# Apron feeders

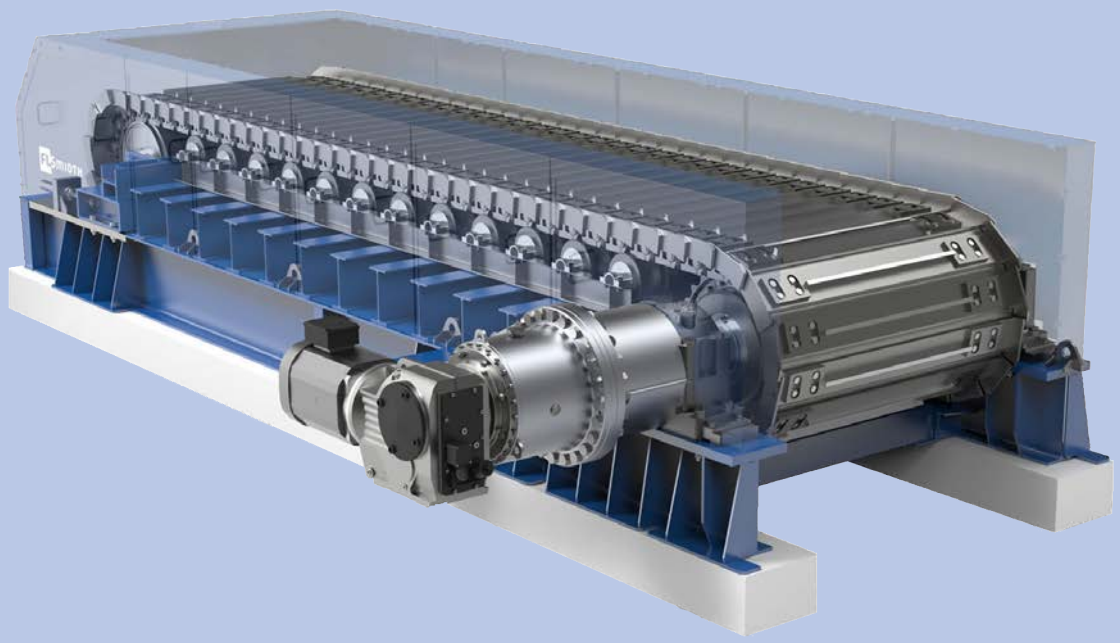
Designed with flexibility to meet your requirements

Mission Zero Towards zero emissions by 2030

FLS

# Moving materials forward

Our apron feeders bring you the highest quality along with an unmatched adaptability to your plant layout, which ensures you ease of maintenance and significant cost-savings. FLS apron feeders are able to handle the highest throughput rates and has been specially designed for crusher and silo discharge.



## Key benefits

- High throughput and variability
- High reliability
- Reduced spare parts and lower maintenance
- Controlled feed with low risk of blockages

# Importance of well-engineered apron feeder design

Our apron feeders offer the ultimate in performance, reliability and cost-effectiveness. We'll partner with you to deliver the optimum, customised solution for even the most demanding of jobs.

When you call on our services, you can count on a wealth of experience and a constant drive for innovation. As a leading manufacturer of machines and plants for the mining industriy, we supply well-engineered apron feeders that have stood the test of time in the hardest service conditions. At the same time, we invest in intensive research and development work to make proven solutions even better and to adapt to changing demands.

Whether you need a standard or bespoke design, wecan provide the optimum solution. We act on your specific requirements and adapt our systems to suit the material and the ambient conditions, optimising proven technology to your specifications. The benefits of our systems are numerous: high throughput coupled with low costs, minimum maintenance, simple operation and maximum reliability.

**Reference to a copper mine in Indonesia**
The primary apron feeder (below) is installed in one of the largest copper mines in the world. This large apron feeder is used to feed one of the four supplied FLS gyratory crusher KB 63x89 S. The feeder is designed to remove 4,500 t/h at a bulk density of 1.7 t/m$^3$ from a large underground ore bin. The material bed thickness will be controlled by five large hydraulic fingers. The feeder can be hydraulically retracted for better maintenance of the gyratory crusher. This system also allows the adjustment of the material dropping point from the apron feeder into the crusher.

The design of the apron feeder and gyratory crushers is based on more than one hundred years experience in the manufacture of this equipment. Changing mining and processing methods demand a continual development of the products. FLS apron feeders and gyratory crushers are designed for high performance at low operating and maintenance costs. They represent today´s state-of-the-art.

# Design that has stood the test of time

Our apron feeders are used throughout the world to transport all kinds of raw materials in a wide range of fields.

Their sturdy design has stood the test of time even under the harshest conditions in applications to the mining industry. They are used to feed a range of crushers with lumps of 'run-of-the-mill' material up to 2 m in size or as dosing systems for downstream drying and/or grinding processes.

The largest apron feeders to date have dimensions of up to 3 m wide and 30 m long. Depending on the job to be done, apron feeders are equipped with lubed-for-life chains and rollers ranging in size from D4 to D11, ensuring a high degree of safety and a long service life.

Apron feeders are designed for conveying capacities of more than 14 000 tph and can be integrated into stationary, semi-mobile or mobile plants.

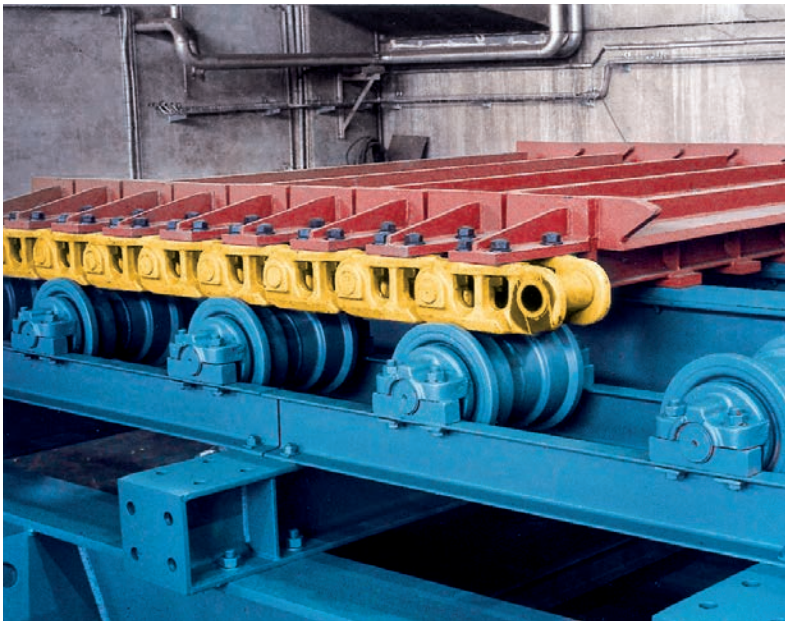
### Applications

- Open pit or underground mines
- Mobile, semi-mobile and stationary installation
- Hopper discharge, primary / secondary crushing stage (feed of crusher or scalping screen), discharge of crusher, discharge of crusher

### Features

- Our apron feeders can be installed horizontally or at an incline
- Angles of inclination of up to 26° are possible due to specially designed aprons
- A uniform bed depth of the material, ensuring a uniform material flow to the downstream components.
- Steep angle of inclination means compact plants can be built to reduce apron feeder lengths and capital costs

Apron feeder RKF 2.2 x 15.8 - D8 with inboard chain.



Apron feeder RKF 3.4 x 17.0 - D9 with outboard chain.

## Head end and take-up station

The drive shaft is journalled in heavy-duty, double-row spherical roller bearings and housings.

Arranged on this shaft there are cast sprockets that are divided into segments so that each element can be replaced without the need to dismantle the chain. Support rings for the slide shoes of the aprons are also mounted on this shaft to prevent deflection of the aprons and spillage at the discharge point.

The chain tension can be adjusted via tensioning spindles. In combination with the relocatable drive shaft, it ensures optimisation of the feeder discharge point, e.g. into the crusher.

## Drive systems

FLS apron feeders are equipped with either hydraulic or electric motors. All drives are designed to allow starting even under load.

Electromechanical drives consist of a planetary gear unit with a hollow shaft design and a three-phase motor. The speed of the apron feeder is controlled via a frequency converter, allowing the speed to be infinitely reduced to 25% of the nominal speed. With hydraulic drives, the speed can be infinitely varied between nominal speed and stop. This is achieved using either axial piston motors in combination with planetary gear units or directly using a Hägglunds hydraulic motor with no additional gearbox.

As all drives can be set accurately, it is possible to combine two or three apron feeders, thus allowing the material to be pre-homogenized.

Tail shaft of apron feeder RKF 3.0 x 8.3 - D10.

Dual electromechanical drive.

Hydraulic drive with Hägglunds motor.

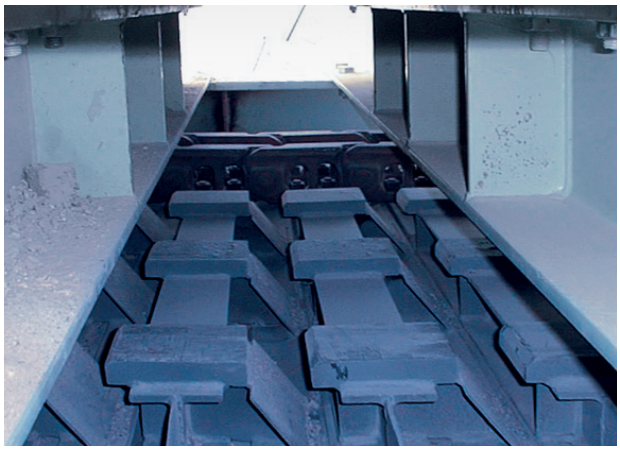
Hydraulic drive with axial piston motor.

# Apron feeder equipped with an impact table

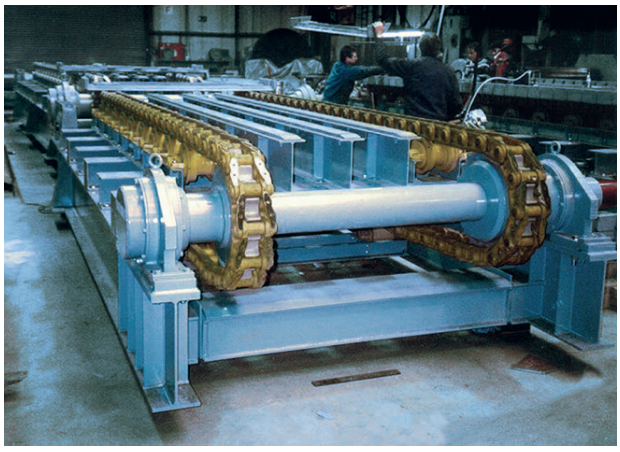
The hopper zone of is equipped with additional rollers and slide rails to ensure uniform load distribution on the main frame of the apron feeder. For additional protection of the supporting structure the apron feeders can be equipped with an impact table with heavy- duty shock absorbers.

The maintenance-free slide rails are made of special steel that allows the apron feeder to be operated without an additional lubrication system. This eco-friendly design avoids grease overflow, resulting in greater operational safety.

Our apron feeders are equipped with reinforced cast aprons in a welded design. In order to minimise the amount of spillage during operation, each apron comes with a special sealing lip. The thickness of the top plate can be tailored to the respective requirements.



Slide shoes of aprons.



Maintenance-free slide rails.

Cast aprons checked for surface cracks.

Reinforced aprons in a welded design.

# Services that back up your quality

We don’t just offer offer optimum, customised technical solutions. We also deliver comprehensive, tailored services ranging from the engineering of apron feeders to their operation and modification if needed.

If you have an apron feeder in operation, our maintenance and repair crews are on hand whenever you need us. From specialist advice, inspections and modifications, to modernisations, performance enhancement, damage analyses and repairs, which are performed exclusively by our highly qualified assembly personnel using high-quality, certified spare parts. Alternatively, you can opt to have your apron feeders maintained and repaired at our workshops. You can call on these services not only for apron feeders from our own production lines, but also for systems manufactured by other suppliers.

Increase the productivity of your machines and plants with help from our service teams.

## One-stop-shop service

- 360° engineering consulting
- Asset management
- Spare parts supply and management
- Service center and field services
- Revamps

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