

Cardan shaft alignment

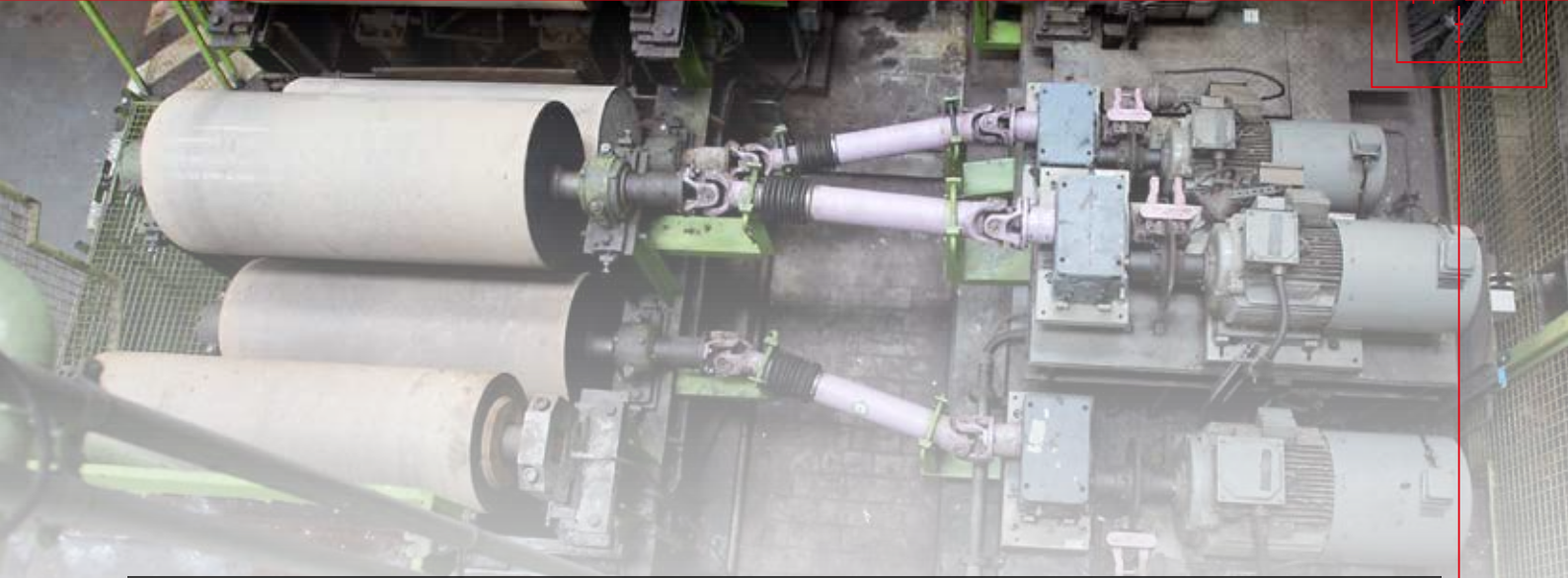
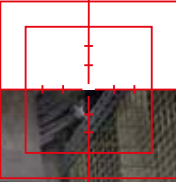
Machine alignment without shaft removal



- Unique and patented solution powered by ROTALIGN[®] Ultra iS

- Intelligent and time-saving

Alignment solutions for all types of cardan shafts



Cardan shafts are common types of couplings in many industries such as pulp and paper, marine and shipping, steel, automotive, cement. They can be either fully rotatable, partially rotatable or non-rotatable, very large and heavy, and difficult to access. Usually, a combination of these configurations applies, making many cardan shaft alignment applications unique and challenging.

PRUFTECHNIK offers intelligent solutions designed to deal with the alignment of various kinds of cardan shaft configurations.

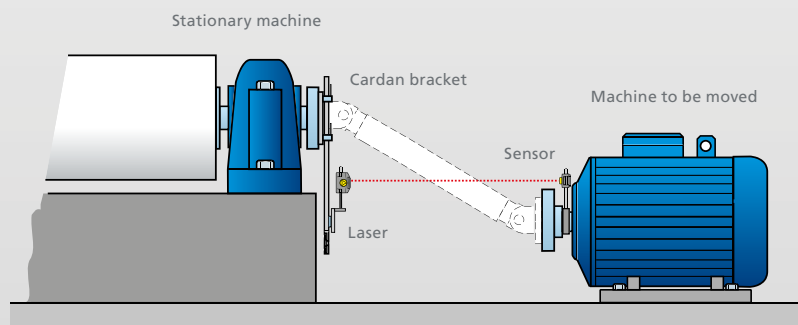
Our laser-based alignment systems guarantee unparalleled accuracy and repeatability in a fraction of the time required by conventional methods.

Cardan shafts are used to compensate for parallel misalignment (offset) between the driving and driven shaft. However, they cannot absorb angular misalignment between the shafts. Angular misalignment typically causes the driven shaft to rotate unevenly during operation, which results in increased vibration.

Precise alignment reduces the rotational forces of the cardan shaft to a minimum. If the cardan shaft is precisely aligned, the second joint converts "irregular" rotational movement of the spacer shaft into a regular movement of the driven shaft. As a result, the uneven bearing loading during cardan shaft rotation is minimized, the service life of the components is extended and machine failures reduced.

Common cardan shaft alignment with laser

The cardan shaft is removed and a long-arm bracket is used to overcome the offset between the machine shaft centerlines. The laser is mounted on a rotating frame which simulates the centerline of the non-moveable machine. The sensor is attached to the shaft of the moveable machine by means of standard chain or magnetic brackets. This method can also be used when the shafts cannot be rotated.



Cardan shaft alignment using a long-arm bracket assembly to overcome the offset.

Intelligent cardan shaft alignment

Unique patented solution eliminates the need for cardan shaft removal



Rotating arm bracket for restricted rotation areas.



Bracket set for 180° rotation requires only two readings.

With specially designed brackets and new measuring methods, the ROTALIGN® Ultra iS platform allows cardan shafts to be aligned without removing the shaft.

Depending on the shaft configuration, one of the two available methods can be used.

With the first method, the sensor is mounted on a bracket with a rotating arm. As shafts are turned to a new measurement position, the bracket's arm is rotated and the sensor moved up or down the posts to intersect the laser beam. This method is used when rotation areas are restricted.

The second method uses a bracket set designed for a 180° rotation and only requires two reading positions.

Benefits:

- ▶ No cardan shaft removal
- ▶ Quick measurement setup
- ▶ Save hours of work and manpower
- ▶ Avoid crane use or rental and tricky manoeuvres in constrained spaces
- ▶ High-quality measurement based on the actual rotation axis of the shaft
- ▶ Improve safety of operators and assets.



In the Result screen the cardan angle and foot position are displayed as well as the tolerance status through a 'Smiley'.

If adjustments are necessary, the moveable machine may be repositioned with the help of the MOVE function.

Technical data

Cardan bracket (ALI 2.893 SETIS)	Cardan length up to 10 m (33 ft) and shaft offsets of up to 1000 mm (39 3/8 in.)
Cardan bracket lite (ALI 2.874 SETIS)	Cardan length up to 10 m (33 ft) and shaft offsets of up to 400 mm (15 3/4 in.)
Cardan bracket with rotating arm (ALI 2.450)	Cardan length up to 10 m (33 ft) and shaft offsets of up to 400 mm (15 3/4 in.)
Cardan bracket with 180° rotation (ALI 2.460)	Cardan length up to 10 m (33 ft) and shaft offsets of up to 300 mm (11 5/8 in.)



ALI 2.450



ALI 2.460

PRUFTECHNIK delivers maintenance solutions worldwide



Alignment Systems



Condition Monitoring



Nondestructive Testing



Service & Support

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