a straight line from sheave to sheave and with a slight bow on the slack side. Check belt tension after eight hours of operation. All drives should be inspected periodically to be sure belts are under proper tension and not slipping.

   For more detailed tensioning instructions and an inexpensive tension checker, see page 63.
6. Do not install new sets of belts in drives where the sheaves have worn grooves. Such sheaves should be replaced with new sheaves to insure a proper fit of the belts in the grooves, thus elimination possibility of premature belt failure.
7. Keep belts clean. Do not use belt dressing.
8. When making replacement of belts on a drive, be sure to replace the entire set with a new set of matched belts. Failure to do this will probably result in premature breakage of new (and probably shorter) belts mixed with old ones.
9. Keep extra belts stored in a cool, dark, dry place.

Warning! Install guards according to local and national codes.

DESIGN AND INSTALLATION SUGGESTIONS

Minimum Center Distance Allowance for Belt Installion and Take-Up

Table No. 1

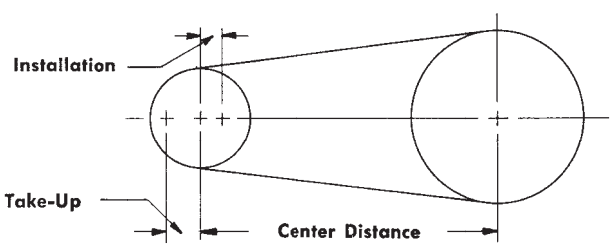
Belt No.	Allowance for Installation		Allowance for Initial Tensioning and Subsequent Take-Up
	A	B	All Sections
26 - 35	0.8	1.0	1.0
38 - 55	0.8	1.0	1.5
60 - 85	0.8	1.3	2.0
90 - 112	1	1.3	2.5
120 - 144	1	1.3	3.0
158 - 180	–	1.3	3.5
195 - 210	–	1.5	4.0
240	–	1.5	4.5
220 - 300	–	1.5	5.0
330 - 390	–	–	6.0
420 and over	–	–	1.5% of Belt Length

DESIGN AND INSTALLATION SUGGESTIONS

Minimum Center Distance Allowance for Belt Installion and Take-Up

Table No. 1A

Belt No.	Allowance for Installation			Allowance for Initial Tensioning and Subsequent Take-Up
	3V	5V	8V	All Sections
250 - 475	.5	–	–	1.0
500 - 710	.8	1.0	–	1.2
750 - 1060	.8	1.0	1.5	1.5
1120 - 1250	.8	1.0	1.5	1.8
1320 - 1700	.8	1.0	1.5	2.2
1800 - 2000	–	1.0	1.8	2.5
2120 - 2240	–	1.2	1.8	2.8
2360	–	1.2	1.8	3.0
2500 - 2650	–	1.2	1.8	3.2
2800 - 3000	–	1.2	1.8	3.5
3150	–	1.2	1.8	4.0
3350 - 3550	–	1.5	2.0	4.0
3750	–	–	2.0	4.5
4000 - 5000	–	–	2.0	5.5
5600	–	–	2.0	6.0



V-BELT DRIVE ENGINEERING DATA

Basic Drive Selection Procedure

Selections are based on horsepower ratings for single belt and are not corrected for arc of contact, belt length or ratio. Selections based on a 1.0 service factor. Drive calculations based on motor or smaller sheave operating at 1750 RPM.

Application Characteristics: **LOW HORSEPOWER**

- For single groove low horsepower application (under 3 HP)
- Ideal for fan applications

FHP (Fractional Horsepower) V-belts

Belt Type 3L		Belt Type 4L	
Pitch Dia.	**HP Rating**	**Pitch Dia.**	**HP Rating**
1.25*	0.09	1.25*	0.09
1.5	0.15	1.5*	0.14
1.75	0.23	2.0*	0.29
2	0.29	2.5	0.6
2.5	0.43	3	0.88
3	0.55	3.5	1.17
3.5	0.61	4	1.37
4	0.67	4.5	1.49
4.5	0.73	5	1.61
5	0.78	5.5	1.7
-	-	6	1.78

* Below NEMA minimum recommended pitch diameter.

Note: For speeds not shown on this page, use the Browning™ Belt Drive Selection Tool on **RegalRexnord.com**.

Drives must be corrected for loss in arc of contact.

Basic Drive Selection Procedure

Selections are based on horsepower ratings for single belt and are not corrected for arc of contact, belt length or ratio. Selections based on a 1.0 service factor. Drive calculations based on motor or smaller sheave operating at 1750 RPM.

Application characteristics: **Medium horsepower**

- For industrial applications requiring single or multiple V-belt drives
- Transmits more horsepower and has longer life expectancy than FHP V-belts
- Suited for "clutching" applications.

A and B Type V-Belts

Belt Type A	**Pitch Dia.**	2.00*	2.20*	2.60*	3.00	3.40	3.70	4.00	4.40	4.70	5.00	5.40	5.70	6.00	6.40	7.00	8.00
	HP Rating	0.90	1.17	1.69	2.23	2.95	3.40	4.00	4.69	5.20	5.96	6.35	6.83	7.30	7.91	8.81	10.22
Belt Type B	**Pitch Dia.**	3.00	3.30*	3.80*	4.20*	4.60*	5.00*	5.40	5.80	6.20	6.60	7.00	7.40	8.00	8.60	9.00	9.40
	HP Rating	1.58	2.47	3.34	4.19	5.10	6.16	7.21	8.22	9.22	10.19	11.13	12.06	13.39	14.66	15.48	16.27

* Below ARPM minimum recommended pitch diameter.

Note: For speeds not shown on this page, use the Browning™ Belt Drive Selection Tool on **RegalRexnord.com**.
Drives must be corrected for loss in arc of contact.

Basic Drive Selection Procedure

Selections are based on horsepower ratings for single belt and are not corrected for arc of contact, belt length or ratio. Selections based on a 1.0 service factor. Drive calculations based on motor or smaller sheave operating at 1750 RPM.

Application characteristics: **Medium/High horsepower**

- For industrial applications requiring single or multiple V-belt drives
- Raw edge, cogged
- Transmits more horsepower than comparable A, B, and C belts
- Raw edge design provides more aggressive gripping with less belt slippage
- Cogged construction allows belt flex easier around drive sheave and run cooler than non-cogged belts
- Not for use on (clutching) applications because of aggressive grip

TorqTitan™ AX and BX Type V-Belts

Belt Type AX	**Pitch Dia.**	2.00*	2.20	2.60	3.00	3.40	3.70	4.00	4.70	5.00	5.40	5.70	6.00	6.40	7.00	8.00	-
	HP Rating	1.61	2.05	2.93	3.77	4.59	5.19	5.80	7.37	8.03	8.89	9.54	10.17	11.50	12.21	14.14	
Belt Type BX	**Pitch Dia.**	3.00*	3.40*	3.80	4.20	4.60	5.00	5.40	5.80	6.20	6.60	7.00	7.40	8.00	8.60	9.00	9.40
	HP Rating	4.84	6.01	7.15	8.27	9.35	10.50	11.95	13.35	14.74	16.11	17.43	18.75	20.66	22.52	23.70	24.87

* Below ARPM minimum recommended pitch diameter.

Note: For speeds not shown on this page, use the Browning™ Belt Drive Selection Tool on **RegalRexnord.com**.
Drives must be corrected for loss in arc of contact.

Basic Drive Selection Procedure

Selections are based on horsepower ratings for single belt and are not corrected for arc of contact, belt length or ratio. Selections based on a 1.0 service factor. Drive calculations based on motor or smaller sheave operating at 1750 RPM.

Application characteristics: **High horsepower**

- For industrial applications requiring single or multiple V-belt drives
- ransmits substantially more horsepower than A, AX, B, BX, C and CX, which allows for more compact drive systems (smaller sheave O.D. and/or fewer grooves)
- Raw edge, cogged

TorqTitan™ 3VX and 5VX Type V-Belts

Belt Type 3VX	**Pitch Dia.**	2.15	2.30	2.45	2.60	2.95	3.10	3.30	3.60	4.45	4.70	4.95	5.25	5.95	6.85	7.95	10.55
	HP Rating	1.78	2.12	2.46	2.80	3.58	3.91	4.34	5.01	7.87	7.35	7.87	8.49	9.92	11.71	13.83	18.49
Belt Type 5VX	**Pitch Dia.**	4.30	4.55	4.80	5.10	5.40	5.70	5.90	6.20	6.50	6.70	7.00	7.40	7.90	8.40	9.10	9.50
	HP Rating	10.70	12.22	13.72	15.51	17.29	19.06	20.23	21.96	23.69	24.83	26.53	28.77	31.54	34.26	38.00	40.09

* Below ARPM minimum recommended pitch diameter.

Note: For speeds not shown on this page, use the Browning™ Belt Drive Selection Tool on **RegalRexnord.com**.
Drives must be corrected for loss in arc of contact.

V-BELT DRIVE ENGINEERING DATA

Overload Service Factors

Load and operating characteristics of both the driving and driven units must be considered thoroughly in the selection of Browning™ Drives. It is essential that all drives be designed for maximum load conditions to be encountered.

Most drives will at some time be overloaded, perhaps only momentarily. It is good practice to have predetermined drive capacity to handle this overload. This predetermined drive capacity helps protect against breakdowns due to premature belt failure. The use of an extra belt will pay for itself many times over by increasing the life of all the belts more than the proportionate cost of the extra belt.

For good design and satisfactory drive life all drives must be selected with careful consideration to two fundamental conditions:

1. The motor must have greater capacity than the driven unit.
2. The drive must have greater capacity than the motor.

A careful consideration of Overload Service Factors for various types of driven units, drivers, type of starting, frequency of maintenance and other drive conditions is extremely important for satisfactory performance and life.

The following tables on **page 53** are suggested Overload Service Factors for various typical driven units.

⚠ CAUTION

Drives requiring high Overload Service Factors, such as crushing machinery, certain reciprocating compressors, etc. subjected to heavy shock load without suitable fly wheels, may need heavy duty web type sheaves rather than standard arm type. For any such application, consult Application Engineering.

V-BELT DRIVE ENGINEERING DATA

Suggested Overload Serice Factors for Typical Applications

TYPES OF DRIVEN MACHINES	DRIVING UNITS 1 AC Motors; Normal Torque, SquirrelCage, Synchronous and Split Phase. DC Motors; Shunt Wound. Multiple Cylinder Internal Combustion Engines.		
	Intermittent (3-5 Hours Daily or Seasonal)	Normal (8-10 Hours Daily)	Continuous (16-24 Hours Daily)
Blowers and Exhausters Pumps and Compressors Fans up to 10 HP	1.0	1.1	1.2
Fans Over 10 HP Positive Displacement Rotary Pumps	1.1	1.2	1.3
Positive Displacement Blowers	1.2	1.3	1.4

TYPES OF DRIVEN MACHINES	DRIVING UNITS 2 AC Motors; High Torque, High Slip, Repulsion-Induction, Single Phase, Series Wound and Slip Ring. DC Motors; Series Wound and Compound Wound. Single Cylinder Internal Combustion Engines. Line Shafts. Clutches.		
	Intermittent (3-5 Hours Daily or Seasonal)	Normal (8-10 Hours Daily)	Continuous (16-24 Hours Daily)
Blowers and Exhausters Pumps and Compressors Fans up to 10 HP	1.1	1.2	1.3
Fans Over 10 HP Positive Displacement Rotary Pumps	1.2	1.3	1.4
Positive Displacement Blowers	1.4	1.5	1.6

A minimum Service Factor of 2.0 is suggested for equipment subject to chocking.

Service factor should be increased by 0.2 on drive units with a increaser drive speed of 2200 RPM or lower when using a 1750 RPM motor. This is a speed-up ratio of 1.25 or less. For speed increaser drives or speed-up drives greater than 2200 RPM, the recommendation is to use a 2.0 service factor.

V-BELT DRIVE ENGINEERING DATA

Datum System

In December, 1987, ARPM/MPTA adopted Standard IP20-1988. This standard supersedes IP20-1977 and affected the A, B, C, and D belts and sheaves. Those products in this catalog are in accordance with IP20-1988 which incorporates the Datum Diameter System.

The Datum System specifies the Datum Diameter as the **effective** diameter for determining the pitch length of the belt for center distance calculation. In this catalog, Datum Diameter (D.D.) is now listed for the A, B, C, and D sheaves and is equal to the old Pitch Diameter (P.D.) shown in previous catalogs.

Belt Velocity

Belt velocity is not needed for calculation of drives, as the horsepower ratings shown are based on the R.P.M. of the sheave. If belt velocity is desired for any reason, use the formula:

Belt Velocity in Feet per Minute (FPM) =
D.D. or P.D. of Sheave × .2618 × Speed of Sheave (RPM)

Cast Iron Sheaves must not be used beyond 6500 FPM belt speed. Since the majority of stock sheaves are made of cast iron, we list no ratings above 6500 FPM.

Some types of belts lose ratings before they reach 6500 FPM and other types continue to increase beyond 6500 FPM. The Basic Rating Tables and the Drive Selection Tables reflect these variations.

Special Balance

Functionally, speeds up to 6500 FPM are acceptable; however, on applications where vibration requirements are critical, special balancing (usually dynamic) for speeds above 5000 FPM may be considered. Factors to be considered for special balance requirements are: rigidity of drive mounting, whether noise created by a level of vibration would be prohibitive, etc. Many drives are in service running at speeds up to 6500 FPM without special balancing.

V-BELT DRIVE ENGINEERING DATA

Center Distance and Belt Length

INTERPOLATION

For every inch of belt length difference there is approximately 1/2 inch center distance change. All belt numbers reflect a relation if it is pitch length, outside length or inside length.

An A26 belt is 2" longer than an A24 belt; a B105 belt is 15" longer than a B90 belt; a 3V335 belt is 8.5" longer than a 3V250 belt, etc.

Interpolation example:

If an A128 belt gives 50.0" C.D. and an A96 gives 34.0 C.D., then an A112 belt gives 42.0 C.D.

If a 5V1200 belt gives 83.1" C.D. and a 5V1600 gives 63.1 C.D., then a 5V1800 belt gives 73.1 C.D.

Center distance and belt lengths determined by interpolation are usually close enough as all drives should provide for take-up as indicated on **pages 46 and 47**. If closer calculation is necessary for any reason use the following formula:

$$L = 2C + 1.57\,(D + d) + \frac{(D - d)^2}{4C}$$

where:

- L = Pitch Length of Belt
- C = Center Distance
- D = Datum or Pitch Diameter of Large Sheave
- d = Datum or Pitch Diameter of Small Sheave

V-BELT DRIVE ENGINEERING DATA

Driven Speed Variations

All V-Belt Drives will vary slightly from the speeds shown in the Drive Selection Tables. These variations are due to different motor speeds depending on load, changing frequencies (on A.C. Motors) or voltage (on D.C. Motors), varying tensions and resulting slip, and allowable manufacturing tolerances in belts and sheaves. Also, actual sheave pitch diameters and actual belt pitch lines have been changed slightly over the years by all manufactures but catalog data has not been changed to reflect this.

In the few instances where very close speed tolerances are required, contact Application Engineering for assistance or use the Browning™ EDGE Selection Program.

Speed-Up, Quarter-Turn, and V-Flat Drives

These drives occur infrequently and should be referred to Application Engineering for special design considerations.

V-BELT DRIVE ENGINEERING DATA

Belt Section Selection Chart

Table No. 1

HP	Belt Section			
1/2	A	AX		
3/4	A	AX		
1	A	AX		
1 1/2	A	AX		
2	A	AX		
3	AX	A	BX	
5	BX	AX	B	A
7 1/2	BX	AX	B	3VX
10	5VX, BX	B	3VX	AX
15	5VX, BX	B	3VX	AX
20	5VX	BX	B	3VX
25	5VX	BX	B	3VX
30	5VX	BX	B	3VX
40	5VX, 5V	BX	B	
50	5VX, 5V	BX	B	
60	5VX, 5V	BX	B	
75	5VX, 5V		BX	
100	5VX, 5V			
125	5VX, 5V			
150	5VX, 5V			
200	5VX, 5V			
250	5VX, 5V			

The best drive will usually be found by using Belt Section from the first column. If, for any reason, such as sheave shortage, this drive is not suitable, go to the next column.

"AX" drives are found in the "A" Drive Selection Tables; "BX" in the "B" Tables, etc.

V-BELT DRIVE ENGINEERING DATA

Correction Factor for Belt Length

Longer belts have greater horsepower ratings because of less frequent flexure around sheaves. Multiply H. P. ratings by appropriate factor from table below to get the final corrected horsepower.

Table No. 1

Nominal Length	A	B
26	.81	—
31	.84	—
32	.85	—
33	.86	—
34	.86	—
35	.87	.81
36	.87	—
37	.88	—
38	.88	.83
42	.90	.85
43	.90	—
46	.92	.87
48	.93	.88
50	—	.89
51	.94	.89
52	—	.89
53	.95	.90
54	.95	.90
55	.96	.90
56	.96	.90
58	.97	.91
59	—	.91
60	.98	.92
61	—	.92
62	.99	.93
63	—	.93
64	.99	.93
65	—	.94
66	1.00	.94
67	—	.94
68	1.00	.95
70	1.01	.95
71	1.01	.95
75	1.02	.97
77	—	.98
78	1.03	.98
79	—	.98
80	1.04	.98
81	—	.98
82	—	.99
83	—	.99
85	1.05	.99
88	—	1.00
90	1.06	1.00
93	—	1.01
96	1.08	1.02
97	—	1.02
99	—	1.02
100	—	1.03
103	—	1.03
105	1.10	1.04
108	—	1.04
109	—	—
110	1.11	—
112	1.11	1.05
115	—	—
116	—	1.06
120	1.13	1.07
124	—	1.07
128	1.14	1.08
133	—	1.08
136	1.15	1.09
144	1.16	1.11
150	—	1.12
158	1.17	1.13
162	—	1.13
173	1.18	1.15
180	1.19	1.16
195	—	1.18
210	—	1.19
225	—	1.20
240	—	1.22
255	—	1.23
270	—	1.25
285	—	1.26
300	—	1.27
315	—	1.28
330	—	—
345	—	—
360	—	1.31
390	—	—
420	—	—
480	—	—
540	—	—
600	—	—

This information is included for technical support in figuring non-standard drives.

V-BELT DRIVE ENGINEERING DATA

Multiply H. P. ratings by appropriate factor from table below to get the final corrected horsepower.

Table No. 2

Belt Length	Cross Section 3V	5V	8V
25.0	.83	—	—
26.5	.84	—	—
28.0	.85	—	—
30.0	.86	—	—
31.5	.87	—	—
33.5	.88	—	—
35.5	.89	—	—
37.5	.91	—	—
40.0	.92	—	—
42.5	.93	—	—
45.0	.94	—	—
47.5	.95	—	—
50.0	.96	.85	—
53.0	.97	.86	—
5.0	.98	.87	—
60.0	.99	.88	—
63.0	1.00	.89	—
67.0	1.01	.90	—
71.0	1.02	.91	—
75.0	1.03	.92	—
80.0	1.04	.93	—
85.0	1.06	.94	—
90.0	1.07	.95	—
95.0	1.08	.96	—
100.0	1.09	.96	.87
106.0	1.10	.97	.88

Belt Length	Cross Section 3V	5V	8V
112.0	1.11	.98	.88
118.0	1.12	.99	.89
125.0	1.13	1.00	.90
132.0	1.14	1.01	.91
140.0	1.15	1.02	.92
150.0	—	1.03	.93
160.0	—	1.04	.94
170.0	—	1.05	.95
180.0	—	1.06	.95
190.0	—	1.07	.96
200.0	—	1.08	.97
212.0	—	1.09	.98
224.0	—	1.09	.98
236.0	—	1.10	.99
250.0	—	1.11	1.00
265.0	—	1.12	1.01
280.0	—	1.13	1.02
300.0	—	1.14	1.03
315.0	—	1.15	1.03
335.0	—	1.16	1.04
355.0	—	1.17	1.05
375.0	—	—	1.06
400.0	—	—	1.07
425.0	—	—	1.08
450.0	—	—	1.09

CORRECTION FACTOR FOR LOSS IN ARC OF CONTACT

The loss of arc of contact from 180° for different drives can be determined in the following manner:

$$\text{Loss in Arc of Contact (in degrees)} = \frac{(D - d)\ 57}{C}$$

The Correction Factors for loss in arc of contact in degrees are:

Table No. 3

Loss in Arc of Contact	Correction Factor
0°	1.00
5°	.99
10°	.98
15°	.96
20°	.95
25°	.93
30°	.92
35°	.90
40°	.89
45°	.87

Loss in Arc of Contact	Correction Factor
50°	.86
55°	.84
60°	.83
65°	.81
70°	.79
75°	.76
80°	.74
85°	.71
90°	.69

This information is included for technical support in figuring non-standard drives.

V-BELT DRIVE ENGINEERING DATA

Table No. 4 (Inches)

Belt Selection	Nominal Belt Size	Add to P.D. to get O.D.	Minimum Recommended Pitch Diameter*	C	D
A	1/2 x 5/16	.25	3.00	3/8	5/8
B	21/32 x 13/32	.35	5.40	1/2	3/4
3V	3/8 x 5/16	.05	2.60	11/32	13/32
5V	5/8 x 7/16	.10	7.00	1/2	11/16
8V	1 x 7/8	.20	12.50	3/4	1 1/8

* The minimum recommended pitch diameters listed above are ARPM and MPTA Standards recommendations. Many sheaves with diameters smaller than these recommendations are made and used. If a rating for a "sub-minimum diameter" sheave is published in the selection tables and the drive is properly installed, it should give the same theoretical life as a drive using sheave diameters equal to or greater than the minimums shown above.

This information is included for technical support in figuring non-standard drives.

V-BELT DRIVE ENGINEERING DATA

1 HP = 54" in-lb @ 1160 RPM

1 HP = 36" in-lb @ 1750 RPM

$$HP = \frac{FORCE \times FPM}{33{,}000}$$

$$HP = \frac{T\text{ " in-lb} \times RPM}{63{,}025}$$

$$HP = \frac{T\text{ ' ft-lb} \times RPM}{5{,}252}$$

$$T\text{ " lbs.} = \frac{63{,}025 \times HP}{RPM}$$

$$T\text{ ' lbs.} = \frac{5{,}252 \times HP}{RPM}$$

$$FPM = .2618 \times DIA. \times RPM$$

$$RPM = \frac{63{,}025 \times HP}{TORQUE}$$

$$T = FORCE \times LEVER\ ARM$$

$$F = \frac{TORQUE}{RADIUS}$$

$$RPM = \frac{FPM}{.2618 \times DIA.}$$

$$\text{Over Hung Load} = \frac{2TK}{D}$$

K = 1.0 for Chain Drives
1.25 for Gear Drives
1.25 for Gearbelt Drives
1.50 for V-Belt Drives
2.50 for Flat Belt Drives

LINEAL SHAFT EXPANSION
= .0000063 x length in inches
x temperature inc. in degrees F

KW = HP x .7457

IN. = MM/25.4

TEMP °C = (°F -32) .556

Kg = LBS x 2.205

This information is included for technical support in figuring non-standard drives.

V-BELT DRIVE ENGINEERING DATA

TENSIONING B-BELT DRIVES

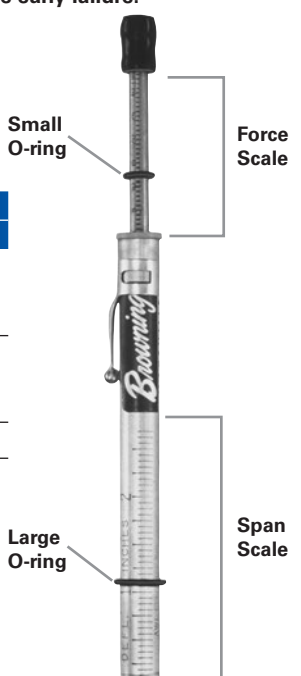
General rules of tensioning:

1. Ideal tension is the lowest tension at which the belt will not slip under peak load conditions.
2. Check tension frequently during the first 24 - 48 hours of operation. TorqTitan™ only needs to be checked after 4 minutes of run time.
3. Over tensioning shortens belt and bearing life.
4. Keep belts free from foreign material which may cause slip.
5. Make V-drive inspection on a periodic basis. Tension when slipping. ***Notice:*** **Never apply belt dressing as this will damage the belt and cause early failure.**

Table No. 1

FHP BELTS DEFLECTION FORCE

Cross Section	Small P.D. Range	Lbs	
		Min.	Max.
3L	1.25 - 1.75	1/2	5/8
	2.00 -2.25	5/8	7/8
	2.50 - 3.00	3/4	1 1/8
4L	2.10 -2.80	1/8	1 5/8
	3.00 - 3.50	1/2	2 1/8
	3.70 - 5.00	1 7/8	2 5/8
5L	See B, BX Table for 5L		



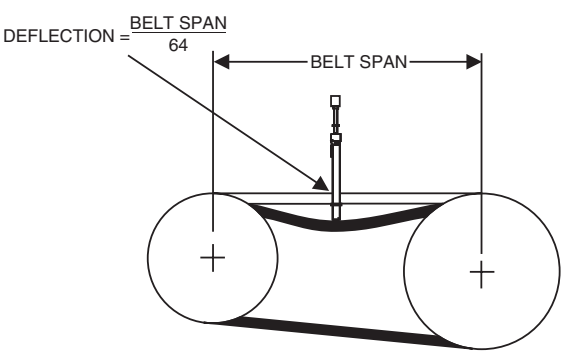
Part Number "Belt Tension Checker"

V-BELT DRIVE ENGINEERING DATA

TENSION MEASUREMENT PROCEDURE

1. Measure the belt span (see illustration below).
2. Position bottom of the large o-ring on the span scale at the measured belt span.
3. Set the small o-ring on the deflection force scale to zero.
4. Place the tension checker squarely on one belt at the center of the belt span. Apply a force on the plunger and perpendicular to the belt span until the bottom of the large o-ring is even with the top of the next belt or with the bottom of a straight edge laid across the sheaves.
5. Remove the tension checker and read the force applied from the bottom of the small o-ring on the deflection force scale.
6. Compare the force you have applied with the values given in **Table No. 2 on page 59**. The force should be between the minimum and maximum shown. The maximum value is shown for "New Belt" and new belts should be tensioned at this value to allow for expected tension loss. Used belts should be maintained at the minimum value as indicated in **Table No. 2 on page 59**.

Note: The ratio of deflection to belt span is 1:64.



The above method of tensioning belt drives is to be used when a drive has been selected in accordance with the suggestions listed in the drive selection tables of the HVAC catalog. For drives with service factor greater than 1.5, consult Application Engineering. For exact tension calculations use the EDGE selection program.

V-BELT DRIVE ENGINEERING DATA

Table No. 2 Sheave Diameter (Inches)

Cross Section	Smallest Sheave Diameter Range	RPM Range
A, AX	3.0 - 3.6	1000-2500
		2501-4000
	3.8 - 4.8	1000-2500
		2501-4000
	5.0 - 7.0	1000-2500
		2501-4000
B, BX	3.4 - 4.2	860-2500
		2501-4000
	4.4 - 5.6	860-2500
		2501-4000
	5.8 - 8.6	860-2500
		2501-4000
3V, 3VX	2.2 - 2.4	1000-2500
		2501-4000
	2.65 - 3.65	1000-2500
		2501-4000
	4.12 - 6.90	1000-2500
		2501-4000
5V, 5VX	4.4 - 6.7	500-1749
		1750-3000
		3001-4000
	7.1 - 10.9	500-1740
		1741-3000
	11.8 - 16.0	500-1740
		1741-3000
8V	12.5 - 17.0	200-850
		851-1500
	18.0 - 22.4	200-850
		851 - 1500

V-BELT DRIVE ENGINEERING DATA

DEFLECTION FORCE (LBS.)

Belt Deflection Force			
Super Gripbelts and Unnotched Gripbands		TorqTitan™, Gripnotch™ Belts and Notched Gripbands	
Used Belt	New Belt	Used Belt	New Belt
3.7	5.5	4.1	6.1
2.8	4.2	3.4	5.0
4.5	6.8	5.0	7.4
3.8	5.7	4.3	6.4
5.4	8.0	5.7	9.4
4.7	7.0	5.1	7.6
-	-	4.9	7.2
-	-	4.2	6.2
5.3	7.9	7.1	10.5
4.5	6.7	7.1	9.1
6.3	9.4	8.5	12.6
6.0	8.9	7.3	10.9
-	-	3.3	4.9
-	-	2.9	4.3
3.6	5.1	4.2	6.2
3.0	4.4	3.8	5.6
4.9	7.3	5.3	7.9
4.4	6.6	4.9	7.3
-	-	0.2	15.2
-	-	8.8	13.2
-	-	5.6	8.5
12.7	18.9	14.8	22.1
11.2	16.7	13.7	20.1
15.5	23.4	17.1	25.5
14.6	21.8	16.8	25.0
33.0	49.3	-	-
26.8	39.9	-	-
39.6	59.2	-	-
35.3	52.7	-	-

V-BELT DRIVE ADVANTAGES

V-belt drives provide many maintenance advantages that help in your daily struggle to reduce equipment repairs and to hold forced downtime to the lowest possible level.

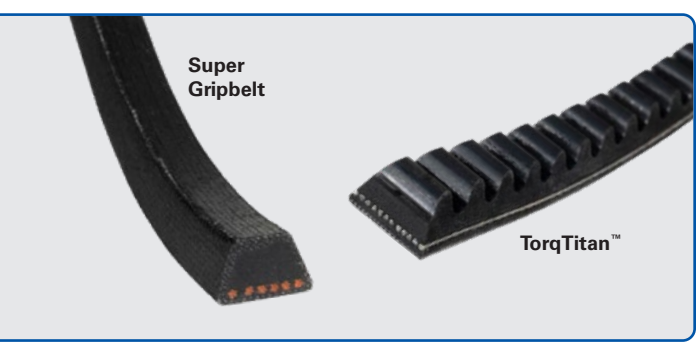
1. They are rugged–they will give years of trouble-free performance when given just reasonable attention... even under adverse conditions.
2. They are clean–require no lubrication.
3. They are efficient–performing with an average of 94-98% efficiency.
4. They are smooth starting and running.
5. They cover extremely wide horsepower ranges.
6. They permit a wide range of driven speeds, using standard electric motors.
7. They dampen vibration between driving and driven machines.
8. They are quiet.
9. They act as a "safety fuse" in the power drive because they refuse to transmit a severe overload of power, except for a very brief time.
10. V-belts and sheaves wear **gradually** – making preventive corrective maintenance simple and easy.

Browning™ is universally known for V-belt drives. In fact, nowhere else can you find such a complete range of V-belting — and the sheaves to run them — all in stock. Choose the type that's best for your application — Classical, "358" and FHP.

Matched Belts -

And there's no problem with matched belt sizes either. Browning offers the "CODE 1" one-match belt system on all classical and "358" belts, allowing easy selection with just one match number for each belt size. The CODE 1 symbol on any Browning belt provides matching tolerances tighter than ARPM standards.

Wherever you are in the universe — make Browning your first choice in V-belts.



SUPER GRIPBELT™

Table No. 1 **Super Gripbelt belts are static conducting**

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
A20	22.2	21.3	.2
A21	23.2	22.3	.2
A22	24.2	23.3	.2
A23	25.2	24.3	.2
A24	26.2	25.3	.2
A25	27.2	26.3	.2
A26	28.2	27.3	.2
A27	29.2	28.3	.2
A28	30.2	29.3	.2
A29	31.2	30.3	.2
A30	32.2	31.3	.2
A31	33.2	32.3	.2
A32	34.2	33.3	.2
A33	35.2	34.3	.2
A34	36.2	35.3	.2
A35	37.2	36.3	.2
A36	38.2	37.3	.3
A37	39.2	38.3	.3
A38	40.2	39.3	.3
A39	41.2	40.3	.3
A40	42.2	41.3	.3
A41	43.2	42.3	.3
A42	44.2	43.3	.3
A43	45.2	44.3	.3
A44	46.2	45.3	.3
A45	47.2	46.3	.3
A46	48.2	47.3	.3
A47	49.2	48.3	.3
A48	50.2	49.3	.3
A49	51.2	50.3	.4
A50	52.2	51.3	.4
A51	53.2	52.3	.4
A52	54.2	53.3	.4
A53	55.2	54.3	.4
A54	56.2	55.3	.4
A55	57.2	56.3	.4
A56	58.2	57.3	.4
A57	59.2	58.3	.4
A58	60.2	59.3	.4
A59	61.2	60.3	.4
A60	62.2	61.3	.4
A61	63.2	62.3	.4
A62	64.2	63.3	.4
A63	65.2	64.3	.4
A64	66.2	65.3	.4
A65	67.2	66.3	.5
A66	68.2	67.3	.5
A67	69.2	68.3	.5
A68	70.2	69.3	.5
A69	71.2	70.3	.5
A70	72.2	71.3	.5
A71	73.2	72.3	.5
A72	74.2	73.3	.5
A73	75.2	74.3	.5
A74	76.2	75.3	.5
A75	77.2	76.3	.5
A76	78.2	77.3	.5
A77	79.2	78.3	.5
A78	80.2	79.3	.5
A79	81.2	80.3	.5
A80	82.2	81.3	.5
A81	83.3	82.3	.5
A82	84.2	83.3	.6
A83	85.2	84.3	.6
A84	86.2	85.3	.6
A85	87.2	86.3	.6
A86	88.2	87.3	.6
A87	89.2	88.3	.6
A88	90.2	89.3	.6
A89	91.2	90.3	.6
A90	92.2	91.3	.6
A91	93.2	92.3	.6
A92	94.2	93.3	.6
A93	95.2	94.3	.6
A94	96.2	95.3	.6
A95	97.2	96.3	.6
A96	98.2	97.3	.7
A97	99.2	98.3	.7

SUPER GRIPBELT™

Table No. 2 Super Gripbelt belts are static conducting

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
A98	100.2	99.3	.7
A100	102.2	101.3	.7
A103	105.2	104.3	.7
A105	107.2	106.3	.7
A110	112.2	111.3	.8
A112	114.2	113.3	.8
A120	122.2	121.3	.8
A128	130.2	129.3	.9
A136	138.2	137.3	.9
A158	160.2	159.3	1.1
A173	175.2	174.3	1.2
B23	26.0	24.8	0.26
B24	28.0	25.8	0.27
B25	28.0	26.8	.3
B26	29.0	27.8	.3
B27	30.0	28.8	0.30
B28	31.0	29.8	.3
B29	32.0	30.8	.3
B30	33.0	31.8	.3
B31	34.0	32.8	.3
B32	35.0	33.8	.3
B33	36.0	34.8	.4
B34	37.0	35.8	.4
B35	38.0	36.8	.4
B36	39.0	37.8	.4
B37	40.0	38.8	.4
B38	41.0	39.8	.4
B39	42.0	40.8	.4
B40	43.0	41.8	.5
B41	44.0	42.8	.5
B42	45.0	43.8	.5
B43	46.0	44.8	.5
B44	47.0	45.8	.5
B45	48.0	46.8	.5
B46	49.0	47.8	.5
B47	50.0	48.8	.5
B48	51.0	49.8	.5
B49	52.0	50.8	.6
B50	53.0	51.8	.6

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
B51	54.0"	52.8"	.6
B52	55.0	53.8	.6
B53	56.0	54.8	.6
B54	57.0	55.8	.6
B55	58.0	56.8	.6
B56	59.0	57.8	.6
B57	60.0	58.8	.7
B58	61.0	59.8	.7
B59	62.0	60.8	.7
B60	63.0	61.8	.7
B61	64.0	62.8	.7
B62	65.0	63.8	.7
B63	66.0	64.8	.7
B64	67.0	65.8	.7
B65	68.0	66.8	.7
B66	69.0	67.8	.7
B67	70.0	68.8	.7
B68	71.0	69.8	.7
B69	72.0	70.8	.8
B70	73.0	71.8	.8
B71	74.0	72.8	.8
B72	75.0	73.8	.8
B73	76.0	74.8	.8
B74	77.0	75.8	.8
B75	78.0	76.8	.8
B76	79.0	77.8	.8
B77	80.0	78.8	.8
B78	81.0	79.8	.8
B79	82.0	80.8	.8
B80	83.0	81.8	.9
B81	84.0	82.8	.9
B82	85.0	83.8	.9
B83	86.0	84.8	.9
B84	87.0	85.8	.9
B85	88.0	86.8	.9
B86	89.0	87.8	1.0
B87	90.0	88.8	1.0
B88	91.0	89.8	1.0
B89	92.0	90.8	1.0

SUPER GRIPBELT™

Table No. 3 Super Gripbelt belts are static conducting

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
B90	93.0	91.8	1.0
B91	94.0	92.8	1.0
B92	95.0	93.8	1.0
B93	96.0	94.8	1.0
B94	97.0	95.8	1.0
B95	98.0	96.8	1.0
B96	99.0	97.8	1.1
B97	100.0	98.8	1.1
B98	101.0	99.8	1.1
B99	102.0	100.8	1.1
B100	103.0	101.8	1.1
B101	104.0	102.8	1.1
B103	106.0	104.8	1.1
B105	108.0	106.8	1.1
B106	109.0	107.8	1.1
B107	110.0	108.8	1.19
B108	111.0	109.8	1.2
B109	112.0	110.8	1.21
B110	113.0	111.8	1.22
B111	114.0	112.8	1.2
B112	115.0	113.8	1.2
B114	117.0	115.8	1.27
B115	118.0	116.8	1.28
B116	119.0	117.8	1.3
B117	120.0	118.8	1.30
B118	121.0	119.8	1.31
B120	123.0	121.8	1.3
B123	126.0	124.8	1.3
B124	127.0	125.8	1.3
B126	129.0	127.8	1.3
B128	131.0	129.8	1.4
B130	133.0	131.8	1.44
B133	136.0	134.8	1.4
B134	137.0	135.8	1.49
B136	139.0	137.8	1.5
B138	141.0	139.8	1.53
B139	142.0	140.8	1.54
B140	143.0	141.8	1.5
B142	145.0	143.8	1.58

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
B144	147.0	145.8	1.6
B148	151.0	149.8	1.6
B150	153.0	151.8	1.6
B151	154.0	152.8	1.68
B152	155.0	153.8	1.69
B153	156.0	154.8	1.70
B154	157.0	155.8	1.6
B156	159.0	157.8	1.73
B158	161.0	159.8	1.7
B162	165.0	163.8	1.7
B173	176.0	174.8	1.7
B180	183.0	181.8	1.9
B185	188.0	186.8	2.05
B190	193.0	191.8	1.9
B191	194.0	192.2	2.0
B195	198.0	196.8	2.0
B205	208.0	206.9	2.0
B210	213.0	211.8	2.2
B225	226.5	225.3	2.5
B240	241.5	240.3	2.6
B255	256.5	255.3	2.8
B270	271.5	270.3	2.9
B285	286.5	285.3	3.1
B300	301.5	300.3	3.2
B315	316.5	315.3	3.4
B360	361.5	360.3	4.0
B225	226.5	225.3	2.5
B240	241.5	240.3	2.6
B255	256.5	255.3	2.8
B270	271.5	270.3	2.9
B285	286.5	285.3	3.1
B300	301.5	300.3	3.2
B315	316.5	315.3	3.4
B360	361.5	360.3	4.0

TORQTITAN™ BELTS

- Precision molded raw edge conctruction
- More horsepower in less space
- Notches are molded extra deep
- Oil and heat resistant
- Static conducting

Table No. 1

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
AX20	22.2	21.3	0.2
AX21	23.2	22.3	0.2
AX22	24.2	23.3	0.2
AX23	25.2	24.3	0.2
AX24	26.2	25.3	0.2
AX25	27.2	26.3	0.2
AX26	28.2	27.3	0.2
AX27	29.2	28.3	0.2
AX28	30.2	29.3	0.2
AX29	31.2	30.3	0.2
AX30	32.2	31.3	0.2
AX31	33.2	32.3	0.2
AX32	34.2	33.3	0.2
AX33	35.2	34.3	0.2
AX34	36.2	35.3	0.2
AX35	37.2	36.3	0.2
AX36	38.2	37.3	0.3
AX37	39.2	38.3	0.3
AX38	40.2	39.3	0.3
AX39	41.2	40.3	0.3
AX40	42.2	41.3	0.3
AX41	43.2	42.3	0.3
AX42	44.2	43.3	0.3
AX43	45.2	44.3	0.3
AX44	46.2	45.3	0.3
AX45	47.2	46.3	0.3
AX46	48.2	47.3	0.3
AX47	49.2	48.3	0.3
AX48	50.2	49.3	0.3
AX49	51.2	50.3	0.4
AX50	52.2	51.3	0.4
AX51	53.2	52.3	0.4
AX52	54.2	53.3	0.4
AX53	55.2	54.3	0.4
AX54	56.2	55.3	0.4
AX55	57.2	56.3	0.4
AX56	58.2	57.3	0.4
AX57	59.2	58.3	0.4
AX58	60.2	59.3	0.4
AX59	61.2	60.3	0.4
AX60	62.2	61.3	0.4
AX61	63.2	62.3	0.4
AX62	64.2	63.3	0.4
AX63	65.2	64.3	0.4
AX64	66.2	65.3	0.4
AX65	67.2	66.3	0.5
AX66	68.2	67.3	0.5
AX67	69.2	68.3	0.5
AX68	70.2	69.3	0.5
AX69	71.2	70.3	0.5
AX70	72.2	71.3	0.5
AX71	73.2	72.3	0.5
AX72	74.2	73.3	0.5
AX73	75.2	74.3	0.5
AX74	76.2	75.3	0.5
AX75	77.2	76.3	0.5
AX76	78.2	77.3	0.5
AX77	79.2	78.3	0.5
AX78	80.2	79.3	0.5
AX79	81.2	80.3	0.5
AX80	82.2	81.3	0.5
AX81	83.2	82.3	0.5
AX82	84.2	83.3	0.5
AX83	85.2	84.3	0.5
AX84	86.2	85.3	0.5
AX85	87.2	86.3	0.6
AX86	88.2	87.3	0.6
AX87	89.2	88.3	0.6
AX88	90.2	89.3	0.6
AX89	91.2	90.3	0.6
AX90	92.2	91.3	0.6
AX91	93.2	92.3	0.6
AX92	94.2	93.3	0.6
AX93	95.2	94.3	0.6
AX94	96.2	95.3	0.6
AX95	97.2	96.3	0.6
AX96	98.2	97.3	0.7
AX97	99.2	98.3	0.7
AX98	100.2	99.3	0.7
AX99	101.2	100.3	0.7

TORQTITAN™ BELTS

- Precision molded raw edge conctruction
- More horsepower in less space
- Notches are molded extra deep
- Oil and heat resistant
- Static conducting

Table No. 2

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
AX100	102.2	101.3	00.7
AX105	107.2	106.3	0.7
AX110	112.2	111.3	0.8
AX112	114.2	113.3	0.8
AX120	122.2	121.3	0.8
AX128	130.2	129.3	0.9
AX136	138.2	137.3	0.9
BX22	25.0	23.8	0.22
BX25	28.0	26.8	0.24
BX26	29.0	27.8	0.25
BX27	30.0	28.8	0.4
BX28	31.0	29.8	0.4
BX29	32.0	30.8	0.4
BX30	33.0	31.8	0.4
BX31	34.0	32.8	0.4
BX32	35.0	33.8	0.4
BX33	36.0	34.8	0.4
BX34	37.0	35.8	0.4
BX35	38.0	36.8	0.4
BX36	39.0	37.8	0.4
BX37	40.0	38.8	0.4
BX38	41.0	39.8	0.4
BX39	42.0	40.8	0.5
BX40	43.0	41.8	0.5
BX41	44.0	42.8	0.5
BX42	45.0	43.8	0.5
BX43	46.0	44.8	0.5
BX44	47.0	45.8	0.5
BX45	48.0	46.8	0.5
BX46	49.0	47.8	0.5
BX47	50.0	48.8	0.5
BX48	51.0	49.8	0.6
BX49	52.0	50.8	0.6
BX50	53.0	51.8	0.6
BX51	54.0	52.8	0.6
BX52	55.0	53.8	0.6
BX53	56.0	54.8	0.6
BX54	67.0	55.8	0.6
BX55	58.0	56.8	0.6
BX56	59.0	57.8	0.6

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
BX57	60.0	58.8	0.6
BX58	61.0	59.8	0.6
BX59	62.0	60.8	0.7
BX60	63.0	61.8	0.7
BX61	64.0	62.8	0.7
BX62	65.0	63.8	0.7
BX63	66.0	64.8	0.7
BX64	67.0	65.8	0.7
BX65	68.0	66.8	0.8
BX66	69.0	67.8	0.8
BX67	70.0	68.8	0.8
BX68	71.0	69.8	0.8
BX69	72.0	70.8	0.8
BX70	73.0	71.8	0.8
BX71	74.0	72.8	0.8
BX72	75.0	73.8	0.8
BX73	76.0	74.8	0.8
BX74	77.0	75.8	0.8
BX75	78.0	76.8	0.9
BX76	78.0	77.8	0.9
BX77	80.0	78.8	0.9
BX78	81.0	79.8	0.9
BX79	82.0	80.8	0.9
BX80	83.0	81.8	0.9
BX81	84.0	82.8	0.9
BX82	85.0	83.8	0.9
BX83	86.0	84.8	1.0
BX84	87.0	85.8	1.0
BX85	88.0	86.8	1.0
BX86	89.0	87.8	1.0
BX87	90.0	88.8	1.0
BX88	91.0	89.8	1.0
BX89	92.0	90.8	1.0
BX90	93.0	91.8	1.1
BX91	94.0	92.8	1.1
BX92	95.0	93.8	1.1
BX94	97.0	95.8	1.1
BX95	98.0	96.8	1.1
BX96	99.0	97.8	1.1
BX118	121.0	119.8	1.08

TORQTITAN™/GRIPNOTCH™ BELTS

- Precision molded raw edge conctruction
- More horsepower in less space
- Notches are molded extra deep
- Oil and heat resistant
- Static conducting

Table No. 3

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
BX97	100.0	98.8	1.1
BX98	101.0	99.8	1.1
BX99	102.0	100.8	1.2
BX100	103.0	101.8	1.2
BX103	106.0	104.8	1.2
BX105	108.0	106.8	1.2
BX106	109.0	107.8	1.2
BX108	111.0	109.8	1.3
BX112	115.0	113.8	1.3
BX113	116.0	114.8	1.3
BX115	118.0	116.8	1.4
BX116	119.0	117.8	1.4
BX120	123.0	121.8	1.4
BX123	126.0	124.8	1.4
BX124	127.0	125.8	1.4
BX126	129.0	127.8	1.4
BX128	131.0	129.8	1.5
BX133	136.0	134.8	1.5
BX136	139.0	137.8	1.6
BX140*	143.0	141.8	1.6
BX144*	147.0	145.8	1.7
BX148*	151.0	149.8	1.7
BX150*	153.0	151.8	1.8
BX154*	157.0	155.8	1.8
BX158*	161.0	159.8	1.8
BX173*	176.0	174.8	2.0
BX195*	198.0	196.8	2.3

* Gripnotch belt.

FHP BELTS

- Wrapped construction provides smooth, quiet operation
- Formulated for maximum flexibility with smaller diameter sheaves
- Oil and heat resistant - static conducting

Table No. 1

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
3L120	12	11.3	0.04
3L130	13	12.3	0.04
3L140	14	13.3	0.05
3L150	15	14.3	0.05
3L160	16	15.3	0.05
3L170	17	16.3	0.05
3L180	18	17.3	0.06
3L190	19	18.3	0.06
3L200	20	19.3	0.06
3L210	21	20.3	0.07
3L220	22	21.3	0.07
3L230	23	22.3	0.07
3L240	24	23.3	0.08
3L250	25	24.3	0.08
3L260	26	25.3	0.08
3L270	27	26.3	0.08
3L280	28	27.3	0.09
3L290	29	28.3	0.09
3L300	30	29.3	0.09
3L310	31	30.3	.010
3L320	32	31.3	0.1
3L330	33	32.3	0.1
3L340	34	33.3	0.11
3L350	35	34.3	0.11
3L360	36	35.3	0.11
3L370	37	36.3	0.12
3L380	38.0	37.3	0.12
3L390	39.0	38.7	0.13
3L400	40	39.3	0.13
3L410	41	40.3	0.13
3L430	43	42.3	0.13
3L440	44	43.3	0.14
3L450	45	44.3	0.14
3L470	47	46.3	0.15
3L480	48	47.3	0.15
3L490	49	48.3	0.15
3L500	50	49.3	0.16
3L510	51.0	50.7	0.17
3L520	52	51.3	0.16
3L530	53	52.3	0.17
3L540	54	53.3	0.17
3L550	55	54.3	0.18
3L560	56	55.3	0.18
3L570	57	56.3	0.18
3L580	58	57.3	0.18
3L590	59	58.3	0.19
3L600	60	59.3	0.19
3L610	61	60.3	0.19
3L620	62	61.3	0.19
3L630	63	62.3	0.2
4L170	17	16	0.1
4L180	18	17	0.1
4L190	19	18	0.11
4L200	20	19	0.11
4L210	21	20	0.12
4L220	22	21	0.12
4L225	22 1/2	21.5	0.13
4L230	23	22	0.13
4L240	24	23	0.13
4L250	25	24	0.13
4L260	26	25	0.13
4L270	27	26	0.13
4L280	28	27	0.13
4L290	29	28	0.13

FHP BELTS

- Wrapped construction provides smooth, quiet operation
- Formulated for maximum flexibility with smaller diameter sheaves
- Oil and heat resistant - static conducting

Table No. 2

Belt No.	Length (In.)		Wt. Lbs.
	Outside	Pitch	
4L300	30	29	0.13
4L310	31	30	0.19
4L320	32	31	0.19
4L330	33	32	0.19
4L340	34	33	0.19
4L350	35	34	0.19
4L360	36	35	0.19
4L370	37	36	0.19
4L380	38	37	0.19
4L390	39	38	0.25
4L400	40	39	0.25
4L410	41	40	0.25
4L415	41 1/2	40.5	0.25
4L420	42	41	0.25
4L430	43	42	0.25
4L440	44	43	0.25
4L450	45	44	0.25
4L460	46	45	0.25
4L470	47	46	0.25
4L480	48	47	0.25
4L490	49	48	0.31
4L500	50	49	0.31
4L510	51	50	0.31
4L520	52	51	0.31
4L530	53	52	0.31
4L540	54	53	0.31
4L550	55	54	0.31
4L560	56	55	0.31
4L570	57	56	0.31
4L580	58	57	0.31
4L590	59	58	0.31
4L600	60	59	0.31
4L610	61	60	0.31
4L620	62	61	0.31
4L630	63	62	0.31
4L640	64	63	0.38
4L650	65	64.0	0.38
4L660	66	65	0.38
4L670	67	66	0.38
4L680	68	67	0.38
4L690	69	68	0.38
4L700	70	69	0.38
4L710	71	70	0.38
4L720	72	71	0.38
4L730	73	72	0.38
4L740	74	73	0.38
4L750	75	74	0.44
4L760	76	75	0.44
4L770	77	76	0.44
4L780	78	77	0.44
4L790	79	78	0.44
4L800	80	79	0.44
4L810	81	80	0.44
4L820	82	81	0.44
4L830	83	82	0.44
4L840	84	83	0.44
4L850	85	84	0.5
4L860	86	85	0.5
4L870	87	86	0.5
4L880	88	87	0.5
4L890	89	88	0.5
4L900	90	89	0.5
4L910	91	90	0.5
4L920	92	91	0.5
4L930	93	92	0.5
4L940	94	93	0.5
4L950	95	94	0.5
4L960	96	95	0.5
4L970	97	96	0.5
4L980	98	97	0.56
4L990	99	98	0.56
4L1000	100	99	0.56

For 5L Belts: Please refer to the table on page 79 for the cross-over to B and BX Belts.

"358" GRIPBELTS™, TORQTITAN™ and GRIPNOTCH™

- Oil and heat resistant
- More horsepower in less space
- Static conducting

Table No. 1

Part No.	Outside Length (In.)	Wt. Lbs.
3VX250	25.0	.1
3VX265	26.5	.1
3VX280	28.0	.1
3VX300	30.0	.1
3VX315	31.5	.1
3VX326	32.6	0.09
3VX335	33.5	.1
3VX355	35.5	.2
3VX366	36.6	0.11
3VX375	37.5	.2
3VX400	40.0	.2
3VX415	41.5	0.12
3VX425	42.5	.2
3VX450	45.0	.2
3VX475	47.0	.2
3VX500	50.0	.2
3VX530	53.0	.2
3VX560	56.0	.2
3VX580	58.0	0.17
3VX600	60.0	.3
3VX630	63.0	.3
3VX650	65.0	0.19
3VX670	67.0	.3
3VX710	71.0	.3
3VX750	75.0	.3
3VX800	80.0	.4
3VX850	85.0	.4
3VX900	90.0	.4
3VX926	92.6	0.27
3VX950	95.0	.4
3VX1000	100.0	.4
3VX1060	106.0	.4
3VX1120	112.0	.5
3VX1146	114.6	0.33
3VX1180	118.0	.5
3VX1250	125.0	.6
3VX1296	129.6	0.38

Part No.	Outside Length (In.)	Wt. Lbs.
3VX1320	132.0	.6
3VX1400	140.0	.6
5VX450	45.0	.4
5VX470	47.0	.5
5VX479	47.9	0.50
5VX490	49.0	.5
5VX500	50.0	.6
5VX510	51.0	.6
5VX519	51.9	0.55
5VX530	53.0	.6
5VX540	54.0	.6
5VX550	55.0	.6
5VX560	56.0	.6
5VX570	57.0	.6
5VX580	58.0	.6
5VX590	59.0	.6
5VX600	60.0	.7
5VX610	61.0	.7
5VX630	63.0	.7
5VX650	65.0	.7
5VX660	66.0	.8
5VX670	67.0	.8
5VX680	68.0	.8
5VX690	69.0	.8
5VX710	71.0	.8
5VX730	73.0	.8
5VX740	74.0	.8
5VX750	75.0	.8
5VX760	76.0	0.80
5VX780	78.0	.8
5VX790	79.0	0.83
5VX800	80.0	.9
5VX810	81.0	.9
5VX830	83.0	.9
5VX840	84.0	.9
5VX850	85.0	.9
5VX860	86.0	.9

"358" GRIPBELTS™, TORQTITAN™ and GRIPNOTCH™

- Oil and heat resistant
- More horsepower in less space
- Static conducting

Table No. 1 (Cont.)

Part No.	Outside Length (In.)	Wt. Lbs.
5VX880	88.0	.9
5VX900	90.0	1.0
5VX930	93.0	1.0
5VX950	95.0	1.0
5VX960	96.0	1.0
5VX1000	100.0	1.1
5VX1108	110.8	1.17
5VX1030	103.0	1.1
5VX1060	106.0	1.2
5VX1080	108.0	1.2
5VX1120	112.0	1.3
5VX1150	115.0	1.3
5VX1180	118.0	1.4
5VX1230	123.0	1.4
5VX1250	125.0	1.4
5VX1277	127.7	1.34
5VX1320	132.0	1.5
5VX1400	140.0	1.6
5VX1500*	150.0	1.8
5VX1600*	160.0	1.8
5VX1700*	170.0	2.0
5VX1800*	180.0	2.1
5VX1900*	190.0	2.3
5V2000	200.0	2.23
5V2120	212.0	2.4
5V2240	224.0	2.6
5V2360	236.0	2.8
5V2500	250.0	2.9
5V2650	265.0	3.2
5V2800	280.0	3.3
5V3000	300.0	3.6
5V3150	315.0	3.9
5V3350	335.0	4.0
5V3550	355.0	4.3
8V1000	100.0	3.3
8V1060	106.0	3.48
8V1120	112.0	3.6
8V1180	118.0	3.8
8V1250	125.0	3.9
8V1320	132.0	4.3
8V1400	140.0	4.5
8V1500	150.0	4.8
8V1600	160.0	5.1
8V1700	170.0	5.6
8V1800	180.0	6.0
8V1900	190.0	6.3
8V2000	200.0	6.5
8V2120	212.0	6.9
8V2240	224.0	7.2
8V2300	230.0	7.56
8V2360	236.0	7.6
8V2500	250.0	8.0
8V2650	265.0	8.5
8V2800	280.0	8.9
8V3000	300.0	9.6
8V3150	315.0	10.3
8V3350	335.0	11.4
8V3550	355.0	12.4
8V4000	400.0	13.0
8V4250	425.0	13.95
8V4750	475.0	15.59
8V5000	500.0	16.41
8V5600	560.0	18.40
8V6000	600.0	19.71

* Gripnotch belt

BELTS CROSS-REFERENCE

4L, A, AX Belts - Cross-Reference

Table 1 (Inches)

4L	A	AX	Length	4L	A	AX	Length
4L230	A21	AX21	23.2	**4L630**	A61	AX61	63.2
4L240	A22	AX22	24.2	**4L640**	A62	AX62	64.2
4L250	A23	AX23	25.2	**4L650**	A63	AX63	65.2
4L260	A24	AX24	26.2	**4L660**	A64	AX64	66.2
4L270	A25	AX25	26.2	**4L670**	A65	AX65	67.2
4L280	A26	AX26	28.2	**4L680**	A66	AX66	68.2
4L290	A27	AX27	29.2	**4L690**	A67	AX67	69.2
4L300	A28	AX28	30.2	**4L700**	A68	AX68	70.2
4L310	A29	AX29	31.2	**4L710**	A69	AX69	71.2
4L320	A30	AX30	32.2	**4L720**	A70	AX70	72.2
4L330	A31	AX31	33.2	**4L730**	A71	AX71	73.2
4L340	A32	AX32	34.2	**4L740**	A72	AX72	74.2
4L350	A33	AX33	35.2	**4L750**	A73	AX73	75.2
4L360	A34	AX34	36.2	**4L760**	A74	AX74	76.2
4L370	A35	AX35	37.2	**4L770**	A75	AX75	77.2
4L380	A36	AX36	38.2	**4L780**	A76	AX76	78.2
4L390	A37	AX37	39.2	**4L790**	A77	AX77	79.2
4L400	A38	AX38	40.2	**4L800**	A78	AX78	80.2
4L410	A39	AX39	41.2	**4L810**	A79	AX79	81.2
4L420	A40	AX40	42.2	**4L820**	A80	AX80	82.2
4L430	A41	AX41	43.0	**4L830**	A81	AX81	83.2
4L440	A42	AX42	44.2	**4L840**	A82	AX82	84.2
4L450	A43	AX43	45.2	**4L850**	A83	AX83	85.2
4L460	A44	AX44	46.2	**4L860**	A84	AX84	86.2
4L470	A45	AX45	47.2	**4L870**	A85	AX85	87.2
4L480	A46	AX46	48.2	**4L880**	A86	AX86	88.2
4L490	A47	AX47	49.2	**4L890**	A87	AX87	89.2
4L500	A48	AX48	50.2	**4L900**	A88	AX88	90.2
4L510	A49	AX49	51.2	**4L910**	A89	AX89	91.2
4L520	A50	AX50	52.2	**4L920**	A90	AX90	92.2
4L530	A51	AX51	53.2	**4L930**	A91	AX91	93.2
4L540	A52	AX52	54.2	**4L940**	A92	AX92	94.2
4L550	A53	AX53	55.2	**4L950**	A93	AX93	95.2
4L560	A54	AX54	56.2	**4L960**	A94	AX94	96.2
4L570	A55	AX55	57.2	**4L970**	A95	AX95	97.2
4L580	A56	AX56	58.2	**4L980**	A96	AX96	98.2
4L590	A57	AX57	59.2	**4L990**	A97	AX97	99.2
4L600	A58	AX58	60.2	**4L1000**	A98	AX98	100.2
4L610	A59	AX59	61.2	**-**	A99	AX99	101.2
4L620	A60	AX60	62.2	**-**	A100	AX100	102.2

Substitutions can be made based on this chart only from left to right.
Example: 4L230 can be interchanged with an A21 or AX21, but the A21 can not be substituted for the AX21.

BELTS CROSS-REFERENCE

5L, B, BX Belts - Cross-Reference

Table 1 (Inches)

5L	B	BX	Length
5L310	B28	BX28	31.0
5L320	B29	BX29	32.0
5L330	B30	BX30	33.0
5L340	B31	BX31	34.0
5L350	B32	BX32	35.0
5L360	B33	BX33	36.0
5L370	B34	BX34	37.0
5L380	B35	BX35	38.0
5L390	B36	BX36	39.0
5L400	B37	BX37	40.0
5L410	B38	BX38	41.0
5L420	B39	BX39	42.0
5L430	B40	BX40	43.0
5L440	B41	BX41	44.0
5L450	B42	BX42	45.0
5L460	B43	BX43	46.0
5L470	B44	BX44	47.0
5L480	B45	BX45	48.0
5L490	B46	BX46	49.0
5L500	B47	BX47	50.0
5L510	B48	BX48	51.0
5L520	B49	BX49	52.0
5L530	B50	BX50	53.0
5L540	B51	BX51	54.0
5L550	B52	BX52	55.0
5L560	B53	BX53	56.0
5L570	B54	BX54	57.0
5L580	B55	BX55	58.0
5L590	B56	BX56	59.0
5L600	B57	BX57	60.0
5L610	B58	BX58	61.0
5L620	B59	BX59	62.0
5L630	B60	BX60	63.0
5L640	B61	BX61	64.0
5L650	B62	BX62	65.0
5L660	B63	BX63	66.0
5L670	B64	BX64	67.0
5L680	B65	BX65	68.0
5L690	B66	BX66	69.0
5L700	B67	BX67	70.0
5L710	B68	BX68	71.0
5L720	B69	BX69	72.0
5L730	B70	BX70	73.0
5L740	B71	BX71	74.0
5L750	B72	BX72	75.0
5L760	B73	BX73	76.0
5L770	B74	BX74	77.0
5L780	B75	BX75	78.0
5L790	B76	BX76	79.0
5L800	B77	BX77	80.0
5L810	B78	BX78	81.0
5L820	B79	B X79	82.0
5L830	B80	BX80	83.0
5L840	B81	BX81	84.0
5L850	B82	BX82	85.0
5L860	B83	BX83	86.0
5L870	B84	BX84	87.0
5L880	B85	BX85	88.0
5L890	B86	BX86	89.0
5L900	B87	BX87	90.0
5L910	B88	BX88	91.0
5L920	B89	BX89	92.0
5L930	B90	BX90	93.0
5L940	B91	BX91	94.0
5L950	B92	BX92	95.0
5L960	B93	BX93	96.0
5L970	B94	BX94	97.0
5L980	B95	BX95	98.0
5L990	B96	BX96	99.0
5L1000	B97	BX97	100.0
-	B98	BX98	101.0
-	B99	BX99	102.0
-	B100	BX100	103.0

Substitutions can be made based on this chart only from left to right.
Example: 4L230 can be interchanged with an A21 or AX21, but the A21 can not be substituted for the AX21.

SHEAVES

Browning

New combination groove B5V™
with 170 plus components covering 10-125 HP range. Mix and match with conventional A, B and 5V components.

Cast iron sheaves
over 3000 AK/BK size and bore combinations in stock, in-shaft ready bushing type and finished bore.

Variable speed sheaves
through 50 HP, precision balanced to provide smooth vibration-free performance.

B5V Sheaves

Variable Speed Sheaves
VP, VL, VM

Cast Iron Sheaves
AK, 2AK, AKH, 2AKH
BK, 2BK, BKH, 2BKH

"H" Bushing

Finished Bore

Single Groove Sheaves for "4L" or "A" Belts

"3L" belts may also be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - Finished Bore

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											
	Outside	Datum "A"	Pitch "3L"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	Wt. Lbs
AK17	1.75	1.50	1.16	X	X	-	-	-	-	-	-	-	-	-	0.5
AK20	2.00	1.80	1.46	X	X	X	-	-	-	-	-	-	-	-	0.6
AK22	2.20	2.00	1.66	X	X	X	-	-	-	-	-	-	-	-	0.6
AK23	2.30	2.10	1.76	-	X	-	-	-	-	-	-	-	-	-	0.7
AK25	2.50	2.30	1.96	X	X	X	-	-	-	-	-	-	-	-	0.7
AK26	2.60	2.40	2.06	-	X	X	-	-	-	-	-	-	-	-	0.8
AK27	2.70	2.50	2.16	-	X	X	-	-	-	-	-	-	-	-	0.9
AK28	2.80	2.60	2.26	X	X	X	-	-	-	-	-	-	-	-	0.9
AK30	3.05	2.80	2.46	X	X	X	X	-	-	-	-	-	-	-	1.0
AK32	3.25	3.00	2.66	X	X	X	X	-	-	-	-	-	-	-	1.2
AK34	3.45	3.20	2.86	X	X	X	X	-	X	-	-	-	-	-	1.2
AK39	3.75	3.50	3.16	X	X	X	X	-	X	-	-	-	-	-	1.6
AK41	3.95	3.70	3.36	X	X	X	X	-	X	-	-	-	-	-	1.9
AK44	4.25	4.00	3.66	X	X	X	X	-	X	X	-	-	-	-	2.1
AK46	4.45	4.20	3.86	-	X	X	X	-	X	X	-	-	-	-	2.4
AK49	4.75	4.50	4.16	X	X	X	X	-	X	X	-	-	-	-	2.1
AK51	4.95	4.70	4.36	X	X	X	X	-	X	-	-	-	-	-	2.4
AK54	5.25	5.00	4.66	X	X	X	X	-	X	X	X	-	-	-	2.3
AK56	5.45	5.20	4.86	-	X	X	-	-	X	X	-	-	-	-	2.6

Single Groove Sheaves for "4L" or "A" Belts (continued)

"3L" belts may also be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - Finished Bore (cont.)

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											
	Outside	Datum "A"	Pitch "3L"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	Wt. Lbs
AK59	5.75		5.16	-	X	X	X	-	X	X	X	-	-	-	2.6
AK61	5.95	5.50	5.36	-	X	X	-	-	X	X	-	-	-	-	3.0
AK64	6.25	5.70	5.66	X	X	X	X	-	X	X	X	-	-	-	2.9
AK66	6.45	6.00	5.86	-	X	X	-	-	X	X	-	-	-	-	3.3
AK69	6.75	6.20	6.16	-	-	X	-	-	X	-	-	-	-	-	4.1
AK71	6.95	6.50	6.36	-	-	X	-	-	X	-	-	-	-	-	4.4
AK74	7.25	6.70	6.66	-	-	X	-	-	X	-	X	-	-	-	3.9
AK79	7.75	7.00	7.16	-	-	X	-	-	X	-	-	-	-	-	4.6
AK84	8.25	7.50	7.66	-	-	X	-	-	X	-	X	-	-	-	5.2
AK89	8.75	8.00	8.16	-	-	X	-	-	X	-	-	-	-	-	5.4
AK94	9.25	8.50	8.66	-	X	X	-	-	X	-	X	-	-	-	4.9
AK99	9.75	9.00	9.16	-	-	-	-	-	X	-	-	-	-	-	5.8
AK104	10.25	9.50	9.66	-	-	X	-	-	X	-	X	-	X	-	6.2
AK114	11.25	10.00	10.66	-	-	-	-	-	X	-	X	-	-	-	6.4
AK124	12.25	11.00	11.66	-	-	-	-	-	X	-	X	-	-	-	7.6
AK134	13.25	12.00	12.66	-	-	-	-	-	-	-	-	-	-	X	9.3
AK144	14.25	13.00	13.66	-	-	-	-	-	X	-	-	-	-	-	9.2
AK154	15.25	14.00	14.66	-	-	-	-	-	-	-	-	-	-	X	11.4

Two Groove Sheaves for "4L" or "A" Belts

"3L" belts may also be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - Finished Bore

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											
	Outside	Datum "A"	Pitch "3L"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	Wt. Lbs
2AK22	2.25	2.00	1.66	-	X	-	-	-	-	-	-	-	-	-	1.0
2AK23	2.35	2.10	1.76	-	-	-	-	-	X	-	-	-	-	-	1.0
2AK25	2.55	2.30	1.96	-	X	-	X	-	X	-	-	-	-	-	1.3
2AK27	2.75	2.50	2.16	-	-	-	-	-	X	-	-	-	-	-	1.4
2AK28	2.85	2.60	2.26	-	-	-	-	-	X	-	-	-	-	-	1.8
2AK30	3.05	2.80	2.46	-	-	-	-	-	-	-	-	-	-	-	1.8
2AK32	3.25	3.00	2.66	-	-	-	X	-	-	X	-	-	-	-	2.0
2AK34	3.45	3.20	2.86	-	-	-	-	-	X	-	-	-	-	-	2.3
2AK39	3.75	3.50	3.16	-	-	-	-	-	X	-	-	-	-	-	2.6
2AK41	3.95	3.70	3.36	-	-	-	-	-	X	X	-	-	-	-	3.6
2AK46	4.45	4.20	3.86	-	-	-	-	-	X	-	-	-	-	-	3.9
2AK49	4.75	4.50	4.16	-	-	-	-	-	X	-	-	-	X	-	3.6

Two Groove Sheaves for "4L" or "A" Belts (continued)

"3L" belts may also be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - Finished Bore (cont.)

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											
	Outside	Datum "A"	Pitch "3L"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	Wt. Lbs
2AK54	5.25	5.00	4.66	-	-	-	-	-	X	-	-	-	-	-	3.8
2AK56	5.45	5.20	4.86	-	X	-	-	-	X	-	-	-	-	-	4.1
2AK64	6.25	6.00	5.66	-	-	-	-	-	X	-	-	-	X	X	6.1
2AK74	7.25	7.00	6.66	-	-	-	-	-	X	-	X	-	-	-	7.2
2AK84	8.25	8.00	7.66	-	-	-	-	-	X	-	-	-	-	X	7.9
2AK94	9.25	9.00	8.66	-	-	-	-	-	X	-	X	-	-	X	8.8
2AK104	10.25	10.00	9.66	-	-	-	-	-	X	-	-	-	-	X	2
2AK114	11.25	11.00	10.66	-	-	-	-	-	-	-	X	-	-	X	9.0
2AK124	12.25	12.00	11.66	-	-	-	-	-	X	-	X	-	-	-	11.8
2AK144	14.25	14.00	13.66		-	-	-	-	-	-	-		-	X	13.4

CAST IRON SHEAVES

Single Groove Sheaves for "4L" or "A" Belts

"3L" belts may be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - with Split Taper™ Bushings

Part No.	Diameter (In.)			Wt. Less Bush
	O.D.	Datum "A"	Pitch "3L"	
AK30H	3.05	2.80	2.46	1.3
AK32H	3.25	3.00	2.66	1.5
AK34H	3.45	3.20	2.86	1.2
AK39H	3.75	3.50	3.16	1.5
AK41H	3.95	3.70	3.36	1.8
AK44H	4.25	4.00	3.66	2.1
AK46H	4.45	4.20	3.86	2.1
AK49H	4.75	4.50	4.16	2.3
AK51H	4.95	4.70	4.36	2.5
AK54H	5.25	5.00	4.66	2.8
AK56H	5.45	5.20	4.86	2.5
AK59H	5.75	5.50	5.16	2.8
AK61H	5.95	5.70	5.36	2.7
AK64H	6.25	6.00	5.66	3.1
AK66H	6.45	6.20	5.86	3.3
AK69H	6.75	6.50	6.16	3.4
AK71H	6.95	6.70	6.36	3.9
AK74H	7.25	7.00	6.66	3.3
AK79H	7.75	7.50	7.16	3.5
AK84H	8.25	8.00	7.66	4.4
AK89H	8.75	8.50	8.16	5.0
AK94H	9.25	9.00	8.66	4.4
AK99H	9.75	9.50	9.16	4.8
AK104H	10.25	10.00	9.66	6.5
AK109H	10.75	10.50	10.16	5.1
AK114H	11.25	11.00	10.66	7.2
AK124H	12.25	12.00	11.66	5.3
AK134H	13.25	13.00	12.66	8.7
AK144H	14.25	14.00	13.66	8.3
AK154H	15.25	15.00	14.66	10.0
AK184H	18.25	18.00	17.66	12.8

Table 2 Stock "H" Bushings

Inch Bore		Millimeter Bore		Stock Spline Bores	
Stock Bores	Keyseat	Stock Bores	Keyseat	Stock Bores	Keyseat
1/2	1/8 x 1/16	19, 20	6 x 3	1 1/8 - 6B	X
5/8, 3/4	3/16 x 3/32	24, 25, 28, 30	8 x 3.5	1 3/8 - 6B	X
7/8	3/16 x 3/32	35, 38	10 x 4		
1 15/16	1/4 x 1/8				
1 1/8, 1 3/16	1/4 x 1/8				
1 1/4	1/4 x 1/16*				
1 3/8	5/16 x 1/16*				
1 3/8, 1 7/16, 1 1/2	3/8 x 1/16*				

Part numbers are specified by "H" and bore size. Example: "H-1 1/8"
*These sizes are furnished with special keys to fit standard depth keyseats.

CAST IRON SHEAVES

Two Groove Sheaves for "4L" or "A" Belts (Cont.)

"3L" belts may be used with these sheaves as indicated in table below.

Table 1 Stock Sizes - with Split Taper™ Bushings

Part No.	Diameter (In.)			Wt. Less Bush
	O.D.	Datum "A"	Pitch "3L"	
2AK30H	3.05	2.80	2.46	1.0
2AK32H	3.25	3.00	2.66	1.9
2AK34H	3.45	3.20	2.86	1.6
2AK39H	3.75	3.50	3.16	2.0
4AK41H	3.95	3.70	3.36	2.1
2AK44H	4.25	4.00	3.66	2.6
2AK46H	4.45	4.20	3.86	2.7
2AK49H	4.75	4.50	4.16	3.1
2AK51H	4.95	4.70	4.36	3.4
2AK54H	5.25	5.00	4.66	3.4
2AK56H	5.45	5.20	4.86	3.5
2AK59H	5.75	5.50	5.16	3.6
2AK61H	5.95	5.70	5.36	3.6
2AK64H	6.25	6.00	5.66	4.1
2AK74H	7.25	7.00	6.66	4.5
2AK84H	8.25	8.00	7.66	5.9
2AK94H	9.25	9.00	8.66	6.9
2AK104H	10.25	10.00	9.66	8.7
2AK114H	11.25	11.00	10.66	8.5
2AK124H	12.25	12.00	11.66	10.4
2AK134H	13.25	13.00	12.66	11.9
2AK144H	14.25	14.00	13.66	12.7
2AK154H	15.25	15.00	14.66	14.0
2AK184H	18.25	18.00	17.66	16.6

Table 2 Stock "H" Bushings

Inch Bore		Millimeter Bore		Stock Spline Bores	
Stock Bores	Keyseat	Stock Bores	Keyseat	Stock Bores	Keyseat
1/2	1/8 x 1/16	19, 20	6 x 3	1 1/8 - 6B	X
5/8, 3/4	3/16 x 3/32	24, 25, 28, 30	8 x 3.5	1 3/8 - 6B	X
7/8	3/16 x 3/32	35, 38	10 x 4		
1 15/16	1/4 x 1/8				
1 1/8, 1 3/16	1/4 x 1/8				
1 1/4	1/4 x 1/16*				
1 3/8	5/16 x 1/16*				
1 3/8, 1 7/16, 1 1/2	3/8 x 1/16*				

Part numbers are specified by "H" and bore size. Example: "H-1 1/8"
*These sizes are furnished with special keys to fit standard depth keyseats.

Single Groove Sheaves
Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - Finished Bore

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											Wt. Lbs
	Outside	Datum "A"	Datum "B"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	
BK24	1.80	1.80	2.20	-	X	-	-	-	-	-	-	-	-	-	0.7
BK25	1.90	1.90	2.30	-	X	-	X	-	-	-	-	-	-	-	0.7
BK27	2.10	2.10	2.50	-	X	-	X	-	-	-	-	-	-	-	0.9
BK28	2.20	2.20	2.60	-	X	X	X	-	-	-	-	-	-	-	1.0
BK30	2.40	2.40	2.80	X	X	X	X	-	-	-	-	-	-	-	1.2
BK32	2.60	2.60	3.00	-	X	X	X	-	-	-	-	-	-	-	1.3
BK34	2.80	2.80	3.20	-	X	X	X	-	X	X	-	-	-	-	1.4
BK36	3.00	3.00	3.40	-	X	X	X	-	X	X	-	-	-	-	1.6
BK40	3.20	3.20	3.60	-	X	X	X	-	X	X	-	-	-	-	1.4
BK45	3.50	3.50	3.90	-	X	X	X	-	X	X	-	-	-	-	2.1
BK47	3.70	3.70	4.10	-	X	X	X	-	X	X	-	-	-	-	2.4
BK50	4.00	4.00	4.40	-	X	X	X	-	X	X	-	-	-	-	2.3
BK52	4.20	4.20	4.60	-	X	X	X	-	X	X	-	-	-	-	2.6
BK55	4.50	4.50	4.90	-	-	X	X	-	X	X	X	-	-	-	2.6
BK57	4.70	4.70	5.10	-	-	X	X	-	X	X	-	-	-	-	2.5
BK60	5.00	5.00	5.40	-	X	X	X	-	X	X	X	-	-	-	2.9
BK62	5.20	5.20	5.60	-	-	X	X	-	X	-	-	-	-	-	2.9
BK65	5.50	5.50	5.90	-	-	-	-	-	X	-	-	-	-	-	3.2

Single Groove Sheaves (continued)
Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - Finished Bore (Cont.)

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)											
	Outside	Datum "A"	Datum "B"	1/2	5/8	3/4	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16	Wt. Lbs
BK67	6.45	5.70	6.10	-	-	X	-	-	X	-	-	-	-	-	3.7
BK70	6.75	6.00	6.40	-	-	X	-	-	X	-	X	-	-	X	3.8
BK72	6.95	6.20	6.60	-	-	-	-	-	X	-	-	-	X	X	4.4
BK75	7.25	6.50	6.80	-	-	-	-	-	X	-	-	-	-	-	4.0
BK77	7.45	6.70	7.10	-	-	-	-	-	X	-	-	-	X	-	5.3
BK80	7.75	7.00	7.40	-	-	X	-	-	X	X	X	-	X	X	5.2
BK85	8.25	7.50	7.90	-	-	-	-	-	X	-	-	-	X	X	5.5
BK90	8.75	8.00	8.40	-	-	X	-	-	X	X	X	-	X	X	6.3
BK95	9.25	8.50	8.90	-	-	-	-	-	X	-	-	-	-	X	6.6
BK100	9.75	9.00	9.40	-	-	X	-	-	X	-	X	-	-	X	7.1
BK105	10.25	9.50	9.90	-	-	-	-	-	X	-	-	-	-	X	7.6
BK110	10.75	10.00	10.40	-	-	-	-	-	X	-	X	-	-	X	7.7
BK115	11.25	10.50	10.90	-	-	-	-	-	X	-	-	-	-	X	6.9
BK120	11.75	11.00	11.40	-	-	-	-	-	X	-	X	-	-	X	9.6
BK130	12.75	12.00	12.40	-	-	-	-	-	X	-	X	-	-	X	10.0
BK140	13.75	13.00	13.40	-	-	-	-	-	X	-	X	-	-	X	11.0
BK160	15.75	15.00	15.40	-	-	-	-	-	-	-	X	-	-	X	13.5
BK190	18.75	18.00	18.40	-	-	-	-	-	-	-	X	-	-	X	16.4

Two Groove Sheaves
Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - Finished Bore

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)									
	Outside	Datum "A"	Datum "B"	1/2	5/8	3/4	7/8	1	1 1/8	1 3/16	1 3/8	1 7/16	Wt. Lbs
2BK25	2.50	1.90	2.30	-	-	-	X	-	-	-	-	-	1.4
2BK27	2.70	2.10	2.50	-	-	-	-	X	-	-	-	-	1.6
2BK28	2.95	2.20	2.60	-	-	-	X	X	X	-	-	-	1.8
2BK30	3.15	2.40	2.80	-	-	-	X	X	X	-	-	-	2.1
2BK32	3.35	2.60	3.00	-	-	-	-	X	X	-	-	-	2.5
2BK34	3.55	2.80	3.20	-	-	-	X	-	X	-	-	-	2.8
2BK36	3.75	3.00	3.40	-	-	-	X	-	X	-	X	-	3.1
2BK40	3.95	3.20	3.60	-	-	-	X	X	X	-	-	-	3.3
2BK45	4.25	3.50	3.90	-	-	-	-	X	X	-	X	-	3.1
2BK47	4.45	3.70	4.10	-	-	-	-	-	X	-	-	-	3.7
2BK50	4.75	4.00	4.40	-	-	-	-	-	X	-	X	-	4.0
2BK52	4.95	4.20	4.60	-	-	-	-	-	X	-	X	-	4.9
2BK55	5.25	4.50	4.90	-	-	-	-	-	-	-	X	-	4.6
2BK57	5.45	4.70	5.10	-	-	-	-	-	-	-	X	-	4.9
2BK60	5.75	5.00	5.40	-	-	-	-	X	-	-	-	-	4.7
2BK62	5.95	5.20	5.60	-	-	-	-	X	-	-	X	-	5.7
2BK65	6.25	5.50	5.90	-	-	-	-	-	-	-	X	-	5.9
2BK67	6.45	5.70	6.10	-	-	-	-	-	-	-	X	-	6.2

Two Groove Sheaves (continued)
Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - Finished Bore (Cont.)

Part No.	Diameter (In.)			Stock Bores Marked "X" (In.)									
	Outside	Datum "A"	Datum "B"	1/2	5/8	3/4	7/8	1	1 1/8	1 3/16	1 3/8	1 7/16	Wt. Lbs
2BK70	6.75	6.00	6.40	-	-	-	-	X	-	X	-	X	7.5
2BK80	7.75	7.00	7.40	-	-	-	-	-	-	X	X	-	8.8
2BK90	8.75	8.00	8.40	-	-	-	-	-	-	X	X	X	8.5
2BK100	9.75	9.00	9.40	-	-	-	-	-	-	X	-	X	11.8
2BK110	10.75	10.00	10.40	-	-	-	-	X	-	-	-	X	13.2
2BK120	11.75	11.00	11.40	-	-	-	-	-	-	-	-	X	14.6
2BK130	12.75	12.00	12.40	-	-	-	-	-	-	X	-	X	17.3
2BK140	13.75	13.00	13.40	-	-	-	-	-	-	-	-	X	18.3
2BK160	15.75	15.00	15.40	-	-	-	-	-	-	-	-	X	19.8

CAST IRON SHEAVES

Single Groove Sheaves - Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - with Split Taper™ Bushings

Part No.	Diameter (In.)			Wt. Less Bush
	O.D.	Datum "A"	Datum "B"	
BK30H	3.15	2.40	2.80	1.3
BK32H	3.35	2.60	3.00	0.8
BK34H	3.55	2.80	3.20	1.7
BK36H	3.75	3.00	3.40	1.4
BK40H	3.95	3.20	3.60	1.6
BK45H	4.25	3.50	3.90	2.0
BK47H	4.45	3.70	4.10	2.2
BK50H	4.75	4.00	4.40	2.4
BK52H	4.95	4.20	4.60	2.7
BK55H	5.25	4.50	4.90	2.9
BK57H	5.45	4.70	5.10	3.3
BK60H	5.75	5.00	5.40	3.4
BK62H	5.95	5.20	5.60	3.6
BK65H	6.25	5.50	5.90	3.0
BK67H	6.45	5.70	6.10	4.1
BK70H	6.75	6.00	6.40	3.6
BK72H	6.95	6.20	6.60	4.2
BK75H	7.25	6.50	6.90	4.0
BK77H	7.45	6.70	7.10	4.7
BK80H	7.75	7.00	7.40	4.8
BK85H	8.25	7.50	7.90	5.1
BK90H	8.75	8.00	8.40	5.6
BK95H	9.25	8.50	8.90	6.1
BK100H	9.75	9.00	9.40	6.9
BK105H	10.25	9.50	9.90	7.0
BK110H	10.75	10.00	10.40	7.6
BK115H	11.25	10.50	10.90	7.7
BK120H	11.75	11.00	11.40	8.7
BK130H	12.75	12.00	12.40	8.9
BK140H	13.75	13.00	13.40	10.6
BK150H	14.75	14.00	14.40	10.8
BK160H	15.75	15.00	15.40	11.8
BK190H	18.75	18.00	18.40	16.1

Table 2 Stock "H" Bushings

Inch Bore		Millimeter Bore		Stock Spline Bores	
Stock Bores	Keyseat	Stock Bores	Keyseat	Stock Bores	Keyseat
1/2	1/8 x 1/16	19, 20	6 x 3	1 1/8 - 6B	X
5/8, 3/4	3/16 x 3/32	24, 25, 28, 30	8 x 3.5	1 3/8 - 6B	X
7/8	3/16 x 3/32	35, 38	10 x 4		
1 15/16	1/4 x 1/8				
1 1/8, 1 3/16	1/4 x 1/8				
1 1/4	1/4 x 1/16*				
1 3/8	5/16 x 1/16*				
1 3/8, 1 7/16, 1 1/2	3/8 x 1/16*				

Part numbers are specified by "H" and bore size. Example: "H-1 1/8"
*These sizes are furnished with special keys to fit standard depth keyseats.

CAST IRON SHEAVES

Two Groove Sheaves - Combination Groove for "4L" or "A" Belts and "5L" or B" Belts

Table 1 Stock Sizes - with Split Taper™ Bushings

Part No.	Diameter (In.)			Wt. Less Bush
	O.D.	Datum "A"	Datum "B"	
2BK32H	3.35	2.60	3.00	2.4
2BK34H	3.55	2.80	3.20	2.7
2BK36H	3.75	3.00	3.40	1.6
2BK40H	3.95	3.20	3.60	2.6
2BK45H	4.25	3.50	3.90	3.2
2BK47H	4.45	3.70	4.10	3.1
2BK50H	4.75	4.00	4.40	3.4
2BK52H	4.95	4.20	4.60	3.9
2BK55H	5.25	4.50	4.90	4.3
2BK57H	5.45	4.70	5t.10	4.6
2BK60H	5.75	5.00	5.40	4.7
2BK62H	5.95	5.20	5.60	4.8
2BK65H	6.25	5.50	5.90	5.0
2BK67H	6.45	5.70	6.10	5.1
2BK70H	6.75	6.00	6.40	5.6
2BK72H	6.95	6.20	6.60	5.6
2BK80H	7.75	7.00	7.40	7.1
2BK90H	8.75	8.00	8.40	8.2
2BK100H	9.75	9.00	9.40	10.9
2BK110H	10.75	10.00	10.40	12.7
2BK120H	11.75	11.00	11.40	14.1
2BK130H	12.75	12.00	12.40	16.2
2BK140H	13.75	13.00	13.40	17.5
2BK160H	15.75	15.00	15.40	20.2
2BK190H	18.75	18.00	18.40	24.2

Table 2 Stock "H" Bushings

Inch Bore		Millimeter Bore		Stock Spline Bores	
Stock Bores	Keyseat	Stock Bores	Keyseat	Stock Bores	Keyseat
1/2	1/8 x 1/16	19, 20	6 x 3	1 1/8 - 6B	X
5/8, 3/4	3/16 x 3/32	24, 25, 28, 30	8 x 3.5	1 3/8 - 6B	X
7/8	3/16 x 3/32	35, 38	10 x 4		
1 15/16	1/4 x 1/8				
1 1/8, 1 3/16	1/4 x 1/8				
1 1/4	1/4 x 1/16*				
1 3/8	5/16 x 1/16*				
1 3/8, 1 7/16, 1 1/2	3/8 x 1/16*				

Part numbers are specified by "H" and bore size. Example: "H-1 1/8"
*These sizes are furnished with special keys to fit standard depth keyseats.

STOCK SHEAVE INTERCHANGE

Sheaves for "4L", "A", "5L" or B" Belts

4L or A	5L or B	Regal Rexnord		Other Manufacturers	
		Browning™	T. B. Wood's™	Maurey®*	Dodge®*
2.4	2.8	**BK 30H**	**BK30**	-	BK 30H
2.6	3.0	**BK 32H**	**BK32**	-	BK 32H
2.8	3.2	**BK 34H**	**-**	-	BK 34H
3.0	3.4	**BK 36H**	**BK36**	-	BK 36H
3.2	3.6	**BK 40H**	**BK40**	BH 40	BK 40H
3.5	3.9	**BK 45H**	**BK45**	BH 42	BK 45H
3.7	4.1	**BK 47H**	**BK47**	BH 44	BK 47H
4.0	4.4	**BK 50H**	**BK50**	BH 48	BK 50H
4.2	4.6	**BK 52H**	**BK52**	BH 50	BK 52H
4.5	4.9	**BK 55H**	**BK55**	BH 52	BK 55H
4.7	5.1	**BK 57H**	**BK57**	BH 54	BK 57H
5.0	5.4	**BK 60H**	**BK60**	BH 58	BK 60H
5.2	5.6	**BK 62H**	**BK62**	BH 60	BK 62H
5.5	5.9	**BK 65H**	**BK65**	BH 66	BK 65H
5.7	6.1	**BK 67H**	**BK68**	BH 68	BK 67H
6.0	6.4	**BK 70H**	**BK70**	BH 70	BK 70H
6.2	6.6	**BK 72H**	**BK72**	BH 72	BK 72H
6.5	6.9	**BK 75H**	**BK75**	-	BK 75H
6.7	7.1	**BK 77H**	**-**	-	BK 77H
7.0	7.4	**BK 80H**	**BK80**	BH 78	BK 80H
7.5	7.9	**BK 85H**	**BK85**	-	BK 85H
8.0	8.4	**BK 90H**	**BK90**	-	BK 90H
8.5	8.9	**BK 95H**	**BK95**	-	BK 95H
9.0	9.4	**BK 100H**	**BK100**	BH 98	BK 100H
9.5	9.9	**BK 105H**	**BK105**	-	BK 105H
10.0	10.4	**BK 110H**	**BK110**	BH 108	BK 110H
10.5	10.9	**BK 115H**	**BK115**	-	BK 115H
16.0	11.4	**BK 120H**	**BK120**	BH 118	BK 120H
12.0	12.4	**BK 130H**	**BK130**	BH 128	BK 130H
13.0	13.4	**BK 140H**	**BK140**	-	BK 140H
14.0	14.4	**BK 150H**	**BK150**	-	BK 150H
15.0	15.4	**BK 160H**	**BK160**	BH 158	BK 160H
18.0	18.4	**BK 190H**	**BK190**	BH 188	BK 190H

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GRIPBELT™ SHEAVES WITH SPLIT TAPER™ BUSHINGS

Specifications - Stock "B5V™" Sheaves

Part Number		Diameter (In.)				Wt. (lbs.) Less Bush.
Sheave	Bushing	Datum "A" Belts	Datum "B" Belts	Pitch "5V" Belts	Outside	
1 GROOVE, F = 1						
1B5V42	P1	3.8	4.2	4.3	4.48	2.5
1B5V44	P1	4.0	4.4	4.5	4.68	2.8
1B5V46	B	4.2	4.6	4.7	4.88	2.5
1B5V48	B	4.4	4.8	4.9	5.08	2.9
1B5V50	B	4.6	5.0	5.1	5.28	3.3
1B5V52	B	4.8	5.2	5.3	5.48	3.6
1B5V54	B	5.0	5.4	5.5	5.68	4.0
1B5V56	B	5.2	5.6	5.7	5.88	4.5
1B5V58	B	5.4	5.8	5.9	6.08	5.0
1B5V60	B	5.6	6.0	6.1	6.28	5.4
1B5V62	B	5.8	6.2	6.3	6.48	5.9
1B5V64	B	6.0	6.4	6.5	6.68	6.1
1B5V66	B	6.2	6.6	6.7	6.88	6.6
1B5V68	B	6.4	6.8	6.9	7.08	6.4
1B5V70	B	6.6	7.0	7.1	7.28	7.1
1B5V74	B	7.0	7.4	7.5	7.68	8.6
1B5V80	B	7.6	8.0	8.1	8.28	9.2
1B5V86	B	8.2	8.6	8.7	8.88	9.4
1B5V90	B	8.6	9.0	9.1	9.28	9.8
1B5V94	B	9.0	9.4	9.5	9.68	9.5
1B5V110	B	10.6	11.0	11.1	11.28	12.0
1B5V124	B	12.0	12.4	12.5	12.68	15.4
1B5V136	B	13.2	13.6	13.7	13.88	18.0
1B5V154	B	15.0	15.4	15.5	15.68	18.9
1B5V160	B	15.6	16.0	16.1	16.28	17.9
1B5V184	B	18.0	18.4	18.5	18.68	30.7
1B5V200	B	19.5	20.0	20.1	20.28	23.0

GRIPBELT™ SHEAVES WITH SPLIT TAPER™ BUSHINGS

Specifications - Stock "B5V™" Sheaves (cont.)

Part Number		Diameter (In.)				Wt. (lbs.) Less Bush.
Sheave	Bushing	Datum "A" Belts	Datum "B" Belts	Pitch "5V" Belts	Outside	
2 GROOVE, F = 1 23/32						
2B5V42	P1	3.8	4.2	4.3	4.48	3.0
2B5V44	P1	4.0	4.4	4.5	4.68	3.3
2B5V46	B	4.2	4.6	4.7	4.88	3.2
2B5V48	B	4.4	4.8	4.9	5.08	3.8
2B5V50	B	4.6	5.0	5.1	5.28	4.5
2B5V52	B	4.8	5.2	5.3	5.48	5.2
2B5V54	B	5.0	5.4	5.5	5.68	5.9
2B5V56	B	5.2	5.6	5.7	5.88	6.6
2B5V58	B	5.4	5.8	5.9	6.08	6.8
2B5V60	B	5.6	6.0	6.1	6.28	8.2
2B5V62	B	5.8	6.2	6.3	6.48	8.6
2B5V64	B	6.0	6.4	6.5	6.68	8.8
2B5V66	B	6.2	6.6	6.7	6.88	9.9
2B5V68	B	6.4	6.8	6.9	7.08	9.6
2B5V70	B	6.6	7.0	7.1	7.28	10.8
2B5V74	B	7.0	7.4	7.5	7.68	11.2
2B5V80	B	7.6	8.0	8.1	8.28	11.1
2B5V86	B	8.2	8.6	8.7	8.88	11.8
2B5V90	B	8.6	9.0	9.1	9.28	12.4
2B5V94	B	9.0	9.4	9.5	9.68	13.2
2B5V110	B	10.6	11.0	11.1	11.28	16.0
2B5V124	B	12.0	12.4	12.5	12.68	19.9
2B5V136	B	13.2	13.6	13.7	13.88	22.1
2B5V154	B	15.0	15.4	15.5	15.68	26.2
2B5V160	B	15.6	16.0	16.1	16.28	25.6
2B5V184	B	18.0	18.4	18.5	18.68	35.4
2B5V200	B	19.5	20.0	20.1	20.28	37.0
2B5V234	B	22.9	23.4	23.5	23.68	40.5
2B5V250	B	24.5	25.0	25.1	25.28	47.0
2B5V278	B	27.3	27.8	27.9	28.08	57.0

GRIPBELT™ SHEAVES WITH SPLIT TAPER™ BUSHINGS

Specifications - Stock "B5V™" Sheaves (cont.)

Part Number		Diameter (In.)				Wt. (lbs.) Less Bush.
Sheave	Bushing	Datum "A" Belts	Datum "B" Belts	Pitch "5V" Belts	Outside	
3 GROOVE, F = 27/16						
3B5V42	P1	3.8	4.2	4.3	4.48	4.8
3B5V44	P1	4.0	4.4	4.5	4.68	5.2
3B5V46	B	4.2	4.6	4.7	4.88	4.8
3B5V48	B	4.4	4.8	4.9	5.08	5.4
3B5V50	B	4.6	5.0	5.1	5.28	6.0
3B5V52	B	4.8	5.2	5.3	5.48	6.5
3B5V54	B	5.0	5.4	5.5	5.68	7.0
3B5V56	B	5.2	5.6	5.7	5.88	7.9
3B5V58	B	5.4	5.8	5.9	6.08	8.8
3B5V60	B	5.6	6.0	6.1	6.28	9.5
3B5V62	B	5.8	6.2	6.3	6.48	10.1
3B5V64	B	6.0	6.4	6.5	6.68	10.9
3B5V66	B	6.2	6.6	6.7	6.88	11.6
3B5V68	B	6.4	6.8	6.9	7.08	12.0
3B5V70	B	6.6	7.0	7.1	7.28	12.8
3B5V74	B	7.0	7.4	7.5	7.68	14.4
3B5V80	B	7.6	8.0	8.1	8.28	14.3
3B5V86	B	8.2	8.6	8.7	8.88	14.7
3B5V90	B	8.6	9.0	9.1	9.28	15.0
3B5V94	B	9.0	9.4	9.5	9.68	16.0
3B5V110	B	10.6	11.0	11.1	11.28	19.6
3B5V124	B	12.0	12.4	12.5	12.68	22.5
3B5V136	B	13.2	13.6	13.7	13.88	28.4
3B5V154	B	15.0	15.4	15.5	15.68	33.8
3B5V160	B	15.6	16.0	16.1	16.28	36.2
3B5V184	B	18.0	18.4	18.5	18.68	41.9
3B5V200	B	19.5	20.0	20.1	20.28	47.5
3B5V234	B	22.9	23.4	23.5	23.68	64.0
3B5V250	B	24.5	25.0	25.1	25.28	68.0
3B5V278	B	27.3	27.8	27.9	28.08	79.4

GRIPBELT™ SHEAVES WITH SPLIT TAPER™ BUSHINGS

Specifications - Stock "B5V™" Sheaves (cont.)

Part Number		Diameter (In.)				Wt. (lbs.) Less Bush.
Sheave	Bushing	Datum "A" Belts	Datum "B" Belts	Pitch "5V" Belts	Outside	
4 GROOVE, F = 3 5/32						
4B5V42	P1	3.8	4.2	4.3	4.48	6.5
4B5V44	P1	4.0	4.4	4.5	4.68	6.3
4B5V46	B	4.2	4.6	4.7	4.88	5.9
4B5V48	B	4.4	4.8	4.9	5.08	7.7
4B5V50	B	4.6	5.0	5.1	5.28	7.0
4B5V52	B	4.8	5.2	5.3	5.48	7.7
4B5V54	B	5.0	5.4	5.5	5.68	8.6
4B5V56	B	5.2	5.6	5.7	5.88	9.3
4B5V58	B	5.4	5.8	5.9	6.08	10.3
4B5V60	B	5.6	6.0	6.1	6.28	11.2
4B5V62	B	5.8	6.2	6.3	6.48	11.8
4B5V64	B	6.0	6.4	6.5	6.68	12.5
4B5V66	B	6.2	6.6	6.7	6.88	13.3
4B5V68	B	6.4	6.8	6.9	7.08	14.2
4B5V70	B	6.6	7.0	7.1	7.28	14.8
4B5V74	B	7.0	7.4	7.5	7.68	16.5
4B5V80	B	7.6	8.0	8.1	8.28	16.0
4B5V86	B	8.2	8.6	8.7	8.88	17.6
4B5V90	B	8.6	9.0	9.1	9.28	18.6
4B5V94	B	9.0	9.4	9.5	9.68	19.3
4B5V110	B	10.6	11.0	11.1	11.28	24.6
4B5V124	B	12.0	12.4	12.5	12.68	28.9
4B5V136	B	13.2	13.6	13.7	13.88	35.3
4B5V154	B	15.0	15.4	15.5	15.68	38.1
4B5V160	B	15.6	16.0	16.1	16.28	41.5
4B5V184	B	18.0	18.4	18.5	18.68	50.7
4B5V200	B	19.5	20.0	20.1	20.28	60.7
4B5V234	B	22.9	23.4	23.5	23.68	75.0
4B5V250	B	24.5	25.0	25.1	25.28	83.4
4B5V278	B	27.3	27.8	27.9	28.08	95.4

Single Groove Variable Pitch Sheaves for "3L", "4L", "5L", "A", "B", and "5V" Belts

Table 1 Stock Sizes - Finished Bore (inches)

Part No.	OZ.	Stock Bores Marked "X" (In.)									
		1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 5/8	Wt. Lbs
1VP25	2.50	x	-	-	-	-	-	-	-	-	0.9
1VP30	2.87	x	x	x	-	-	-	-	-	-	1.1
1VP34	3.15	x	x	x	x	-	-	-	-	-	1.3
1VP40	375	x	x	x	x	-	-	-	-	-	1.6
1VP44	4.15	x	x	x	-	-	-	-	-	-	2.0
1VP44	4.15	-	-	-	x	x	x	-	-	-	2.9
1VP50	4.75	x	x	x	-	-	-	-	-	-	2.7
1VP50	4.75	-	-	-	x	x	x	-	-	-	3.6
1VP56	5.35	x	x	x	-	-	-	-	-	-	4.0
1VP56	5.35	-	-	-	x	x	x	-	-	-	4.5
1VP60	6.00	-	-	x	x	x	x	-	x	x	6.7
1VP62	5.95	-	x	x	x	x	x	x	x	-	6.5
1VP65	6.50	-	-	x	x	-	x	-	x	x	7.6
1VP68	6.55	-	x	x	x	-	x	-	x	-	7.7
1VP71	7.10	-	-	-	x	-	x	-	x	x	8.5
1VP75	7.50	-	-	-	x	-	x	-	x	x	9.5

Single Groove Variable Pitch Sheaves for "3L", "4L", "5L", "A", "B", and "5V" Belts

Table 2

Part No.	Diameeter Range (in.)															
	"3L" Belts				"4L" or "A" Belts				"5L" or "B" Belts				"5V" Belts			
	Min.	Turns	Max.	Turns	Min.	Turns	Max.	Turns	Min.	Turns	Max.	Turns	Min.	Turns	Max.	Turns
	Pitch	Open	Pitch	Open	Pitch	Open	Pitch	Open	Pitch	Open	Pitch	Open	Pitch	Open	Pitch	Open
1VP25	1.6	4	2.4	0	-	-	-	-	-	-	-	-	-	-	-	-
1VP30	1.9	4	2.7	0	-	-	-	-	-	-	-	-	-	-	-	-
1VP34	1.7	4	2.5	0	2.0	5	3.0	0	2.7	5	3.5	1	-	-	-	-
1VP40	2.3	4	3.1	0	2.6	5	3.6	0	3.0	6	4.0	1	-	-	-	-
1VP44	2.7	4	3.5	0	3.0	5	4.0	0	3.2	6	4.4	1	-	-	-	-
1VP44	2.7	4	3.5	0	3.0	5	4.0	0	3.4	6	4.4	1	-	-	-	-
1VP50	3.3	4	4.1	0	3.6	5	4.6	0	4.0	6	5.0	1	-	-	-	-
1VP50	3.3	4	4.1	0	3.6	5	4.6	0	4.0	6	5.0	1	-	-	-	-
1VP56	3.9	4	4.7	0	4.2	5	5.2	0	4.6	6	5.6	1	-	-	-	-
1VP56	3.9	4	4.7	0	4.2	5	5.2	0	4.6	6	5.6	1	-	-	-	-
1VP60	-	-	-	-	4.4	5	5.4	0	4.6	6	5.8	0				
1VP62	-	-	-	-	4.4	5	5.4	0	4.6	6	5.8	0	4.7	6	5.9	0
1VP65	-	-	-	-	4.9	5	5.9	0	5.1	6	6.3	0	4.7	6	5.9	0
1VP68	-	-	-	-	4.9	5	5.9	0	5.1	6	6.3	0	5.2	6	6.4	0
1VP71	-	-	-	-	5.5	5	6.5	0	5.7	6	6.9	0	5.2	6	6.4	0
1VP75	-	-	-	-	5.9	5	6.9	0	6.1	6	7.3	0	5.8	6	7.0	0

Two Groove Variable Pitch Sheaves for "3L", "4L", "5L", "A", "B", and "5V" Belts

Table 1 Stock Sizes - Finished Bore (inches)

Part No.	O.D.	Stock Bores Marked "x" (In.)									Wt. Lbs.
		1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 5/8	
2VP36	3.35	x	x	-	x	-	-	-	-	-	3.7
2VP42	3.95	-	x	x	x	-	x	-	-	-	4.3
2VP50	4.75	-	x	-	x	x	x	-	-	-	5.8
2VP56	5.35	-	-	-	x	x	x	-	-	-	7.5
2VP60	6.00	-	-	x	x	-	x	-	x	x	10.8
2VP62	5.95	-	-	-	-	x	x	x	x	-	10.2
2VP65	6.50	-	-	-	x	x	x	-	x	x	12.8
2VP68	6.55	-	-	-	x	x	x	-	x	-	13.4
2VP71	7.10	-	-	-	x	-	x	-	x	x	14.6
2VP75	7.50	-	-	-	x	-	x	-	x	x	16.6
2VP84	8.50	-	-	-	-	-	-	-	x	x	23.4

2VP84 is also available in 1 7/8 and 48 MM stock sizes.

Two Groove Variable Pitch Sheaves for "3L", "4L", "5L", "A", "B", and "5V" Belts

Table 2

Part No.	Diameeter Range (in.)															
	"3L" Belts				"4L" or "A" Belts				"5L" or "B" Belts				"5V" Belts			
	Min. Pitch	Turns Open	Max. Pitch	Turns Open	Min. Pitch	Turns Open	Max. Pitch	Turns Open	Min. Pitch	Turns Open	Max. Pitch	Turns Open	Min. Pitch	Turns Open	Max. Pitch	Turns Open
2VP36	1.9	4	2.7	0	2.2	5	3.2	0	2.8	5	3.6	1	-	-	-	-
2VP42	2.5	4	3.3	0	2.8	5	3.8	0	3.2	6	4.2	1	-	-	-	-
2VP50	3.3	4	4.1	0	3.6	5	4.6	0	4.0	6	5.0	1	-	-	-	-
2VP56	3.9	4	4.7	0	4.2	5	5.2	0	4.6	6	5.6	1	-	-	-	-
2VP60	-	-	-	-	4.4	5	5.4	0	4.6	6	5.8	0	4.7	6	5.9	0
2VP62	-	-	-	-	4.4	5	5.4	0	4.6	6	5.8	0	4.7	6	5.9	0
2VP65	-	-	-	-	4.9	5	5.9	0	5.1	6	6.3	0	5.2	6	6.4	0
2VP68	-	-	-	-	4.9	5	5.9	0	5.1	6	6.3	0	5.2	6	6.4	0
2VP71	-	-	-	-	5.5	5	6.5	0	5.7	6	6.9	0	5.8	6	7.0	0
2VP75	-	-	-	-	5.9	5	6.9	0	6.1	6	7.3	0	6.2	6	7.4	0
2VP84	-	-	-		6.9	5	7.9	0	7.1	6	8.3	0	7.2	6	8.4	0

All fitted with hollow head setscrews
Any standard two groove Browning sheave can be used as a companion sheave

Stock "VL" and "VM" Variable Pitch Sheaves

Table 1

Part No.	O.D.	Stock Bores Marked "x" (In.)				Wt. Lbs.
		1/2	5/8	3/4	7/8	
1VL25	2.50	x	x	-	-	0.9
1VL30	2.87	x	x	-	-	1.0
1VL34	3.15	x	x	x	-	1.2
1VL40	3.75	x	x	x	x	1.6
1VL44	4.15	x	x	x	x	2.0
1VM50	4.75	x	x	x	x	2.5

Table 2

Part No.	Diameeter Range (in.)											
	"3L" Belts				"4L" or "A" Belts				"5L" or "B" Belts			
	Min. Pitch	Turns Open	Max. Pitch	Turns Open	Min. Pitch	Turns Open	Max. Pitch	Turns Open	Min. Pitch	Turns Open	Max. Pitch	Turns Open
1VL25	1.6	4	2.4	0	-	-	-	-	-	-	-	-
1VL30	1.9	4	2.7	0	-	-	-	-	-	-	-	-
1VL34	1.7	4	2.5	0	2.0	5	3.0	0	2.7	5	3.5	1
1VL40	2.3	4	3.1	0	2.6	5	3.6	0	3.0	6	4.0	1
1VL44	2.7	4	3.5	0	3.0	5	4.0	0	3.4	6	4.4	1
1VM50	3.3	4	4.1	0	3.6	5	4.6	0	4.0	6	5.0	1

BUSHINGS

Browning™

SPLIT TAPER™ BUSHINGS

Bushing Specifications

Part No.	Dimensions (In.) D		Bore Range (In.)		Cap Screws (In.)		Avg. Wt Lbs.	Wrench Torque In-Lbs.
	Large End	Small End	Type 1	Type 2	No.	Size		
G	1.172	1.134	3/8 - 15/16	1	2	1/4-20 x 5/8	0.4	95
H	1.625	1.571	1/2 - 1 1/8	1 7/16 - 1 1/2	2	1/4-20 x 5/8	0.6	95
P1	1.938	1.856	5/8 - 1 7/16	1 1/2 - 1 3/4	3	5/16-18 x 1	1.3	192
P2	1.938	1.793	1 - 1 7/16	1 1/2 - 1 3/4	3	5/16-18 x 1	1.4	192
B	2.625	2.557	1 - 1 15/16	2 - 2 7/16	3	5/16-18 x 1 1/4	2.3	192
Q1	2.875	2.769	3/4 - 2 1/16	2 1/8 - 2 11/16	3	3/8-16 x 1 1/4	3.4	348
Q2	2.875	2.707	1 3/8 - 2 1/16	2 1/8 - 2 5/8	3	3/8-16 x 1 1/4	3.7	348
Q3	2.875	2.613	1 11/16 - 2 1/16	2 1/8 - 2 1/2	3	3/8-16 x 1 1/4	4.1	348
R1	4	3.877	1 1/8 - 2 13/16	2 7/8 - 3 3/4	3	3/8-16 x 1 3/4	7.1	348
R2	4	3.752	1 1/2 - 2 1/16	2 1/8 - 3 5/8	3	3/8-16 x 1 3/4	9.7	348
S1	4.623	4.42	2 7/16 - 3 3/16	3 1/4 - 4	3	1/2-13 x 2 1/4	12.2	840
S2	4.623	4.272	2 7/16 - 3 3/16	3 1/4 - 4	3	1/2-13 x 2 1/4	15.3	840
U0	5.997	5.768	3 - 4 1/4	4 3/8 - 5	3	5/8-11 x 2 3/4	23.9	1680
U1	5.997	5.658	2 3/8 - 4 1/4	4 3/8 - 5 1/2	3	5/8-11 x 2 3/4	33.6	1680
U2	5.997	5.471	3 7/16 - 4 1/4	4 3/8 - 5	3	5/8-11 x 2 3/4	39.3	1680

R1 - 1 1/8, R1- 1 3/16, R2 - 1 3/8, S1 - 1 11/16, S1 - 1 3/4, and S2 - 1 7/8" to 2 1/8" bushings are steel. U0 and U1 - 2 3/8" to 3 3/16" and U2 - 2 7/16" to 3 3/16" are cast iron. All other bushings on this page are either sintered steel, or ductile iron.

Contact factory for clarification.

Note: Taper on all Browning™ bushings is 3/4" per foot on diameter.

Flange Set Screw		
Part No.	Thread	Tightening Torque (in-lb)
R	5/16-18	165
S,U	3/8-16	290

BEARINGS

Browning™

AIR HANDLING SOLUTIONS

Mounted Ball Bearing

Stamped Steel Bearing

Rubber Mounted Bearing

Browning™

CONTENTS

MOUNTED BALL BEARINGS

- Available in a variety of housing configurations including pillow block, two-bolt flange, four-bolt flange and more
- Solid cast iron base
- Anti-rotation rivet
- Available in set screw, eccentric and concentric locking collar
- AH suffix product designates special concentric locking collar air handling housing fit and noise testing

STAMPED STEEL/RUBBER MOUNTED

Rubber Mounted

- Available in cartridges and stamped steel pillow blocks
- Designed to fit into HVAC web-mount supports
- Cartridges adjust with misalignment and dampen noise and vibration

Stamped Steel

- Low cost, stamped steel housings for light-duty HVAC requirements
- Well suited for small spaces
- Permanently sealed and lubricated for life for maintenance-free operation

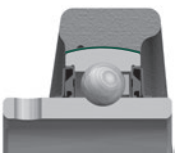
AIR HANDLING BEARING APPLICATIONS

	Light Duty	Light Commercial Duty	Commercial Duty	Industrial Duty
SealMaster™ Ball	✔	✔	✔	✔
Browning™ Ball	✔	✔	✔	✔
Browning Runbber Mount	✔	✔		
Browning Stamped Steel	✔	✔		

AIR HANDLING BEARING SOLUTIONS

Air Handling "AH" Option

The Browning™ Air Handling mounted ball bearing has the same features as the standard Browning mounted ball bearing except for the following air handling features.



AH Housing Fit

Air Handling "AH" ball bearings are manufactured with a controlled housing fit that allows the bearing to properly self-align when mounted on lightweight frames commonly found on air handling equipment.

Noise Test

All Air Handling "AH" bearings must pass a two stage noise testing verification for quiet operation to meet the noise level standards of the air handling industry.

Popular shaft sizes and housing configurations in the normal and medium duty series are available "off-the-shelf" these air handling features (designated by the AH suffix). These products are offered in both setscrew and concentric locking collar.

AIR HANDLING BEARING SOLUTIONS

Zone Hardening Inner Race

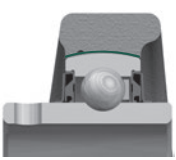
Browning incorporates a unique heat treat process that hardens the inner race only where it is needed...under the ball path. The zone hardened inner race results in improved lock reliability as a result of less distortion at setscrew location and improved thread conformity resulting in improved clamping and resistance to setscrew back-out.

Solid Cast Iron Base

The rugged base design provides an excellent mounting foundation. This is integral to prevent sheet metal "buckling"

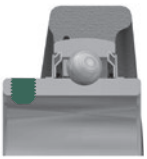
Anti-Rotation Rivet

An anti-rotation rivet prevents outer ring creep, or rotation, within the housing.



Misalignment

The bearing assembly is designed for ±1 1/2° of static misalignment between the bearing O.D. and housing bore.

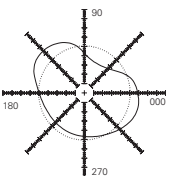


Setscrew Locking

SealMaster™ 120° spaced, balanced three point contact minimizes inner ring distortion vibration, reduces noise, and improves reliability.

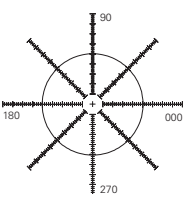
Browning 90° spaced, three-point contact offers improved shaft locking and reliability, with low noise.

Precision manufactured diamond faceted setscrews contribute to improved clamping and resistance to back out.

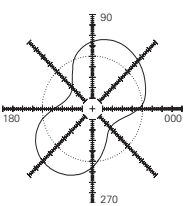


Typical Roundness of SealMaster 120° Setscrew

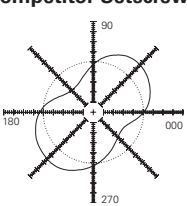
Typical Roundness of Manufactured Bearing



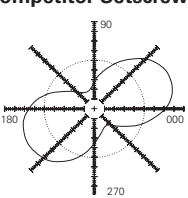
Typical Roundness of 90° Setscrew



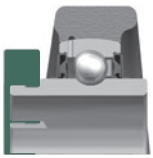
Roundness of 65° Competitor Setscrews



Roundness of 45° Competitor Setscrews



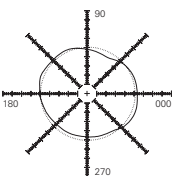
AIR HANDLING LOCKING SOLUTIONS



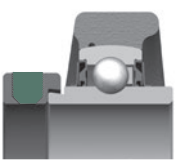
Concentric Locking Collar

This is a concentric locking collar clamp design that results in near-perfect concentricity of the shaft to the bearing bore and maintains near perfect ball path roundness, while reducing fretting corrosion. This design eliminates the shaft damage of setscrew locking, and minimizes bearing induced vibration for smoother quieter operation. The collar has a TORX head cap screw that outlasts stripping 12 times longer than hex head cap screws.

Concentric is often specified in air handling, HVAC, fan and blower applications where noise and vibration reduction is essential.



Roundness Browning Concentric Locking Collar Bearing with 360° Locking



Eccentric Locking

Eccentric locking design incorporates a precision eccentric collar to mate with the inner ring extension for shaft hold.

Note: The eccentric is designed for single direction of rotation and should not be used when two direction rotation is present.

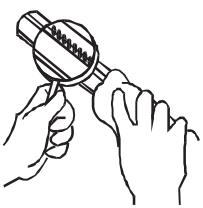
MOUNTING INSTALLATION

NOTICE:

- These bearings are designed for maximum permissible static misalignment of ± 1 1/2 degrees. Installation, handling or operation of the bearing in excess of the maximum of ± 1 1/2 degrees can cause reduction in bearing performance and may lead to equipment failure.
- Do not strike or hammer on any component of the bearing and/or shaft. Impact can result in damage to the bearing that may cause reduction in bearing performance and may lead to equipment failure.

STEP 1: Inspect Shaft and Bore

Shaft should be within tolerance range shown in the table, clean and free of nicks and burrs. Mount bearings on unused section of shafting or repair/ replace shafting as required. Inspect both the shaft and bearing bore for debris or contaminants. Wipe clean as necessary.



SM Gold Table 1

Recommended Shaft Tolerances		
Shaft Diameter	**Setscrew Locking Shaft Tolerance Range (TG&P)**	**Concentric Locking Shaft Tolerance Range (T&P)**
1/2" to 2"	+.0000 / -.0005"	+.000 / -.003"
2 1/8" to 2 7/16"	+.0000 / -.0010"	+.000 / -.004"

STEP 2: Check Support Surfaces

Make sure the base of the housing and the support surfaces are clean and free from burrs. If the housing elevation is adjusted with shims these must cover the entire contact area between the housing and the support surface.

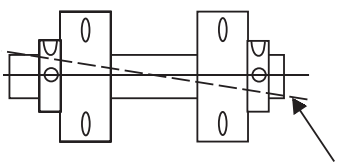
MOUNTING INSTALLATION (Cont.)

STEP 3: Install Unit

To aid installation, keep weight off bearing during mounting. Slide unit onto shaft by pushing on the inner ring. If it is difficult to mount bearing on shaft, use a piece of emery cloth to reduce any high spots on the shaft.

STEP 4: Fasten Unit in Place

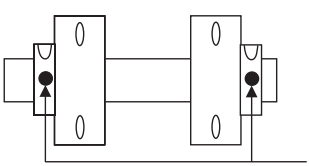
Install housing mounting bolts and check bearing alignment. Align the bearing units as closely as possible. Tighten mounting bolts to recommended fastener torques. Check the shaft for freedom of rotation by rotating shaft with hand in both directions.



STEP 5: Tighten Locking Mechanism

a. Setscrew Locking Inserts

Setscrews in multiple bearing applications should be aligned as shown.

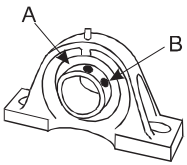


Tighten bearing units to the shaft as follows:

i. Torque the first setscrew "A" to one half of the recommended torque in Table 2.

ii. Torque the second setscrew "B" to the full recommended torque. Go back to the first setscrew "A" and tighten to the full recommended torque.

MOUNTING INSTALLATION (Cont.)



BMD Table 2

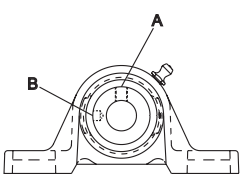
Setscrew Recommended Torque		
Screw Size	**Hex Size**	**Inch-Pounds**
#10	–	33 – 40
1/4	1/8	87 – 92
5/16	5/32	165 – 185
3/8	3/16	290 – 325
7/16	7/32	430 – 460
1/2	1/4	620 – 680
5/8	5/16	1225 – 1350
3/4	–	2125 - 2350

b. Eccentric Locking Inserts

i. Place collar on inner race and rotate by hand in direction of shaft rotation until eccentrics are engaged.

ii. Insert drift pin into the hole in the collar O.D. (B) and lock in direction of shaft rotation with the aid of small hammer.

iii. Torque single setscrew (A) to recommended torque in Table 3.



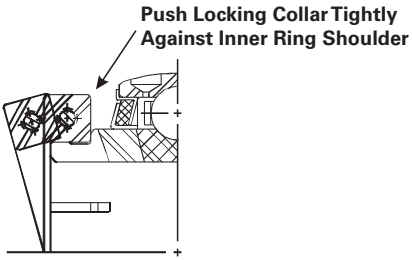
BMD Table 3

Eccentric Locking Recommended Torque		
Screw Size	**Hex Size**	**Inch-Pounds**
#10	–	33 – 40
1/4	1/8	87 – 92
5/16	5/32	165 – 185
3/8	3/16	290 – 325
7/16	7/32	430 – 460
1/2	1/4	620 – 680
5/8	5/16	1225 – 1350
3/4	–	2125 - 2350

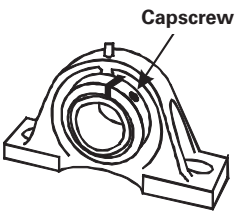
MOUNTING INSTALLATION (Cont.)

c. Concentric Locking Collar - Locking Inserts

i. Be sure that the concentric locking collar is fitted square and snug against the shoulder on the inner ring as shown.



ii. Torque the concentric locking collar cap screw to the full recommended torque in Table 4.



BMD Table 4

Concentric Locking Collar Cap Screw Torque				
Screw Size	**Torx Plus™ Size**	**Torx™ Size**	**New Design Torque (in-lbs)**	**Old Design Torque (in-lbs)**
# 8-32	25IP	T-25	N/A	70
# 10-24	27IP	T-27	85	100
1/4-20	30IP	T-30	160	240
5/16-18	45IP	T-45	350	495
3/8-16	50IP	T-50	650	N/A

Check shaft again for freedom of rotation and then tighten the secondbearing unit in the same fashion. When all bearings are tightened, perform a final check to the shaft for freedom of rotation.

BEARING BASICS AND FAQS

	Speed Capability	Radial Load Capability	Thrust Load Capability	Misalignment
Ball Bearings	High	Moderate	Low	Static
Tapered Roller Bearings	Low	Moderate	High	Static
Spherical Roller Bearings	Moderate	High	Combined	Static/Dynamic

What is the difference between static and dynamic misalignment?

- **Static misalignment =** shaft misalignment at a constant angle with respect to the bearing
- **Dynamic misalignment =** shaft that is continuously misaligning with respect to the bearing

BEARING LUBRICATION FAQS

What is grease?

- Mixture of a soap/thickener, an oil and additives
- The thickener's function is to retain oil in the bearing cavity
- The oil provides lubricity to the rolling elements and raceways of the bearing
- Additives such as rust preventatives can enhance grease characteristics

Why grease instead of oil in the bearing?

- Grease is preferred due to reduced maintenance and/or lower cost
- Grease is easier to store, handle and transport
- Most mounted bearings are designed for relubrication with grease
- Oil is the preferred lubricant in high-speed or high-temperature applications

Can I mix greases?

- Compatibility may be an issue when mixing thickener and oil types
- Incompatibility can be avoided by using the grease or grease type recommended by the manufacturer

Can I over grease a bearing?

- Excessive grease in the bearing may be an issue for high speed applications
- Initial start-up after relubrication should be slow to allow grease to purge
- When greasing, add grease slowly
- Many mounted bearing seals are designed to allow grease to purge
- Some seals can be damaged or blown out by excessive relubrication

How often should I regrease, and how much grease should I add?

- The engineering charts in the engineering sections of the catalogs serve as general schedules since applications vary greatly. Your experience may be important in determining a lubrication schedule.

LUBRICATION ENGINEERING TABLES

All Browning™ Ball Bearings are delivered with a high quality lithium complex grease with an EP additive. The bearing is ready for use with no initial lubrication required. The grease consists of a lithium complex thickener, mineral oil, and NLGI grade 2 consistency.

Compatibility of grease is critical; therefore consult with Application Engineering and your grease supplier to insure greases are compatible For best performance it is recommended to relubricate with lithium complex thickened grease with a comparable NLGI consistency and base oil properties.

Relubricatable Browning bearings are supplied with grease fittings or zerks for ease of lubrication with hand or automatic grease guns. Always wipe the fitting and grease nozzle clean.

CAUTION! If possible, it is recommended to lubricate the bearing while rotating, until grease purge is seen from the seals. If this is not an option due to safety reasons, follow the alternate lubrication procedure below.

LUBRICATION ENGINEERING TABLES (Cont.)

Re-Lubrication Procedure: Stop rotating equipment. Add one half of the recommended amount shown in Table 1. Start the bearing and run for a few minutes. Stop the bearing and add the second half of the recommended amount. A temperature rise after lubrication, sometimes 30° F (17° C), is normal Bearing should operate at temperatures less than 200° F (94° C) and should not exceed 250° (121° C) for intermittent operation. For lubrication guidelines, see Table 2.

Note: Table 2 is general recommendations. Experience and testing may be required for specific applications.

Note: Grease charges in Table 1 are based on the use of lithium complex thickened grease with a NLGI grade 2 consistency.

Browning Lube Table 1 – Grease Charge for Relubrication (Ounces)

Shaft Size Imperial	Link-Belt™		SealMaster™	
	Standard Duty (200 Series)	Medium Duty (200 Series)	Heavy Duty (300 Series)	Standard Duty
c	0.06	0.06	0.08	0.03
13/16 – 1	0.06	0.06	0.11	0.04
1 1/16 – 1 1/4S	0.15	0.15	0.15	0.09
1 1/4 – 1 7/16	0.15	0.15	0.22	0.13
1 1/2 – 1 9/16	0.23	0.23	0.3	0.18
1 5/8 – 1 3/4	0.23	0.23	0.41	0.2
1 13/16 – 2S	0.26	0.26	0.52	0.22
2 – 2 3/16	0.26	0.26	0.7	0.3
2 1/4 – 2 7/16	0.28	0.28	0.83	0.38
2 1/2 – 2 11/16	0.68	0.68	1.25	0.53
2 3/4	0.7	0.7	1.25	0.53
2 13/16 – 3	0.7	0.7	1.8	0.88
3 1/16 – 3 3/16	1.12	1.12	1.8	0.88
3 1/4 – 3 7/16	1.12	1.12	2.42	1.11
3 1/2	1.12	1.12	2.42	1.37
3 9/16 – 4 3/16	2.5	2.5	3.27	2.5
5	-	-	-	3.91

LUBRICATION ENGINEERING TABLES (Cont.)

Browning Lube Table 2 – Relubrication Recommendations

Environment	Temperature (° F)	Speed (% Catalog Max)	Frequency
Dirty	-20 to 250	0 - 100%	Daily to 1 Week
Clean	-20 to 125	0 - 25%	4 to 10 Months
		26 - 50%	1 to 4 Months
		51 - 75%	1 Week to 1 Month
		76 - 100%	Daily to 1 Week
	125 to 175	0 - 25%	2 to 6 Weeks
		26 - 50%	1 Week to 1 Month
		51 - 75%	Daily to 1 Week
		76 - 100%	
	175 to 250	0 - 100%	Daily to 1 Week

AIR HANDLING INTERCHANGE

Table 8 Set Screw Ball Bearing Interchange

Requested Part Description	Manufacturer	Browning Part Description
P2BSCAH	Dodge®*	VPS-2XX AH
P2BSCMAH	Dodge	VPS-3XX AH
SYXX-TF/AH	SKF®*	VPS-2XX AH
SYMXX-TF/AH	SKF	VPS-3XX AH
RASC	Fafnir®*	VPS-2XX AH
P3-UXXN	Link-Belt™	VPS-2XX AH

Table 9 Ball Bearing Interchange (Concentric locking collar)

Requested Part Description	Manufacturer	Browning Part Description
P2BDLAH	Dodge	VPB-2XX AH
P2BDLMAH	Dodge	VPB-3XX AH

Table 10 Rubber Mount Interchange

Requested Part Description	Manufacturer	Browning Part Description
R-X-FM	SKF	RUBRB-1XX
RSCM-XX	Fafnir	RUBRB-1XX

NOTE: Always consult manufacturer's catalog for detailed dimensions.

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Browning

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