TRADITIONAL P&H™ CRANES FOR MODERN APPLICATIONS

CJ TROLLEYS AND HEAVY DUTY CRANES
With the 2006 acquisition of Morris Material Handling, Konecranes became the rightful owner of the engineering drawings, manufacturing machines, and general know-how that built the P&H™ brand of overhead cranes dating back to 1884. One small but significant asset could not and did not come along with the purchase – the black and yellow, boldly rectangular logo that is the P&H™ trademark. The P&H™ logo was never owned by Morris Material Handling, instead it was and continues to be used by Morris Material Handling under a license agreement. Today, Konecranes can provide a genuine and original P&H™ crane, hoist and replacement part because we own all the stuff that makes up the crane. Konecranes just can’t apply a P&H™ logo to a crane because Konecranes does not own or license use of the logo. The ownership of the P&H™ logo is in the hands of Harnischfeger Technologies Inc., to whom the P&H™ trademark is registered.

Meanwhile, Morris Material Handling is able to continue using the P&H™ trademark because its license agreement with Harnischfeger Technologies remains in effect. Unfortunately, the license agreement does not extend up the org chart to the parent company, Konecranes. Confused? We can’t blame you. Please read this a couple of times or call our Communications group in Springfield Ohio if you’d like more information. Not so strange a story in these complicated days of trademark law.

Konecranes is fully committed to supporting the P&H™ legacy

- Continued availability of the popular Hevi-Lift and CJ hoists. You can still get the exact same hoist, without the P&H™ logo.
- Availability of Prescription Parts™ through Konecranes and Crane Pro Parts™.
- The educational services of the Konecranes Training Institute (formerly the P&H Institute).
HEAVY-DUTY CRANE FEATURES

10- TO 750-TON CAPACITIES

1. **BOX SECTION END TRUCKS** offer strength and stiffness in both the vertical and horizontal planes, minimizing vertical deflection and horizontal crane skew.

2. **3-PLANE BOLTED GIRDER/END TRUCK CONNECTION** at the top, side, and bottom of the truck, hence no field welding and accurate alignment and maximum rigidity.

3. **TWO HOIST LIMIT SWITCHES** - a rotating shaft limit switch is backed up by a final weight operated limit switch activated through direct contact with the bottom block.

4. **“BUILT-UP” HOIST UNIT** - Each component: motor, gear case, drum, upper block - is designed to be serviceable without disturbing the others.

5. **PARALLEL SHAFT HOIST GEAR CASE HORIZONTALLY SPLIT ALONG SHAFT CENTERS** - Individual shaft assemblies can be removed or serviced without removing the gear case or disturbing any other assembly.

6. **ENCAPSULATED HOIST TROLLEY & BRIDGE GEAR CASE BEARINGS** - Designed to prevent bearing contact with the gear case frame in the event of a bearing failure.

7. **WELDED STEEL BOX SECTION GIRDERs** with web plates continuous-welded to the top and bottom plates for maximum strength and stiffness. Full depth diaphragms provide torsional stability and web plate support. Cover plate splices are full-penetration welded and tested for maximum joint integrity.

8. **T SECTION AISC TROLLEY RAILS** - ASCE crane rails provide a durable track surface for minimum wear. Rails are designed specifically for use with flanged steel wheels, and follow CMAA No. 70 and AISC No. 6 crane standards. Rails are fastened to the girder with welded clips - welding directly to the rail is not allowed.

9. **ROTATING AXLE ASSEMBLIES** - Wheels are pressed onto a rotating axle and supported by spherical roller bearings on each side of the wheel. Driver wheels are pressed and keyed to the axle. This axle design allows removal of an entire wheel assembly for ease of servicing.

10. **LOAD BLOCK SHEAVES** - Feature individually lubricated roller-bearing assemblies for ease of maintenance.

11. **FOOT-MOUNTED BRIDGE DRIVE** - Are coupled to the wheel axles by a geared flexible coupling. Service is performed without disturbing the drive axle assembly.

12. **FOOT-MOUNTED TROLLEY DRIVE** - Is coupled to the wheel axles by couplings and floating shafts. Service is performed without disturbing the drive axle assemblies.

13. **OIL BATH GEARING** - All hoist, trolley and bridge drive gearing is enclosed in sealed gear boxes, with oil bath lubrication for the longest possible service life and ease of maintenance.

14. **CRANE DUTY MOTORS** - Totally enclosed brushless squirrel cage motors designed specifically for crane duty service, with minimum maintenance required. Motors are 60-minute rated or higher, with minimum Class F winding insulation.

15. **FORGED STEEL HOOKS** - Are designed and constructed for maximum reliability.

16. **REDUNDANT END LINK** - All eight-wheel cranes have a pinned link connecting the two end trucks. The pinned link maintains the proper crane spread, should the end tie be damaged or need repair.

17. **PARALLEL SHAFT TROLLEY AND BRIDGE GEAR CASE SPLIT ALONG SHAFT CENTERS (OPTIONAL)** - Allows servicing and parts replacement without removing the gear case.

18. **90-DEGREE MCB TROLLEY AND BRIDGE WHEEL BEARING CAPSULES (OPTIONAL)** - Are the most rugged and reliable bearing capsule arrangement for overhead crane service. All loading, including horizontal force, is transferred to the truck through the bearing capsule, not the attachment bolts. The right-angle design allows for easy replacement of the wheel assembly.

19. **ALTERNATE TROLLEY AND END TRUCK DESIGN** - Offer shaft mounted standardized drives with encapsulated wheel bearing design.

20. **P&H™ BRAKES** - Offer dependable long-term reliability.

FULLY CUSTOMIZED OPTIONS ARE AVAILABLE TO MEET YOUR UNIQUE REQUIREMENTS
CJ TROLLEY

SPECIFICATIONS
- Designs for CMAA Class D, E, & F Service
- Double reeved for true vertical lift
- Drum diameter to rope diameter ratio is a minimum of 24 to 1.
- Hoist motor is a P&H™ totally enclosed, non-ventilated inverter duty, squirrel cage induction motor designed for hoist service with variable frequency control.
- Hoist motor is foot mounted, rated 60 minutes, and has Class F insulation and thermistors imbedded in windings.
- Hoist speed reducer is a parallel shaft type split horizontally along shaft centers, which allows for the removal of shaft assemblies without disturbing the other components.
- 5-150 ton capacities
- Our high speed gearing is helical for quiet, smooth operation. Low speed gearing is spur, to eliminate large thrust loads.
- Hoist gear case is removable and base mounted, completely enclosed, and splash lubricated, with spring-backed oil seals or o-rings throughout. Bearings in separate retainers.
- Hoist brake is spring-set, electromagnetically released shoe brake or DC Disc Brake.
- Shoe brakes are available and included at 75 HP.
- Hoist brake is rated at 150% of rated motor torque and is operated by a DC power supply.
- Geared type upper and lower limit switch, plus control circuit weight type upper limit switch.
- Trolley wheels are forged steel, straight tread, double flanged, heat treated 58-62 RC.
- Trolley drive motors are totally enclosed, fan cooled, continuous rated with Class F insulation.

FEATURES

HOIST MOTOR AND BRAKE
- The motor is a foot mounted, totally enclosed inverter duty squirrel cage induction motor rated 60 minutes, with Class F insulation and thermal protection.
- The brake is a spring-set, electromagnetically released DC disc brake rated at 150% of motor torque.
- An encoder monitors speed and direction.
- Shear bars are installed after final assembly to retain shaft alignment.
- The motor coupling is a geared flexible type.

HOIST SPEED REDUCER
- The reducer is base mounted, parallel shaft type, horizontally split along shaft centers.
- High speed gearing is helical for quiet, smooth operation. Low speed gearing is spur type to eliminate large thrust loads. Gear tooth form is 20 deg FD-FPF.
- The minimum hardness of all the gearing is 341,269 BHN, while induction hardened/carburized gears are 54-62 Rc (550-690 BHN).
- All bearings are anti-friction self-aligning spherical roller type, mounted in individual machined retainers designed to protect the gear case if a bearing should fail.
- The reducer is completely enclosed and splash lubricated, with spring-backed oil seals or o-rings throughout.
- The gear case and cover are kept in alignment by body-bound bolts in reamed holes.
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- Inspection covers are included in the gear case cover.
- A breather is provided to equalize gear case pressure.

DRUM
- The drum to wire rope diameter ratio is a minimum of 24 to 1.
- Flanged ends designed keep rope on drum in the event rope should jump grooves in a slack rope condition.
- The drum shell is steel, not cast iron.
- Double bolt rope clamp fastens two wraps of wire rope to the shell. The two wraps used for clamping are in addition to the two dead wraps left on the drum when the hook is at its lowest position. The hook includes a safety latch and rotates 360 degrees.

LIMIT SWITCHES
- Geared type upper and lower limit switches are provided.
- A weight operated upper limit switch backup is provided.
- All limit switches are control circuit type.

UPPER AND LOWER BLOCKS
- The sheave to rope diameter ratio is a minimum of 20 to 1 in both the upper and lower blocks.
- All sheaves are of equal size and are made from forged or hot rolled steel and supported by roller bearings.
- The sheave groove profile is per AISE No. 6.
- Each sheave bearing is lubricated by its own lube fitting.
- Upper block sheaves are serviceable and removable from top of trolley.

TRUCKS AND DRIVES
- All motors are totally enclosed fan cooled (TEFC), continuous rated with class “F” insulation.
- The brakes are spring-set, electromagnetically released DC disc type.
- The brakes have a manual release feature for serviceability.
- The reducers are mounted in a dual drive (A-4) arrangement.
- All gears are carburized and ground to AGMA 11 quality, and hardened to 58Rc hardness minimum for extended life.
- All reducer bearings are rated at 20,000 hours, which meet CMAA Class “E”.
- Wheels are hardened forged steel, straight tread, double flanged.
- Wheel bearings are individually enclosed in bolted-on housings.
- High strength structural tube end truck construction.
- OSHA required bumpers and rail sweeps are included.

SMARTORQUE® VARIABLE FREQUENCY CONTROL
- The lightweight, ergonomic pendant is suspended from the control panel (or can be shipped loose).
- The enclosure is impact resistant, chemically resistant, watertight, double insulated, and rated NEMA 1, 3, 4X and 12.
- Two step or single step buttons are provided to suit selected control.
Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity-enhancing lifting solutions as well as services for lifting equipment and machine tools of all makes. In 2012, Group sales totaled EUR 2,170 million. The Group has 12,100 employees at 609 locations in 47 countries. Konecranes is listed on the NASDAQ OMX Helsinki (symbol: KCR1V).

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