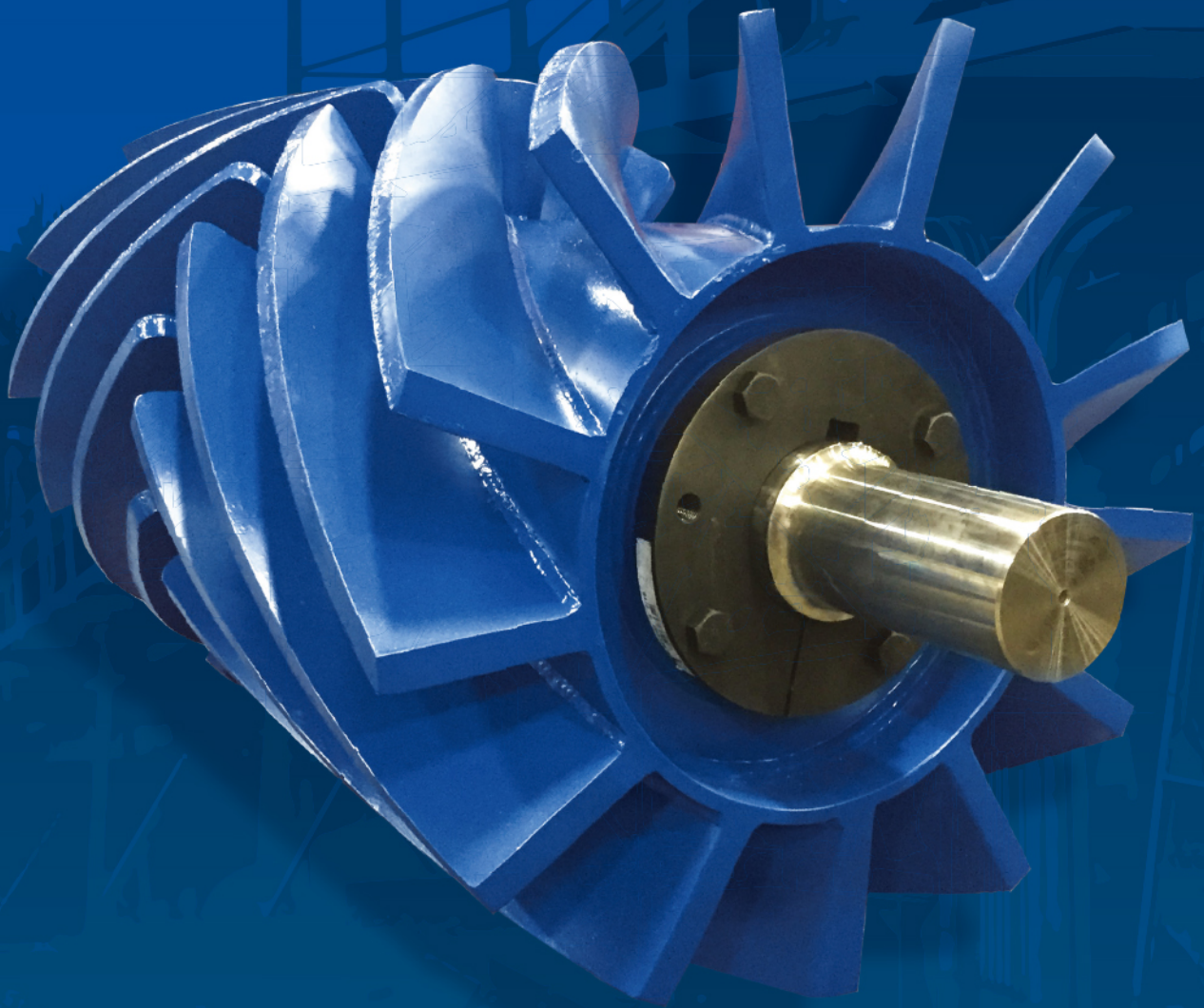


*Martin*

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

## Special Features

### Assembly Options



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

### Bushing Options

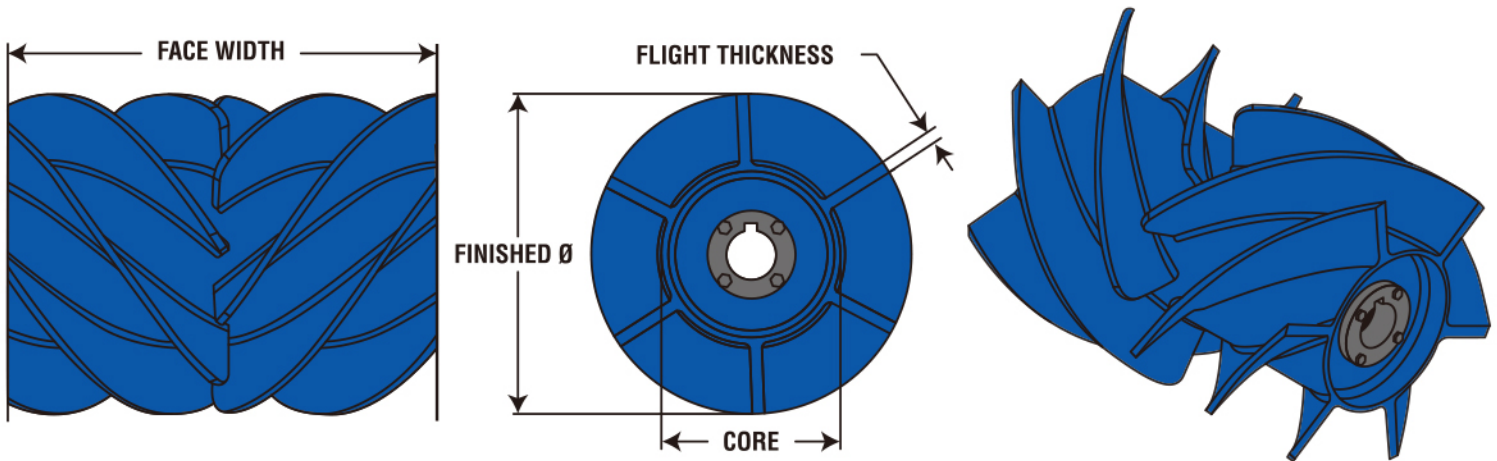


- MXT
- M-HE
- QD
- Taper Bushed
- Keyless Locking Device

### 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: \_\_\_\_\_

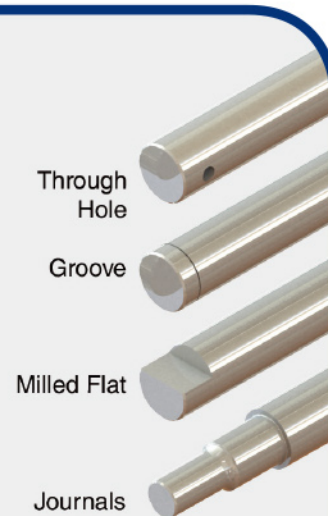




### Shafting

*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		MXT® Steel Option
Add H if its a Weld-On Hub		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* Idlers are manufactured to meet or exceed CEMA standards. *Martin* uses sealed-for-life ball bearings that allow for trouble-free life even in the harshest applications. 9 gauge tubing is used for CEMA C & D Idlers and 7 gauge tubing is used for CEMA E Idlers.

Conveyors are a proven way to move bulk materials in practically every industry. Conveyors routinely operate at 90% capacity and can be operated 24/7, 365 days per year. 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. Material conveyed can range from very fine to large lumps of iron ore, stone, coal and pulpwood logs. The size of material is limited by the belt width used.



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

*Martin* offers **Drop-in Idlers**, retrofit for all major competitors.

**Request a Quote Online**



Scan for more information

#### *Martin* Idler types:

- Flat Return Rolls
- Guide Rollers
- Impact Idlers
- Live Shaft Idlers
- Offset Idlers
- Return Roll Guarding
- Rubber Disc Idlers
- Self-Aligning Idlers
- Troughing Idlers
- Underground Idlers
- V>Returns

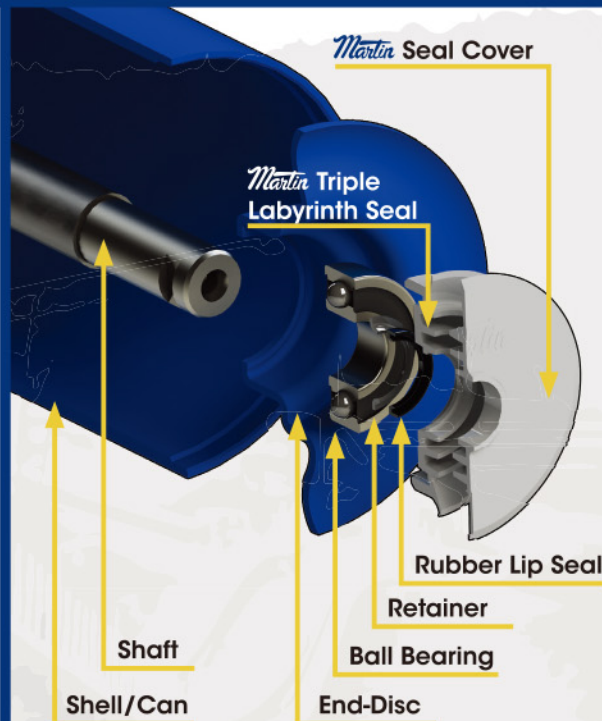
#### Specials Offered

- Garland / Catenary
- Belt Saver Brackets
- Scale Quality Rolls
- Polyethylene / Plastic Rolls
- Return Rubber Rolls
- Return Roll Guard
- Impact Beds

## *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 contaminants away from the bearing housing by centrifugal force
- ***Martin* Triple Labyrinth Seal** is grease filled that offers an additional level of protection from contaminants impacting the bearing
- **The contact lip seal** adds additional level of protection
- **CEMA C, D & E Idlers have sealed for life ball bearings**



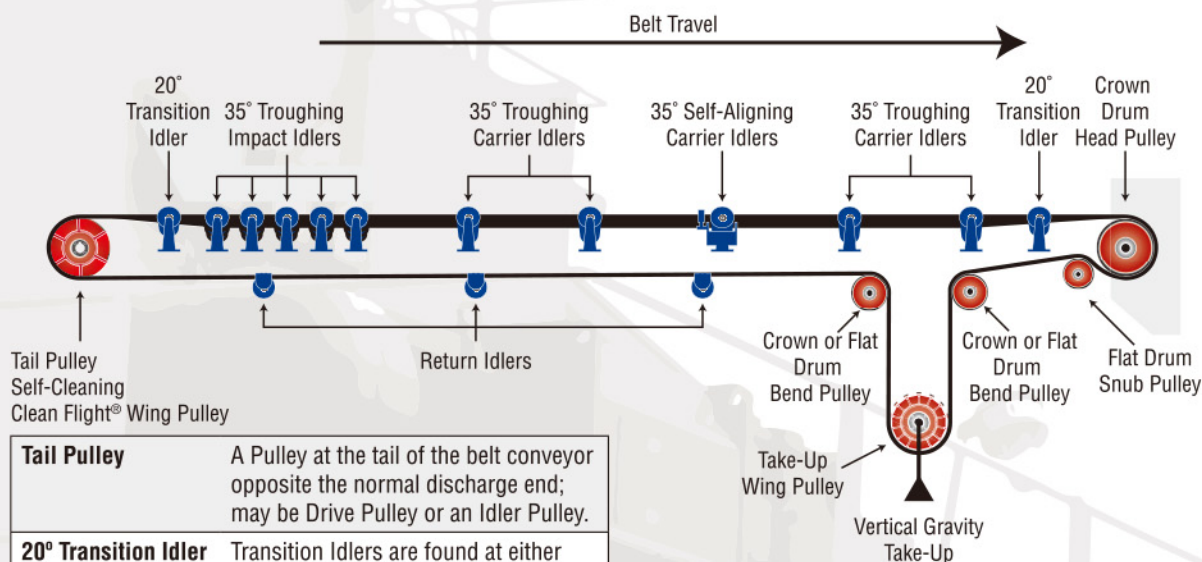
#### • Wide range of belt size available product:

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

#### • Rapid response for Made-to-Orders

- **Extremely low rolling resistance** that allows for lower operating cost
- **Roll gap meets CEMA standards**
- **Patent pending Idler end welding** allows for protection against belt wear
- **Solid steel shaft** the entire length of the roll
- **Exceptional low TIR runoff**
- 9 & 7 Standard Steel Tubing, 1/4" wall steel tubing is available upon request





<b>Tail Pulley</b>	A Pulley at the tail of the belt conveyor opposite the normal discharge end; may be Drive Pulley or an Idler Pulley.
<b>20° Transition Idler</b>	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.
<b>35° Troughing Impact Idlers</b>	Wherever 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.
<b>35° Troughing Carrier Idlers</b>	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.
<b>35° Self-Aligning Carrier Idlers</b>	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.
<b>Head Pulley</b>	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.

<b>Snub Pulley</b>	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.
<b>Bend Pulley</b>	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.
<b>Take-Up Pulley</b>	An adjustable Idler Pulley made to accommodate changes in the length of a conveyor belt to maintain proper tension.
<b>Return Idlers</b>	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.
<b>Return Self-Aligner Idler</b>	As with the Troughing Self-Aligners we see in the carrying-side, the Return Self-Aligner helps align the common misalignment that occurs. Self-Aligners detect the misalignment and automatically re-align the belt.

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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!



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