Clarifier and Thickener Drives

Quality Equipment; Competitive Price

American Water Works Association

Water Environment Federation
the water quality people

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Sandy, UT 84070

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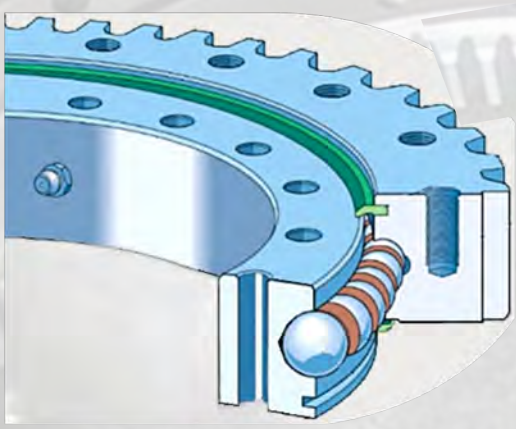
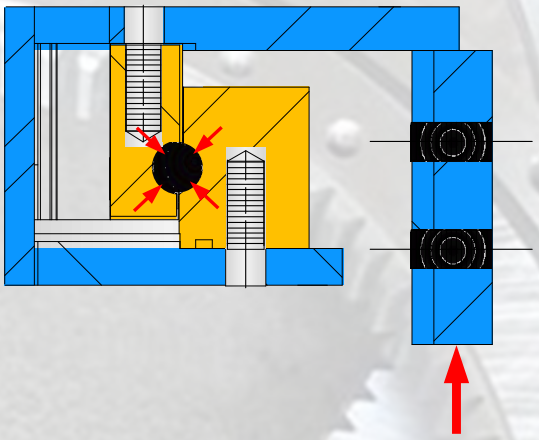
Water & Wastewater Treatment Solutions
Municipal, Industrial, Power & Mining

Division of

PRECISION GEAR/BEARING

PRECISION GEAR/BEARING DRIVE

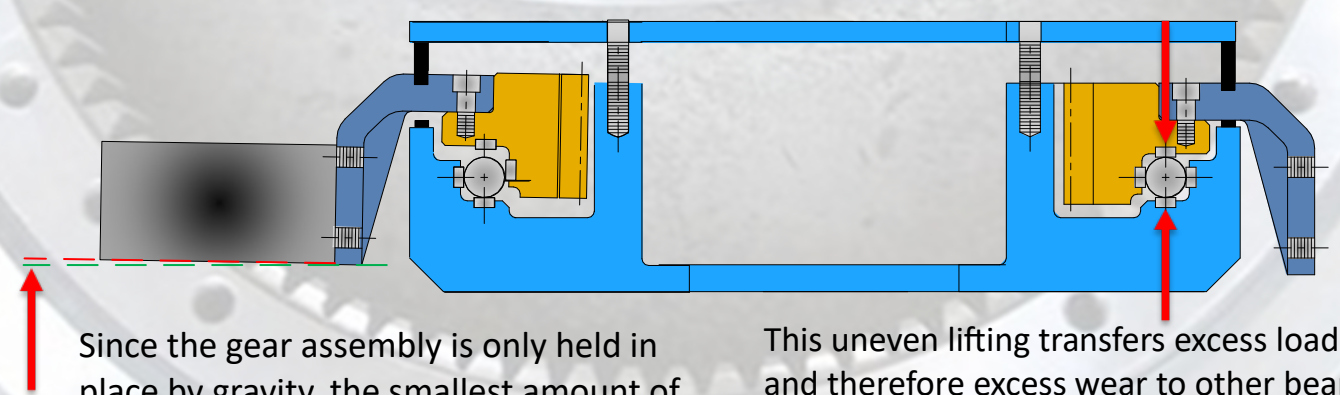




Precision Bearing Assembly is totally enclosed, machined, and grease or lubricated. It evenly distributes any over-turning loads to the entire raceway thus limiting the load and wear on any particular ball bearing.

The Gothic arch design of the Precision Bearing Assembly provides four-point contact—two contact points on the ball and two contact points on the raceway. This four-point contact provides higher moment capacity and makes Gothic arch the preferred design for rails with only two raceways.

STANDARD STRIP LINER DRIVE



Since the gear assembly is only held in place by gravity, the smallest amount of uneven upward loading i.e., passing over a Scum Box can cause one side of the assembly to lift unevenly.

This uneven lifting transfers excess loading and therefore excess wear to other bearings in the drive. If this excess load is of sufficient amount or frequency, it can even split the individual ball bearings.

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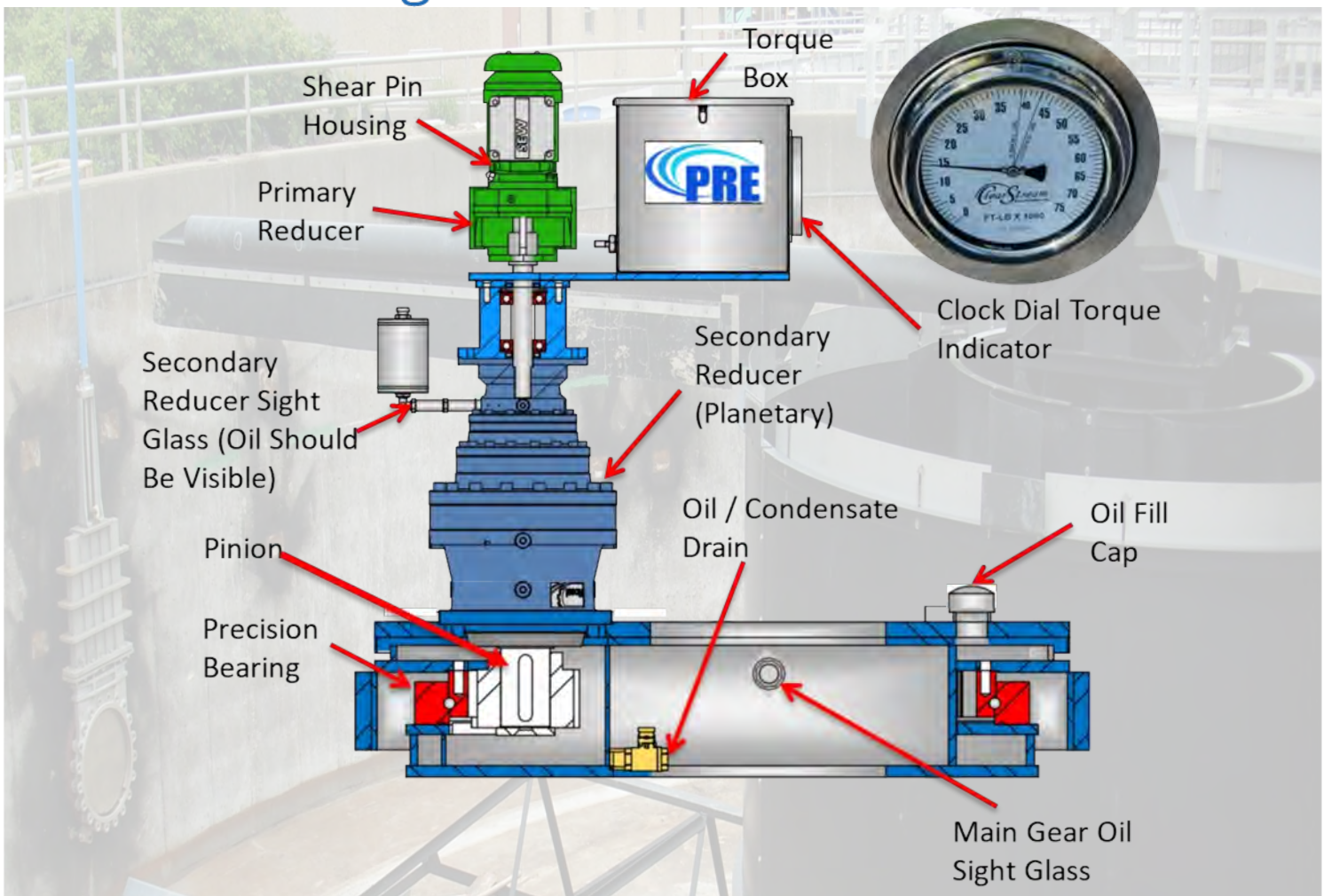
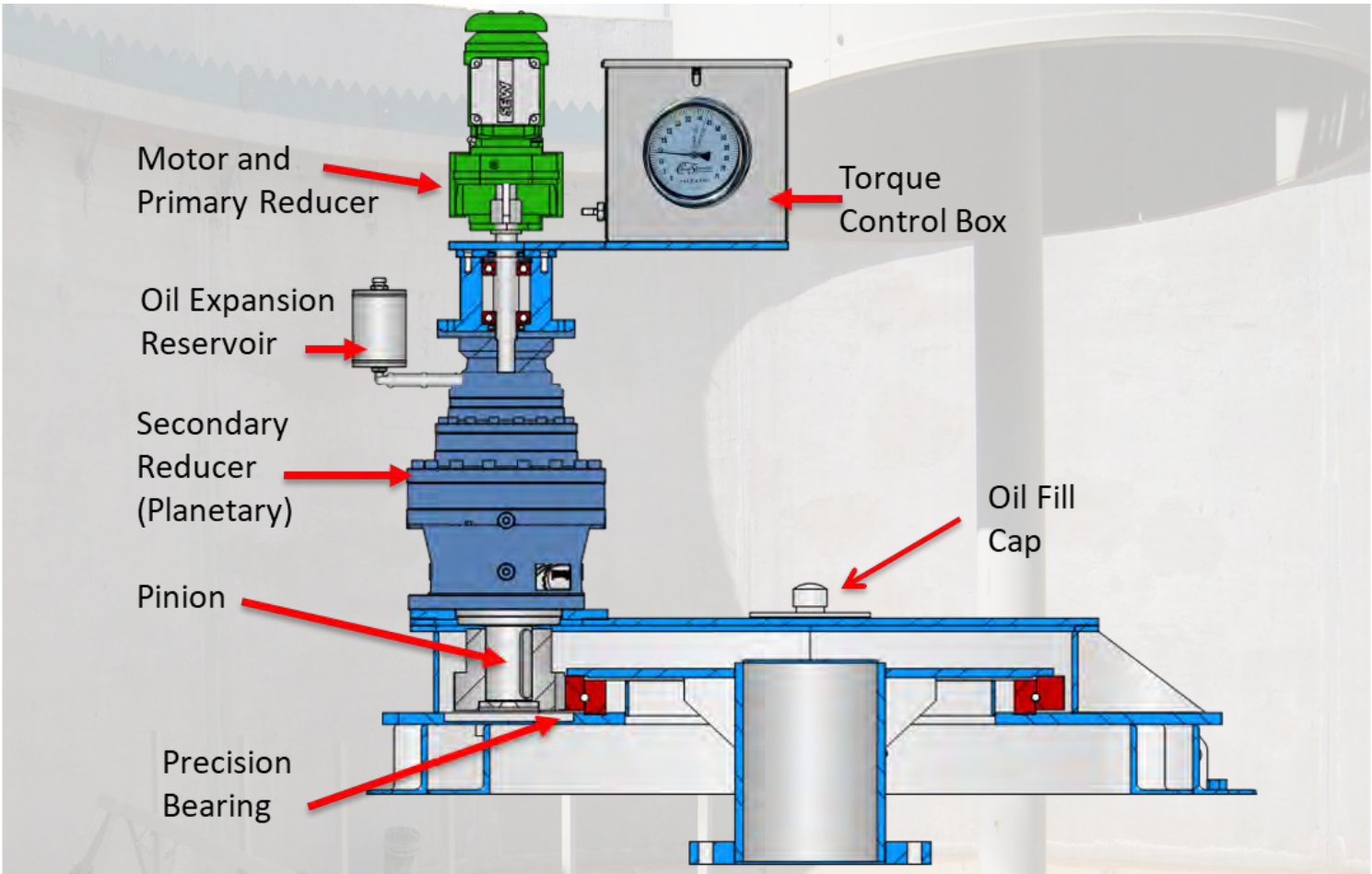
Cage Drives Features



- Four-point contact precision main bearing, evenly distributes overturning loads.
- Steel housing designed to bolt-up to any existing unit for retrofit.
- Designed per AGMA and ABMA standards for minimum 100 year bearing life.
- Standard drive do not require lower pinion bearing .
- Primary parallel helical gearmotor with shear pin.
- Secondary planetary speed reducer with pinion mounted to output shaft.
- Precision gear; grease and / or oil lubricated.
- Hydraulic Torque Box with Dial Indication.
- 5-year Warranty (less motors and paint).
- 10-year Warranty Main Gear.
- Stainless Steel or Cast Iron Drive Housings are options.

Shaft Drives Features



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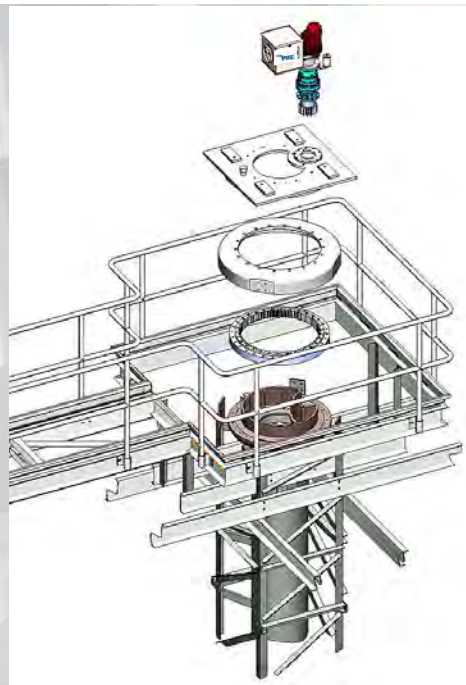
Heavy Duty Cage Drives



Cage Drives

Cage drives are mounted on top of a central column. This column usually contains the inlet to the clarifier or thickener. The cage is built around the column and supports the rake mechanisms. The bridge assembly sits on top of the cage drive as illustrated above.

Dual Cage Drives

When it is necessary to use an additional rotating component, such as an impeller in the case of a Solids Contact Clarifier or a flocculating mixer in a Flocculating Clarifier, a dual cage drive is employed. This adds an additional “high speed” drive as a means to rotate the impeller or flocculator.

Cage Drives w/ Lift

In applications which entail heavy sludges and high torque, such as thickening and mining applications, the cage drive may be supplied with a lift mechanism. This torque actuated mechanism raises the entire rake assembly when high torque events occur. The lift raises automatically but is lowered via push button manually.

Multi-Pinion Cage Drives

For applications requiring even higher torque ratings, a multi pinion drive is supplied. This drive may consist of either 2, 3, or 4 pinion stacks depending upon the torque requirements. Multi pinion drives can supply these high torque values while providing years of low maintenance operation.

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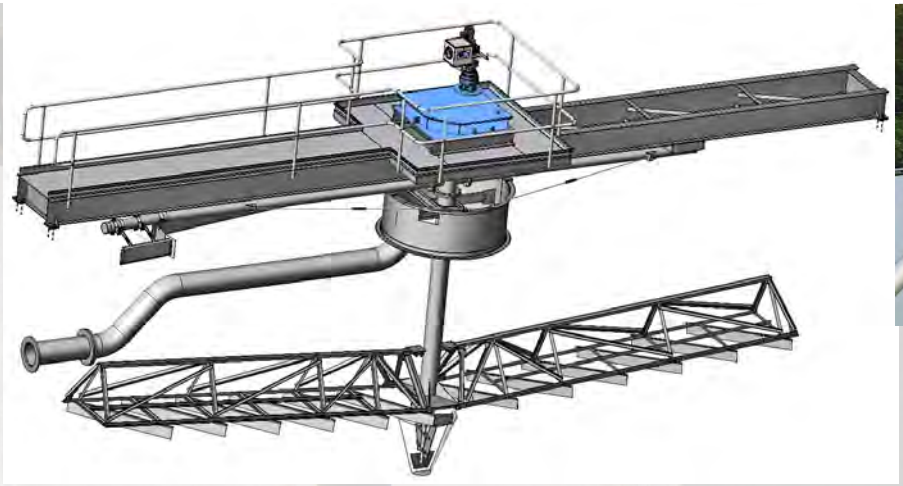
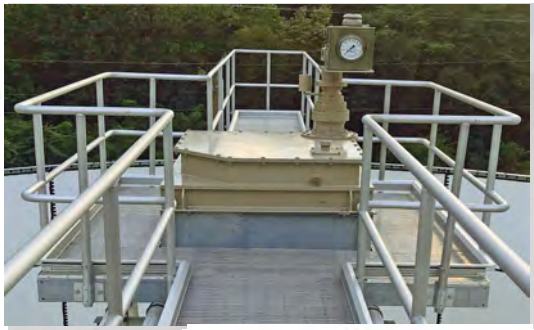
Division of

Heavy Duty Shaft Drives





Shaft Drives

Shaft drives are mounted on top of a full span bridge. The inlet to the clarifier or thickener usually comes from the side or over the top.. The shaft hangs from the drive and supports the rake mechanisms. The drive assembly is accessed by a walkway spanning half the bridge as illustrated above.

Dual Shaft Drives

When it is necessary to use an additional rotating component, such as an impeller in the case of a Solids Contact Clarifier or a flocculating mixer in a Flocculating Clarifier, a dual cage drive is employed. This adds an additional “high speed” drive as a means to rotate the impeller or flocculator.

Shaft Drives w/ Lift

In applications which entail heavy sludges and high torque, such as thickening and mining applications, the shaft drive may be supplied with a lift mechanism. This torque actuated mechanism raises the entire rake assembly when high torque events occur. The lift raises automatically but is lowered via push button manually.

Multi-Pinion Shaft Drives

For applications requiring even higher torque ratings, a multi opinion drive is supplied. This drive may consist of either 2, 3, or 4 opinion stacks depending upon the torque requirements. Multi pinion drives can supply these high torque values while providing years of low maintenance operation.

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Specialty Heavy Duty Drives

Hydraulic Drives

Hydraulic Drives use the same robust secondary reducer as their precision main gear/ bearing drives and include the same torque measurement display with an easy-to-read torque dial. An optional 4 - 20 mA signal can be specified which may be sent to the control room for remote monitoring. **PRE** manufacturers Hydraulic Drives in both bridge mounted shaft units and column mounted cage units.

Direct Cage Drives

For light or heavy duty mixing applications or small (< 25 ft dia), light duty clarifiers, direct drives can offer a cost-effective alternative. **PRE**'s direct drives use the same robust upper reducer as their precision main gear / bearing drives and include the same direct torque measurement which is displayed on the easy-to-read torque dial. An optional 4 - 20 mA signal can be specified which may be sent to the control room for remote monitoring. This provides an extra level of instrumentation and feedback which is not normally included with standard direct drives.

Direct Shaft Drives

PRE also manufactures direct drives in both bridge mounted shaft units. This provides great flexibility in the design of mixers and rake mechanisms. In addition, these units may also be powered by hydraulic power units.

The simple but sturdy design of these direct drives provide excellent performance and low maintenance. This allows **PRE** to custom design their drives and other components to meet your specific application.

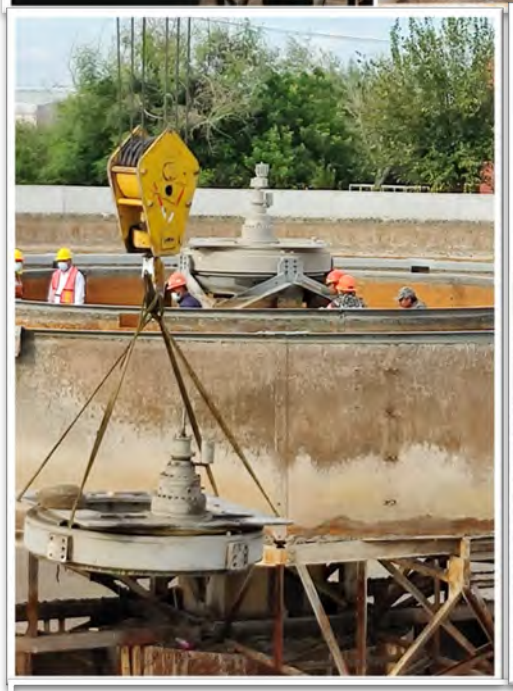
Rim Drives

PRE manufactures rim, where the bridge rotates with the drive. In addition, these units may also be powered by hydraulic power units.

The simple but sturdy design of these rim drives provide excellent performance and low maintenance. These options and our expertise allow **PRE** to custom design their drives and other components to meet your specific application.

REPLACEMENT DRIVES and RETROFITS

ALL MAJOR BRANDS



Before

After