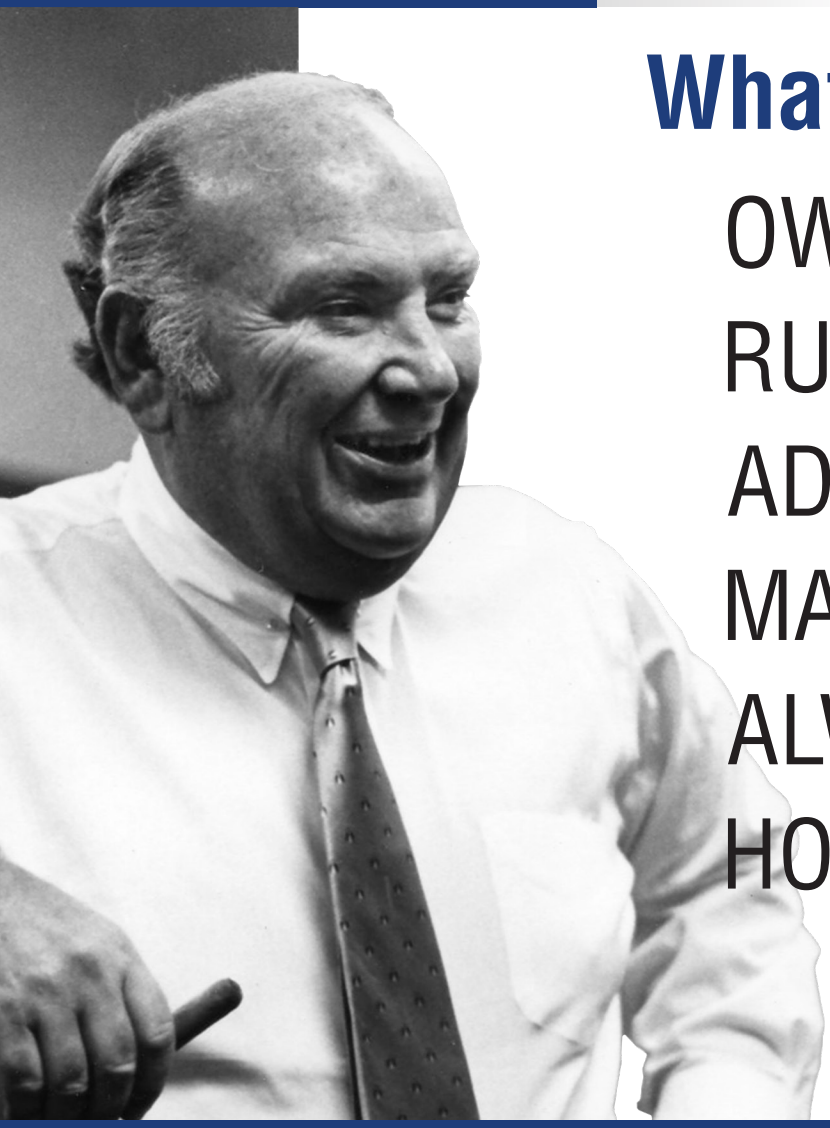
Martin

Screw Conveyors

SCREW CONVEYOR | SHAFTLESS SCREW CONVEYOR
SCREW FEEDER | LIVE-BOTTOM | HEAT TRANSFER
INCLINED | VERTICAL | MODULAR PLASTIC SCREW



What would Joe do?

OWN your own territory and take care of our customers

RUN your facility and take care of our people

ADD something to the ballgame

MAKE SURE you have your priorities right

ALWAYS back to the basics – quality, service, low-cost producer

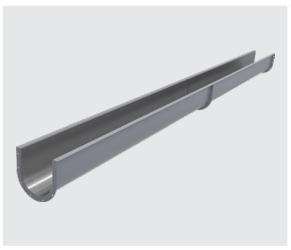
HOW to get big and stay small

Established in 1951 in Arlington, Texas, Martin has evolved into a global powerhouse with 30+ strategically located sites. Our unwavering commitment to excellence in power transmission and material handling positions us as a trusted partner globally. At Martin, we offer more than products; we provide precision, personalized service, combining global capability with local care. Experience the Martin difference, where our dedication to quality sets us apart.

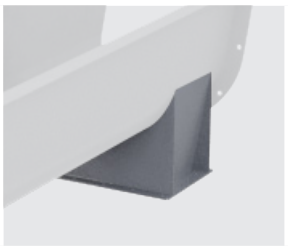
Success in Business, Martin's Philosophy:
Success at Martin requires a strategic mindset — knowing customers, taking ownership, building trust, and cultivating an owner's mentality. Effective leadership involves personal responsibility, positive work culture, visibility, and effective communication. Unlocking success demands creativity, innovation, and resisting the status quo. Aligning priorities with a greater purpose ensures contributions lead to organizational success. Martin emphasizes basics — quality, service, and low-cost production — for streamlined and maximized efforts.

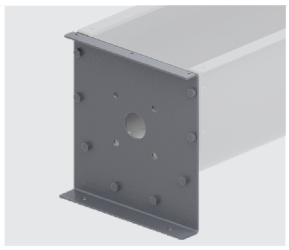
"Get Big, Stay Small" Strategy:
Martin advises strategic business expansion, discovering scalable avenues while preserving core qualities. Maintaining agility and adaptability in the dynamic market landscape is crucial. In a world full of choices, Martin's commitment to prioritizing personalized service and connections with customers sets us apart from the competition.

TYPICAL PARTS OF A SCREW CONVEYOR


Trough

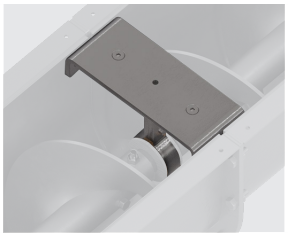

Gasket

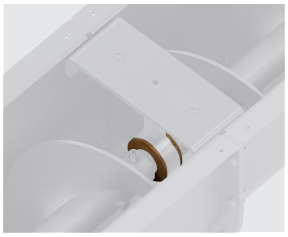

Discharge

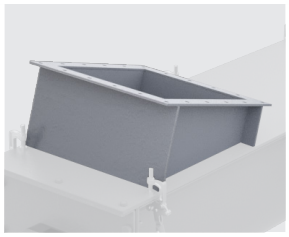

End Plate

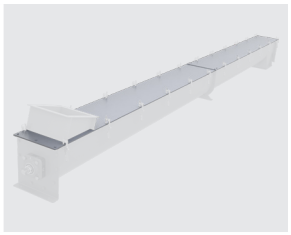

Feet and Saddles

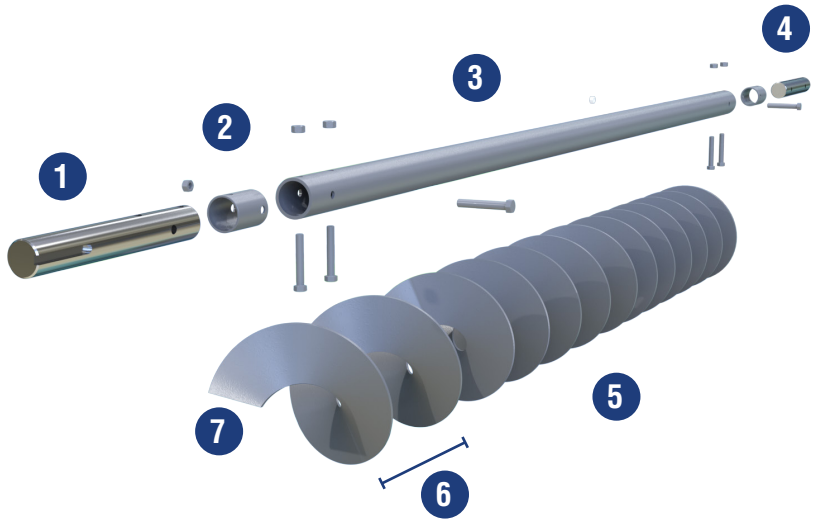

Seal


Hanger


Hanger Bearing


Inlet


Cover



1. Drive Shaft
2. Internal Collar
3. Screw Pipe
4. Coupling Shaft
5. Screw Conveyor
6. Flight Pitch
7. Screw Flights

SPECIAL FEATURES

SCREW CONVEYOR

- Split flight couplings
- Wear flights
- Quick detachable key
- Hard surfaced flights
- Short pitch
- Tapering flight
- Stepped diameter
- Stepped pitch
- Cone screw
- Double flight
- Multiple ribbon flight
- Breaker pins
- Continuous welding
- Opposite hand flights
- Odd diameter
- Close coupled
- End disc on screw
- Multiple hole drilling
- Rotary joints
- Bearing shoes
- Kicker bars
- External sleeves or bolt pads
- And more

COVERS

- Overflow
- Shroud
- Expanded metal
- Dust seal
- Hinged

TROUGH ENDS

- Shelf-type
- Blind

TROUGH

- Hold down angles
- Insulated
- Rider bars
- Saddle type wear plates
- Strike off plate (shroud baffle)

DISCHARGE AND INLETS

- Angular discharges
- Longer discharges sprouts
- Round discharges sprouts
- Flush end discharges sprouts
- Air operated flat side gates
- Level operated gates
- Enclosed dust-tight or weather-proof
- Air operated curved slide gates
- Cushion chamber inlets (dead bed inlets)
- Side inlet
- Hand slide inlet gates
- Round inlet spouts
- Hanger pockets

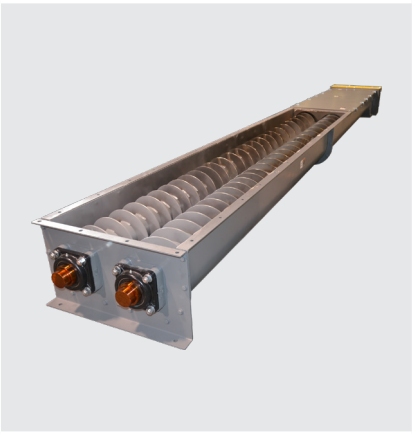
SCREW CONVEYORS

BENEFITS

HORIZONTAL SCREW CONVEYORS

- Most widely used type of screw conveyor
- Available in various sizes, lengths, configurations, and materials
- Ideal for dry to semi-fluid bulk materials
- Multiple inlet and discharge points
- Totally enclosed design

- Cost-effective compared to other conveying devices
- Efficient bulk material distribution
- Suitable for dusty, corrosive, or hazardous environments



SCREW FEEDERS

- Designed to meter bulk materials
- Capacity and feed rate control with variable speed drives
- Available in various sizes, lengths, configurations, and materials
- Inlet always flood loaded (100%)

- Accurate metering of bulk materials
- Customizable feed rates
- Suitable for use with hoppers, bins, and silos

LIVE-BOTTOM SCREW FEEDERS

- Designed for large silos, bins, and hoppers
- Multiple feeder screws create a "live bottom"
- Measures and draws materials equally from the entire inlet opening

- Prevents bridging or cavern formation
- Ideal for bulk materials that compact or bridge easily
- Even distribution of materials

INCLINED SCREW CONVEYOR

- Higher horsepower requirement than horizontal conveyors
- Lower capacity rating
- Efficiency varies with incline angle and material characteristics
- Best with tubular/shrouded cover design and few intermediate hanger bearings
- Operates efficiently at high speeds

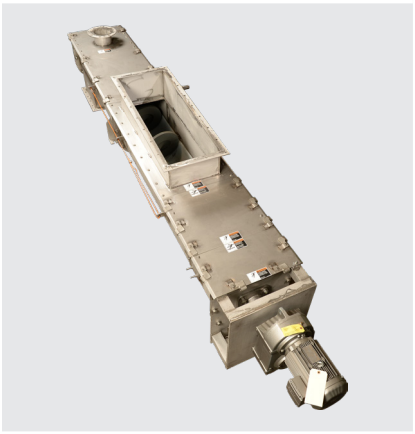
- Effective for inclined material transport
- Handles various materials with appropriate design
- High-speed operation minimizes material fallback
- Tailored design for specific needs

BENEFITS

VERTICAL SCREW ELEVATOR

- Efficient vertical material elevation
- Requires uniform loading
- Designed with integral feeders
- Available with MTO features and stainless/special alloy construction

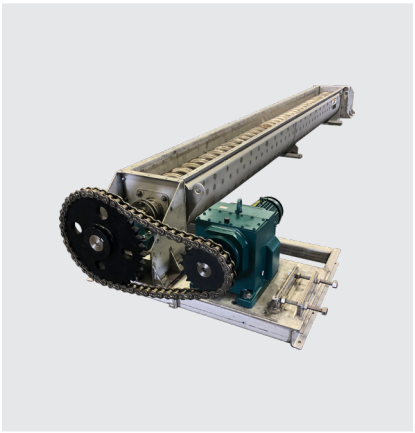
- Effective for vertical transport
- Customizable with special features and materials
- Integral feeders ensure smooth loading
- Tailored design for specific needs



SHAFTLESS SCREW CONVEYORS

- Screw flight rides directly on liner, allowing for trough cleanout
- Ideal for handling materials with high moisture content
- No internal bearings

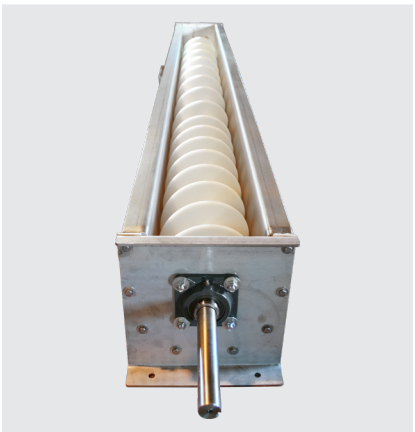
- Easily conveys sticky and sluggish materials
- Improved conveying efficiency
- Greater flexibility in plant layout



HEAT TRANSFER

- Transfers bulk material solids and manages heat transfer
- Available in "Core-Buster" and hollow-flight designs
- Constructed from various grades of steel depending on temperature needs
- Features large potential heat transfer surface area for high efficiency operation

- Effective heating or cooling of conveyed materials
- Customizable design for specific heat transfer requirements
- Enhanced efficiency due to increased surface area



MODULAR PLASTIC SCREW

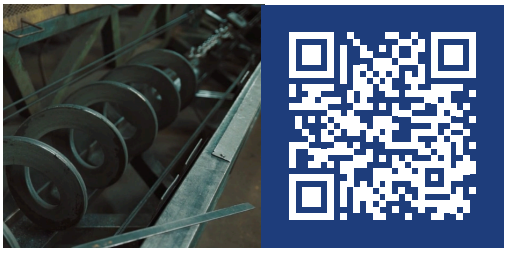
- Helical flight spiraling around a hollow square hub
- Made from durable, lightweight injection-molded modules
- Available in polyurethane, polypropylene, and polyethylene
- Individually replaceable modules
- Can be fabricated fully bonded and heat cleaned for seamless construction

- Eliminates need for welding metal flights
- High wear resistance and corrosion resistance
- FDA approved for food contact
- Easy to handle, clean, and maintain

BOOSTING SCREW CONVEYOR DURABILITY

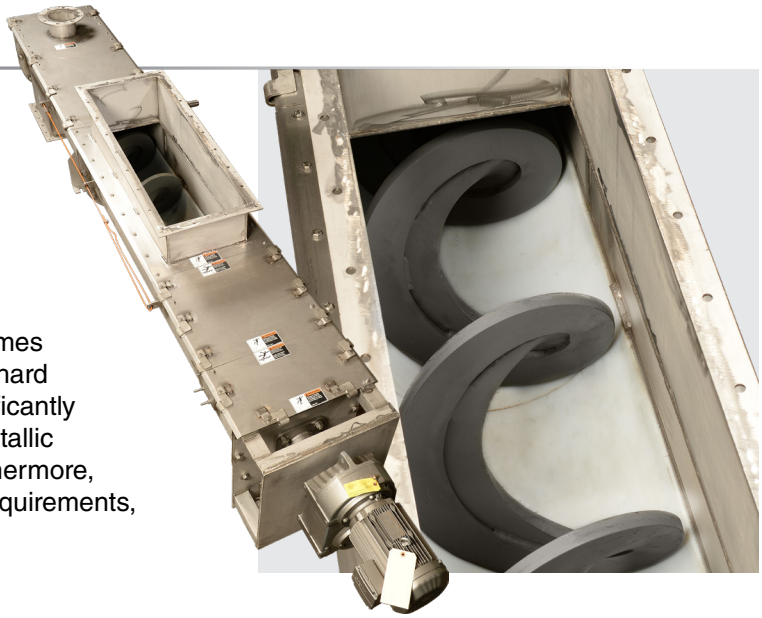
Martin specializes in designing screw conveyors that utilize materials specifically suited for each application, optimized construction techniques, and advanced fabrication methods to enhance structural integrity and wear resistance.

The company employs cold-formed helicoid flights made from work-hardened steel to ensure the durability of their conveyor screws. For made to order applications, sectional flights may be used to add additional thickness and/or customization to a conveyor's functionality and durability. To prevent weldment and abrasion failures, Martin may incorporate surface hard-facing, abrasion-resistant steels, and continuous welding with various wire types and finishes. These strategies significantly extend the lifespan of conveyor screw flights and weldments, resulting in products that are expertly engineered for their intended applications.



Scan QR code to watch video:
Screw Conveyor Manufacturing Capabilities

ADVANCED MATERIALS AND COATINGS



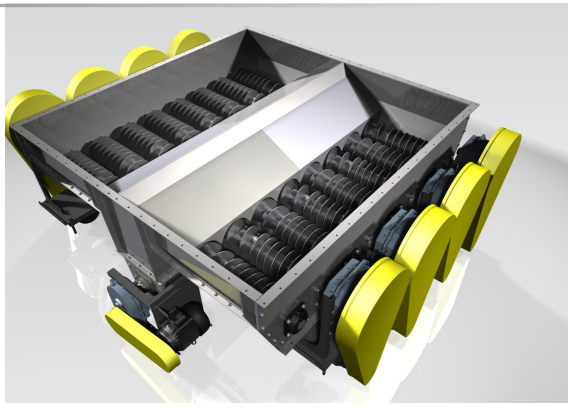
Utilizing custom materials and coatings effectively protects components against abrasion, corrosion, and high temperatures. Abrasion-resistant (AR) steel offers up to three times the hardness of carbon steel, while stainless steel provides excellent corrosion resistance due to its high chromium and low carbon content.

Chromium carbide overlay plates can last up to 4 to 6 times longer than AR400 in various applications. Additionally, hard iron, Stellite®, ceramic, or Gatke® hanger bearings significantly enhance abrasion resistance. Both metallic and non-metallic liners extend trough life by reducing material wear. Furthermore, custom paint finishes can be tailored to meet specific requirements, such as high-temperature and corrosion resistance.

OPTIMIZED SCREW DESIGN AND FACTORY ASSEMBLY

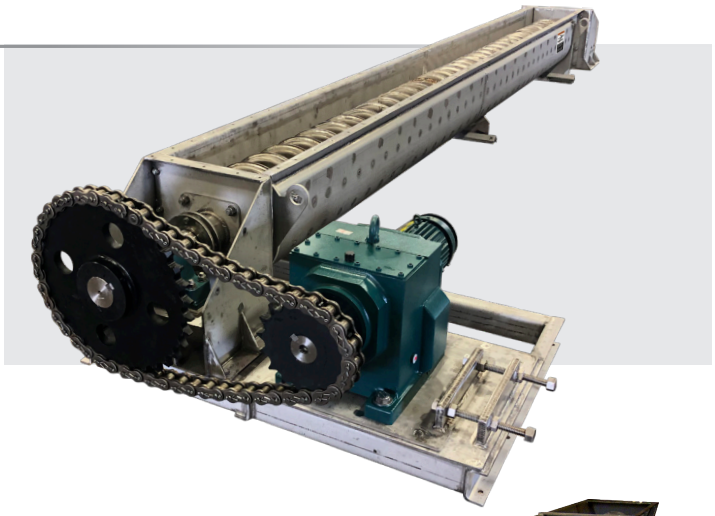
Screw conveyors have been a preferred method of material handling for centuries, renowned for their efficiency and minimal losses. Since 1969, Martin has been a leader in the industry, leveraging its design expertise to enhance component protection through optimized drive arrangements, trough configurations, and operating speeds.

Martin's factory assembly process maximizes system longevity, reduces freight costs, ensures consistent quality control, and facilitates quick and safe installation.



SMALLER FOOTPRINT OPTIONS

Martin's engineered conveyor designs balance component sizing and footprint for cost-effective solutions. In limited space, conveyors can perform multiple functions, like heating or cooling products. Martin's heat transfer screws allow fluid media to move inside a jacketed trough, hollow flights, and core-buster pipes. Shaftless screw conveyors eliminate the need for end-bearings, and live-bottom or multi-screw conveyors combine hoppers and metering equipment.



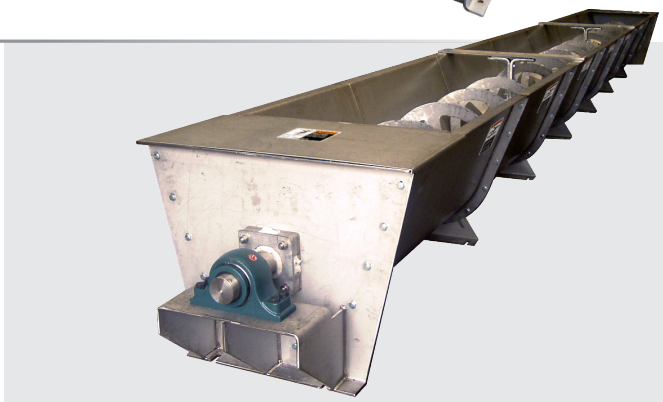
PREVENTING OVERLOADS AND JAMMING

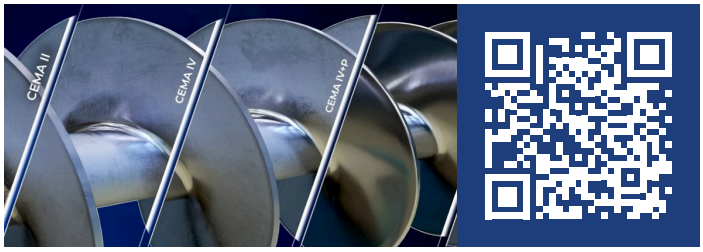
Reduce costs and downtime with material overload prevention and configurations to prevent jamming. Options to increase release properties and decrease reliability issues include:

- Stainless steel construction
- Martin IV+P surface finish
- Non-metallic construction

Design features to prevent overloading and jamming:

- Flared troughs: wider top opening to prevent bridging
- Shroud covers or tubular troughs: prevent material fall-back in incline screws
- Ribbon screws: ideal for viscous or sticky materials
- Rider bars: create channels to prevent buildup and jamming
- Keyhole troughs: prevent large materials from being conveyed through flights



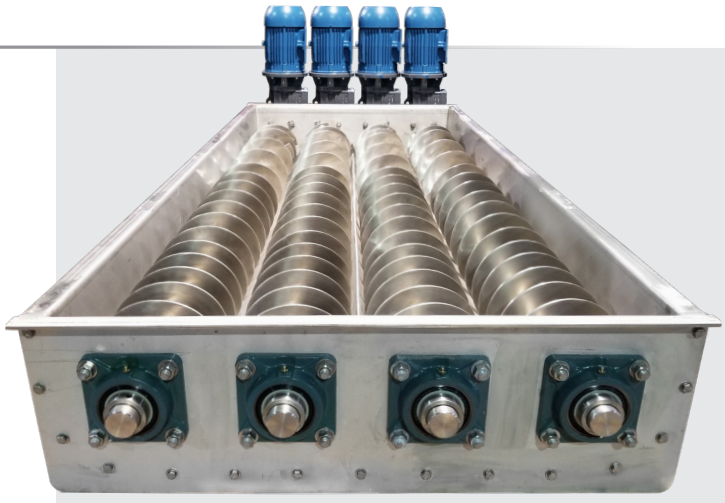


Scan QR code to watch video:
Weld and Surface Finish Comparison

INCREASED RELEASE PROPRIETIES

Martin screw conveyors feature unique configurations and materials to prevent material from sticking, enhancing efficiency and throughput. Key designs include:

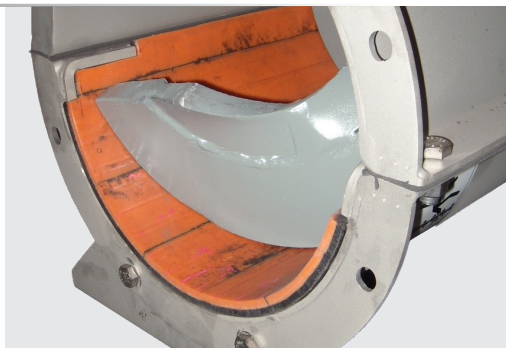
- Live-bottom or multi-screw applications: Wider footprint for increased capacity, even distribution, and overload prevention.
- Stainless steel construction, CEMA IV welds, and Martin IV+P surface finish: Increased release properties.
- Cone screws: Ensure even draw out from hopper, preventing bridging and ratholing.
- Shaftless screws: Eliminate the center pipe, reducing surface area for material to stick.



SOLUTIONS FOR EASIER MAINTENANCE

Martin's screw conveyor options cut maintenance and downtime with:

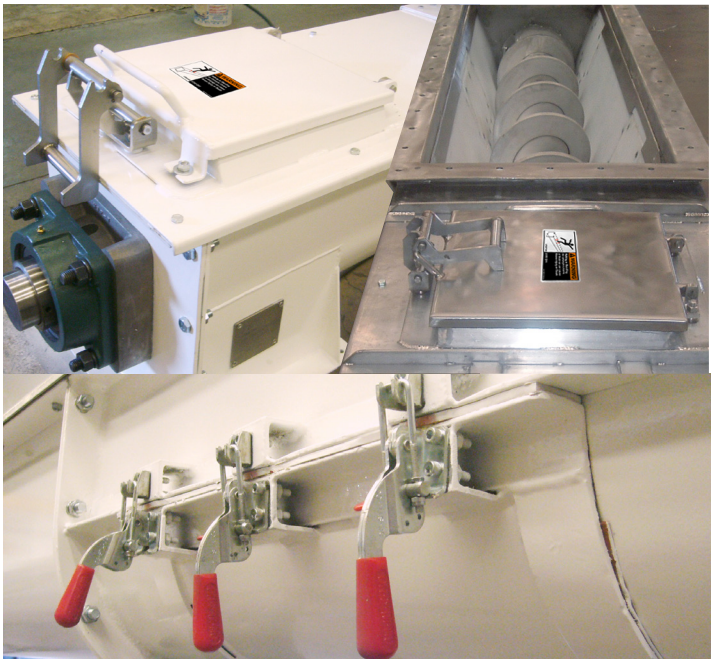
- Visual wear indicators: easily know when it's time to replace liners.
- Compact gearmotor drive: No belt maintenance needed.
- Shaftless screw continuous flight: eliminate hanger bearing maintenance.
- Blind end-plate: Reduces maintenance and contamination.
- Rectangular trough: Protects from wear with a material bed.
- Interchangeable stock components: Enables quick replacement.



SAFETY FEATURES

Screw conveyors enhance safety by:

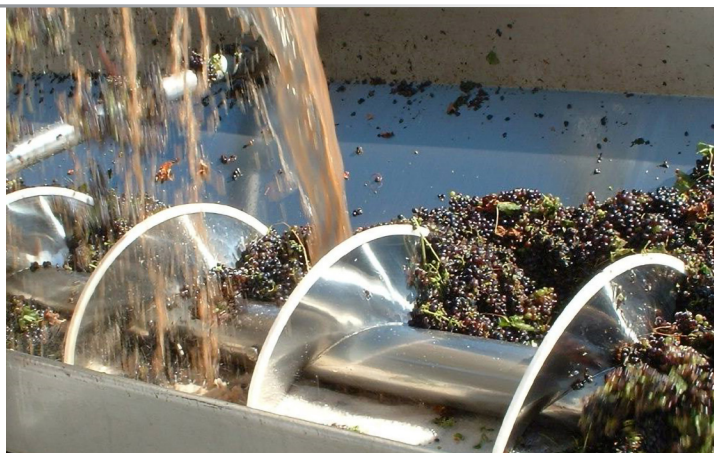
- Fully enclosed housing: Prevents material contamination and environmental exposure.
- Easy access to maintenance points: Facilitates safe upkeep of high-wear components.
- Durable materials: Extend wear life and reduce replacement frequency.
- While lockout/tagout is still necessary, interlocks, limit switches, zero speed switches etc. can all be added to enhance safety.
- Inspection hatches and doors with safety screens: Enable preventative maintenance.
- MDT® dust-tight inspection doors are durable, moisture-resistant, and easy to install in existing equipment.
- Clamped drop-bottom trough: Allows for internal inspection and cleaning by removing bolts from each corner.



MATERIAL CONTAMINATION PREVENTION

Screw conveyors prevent contamination, manage overflow, and simplify maintenance with:

- Can conform to FDA standards in many industries: reduce downtime and violation costs.
- Overflow hatches paired with monitoring: allow excess material to escape and trigger limit switch, shutting down screw and avoiding component damage.
- Split tubular housing: Reduce material fallback in inclined applications and reduce area for purged conveyors.
- Seal options: Reduce leaks, product loss, and bearing failure.



Safety Considerations for Screw Conveyors as per ASME B20.1-2021"

(a) Except as provided in *(b)* and *(c)*, screw conveyors shall not be operated unless the conveyor housing completely encloses the conveyor-moving elements and power transmission guards are in place.

(b) If the conveyor must have an open housing as a condition of its use and application, the entire conveyor is then to be guarded by a railing or fence, unless guarded by location.

(c) Feed openings for shovel, front-end loader, or other manual or mechanical equipment shall be constructed in such a way that the conveyor screw is covered by grating. If the nature of the material is such that grating cannot be used, then the exposed section of the conveyor is to be guarded by a railing, and there shall be warning signs posted.

POWERING INDUSTRIES SINCE 1951

Unlock the pinnacle of industrial excellence with Martin, your trusted partner in custom screw conveyor engineering. For over seven decades, we've been at the forefront of innovation, crafting bespoke solutions that stand the test of time.

Elevate your industrial experience with Martin – where precision meets performance, and innovation meets reliability. Unleash the power of custom screw conveyors designed to propel your industry forward. Choose Martin, choose excellence.

UNMATCHED INVENTORY

With the largest power transmission stock in North America, find the perfect fit for your needs, always exceeding expectations.

TAILORED TO PERFECTION

Crafting made-to-order screw conveyor for unique industrial needs. Diverse materials, shaft options, and assemblies bring your vision to life.

QUALITY ASSURED

Backed by a solid one-year warranty*, Martin ensures top-tier reliability and durability in every product.

RAPID RESPONSE, SWIFT SOLUTIONS

Quick alterations and manufacturing across locations guarantee the industry's fastest lead times for made-to-order products. Your deadlines, our priority.

A PERSONAL TOUCH TO EVERY ORDER

Beyond products, Martin is your dedicated partner in success. Experience precision, performance, and reliability. Choose Martin, choose excellence.

** Conditions apply, check our Limited Warranty at https://martinsg.info/terms*

REQUIRED INFORMATION

Screw diameter	Shaft diameter	Material component group	Unusual material characteristics

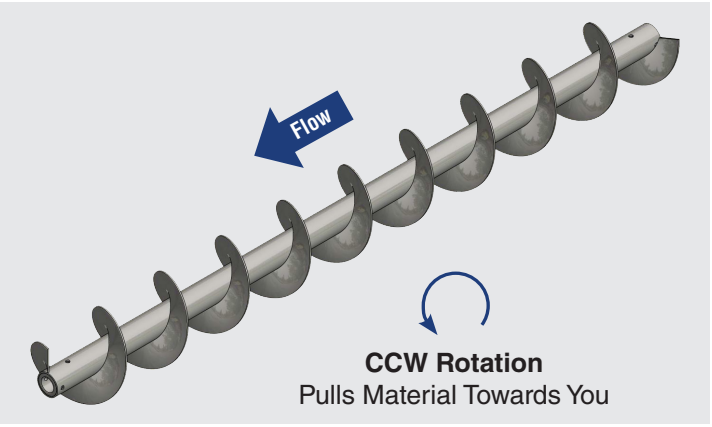
CONVEYOR SCREWS

Use Standard Length Screws		Use standard length screws whenever possible to utilize stock components for easy replacement/availability
Recommended Types		Standard helicoid and sectional screw conveyors.
Screw Hand Orientation	**Right Hand**	Rotate clockwise to pull material toward the rotating end; counterclockwise rotation pushes material away.
	Left Hand	Material flow is opposite to that of right hand screws, with the rotation direction remaining unchanged.

A conveyor screw is either LEFT hand or RIGHT hand depending upon the form of the flights. A conveyor screw can be viewed from either end to determine if it is LEFT hand or RIGHT hand.

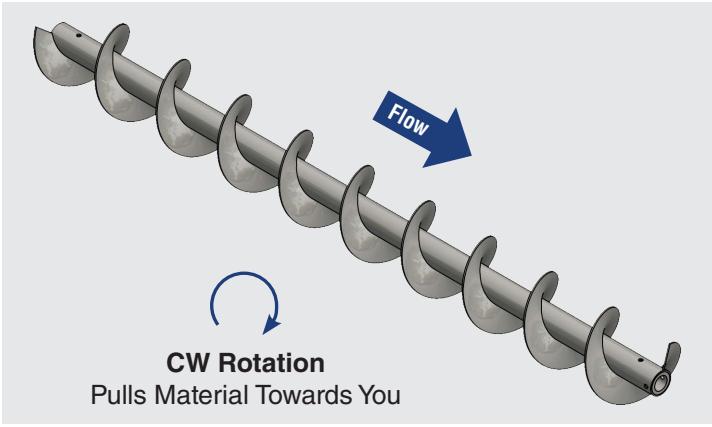
HOW TO DETERMINE ROTATION BY LOOKING AT THE DRIVE END OF THE SCREW:

DRIVE END LEFT HAND SCREW



If flight is wrapped around the pipe in a **counter-clockwise** direction, or over the pipe to the left, it is a **LEFT HAND SCREW.**

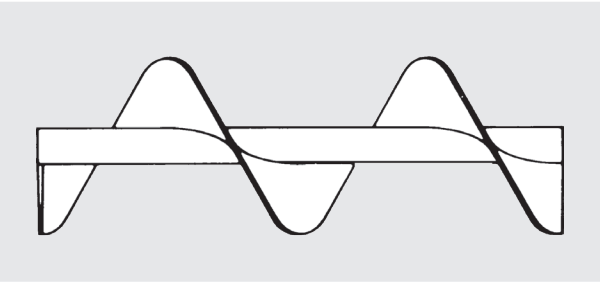
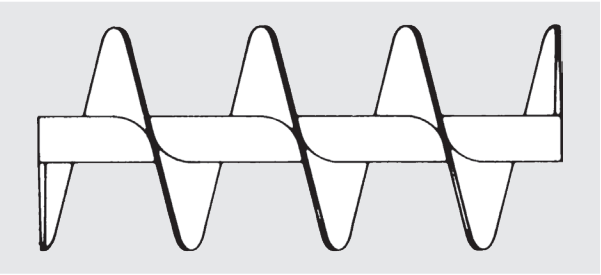
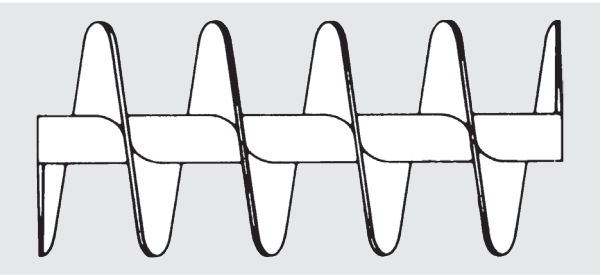
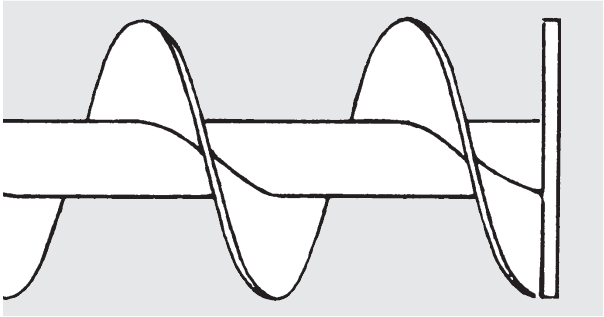
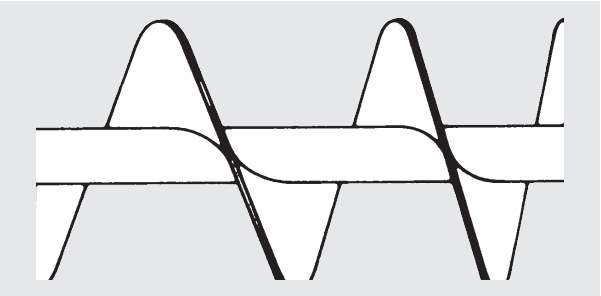
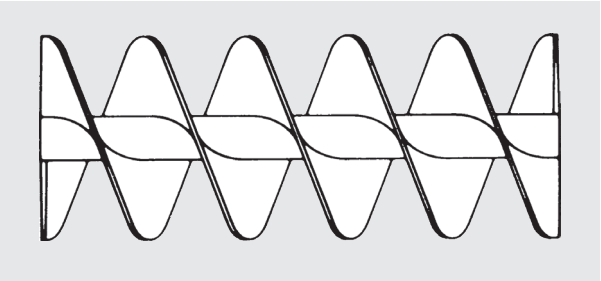
DRIVE END RIGHT HAND SCREW

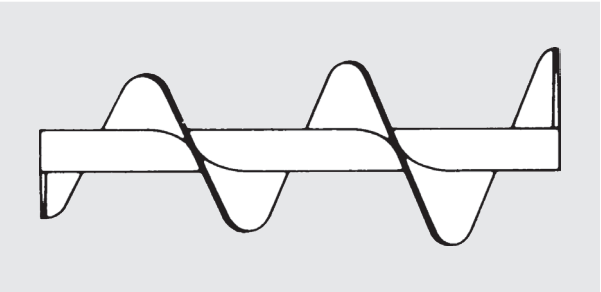
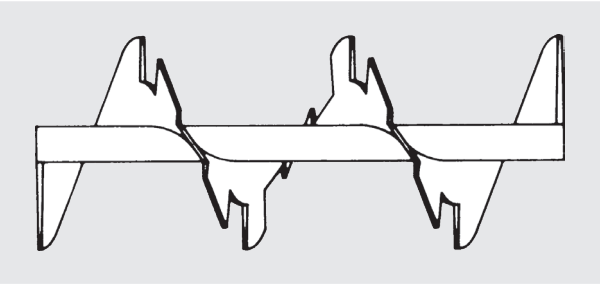
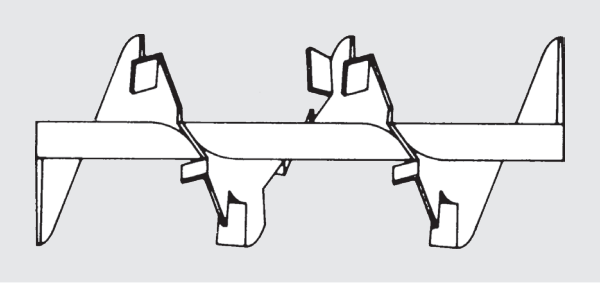
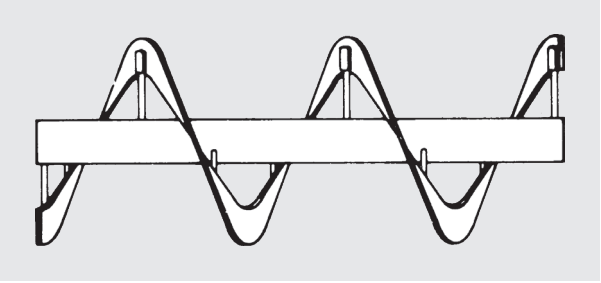
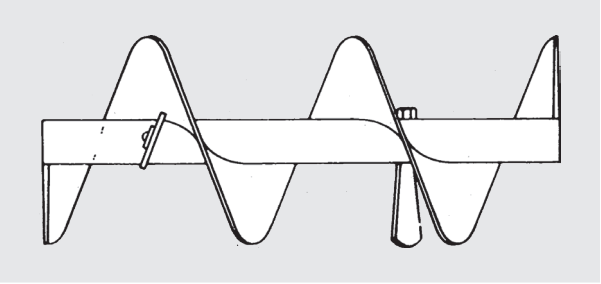
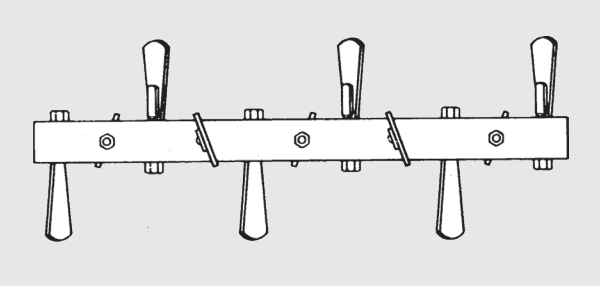


If flight is wrapped around the pipe in a **clockwise** direction, or over the pipe to your right, it is a **RIGHT HAND SCREW.**

Material Flow	Material is carried on one face of the conveyor flighting. End lugs should be on the opposite face for unimpeded flow. Install sections with all end lugs toward the inlet end. Do not reverse sections end-for-end without changing rotation direction.
Reversible Conveyor Screws	For reversible conveyor screws intended to transport material in either direction, consult our Engineering Department.
Discharge Openings	Omit flighting from the conveyor pipe over the last discharge opening to ensure complete discharge of material without carryover.
Hanger Points	Ensure continuity of material flow at hanger points by opposing adjacent flight ends approximately 180°, or as close as the predrilled holes allow.

CONVEYOR SCREWS

		BENEFITS
	**STANDARD PITCH, SINGLE FLIGHT** • Pitch equals screw diameter	• Suitable for most materials and applications
	**SHORT PITCH, SINGLE FLIGHT** • Pitch is 2/3 diameter	• Ideal for inclined/vertical applications and screw feeders • Reduces material flushing
	**HALF PITCH, SINGLE FLIGHT** • Pitch is 1/2 standard	• Suitable for inclined applications, screw feeders, and very fluid materials
	**END DISC ON CONVEYOR SCREW** • End disc, same diameter as screw, welded flush at discharge end	• Keeps material away from trough end seal
	**VARIABLE PITCH, SINGLE FLIGHT** • Increasing pitch in flights	• Used in screw feeders for uniform withdrawal of fine, free-flowing materials
	**DOUBLE FLIGHT, STANDARD PITCH** • Double flight with standard pitch	• Ensures smooth material discharge, and reduces flushing

		BENEFITS
	**TAPERED, STANDARD PITCH, SINGLE FLIGHT** • Flights increase from 2/3 to full diameter	• Used in screw feeders for uniform material withdrawal from headload
	**SINGLE CUT-FLIGHT, STANDARD PITCH** • Screws notched at regular intervals	• Helps break apart/ agitate material • Adds some mixing action, useful for materials that tend to pack
	**CUT & FOLDED FLIGHT, STANDARD PITCH** • Folded flight segments lift and spill material	• Adds a great deal of mixing action • Ideal for combining /mixing materials from multiple inlets
	**SINGLE FLIGHT RIBBON** • Open space between flighting and pipe	• Ideal for conveying sticky or viscous materials • Prevents material build-up
	**STANDARD PITCH WITH PADDLES** • Adjustable paddles positioned between screw flights	• Provides gentle yet thorough mixing action
	**PADDLE** • Adjustable paddles	• Allows for excellent mixing action • Can be supplied with adjustable paddles for desired mixing capability

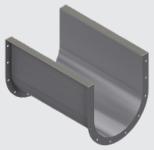
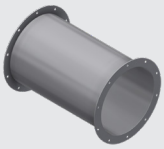
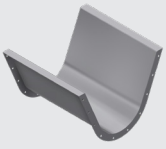
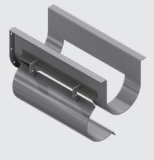
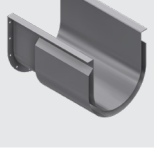
OTHER COMPONENTS

		Page
Conveyor Trough and Tubular Housing	**Standard Lengths:** Available in 5, 6, 10, and 12 feet. Use 5 and 6-foot lengths when connecting flanges align with discharge openings or hanger bearings.	14
Trough Ends	A complete line of conveyor ends is available for conveyor trough or tubular housing, with a choice of many bearing types and combinations.	15
End Bearings	**Radial Load:** Negligible at the conveyor tail shaft. At the drive end, radial loads arise from overhung drive loads like chain sprockets or shaft-mounted speed reducers. **Drive End Bearings:** Screw conveyor drive reducers at the drive end should adequately carry both thrust and radial loads.	15 & 16
Discharge Spouts and Gates	Standard discharge spouts and gates for conveyor trough or tubular housing are available in various designs, operated manually or by remote controls. **Overflow Protection:** For installations at risk of overfilling, provide an overflow discharge opening or relief device. Consult our Engineering Department for recommended electrical interlocks and safety devices.	16
Shafts	**Selection Criteria:** Ensure shafts can transmit the required horsepower, including any overload. Types of Shafts: • **Cold-Rolled:** Generally adequate. • **High-Tensile:** Needed for higher torque applications. • **Stainless Steel:** Required for handling corrosive or contaminable materials. • **Hardened:** Necessary for conveyors with non-lubricated hard iron hanger bearings.	17
Shaft Seals	Prevent contamination of conveyed material and material escape with various end seal types available for different applications.	
Hanger bearings	Provide intermediate support for multiple screw sections **Clearance:** Ensure adequate clearance between bearings and conveyor pipe ends to prevent damage from thrust load. **Material Suitability:** Consult the Material Characteristic Tables in Martin's Material Handling Catalog. For special bearing materials, contact our Engineering Department.	18

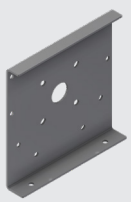
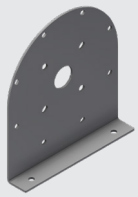
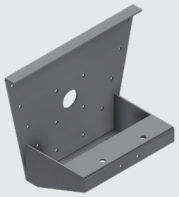
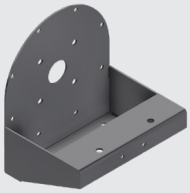
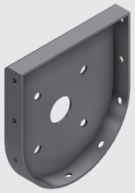
SPECIAL APPLICATION RECOMMENDATIONS

Contaminable Materials	**Abrasive Materials**	**Hygroscopic Materials**	**Harmful Vapors or Dusts**
Utilize oil-impregnated, sealed, or dry hanger bearings. Seal end shafts to prevent contaminants and design for easy disassembly and cleaning.	Use abrasion-resistant alloys with hard-surfaced screws and line exposed surfaces with rubber or special resins.	Handle in sealed conveyors, use jacketed troughs or housings with circulating mediums, or purge with dry gas.	Use dust-sealed troughs, plain tubular housing, or gasketed flanged tubular housing with proper shaft sealing. Exhaust systems may be used.
Corrosive Materials	**Viscous or Sticky**	**Interlocking or Matting**	**Blending in Transit**
Use resistant alloys or coated components.	Use ribbon flight conveyor screws or coat standard components.	Use special feeding devices at the conveyor inlet with standard components.	Use ribbon, cut flight, paddle, or a combination of screw types.
Explosive Dusts	**Materials Subject to Packing**	**Degradable Materials**	**Elevated Temperature**
Use non-ferrous components, proper sealing techniques, and exhaust systems. Explosion vents and fire suppression options available by request.	Use aerating devices at the inlet or special feeders.	Handle with reduced speed and larger conveyor size.	Utilize high temperature rated alloys and bearing components. Use jacketed troughs/cooling screws where applicable.

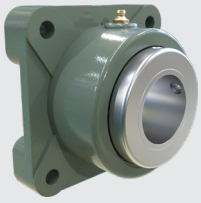
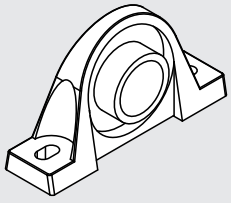
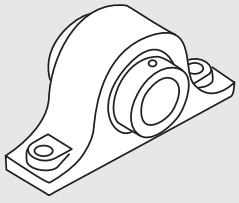
TYPES OF HOUSING

		BENEFITS
	**FORMED FLANGE U-TROUGH** • Economical one-piece construction • Standard lengths in stock	• Cost-effective • Readily available • Excellent sealing capability
	**ANGLE FLANGE U-TROUGH** • Rigid construction • Standard lengths in stock	• Durable and strong • Ideal for hanging in certain applications
	**FORMED FLANGE TUBULAR TROUGH** • Loadable to full cross section • Minimizes fall back in inclined applications • Easily disassembled for maintenance • Can be gasketed for dust-tight enclosure • Requires hanger pockets for standard hangers	• Ideal for feeder applications • Reduces material fallback • Easy maintenance • Dust-tight option available
	**SOLID TUBULAR TROUGH** • One-piece construction • Suitable for totally enclosed or inclined applications • Requires hanger pockets for standard hangers	• Enclosed design for safety • Ideal for inclined setups • Best gas containment/seal
	**FLARED TROUGH** • Prevents material bridging • Suitable for flared inlets	• Reduces clogging • Versatile inlet options
	**CHANNEL TROUGH** • Adds structural support for long spans	• Enhanced stability for extended lengths
	**DROP BOTTOM TROUGH** • Allows complete material clean-out • Hinges and bolts or clamps for secure closure	• Easy to clean • Secure and reliable closure
	**FORMED FLANGE RECTANGULAR TROUGH** • Suitable for abrasive materials to generate a product wear surface	• Increases trough life with certain materials
	**JACKETED TROUGH** • Jacket for heating or cooling material	• Temperature control for conveyed material

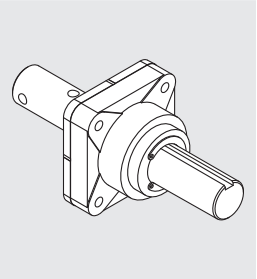
TROUGH ENDS

	U-TROUGH	RECTANGULAR TROUGH	FLARED TROUGH	TUBULAR TROUGH
OUTSIDE TROUGH ENDS WITH FEET • Most common type used as trough support is included				
OUTSIDE TROUGH ENDS WITHOUT FEET • Trough support not included				
OUTBOARD BEARING TROUGH END SINGLE • Used when compression type packing gland seal or split gland seal required • Typically shaft-mount style drives utilized. • Pillow block bearings typical				
DISCHARGE TROUGH ENDS • For end discharge conveyors • Special flange bearing required				
INSIDE PATTERN TROUGH ENDS • Used where space is limited or trough does not have end flange				

TROUGH END BEARING HOUSINGS

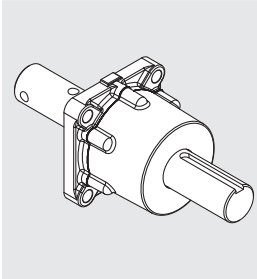
FLANGE UNITS Mounted on trough end plate			PILLOW BLOCKS Mounted on pedestal of outboard bearing trough end	
				
BALL BEARING FLANGE UNIT	**ROLLER BEARING FLANGE UNIT**	**BRONZE SLEEVE BEARING FLANGE UNIT**	**BALL BEARING PILLOW BLOCK**	**ROLLER BEARING PILLOW BLOCK**

THRUST BEARINGS



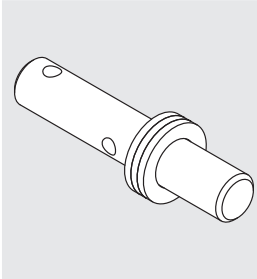
TYPE E THRUST BEARINGS

The most common and cost-effective thrust unit when not using a screw conveyor drive.



TYPE H THRUST BEARINGS

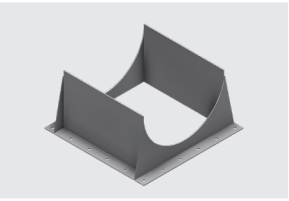
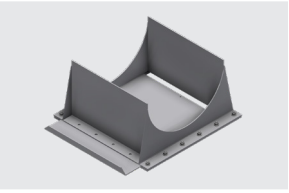
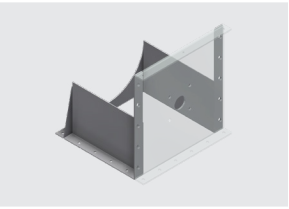
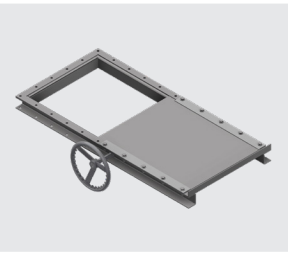
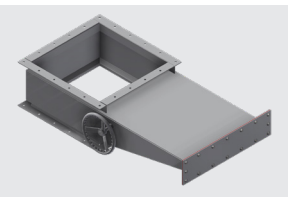
For heavy-duty thrust requirements.



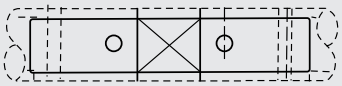
BRONZE WASHER

For light-duty applications only. Used inside the trough when the screw is under compression.

DISCHARGE AND GATES

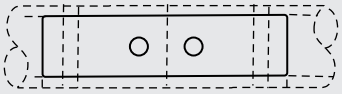
	BENEFITS
 **STANDARD DISCHARGE SPOUT** • Most commonly used • Flanged hole drilling per CEMA Standards	• Versatile mounting options
 **STANDARD DISCHARGE** • Standard spout with slide and side guides	• Enhanced control over material flow
 **FLUSH END DISCHARGE SPOUT** • Reduces distance from discharge centerline to conveyor end • Eliminates ledge at end of trough • Requires special flush-end trough ends	• Prevents product build-up • Optimizes space usage
 **FLAT SLIDE GATE** • Rack & pinion type with various handwheel options • Discharge spout included when fitted • Can be equipped with pneumatic, hydraulic, or electric actuators • Not dust-tight	• Versatile operation options • Easy to integrate with existing systems
 **CURVED SLIDE GATE** • Contoured shape eliminates pockets • Rack & pinion type with various handwheel options • Can be equipped with pneumatic, hydraulic, or electric actuators • Not dust-tight • Factory installation recommended	• Smooth material flow • Versatile operation options
 **DUST TIGHT RACK AND PINION FLAT SLIDE** • Totally enclosed dust-tight design • Available with flat or curved slide • Handwheel, chain, or rope wheel options	• Prevents dust escape • Flexible operation options

SHAFTS



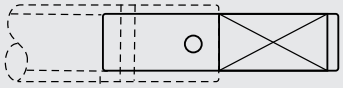
COUPLING SHAFT

Used to join individual lengths of conveyor screws, allowing for rotation within the hanger bearing. Typically made from C-1045 steel, but hardened bearing surfaces can be provided for highly abrasive materials. Jig drilling allows for easy installation.



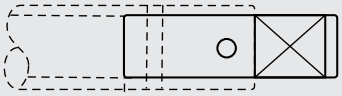
CLOSE COUPLING

Used to join conveyor screws where no hanger is required. Jig drilling allows for easy installation.



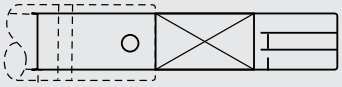
END SHAFTS

Support the end conveyor section, usually made from cold rolled steel. Jig drilled for easy assembly with close diametral tolerances for proper bearing operation.



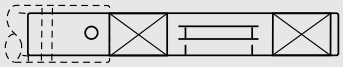
HANGER END SHAFTS

Connect one conveyor section to a hanger bearing. Can be used in pairs to divide long conveyor assemblies between two drives.



NO. 1 DRIVE SHAFTS

Typically used with standard end plates. Jig drilling allows for easy installation.



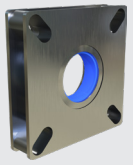
SPECIAL DRIVE

Length, bearing location, seals and keyway location and size as required.

SHAFT SEALS

WASTE PACK SEAL

- Furnished with waste packing or combined with lip seal
- Installed between trough end and bearing or on pedestal type trough ends
- Opening at top for repacking without removal
- Compatible with flanged ball, roller, or other standard 4-bolt bearings



MARTIN SUPER PACK SEAL

- Combines heavy-duty waste pack housing with superior sealing
- Can be air or grease purged for difficult sealing applications

PRODUCT DROP OUT SEAL

- Flange type dust seal for insertion between trough end and flanged ball bearing
- Cast iron housing open on all four sides for material exit

PLATE SEAL

- Common and economical seal
- Typically furnished with a lip seal
- Installed between trough end and bearing or on pedestal type trough ends
- Compatible with flanged ball, roller, or other standard 4-bolt bearings

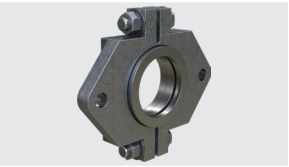
BENEFITS

- Easy maintenance without removing the seal
- Versatile installation options
- Effective for various bearing types

- Enhanced sealing capabilities
- Suitable for challenging sealing environments

- Prevents material and lubricant buildup
- Effective dust sealing

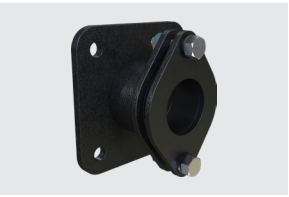
- Cost-effective
- Versatile installation
- Reliable sealing



SPLIT GLAND SEAL

- Split gland compression type seal
- Allows easy replacement and adjustment of packing pressure
- Installable inside or outside end plates

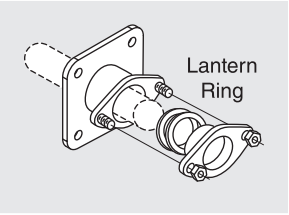
- Easy maintenance and adjustment
- Flexible installation options



COMPRESSION TYPE PACKING GLAND SEAL

- Flanged packing gland with external housing and internal gland
- Compresses packing for a positive shaft seal
- Suitable for minor pressure requirements

- Strong and reliable sealing
- Ideal for minor pressure applications



AIR-PURGED SEAL

- Attaches to standard or special trough ends
- Maintains constant air pressure to prevent material escape
- Can be purged with air or grease
- Ideal for sealing highly abrasive materials

- Prevents material leakage
- Suitable for abrasive materials
- Customizable purging options

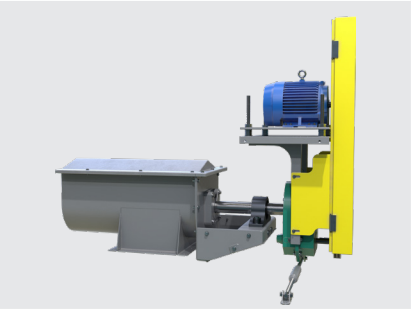
TYPICAL DRIVE ARRANGEMENTS

BENEFITS

SCREW CONVEYOR DRIVE

- Mounts on trough end, directly connected to conveyor screw
- Integral thrust bearing, seal gland, and drive shaft
- Motor mount positions: top, either side, or below
- No separate drive shaft, end bearing, or seal needed

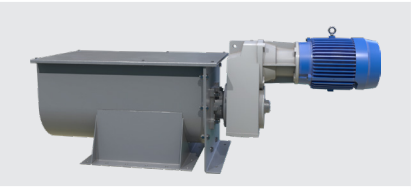
- Simplified installation
- Flexible motor positioning
- Reduced maintenance
- Enhanced reliability



SHAFT MOUNTED DRIVE

- Mounts on conveyor drive shaft
- Motor and V-belt drive can be positioned anywhere
- Torque arm fastens to floor or trough end
- Needs extended drive shaft, end bearing, and seal

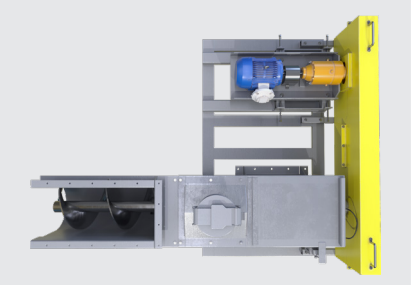
- Flexible positioning
- Secure mounting
- Customizable setup



GEARMOTOR DRIVE

- Motor bolted directly to reducer
- Compact size
- Can be screw conveyor drive or shaft mounted

- Space-saving design
- Versatile applications
- Simplified assembly



BASE TYPE REDUCER DRIVE

- Motor direct-coupled to reducer
- Chain drive to conveyor shaft
- Mounted on floor or platform near conveyor

- Adds mechanical failsafe
- Convenient access
- Stable and reliable

HANGER BEARING SELECTION GUIDE

BEARING MATERIAL	MAXIMUM OPERATING TEMPERATURE (°F)	STYLES AVAILABLE	MATERIAL FDA COMPLIANT	SELF LUBE	SOME SUGGESTED USES	COMMENTS
WOOD	160°	220, 216, 19B	–	Yes	Grain, Feed, Fertilizer	Good general purpose.
UHMW	225°	220, 216	Yes	Yes	Food	Material USDA approved. Does not swell in water.
MARTIN HARD IRON	500°	220	–	Yes	Chemical, Cement, Aggregate	Requires Hardened Shaft
CAST HARD IRON	500°	220, 216, 19B	–	–	Lime, Cement, Salt, Gypsum	Requires hardened shaft. Can be noisy. Lubrication required in some applications.
CERAMIC*	1,000°	220, 216	Yes	–	Chemical, Cement, Food	Requires hardened shafts.
STELLITE	1000°	220, 216	–	–	Chemical, Cement, Aggregate	Requires Stellite insert in shaft.
FOOD GRADE ENGINEERED NYLON	300°	220	Yes	Yes	Food, Grain, Fertilizer	For dry application.
NYLATRON GS	250°	220, 19B	–	Yes	Chemical, Handling, Grain, Feed	Very low load capacity.
MARTIN BRONZE	850°	220	–	Yes	Grain, Feed, Processing	High quality bearings. High load capacity.
MARTIN HDPE	200°	220	Yes	Yes	Grain, Feed, Chemical Handling	Recommended for non-abrasive applications
MARTIN URETHANE	200°	220	–	Yes	Grain, Chemical, Fertilizer	Good general purpose.
MARTIN WHITE IRON	500°	220	–	–	Chemical, Cement, Aggregate	Requires hardened shaft. Can be noisy. Lubrication required in some applications.
GATKE	400°	220, 216	–	–	Chemical	Fiberglass fabric. Good for higher speeds.
ERTALYTE®	200°	220, 216	Yes	–	Food	Registered Trademark of Quadrant Engineering Products
BALL BEARING	180°	60, 70	–	–	Non-abrasive applications	General purpose use.

* Higher temperature ceramics are available.

HANGER FRAMES

STYLE 226

- Flush mounted inside trough
- Friction type bearing

BENEFITS

- Dust-tight or weather-proof operation
- Minimum obstruction of material flow in high capacity conveyors

STYLE 216

- Heavy-duty applications
- Flush mounted inside trough
- Hard iron or bronze bearings typical

- Durable and robust for demanding environments
- High load capability

STYLE 220

- Mounted on top of trough flanges
- Friction type bearing

- Minimum obstruction of material flow in high capacity conveyors

STYLE 230

- Heavy-duty applications
- Mounted on top of trough flanges
- Hard iron or bronze bearings typical

- Robust and reliable for demanding conditions

STYLE 316

- Heavy-duty use in conveyors with thermal expansion
- Hard iron or bronze bearings (other bearings available)

- Allows for unequal expansion between screw and conveyor trough

STYLE 60

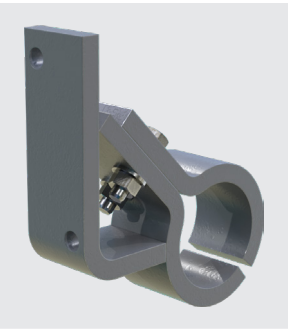
- Heavy-duty, permanently lubricated and sealed self-aligning ball bearing
- Mounted on top of trough flanges
- Supports temperatures up to 245° F
- Allows up to 4° shaft misalignment
- Grease fitting available

- High durability and heat resistance
- Self-aligning for better performance

STYLE 70

- Heavy-duty, permanently lubricated and sealed self-aligning ball bearing
- Mounted inside trough
- Supports temperatures up to 245° F
- Allows up to 4° shaft misalignment
- Grease fitting available

- Enhanced durability and heat resistance
- Self-aligning for improved functionality



STYLE 30

- Side mounted within conveyor trough on the non-carrying side
- Friction type bearing

- Minimum obstruction of material flow

AIR-PURGED HANGER

- Designed for dusty and abrasive materials
- Available for 9"-24" conveyors
- Not for hot materials (over 250° F) or wet sticky materials
- Requires 3 to 7 cu. ft. of air per minute
- Air enters at top, passes over and around bearing

- Reduces shutdowns and bearing failures
- Provides trouble-free operation
- Low coefficient of friction reduces power requirements
- Protects bearing from dust and material in trough
- Helps solve noise nuisance problems

NOMENCLATURE

Conveyor Screw

16 S 6 16 - R

Flight Hand
R Right L Left

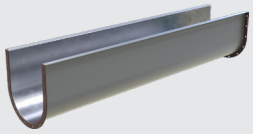
Flight Thickness
04 1/16 08 1/8 12 3/16 16 1/4 32 1/2
06 3/32 10 5/32 14 7/32 24 3/8

Coupling Diameter
2 1" 4 2" 6 3" 8 3 15/16" 10 4 15/16"
3 1 1/2" 5 2 7/16" 7 3 7/16" 9 4 7/16"

Screw Type
H Helicoid R Ribbon HQ Quick Detachable Helicoid
S Sectional SQ Quick Detachable Sectional

Conveyor Diameter

Conveyor Trough



16 CTF 3 - 12

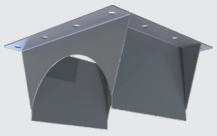
Length of Trough

Trough Thickness
16 16 GA. 12 12 GA. 7 3/16"
14 14 GA. 10 10 GA. 3 1/4"

Housing Configuration
CTA Angle Flange U-Trough CHT Tubular
CTF Formed Flange U-Trough CHT-F Tubular Split Formed Flange
FCT Flared Trough CHT-A Tubular Split Angle Flange

Conveyor Diameter

Discharges & Gates



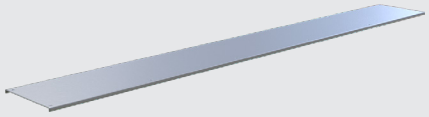
16 TSD 7

Sprout Thickness
16 16 GA. 12 12 GA. 7 3/16"
14 14 GA. 10 10 GA. 3 1/4"

Type
TSD Plain Fixed Spout RPC Rack & Pinion Curved Slide
TSDS Plain Fixed Spout w/Slide RPCD Rack & Pinion Curved Slide Dust Tight
TSDF Flush End Spout PF Pneumatic Flat Slide
RPF Rack & Pinion Flat Slide PC Pneumatic Curved Slide
RPFD Rack & Pinion Flat Slide Dust Tight

Conveyor Diameter

Trough Cover



16 TCF 14 - 12

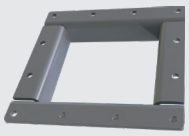
Length of Cover

Cover Thickness
16 16 GA. 14 14 GA. 12 12 GA. 10 10 GA.

Type
TCP Plain TCF Flanged TSC Shroud
TCS Semi-Flanged TCH Hip Roof

Conveyor Diameter

Cover Inlet



16 CI F

Type
F Fixed D Detachable

Cover Inlet

Conveyor Diameter

Trough End

16 TEF 6 - BB - P

Plate Only
(Less Bearing)

Bearing Type
BB Ball RB Roller

Coupling Diameter
2 1" 4 2" 6 3" 8 3 15/16" 10 4 15/16"
3 1 1/2" 5 2 7/16" 7 3 7/16" 9 4 7/16"

Trough End Type
TE Outside FTE Outside Flared
TEF Outside with Feet FTEO Single Bearing Flared Pedestal
TEI Inside FTDO Flared Discharge End
TER Inside Rectangular TDO Outside Discharge End
TEO Single Bearing Pedestal TDI Inside Discharge End
TEOD Double Bearing Pedestal CHTE Outside Tubular
FTEF Outside Flared with Feet CHTEF Outside Tubular with Feet

Conveyor Diameter

End Bearing

TEB 6 BB

Bearing or Shaft Type
(Doesn't apply for TEBH & CTW)
R Roller **BR** Bronze **E** End
D Drive **BB** Ball

Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Bearing Style
TEB Flanged
TDB Discharge
TPB Pillow Block
TEBH Trough End Bearing Housing for Hanger Bearing
CTW Weather Set Thrust Style B
CTH Heavy-Duty RB End Thrust
CT Type E Thrust Hanger Bearing

End Seal

PGC 6

Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Seal Style
CSS Split Gland
PGC Packing Gland
CSW Waste Pack with Lip Seal
CSP Plate Seal with Lip Seal
CSFP Product Drop Out
MSP-SD Martin Super Pack Standard-Duty
MSP-HD Martin Super Pack Heavy-Duty

Hanger Frame

16 CH 220 6 - O

Oil Pipe Assembly

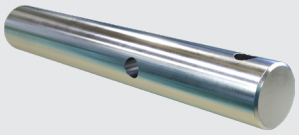
Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Hanger Style
220, 226, 216, 230, 316, 19B, 18B, 326, 30, 216F, 60, 70
APH Air-Purged

Conveyor Hanger

Conveyor Diameter

Shafts



Coupling Shaft and Components

CC 6 - 3 - H

Special
H Hardened **ST** Stellite
HC Tungsten Carbide Coated

Add "3" if 3 Bolt Drilled

Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Coupling Part
CCB Coupling Bolts
CIC Internal Collar
CC Coupling Shaft Std.
CCC Close Coupling Shaft
CHE Hanger End Shaft

Drive & End Shaft

1 CD 6 BB - W

Seal Type *(Delete if without seal)*
P Plate **W** Waste Pack

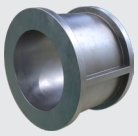
Bearing Type
BB Ball **RB** Roller

Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Type
CD Drive Shaft **CE** End Shaft

Drive Shaft Number *(Drive Shaft Only)*
1 Standard End Plate **2** Single Bearing Pedestal **3** Double Bearing Pedestal

Hanger Bearing



CHB 220 6 MHI - O

Oil Pipe Assembly

Construction
ST Stellite
MHI Martin Hard Iron
N Nylatron
P HDPE
WN White Nylon
H Cast Hard Iron
W Wood
BR Bronze
U UHMW
MBR Martin Bronze
C Ceramic

Coupling Diameter
2 1" **4** 2" **6** 3" **8** 3 15/16" **10** 4 15/16"
3 1 1/2" **5** 2 7/16" **7** 3 7/16" **9** 4 7/16"

Style
18B*, 60, 216, 220
** Wood, Cast Hard Iron, Nylatron & Gatke: Ball Bearing Only*

Conveyor Hanger Bearing

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