

DRAGLINE PARTS & SERVICES

- CATERPILLAR/BUCYRUS/MARION
- KOMATSU/P & H • UDD

With a long engineering and manufacturing background in dragline components, Hofmann Engineering supply the full range of new and refurbished dragline parts that are interchangeable with the OEM's. All major mechanical components are available including the swing base, rack, rails and rollers, walking eccentrics, cams, shafts, gearboxes and boom point sheaves. In situ induction hardening of rope drums by Hofmann's Site Team reduces downtime.



SWING RACK ASSEMBLIES

- Forged alloy steel rack rims Q&T to 330BHN combined with fabricated construction.
- High performance racks with a unique heat treatment procedure that increases the hardness to 450BHN.
- Swing pinions are full contour induction hardened.



UDD MECHANICAL CONVERSIONS

Hofmann Engineering completely designed, manufactured and installed the mechanical drive for the UDD (Universal Dig and Dump) dragline.

Our concept provides a free-floating, alignment free, shaft mounted, modular gearbox that bolts to the side of the rope drum. This gearbox contains HofCarb carburised and precision ground gearing with a filtered oil recirculation system.

Being shaft mounted and modular enables this gearbox to be pre-test run and changed out in under one shift without requiring realignment.



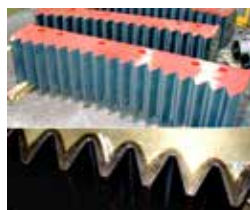
INPUT MOTOR PINIONS

- Double helical hard cut narrow gap. Case carburised to 60-62HRC and finished to AGMA 12 quality.
- Quench and tempered to 360 BHN and cut to AGMA 10 quality as per OEM design.
- CARB bearing alignment technology with eccentric cartridges can also be used on Bucyrus machines to give over a 200% improvement in bearing life.



RAILS & ROLLER ASSEMBLY

- Original or 3rd (thrust) rail designs.
- Laser tracking inspection to 40 micron accuracy.



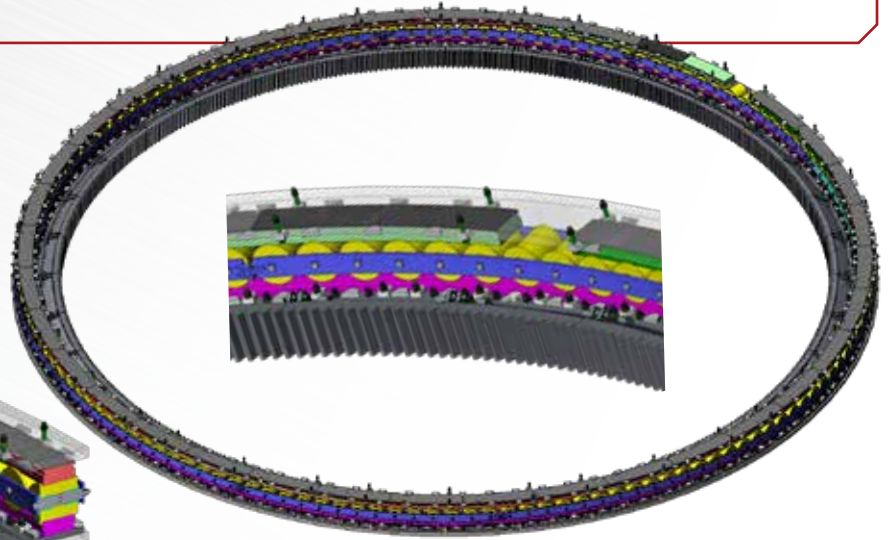
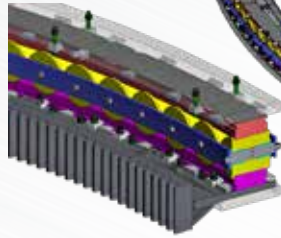
RACK SEGMENTS

- Fully assembled and inspected in-house prior to on-site installation.

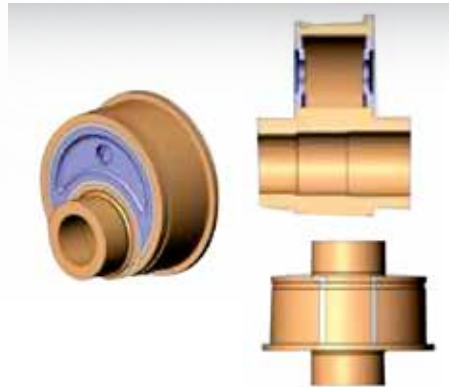
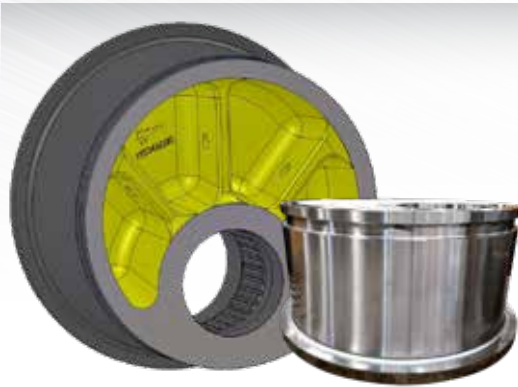
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RACKS, RAILS & ROLLERS

- Improved material chemistry to achieve increased hardness and superior mechanical properties.
- High quality forgings fully ultrasonically tested to AS1065 Level 1.
- Complete assemblies trial fitted prior to despatch.



PROPEL ECCENTRICS



1. FORGED

- A single piece quench and tempered forging results in superior mechanical properties.
- Hardness achieved: 320-350 BHN.

2. FORGED FABRICATED

- Eccentric casting fully machined.
- Forged steel version available from AS1444-4330 steel.
- Hardness achieved: 270-300 BHN.

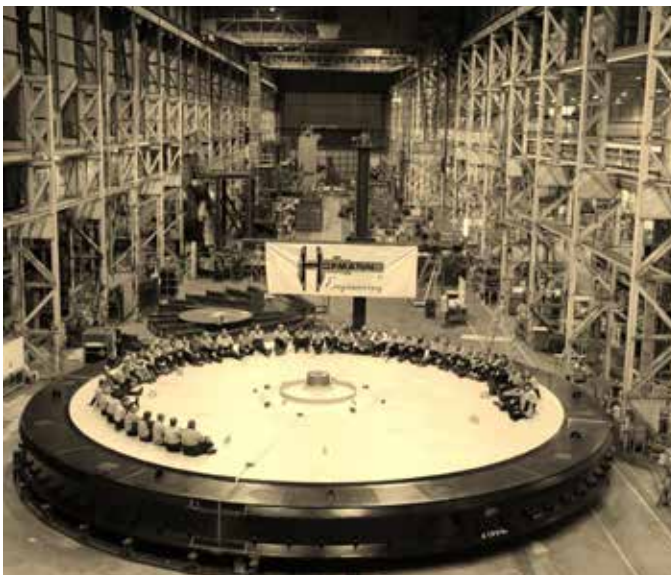
3. CAST VERSION

- Eccentrics also available as an original cast version.
- Hardness achieved: 220-260 BHN.

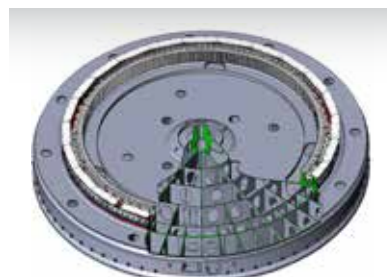
4. FULL REFURBISHMENT

- Welding, stress relieving and machining back to as new dimension including the spline.

SWING BASE TUBS



- Manufactured with a minimum of 80mm plate for the circumferential diaphragm sections.
- Stress relieving is carried out on the full tub quadrant sections.
- Supplied in 5 major fabricated sections for ease of site assembly with minimal site installation time required.
- Includes general thickening of bulkhead diaphragms.
- Includes 2 pinion change-out holes (with covers and lower support structures.)



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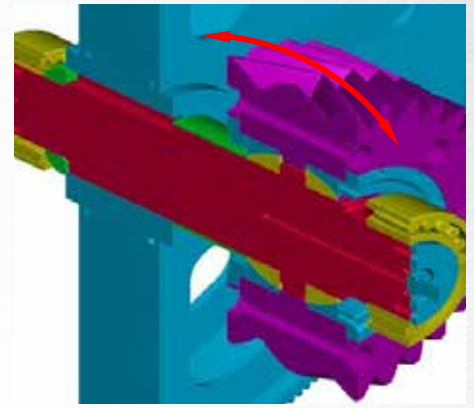
DRUM GEARS

- New forged steel gears 330 to 360 BHN precision cut to AGMA 10.
- Mechanically re-rimmed gears: Replace the gear teeth with a bolt on arrangement to save time and money.
- Re-rimmed gears: Remove old rim and weld new rim to hub with submerged arc full penetration weld.



INTERMEDIATE ASSEMBLY

- Intermediate gears: forged steel, staggered tooth, double helical, through hardened 330 to 360BHN, precision cut to AGMA 10 quality.
- Intermediate shafts: forged steel, spline coupling carburised to 60-62HRC, precision cut to AGMA 12 quality.
- CARB bearings increase bearing life by up to 200%.



SELF ALIGNING PINIONS

- Self-aligning gearing technology maintains 100% contact in operation.
- Double helical zero-gap 19" face width, carburized to 60-62HRC and precision ground to AGMA 12 quality.
- Spherical bearings carburised to 60-62HRC and lapped for 100% contact, oil lubricated.



PROPEL GEARS

- New or reclaimed hub.
- Reversible gear rim on the same side hub thus doubling the life of the gear.
- Mechanically fastened rim can be replaced independently of hub.
- Forged steel gear rim, through hardened gear 330 to 360BHN, precision cut to AGMA 10.



PROPEL SHAFTS

- New shafts of high quality alloy forging with a higher forging reduction.
- Quench and tempered to achieve hardness of 320-360 BHN.
- Polished and shot-peened radii and transitional areas to increase strength.



SWING PINIONS

- Forged High Alloy steel precision ground to AGMA12.
- Induction hardened full contour induction hardened to 54-58HRC 8mm thick case.
- Impact resistant core hardness of 280-310BHN.



ROPE SHEAVES

- New forged steel rope sheaves, full contour induction hardened grooves to 55HRC for a case depth of 6mm.
- Repaired sheaves by full penetration submerge arc welding the worn groove and then induction hardening.



8200 HOIST ARRANGEMENT

- Modular design allows quick and easy change out.
- Rigid construction reduces distortion and gear misalignment.
- Interchangeability between gearboxes and gearing.
- Self-aligning technology maintains 100% contact during floor deflection.



GEARBOX MODULE

- Maintenance and testing of gearbox can be done in a clean workshop rather than inside the dragline.
- Installation requires less skill and accuracy with the self aligning pinion.
- Gearing: forged steel, carburised to 60 ± 2 HRC, high precision ground.



SHAFT MOUNTED GEARBOX

- Modular design allows quick and easy change out in one shift.
- Rigid construction reduces distortion and gear misalignment.
- Free floating isolated from dragline floor distortion.
- Alignment free gearbox bolts directly to the hoist drum.



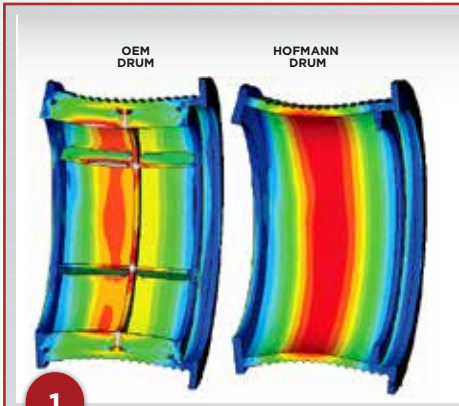
SWING PLANETARY

- The swing gears are manufactured from high quality alloy steel forgings and heat treated to increase load carrying capacities.
- All gearing is ground to high AGMA quality.



CENTRE PINTLE

- Designed using FEA modeling to reduce the magnitude of stress and reduce stress concentrations.
- New forged steel construction overcomes cast steel cracking problems.



ROPE DRUM DESIGN

- Finite element analysis to eliminate the tendency of OEM rope drum internal stiffeners to crack.
- Hofmann Engineering design removes all internal lateral stiffeners and increases the drum shell forging thickness to reduce stress.



ROPE DRUM MACHINING

- All rope drums are fully machined in-house from the initial fabrication preparations right through to cutting of the rope grooves, turning of the flanges and drilling and tapping of the holes. This ensures that complete control of the project is maintained and the highest standards of quality are guaranteed.



INDUCTION HARDENING

- New forged steel drums: fully fabricated using full penetration welds and then full contour induction hardened to 55 HRC for a case depth of 6mm.
- Worn drums: all cracks are removed before the drum is built up with 30mm of submerged arc weld, machined and then induction hardened.



ROPE DRUM CLAMPS

- Unique design developed by Hofmann Engineering.
- Clamp is integrated into the rope drum center flange.
- Precision machined.
- Case hardened.
- Optimized for weight.
- Greater clamping force.



HOIST/DRAW BULL GEARS

- New forged steel 3 piece design.
- The spider is an AISI 1444/4140 quench and tempered forging with a hardness range of 280-320 BHN instead of a casting.
- The gear rim forging is AISI 1444/4330 quench and tempered with hardness of 320-360 BHN. This forging offers better mechanical properties to go along with the increased hardness.
- Depending on customer preference, can be supplied in parts or as an assembly.

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