Rapistak MRO Prostak Management System Performance & Design Specification.

Capacities: 2000# System

Stacker Crane:

System lifting capacity: 2,000 pounds
Hoist lifting capacity: 2,750 pounds
Crane service class: CMAA Class C

Racking

Section Capacity Non-Seismic: 25,000 pounds per section
Section Capacity Seismic Zone 4: 12,000 pounds per section

System Speeds

Hoist: Minimum high speed 32 FPM; Minimum low 8 FPM for safe placement of pallets
Bridge: 120 FPM Maximum
Trolley: 25 FPM Maximum (Single Aisle), 40 FPM Maximum (Double Aisle)
Rotation: 2 RPM Maximum

Features / Performance / Construction

Racking:

- Section capacity shall be a minimum of 25,000 pounds per section (12,000 pounds for seismic 4 zones).
- Rack frame uprights shall be designed to carry both the load of the crane and the loads of the material to be stored.
- Rack shall be designed to guidelines and safety factors as set forth by the RMI (Rack Manufacturers Institute).
- Rack shall be constructed with heavy duty individual rear and top x-brace panels constructed of 2" x 2" x ¼" horizontal angles with two ¼" x 1 1/2" bar diagonal bracing.
- Rack shall be mounted on two base plates (one front, one rear) that are a minimum of 3/8" thick x 7 ¼" wide x 6" deep, approved for seismic zone 4 and utilizing two 5/8" x 4" long anchor bolts.
- Rack frame uprights shall have a 10ga. rear upright with a formed "V" guide for pallet self alignment during loading of pallets. Rear upright shall have 2.5" tall slot cut outs for positive engagement of pallet tabs.
- Rack frame uprights shall have a 10ga. roll formed front upright utilizing ½" diameter bolts on 4" vertical increments for positive pallet engagement.
- Front uprights shall be smooth as to prevent operator injury

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- Front uprights shall be one smooth continuous roll formed piece with bolts/pins for pallet storage and shall not have hooks that can be damaged and result in storage location loss.

Pallets:

- Pallets shall be manufactured with an impact resistant outer frame of ¼" steel and a top plate with a minimum thickness of 14 gage steel.
- Pallet top plates shall be pre-punched to accept bolt on pallet options.
- Pallets shall feature full length fork pockets running from front to rear of the pallet, encapsulating the entire length of the fork.
- Pallets shall utilize formed flat bar hooks to engage and lock into front rack frame upright bolts and flat bar tab to engage rear rack frame upright slots.
- Pallets shall have 100% surface utilization (rear rack pallet supports must not protrude into pallet surface area)

Mast:

- Mast rotation shall be fully motorized at a maximum of 2 rpm utilizing SEW Euro-drive or equal gearbox/motors.
- Mast shall be constructed of a minimum of 7 inch structural steel channel and utilize 1.5" wide x 2" high hardened guide bars rated at 125,000 PSI to 146,000 PSI for maximum wear resistance.
- Mast construction shall be such that mast deflection is held to a maximum of 1" deflection.
- Mast shall be constructed utilizing 2" x 1" structural cross tube supports spaced at 16 inches.
- Mast bearing mount surface shall be a machined surface.
- Bottom of mast shall have an adjustable toe guard/kick plate.
- Mast shall have a mast mounted back stop and separate mast mounted 22" wide x 19.5" deep operator canopy.
- Mast shall have 7 gage formed steel hand guards.
- Mast shall have protective expanded metal on operator side to 36" high.
- Mast shall have polycarbonate viewing window 36" from floor to 87" from floor.
- Mast shall have one LED flood light mounted on the front of the mast and rotates with the load on the forks.

Carriage:

- Carriage main rollers shall be a minimum 2 inch diameter, hardened steel roller spaced at 12.5 inches.
- Carriage side guide rollers shall be a minimum 1.5 inch diameter, hardened steel roller spaced at 8.75 inches and designed to handle up to 1,000 pounds of side load.

- Carriage shall be constructed with standard ITA class II fork carriage bars 1.5 inches tall x 5 inches wide (no shaft mount)
- Carriage shall be constructed utilizing a dual arm free fall prevention device capable of stopping and holding the full rated load. This device shall not engage the mast guide bar.
- Max fork deflection designed to be 1.25" max at full load

Hoist:

- Hoist shall be rated to handle 2,000 pound working load and weight of carriage, forks, and pallet.
- Minimum hoist lift rating shall be 2,750 pounds (3.75HP).
- Hoist shall have two lifting speeds, one slow speed and one fast speed.
- Hoist shall be of single fall chain arrangement for smooth lifting/lowering

Bridge:

- Bridge operation shall be fully motorized at a maximum of 120 fpm & shall be top running and constructed of a minimum 10 inch wide flange structural beam with a maximum deflection of 1/8 inch and utilize 9.25 inch diameter double flanged wheels with double sealed precision ball bearings rated at 2500# min. per wheel.
- Motorized bridges shall be top running and constructed of a minimum 10 inch wide flange structural beam and utilize modular wheel block assemblies and SEW Euro-drive or equal gearbox/motors.
- Bridge rail shall be square bar welded on center of beams.
- Bridge end trucks shall be equipped with rubber bumpers.

Trolley:

- Trolley operation shall be fully motorized at a maximum of 25 fpm (single aisle), 40 fpm (double aisle) & shall be top running and constructed of structural steel tube framing with 5/8 inch thick bearing mount plate and utilize 6 inch diameter double flanged wheels with double sealed precision ball bearings rated at 2500# min. per wheel.
- Motorized trolley's shall be top running and constructed of structural steel tube framing with a 5/8 inch thick bearing mount plate and utilize modular wheel block assemblies and SEW Euro-drive or equal gearbox/motors.
- Trolley bearing mount surface shall be a machined surface.
- Trolley rotation bearing shall be 34 inch diameter with 44 attachment bolts that are ½ inch diameter.

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Runway Rail:

- Rack mounted runway rail shall be a minimum of 30# ASCE rail.
- Rail splices must be designed so as to fall on rack frame top supports.
- Rail splices shall be designed to be offset from one another.

Electrification:

- Motorized stackers shall have flat cable festoon encapsulated in plastic cable track running in a cable tray the full length/span of the bridge.
- System electrification shall consist of Conductix finger safe 100 amp or equal rigid four bar conductor mounted off the rack with four 50 amp collector shoes mounted off the bridge end truck.
- Power collector ring shall be rated at a minimum of 15 amps/600v and allow 360 degree continuous rotation.

Controls:

- Controls shall be a push button detachable pendant attached to the mast.
- Control pendant station shall be equipped with an emergency stop push/pull button, and removable on/off key switch.
- Motorized stackers shall have two speed push buttons for hoisting operation and two step buttons for bridge, trolley, and rotation operation utilizing Magnetek or equal VFC (variable frequency controls) drives.

Utility Requirements:

- 460v or 230v/60Hz/3Ph
- 13 Amps @ 460V
- 28 Amps @ 230V

Paint/Finish:

- Durable epoxy and/or powder coat finish in Authority's choice of manufacturer's standard colors.

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