Apron Feeders
Parts, refurbishments and engineered upgrades

Improved equipment availability for higher production
With Metso’s deep equipment knowledge, coupled with access to original design specifications and specialized parts – older apron feeders can be refurbished back to their original capabilities.
Meeting your aims
You aim for increased production, higher equipment availability and better reliability. Metso’s apron feeder parts, upgrades, repairs and refurbishments can help you to achieve these aims with smoother operations.

Overcoming your challenges
Many mines and quarries struggle with the limitations of older apron feeders and have to worry about potential breakages, which can impact throughput or even risk a catastrophic breakdown in production.

Unplanned downtime due to excessive repairs can keep your operations running at half speed or worse. Sourcing hard to find obsolete spares and maintaining an adequate stock of parts for different models and brands of apron feeders can also make it difficult to keep up with the maintenance demands of older machines.

Metso can help you understand which parts on your apron feeders are worn down, close to failing, or need immediate replacement. We can also make recommendations on upgrade and refurbishment options to get your machines back up and running as they were designed.

Metso strives to understand your aims and challenges
As your OEM expert, Metso offers the right support, service and top quality equipment and components. Through our heritage trademarks, we have over 100 years of equipment experience. Metso is the sole owner of the original drawings and product specifications to previously sold OEM brands such as Stephens Adamson, NICO and Svedala.

Metso at your service, assists you with:
- Deep equipment knowledge built on machine experience, operational best practices, experience from hundreds of installations and configurations
- Shared objectives – Responsibility for quality and support as agreed
- Cost clarity for business planning and fast payback
- A network of experts, the correct tools and parts with exact specifications

Built tough, repaired and refurbished to excel
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Benefits for your production:
- Minimized downtime
- Improved production efficiency
- Simplified maintenance requirements
- Lower maintenance and parts costs
- Less inventory needed on the shelf
- Minimized risk of failure
- Increased safety
More than just a repair company

Detailed drawings and accurate information on original specifications for your apron feeders make the big difference in guaranteeing proper design and fit of spare parts. With additional capabilities for 3rd party equipment, Metso brings technical and machine know-how together with high-quality components and service to safeguard your machines and maximize the life of your equipment.

**Spare and wear parts**
All Metso replacement parts are OEM and designed to meet the precise specifications of the components of your feeders. Original equipment replacement parts ensure proper fit and function and include certified replacement parts across our entire range of products. Our global sourcing also helps make sure you get quality parts that are cost-effective and available when you need them. With Metso products you can count on:

- Increased availability
- Improved reliability
- Reduced maintenance issues
- Maximized safety

Learn more at: [metso.com/services/spare-wear-parts-for-bulk-handling-equipment](http://metso.com/services/spare-wear-parts-for-bulk-handling-equipment)
## Apron feeder major components

*Designed to fit your needs*

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Accessories (safety guards, speed switches, etc.)

Main drive and complete guarding system not shown for clarity.
Upgrades and refurbishments

Metso can offer cost-effective components and parts to repair, modernize and upgrade your machine, bringing it back to its original capabilities. Enjoy a fast payback, simplified maintenance and spare part requirements, as well as boosted availability and performance.
Main drive and head shaft assembly

Drive system and head shaft assembly upgrades are a key upgrade opportunity for older apron feeder models. The apron feeder is a high-torque low-speed application, and older models use multiple reducers, chain and sprocket sets, open gearing, countershafts, etc., to achieve the necessary mechanical advantage. With so many moving parts, spare parts inventory requirements are high and need constant lubrication and care. Older parts can often become obsolete and difficult to source.

Metso’s current drive design minimizes the number of parts by utilizing a single, compact multi-stage planetary reducer to drive the head shaft. With spare parts readily available, the customer no longer needs to rely on makeshift solutions to replace obsolete parts.

The new design does not require mounting to the customer’s floor steel, since the reducer is mounted directly to the head shaft by a locking device connection and torque arm that connects to the feeder frame.

As part of the upgrade, the head shaft assembly including the bearings will be upgraded. Along with simply modernizing the drive system for the same capacity, Metso can also convert hydraulic drives to electromechanical (and vice versa) as well as upgrade drives for additional throughput.

Benefits of main drive upgrade:
- Lower maintenance, encapsulated systems require less lubrication
- Less spare parts inventory
- Potential gains in throughput
- Lower lifecycle costs through improved reliability
- Reduced footprint by removing large outdated components
- Reduced impact on environment, reduced energy use

Discover more from the following links:

- metso.com/services/field-services/engineered-upgrades
- metso.com/services/apron-feeder-parts-and-refurbishments

Our competent and committed professionals ensure the highest level of service, based on global standards and proven practices
Parts that perform
Additional upgrades and refurbishments

Head shaft bearings

Improved availability with longer life

Older head shaft bearings can come out of alignment as they experience wear, causing stress on the machine. Head shaft bearings are often included when the drive and shaft assembly are refurbished. Upgraded head shafts are mounted on large, double-row, self-aligning spherical roller bearings, selected to provide long-life to minimize maintenance requirements and downtime. The bearings are mounted in cast steel housings and fitted with dual purgeable (Taconite-type) seals for use in extreme conditions. These upgrades can help push the expected bearing life up to 100,000 hours, depending on site conditions, nearly double that of older models.

Drive sprockets

Minimized downtime with faster changeouts

Older drive sprockets consisted of a single piece design that is difficult to change out, resulting in excessive downtime. Metso’s upgraded drive sprocket design features three cast manganese alloy steel segments that allow replacement of one segment at a time, without needing to dismantle the feeder or remove the chain, pans, skirts and material on the feeder.

Rather than taking multiple shifts to change out the drive sprockets, the upgraded design allows a changeout in just hours. In addition, a half-tooth design with an odd number of teeth is used to allow contact with the chain during every second revolution, which doubles the life of the sprockets.

Tail wheel assembly

Shaftless design for easier maintenance

Many existing and older apron feeders are challenging to service, need regular lubrication and often involve the manipulation of large and cumbersome shafts during changeouts. Metso can provide an upgrade to the tail wheel assembly that does not require a shaft or outboard pillow block bearings to lubricate. The new ‘shaftless’ modular design features a tail wheel that rides/wears on the bottom of the chain so there is no contact between the bushing of the chain and tail wheel. Besides eliminating the tail shaft and bearings, the tail wheel assembly does not require regular lubrication since the wheel is ‘sealed-for-life’ lubricated.
Manganese pans*

Cast steel pans often experience severe wear during day-to-day operation, becoming thin or even flexing, which can cause lengthy downtime to service. Metso can upgrade pans to cast manganese pans, which can be ‘work hardened’ to achieve up to 500 Brinell, perfect for high-impact loading and abrasive operations. The pans are cast from high-quality austenitic manganese steel with a stiffened underside for additional strength. A longitudinal center rib provides close tolerance to impact rail(s) under the deck, thereby preventing excessive deflections.

*It is strongly recommended to also replace the impact rail(s) when changing the pans, to ensure proper clearance between the pans and the rails.

Chain

Chains on older model feeders can often become contaminated with dirt or experience lubrication issues leading to premature wear. Upgrades can be made utilizing a SALT (Sealed And Lubricated Track) chain, which features a better seal system, oil lubrication and more flexible links for less power consumption.

Top carry rollers and support modules

When servicing the top carry rollers of older apron feeders, replacing the complete assembly can be a challenge. Metso offers an upgrade, featuring heat-treated, forged alloy steel top carry rollers that are hardened for long rim-wear. These also feature a modular design, which allows the rollers to be easily removed without having to remove material from the feeder or lift the chain from the rollers. The rollers are sealed and lubricated for life with high load carrying capacity bearings that ensure trouble-free service.

Parts that perform

Additional upgrades and refurbishments
Underneath older apron feeders, fine material often builds up under the machine, requiring the equipment to be occasionally shut down for removal. Metso can furnish a dribble belt or dribble drag conveyor to collect the fine material that sticks to the pans and would drop off on to the return strand. These conveyors are of low profile and operate on a separate reducer/motor. The dribble belt minimizes time lost to shutting down a feeder to remove the excess fine material that tends to accumulate.

Apron feeders can often be found in tight quarters, which can present safety issues and pinch points for staff working with the machines. Metso offers a variety of safety solutions that help keep your personnel safe. Safety guards can be installed that help restrict personnel from entering into contact with moving parts of the feeder and are engineered to meet the local safety and customer requirements.

Removable tail guards can also be retrofitted to older feeders, as well as removable side nip guards, which help to reduce safety incidents. Drive guards are also provided with all new upgrades. Emergency pull cord switches can offer peace of mind, allowing quick stoppage of the feeder in emergency situations.

Return rollers
Dribble conveyor
Safety accessories

Metso can provide an upgrade to the return rollers to a ‘sealed-for-life’ lubricated track style roller and thus eliminate any long shaft, wheels and outboard pillow block bearings that were used for many years on older feeders. Reduced parts make service easier overall and reduces the number of spare parts needed for inventory.

Simplified parts requirements
Minimized downtime from shutdowns
Improved safety

Parts that perform
Additional upgrades and refurbishments

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More than a century of customer collaboration

In addition to parts and refurbishments for your apron feeders and bulk handling equipment, Metso also offers other services that help you get the most out of your machines.

**Life Cycle Services**
Life Cycle Services (LCS) take the entire range of Metso services and conveniently bundles them into customizable, easily manageable packages, ranging from the basics to more complete solutions, depending on the scale of your needs. Packages are equipped to cover single-event equipment shutdowns or span multiple years, measured against strict KPIs.

[metso.com/services/life-cycle-services-for-mining](metso.com/services/life-cycle-services-for-mining)

**Field services**
Metso offers a comprehensive set of field services to help meet your maintenance, repair, installation and refurbishment needs. Each service is fully customizable to your exact requirements. Our highly specialized services cover all Metso and 3rd party bulk material handling, crushing, screening, conveying, grinding, mineral separation and pyro processing equipment.

[metso.com/services/field-services](metso.com/services/field-services)

**Inspections and equipment audits**
Regular inspections help prevent unplanned mechanical and electrical failures from having a direct effect on your apron feeder’s availability and productivity. Metso also offers other services that help you get the most out of your machines.

- **Certified global service team**
- **Expert assessment and recommendations**
- **Minimized downtime**

[metso.com/services/field-services/diagnostic-services2](metso.com/services/field-services/diagnostic-services2)

**Repair and maintenance services**
Metso’s service experts provide regular and corrective maintenance services, as well as preventive maintenance options. Repair services are available both on-site and at our global repair centers, depending upon the scope of work required. Our repair facility network offers an extensive range of services stretching from straightforward parts replacement to complete equipment reconditioning.

- **Global network of service centers**
- **Skilled and certified technicians**
- **Cutting-edge technology and tools**
- **Safe and consistent service standards**

[metso.com/services/field-services/repairs-and-refurbishment](metso.com/services/field-services/repairs-and-refurbishment)

**Training**
Metso offers training programs based on expert knowledge of equipment and maintenance procedures. Training programs include online e-training, hands-on modules, specialized courses on bulk handling, crushing, grinding and screening equipment, along with safety and maintenance training in accordance with global best practices.

- **Improved employee motivation**
- **Full utilization of equipment features**
- **Maximized productivity**
- **Safer operation**

[metso.com/services/field-services](metso.com/services/field-services)
Customer success cases

20% increase in production capacity

**Background**
- Canada-based Kinross Gold Corporation established in 1993
- In focus: Gold mine in Paracatu, Minas Gerais, Brazil, established 1987
- Upgrade apron feeder in the crushing sector that takes in the ROM and feeds the crusher
- Replace the pans and the other parts as quickly as possible with as little disturbance as possible to mine’s production
- Goals to optimize production and capacity

**Our solution**
- Improvements to apron feeders using Metso technology
- Tailored replacement operation using taller lifting bars and an optimized profile
- Thicker sidewalls of the pans for better pressure distribution on the roller surface
- A new return roller made of wear-resistant material to help offer a longer service life
- Work carried out in-house with technical assistance and supervision by Metso experts

**Results**
- 20% increase in feed capacity
- Higher productivity throughout the unit due to higher equipment availability
- Optimization of processes (in 2008) helped triple gold production
- Minimized downtime from streamlined repairs
Complete feeder upgrade to current design standards

Mine was experiencing high downtime due to unplanned maintenance and hard to source parts. Steel pans were experiencing heavy wear, older style drive system had multiple hard-to-source parts and roller modules were difficult to access during maintenance.

Our solution
• New head shaft assembly with modified frame and wear-resistant cast manganese pans and impact rails
• Modular top rollers for easier servicing
• New tractor-type return rollers and ‘shaftless’ tail wheel for easier service handling

Results
• Lowered maintenance, improved reliability and optimized spare parts

Battling wear with upgraded components

A mine in Mexico was experiencing heavy wear on the chains of its multiple apron feeders. The wear was a result of older style tail wheel assemblies on the feeders.

Our solution
• Efficient replacement of older style tail wheel assemblies
• Upgraded with newer shaftless assemblies

Results
• Significant downtime avoided by having less wear on the chains
• Service times reduced due to ease of doing maintenance on shaftless wheel assembly
The Metso Way – Making the big difference to our customers

Everything we do is based on deep industry knowledge and expertise that makes the big difference to our customers. Decades of close customer collaboration and adapting to our customers’ ever changing needs have transformed us into a knowledge company.
Through our knowledge and experience, we work with our mining and aggregates customers to create solutions that enable them to attain their objectives. We call this The Metso Way, which focuses on creating value to our customers.

The Metso Way is built upon:

**Knowledge –**

Our service technicians bring expert know-how, safe practices and follow the manufacturer’s defined maintenance procedures for every repair. In addition to skilled engineering and best practices, our experts also have unique access to original drawings and specifications.

**People –**

Our global presence has given us the opportunity to grow with our customers around the world and has given us the advantage of learning from a wide variety of operational situations. With more than 1,500 field service experts and more than 40 service centers and factory hubs worldwide, Metso is there when you need support.

**Solutions –**

We have the ability to bring together parts, engineering expertise as well as inventory management to help you meet your specific goals. Whether it is improving your equipment’s reliability through selected upgrades or inspecting and recommending the right parts to keep on your shelf, Metso has a solution for your needs.