

Apron Feeders





Apron Feeder extracting coal from a hopper on a floating barge to feed a major power plant.



Apron Feeder extracting copper ore from a truck dump hopper to a gyratory crusher.

Over a Century of Expertise

Backed by over 140 years of experience and expertise, Metso Apron Feeders set the world standard in quality, durability, and reliability.

Metso has been designing and building apron feeders for more than a century. In that time, we have continually driven performance and innovation, including introduction of the first crawler tractor type apron feeder. This rugged and reliable design remains the preferred choice of materials handling and processing industries around the world.

“Tractor chain” style apron feeders have dominated the market in industries where users require a feeder that can extract materials of varying characteristics. This would include different sizes and consistencies – everything from dry and abrasive to wet, sticky and difficult-to-handle material.

They are also the preferred type of feeder for many minerals processing applications including gold, copper, and bauxite mines. With more mines and plants running around the clock, operators are opting for new and retrofit equipment that is more reliable and requires less maintenance. This approach has also expanded to other bulk materials handling industries such as coal mines, power plants, rock quarries and cement.

“Tractor/dozer chain” style feeders are the preferred design and set the standard for an almost maintenance-free feeder. The Metso Apron Feeder utilizes tractor-type undercarriage chain, rollers and tall wheels that are also used on bulldozers and excavators. All crawler tractor components are ‘sealed for life lubricated’ and thus do not require regular lubrication. This provides the feeder and end user with many years of reliable, trouble-free operation.



Metso manufactures Apron Feeders of various size, tonnage and drive configurations to meet the specific application and customer requirements.

Guards and main drive not shown for clarity.



Truck dump hoppers utilize the Metso Apron Feeders to withdraw rock and ore at a controlled rate of speed to feed other equipment such as all types of crushers, vibrating grizzlies, wobbler feeders or conveyors.



Apron Feeder installed under a crushed copper ore stockpile.



Apron Feeder at a major cement producer extracting clay from a storage bin.

Designed to Suit the Most Important Application... Yours.

Benefits of the Metso Apron Feeder put it in a class by itself. Metso offers a robust design with an intense commitment to quality and attention to detail. The main benefit to the end user is ruggedness and dependability for heavy-duty operations. The bottom line: reduced downtime and lower overall cost.

When your application calls for an apron feeder that offers many years of trouble-free operation, contact Metso. Skilled technical specialists will help you choose the best feeder and accessories to suit your needs, then assist in planning your installation. Years of low-maintenance, dependable service await.

Ideally suited for feeding large, lumpy, abrasive and heavy materials during wet, sticky or frozen operations, Metso apron feeders work well across a wide variety of applications:

- Feeding to and withdrawing from primary crushers
- Loading/unloading trucks and railcars
- Removing frozen materials from storage
- Feeding jaw crushers and belt conveyors
- High-abrasion applications frequently found in reclaim circuits

Metso apron feeders should not be mistaken for “pan or belt feeders” that are typically used in light duty operations not requiring the benefits of a true crawler tractor-type feeder. The Metso feeder is offered in various models, and in an infinite range of lengths to meet most any tonnage requirements. The design is based on parts for the world’s most popular crawler tractor. Because the parts are interchangeable, the volume of parts kept in stock may be reduced. Also, parts are readily available at a relatively low cost.



Metso standard apron feeders are engineered as a robust design and manufactured with attention to details and quality.



Overhead view showing an apron feeder installation under a raw mix bin at a major cement plant.



Head Drive Shaft

The head shaft bearing and sprockets are mounted on a heavy-duty, machine drive shaft. Shaft sizes are manufactured from hot-rolled or forged steel and range from 5.5" (140 mm) to 17" (430 mm) diameter, depending on power requirements.

Anti-Friction Bearings

The head shaft is mounted on large, double-row, self-aligning spherical roller bearings. These bearings are selected to provide extremely long life to minimize maintenance requirements and downtime. All shaft bearings have been designed for a minimum of 100,000 hours of B-10 life. Bearings are grease-lubricated and grease reservoirs are included in the design of the bearing housing and end caps. The bearings are in cast steel bearing housings and fitted with either standard labyrinth seals for normal environments, or dual flushable (taconite duty) seals for use in extreme conditions. Positive positioning of the head shaft bearings is ensured by stop blocks welded to the main frame.

Drive Sprockets

The sprockets, which drive the chain, are bolted to the hub with high tension steel bolts. The sprockets are segmented, cast manganese alloy steel, machined and jig-driven for proper mounting alignment. The segments are reversible and designed for easy removal. A half tooth design with an odd number of teeth are used to allow contact with the chain during every second revolution, thus doubling the life of the sprockets.

Tail Traction Wheel

A "shaftless tail traction wheel" assembly is standard on all Metso apron feeders. This feature does not utilize a shaft or pillow block bearings. The tail wheels are "sealed for life" and do not require regular lubrication. The hardened rim face of the tail wheel makes contact with the bottom surface of the tractor chain and not the pin bushing, and thus does not prematurely wear the chain.

Carrying and Return Rollers

Metso apron feeders are equipped with standard tractor-type carrying and return rollers to support the deck during operation. Both types of rollers are designed and manufactured for long wear and maintenance-free service. They also feature lifetime lubricated, fully-sealed bearings.

Carrying rollers are heat-treated, forged alloy steel and have a hardened, ground shaft that is fitted with a center thrust shoulder. They are closely spaced down the length of the feeder to ensure ample support and smooth travel of the deck during operation.

Return rollers support the deck on its return travel. The rollers are mounted in a fabricated steel bracket which is bolted to the web of the main support beam. They are equipped with bearings and are lifetime lubricated. The return roller assembly can be easily removed through a hole in the web of the frame beam.

Pans (Flights)

A variety of pan designs are offered to match different working conditions. Metso will help you choose the optimum pan for your particular application.

Manganese Pans are used for maximum resistance to high impact loading and for abrasive operations. The pans are cast from high quality austenitic manganese steel with stiffened underside for additional strength. A longitudinal center rib provides close tolerance to impact rail(s) under the deck, thereby preventing excessive deflections. During continuous impact applications, manganese pans can be work hardened to achieve a hardness of over 500 Brinell.

Fabricated/Formed Steel Pans are used in applications where extreme impact is not a factor. On widths that utilize an impact rail, an abrasive-resistant wear plate is furnished on the underside of the pan. Fabricated flights are offered on models AF4, AF5, and AF10.

All pans are bolted directly to the chain, eliminating the need for special attachment to the links. High-tensile grade bolts and hardware are used to secure the pans to the links.

Pans feature an overlapping design and provide the tightest possible seal and leak resistance on the top carry side and as the pans articulate around the terminal ends.

Flights are protected at the loading point by an impact rail under the pans.

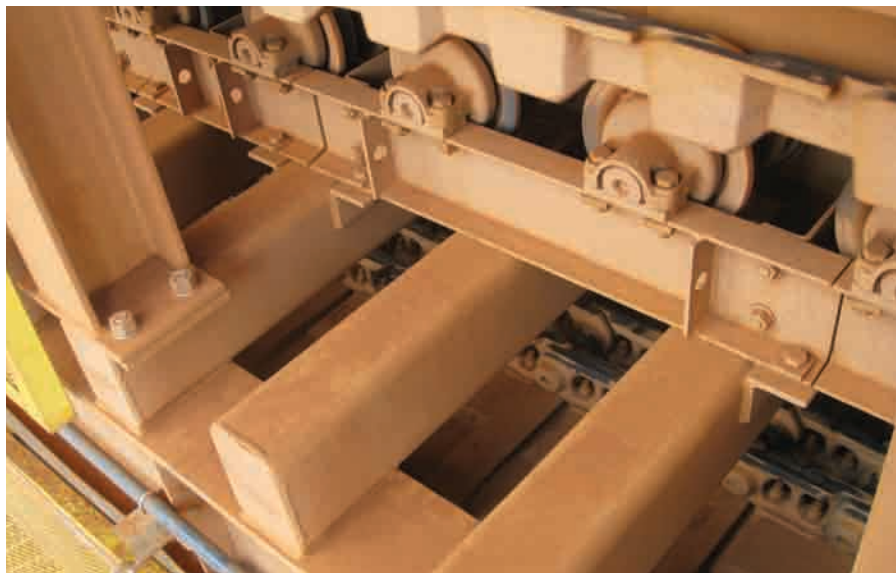


Impact Rail

Impact rails are used to prevent permanent deformation of the pans during severe impact loading, yet provide ample clearance to prevent pans from dragging. Two impact rails are typically used on feeders 60" (1524 mm) and wider that have direct impacting. (Note: no impact rails furnished with 24" and 30" widths).

Heavy-Duty Chain

Crawler tractor-type chain is used on all models of Metso apron feeders. This chain features hardened links, pins and bushings, all made from heat-treated alloy steel. The chain links are drop-forged for greater weight carrying capacity and strength. Chain seals prevent entry of abrasive foreign materials and prolong chain life. Apron feeders are available in either sealed or sealed and lubricated track



S.A.L.T. chain. Artic duty chain and rollers are used for extreme cold weather applications. Final chain type will be determined by Metso for each application. In either case, the chain bushing is shouldered into the outer link to provide the tightest possible seal between the bushing and the pin. Therefore, abrasives cannot get in to cause internal wear of the pins and bushings. The possibility of damage and costly downtime is reduced.

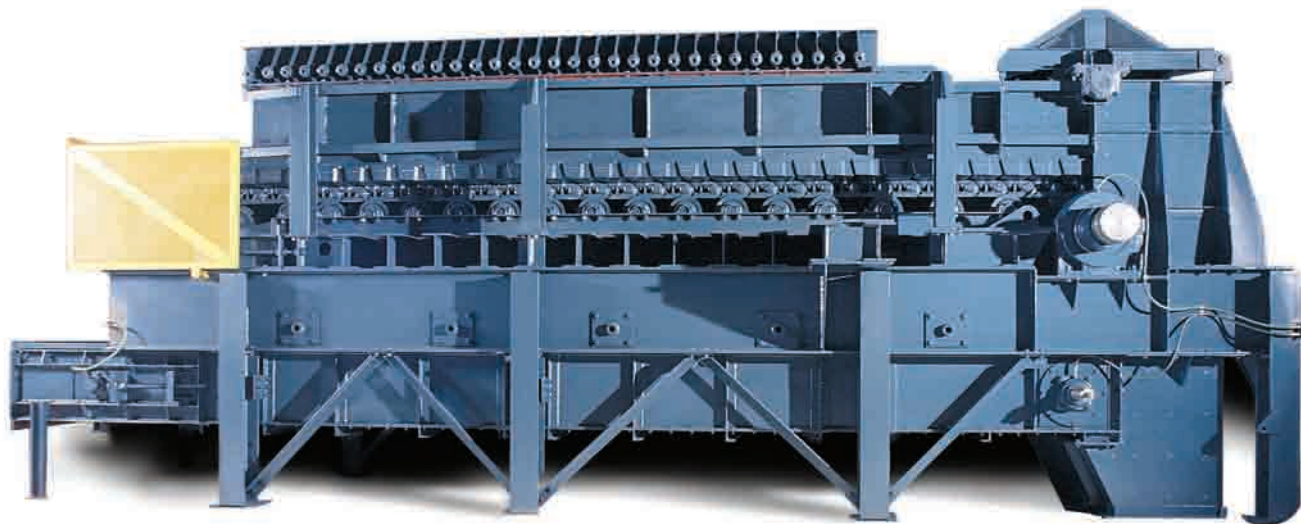
Chain Take-Up

Chain take-up and adjustment is accomplished by a threaded rod extended from each side of the take-up frame. This provides for convenient, positive adjustment and helps maintain tail take-up tensions. Hydraulic type take-up can be provided if desired.

Heavy-Duty Frame

Robust heavy-duty welded construction frame consists of main frame beams and cross members which provide rigid support for carry rollers. Roller modules are available on request to allow the rollers to be removed without disassembly of pans, chain, and skirts.

- Lifting lugs are standard on all Metso feeders
- Frame can be bolted construction to allow for installation in existing facilities
- Metso standard paint provided on all models



Metso apron feeder supplied with many accessories. Feeder shown without drive or guards for clarity.



Rugged Apron Feeder Accessories... For Your Specific Application Needs

A complete line of Metso Apron Feeder accessories and auxiliary equipment makes your feeder adaptable to nearly any application. Metso custom-designs and manufactures durable accessories to last the life of your feeder while requiring minimal maintenance or added costs.

Drive Units

A wide range of drive unit options is offered to meet nearly any requirement. Available units include constant speed electric, variable speed AC or variable speed hydraulic drives.

Dribble Drag/Belt Conveyors

When required for cleanup, feeders can be equipped with either drag scrapers or dribble belts.

Skirts and Discharge Chutes

Metso feeders can be equipped with skirts and discharge chutes to accommodate feeder requirements. Skirts and chutes are manufactured out of structural steel plate, rigidly stiffened with structural supports that bolt to the feeder frame. Welded or bolted skirt/chute liners of various materials are supplied for maximum wear. Dust covers and shear bar/gates can also be supplied to complete your package. Rear and side nip safety guards can be furnished (optional supply) if skirt boards are included.

Lump Breakers

Lump breakers/cutters are utilized to break up wet, sticky, clay-like lumps prior to discharging off the head terminal end. They are commonly used in the cement industry to increase flowability where material is blended or wetted downstream. (Note: lump breakers are not designed for crushing rock or hard materials.)

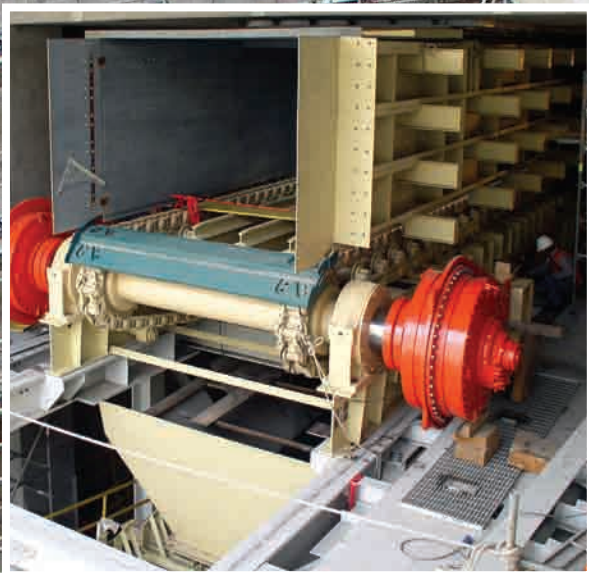
Lubrication, Safety and Instrumentation

- Optional speed transmitter allows operator to monitor feeder operating conditions from a remote location.
- All necessary drive guards are offered. Special requirements can be accommodated pending feeder location and safety code requirements.
- The Metso feeder is designed as a nearly 100% self-lubricated unit. Special manual or automatic centralized systems can be furnished upon request.

Spare Parts and Service

Metso stocks many original spare parts and offers on-site services for all Metso feeder equipment.





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INGRESO PROHIBIDO
SOLLO PERSONAL
AUTORIZADO.

PELIGRO
ALTA TENSION

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USAR ZAPATOS
DESEGURADOS
EN ESTA AREA



Expect results

It is our promise
to our customers and
the essence of our strategy.

It is the attitude
we share globally;
our business is to deliver
results to our customers,
to help them reach
their goals.

