



TB Wood's Belted Drive Selection Program

BeltDriveSelector.TBWoods.com



The Enhanced Web Based Belted Drive Selector at: www.tbwoods.com

Online Program Features Include:

- Accessible from any device with an internet connection
- User settings are always recalled, regardless of device used for access
- New solutions always use the latest software version, no need to download updates
- Easier retrieval and sharing of prior solutions

The screenshots show the TB Wood's website interface. The top navigation bar includes links for COMPANY, PRODUCTS, COMMERCIAL CASTINGS, KEY MARKETS, SUPPORT, and NEWSROOM. A dropdown menu under SUPPORT highlights 'Mechanical Engineering', 'Selector Programs', and 'eCatalog'. The main content area features a 'Belted Drive & Coupling Selection Programs' section with an 'Online Coupling Selection Program' and an 'Online Belted Drive Selection Application'. A red circle highlights a picture of a belt and pulley system, with a callout pointing to it.

Click Here to get Started

Select this Picture to Proceed

Solutions are Easy as 1, 2, 3!

Step 1: Minimal Entries Required

-OR-

Refine Selections by Setting
Design Constraints or Limiting
Product Types

This screenshot shows the 'Refine Selections' section of the TB Wood's website. It includes input fields for 'DRIVE NAME', 'Prepared For', 'INPUT Service Factor', 'Input Power', 'DRIVER RPM', 'Shaft', 'DRIVEN RPM', 'Shaft', 'CENTER DISTANCE', and 'Target'. There are also checkboxes for 'Design Constraints' and 'Product Types'.

This screenshot shows the 'New Solution' form of the TB Wood's website. It includes input fields for 'DRIVE NAME', 'Prepared For', 'INPUT Service Factor', 'Input Power', 'DRIVER RPM', 'Shaft', 'DRIVEN RPM', 'Shaft', 'CENTER DISTANCE', and 'Target'. There are also buttons for 'New Solution', 'Recall Solution', 'Batch', 'Refine Selection', 'Calculate', and 'Clear Entries'.

Step 2: Choose a Selection from the Drive List

Add a Note with Your Own Text
 Quickly Change your Inputs for New Solutions
 Mark Favorite Solutions for Quick Recall
 Use the Drive Name and Solution ID to Identify a Particular Solution
 Eliminate Solutions Out of Stock at TB Woods
 Easily Sort your Solution Options by any Available Category

Prepared By: Rachel Paccagnini
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 Phone: 815-389-6312
 Email: rachel.paccagnini@altramotion.com
 Drive Name: New Drive Solution

CAUTION: This solution is calculated exclusively using TB WOOD'S products. Substitution of alternate components and/or material may result in failure.

Date Created: October 26, 2016 at 10:37:33 AM CDT ID: 118852

HP Input: 40 DriveR RPM: 1750 NEMA Considered: Yes, (324T)

Drive ID	Input Targets	Belt Type	DriveR	DriveN (shaft not specified)	Belt	Belt Qty	Service Factor	RPM	Center Distance	Max. Hub Load	Relative Price
1	BX	565B	1245B	BX64	5	1.21	821.3	18.45	1448	1.00	
2	BX	585B	1245B	BX64	5	1.27	848.6	18.31	1403	1.00	
3	BX	863B	1843B	BX78	3	1.24	838.4	18.03	1023	1.01	
4	BX	704B	1544B	BX71	4	1.30	820.4	18.33	1209	1.03	
5	BP	744B	1604B	BP72	4	1.17	833.0	18.01	1146	1.06	

Review your Entry Criteria at a Glance

Step 3: Review the Details of your Selection

Quick Link to Part in E-catalog

1. Detailed Bill of Material
2. User Requested Inputs for Solution
3. Actual Solution Results of Selected Drive
4. Results Comparison, Solution "Fit"
5. Drive Notes and Installation Information
6. Now with Sonic Tension Recommendations

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Date Created: October 26, 2016 at 10:37:33 AM CDT ID: 118852-4

Drive Name: New Drive Solution

Return to Drive List Add Note Revise Inputs Adjust Belt

Bill of Materials	Description	Part Number	Quantity	Weight (lbs)
1	DR Sheave	704B-SK	1	15.1
	DN Sheave	1544B-SF	1	36
	Belt(s)	BX71	4	2.8
	DR Bushing	SK218	1	2
	DN Bushing	SFXSTOCK	8	61.1

Application Details	Input	Actual	% Change	Comments
Service Factor	1.20	1.30	8.3%	NEMA Motor Specs. DO Apply (324T) Actual face width is 3.25 in. Actual DriveR O.D. is 7.35 in.
Input Power (HP)	40.0	52.0	8.3%	
DR RPM	1750.0	820.4	-0.6%	Actual DriveN O.D. is 15.75 in.
DR Shaft (in)	2.125	2.13	0.5%	
DN RPM	825.0	3396	-8.4%	Center distance adjustments allowances +1.2 adjustment for installation (in) +2.0 adjustment for tensioning (in)
DN Shaft (in)	0	17.13	-6.5%	
Speed Ratio	2.12	20.33	10.9%	Dynamic hubloads generated
Belt Speed (FPM)	17.13	20.33	10.9%	
Center Distance (in)	20	20.33	10.9%	
Belt Tension (per strand)	0.28	784 lbs hubload		784 lbs hubload 1209 lbs hubload
Deflection (in)	6.80			
Force (min lbs)	9.89			
Force (max lbs)				
Sonic Tension	62.74 Hz			
Minimum Frequency	76.84 Hz			
Maximum Frequency				

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TB Wood's Belted Drive Selection Program Provides Peace Of Mind To Users:

The improved program now checks the arm/web strength of a sheave/sprocket along with the bushing torque rating for suitability of the application. The program will automatically drop bushing solutions with torque ratings that are obviously inappropriate. The program will also notify the user to "Evaluate Peak Torque Applied to Bushing" to verify acceptability of the application for bushing solutions that are marginal. Similarly, the program will also check the sheave/sprocket arm/web strength to determine if the selected components are acceptable, and will automatically drop all inappropriate solutions.

TB Wood's is the only manufacturer that currently offers an online selection tool that checks for both criteria. The new features provide peace of mind to users as it helps to prevent the design of drives where the metal components are not properly sized. This issue has become increasingly important as belt manufacturers frequently increase belt capacity, but new metal products are not being designed to accommodate those larger torque requirements.

Description	Part Number	Quantity	Weight (lbs)
DR Sprocket 8MPC-34S-62-1610	8MPC34S62	1	2.3
DN Sprocket 8MPC-56S-62-2517	8MPC56S62	1	8.2
Belt 8MPC-1280-62	8MPC128062	1	0.9
DR Bushing TL1610x1 5/8	TL1610158	1	0.5
DN Bushing TL2517x2 1/8	TL2517218	1	2
		5	13.9

Input	Actual	% Change	Comments
Service Factor	1.60	1.65	3.1%
Input Power (HP)	5.00	8.30	3.8%
Design Power (HP)	8.00		
DR RPM	100.0		NEMA Motor Specs. NOT Considered
DR Shaft (in)	1.625		Actual face width is 2.91 in.
DN RPM	60.0	60.7	1.2%
DN Shaft (in)	2.125		Actual DriveN pitch is 5.61 in.

MTO Drive Selection:

Description	Part Number	Quantity	Weight (lbs)
DriveR 5VP15.00X5	5V1505	1	58.2
DriveN 5VP22.69X5	5V2365	1	117.6
Belt 5VP1250	5VP1320	5	8.5
		7	184.3

Input	Actual	% Change	Comments
Service Factor	1.30	1.33	2.3%
Input Power	250.0 HP	331.5	2.0%
Design Power	325.0		
DRIVER Input RPM	1180.0	15	
DRIVER Sheave Datum	19 in.		
DRIVEN Output RPM	780.0	780.0	0.0%
DRIVEN Sheave Datum		22.69	
BELT Length Code		1250	
BELT No. of Belts/Ribs		5	
Min. Center Distance	32 in.	32.67	2.1%
		31.67	-3.1%
		34.47	5.5%

Talk to your local Altra representative about access to TB Wood's Made-To-Order selection module!

Show closest solution to MTO drive in stock parts

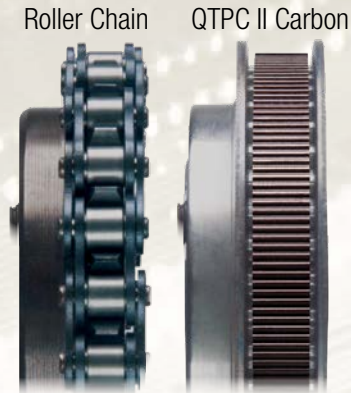
Special notes on MTO design requirements

MTO modules available for fixed pitch V-belts and synchronous drives. Also consider entering an existing drive to evaluate specifications or to make minor modifications.

Enhanced Products Available:

Create selections in state-of-the-art Premium V-belts with aramid fibers and QT Power Chain II Carbon synchronous belts with carbon-fiber tensile cords.

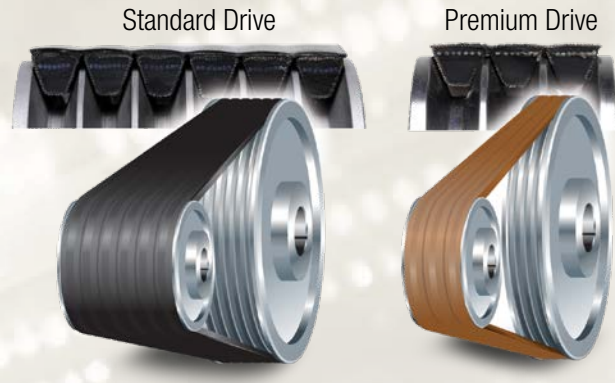
QT Power Chain II Carbon System



Advantages of QTPC II Carbon:

- Longer drive life
- Very high efficiency
- Less noise
- Increased torque ratings
- Narrower profiles
- No lubrication required

Premium Belt Drive System



Advantages of Premium System:

- Use narrower sheaves
- Lighter weight components
- Lower bearing loads
- Less maintenance required
- Increased power capacity
- Better resistance to shock loads

Adjust Belt Functionality:

Sometimes it is useful to examine what would happen if changes were made to a specific drive. This can be accomplished using TB Wood's "Adjust Belt" function when viewing a solution's details.

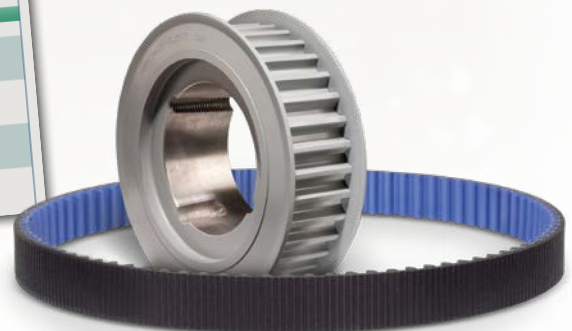
The screenshot shows the TB Wood's software interface. At the top, there are buttons for 'Return to Drive List', 'Add Note', and 'Revise Inputs'. Below these is a 'CAUTION' message and a note about the calculation method. The main area displays a 'Bill of Materials' table with columns for Description, Part Number, Quantity, and Weight. A 'Change Belt Length or Width' dialog box is open, showing options for 'Shorter Belt', 'Longer Belt', 'Narrower Belt', 'Wider Belt', and 'Cancel'. The 'Adjust Belt' button is highlighted with a red circle. Below the table, there is a section for 'Application Details' with input and actual values for various parameters.

Application Details	Input	Actual	% Change	Comments
Service Factor	1.60	1.57	-1.9%	NEMA Motor Specs. NOT Considered Actual face width is 1.36 in. Actual DriveR pitch is 6.14 in.
Design Power (HP)	8.00	7.90	-1.2%	
DR RPM	100.0			Actual DriveN pitch is 10.53 in.
DR Shaft (in)	1.625			
DN RPM	60.0	58.3	-2.8%	
DN Shaft (in)	2.125			
Speed Ratio	1.67	1.72	3.0%	
Belt Speed (FPM)		184		

Toggle output view between different trials

Investigate the consequences of trying a shorter or longer belt, or even examine the entire drive in a narrower or wider belting scenario

Keep track of multiple adjustments



Adjustable Pitch Drive Selection:

DRIVE NAME: Adjustable Pitch Solution
Prepared For: [Green Checkmark]

INPUT
Service Factor: 1.25 [Help]
Input Power: 20 HP
DRIVER
RPM: 1780
Shaft: 1.625 in. mm
DRIVEN
Selection Mode: 1 Point [2 Point]
Max RPM: 875
Min RPM: 725
Shaft: in. mm
CENTER DISTANCE
Target: 20 in. mm

DESIGN CONSTRAINTS
Max Hub Load: lbs.
Max Sheave Width: NEMA STD in. mm
Min No. of V-Belts: 1
DR SHEAVE OD: NEMA STD in. mm
Min Diameter: 0 in. mm
Max Diameter: 36 in. mm
DN SHEAVE OD: 0 in. mm
Min Diameter: 0 in. mm
Max Diameter: 75 in. mm
Service Factor at: Low RPM
Driven Speed: 9999 RPM
Not to Exceed
Center Distance
Min: 18 in.
Max: 22 in.

PRODUCT TYPES
Variable Speed Sheave Types
☒ FHP ☒ JVS ☒ SVS ☐ 5/8VS
☒ Allow Rebore
☐ Light Duty
☐ 3L ☒ FHP Bore-to-size
☐ 4L ☒ FHP QT Bushing
☐ 5L ☐ Allow Rebore
☒ Industrial Sheaves
☒ MTO Companion
Standard Duty
Classical ☒ AP ☒ AX
☒ BP ☒ BX
☐ CP ☐ CX
Classical COG
☒ Narrow (Ultra V) ☒ 5V(X)
☐ 8V(X)

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Selections are available for adjustable pitch V-belt drives. TB Woods' makes adjustable pitches sheaves for drives up to 500 horsepower at 1750 RPM.

Program automatically selects the most appropriate adjustable pitch products



Choose standard (1 Point) Selection Mode OR choose 2 Point Selection to ensure all aspects of solution are valid over a range of speeds

Extensive listing of criteria to better define problem when using the "Refine Selection" option

Switch between multiple speed re-calculations

TB WOOD'S INC. IS NOT LIABLE FOR DESIGN OR PRICING ERRORS.
Drive Name: Adjustable Pitch Solution Date Created: October 26, 2016 at 10:53:31 AM CDT ID: 118858-2

CAUTION: This solution is calculated exclusively using TB WOOD'S products. Substitution of alternate components and/or material may result in failure.

Showing entry speed results

Description	Part Number	Quantity	Weight (lbs)
DR Sheave	2VP71x1 5/8	1	14.6
DN Sheave	13.6X28-SK	1	21
Belt(s)	BX70	2	1.4
DN Bushing	SK5STOCK	1	3.7
		5	40.7

Input	Actual	% Change	Comments
Service Factor	1.25	1.22	-2.4%
Input Power (HP)	20.0	24.3	-2.8%
Design Power (HP)	25.0	24.3	-2.8%
DR RPM	1780.0	877.7	0.3%
DR Shaft (in) Adjustment	1.625	734.2 - 890.4	0.0%
DN RPM	875.0	0	0.0%
DN Shaft (in) Speed Range	0	734.2 - 890.4	0.0%
Speed Ratio	2.03	2.03	0.0%
Belt Speed (FPM)	3220	3220	0.0%
Center Distance (in)	20	19.80	-1.0%
C.D. Range		18.60	-6.1%
		21.80	10.1%
		19.73 - 20.59	

Comments: NEMA Motor Specs. DO Apply (256T)
Overall width dR is 3.25 in.; Face width dN is 1.75
Actual DriveR O.D. is 7.10 in.; Pitch is 6.91 in.
Actual DriveN O.D. is 13.95 in.
Center distance adjustments allowances
-1.2 adjustment for installation (in)
+2.0 adjustment for tensioning (in)



Turns to open adjustable pitch sheave to obtain set speed

Functionality exclusive to TB Wood's: Re-calculate your adjustable pitch solution at any intermediate speed. Choose speed by RPM or turns of adjustment.

Other Standard Options:

Simple Recall of Previously Generated Solutions

Use the "Favorites" Dialog to Recall Previously Selected Drives

Easily Choose Start and End Date

Use Powerful Search Criteria

Click the ID Number to Recall the Solution

Advanced Options Allow Users to Choose Display and Calculation Settings

Advanced Options

Options Affecting Input/Output Display

Max No. Solutions

Sort Priority

Price Displayed

RPM Input Uses

Shaft Size Entry

Center Distance Uses
and

Default Drive Properties

Max Face Width

Min No. of V-Belts

Use Banded V-Belts

Allow MPB Sprockets

Background Calculation Options

Service Factor Allowance

% Under SF (-)

% Over SF (+)

Apply NEMA Standards

NEMA Motor Type

RPM

% Under (-)

% Over (+)

Center Distance

% Under (-)

% Over (+)

Adj Pitch Allowance %

Reset to Defaults

Save

Cancel

Recommend Service Factor

Driver

Hours of Service

Idler

Type of Load

Agitators: Semi-Liquid
Blowers: Centrifugal
Blowers: Positive Displacement
Brick Machinery: except Pug Mill
Brick Machinery: Pug Mill
Compressors: Centrifugal
* Compressors: Piston
Conveyors: Apron, Pan, Bucket Elevator
Conveyors: Belt - Light Package, Oven, Screen
Conveyors: Belt - Sand, Coal, Ore
Conveyors: Screw, Flight
* Crushers: Giratory, Jaw, Roll
Elevators
Exciters
Extractors
Fans: Centrifugal
Fans: Propeller Mine
Generators
Hommer Mill

Extensive Assistance for Selection of Service Factors

TB Wood's Facilities

North America

USA

440 North Fifth Avenue
Chambersburg, PA 17201 - USA
888-829-6637 * 717-264-7161

Belted Drives and Elastomeric Couplings

Customer Service

1-888-829-6637 (Press #5)

For Application Support

1-888-829-6637 (Press #7)

2000 Clovis Barker Road
San Marcos, TX 78666 - USA
1-888-449-9439

General Purpose Disc Couplings

Customer Service

1-888-449-9439

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Reno, NV 89502 - USA
775-857-1800

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Edmonton, AB T6E 5V8 - Canada
+1 780-439-7979

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