

# KOMATSU



## Feeder-Breakers Product Overview



**Who we are:**

Since 1921, Komatsu has stood for unrivaled quality and reliability. Our enduring global success stems from the principles of our founder, Meitaro Takeuchi, who envisioned a sustainable future built through globalization, quality first, technology innovation and human resource development. These defining principles, along with an emphasis on safety and compliance, remain part of our Komatsu DNA. With each brand and company added to the Komatsu family, we expand our capabilities, leveraging our global teams to push beyond what can be done and create what can be imagined. We believe partnering directly with our stakeholders and being in the workplace (gemba) is the best way to gain insight into their challenges, win their trust and develop cutting-edge solutions.

**What we do:**

Komatsu is an indispensable partner to the mining, forestry, industrial and construction industries that maximizes value for customers through innovative solutions. With a full line of products supported by our advanced IoT technologies and global service network, we help customers safely and sustainably optimize their operations. Our **Komatsu, P&H, Joy and Montabert** equipment and services are used to extract fundamental minerals and develop modern infrastructure.



**Underground Feeder-Breaker**

Joy feeder-breakers, designed for low-to-high seam applications, provide high productivity and reliability in the most rigorous of conditions. Each feeder-breaker is designed to work as an integral part of your total mining operation. It allows mining, haulage and conveying systems to work at their most efficient rates to maximize mine production.

The basic elements of each feeder-breaker are similar in design, following decades of engineering design philosophies and field performance. Each machine begins with robust, all welded frame construction. The conveyor deck is hard surfaced with chromium carbide overlay adding long deck life to the unit. All flights and shafting are made from alloy steel, allowing for smaller sized components at a high tensile strength. Controls and components are located for safety, ease of troubleshooting and maintenance.

**Designed to increase your mining efficiency**

- Surge capacity allows the feeder-breaker to discharge mined material at the maximum capacity of the haulage equipment
- Material throughput is fully variable up to 2,000 TPH (1814 tonne)
- Powerful rotary pick breaker reduces mined material to a consistent, easily handled size
- Mined material is discharged at a steady rate, virtually eliminating spillage and reducing belt wear
- Available with optional Integrated Continuous Trimming (ICT) crawlers. The heavy-duty frame construction includes a planetary crawler drive with reversible cap for free wheeling capability



**Designed for maximum mobility and performance**

Each feeder-breaker has the same basic configuration - hopper, breaker, and conveyor. By varying these three aspects of the configuration, we can match our equipment with the application. We offer several options for increased mobility, lower ground pressure and improved traction in varying bottom conditions.

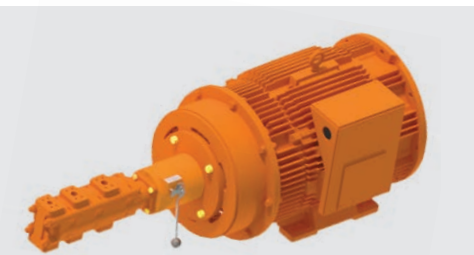
Intake ends are designed to meet customer preferred haulage means. Ram car, swing gate and three-way dump intake ends can be custom-designed to accept discharge from specific haulage equipment such as ram cars, scoops, shuttle cars and battery-powered haulers. Staked or hinged sideboards are also available at various heights for additional capacity.

The breaker shaft, components and drives on the UFB-14 and UFB-17 are designed to produce forces capable of fracturing material up to 33,000 PSI (220 MPa) unconfined compressive strength. Direct drive breaker and conveyor systems are both standard on UFB-14 and UFB-17 feeder-breakers. These designs reduce maintenance time and spare parts stock by eliminating drive chain, sprockets, and drive chain tensioning requirements. Both hydraulic and electro-mechanical conveyor drives are available on both models.

A “feedback” circuit enhances the performance of both hydraulic and mechanical conveyor drives. The “feedback” circuit monitors loads seen by the breaker shaft and automatically adjusts the conveyor speed to provide optimum operation and reduce potential overloads.

**Quick disconnect for hydraulic pump (optional equipment)**

Quick disconnect allows operators to easily disengage the hydraulic pump from the electric motor and idle hydraulics when the feeder-breaker is not tramping.



**Total control**

*The latest in VFD technology...*

Various material types and belt conveyor capacities require flexibility in the feeder-breaker discharge rate. The Optidrive AC variable frequency drive (VFD) system offers variable speed drive conveyor control from 25% to 100% of the rated throughput capacity. Water cooled and air cooled drives are available to meet customer machine and application preferences.

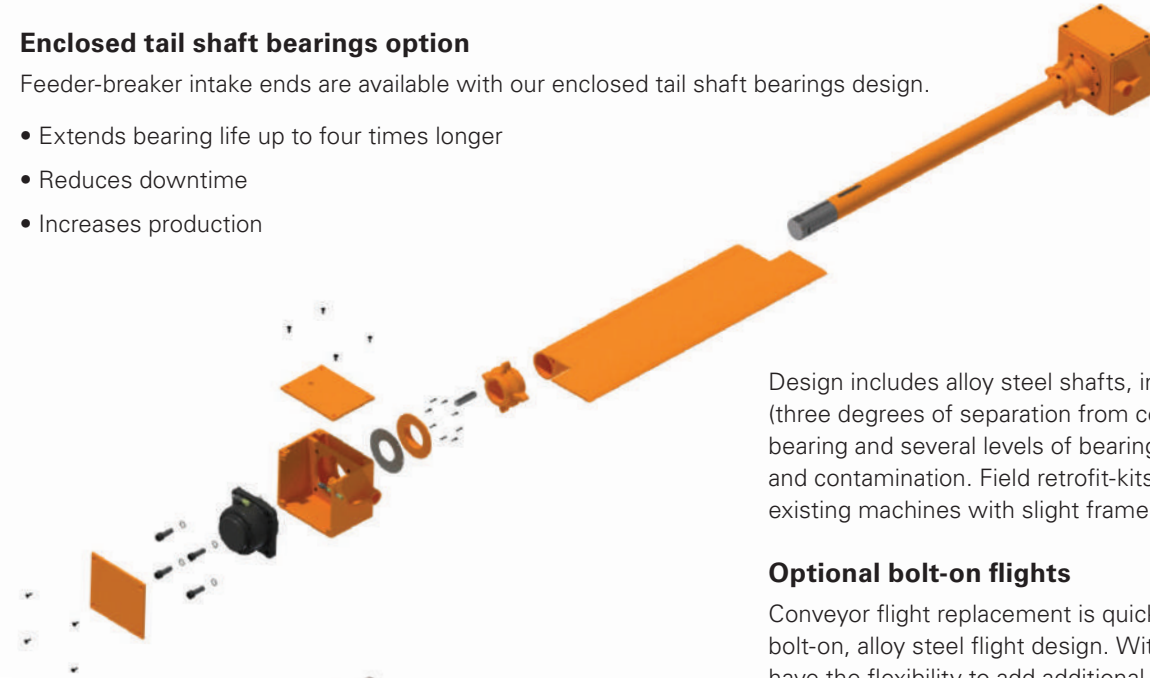


## Designed to reduce downtime and increase production

### Enclosed tail shaft bearings option

Feeder-breaker intake ends are available with our enclosed tail shaft bearings design.

- Extends bearing life up to four times longer
- Reduces downtime
- Increases production



Design includes alloy steel shafts, improved contact seals (three degrees of separation from contaminants), a larger bearing and several levels of bearing protection from water and contamination. Field retrofit-kits are available to upgrade existing machines with slight frame modifications

### Optional bolt-on flights

Conveyor flight replacement is quicker and easier with our bolt-on, alloy steel flight design. With this option, operators have the flexibility to add additional flights and improve product sizing. Instead of the welded flight end design, four bolts hold each flight in place. No special conveyor chain links are included and there is no need to remove chain covers. The new design also retrofits with standard conveyor chain. Downtime to replace flights is reduced by up to 75%.

### Optional hydraulic conveyor chain tensioning system

Chain take-up tension can easily be adjusted without removing covers on the intake end and manually adjusting the chain. With less downtime during change-out, the machine is put back in service more quickly.

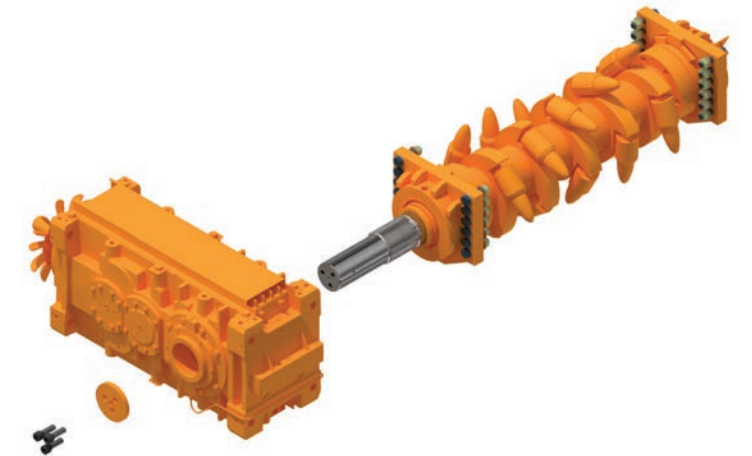
- More robust design with fewer parts to fail
- Tensioning is more accurate, leading to improved machine performance and increased component life
- Under normal conditions, chain adjustment time is reduced from two hours to two minutes

The system is capable of providing the optimal conveyor tension without over-tensioning the chain under normal operating conditions.



### Splined breaker shafts

Operators benefit from our simplified and more robust connection, fewer parts, less labor and less space needed for removal. With less downtime during change-out, the machine is put back in service more quickly and is therefore more productive. By moving to a splined connection versus a compression connection, assembly and disassembly time is reduced more than 50%. Available space for drive removal and installation is increased, making repairs easier. Actual splined connection is 25% stronger than previous connections, while maintaining ability to disassemble when required.

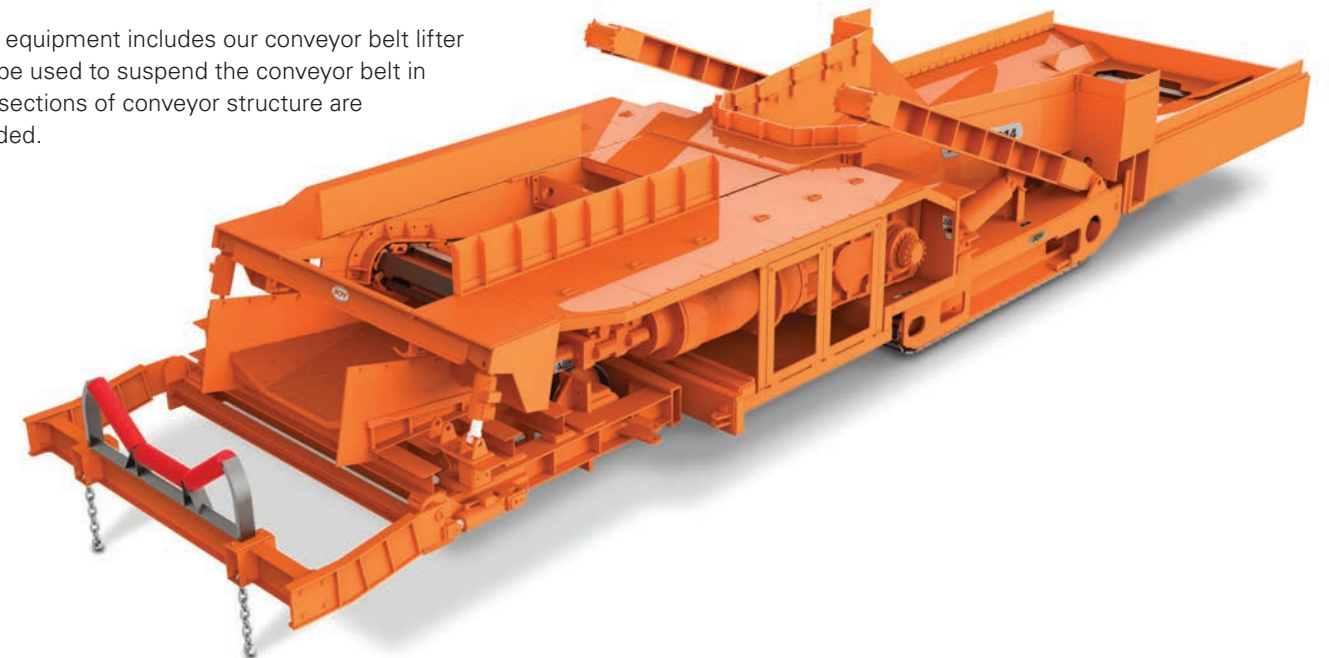


### Additional UFB-14 options

Optional equipment for the UFB-14 includes a tail piece and impact bed for smoother transfer of material to the belt conveyor system. This built-in loading section option is used in lieu of a separate conveyor tail loading section. Belt alignment can be improved by adjusting the tail section training cylinders as required.

Belt moves are quicker and easier since the conveyor belt is pulled by the feeder-breaker as it is trammed to a new location and re-positioned. Operators should consult Komatsu personnel during the mine planning process for maximum belt pull capabilities. The requirement to bolt a separate tail loading section in place and un-bolt during a belt move is eliminated. Machine-stabilizing roof beams or cylinders are also part of the design for added stability during operation.

Available equipment includes our conveyor belt lifter that can be used to suspend the conveyor belt in place as sections of conveyor structure are being added.

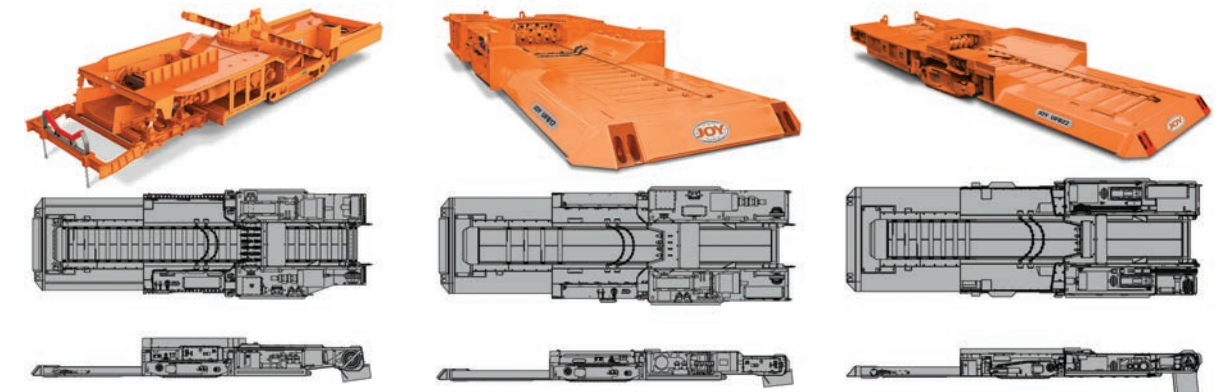


## General Specifications

<b>Processed material</b>	Run-of-mine coal with high percentage of rock content	
<b>Conveyor width</b>	50 and 56 in	1270 and 1422 mm
<b>Overall length</b>	396 - 460 in	10058 - 11684 mm
<b>Mobility</b>	High torque Free wheeling extreme duty crawlers Optional tram speeds 30, 42 and 50 fpm (9.14, 12.8 and 15.2 mpm) Available per customer requirements	
<b>Intake end design</b>	Ram car 3-way dump Hoppered with sideboards	
<b>Available tractive effort</b>	Up to 142,000 lbs	Up to 64,410 kg
<b>Drawbar pull</b>	Up to 100,000 lbs	Up to 45,359 kg



Model Number	UFB-14		UFB-17		UFB-22	
<b>Overall width (at intake end)</b>	112 - 148 in	2844 - 3759 mm	108 - 142 in	2743 - 3606 mm	108 - 142 in	2743 - 3606 mm
<b>Weight</b>	80,000 - 100,000 lbs	36,287 - 45,359 kg	75,000 - 90,000 lbs	34,000 - 40,823 kg	58,000 - 65,000 lbs	26,308 - 29,483 kg
<b>Seam height</b>	Greater than 65 in	Greater than 1650 mm	48 - 64 in	1220 - 1625 mm	Less than 48 in	Less than 1220 mm
<b>Throughput standard (variable)</b>	Up to 1,500 TPH	Up to 1360 MTPH	Up to 1,000 TPH	Up to 900 MTPH	700 TPH	636 MTPH
<b>Special applications</b>	Up to 2,000 TPH	Up to 1800 MTPH	Up to 1,200 TPH	Up to 1091 MTPH	N/A	N/A
<b>Breaker diameter</b>	21 - 34 in	533 - 864 mm	15 - 21 in	381 - 533 mm	15 - 17 in	381 - 432 mm
<b>Breaker pick force (variable)</b>	Up to 130,000 lbs	Up to 60,000 kg	Up to 130,000 lbs	60,000 kg	60,000 lbs	27,200 kg
<b>Material compressive strength</b>	Up to 33,000 PSI	Up to 220 MPa	Up to 33,000 PSI	220 MPa	7,000 PSI	48 MPa
<b>Ground clearance:</b>						
<b>Intake end</b>	2 - 17 in	50 - 432 mm	0 - 8 in	0 - 203 mm	0 - 8 in	0 - 203 mm
<b>Discharge end</b>	12 - 27 in	305 - 686 mm	6 - 21 in	152 - 533 mm	2 - 10 in	50 - 254 mm
<b>Frame height</b>	36 - 51 in	914 - 1295 mm	28 - 37 in	711 - 940 mm	26 in	660 mm
<b>Total horsepower (variable)</b>	Up to 300 hp	Up to 225 kW	Up to 250 hp	Up to 190 kW	175 hp	130 kW
<b>Flexibility of configuration</b>	High		Moderate		Minimal	



## Komatsu Mining Corp. Group

<https://mining.komatsu>



Product designs, specifications and/or data in this document are provided for informational purposes only and are not warranties of any kind. Product designs and/or specifications may be changed at any time without notice. The only warranties that apply to sales of products and services are Komatsu's standard written warranties, which will be furnished upon request.

Komatsu, Joy, Montabert, P&H and other trademarks and service marks used herein are the property of Komatsu Ltd., Komatsu Mining Corp., or their respective owners or licensees.

© 2019 Komatsu Mining Corp. All rights reserved.