ENGINEERED TO ANSI B30.5 AS REQUIRED BY OSHA

AMERICAN

DIESELECTRIC®

with HYDRAULIC SWING

LOCOMOTIVE CRANE SPECIFICATIONS

GENERAL SPECIFICATIONS

TRUCKS:

Multiple wear roller steel, 33" wheels standard, Class U.
Cast steel pedestal type, side frames with blocking cams on top of side frames.
Two 8" x 8" air brake cylinders per truck. Each cylinder operates two wheels.
Hand brake for one truck.
Traction type electric motor driving inside axle of each truck through triple reduction gearing enclosed in heavy cast steel case, gears are running in oil.
Sliding pinion in gear case is provided to disengage motor.
Gear box supported on axle with rubber mounted torque arm fastened to bolster.
Motor flange is attached to gear box.
Clearance under travel motor gear case — 4-5/8".
Clearance under traction motors — 8-1/2".
Center to center of truck axles — 6'8".
Track gauge — 56-1/2".
Trucks meet AAR requirements.

CARBODY:

All welded structural steel construction furnishing a rigid crane base and fully cover plated for safety. 6-1/4" x 8" type E couplers with friction draft gear. Sliding end outriggers, box section welded construction are standard. Lever operated hand brakes on one truck is mounted at the end of Carbody. Standard AAR type steps and hand grabs are included.

BULLGEAR AND SWING BEARING:

The swing ring is an anti-friction bearing, integral with the bullgear, with weld-on construction to machined surface on the carbody. The bullgear has internal cut teeth.

AIR COMPRESSORS:

Bendix Westinghouse Tu-flo 1000, 24 CFM engine mounted compressor on General Motors engines.

Cummins 30 CFM two cylinder engine mounted air compressors on Cummins engine.

POWER:

Standard: General Motors model 6-71N diesel 6 cylinder, 4-1/4" bore, 5" stroke, 426 cu. in. displacement rated 185 HP @ 1700 RPM, 24 volt electric starting.

ALTERNATE ENGINES:

General Motors Model 8V-71N diesel 8 cylinder, 4-1/4" bore, 5" stroke, 568 cu. in. displacement rated 245 HP @ 1700 RPM, 24 volt electric starting.

Cummins NT855-C Turbocharged diesel engine, 6 cylinder in line, 5-1/2" bore x 6" stroke, 855 cu. in. displacement rated 260 BHP @ 1700 RPM, 24 volt electric starting.

ROTATING MACHINERY BASE:

The entire rotating deck is a single unit, fabricated from heavy rolled steel plates, deep girder construction with integral walkways add rigidity to the deck. The complete deck is jig drilled and machined after fabrication for proper machinery alignment.

FUEL TANK:

117 Gallons capacity.

MAIN HOIST DRUM ASSEMBLY:

Twin ductile iron drums, with stress relieved brake and clutch surfaces, are mounted on anti-friction bearings on the main drum shaft. The main drum shaft is also mounted in anti-friction bearing pillow blocks.

Lagging options are available to obtain various line pulls and speeds. Split steel laggings are bolted to drums for quick replacement.

Internal expanding, tandem clutches are activated by highly responsive variable air controls. Cooling fins on brake and clutch rings assure maximum dissipation of heat. Brake shafts and pins are mounted in anti-friction bearings for responsive operation with minimum foot pressure from the operator.

A spring set, air released brake mechanism on each drum, controllable from the operator's lever stand, actuates automatically in the event there is a loss of air during crane operation. These external contracting brakes are capable of suspending a rated load indefinitely without further effort from the operator, and will function under normal conditions of brake temperature and lining wear provided the brake mechanisms receive proper adjustment. The spring set hoist brakes are furnished as standard equipment on all machines.

GENERAL SPECIFICATIONS (continued)

DRUM LAGGING:

Standard laggings are 21-1/2" diameter for maximum rated lift crane service, or controlled load lowering.

Optional 26" diameter drum laggings for magnet, clamshell, or grapple service. Special 29" diameter drum laggings are available.

713923 — L.H. Lagging — Magnet, Clamshell, or Grapple. (Optional)
Grooved. 26" dia. x 14-3/4" wide.
Working Capacity: 340 ft. of 7/8" Rope on 3 layers.
Storage Capacity: 465 ft. of 7/8" Rope on 4 layers.

713897 — L.H. Lagging — Lift Crane. (Standard)
Smooth. 21-1/2" dia. x 14-3/4" wide.
Working Capacity: 625 ft. of 7/8" Rope on 6 layers, or 455 ft. of 1" Rope on 5 layers.
Storage Capacity: 750 ft. of 7/8" Rope on 7 layers, or 565 ft. of 1" Rope on 6 layers.

713712 — L.H. Lagging — Controlled Load Lowering. (Optional)
Smooth. 21-1/2" dia. by 12-19/64" wide.
Working Capacity: 515 ft. of 7/8" Rope on 6 layers, or 375 ft. of 1" Rope on 5 layers.
Storage Capacity: 620 ft. of 7/8" Rope on 7 layers, or 465 ft. of 1" Rope on 6 layers.

713922 — R.H. Lagging — Magnet, Clamshell, or Grapple. (Optional)
Grooved. 26" dia. x 19-3/4" wide.
Working Capacity: 455 ft. of 7/8" Rope on ? yers.
Storage Capacity: 625 ft. of 7/8" Rope on layers.

713921 — R.H. Lagging — Lift Cran (Standard)
Smooth. 21-1/2" dia. x 19-3/4" wide.
Working Capacity: 840 ft. of 7/8" R pe on 6 layers, or 610 ft. of 1" Rope on 5 layers.
Storage Capacity: 1,010 ft. of 7 " Rope on 7 layers, or 760 ft. of 1" Rope on 6 layer

713711 — R.H. Lagging - Controlled Load Lowering. (Optional)
Smooth. 21-1/2" dia. x 19-1/8" ide.
Working Capacity: 815 ft. x 7/8' Rope on 6 layers, or 595 ft. of 1" Rope on 5 layers.
Storage Capacity: 975 ft. of 7/8" Rope on 7 layers, or 735 ft. of 1" Rope on 6 layers.

BOOM HOIST:

Two cast steel boom hoist drums are mounted on a common shaft on machinery base, powered through gear train from engine through drive shaft to boom hoist shaft. A single lever graduated air valve controls both raising and lowering, cut tooth spur gear is mounted on anti-friction bearings with alloy cast iron clutch ring, clutch spider is splined to clutch shaft, air controlled clutch is internal contracting band and the clutch shaft is mounted on bronze bushed pillow blocks. Spring set air released contracting band brake, and spring set air released locking pawl holds the boom during operation or when machine is idle.

CONTROLLED BOOM LOWERING:

Boom lowering speed limited by speed of engine; rapid boom handling, slower boom lowering by reduced engine speed; overrunning sprag clutch mechanism mounted on independent shaft engages positively and smoothly.

BOOM STOPS:

Telescopic tubular boom stops restrain the boom from overtopping in the event of hoist line or hoisting tackle failure.

BOOM HOIST SHUT OFF:

Automatically stops the boom hoist mechanism when the boom reaches a predetermined angle, the adjustable actuator rod, located near the cab roof elevation, simultaneously disengages the boom hoist clutch and sets the boom hoist brake when the boom reaches the preset high limit.

BOOM:

Standard boom will consist of 25 ft. inner and 25 ft. outer sections. Sections are butt connected for assembly and disassembly. Additional center sections with matching pendants are available in 5 ft., 10 ft., and 20 ft. lengths.

The operator's cab, located in the front right hand corner of the crane is a fully enclosed steel cab, acoustically insulated and is separated from the machinery cab for noise reduction. The operator has good all around vision plus an overhead window for good upward visibility. The front window is shatterproof glass and all other windows are Lexan, mounted in rubber.

The machinery cab has sliding doors, sides and rear with ladder to roof at left front.

TRAVEL BRAKES:

Railroad Type — Air operated.

Class I (Standard) — Formerly known as CBG.
This consists of straight air brakes on the crane trucks, operated from the operator's position. A through pipe or train line is provided. (Includes Bendix-Westinghouse 24 CFM Air Compressor.)

Class II (Optional) — Formerly known as ABG.
Includes straight air brakes from the operator's cab applying on the crane and also automatically operated air brakes applying on the crane operated by the engineer from the locomotive when crane is hauled in a train, (might be called freight car brakes). (Includes Bendix-Westinghouse 24 CFM Air Compressor.)

GENERAL SPECIFICATIONS (continued)

TRAVEL BRAKES: (continued)

Class III (Optional) — Formerly known as BBG. Includes straight air brakes from the operator's cab applying on the crane and also automatically operated air brakes applying on the crane operated by the engineer from the locomotive when crane is hauled in a train, and also automatic air brakes on cars being switched by crane. (Includes Quincy Model 370,70 CFM Air Compressor.)

All brake classes have brakes applying on all eight wheels. Hand brakes provided on four wheels (one truck).

LIGHTING EQUIPMENT:

100 amp belt driven alternator, 24 volts.
2—150 watt floodlights on cab.
2—150 watt lights on boom.
2—25 watt tail lights.
4—24 watt lights in machinery cab.
1—24 watt light in operator's cab.
1—Outlet in machinery cab for 24 volt D.C. trouble light.

HYDRAULIC SWING SYSTEM:

The swing system is composed of a torque select closed loop hydrostatic drive system. This rotates the upper on a ball race thru means of a gear reduction to the pinion and bullgear. The basic hydraulic system consists of a variable displacement piston pump and a fixed displacement motor with loop lines between the ports of the pump and motor.

To swing the machine to the right, the operator must pull on the control lever. To swing left, he must push forward on the lever. The pump has a built-in torque select valve. When you move the swing lever, the select lever on the pump linkage moves. This, in turn, produces swing torque. As you pull the handle the torque is increased until the torque requirement to swing the load is reached; then the machine starts to swing. As the machine begins to swing the required torque drops off and the volume of oil delivery increases until the desired speed is obtained. You may then coast along with the load or you may hydrostatically brake to a stop. Full torque braking may be applied if so desired by stroking the lever over center to full stroke or partial stroke over center for partial braking.

Speed and torque may be varied regardless of engine speed within the limits of the engine capability.

The pump has a pressure limit stop which limits the pressure to 4200 psi. It also has a built-in relief valve set at 5500 psi. This relief valve is only used to release pressure surges caused from shock loading.

Swing house brake is spring set, air released.

ELECTRIC TRACTION EQUIPMENT:

Generator — traction type, protected ventilated Class B insulation. Nominal rating is in excess of 100 KW. General Electric model 1519D1 is standard.

Motors — General Electric model 763A2. Rated 115 H.P., 60 min., each based on 120°C. Motors are series wound, transmission mounted, protected, self-ventilated, and drives the axle thru triple reduction gearing.

CONTACT RINGS:

Rings carry current to the travel motors from the rotating deck of the crane.

TRAVEL MASTER SWITCH:

Is a reversing type with 5 speed points. Operating lever located at lever bank.

Travel controls are magnetic reversing and easily accessible for maintenance.

CONTROLS:

Graduated air controls, pioneered by AMERICAN, put "feel" at every operator's fingertips, insure higher production and more accurate control.

MATERIALS:

Gears and pinions are heat-treated alloy or high carbon steel; cut teeth on all gears.

Involute splines are used where required for maximum tooth strength through minimum diameter where needed; self centering; equalized bearing and stress among all teeth; smooth tooth surface; easy interchangeability of parts.

Anti-friction bearings are used on all main or high speed shafts and wherever practical to provide friction-free, smooth operation with minimum maintenance.

LUBRICATION:

All anti-friction bearings and bronze bushings requiring short period lubrication are provided with pressure grease fittings; swing deck gears are provided with oil bath lubrication; drum gear train and the swing bullgear are arranged for grease lubrication.

PERFORMANCE DATA:

Swing speed ..... variable from 0 to 3 RPM
Line Pull:
with 21½" dia. lagging .. 29,600 lbs SLP @ 165 FPM
with 26" dia. lagging ... 24,800 lbs SLP @ 200 FPM
with 29" dia. lagging ... 22,500 lbs SLP @ 220 FPM

Performance figures are based on machine equipped with standard engine.

BATTERIES:

Two 6-cell batteries are connected in series and provide power for cranking the engine and for lights.

GENERAL SPECIFICATIONS (continued)

OPTIONAL ATTACHMENTS & ACCESSORIES

CLAMSHELL ATTACHMENT:

For clamshell or grapple work, 7/8" holding line and 7/8" closing line furnished to reach track level.

CONTROLLED LOAD LOWERING:

The controlled load lowering shaft is mounted behind and above the main drum shaft; shaft is alloy steel mounted in anti-friction bearings in the optional A-frame; roller chain sprocket is bolted to a special drum lagging: a mating drive sprocket is provided on the load lowering shaft; clutch is internal expanding band type. Controlled load lowering can be provided for either the right hand or left hand drum, but not both simultaneously; the large driven sprocket is bolted to the special lagging and can be bolted to either right or left lagging as desired.

Loads are lowered through the chain drive to the lowering shaft, then through the lowering clutch to the gear train and back to the engine where they are resisted by the overrunning friction torque of the engine.

Also available as an option is controlled load lowering for second drum; a second chain sprocket is mounted on the controlled load lowering clutch shaft and connected by roller chain to sprocket on drum lagging; single clutch is utilized for lowering of either drum as selected by jaw clutch shifter; cannot lower under control on both drums simultaneously.

A single air valve controls both hoisting and lowering. The foot brake stops the load.

The controlled load lowering is completely independent of all other operations.

When ordered on machines an engine brake is included.

MAGNET ARRANGEMENT:

25KW constant voltage magnet generator is belt driven from main engine, eliminating extra fuel costs and maintenance of second engine; voltage control holds voltage constant under normal operating conditions; magnet controller mounted in machinery cab, push-buttons mounted in operating levers so operator need not release control levers while operating magnet.

Over-excitation arrangement increases magnet pick-up to 20%, increasing daily output; when magnet is dropped on pile of material the operator pushes "LIFT" button on hoist lever which raises generator voltage to 275, materially increasing magnet pick-up capacity; when free from pile the button is released and voltage drops to 200, which is ample to hold the load; to release the load the operator pushes the "DROP" button on the swing lever.

Included with magnet arrangement are Gleason Model S-150 cable reel including power cable, single sheave crane block with bronze bushed sheave, and two-part magnet hoist line to reach track level.

ELEVATED CAB:

For greater vision, the operator's cab can be elevated 2 ft., 5 ft., 10 ft. or 15 ft. above standard.

MISCELLANEOUS OPTIONS:

Integral jib 5 ft. long, offset 14 in. Capacity 30,000 Lbs.
Air-operated track sanders.
Four manually operated track clamps.
Counterweight in carbody furnished and installed.
Fairlead can be provided on the boom for magnet inhaul service.
Fire extinguisher.
Fan in Cab for cooling or defrosting.
Automatic warning bell and ringer for travel.
Gyrating flashing light on top of Cab.
Controlled load lowering.
Third drum for snaking or pile driver service.
Single or Dual Air Controlled Tagline winders.

NOTE: To provide our customers with the best possible equipment and offer the latest product improvements, these specifications are subjec to change without notice and without incurring responsibility to units previously sold.

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