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Power and Performance for the Cement Industry



Global Manufacturing, TSUBAKI Quality

TSUBAKI has sales and manufacturing locations around the world to provide our customers with the solutions they need.

These global manufacturing bases all provide consistent, dependable quality: TSUBAKI Quality.

TSUBAKI started in Japan a century ago, where we set the standards of carefully cultivated, fundamental technology, and quality control for all our manufacturing facilities worldwide.

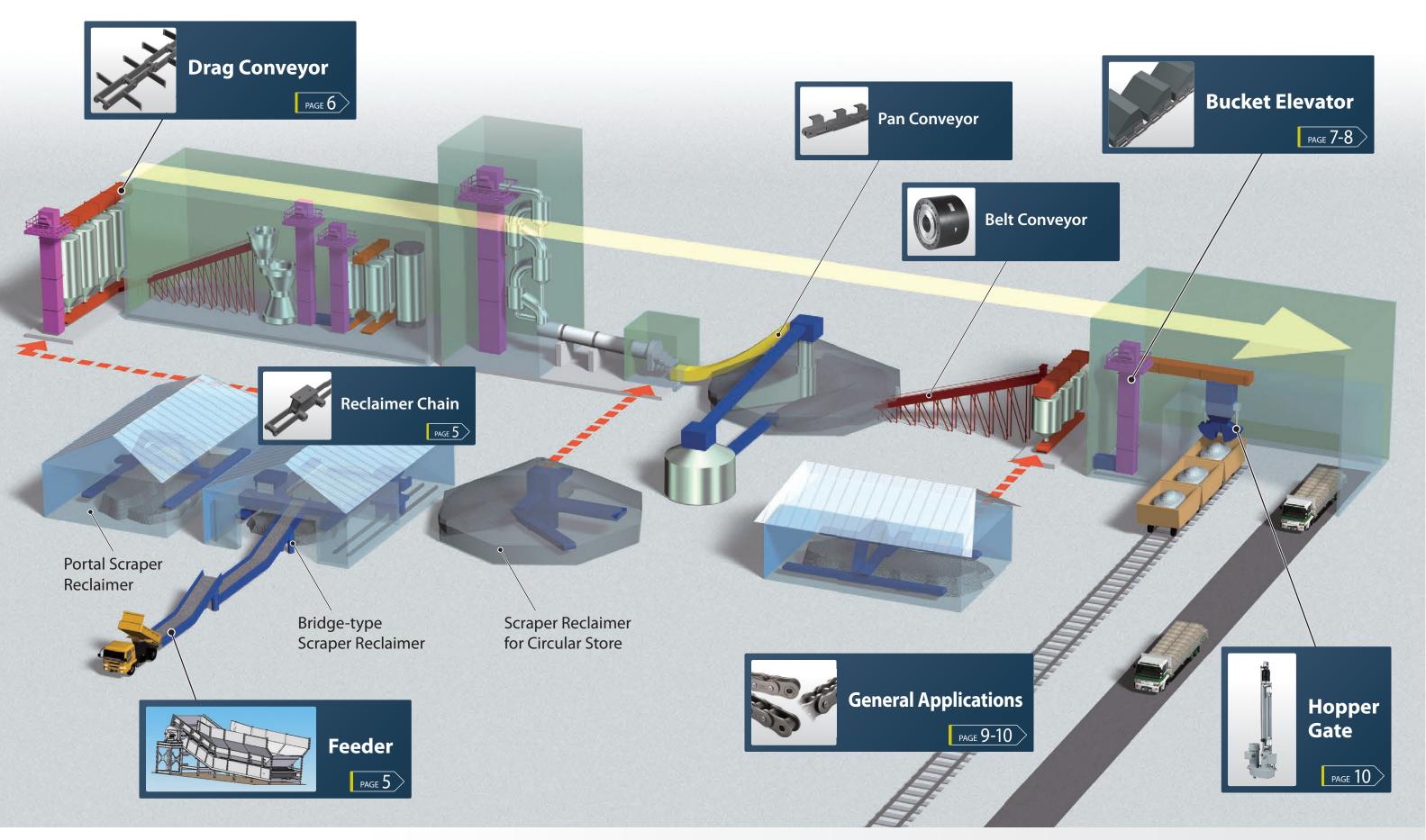
Customers can rest assured that no matter where our product was made, TSUBAKI Quality was infused in the manufacturing process from beginning to end. We will continue to listen to customers' needs and provide the products and solutions that have made TSUBAKI the global leader in power transmission.

One Name, One Quality TSUBAK

1



TSUBAKI Products for Cem ent Industry



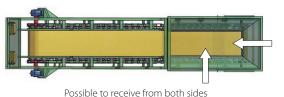
Innovative Solutions for the Cement Industry

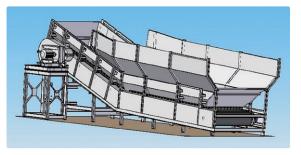
Feeder and Reclaimer

Drag Conveyor

BSF Feeder (Belt Slat Feeder)

TSUBAKI BSF FEEDER is a tough and simply-structured feeder that directly receives and feeds materials, utilising functions of both belt and conveyor chain.





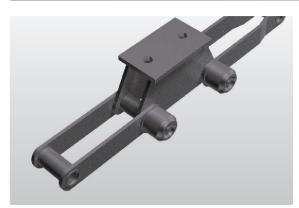
Main Features

- 1. Underground Pit is not required
- 2. Spillage conveyor is not necessary
- 3. Receive materials directly and convey incline in one unit



95m³-690m³

Reclaimer Chain



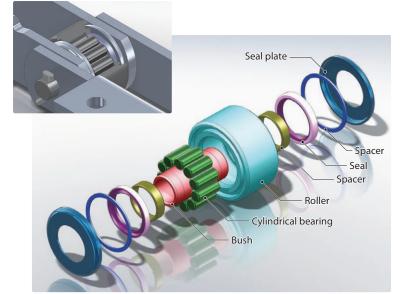
Main Features

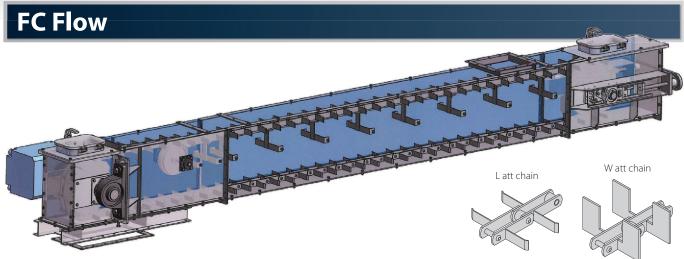
- 1. Solves the problem of dust causing early wear between bushes and rollers
- 2. Increases efficiency which lowers cost
- 3. Suppresses stick-slip phenomenon
- 4. Extends roller and rail life

When abrasive material infiltrates between bushes and rollers, and infiltrates outboard rollers, the rollers lock and wear accelerates between bush and roller, causing your chain to reach its wear life. Using TSUBAKI's dust resistant bearing rollers extends the life of your reclaimer chain.

4. Easy maintenance and high strength

5. No slip occurrence





TSUBAKI FC FLOW is a continuous drag conveyor, which is appropriate for powdery or granular materials of cement, chemical and fertilizer. Materials are conveyed smoothly like water flow, along with chain running motion within a casing on a horizontal or moderate inclination layout.

Main Features

1.

3

4

| Compact and economical |
|---|
| Possible to install multiple inlets and outlets |
| Easy maintenance |
| Dust- and waterproof |

WHX Series Heavy Duty Drag Chain

TSUBAKI Welded steel chain is designed and manufactured to offer strength, precision, impact resistance and wear resistance. Our drag chain features include press fit construction and induction hardened pins.

Induction hardened pins combine the benefit of a thru-hardened part for maximum strength with a high surface hardness to resist abrasive wear. This also allows for a ductile pin which will flex under shock load.

All of our heavy duty drag chains are heat treated for maximum wear life. All of our WHX drag chains include hard face welding on all sliding surfaces for wear resistance.

Standard Models

FC150 (inner width of the casing : 150 mm) - FC580 7 sizes

Capacity

8m³/h(FC150 S=10m/min.) ~ 450m³/h(FC580 S=30m/min.)



Innovative Solutions for the Cement Industry

Bucket Elevator

ONE-TOUCH INSPECTION DOOR®



ONE-TOUCH INSPECTION DOOR® is a dust and rain tight inspection and service door for conveyors, as well as processing and handling equipment. These pre-fabricated units are ready to-go for ease of use on the jobsite. Once in place, ONE-TOUCH INSPECTION DOOR® allows for quick and simple inspection without the need for special tools: just lift the lever! No bolts to

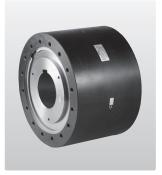
loosen and no covers to misplace. One touch is all it takes...it's that simple

Main Features

1. Durable and trouble-free 2. Dust and rain tight

3. Easy to open Easy to install 4. Patented Design

Cam Clutch BS Series



TSUBAKI BS-F and BS-HS Series Exclusively used in backstop applications for conveyors. They offer significantly increased maximum overrunning speed (low speed) and allowable torque. The BS-F series could also

be interchanged with your current Cam Clutch because it's dimensions are compatible.



Scan to see more about Cam Clutch

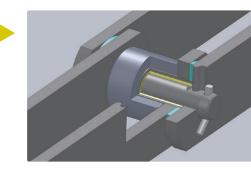
Internal Take-up



TSUBAKI Internal Take-up keeps the factory environment clean by preventing powdery materials from spilling from the casings. This take-up utilizes the weight of the tail mechanism to provide automatic tensioning. The take-up components are housed in the tail casing and are completely enclosed, however they are easily accessible for inspection and maintenance.

Note: TSUBAKI Internal Take-up can be replaced for TSUBAKI Bucket Elevator only

FB Series Conveyor Chain



A solid lubricant is bonded between pin and bush, and an O ring is attached between the links to prevent the conveyed material from entering the link mechanism. At the same time, it retains the solid lubricant in place. This design suppresses wear between the pin and bushing (which contributes to pitch elongation), thus doubling the service life. Thanks to the solid lubricant ,bucket elevators can now feature low-noise operation with an average noise reduction of about 2dB.

Main Features

- 1. Superior service life compared to conventional components
- 2. Low-noise operation (average 2dB reduction)

workhorse[®] Series Conveyor Chain

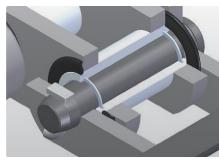


TSUBAKI workhorse[®] elevator chains are specifically designed for use within aggressive bulk material handling environments with harsh fine particulates such as cement or lime.

Main Features

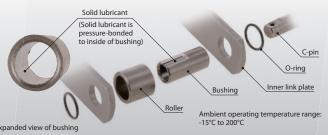
1. Ultimate Strength 2. Unparalleled Toughness & Wear resistance

sj3[®] Series Sealed Joint Conveyor Chain



Utilizes a unique combination of three distinct seals to create an innovative labyrinth structure that effectively hinders the infiltration of foreign matter, without compromising any strength or dynamic performance.

1. Extended Bushing Barrier Seal 2. Polymer Wide Face Seal 3. Stainless Steel Internal Ring Seal



TSUBAKI's patented 3 seal structure



General Applications

Drive Chain G8 Series



The G8 Series is a superior drive chain developed utilizing TSUBAKI's 100 years of manufacturing expertise.

> Solid bush _ube Groove*



RS Roller Chain G8 (Standard Drive Chain)

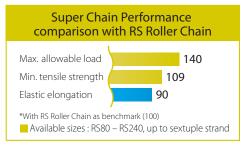


TSUBAKI's standard RS G8 Roller Chain uses a seamless solid bushing developed by advanced TSUBAKI engineering and processing. TSUBAKI's patented lube groove technology in our precision solid bushings retain lubrication and provide superior wear life. *Lube grooves available for RS80-RS140 only. (RS16B-RS28B for BS/DIN standard)

Super (Heavy Duty) Drive Chains



TSUBAKI offers a variety of heavy duty and super chains to provide users with a higher maximum allowable load, shock absorption, fatigue strength and tensile strength than standard RS roller chains.



Surface Treated NEPTUNE CHAIN®



TSUBAKI's NEPTUNE CHAIN® combines uniquely developed base and resin coatings for superior corrosion and chemical resistance against water and alkalis.



Drive Chain titan™ Series



The titan[™] Chain integrates the latest advancements from TSUBAKI's research and development to increase the wear life of roller chains in high speed and harsh environments. Our titan[™] chain incorporates 4 best features of our standard ANSI chain coupled with new and unique features to outperform other extended life chains.







4. Rina-Coined Connecting Links

Sprockets for Large Size Conveyor Chain

Replaceable Sprocket Blades



TSUBAKI also offers a line-up of sprockets where just the teeth can be replaced, which can reduce the massive replacement costs and labor when sprockets need replacing.

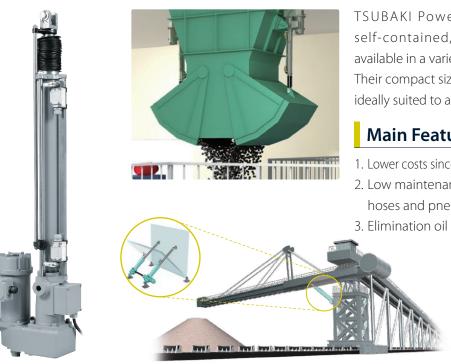
We can also deliver sprockets already assembled onto their shafts.

smart tooth[®] Sprockets



for increased productivity. TSUBAKI's long history of designing innovative chain and sprocket products assures you will receive the best system solution.

Power Cylinder



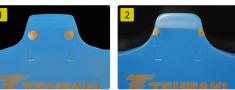
1. Special Coated Pins

2. Zinc Coated Pin Link Plates and Black Oxide Roller Link Plates

3. Solid Lube Groove Bushes



TSUBAKI's smart tooth[®] sprockets with patented Wear Indicator technology offer users the ability to identify and schedule drive system maintenance before critical component failure occurs. The result is extended chain life and reduced downtime



Comparison – New (1) vs. Worn Sprocket (2)

TSUBAKI Power Cylinders are a completely self-contained, motorized linear actuator unit available in a variety of types and speeds. Their compact size and ease of installation make them ideally suited to a variety of cement applications.

Main Features

- 1. Lower costs since no pumps or compressors are required
- 2. Low maintenance with the elimination of hydraulic hoses and pneumatic hose
- 3. Elimination oil leaks and environmental impact



Scan to see more about Power Cylinder