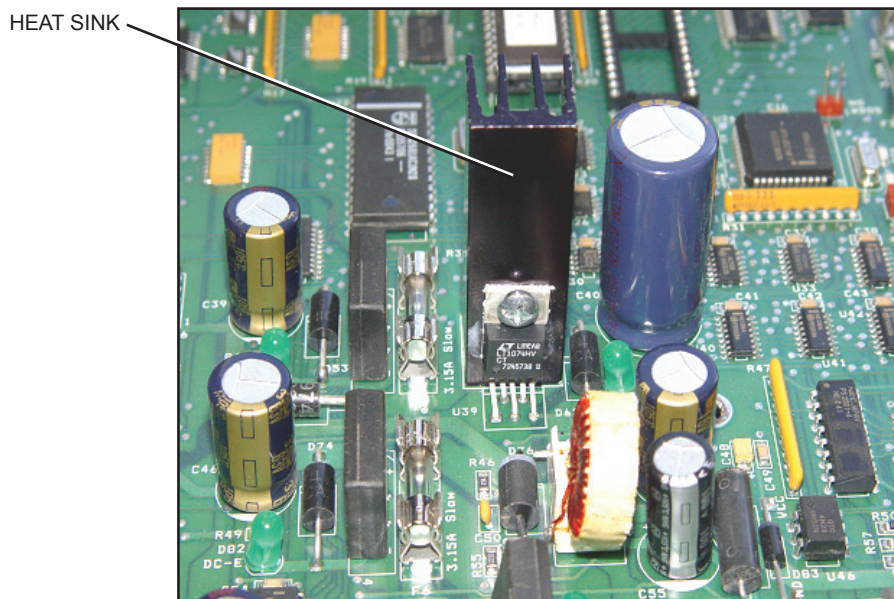# *Brunswick*® Ⓑ
SERVICE BULLETIN

Subject: GS-X Nexgen Rear Display Upgrade Package   **Date: 8/18/10**

Bulletin No. SB10-10

Brunswick now offers a Rear Display Upgrade Package, part number 47-861048-000, for GS-X pinsetters. This display mounts on the side of the elevator and is being made available to provide for ease of viewing and for use of the functions that are currently available on the Nexgen Box. Included with this letter is a copy of Installation Instructions, part number 47-902101-000, that will be needed for the installation.

Please note that in bowling centers where GS-X pinsetters were installed in the years 2000 to 2003 (Series Number 465 – 510) with Nexgen CPU PCBs, the communication circuit was not enabled. This will prevent correct communication through the I/O PCB to the Rear Display. If the Rear Display unit is installed on pinsetters with this version of the CPU PCB, a "NO COM" error will be displayed on the Rear Display. Before attempting to install this package, you will need to identify if the upgrade is needed.

To identify if a CPU PCB upgrade will be needed, refer to the following steps.

1. Disconnect power to the pinsetter by turning off the main power switch and unplugging the power cord to the Nexgen Box.

2. Locate the CPU PCB board and check if Regulator U39 has a black heat sink attached and is soldered on the board. Refer to *Figure 1*.
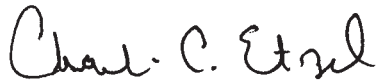

Figure 1 - Modified CPU with Heat Sink

a. If the CPU PCB has the heat sink soldered onto the board, the board will operate as needed and the Rear Display package can be installed.

b. If the CPU board does not have this heat sink, it will need to be modified as it will not communicate with the Rear Display unit.

3. If a heat sink is not present, the CPU PCBs will need to be exchanged with upgraded PCBs.   To receive exchange PCBs, contact the Brunswick Electronic Repair Center or an authorized Exchange Depot.   Please note that an exchange fee will be charged for each board. You can contact the Electronic Repair Center by calling 1-800-937-2695 or 231-725-4966, or sending an e-mail to erc@brunbowl.com to receive a CPU upgrade replacement and current pricing information.

For customers in Europe, Middle East or Africa, you may contact the Exchange Depot in Hungary by dialing 00-36-22-512-917 or by sending an e-mail to erzsebet.nagy@brunbowl.com.

If you have questions regarding the information contained in this Service Bulletin, please contact Brunswick Technical Support at 1-800-937-2695 or 231-725-4966, FAX 231-725-4667, or Email techsupport@brunbowl.com   Visit http://www.brunswickbowling.com/service-support/tech-support/ for electronic files of this and other Service Bulletins.

Charlie C. Etzel
Technical Support Technician

David E. Rice
Director of World Wide Service

Nexgen Rear Display
47-861048-000

Packaging

This package contains the following components:

  1 Ea.   47-142761-000 GS-X Display to Nexgen Cable Assembly
  1 Ea.   47-142762-000 GS-X Rear Power, Stop Switch Cable Assembly
  1 Ea.   47-142768-000 GS-X L.H. Function, Power Cable Assembly
  1 Ea.   47-862509-400 Nexgen Firmware
  1 Ea.   47-862869-401 GS-X Rear Display V1.05 with Hardware
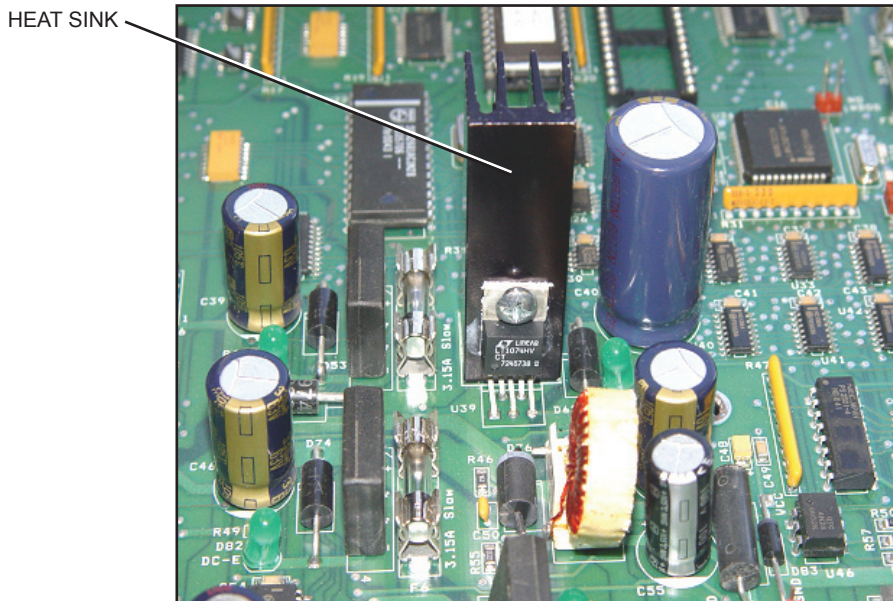 1 Ea.   47-902101-000 Instruction Sheet

Nexgen CPU PCB Inspection

Please note that in bowling centers where GS-X pinsetters were installed in the years 2000 to 2003 (Series Number 465 – 510) with Nexgen CPU PCBs, the communication circuit was not enabled. This will prevent correct communication through the I/O PCB to the Rear Display. If the Rear Display unit is installed on pinsetters with this version of the CPU PCB, a "NO COM" error will be displayed on the Rear Display.   Before attempting to install this package, you will need to identify if the upgrade is needed.

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HEAT SINK

Figure 1 - Modified CPU with Heat Sink

    a. If the CPU PCB has the heat sink soldered onto the board, the board will operate as needed and the Rear Display package can be installed.

    b. If the CPU board does not have this heat sink, it will need to be modified as it will not communicate with the Rear Display unit.

3. If a heat sink is not present, the CPU PCBs will need to be exchanged with upgraded PCBs.   To receive exchange PCBs, contact the Brunswick Electronic Repair Center or an authorized Exchange Depot. Please note that an exchange fee will be charged for each board. You can contact the Electronic Repair Center by calling 1-800-937-2695 or 231-725-4966, or sending an e-mail to erc@brunbowl.com to receive a CPU upgrade replacement and current pricing information.
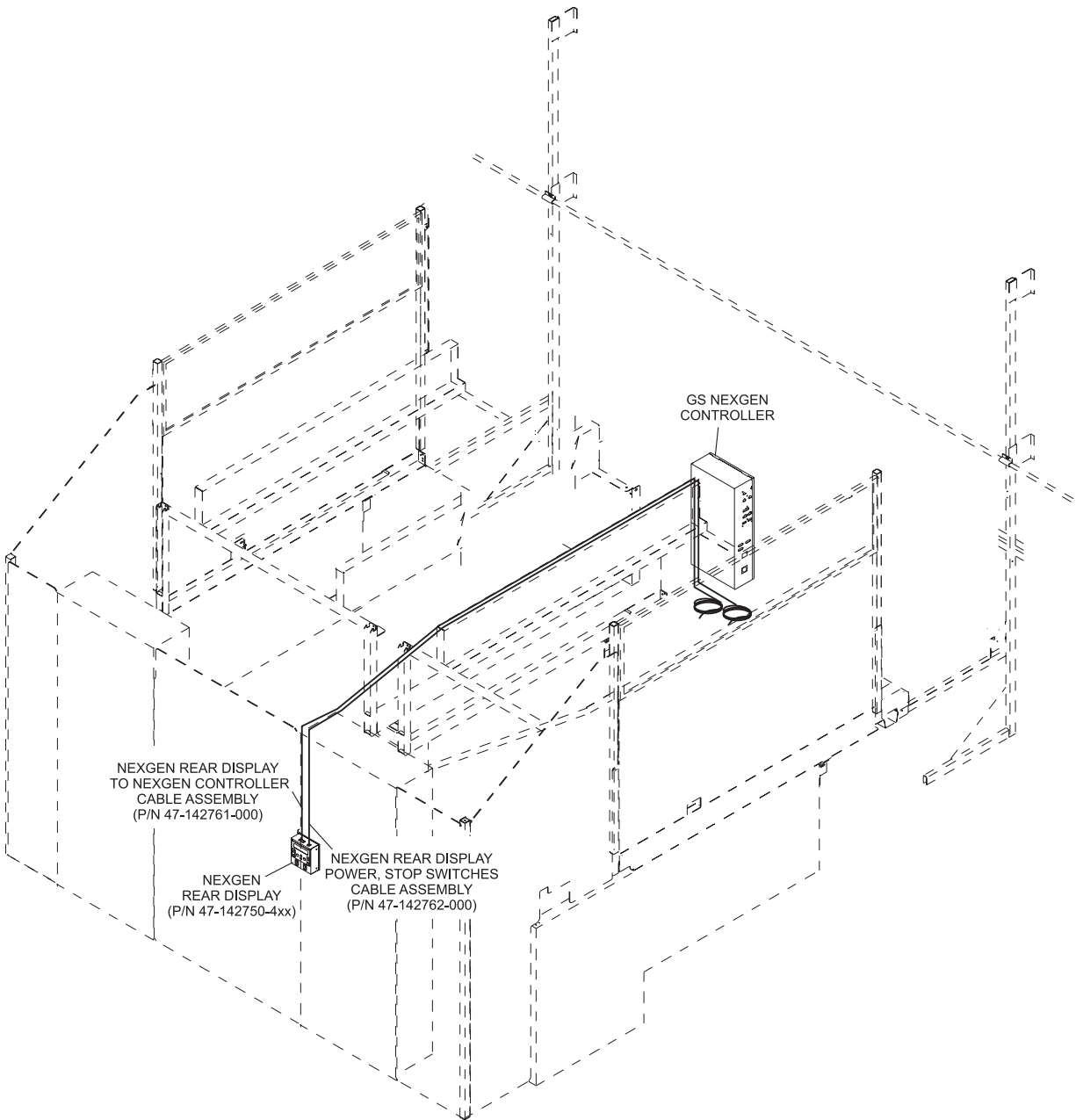
   For customers in Europe, Middle East or Africa, you may contact the Exchange Depot in Hungary by dialing 00-36-22-512-917 or by sending an e-mail to erzsebet.nagy@brunbowl.com.

Installation Instructions

⚠️ **WARNING! Turn "OFF" and lock out power to the Safety Controller. If machine does not have a Safety Controller Turn "OFF" and lock out power to the Nexgen Controller.**
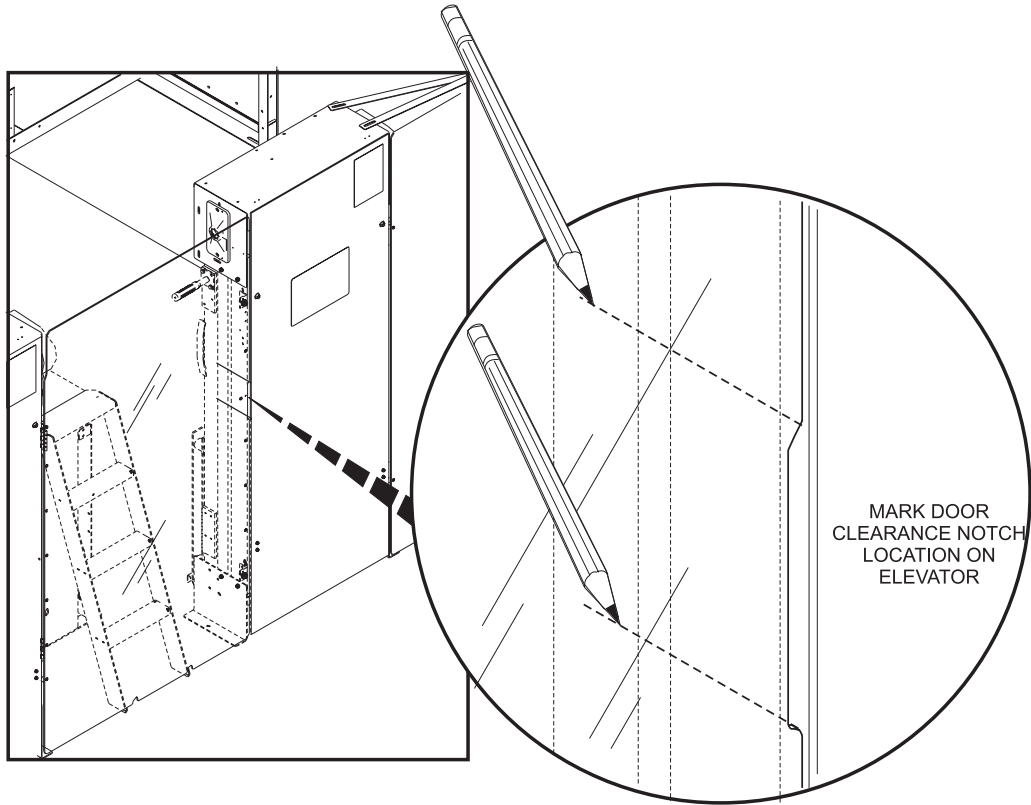
1. Replace the existing EPROM chip. Utilize the instructions packaged with the EPROM chip (P/N 47-862509-400).

2. Route" GS-X Rear Display Box to Nexgen" cable assembly (P/N 47-142761-000) and "GS-X Rear Display Box Power, Stop Switches" cable assembly (P/N 47-142762-000). Refer to *Figure 1*.

GS NEXGEN
CONTROLLER

NEXGEN REAR DISPLAY
TO NEXGEN CONTROLLER
CABLE ASSEMBLY
(P/N 47-142761-000)

NEXGEN
REAR DISPLAY
(P/N 47-142750-4xx)

NEXGEN REAR DISPLAY
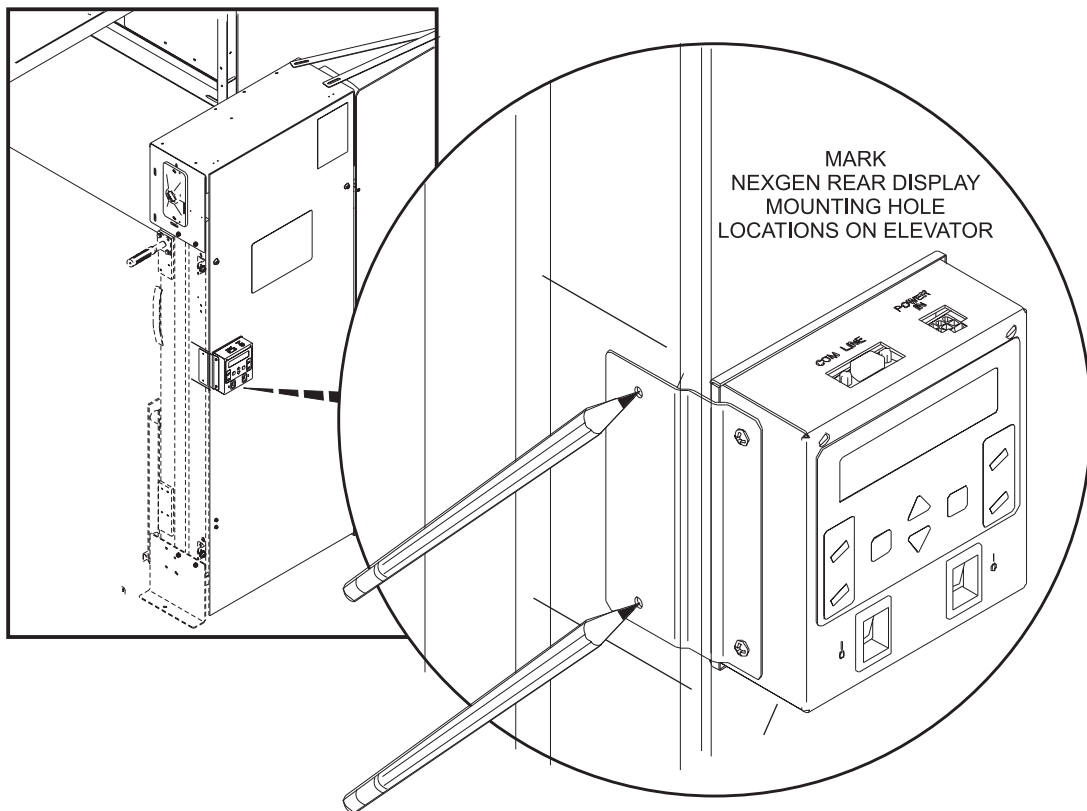POWER, STOP SWITCHES
CABLE ASSEMBLY
(P/N 47-142762-000)

Figure 1

Mark Mounting Holes on Elevators with Advanced/U.K. Advanced Guarding

1. Close rear door and mark location of door's clearance notch on the side of the elevator.   Refer to *Figure 2*.

MARK DOOR
CLEARANCE NOTCH
LOCATION ON
ELEVATOR

Figure 2

2. Center Remote display between lines marked on side of elevator in *step 1* and mark location of mounting holes. Refer to *Figure 3*.

MARK
NEXGEN REAR DISPLAY
MOUNTING HOLE
LOCATIONS ON ELEVATOR

POWER

COM LINE

Figure 3

Mark Mounting Holes on Elevators without Guarding

1. Place the Nexgen Rear Display (P/N 47-142750-4XX) in a location on the elevator that allows proper function of any existing doors or guards and within reach of both cable assemblies.

2. Mark location of mounting holes. Refer to *Figure 4*.

MARK
NEXGEN REAR DISPLAY
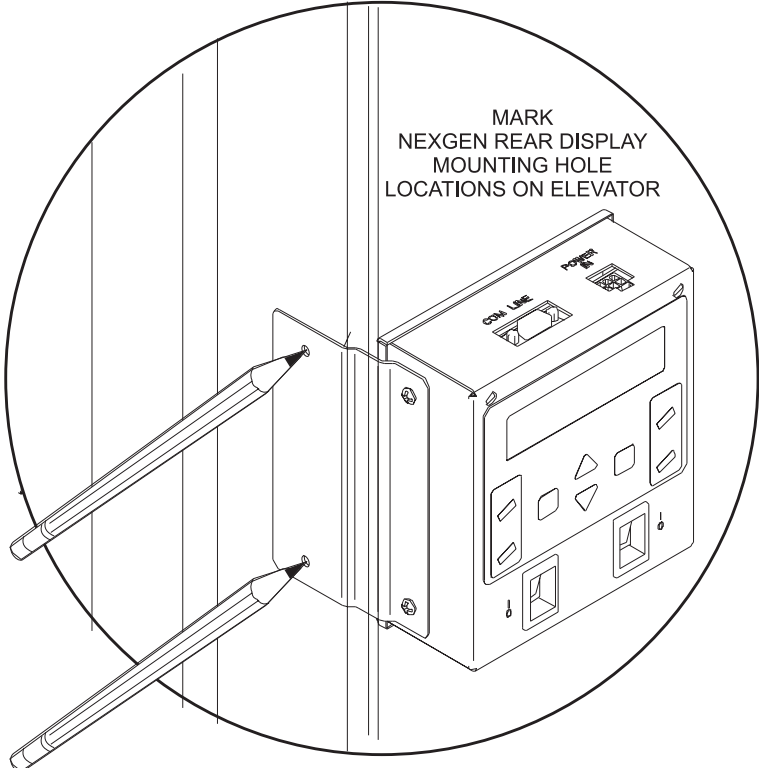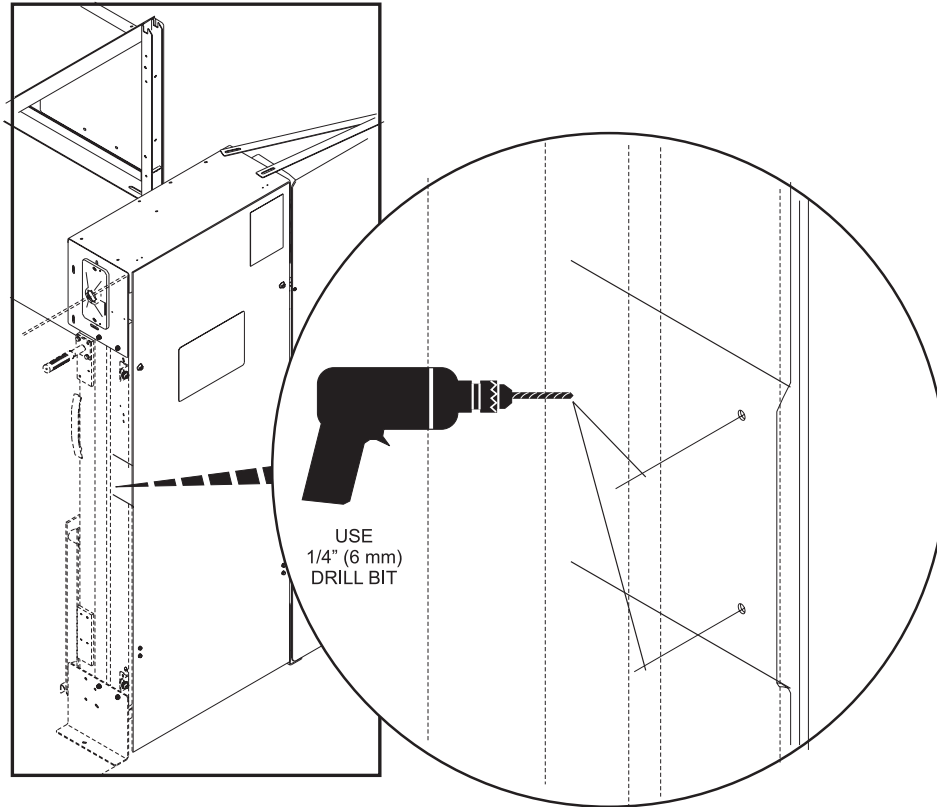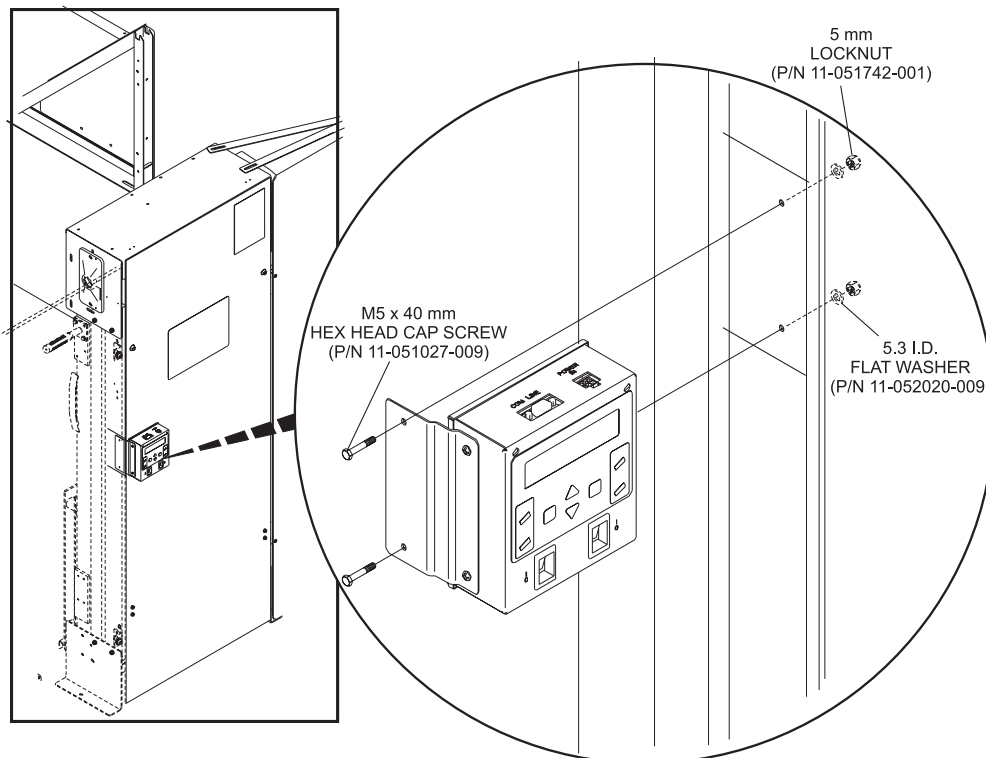MOUNTING HOLE
LOCATIONS ON ELEVATOR

Figure 4

Drill Mounting Holes and Mount Remote Display on Elevator

1. Drill 1/4" Diameter thru holes at marked mounting hole locations on elevator. *Figure 5*.

USE
1/4" (6 mm)
DRILL BIT

Figure 5

2. Secure Remote Display to the elevator with two M5 x 40 mm hex head cap screws (P/N 11-051027-009), two 5.3 mm I.D. flat washers (P/N 11-052020-009) and two 5 mm locknuts (P/N 11-051742-001). Refer to *Figure 6.*

5 mm
LOCKNUT
(P/N 11-051742-001)

M5 x 40 mm
HEX HEAD CAP SCREW
(P/N 11-051027-009)

5.3 I.D.
FLAT WASHER
(P/N 11-052020-009)

Figure 6

3. Connect cable assembly (P/N 47-142761-000) to "P16" on the Nexgen box and "COMLINE IN" on the remote display. Refer to Figure 7.
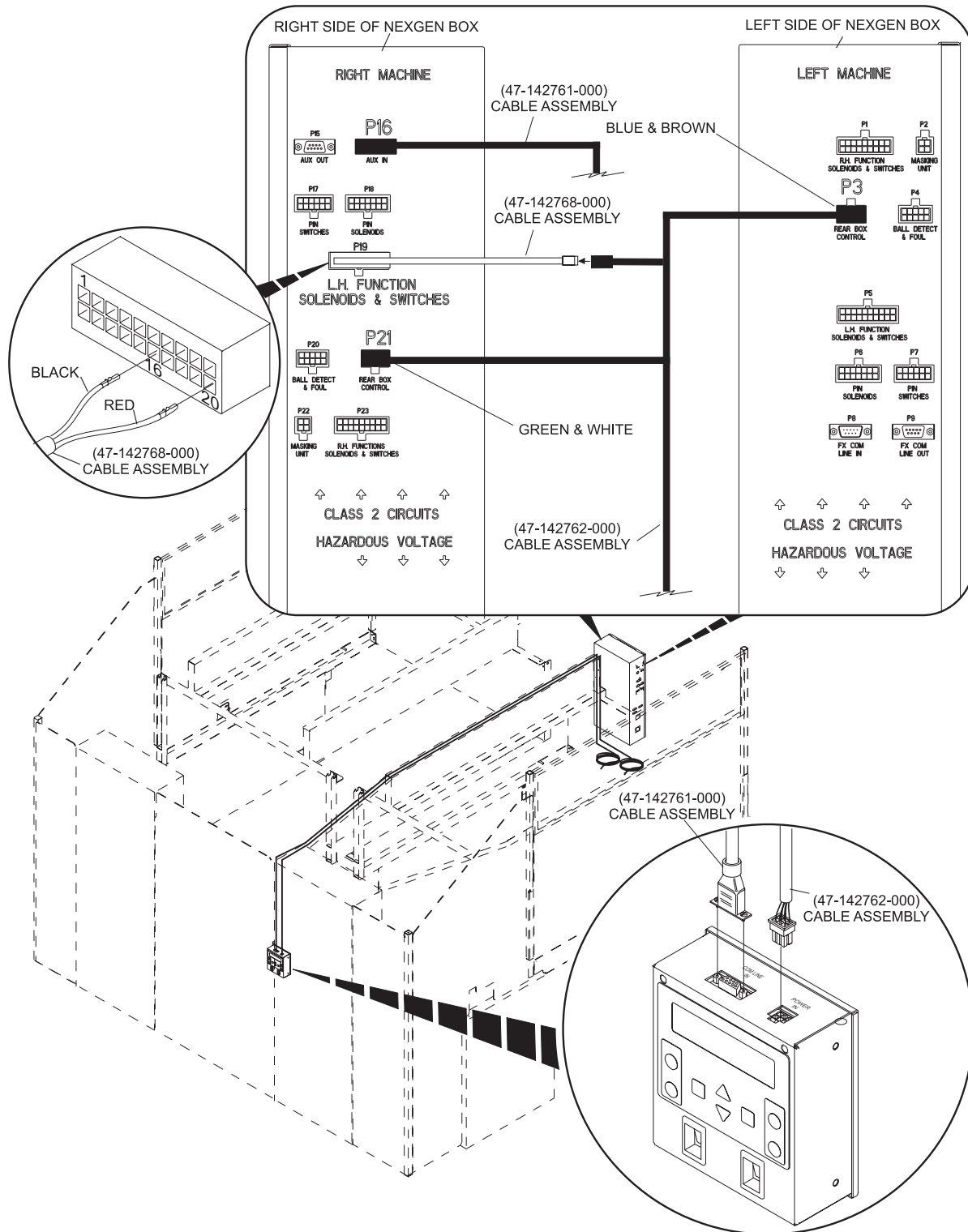

Figure 7

4. Connect pins from cable assembly (P/N 47-142768-000) to existing "P19" connector. Refer to Figure 7.

5. Connect multi connector end of cable assembly (P/N 47-142762-000) to "P3", "P21" and cable assembly (P/N 47-142768-000) on the Nexgen box. Refer to Figure 7.

6. Connect single connector end of cable assembly (P/N 47-142762-000) to "POWER IN" on the remote Display box. Refer to Figure 7.