Preface

The purpose of this document is to aid in the selection, installation, and maintenance of the Harrington P1000 Series Bridge Control Panels, intended for use with Harrington Series 3 / N6 Motorized End Trucks. An appendix is included on the final page to assist in identification of associated hardware kits and their components.

Introduction

The bridge control panel and control wiring is supplied by Harrington either as a pre-assembled and hard-wired unit or as separate components with plugs. The end truck motor wiring is pulled through the conduit and fittings prior to shipment from the factory.

- Hard-wired configuration – This setup is packaged so that the bridge control panel, wire and conduit can be removed from the panel and assembled to the bridge beam as detailed in these instructions.
- Plug and Play configuration – This setup includes a bridge control panel with plugs that can be installed independent of wiring to the bridge beam as detailed in these instructions. The wiring is in flexible metallic liquid tight conduit with plugs on each end which can be installed and connected to the panel and end truck motors per the instructions below.

A ladder diagram and Soft-Start / VFD Owner's Manual are supplied in an envelope within the panel enclosure as shipped from the factory. These documents should be removed from the enclosure prior to initial power-up of the panel and should be kept with the crane maintenance records for future reference in case of part malfunction or failure. Replacement documents can be obtained by contacting Harrington Technical Support.

Panel Part Number

The panel part numbering scheme is shown below in Figure 1. This part number can be found labeled on the interior face of the panel door, on the Harrington sales order acknowledgement/invoice, or on the ladder diagram supplied with the panel from the factory.

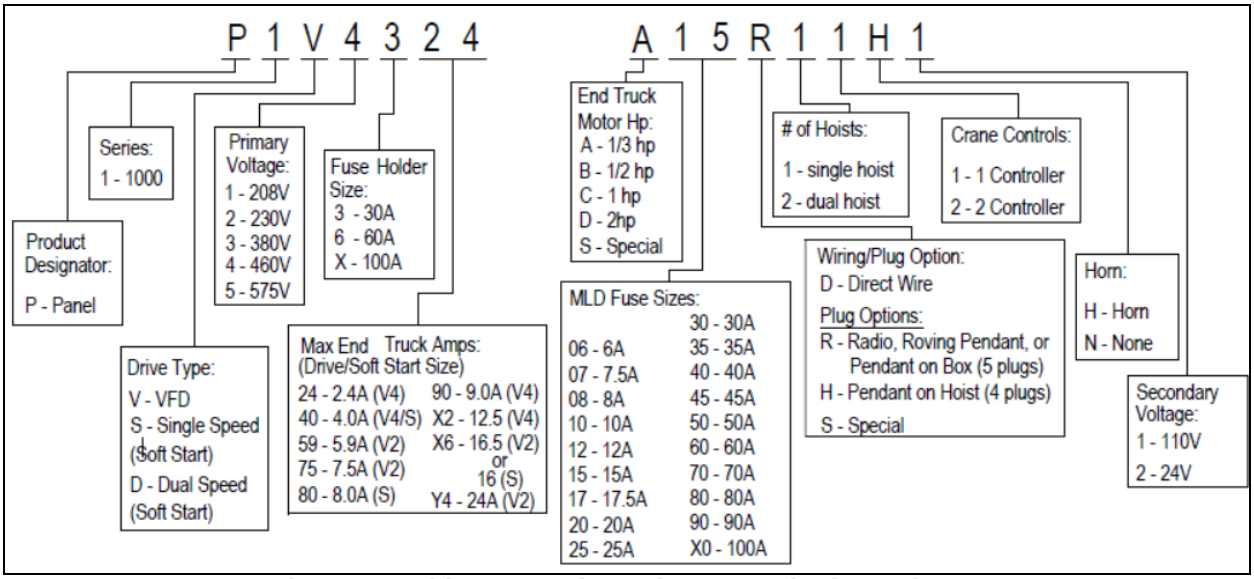

Figure 1 - Bridge Control Panel Part Numbering Scheme

Instructions

NOTICE

Read through all of these instructions prior to installing the bridge control panel and conduit.

1. Unpack the bridge control panel, wiring, and conduit from the packaging.
2. Inspect the conduit for damage such as dents or cuts. If the conduit is damaged, contact Harrington Technical Support.

⚠WARNING

Do not install damaged conduit. Use of damaged conduit can create an electrocution or fire hazard, which if not avoided, could result in death or serious injury, and property damage.

3. Inspect wires for damage. Make sure the insulation is not cracked, frayed, or damaged in any way. Do not install bridge control panel and associated wiring if any wire is damaged, contact Harrington Technical Support.

⚠WARNING

Do not install damaged wire. Use of damaged wire can create an electrocution or fire hazard, which if not avoided, could result in death or serious injury, and property damage.

4. Inspect components inside bridge control panel. Make sure all components are securely fastened to mounting panel and DIN rail. If any components are loose, tighten as required.
5. For single girder cranes, follow steps 5.1 thru 5.2 and skip step 6. For double girder cranes, skip steps 5.1 and 5.2. See Appendix section for hardware kit part numbers and component breakdowns.

5.1. (Single Girder Only) Mount the bridge control panel extension brackets to the beam as shown in Figure 2 below. Tighten the nuts to a minimum of 9.5 ft-lb (12.9 Nm).

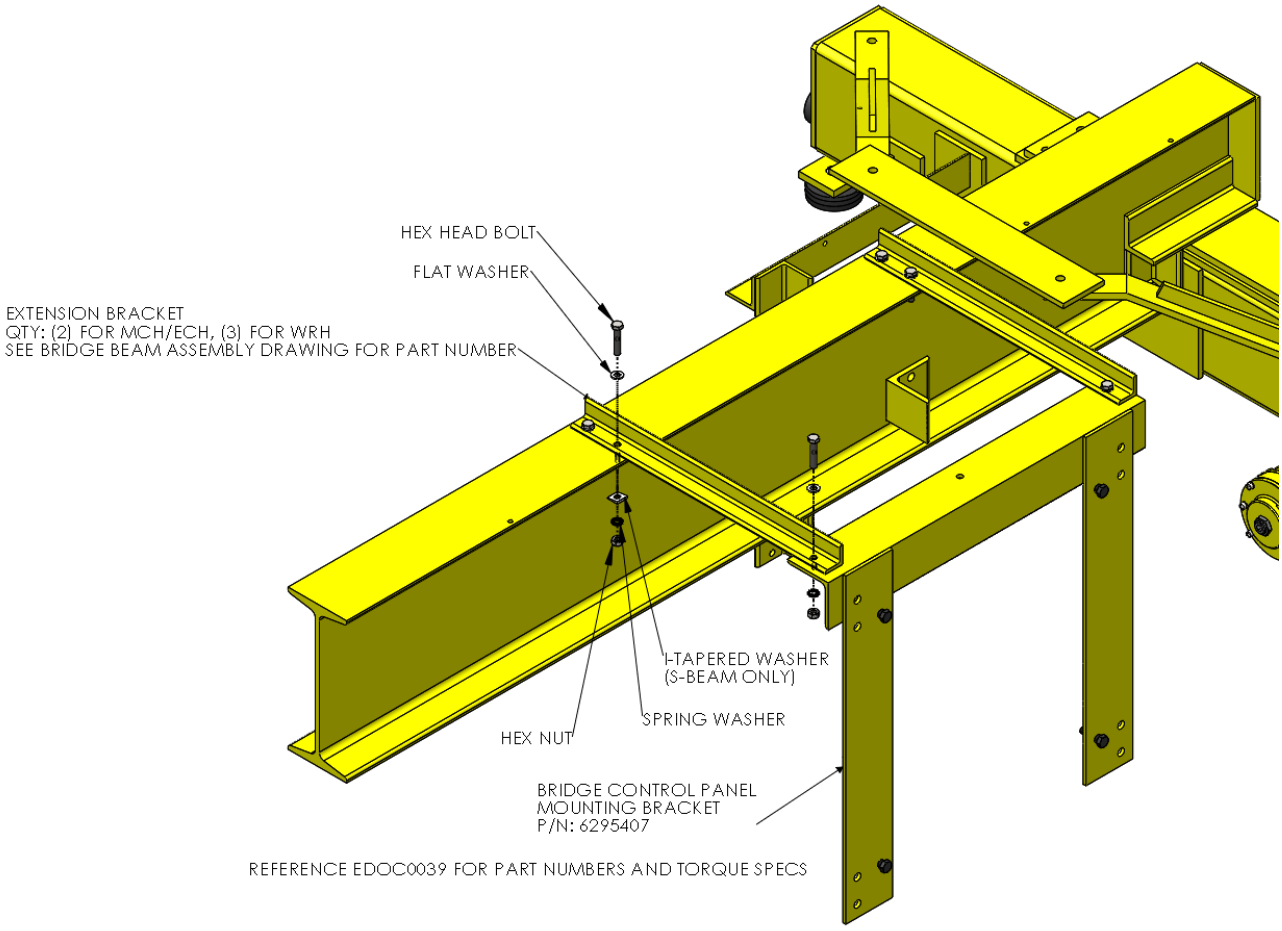

Figure 2 - Single Girder Mounting Scheme

5.2. (Single Girder Only) Fasten the bridge control panel mounting bracket to the extension brackets. Tighten the nuts to 9.5 ft-lb (12.9 Nm). See Figure 2 above.

5.3. (Double Girder Only) Mount the bridge control panel extension brackets to the beam as shown in Figure 3 below. Tighten the nuts to a minimum of 9.5 ft-lb (12.9 Nm).

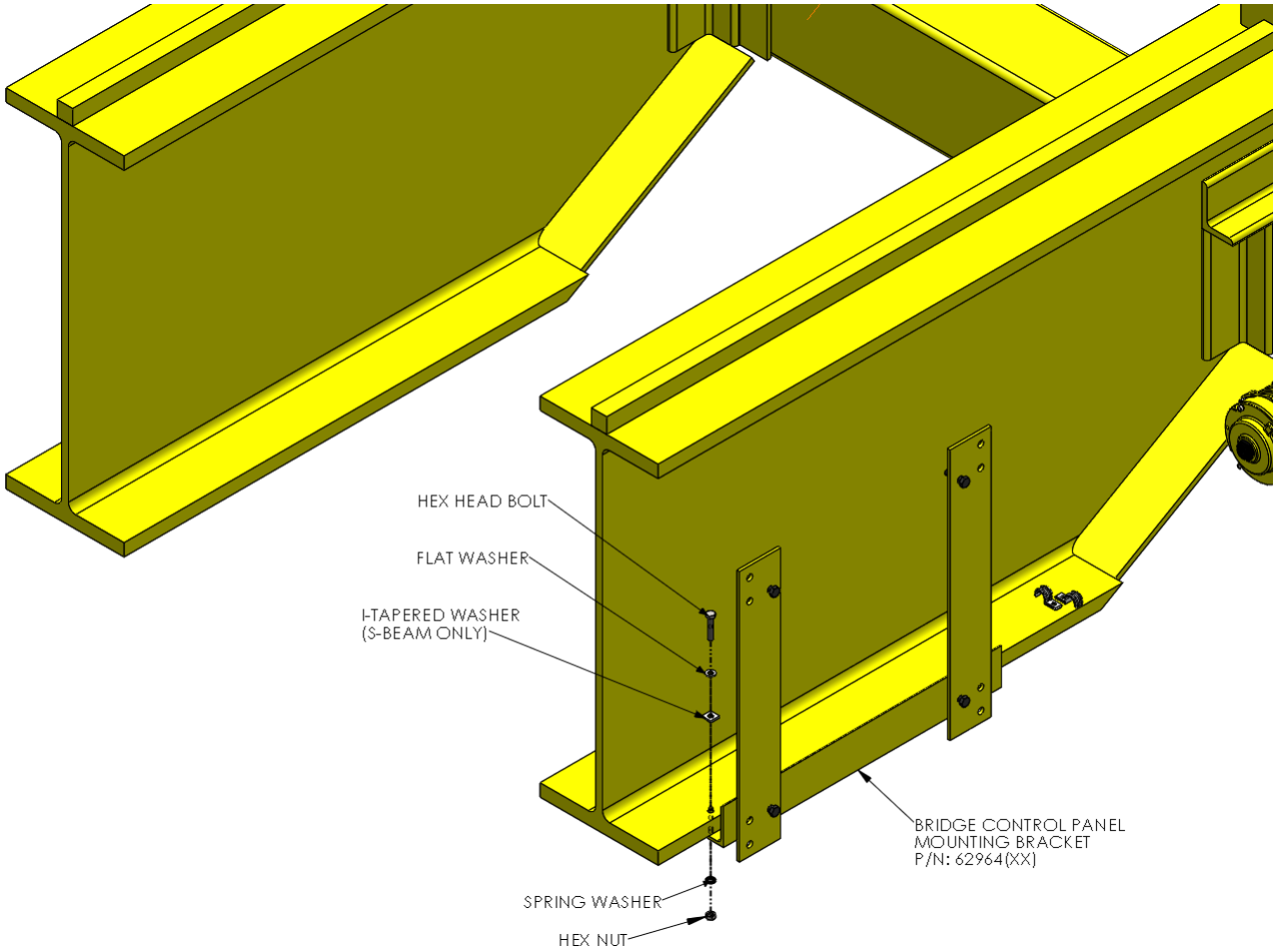

Figure 3 - Double Girder Mounting Scheme

6. (Note: the following step is already performed at the factory when crane wiring is provided by Harrington.) Attach the bridge control panel to the mounting bracket using the 4 bolts, washers, and locknuts provided. Tighten the locknuts to a minimum of 5.0 ft-lbs (6.8 Nm).
7. Mount the conduit to the beam using the hardware provided and terminate the crane wires as required (see step 7.3 or 7.4).

NOTICE For a plug and play configuration, match the plug labels to the panel and end truck labels according to the factory supplied wiring diagram before mounting the conduit.

7.1. Each of the nuts used to clamp the conduit to the beam should be tightened to 5.0 ft-lbs (6.8 Nm). Holes are located at 30" (0.76m) spacing intervals on the beam.
7.2. If the bridge beam is not supplied by Harrington, drill the conduit mounting holes per the bridge beam assembly print provided with order.
7.3. For hard-wired configurations: After bridge control panel, conduit, and wiring are in place, the wiring can now be connected to the motor connections per wiring diagram supplied with your order.

7.4. For plug & play configurations: After bridge control panel and conduit are in place, each plug connection can be installed at the panel and end truck motors per the wiring diagram supplied with your order. Tighten the screws on each plug housing to 1.5 ft-lb (3Nm).

8. **If Harrington Bridge Panel is used with non-Harrington motors**: A jumper will be installed in the terminal strip (or directly on the drive for VFD Plug & Play configurations) from the factory. If the end truck motors have thermal overload devices, this jumper should be removed and the thermal overload connections should be wired in place of the jumper. If (2) or more thermal overload devices are present, they should be wired in series between the terminals identified below in place of the jumper.
   8.1. For hard-wired configurations with Soft-Start: the jumper is installed between B1X2 and X2 on the terminal strip.
   8.2. For hard-wired configurations with VFD: the jumper is installed between BX7 and X2 on the terminal strip.
   8.3. For plug & play configurations with Soft-Start: the jumper is installed between BX6 and X2 on the terminal strip.
   8.4. For plug & play configurations with VFD: the jumper is installed between COM and ST on the VFD.

NOTICE Failure to remove the jumper will cause the motors to continue to run, even when the thermal overload device has been tripped, leading to overheating of the motors and premature failure of motor components.

Appendix

Harrington Hardware Kit Part Numbers	Manual or Powered Chain Trolley/Hoist	Wire Rope Trolley/Hoist
S-Beam (Tapered Flange)	HDWEKITC-ECH-S-BEAM	HDWEKITC-WRH-S-BEAM
W-Beam (Flat Flange)	HDWEKITC-ECH-W-BEAM	HDWEKITC-WRH-W-BEAM

Table 1 – Hardware Kit Selection For Extension Bracket Mounting (Single Girder Only)

		Part Quantities (Per Kit)					
Part Number	**Description**	**HDWEKITC-ECH-S-BEAM**	**HDWEKITC-ECH-W-BEAM**	**HDWEKITC-WRH-S-BEAM**	**HDWEKITC-WRH-W-BEAM**	**HDWEKITD-S-BEAM**	**HDWEKITD-W-BEAM**
9093354	HEX HEAD CAP SCREW M10X1.5X50	6	6	9	9	2	2
9012514	FLAT WASHER M10	6	6	9	9	2	2
9043511	I-TAPERED WASHER M10	4	0	6	0	2	0
9012712	SPRING WASHER M10	6	6	9	9	2	2
9093427	HEX NUT M10	6	6	9	9	2	2

Table 2 –Hardware Kit Component Breakdown (Single and Double Girder)

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