



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



Clarifier and Thickener Drives

Quality Equipment: Competitive Price



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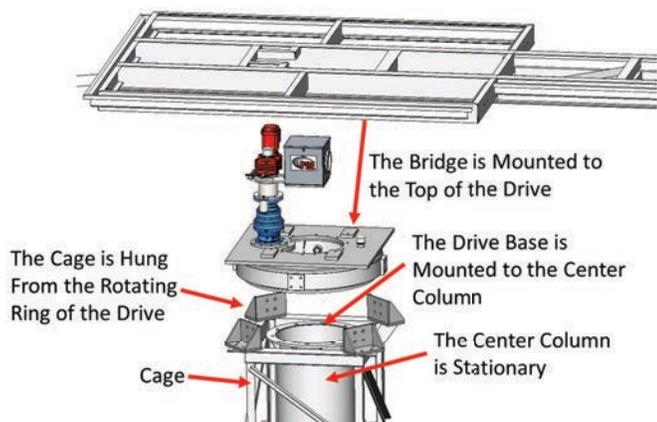
CAGE DRIVE vs SHAFT DRIVE

In general, drives fall into one of two categories: cage drives or shaft drives. There are numerous differences in how these drives are designed. The first is the manner in which they are mounted.

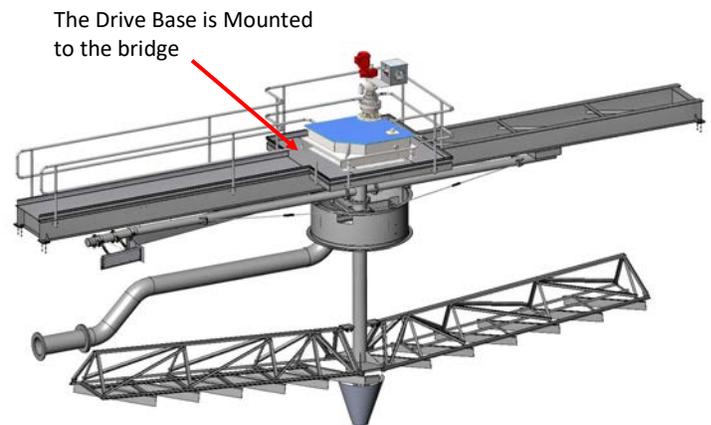
Cage drives are mounted atop a **center column** within the unit. The bridge and walkway are mounted to the top of the drive housing. The cage assembly, which drives the sludge collection mechanism, is also hung from the cage drive. This mechanism may also drive the skimmers for the unit.

Shaft drives are normally mounted on top of a full span **bridge** and the shaft, skimmers, and sludge collection mechanism hang from the drive.

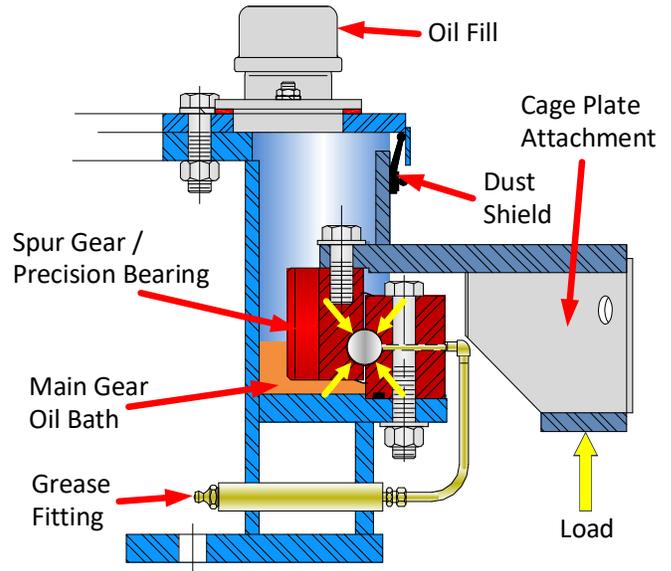
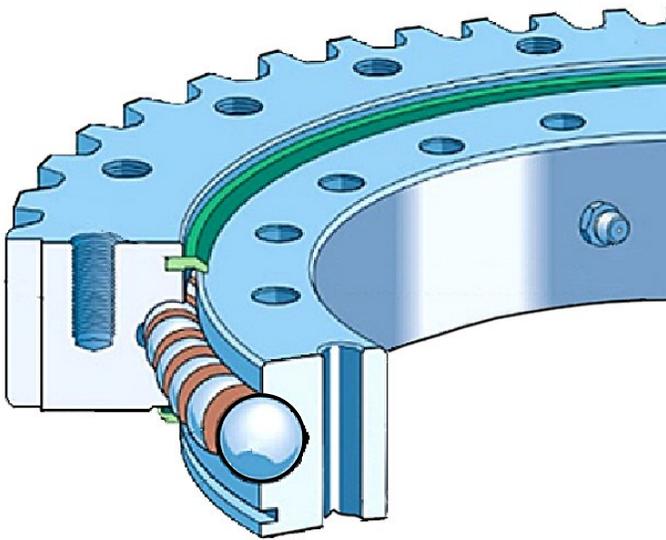
Heavy Duty Cage Drives



Heavy Duty Shaft Drives



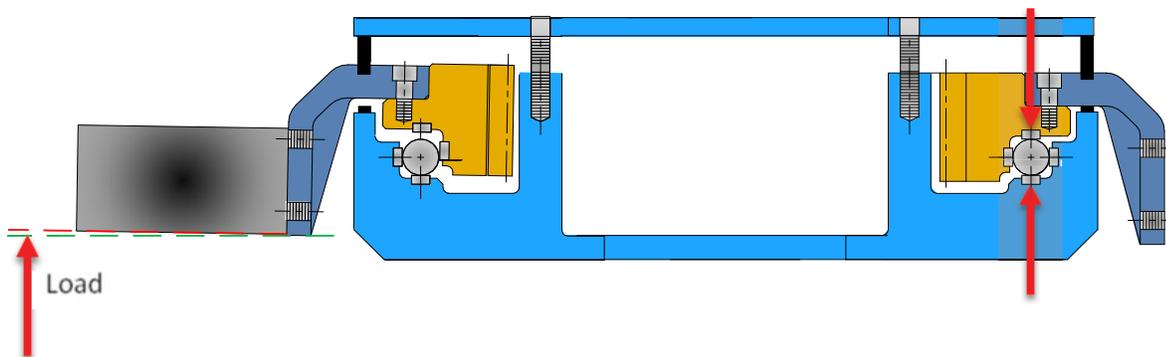
PRECISION GEAR / BEARING



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

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 making Gothic arch the preferred design for rails with only two raceways.

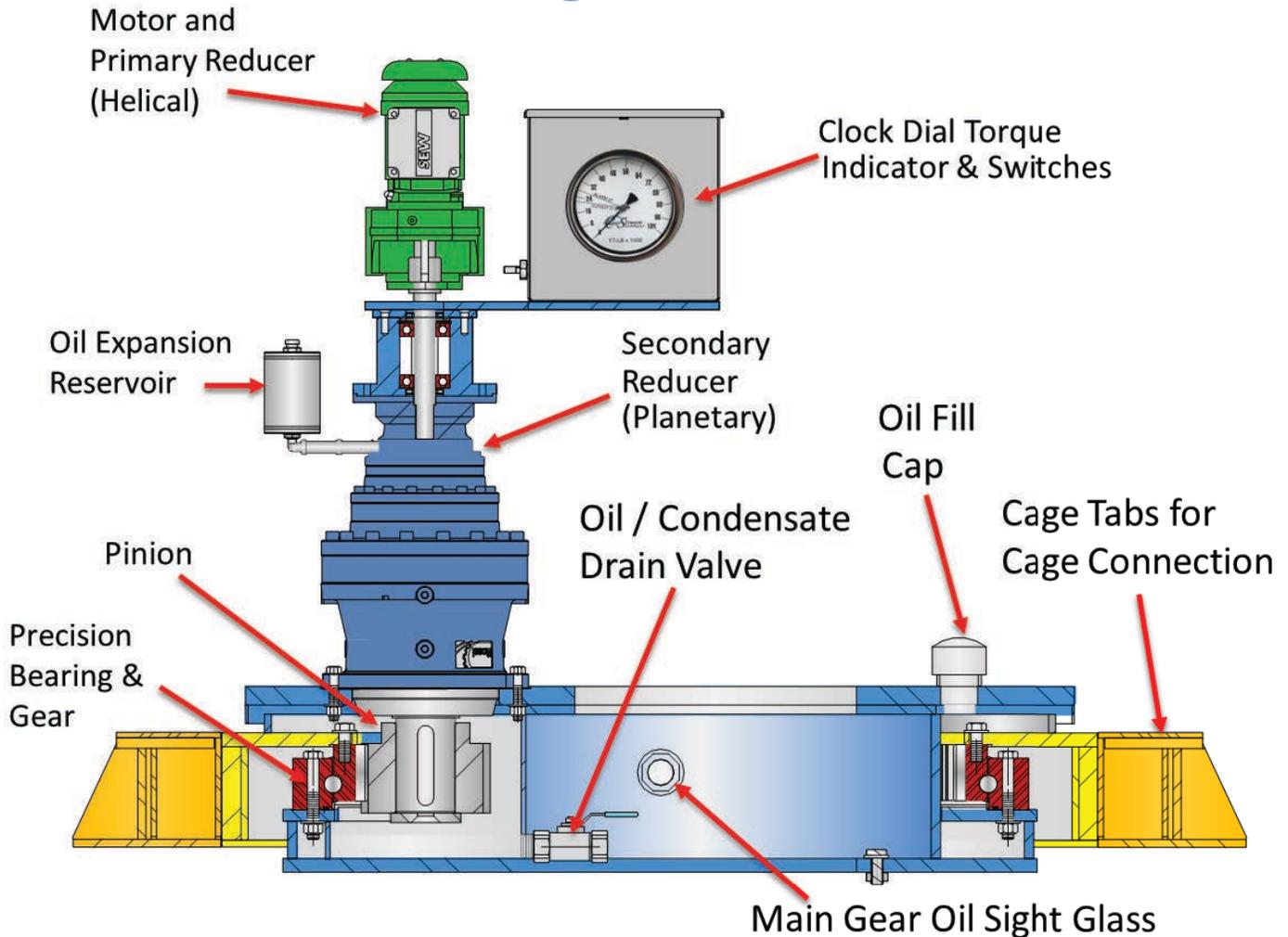
STANDARD STRIP LINER DRIVE



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 the opposite bearings on the drive. If this excess load is of sufficient amount or frequency, it can even split the individual ball bearings.

Cage Drives



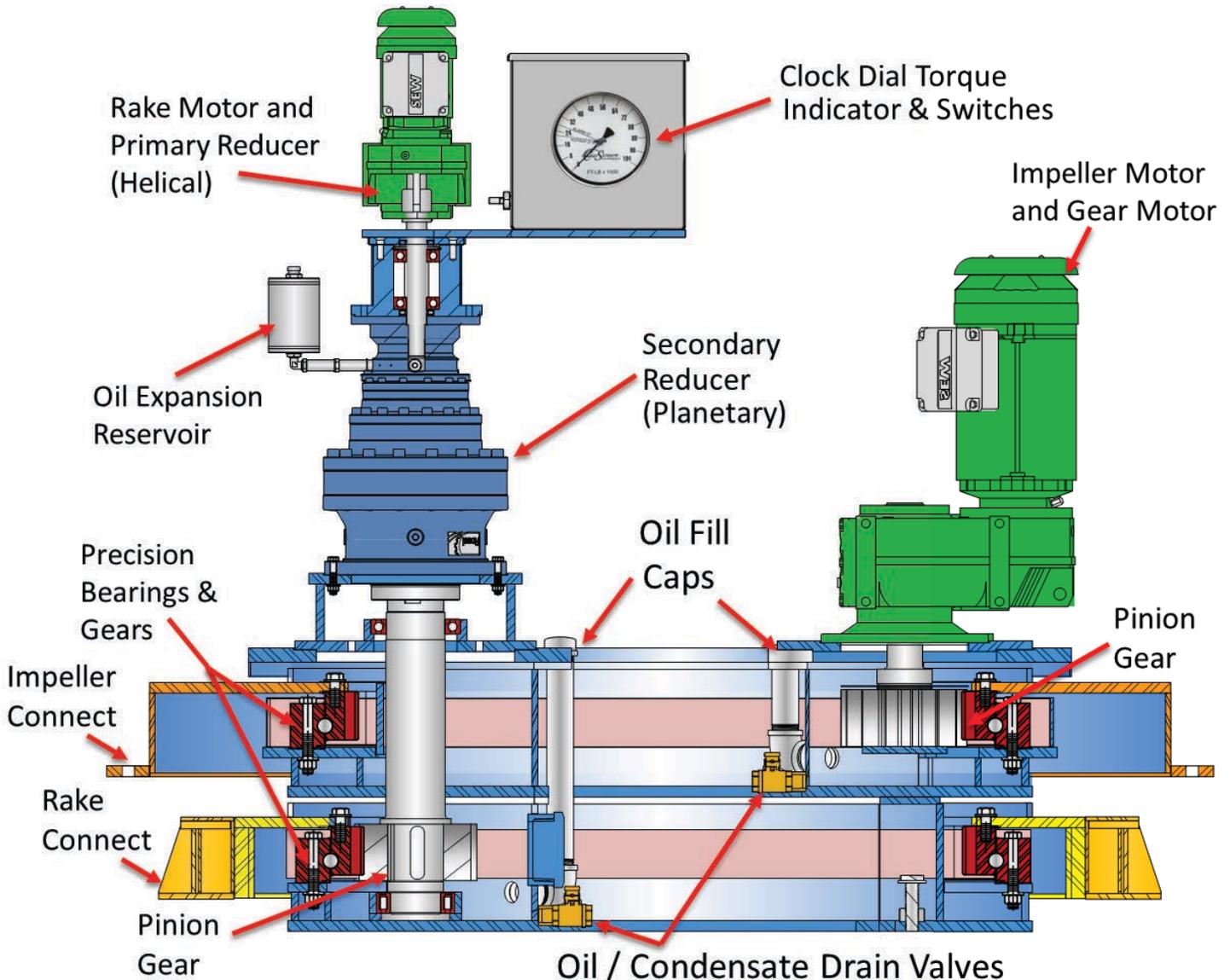
Standard Drive Features

- 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.
- No lower stream pinion bearing required. Note: Extreme torque applications may require lower bearing.
- Primary parallel helical gearmotor with shear pin.
- Secondary planetary speed reducer with pinion mounted on output shaft.
- Precision gear, oil lubricated.
- Hydraulic Torque Box with Dial Indication.
- 5-year Warranty (less motors and paint)
- 10-year Warranty Main Bearing / Gear
- Stainless Steel or Cast Iron Drive Housings are options

Dual Cage Drives



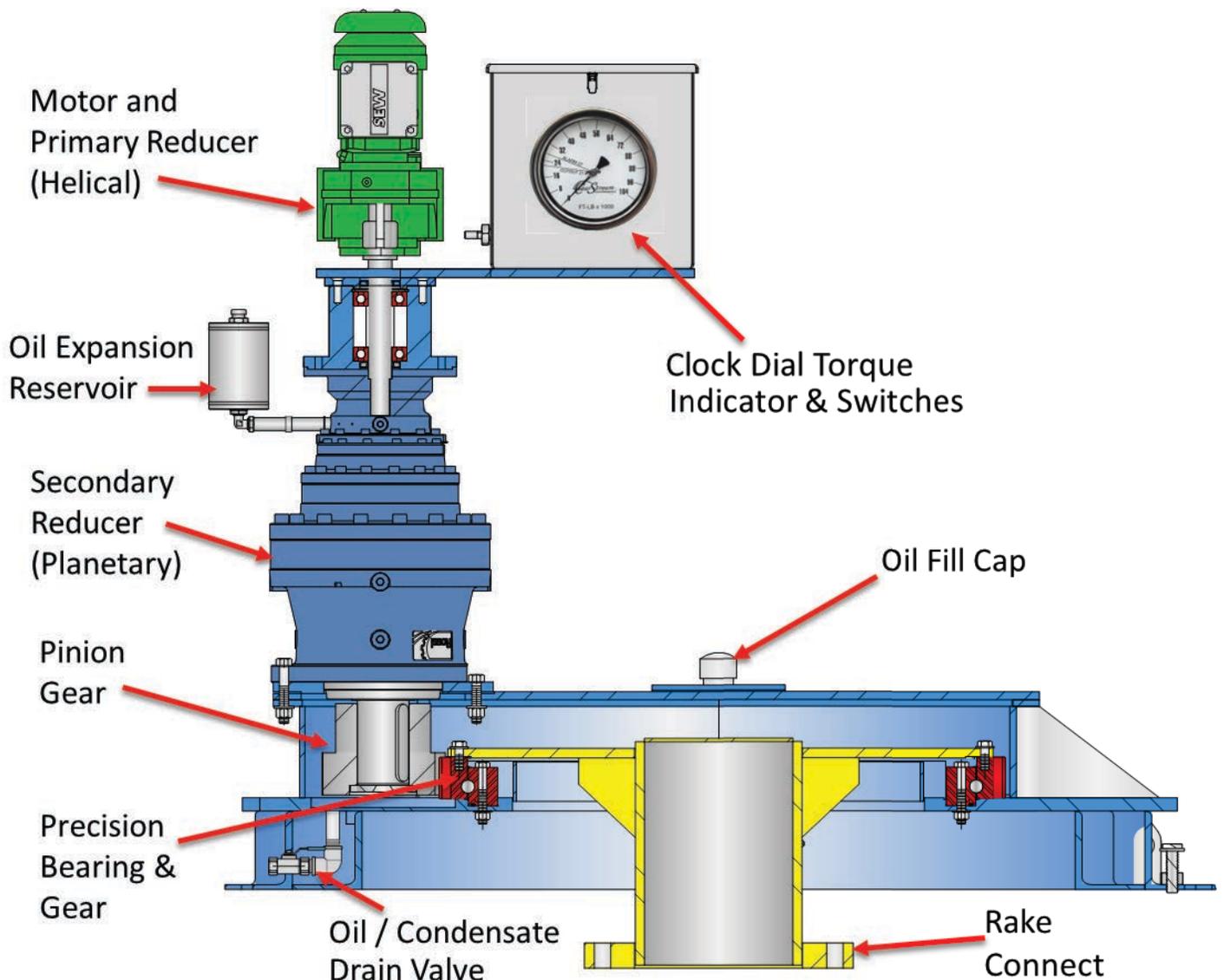
When it is necessary to use an additional rotating component, such as an impeller in the case of a Solids Contact Clarifier or a flocculating mixer in the case of a Flocculating Clarifier, a dual cage drive is employed. This adds an additional “high speed” drive as a means to rotate the impeller or flocculator.



Shaft Drives



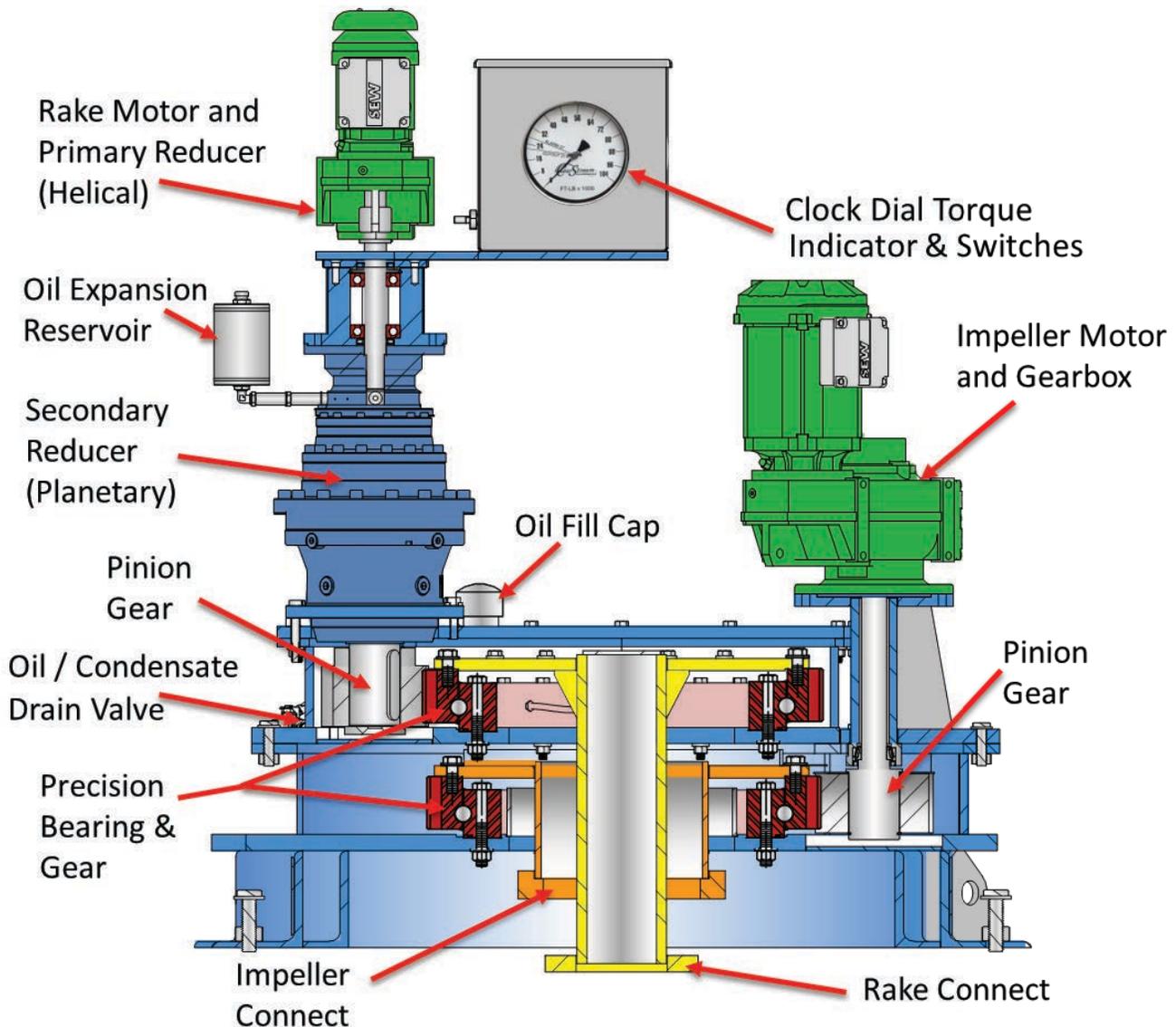
Shaft drives are mounted on top of a full-span bridge. The inlet to the clarifier or thickener usually comes from the side or over the top. The shaft hangs from the drive and supports the rake mechanisms. The drive assembly is accessed by a walkway spanning half the bridge or the entire bridge if dual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



Dual Shaft Drives

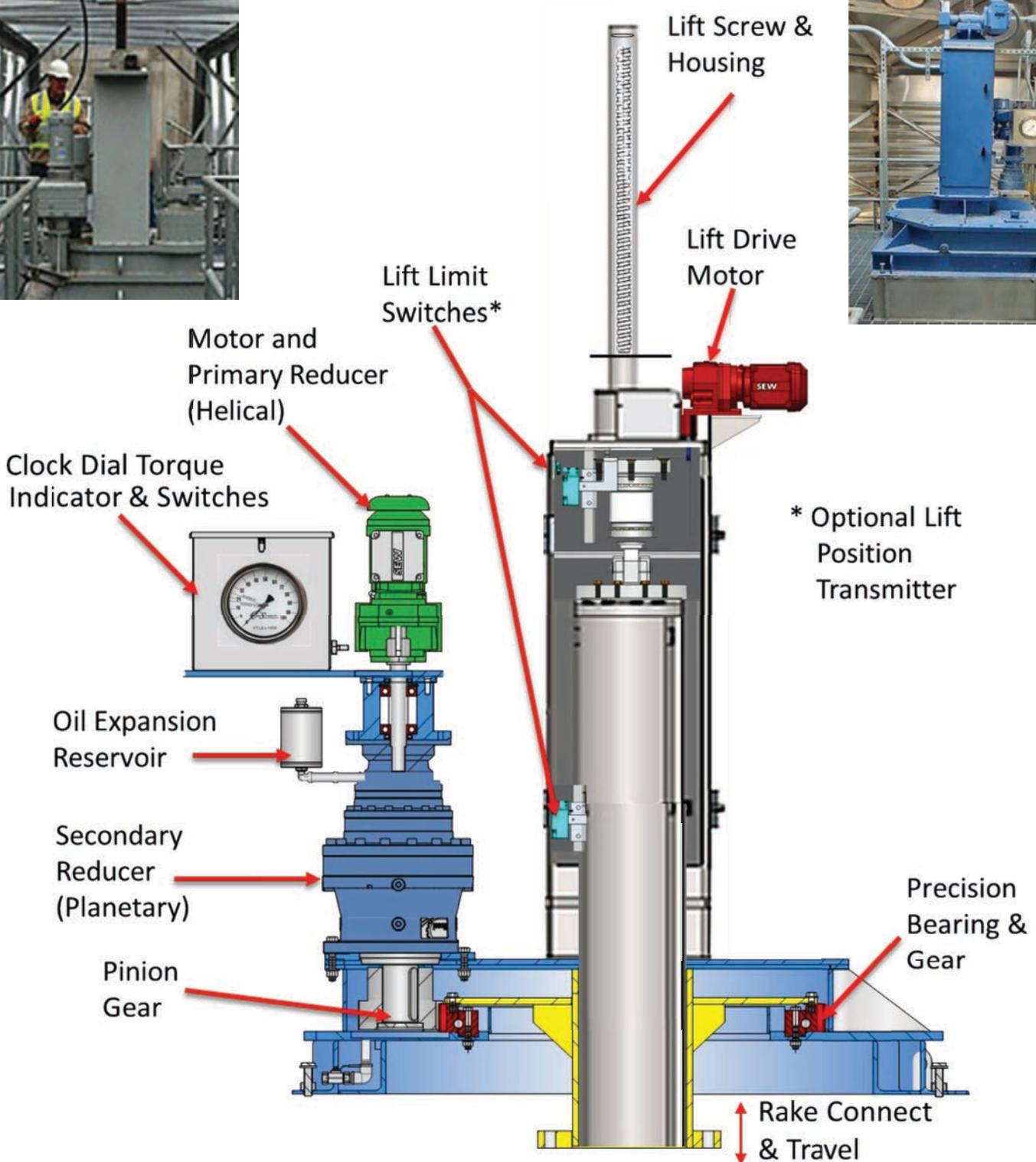


When it is necessary to use an additional rotating component, such as an impeller in the case of a Solids Contact Clarifier or a flocculating mixer in the case of a Flocculating Clarifier, a dual shaft drive is employed. This adds an additional “high speed” drive as a means to rotate the impeller or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



Shaft Drive with 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.



Specialty Drives

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 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.



Multi-Pinion Shaft Drives

For applications requiring even higher torque ratings, a multi-pinion 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.



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 manufactures 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 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

Direct drives are available in both bridge mounted shaft units and column mounted cage 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.



REPLACEMENT DRIVES, UPGRADES and RETROFITS

ALL MAJOR BRANDS & DESIGNS

Bring new life to your rotating equipment by replacing outdated drives with the latest heavy duty precision bearing drive technology. ClearStream provides their proven standard design units with a custom-built adapter plate to connect the new drive to the existing rake mechanism whether it is a cage type or a shaft type drive. New drives are "Plug and Play".



Aftermarket drives can be rebuilt or replaced to improve performance or update to newer technology.

BILL OF MATERIALS					
ITEM NO.	QTY.	MATERIAL	DESCRIPTION	LENGTH	WEIGHT
1	1	CARBON STEEL	PL. 1 1/2" X 40" O.D.	--	5873

INSPECTION CHECKLIST		DATE	BY
<input type="checkbox"/>	CONFIRMATION	DATE	SIGNATURE
<input type="checkbox"/>	DIMENSIONAL	DATE	SIGNATURE
<input type="checkbox"/>	MATERIAL	DATE	SIGNATURE
<input type="checkbox"/>	DRY / CONNECTION	DATE	SIGNATURE
<input type="checkbox"/>	WELD	DATE	SIGNATURE
<input type="checkbox"/>	PAINT	DATE	SIGNATURE

BASE PLATE

PART NO. P005-001 REV 0
1/2 SHEET 1 OF 1



REPLACEMENT MECHANISMS, UPGRADES, CONVERSIONS, and RETROFITS

Revitalize and update old clarifier, thickener, DAF, trickling filters etc. Whether the project is to replace in kind or update to a new design, ClearStream can handle the project start to finish. We will demo the old equipment, make any tank repairs required, install and start up the new unit. This can bring new life and better efficiency and operating costs to existing plants.

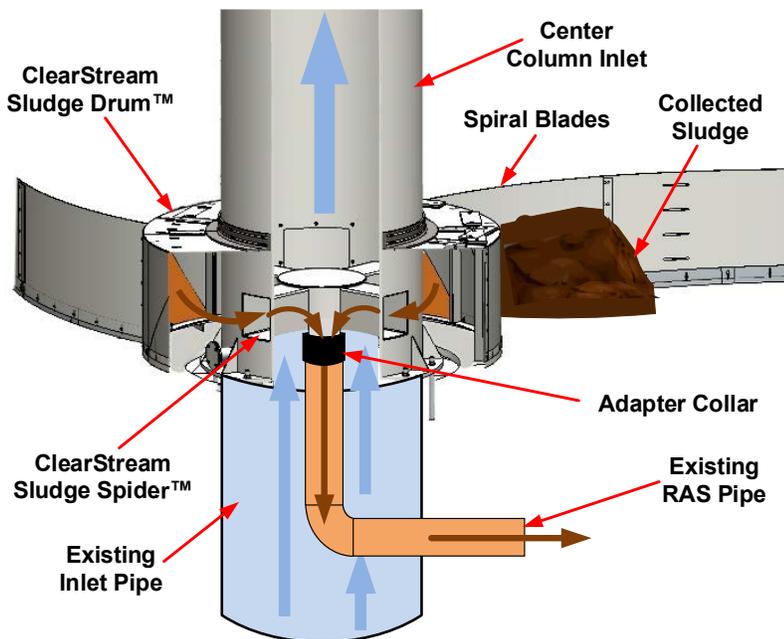


Before



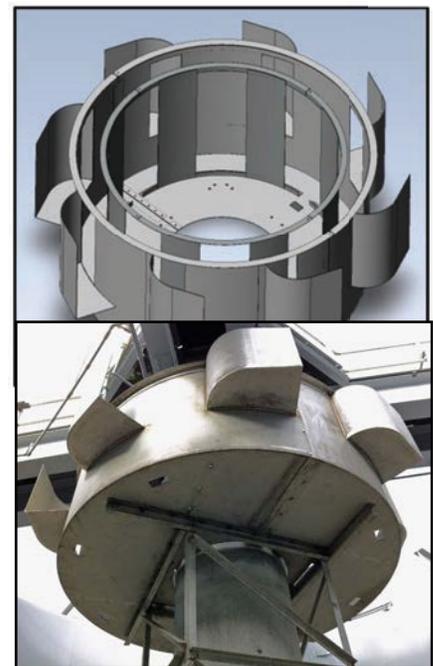
After

Convert A Sludge Pipe Clarifier to Spiral Blade Clarifier



Improve RAS concentration while leaving
the concrete floor intact

Influent Dispersion Well™



Upgrade feedwells
for better operation



AFTER-MARKET PARTS and SERVICE

Choosing quality aftermarket parts can offer benefits such as faster installations, reduced costs, improved performance, and lower maintenance requirements, particularly for rebuilding or retrofitting existing clarifiers rather than replacing entire systems.



- Inlet Boxes
- Drop Pipe Assemblies
- Skimmer Assemblies
- Scraper Assemblies
- Rakes, Chain, and Sprockets
- Scum Flushing Valves
- Weirs, Baffles, and Launder Covers
- Motors and Gear Boxes

