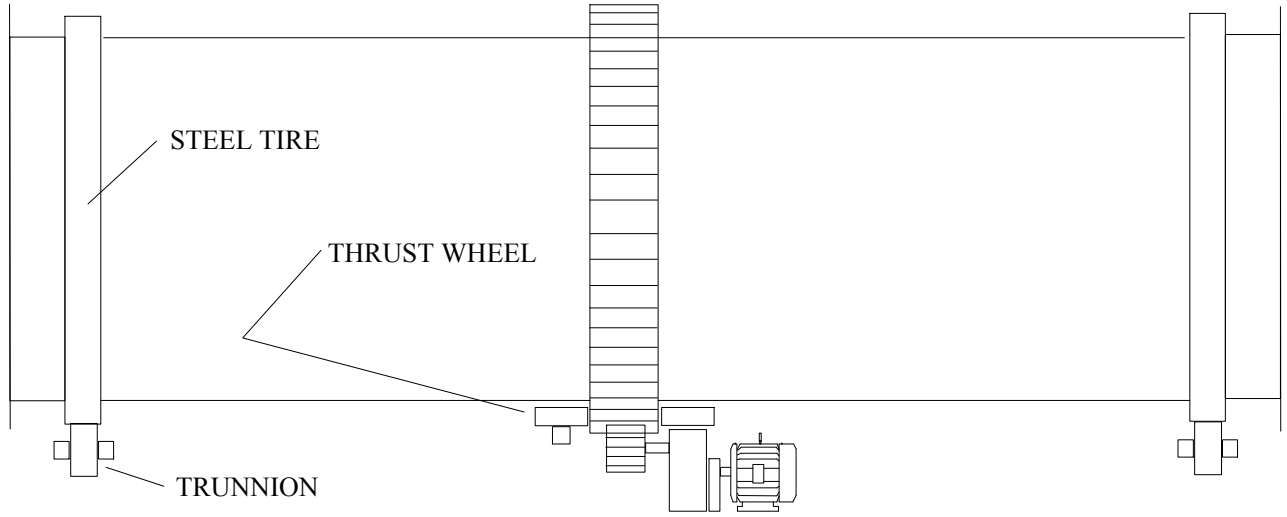
Application Title: Trunnion and Thrust Wheels of Rotating Drums

Rotating Drums are used throughout the world in processes for drying, cooling, mixing and conditioning applications. Drums components are rollers, trunnions, turning gears, drive motors and gear boxes, thrust wheels, tires and seals. Not all drums have the same number of each component (e.g. one tire in lieu of two)



The tires are what support the drum. The tire rides on trunnions, which supports the weight and are adjusted to align the drum so the tire stays on the trunnions, the drive gear is kept in place, seals are working and thrust bearings are not being used.

Adjustments are made in small increments, and changes to operating conditions don't happen suddenly. With an early warning device, adjustments can be made to prolong lubrication life expectancy and prevent downtime from bearing and shaft failure.

This application note describes a basic system and is used to show the benefits of monitoring specific points on a common drier to help keep it operational and prevent breakdown.

Trunnion

Trunnions are heavy duty wheels with a shaft held in place by two bearings, on each side. Drum tires ride on two trunnions; two wheel drums are equipped with four trunnions.

When a drum is aligned properly, all trunnions share the same load, and should be running at a lower temperature. When a drum becomes misaligned, one of the trunnions pick up more weight than the others and begins to do all the work.



The extra force causes the one trunnion set of bearings to heat up. With a TIC installed, as shown in the negative photo above, the operator can notify maintenance of a hot trunnion and have the drum skewed properly, so the lubrication in the bearings doesn't degrade, bearings don't fail, shaft doesn't fail and the drum is kept operational.

The simplest solution is to install a two sensor TIC that is set at the next higher operating temperature of the bearings. If the bearing outside temperature is 88ºF, the inside temperature could be close to 110ºF. There could be expansions and contractions of the drum with some cyclical changes, due to time of day or season, so instead of choosing a 120ºF TIC, a 150ºF TIC should be chosen.

Thrust Wheel

Normally, under proper alignment, the thrust bearing or wheel(s) is/are not turning. If the whole drum is not level and has slid too far, the thrust wheel comes in to play, and if excessive thrust is happening, the temperature of the bearing supporting the wheel will rise.

With a TIC installed, the operator can alert maintenance for assistance and prevent downtime.

Please note that the information in this document is of a general nature.

Before deciding on a particular implementation of this technology attention needs to be given to the specifics of your equipment and circumstances

Australia, New Zealand and Papua New Guinea residents please contact :

Precisely	Phone:	1300 30 60 45
P.O. Box 376	Fax:	1300 30 60 47
Elsternwick	Email:	info@precisely.com.au
Australia 3185	Web:	www.precisely.com.au