



Architectural Specification

Nordock SMART-HOOK™ Series – Model AR-10K Automatic Vehicle Restraint

SECTION 11161
VEHICLE RESTRAINTS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Factory assembled vehicle restraint
- B. Control panel and communication system.
- C. Installation and Owner's Manual.

1.02 RELATED WORK

- A. Section 11160 – Dock Levelers
- B. Section 11164 - Seals and Shelters.
- D. Section 11165 - Dock Bumpers.

1.03 SYSTEM DESCRIPTION

- A. Vehicle restraint shall be manufactured the by the same manufacturer as the dock leveler and provided with the following features:
 - 1. Restraint shall engage and restrain variable height rear impact guards.
 - 2. Unit to restrain all trailers with legal rear impact guards and lower to 9" above ground.
 - 3. Communication system shall have red and green LED lights and instruction signs inside and outside.
 - 4. Restraint shall maintain engagement during loading with large rotating hook.
 - 5. Activation shall be with push button controls for engage and disengage functions.
 - 6. The hook position to be continuously monitored by an angular position sensor. **Mechanical limit switches are unacceptable.**
 - 7. Restraint shall be stored off ground for automatic positioning by trailer.
 - 8. Restraint shall monitor an abnormal condition and sound an alarm if the rear impact guard is not detected. A restraint bypass button shall silence alarm leaving a red light outside and alternating red/green inside to indicate caution until the release button is selected to reset the system.

1.05 SUBMITTALS

- A. Submit Manufacturer's installation instructions.
- B. Submit shop drawings showing layout, conduit positions and wiring schematics.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Impact Series - Model AR-9500 as manufactured by Nordock Inc.

2.02 EQUIPMENT

- A. Cast in Plate (Optional): 3/8" steel plate with concrete anchors poured into dock face for welded installation of restraint.
- B. Vehicle Restraint:
 - 1. Vertical Frame: Mounting plate and vertical track of 5/16" steel suitable for welding to cast in plate or bolted to dock face with concrete anchors.
 - 2. Carriage: Low profile above ground mounted structural welded assembly with pivoting slope extension. Unit to adjust to be positioned without electrical power required and adjust automatically to variable trailer rear impact guards.
 - 3. Barrier: Large rotating hook constructed with 1-1/4" thick steel and attached to the carriage housing with a 1-1/4" diameter superior shaft.
 - 4. Actuator Drive: Restraining hook positioning drive shall be with a direct-coupled torque motor without brakes, clutches, chains or sprockets. Hook shall apply upward biased force against rear impact guard at all times while restraining trailer.
 - 5. Inside Communication System: Either a Green LED light to indicate when vehicle is restrained or a Red LED light to indicate that vehicle is not restrained or when restraint is stored. Audible alarm indicates a fault condition where a rear impact guard may not be present or a malfunction has occurred. Bypass selection by attendant silences alarm and illuminates alternating Red and Green lights indicating that the vehicle is not restrained and in manual bypass mode. Include label on front cover of control panel to instruct dock attendant.
 - 6. Outside Communication System: Red light to indicate when vehicle is restrained or in bypass mode. Green light to indicate restraint is stored in low profile position leaving a clear path for a vehicle to enter or leave the dock. Include large caution sign to instruct truck driver to "MOVE ON GREEN ONLY" in both forward and reverse letters.
 - 7. Controls: All controls to be in a NEMA 12 dust tight metal enclosure with hinged cover. Complete control box to be UL/CSA approved. Power consumption requirement to be 115 volt, single phase, 2 amperes.
 - 8. Power Loss: Unit to remain fully operational if incoming power is interrupted for up to 24 hours. Full functions include inside and outside signal lights, engage, dis-engage and fault condition monitors. Unit to return to original conditions when power is restored. **Units requiring manual release of restraint during power loss are unacceptable.**
 - 9. Finish: All structural steel components to be zinc plated including hook, carriage and vertical frame.

- C. Options:
1. LOGI-SMART™ control systems to integrate other loading dock equipment into one panel with pre-wired interlocks.
 2. Cast in steel wall mounting plate or cantilever bracket.
 3. Dock leveler stored interlock to disallow restraint release until leveler is removed from truck bed.

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide cast in plate for setting in front wall. (Optional)

3.02 INSTALLATION

- A. Inspect site conditions and report anything detrimental to the proper installation and performance of vehicle restraint. Do not proceed until unsatisfactory conditions have been corrected.
- B. Manufacturer's representative shall install vehicle restraint in accordance with manufacturer's instructions and recommendations.
- C. Adjust installed unit for operation as specified by manufacturer.
- D. Manufacturer's representative to examine finished installation to ensure proper operation and demonstrate proper use of the restraint to the owner.



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