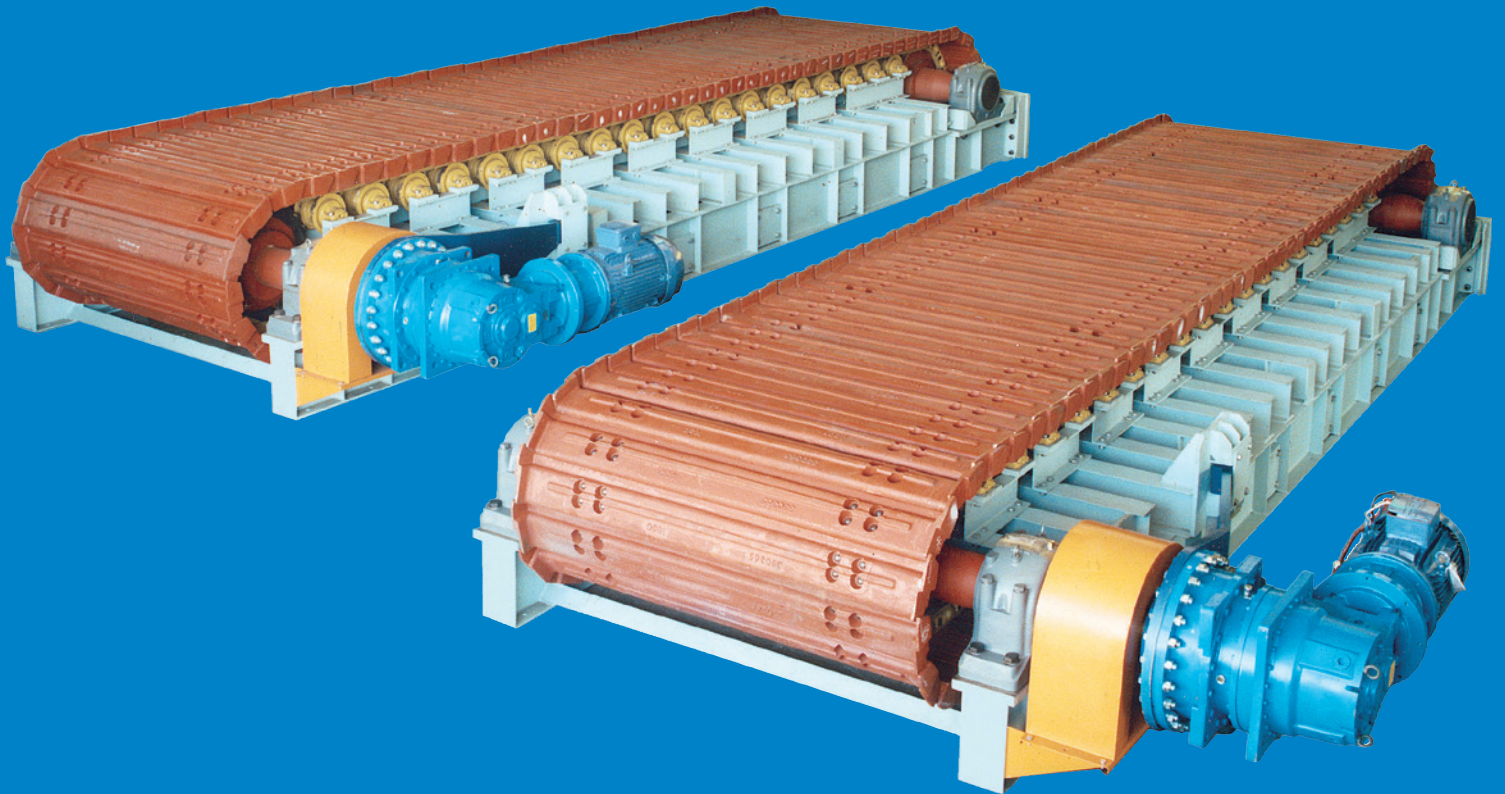


TAKRAF[®]



TAKRAF APRON FEEDER

Optimal solutions for mining, material handling
and processing

Innovation out of tradition – It pays to talk to a specialist!

TAKRAF Group, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. We leverage our experience, acquired over more than a century, to provide equipment, systems and services that best satisfy our clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Owners and operators around the world trust our engineered solutions to lower the total cost of ownership and reduce environmental impact by improving efficiency with safe and reliable equipment. For sustainable solutions backed by expert service you can rely on TAKRAF Group. Visit us at www.takraf.com.

We at TAKRAF Group are committed to environmental and social sustainability in all our business interactions and have adopted a Zero Harm approach under our global safety promise.

Our continuously expanding reference list demonstrates that owners and operators around the world are confident that TAKRAF Group provides the most suitable solution to their unique project requirements. We assist our clients in overcoming the most complicated challenges in transforming the resource industry towards a sustainable future. We focus on specific areas that are critical for reliable and sustainable operations, as it is here where we best support our clients with innovative solutions that save energy, lower environmental impact and meet or exceed operational requirements.

Our TAKRAF brand portfolio is recognized as the world's leading technology provider when it comes to run-of-mine and bulk material handling. Our other focus area is liquid/solid separation, where we capitalize on our global DELKOR brand and its track record of thousands of successful installations.

We leverage our global organization and aggregate our extensive expertise by offering a unique combination of both application experience and product based knowledge. Clients therefore benefit from direct technical discussions with our local specialists, who are able to draw upon this expertise and provide the most suitable local solution and service that enhances safety, improves sustainability, decreases costs and increases efficiency.

Our commitment is summarized by:

Safety | Reliability | Innovation | Sustainability



TAKRAF APRON FEEDERS

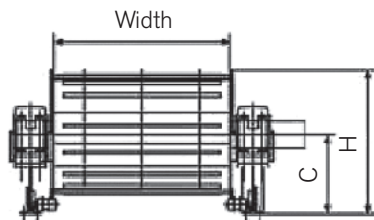
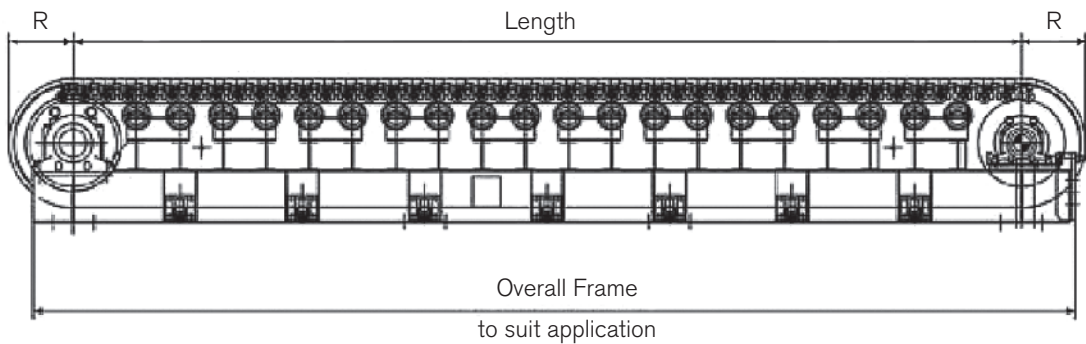
TAKRAF Apron Feeders are designed for demanding material handling work in mineral, ore, coal and aggregate mining, as well as processing operations, combining robust, heavy-duty frames with standard chains and rugged pans to provide extremely long service life.

APPLICATIONS

- Feed and discharge of big lump sizes, hard material, abrasive material, hot material or a combination thereof
- Can be installed below dump hoppers, material storage or transfer facilities from small to highest capacities
- For hoppers and bins with closed or open fronts as well as for material discharge from stockpiles
- Feeder slope may be inclined up to 28 degrees
- Material discharge may be by mass flow or funnel flow on to the feeder deck
- Functional design of the feed hopper can be provided

STANDARD SIZES & SPECIFICATIONS

HEAD SHAFT



VIEW OF HEAD SHAFT ASSEMBLY

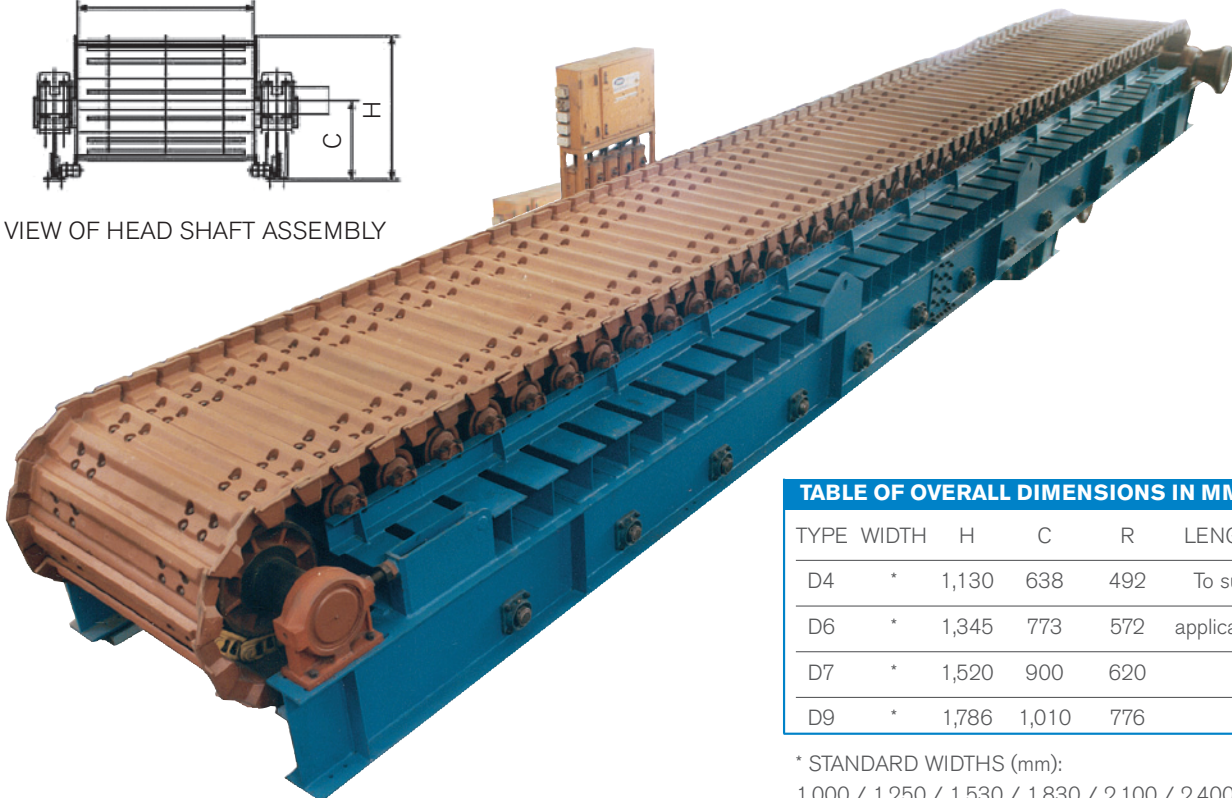
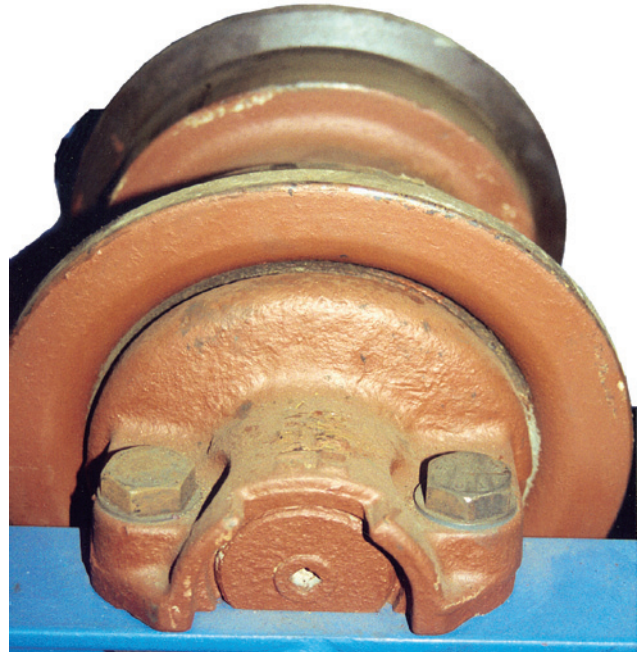


TABLE OF OVERALL DIMENSIONS IN MM

TYPE	WIDTH	H	C	R	LENGTH
D4	*	1,130	638	492	To suit
D6	*	1,345	773	572	application
D7	*	1,520	900	620	
D9	*	1,786	1,010	776	

* STANDARD WIDTHS (mm):
1,000 / 1,250 / 1,530 / 1,830 / 2,100 / 2,400

- Robust construction using high strength materials
- Standard bearings and plummer blocks on head and tail shafts
- Standard crawler under-carriage parts
- Lifetime lubrication on rollers
- Range of standard widths available in different lengths, as required
- Flight overlap minimizes spillage
- Sprocket segments interchangeable and easily replaceable
- Easy chain tensioning at tail shaft
- Compact hydraulic or electromechanical drives
- Drives can be fixed or variable speed; single or twin drives
- Heavy duty ribbed pans are standard



- Can be transported and installed as fully assembled and tested unit
- Moving parts available worldwide, off the shelf
- Variable speed drives and short chain pitch provide accurate and infinitely variable feed rates
- High impact carrying capability due to closely spaced rollers and impact rail
- Manual or electronic control – locally or remote – ensuring flexibility
- Height saving benefits due to feeder incline
- Minimal scheduled maintenance requirements
- Discharge also of 'sticky' materials through application of bulk solids flow design
- Long service life



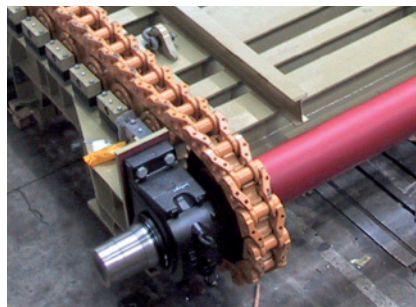
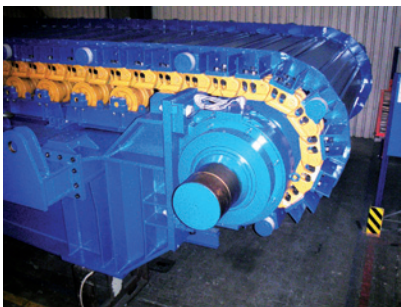
The apron feeders are available with frequency controlled electro mechanical drive or hydraulic direct drive.

HEAVY DUTY APRON FEEDERS FOR SPECIAL APPLICATIONS

Besides the standardized apron feeders TAKRAF supplies heavy duty apron feeders designed to meet special requirements resulting from conditions given by material, capacity and geometry. For capacities requiring chains above D11, please contact TAKRAF GmbH.

Following is a selection of TAKRAF apron feeders supplied:

Material	ROM. Phosphate	ROM. Phosphate	ROM. Overburden (hard rock)	ROM. Overburden (hard rock)	Primary crushed Copper Ore	ROM Iron Ore
Description (Width x Centers - Chain)	PB 2600 x 10600 - D8	PB 2600 x 6600 - D8	PB 2400 x 14100 - D9	PB 3100 x 28000 - D11	PB 2600 x 10100 - D9	PB 2400 x 19600 - D10
Capacity [t/h]	1500	1500	4250	12000	7250	6850
Conveying speed, nominal [m/min]	6 - 24	20.8	9.4 - 23.6	15.6 - 21.3	17.9 - 21.5	11.7 - 20.7
Installed power [kW]	2 x 120	22	2 x 315	2 x 710	2 x 200	2 x 200



The apron feeders are available in outboard design with the chains outside the area in between the skirt boards preventing chains and rollers from falling spillage material and inboard design providing shorter and lighter pans. For outboard designs, return rollers are mounted at the pans or mounted underneath the pans as for inboard chains. If mounted at the pans, the rollers move on a rail. Pans are heavily reinforced. As appropriate, greased slide rails are mounted in full length.

Drive shafts are in one piece design. For large bearings, heavy plummer blocks are fabricated by TAKRAF in its own workshop.

Chain tension is applied by screw type tensioning or with a tension frame (idler wheels mounted in it), hydraulically supported, mechanically secured. Chain force monitoring is available.

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