



Cam Clutches Back Stops

Tsubaki Cam Clutches

Mining and conveying go hand in hand, and in a business where transferring product up into CHPP facilities and stock pile reclaim pads is vital, you want to know that you have the right equipment to hold the load to prevent the conveyor from running backwards.

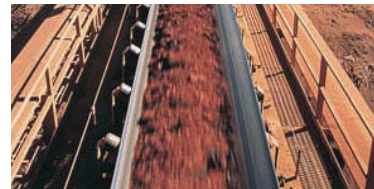
Tsubaki brings to the market a mining series of Cam Clutches with a greater torque capacity size-for-size than other clutches, with a full complement of cams on our HS model to provide maximum load transmitting members per given diameter. Tsubaki has the most versatile and complete clutch selection there is.

Reliable, tough, field-proven. Tsubaki precision formed cams are “non roll-over-type” with superior durability against shock loads. With cams and races always in contact, you get instantaneous hold reverse without backlash.

Whether used on the head shaft pulley, on the geared motor intermediate shafts, or connected to the system via couplings, Tsubaki has the Cam Clutch to get the job done and handle the pressure of your mining site.

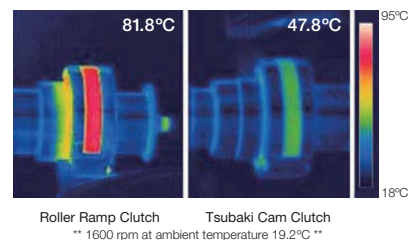
Typical Applications

The BS series Cam Clutch was developed for inclined belt conveyors and bucket elevators used in mining and other industries. This specialized Cam Clutch for back stopping applications features superior load resistance and dust protection abilities. One such application in mining for the BR-P Series is on ventilation fans to prevent reverse fan flow when the units are turned off.



Superior Cam Design

With the design of the Tsubaki clutch you will be running with less energy and heat due to the cam design reducing the effects of friction compared to the roller ramp design. The image on the right shows the roller ramp with a much higher running temperature from its design, which allows centrifugal forces on the rollers to increase the temperature of the clutch. This temperature increase causes premature failure of the oil seals and reduces wear life, which leads to clutch failure.



Special Design Features

1. Self Lubrication Function

When the inner race overruns, the rollers also rotate so the cam and roller cage orbit around the inner race outer circumference at a low speed. Grease in the cam and roller cage spreads completely throughout the insides of the Cam Clutch due to this orbital motion, thus maintaining good lubrication.

2. Sliding Speed Diminishing Function

The actual sliding speed of the cams and the inner race is reduced due to the orbital motion of the cam and roller cage, so the wear on the cams is diminished, and a longer overrunning wear life is possible.



Cam Clutches / Back Stops

Tsubaki Cam Clutch - Mining Line Up

MG Series

A proven field performer used on the intermediate shaft on small discharge conveyors and transfer conveyor chutes, as well as for backstopping on pumps.

This rugged model comes in either grease or oil filled configurations to suit your needs with a series of different seals and operating conditions.

Typical applications are small discharge conveyors and gearbox backstopping.



BR-HT Series

This unique product incorporates very special cams to lift off and not contact with the inner and outer race when in overrunning operations. This is due to centrifugal force, and is the reason why this type of Cam Clutch is known as a Lift Off Type.

Suitable for overrunning high-speed inner race/low speed engaged outer race or Backstopping high speed inner race overrunning.

Applications include internal mounting in gearboxes for backstopping. Interchangeable with popular European brands.



BR-P Series

Same as BR-HT Series but has a body that is wider than the standard BR-HT Series and two deep groove ball bearings to center the inner and outer races, which allow the clutch to be mounted externally on the gearbox intermediate shaft of the conveyor.

Other typical applications are backstopping for emergency pumps on process and inclined pumps.



BS Series

A proven field performer for low speed high torque applications. Tsubaki has developed a Cam Clutch that has instantaneous hold back, low noise, easier maintenance, long life and compactness.

This product is ideally situated on the head shaft pulley to prevent any roll back of the conveyor if power failure or system failure occurs.

Typical applications are incline and decline conveyor assemblies.



BS-HS Series

The next generation in Cam Clutch design that takes the best of all our designs for applications with higher speeds and greater load requirements than suited to our BS series. Our new design incorporates a Cam Cage with a full complement of cams and bearing supported races to give optimum load capacities and running performance.

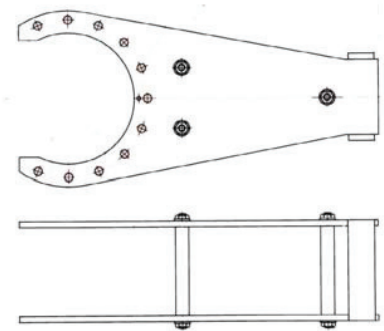
With a design that often allows for one size down selection compared to our BS series, this unit is a leading edge product.

Typical applications are the new super conveyor systems with large loads and high speeds.



Torque Arms for Cam Clutches

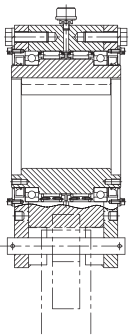
Torque arms stop the rotation of the outer race. A variety of torque arms are available for BS and other series of Cam Clutches. Please contact your local Tsubaki representative to find a torque arm appropriate for your application.



BS220TA ~ BS450TA

Special Design Versions Available

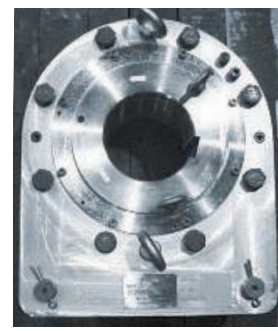
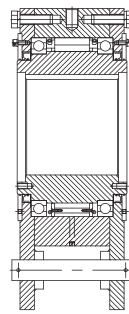
Double Cam Cage model
(BS160WHS~BS350WHS)
(BS160W~BS350W)



A double cam cage is a standard specification in BS425HS and BS450HS.

If the conveyor needs higher torque capacity in Cam Clutch sizes BS85 to BS350 and BS160HS to BS350HS, adding another cam cage to the design provides the required backstop holding capacity. Please contact your local Tsubaki representative for more details.

BS-HS series MA model



The special flanges mounted on both sides the MA type Cam Clutch allow for easy replacement of previous units. Also, to reduce costs, this Cam Clutch has been designed to be used with the previous torque arm as is.

Safety Covers

Safety covers for Cam Clutches are available. These safety covers protect the unit while preventing hands, clothing, etc. from getting entangled in the rotating portion of the Cam Clutch. The safety cover shown here is for the BS Cam Clutch.

