Browning®

V-belt Drives and Bearings

EMERSON™
Climate Technologies

EMERSON. CONSIDER IT SOLVED.

Browning®

The First Name In Air Handling Products

Browning's Family of Bearings

	Type	Eccentric	Available Locking Setscrew	BOA®	Air Handling Proven
Rubber Mount	Ball	Yes	Yes	Yes	Yes
Stamped Steel	Ball	Yes	Yes	No	Yes
Ductile Steel	Ball	Yes	Yes	No	Yes
100 Series, Cast-Iron	Ball	Yes	Yes	No	Yes
200 Series, Cast-Iron	Ball	Yes	Yes	Yes	Yes
300 Series, Cast-Iron	Ball	No	Yes	Yes	Yes
1000/1100 Series, Cast-Iron	Spherical	Yes	Yes	No	Yes

Browning's Family of Drives

	Bore Range	Available Grooves
Classical Gripbelt® Sheaves	1/2" to 7 7/16"	16
Variable Speed Sheaves	1/2" to 4 3/4"	10
Companion Sheaves	1/2" to 7 7/16"	6
Single Groove Sheaves	1/2" to 1 7/16"	1
Poly-V® Drives	3/8" to 4 1/4"	20
RPP® Panther® Synchronous Belt Drives	1/2" to 7 7/16"	na
HPT Synchronous Drive Line	1/2" to 5 1/2"	na
FHP Belts	Type: 2L, 3L, 4L, 5L	

Browning®

OEM Specified –

Browning®

Technology Leadership to Meet the Requirements of Shorter Centers and Higher Speeds

High Performance V-Belts

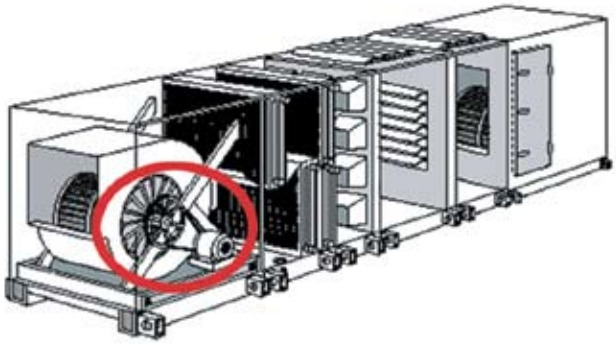
Variable Speed Sheaves

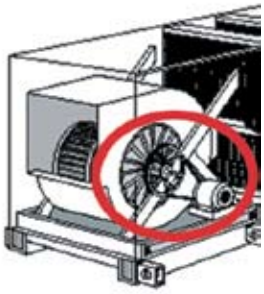
Fixed Pitch Sheaves

Bushings

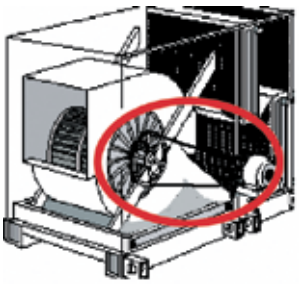
Rubber Mount Bearings

Mounted Bearings





New Center Distance Trend (12 - 18 inches)



Traditional Center Distance Requirement (20 - 28 inches)

Only Nature Moves More Air Than Browning

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Contractor Preferred

EMERSON Climate Technologies

Browning®

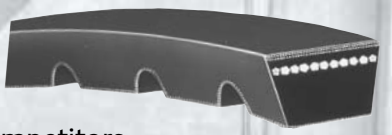
Accept N

Increased Life

Reduced Vibration

Gripnotch® - Raw Edge Cogged

Exclusive Design

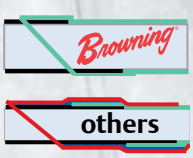


- Ground form design
  - Reduces vibration
  - Increases belt and bearing life
- Greater belt sidewall area
  - 15 - 20% more contact area than competitors
  - Higher horsepower
- Cover on top and bottom of belt
  - Increased stability
  - Lower cord stresses

Gripbelts - Wrapped

Exclusive Design

- Single wrap design
  - Greater flexibility when using small diameter sheaves
  - Less fabric overlap which reduces vibration
  - Better cord adhesion and flexibility



Patented B5V Sheaves

- Patented design provides the power of 5V belts in the economy of a B section sheave
- Serves 90% of all applications from 10 to 150 HP
- Increases HP by 40% (or reduces cost by 40%)

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

5V
5/8 x 17/32"

Browning® OEM Specified –

The #1 Name in Belt Drive and Bearing Products for HVAC.

o Substitute

Variable Speed Sheaves

VP-MVP® Variable Speed Sheaves

- New VP Vortex design reduces vibration and increases belt life
- Precision thread tolerances
- Powder coat or epoxy paint for enhanced corrosion resistance
- MVP offered up to 10 groove

Bushing

Browning Split Taper™ Bushings

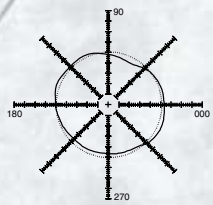
- Better concentricity for easy assembly
- Key-to-key drive
- 3/4"/ft. self-locking taper
- Available in inch and metric bores

BOA

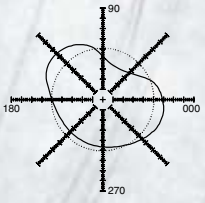
Mounted Bearings

- Air handling (AH) designs specifically for HVAC applications
- Offered in setscrew, eccentric or concentric (BOA) locking systems
- Available in ductile iron, cast iron or stamped steel housings
- Available in rubber mount

New BOA concentric lock: Resultant ballpath roundness



Setscrew locking at 120°: Resultant ballpath roundness



Contractor Preferred

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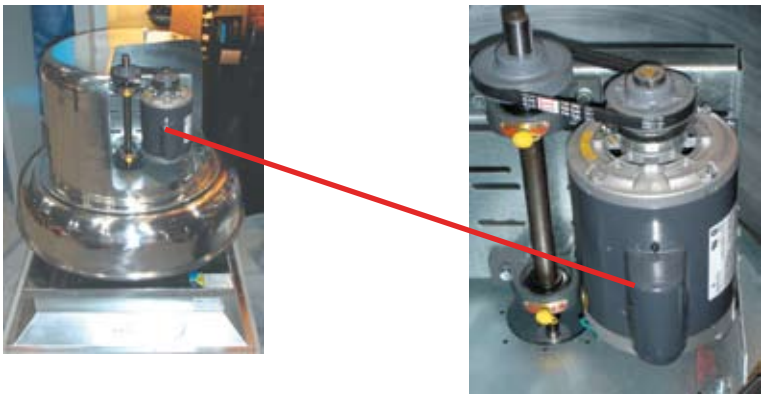
Commercial Duty - Air Handling Products



Typical Commercial Duty Applications:

- Upblast exhaust fan
- Centrifugal exhaust fan
- Rooftop HVAC units

Belt Drive Products for Commercial Duty Applications

Bushings
Browning Split Taper bushings are an excellent choice for commercial belt drive HVAC applications. They are easier to install and offer greater bore capacity than other bushing systems. In addition, they are supplied with large heat-treated capscrews so maximum pressure can be applied without any special tools.

Single and Double Groove Sheaves
Browning single and two-groove AK and BK sheaves are the industry standard for commercial-duty applications. They are available from stock in finished bores or for use with the Browning “H” Series Split Taper bushing. Datum diameters range from 1.5" to 18".

Variable Pitch Sheaves
The Browning commercial-duty variable pitch offering includes 1VP and 2VP cast-iron sheaves. These single and two-groove sheaves are available from stock in datum diameters from 1.9" to 7.4". They are designed for use with 4L, 5L, A, B or 5V belts on applications up to 30 horsepower.

V-Belts
Whatever your needs, Browning can provide the precisely matched belts from its broad selection of the universe of available V-belts, generally from stock.

Mounted Ball Bearings for Commercial Duty Applications

Rubber Mount Cartridges and Pillow Blocks
Low-cost rubber cartridges are most common in light commercial HVAC applications. The cartridge is designed to fit into HVAC web-mount supports. The rubber cartridges adjust with misalignment and dampen noise and vibration. Available with setscrew, BOA concentric and eccentric locking.

Lubricated for Life
Browning rubber mounted ball bearings are permanently sealed and cannot be relubricated.

AH Housing Fit
Air Handling (AH) ball bearings are manufactured with a distinct AH housing fit that allows the bearing to properly self-align when mounted on lightweight frames. Improper self-alignment creates high-stress zones between the ball and ball-path that can significantly reduce bearing life.

200 AH Series Cast-Iron Units
Browning Normal-Duty Air Handling (AH) units operate smoothly and quietly. They are furnished with a distinct AH housing fit and AH noise testing. AH units also have Browning mounted ball bearing features: wide inner ring, auxiliary seal flingers, outer race anti-rotation, and semi-solid housing bases that prevent sheet metal “buckling”. Available with setscrew, BOA concentric and eccentric locking.

Browning®

Industrial Duty - Air Handling Products

Industrial-duty HVAC applications demand rugged, heavy-duty components that are subjected to the most demanding of all HVAC service requirements. **Once again, Browning meets the specific needs of the industrial marketplace with products equal to the job:**

- Top quality performance
- Serving custom and special needs
- Unmatched technical support

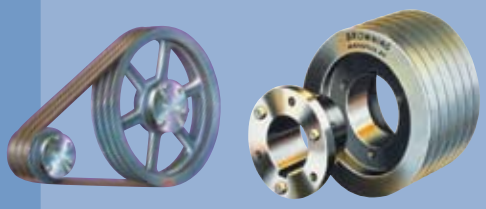
Typical industrial-duty applications include:

- Centrifugal blowers
- In-line centrifugal units
- Utility fans (large)
- Cooling towers

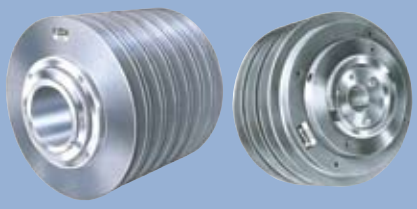
Belt Drive Products for Industrial Duty Applications

Bushings
Browning Split Taper bushings are the industry's most specified bushing type because they give the designer the world's largest selection of V-belt drive options. These patented bushings provide the fit and concentricity needed to balance most air handling systems. Browning Split Taper bushings are available in inch and metric sizes with a bore range from 3/8" to 10".

Single and Multiple Groove Sheaves
Browning single and multiple groove, cast-iron sheaves are available in A, B, C and 5V belt sections. They are stocked in 1-12 grooves with datum diameters ranging from 2.6" to 63.8". All use the Browning Split Taper bushing which provides true concentricity between the sheave and the shaft.



Multiple Variable Pitch Sheaves (MVP)
Browning MVP sheaves are designed for V-belt drive requirements up to 750 horsepower. They are stocked in A, B, C, 5V and 8V belt sections in either finished bores or for use with Browning Split Taper bushings. MVP sheaves are available in 2-10 grooves with datum diameters ranging from 3.4" to 17.2".

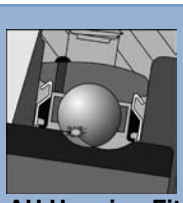


V-Belts
Browning is universally known for its broad selection of V-belts. Belts are available in every standard size to match the horsepower range required.
Machined matched belts can be provided upon request.

Mounted Bearings for Industrial Duty Applications

200 Series Normal-Duty AH Mounted Ball Bearings

Browning normal-duty Air Handling (AH) cast-iron units are ideal for industrial HVAC applications with moderate loads and higher speeds. The Browning AH 200 Series comes standard with distinct AH housing fit and AH noise testing. AH units also have Browning mounted ball bearing features: auxiliary seal flingers, outer race anti-rotation, and semi-solid housing bases that prevent sheet metal "buckling".



AH Housing Fit

300 Series Medium-Duty AH Mounted Ball Bearings

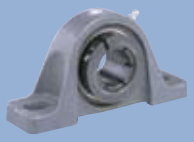
Browning medium-duty Air Handling (AH) cast-iron units are ideal for industrial HVAC applications with heavier loads and moderate speeds. The Browning AH 300 Series comes standard with distinct AH housing fit and AH noise testing. AH units also have Browning mounted ball bearing features: auxiliary seal flingers, outer race anti-rotation, and semi-solid housing bases that prevent sheet metal "buckling".

Noise Tested

Superior Locking

Both 200 & 300 Series Browning Air Handling (AH) bearings offer two locking devices that perform exceptionally well for industrial HVAC applications: The 120° setscrew positioning combined with zone hardened wide inner races and diamond faceted precision ground setscrews, and the all new BOA concentric which reduces noise and vibration while achieving higher speeds.

Setscrew



Spherical Roller Bearings

Browning's 1000 Series setscrew locking and 1100 Series eccentric locking spherical roller bearings are designed to accommodate even heavier radial loading and thrust loading. The spherical roller self-aligning capacity lends itself to industrial HVAC applications.

SPB-1000

Browning®

EPT Edge (Engineered Design, Guaranteed Economy)

V-Belt drive optimization software that selects the lowest cost, most torque dense drives.

Input HP 15.0
Service Factor 1.25
Driver rpm 1750
Driver shaft 1.625"
Driven rpm 1100
Driven shaft 2.0"
Min. center distance 20"
Variable speed

This Solution is based on the use of EPT COMPONENTS. Substitution of competitive product may result in reduced drive life and/or unsatisfactory performance.

No.	Driver Sheave	Driver Bushing	Driven Sheave	Driven Bushing	Belt	Qty	Actual C.D.	Actual S.F.	Driven Speed	Cost
1.	1VP75		1B5V110	B	5VX710	1	20.90	1.37	1167/977	1.000
	If Driver is 0 turns open Driven RPM=1167 and CD=20.9 in. If Driver is 4 turns open Driven RPM=1041 and CD=21.49 in. Correct tension for this drive (8.74 Lb. should deflect belt 0.33 In.) will have 278 Lb. 'running' Hub Load									
2.	2VP60		2B5V86	B	BX61	2	20.20	1.26	1160/924	1.070
	If Driver is 0 turns open Driven RPM=1160 and CD=20.2 in. If Driver is 3 turns open Driven RPM=1042 and CD=20.65 in. Correct tension for this drive (5.96 Lb. should deflect belt 0.32 In.) will have 344 Lb. 'running' Hub Load									
3.	2VP65		2B5V86	B	BX61	2	19.82	1.26	1258/1022	1.106
	If Driver is 2.5 turns open Driven RPM=1160 and CD=20.2 in. If Driver is 5.5 turns open Driven RPM=1042 and CD=20.65 in. Correct tension for this drive (5.65 Lb. should deflect belt 0.31 In.) will have 342 Lb. 'running' Hub Load									
4.	2VP65		2B5V90	B	5VX650	2	20.29	2.05	1231/1000	1.265
	If Driver is 1.5 turns open Driven RPM=1173 and CD=20.51 in. If Driver is 5 turns open Driven RPM=1038 and CD=21.04 in. Correct tension for this drive (5.5 Lb. should deflect belt 0.32 In.) will have 335 Lb. 'running' Hub Load									
5.	2VP65		2Q5V90	Q1	5VX650	2	20.45	1.95	1258/1022	1.507
	If Driver is 2.5 turns open Driven RPM=1160 and CD=20.83 in. If Driver is 5.5 turns open Driven RPM=1042 and CD=21.28 in. Correct tension for this drive (5.48 Lb. should deflect belt 0.32 In.) will have 342 Lb. 'running' Hub Load									
6.	2VP65		2Q5V92	Q1	5VX650	2	20.21	2.05	1217/989	1.537
	If Driver is 1.5 turns open Driven RPM=1160 and CD=20.43 in. If Driver is 5 turns open Driven RPM=1027 and CD=20.95 in. Correct tension for this drive (5.5 Lb. should deflect belt 0.32 In.) will have 332 Lb. 'running' Hub Load									
7.	2VP75		2B5V110	B	5VX710	2	20.90	2.75	1167/977	1.653
	If Driver is 0 turns open Driven RPM=1167 and CD=20.9 in. If Driver is 4 turns open Driven RPM=1041 and CD=21.49 in. Correct tension for this drive (5.17 Lb. should deflect belt 0.33 In.) will have 278 Lb. 'running' Hub Load									
8.	2VP75		2Q5V109	Q1	5VX690	2	20.14	2.63	1199/1005	1.904
	If Driver is 1 turns open Driven RPM=1167 and CD=20.29 in. If Driver is 5 turns open Driven RPM=1037 and CD=20.88 in. Correct tension for this drive (5.17 Lb. should deflect belt 0.31 In.) will have 285 Lb. 'running' Hub Load									
9.	2VP75		25V1130SK	SK	5VX710	2	20.81	2.74	1156/969	1.960
	If Driver is 0 turns open Driven RPM=1156 and CD=20.81 in. If Driver is 4 turns open Driven RPM=1031 and CD=21.4 in. Correct tension for this drive (5.18 Lb. should deflect belt 0.33 In.) will have 276 Lb. 'running' Hub Load									
10.	2MVP45B59		2B5V90	B	BX62	2	20.14	1.38	1167/903	2.185
	If Driver is 0.25 turns open Driven RPM=1167 and CD=20.14 in. If Driver is 3 turns open Driven RPM=1035 and CD=20.67 in. Correct tension for this drive (5.79 Lb. should deflect belt 0.31 In.) will have 330 Lb. 'running' Hub Load									

Drives above meet your criteria - Selection below is best disregarding options

	1VP75		1B5V110	B	5VX710	1	20.90	1.37	1167/977	1.000
	If Driver is 0 turns open Driven RPM=1167 and CD=20.9 in. If Driver is 4 turns open Driven RPM=1041 and CD=21.49 in. Correct tension for this drive (8.74 Lb. should deflect belt 0.33 In.) will have 278 Lb. 'running' Hub Load									

EPT Edge Optional Drive Selection from the World's Largest Selection of V-Belt Drives

- Today's most trusted OEM design tool.

www.emerson-ept.com

Vibration = Noise

Noise = Complaints

Complaints = Contractor Callbacks

How does Browning reduce vibration?

- 100% of Browning AH (Air Handling) bearings are noise tested.
- Browning single fabric design belts reduces vibration.
- Browning ground form edge belts reduce center distance variation and drive vibration.
- Code 1 design belts enforce RMA standards without matching.
- All Browning sheaves are statically balanced.

Only Nature Moves More Air Than Browning... Just Not As Quietly.

Browning®

OEM Specified – Contractor Preferred

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