

Martin

CFW **CLEAN
FLIGHT®
WING
PULLEY**



Martin's patented Clean Flight® Wing Pulley (CFW).

- *Martin* services a wide range of industries conveying light to extreme bulk materials
- The *Martin* pulley product line features drum pulleys, wing pulleys, shafting and take-up frames
- Available to ship in assemblies
- Extensive inventory of pulleys in over 30 North American locations



Structural Advantages

Martin's patented Clean Flight® Wing Pulley distinct construction advantages:

- Each flight lies perpendicular to the pulley core, resulting in a much stronger design
- The **CFW** is constructed with distinctly aggressive materials with thick flights
- Continuous welds available upon request
- An open herringbone flight placement allows for better material rejection



Martin Clean Flight® Wing Pulley
Patent No. US 9,434,552 B2

NOISE REDUCTION

Users report a reduction in operating decibels from 14-22%, depending on belt speed and belt width

LESS VIBRATION IN OPERATION

Since the belt is in constant contact with the Clean Flight® Wing outside diameter (OD), the “belt-slapping” observed in traditional wing pulley operation is eliminated, as is the operational ambient noise. Decreased vibration also means less stress on the belt, splice, and bearings.

ENHANCED BELT TRACKING

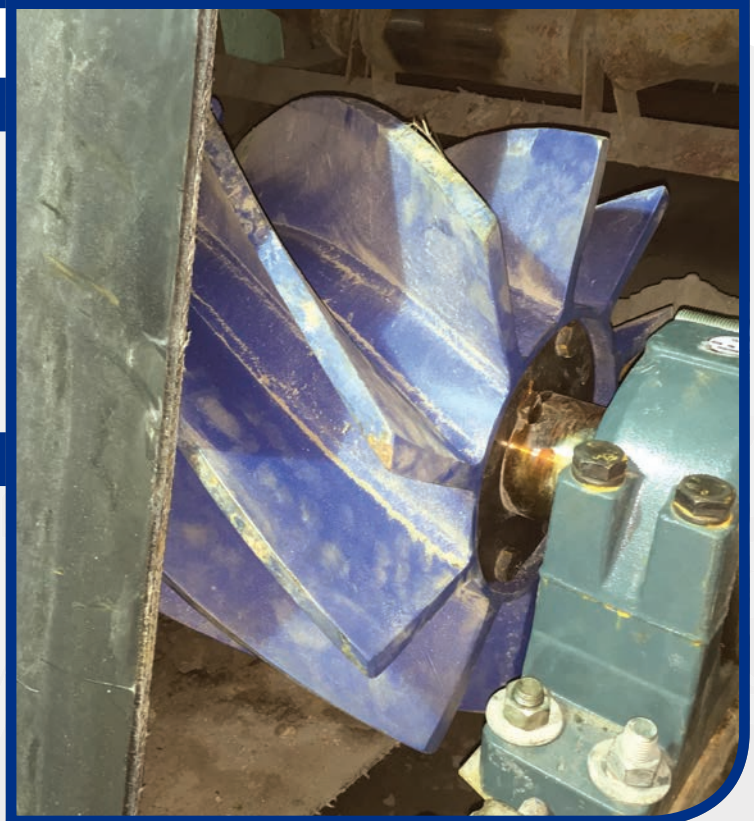
Each **CFW** flight contacts the belt at a helix angle that contributes to the tracking of the belt. The **CFW** flight operates much like a traditional "spiral" wing pulley in assisting belt tracking. The *Martin* **CFW** is also offered in a crown-face profile.

OPTIMIZED BELT CLEANING

As well as reducing vibration noise and improving belt tracking, the **CFW** also cleans the belt more effectively while in operation by shedding materials away from the belt surface. Additionally, the **CFW** operates with less vibration at the skirt board zones, reducing fines at the loading zone.

IMPROVED MATERIAL REJECTION

Traditional wing pulley flights contact the conveyed material at a right angle, whereas the **CFW** actually “plows” material out of harm's way, toward the end of the pulley, where it safely falls away from the pulley and belt contact surface.



All Clean Flight® Wing Pulleys (CFW) use the longest pitch possible for each diameter and face width

Standard Duty Clean Flight® Wing



- 1/2" Flight, 1/4" Rim
- 3/8" End-Discs

Mine Duty Clean Flight® Wing



- 3/4" Flight, 3/8" Rim
- 1" End-Discs

Quarry Duty Clean Flight® Wing



- 1" Flight, 1/2" Rim
- 1-1/4" End-Discs

Nomenclature

Face	C	S	CF	160	32	X30	<small>Bushing First letter of bushing and bushing size</small>
C Crown							X30 XT30
F Flat							<small>Face Width 2 digits, example:</small>
Pulley Type							32 32"
S Standard Duty							<small>Diameter 3 digits, example:</small>
M Mine Duty							160 16.0"
Q Quarry Duty							
Pulley Style							
CF Clean Flight® Wing							

Special Features

Assembly Options



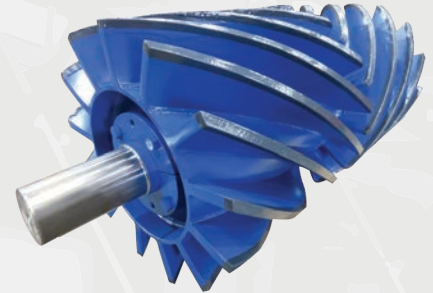
- Bearing Assemblies
- Take Up Frame Assemblies
- Keyless Lockers for Shaft Connection

Bushing Options

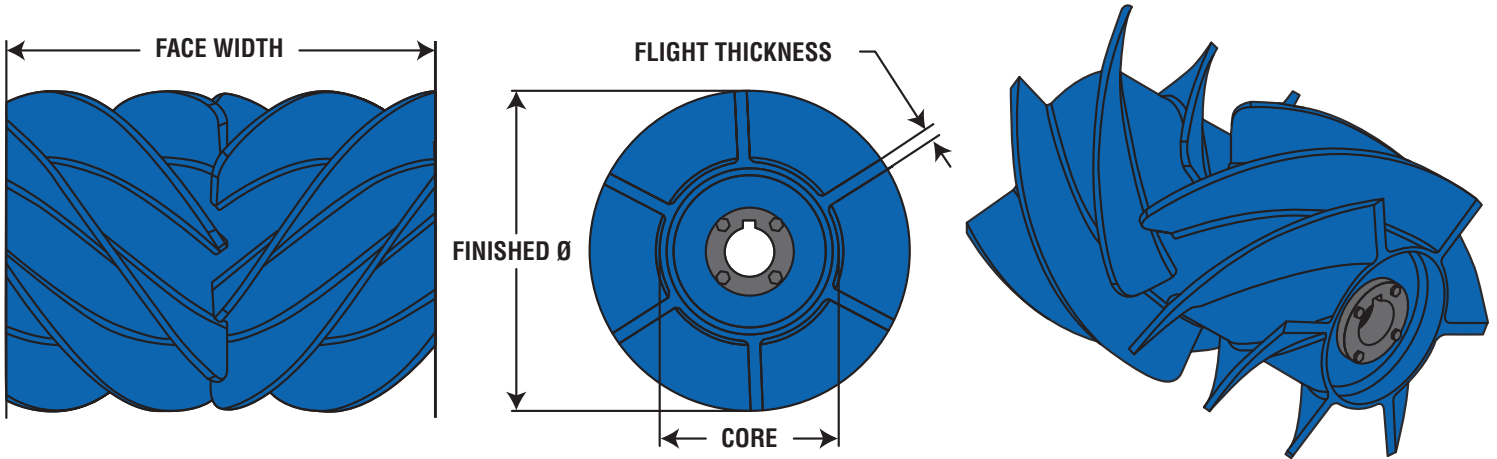


- MXT
- M-HE
- QD
- Taper Bushed
- Keyless Locking Device

Pulley Options



- Hard Facing
- Custom Epoxy Paint
- Special Flight Spacing
- Special Pitch
- Continuous Welding of Flights



Basic Pulley Data

Finished Diameter: _____ Face Width: _____ Bushing Bore: _____

Conveyed Material Lump Size: _____ Location on Conveyor: _____

Application: _____

Notes: _____

Additional Data & Options:

Duty: _____ Flight Thickness: _____ Core Diameter: _____

Pulley Material: _____

Shaft Diameter: _____ x OAL: _____

Notes: _____

Horsepower: _____ Belt Speed: _____ Belt Wrap: _____

Conveyor Take-Up Style (Mechanical or Gravity/Automatic): _____

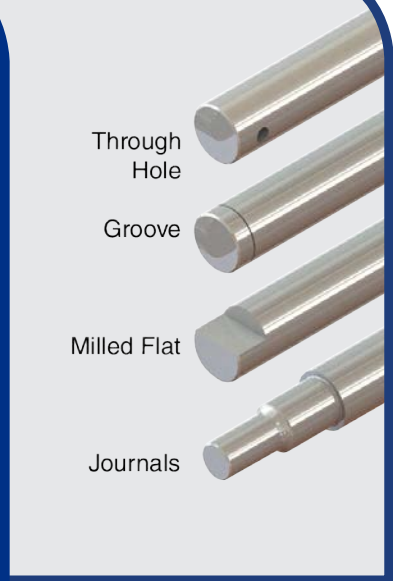
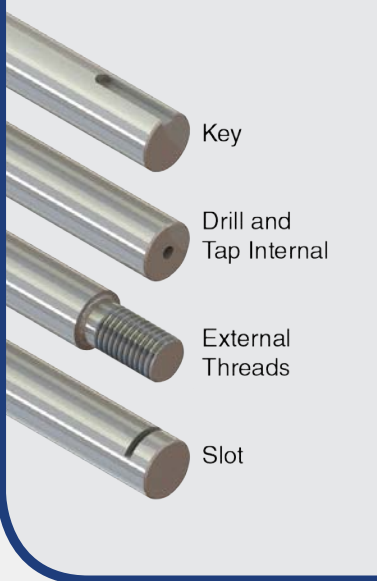
Bearing Diameter: _____ Bearing Centers: _____

Belt Width: _____ Belt PIW: _____

Shafting

Martin has the inventory and machining capabilities for quick turnarounds on Heavy-Duty Conveyor Pulley Shafts and custom Shaft detailing for a wide variety of applications. Stock Shafting is available for most applications on-the-shelf and ready to ship. For custom detailing, Martin offers on-site machining for customization, turn downs, customized keyways and more.

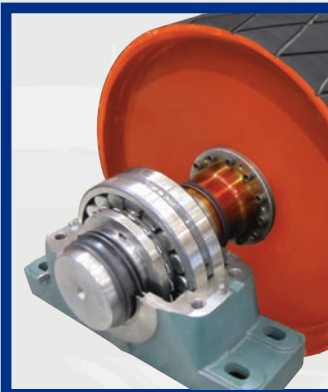
- Shafts up to 24" diameter
- Shafts up to 22' long
- Raw bar weights up to 22,000 lb
- Stock shafting material available in several grades 1144 — 1045 — 4140 and Stainless Steel



Take-Up Frames

Martin's Take-Up frames are fabricated from steel, offering superior strength and durability in the most rugged conditions.

- Available in these styles:
 - Light Duty
 - Top Angle
 - Heavy Duty
 - Center Pull
 - Wide Slot
 - Tube Take-Up
- Accommodate bearing shafts sizes from 1" to 5.9375"
- Available in standard travel lengths from 9" to 60"
- Stainless Steel, ACME thread & MTO lengths available
- Suitable for most manufacturers' housing styles including center pull wide slot, pillow block and top angle protected screw



Bearings

Martin offers a full line of roller bearings and stocks most common sizes. We can supply SAF, Type E, and Ball Bearing units in Pillow Block, Flange Block & Take-Up Housing styles.

- Type E Pillow Block Bearings
 - Bore Range from 1-7/16" to 4-15/16" Diameter
- Split Housed Spherical Pillow Block Bearings
 - Stocked from 1-7/16" to 8" Diameter



Martin's MXT® & MXT-STL® bushings are available from stock to fit all popular pulley sizes. Both styles are also available as Weld-On Hubs.

Both MXT® & MXT-STL® Bushings offer a 2" per foot taper, which reduces end disc pre-stressing, as well as increasing clamping force.

Bushing Style	MXT H - STL 45*	Bore Max Size
MXT <i>Martin</i> XT		Example: 45 4.5"
M-HE <i>Martin</i> HE		

Weld-On Hub
Add H if its a Weld-On Hub

MXT® Steel Option
Add -STL for Steel option, only for MXT (not for hub)

* NOTE: This part number does NOT reflect an actual part number, it includes all bushing/hub options only for instructional purpose.

Bushings & Weld-On Hubs

Martin manufactures heavy-duty idlers and components that exceed CEMA standards. Martin uses sealed-for-life ball bearings that allows for trouble-free life even in the harshest applications. With Idlers available when and where you need them, Martin can provide the complete solution for your belt conveyor needs.

Belt conveyors are a proven way to move bulk materials in practically every industry. Belt conveyors routinely operate at 90% capacity and can be operated 24/7, 365 days per year. Belt conveyors have a lower operating cost and can provide a higher return on investment than competitive methods. Maintenance is minimized and less labor is required. Materials conveyed can range from very fine powder such as gypsum to large lump size material such as limestone from a quarry. The size of material conveyed is limited by the belt width used.



Martin Idler types:

- Equal Troughing
- Unequal Troughing
- Self-Aligning
- Wide Base
- Transitional/Adjustable
- Flat Carrier
- Rubber Discs
- Impact
- V-Return
- Return

Other Idler Products

- Galvanized Frames
- Garland/Catenary
- Belt Saver Brackets
- Scale Quality Rolls
- Urethane Covered Rolls
- Live Shaft Rolls
- Impact Beds
- Channel Inset Idlers

Martin Idlers are stocked in a wide range of belt widths to meet customers' needs.

Martin offers **Drop-in Idlers**, with slotted ends or hex nuts. **Request a Quote Online**

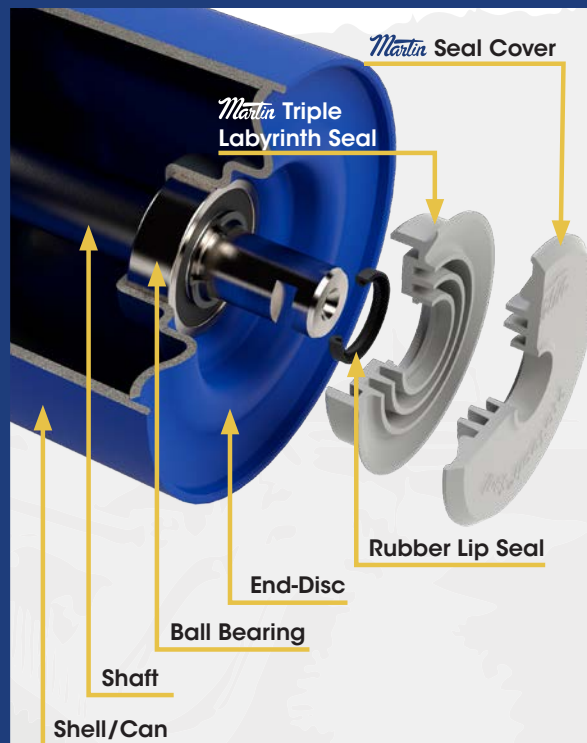


Scan for more information

Martin Idler and Triple Labyrinth Seal Design

Martin Triple Labyrinth Seal design offers the following exclusive bearing protection

- **External shield** deters impurities from entering the bearing housing
- **Flinger design** removes contaminates away from the bearing housing by centrifugal force
- **Martin Triple Labyrinth Seal** is grease filled and offers an additional level of adds protection from moisture or fine contaminants impacting the bearing
- **The contact lip seal** adds additional level of protection
- **CEMA C, D & E Idlers have sealed for life ball bearings**

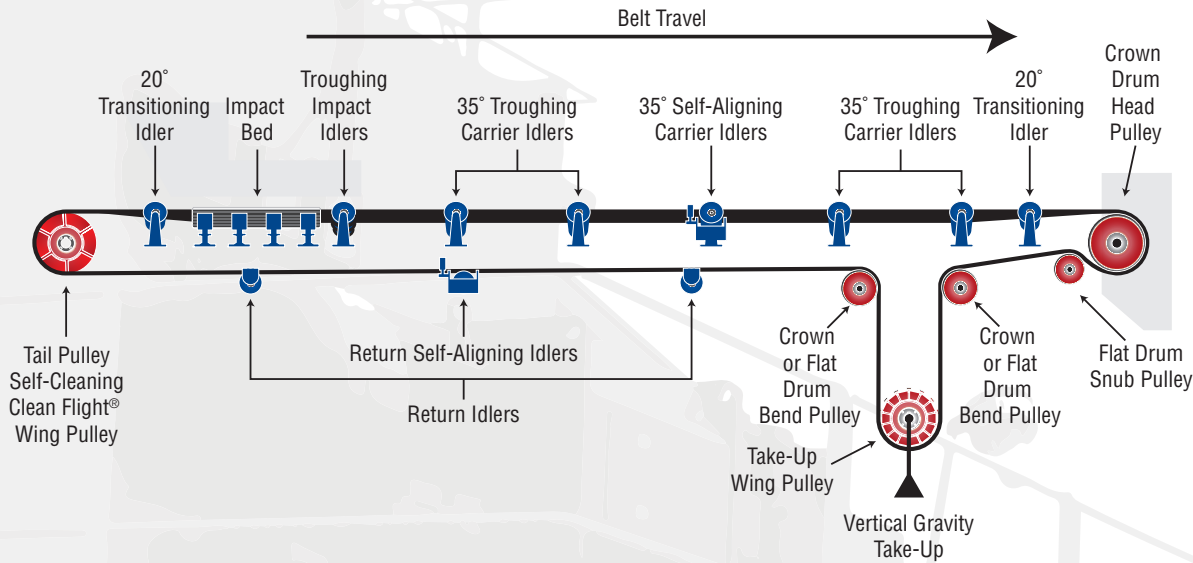


Wide range of belt size available product:

- CEMA C: 18" to 60"
- CEMA D: 24" to 72"
- CEMA E: 36" to 94"

Rapid response for Made-to-Orders

- **Low rolling resistance** that allows for lower operating cost
- **Patent pending Idler end welding** protects roll weld against belt wear
- **Machined solid steel shaft** the entire length of the roll
- **Exceptional low TIR runoff**
- 9 GA and 7 GA Standard Steel Tubing, 1/4" wall steel tubing is available upon request



Tail Pulley	A Pulley at the tail of the belt conveyor opposite the normal discharge end; may be Drive Pulley or an Idler Pulley.
20° Transition Idler	Transition Idlers are found at either end of the conveyor, adjacent to the head and tail Pulleys. These Idlers have a smaller troughing angle to that of the rest of the Troughing Idlers on the conveyor.
35° Troughing Impact Idlers	Whenever material is loaded onto a conveyor belt, Impact Idlers are installed beneath the troughed belt over the full loading length. These are usually spaced at smaller intervals to provide a support base for the belt. They have rubber discs pressed onto a steel tube to absorb impact efficiently.
35° Troughing Carrier Idlers	Troughing Idlers are found on the carrying-side, along the length of the conveyor. On any particular conveyor these Idlers are identical, as are the bases.
35° Self-Aligning Carrier Idlers	It is common that even with correct conveyor alignment, there can be some belt misalignment. A solution to correct or prevent this is to install Self-Aligning Idlers which are able to detect belt misalignment and automatically re-align the belt.

Head Pulley	The Pulley at the discharge end of a conveyor belt; may be either an Idler or a Drive Pulley. Usually it has a larger diameter than other Pulleys in the System and is often lagged to increase traction and Pulley life.
Snub Pulley	Mounted close to the Drive Pulley on the return side of the belt, the Snub Pulley's primary job is to increase the angle of wrap around the Drive Pulley, thereby increasing traction. Its secondary purpose is reducing belt tension, which is important in maximizing conveyor component life. The Snub Pulley may be lagged for longer wear life.
Bend Pulley	The Bend Pulley is used for changing the direction of the belt running to the gravity take-up. It may be lagged for longer wear life.
Take-Up Pulley	An adjustable Idler Pulley made to accommodate changes in the length of a conveyor belt to maintain proper tension.
Return Idlers	The Idlers on which the conveyor belt rides after the load it was carrying has been dumped. The mass of the return belt is the only load that Return Idlers are required to support.

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martinsprocket.com

Martin Sales and Engineering will work with you to completely solve your belt conveying needs. Since there are infinite amounts of conveying possibilities and configurations our sales and engineering staff are prepared to assist you with a custom solution.

Call *Martin*, we will be happy to assist you!



Free Download Maintenance and Troubleshooting Guide

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