

## Introduction

### Purpose

This document provides instructions for installing the following Monochrome LCD retrofit kits (C00006-00X) in The Advantage® Series units with the CRIND® device.

Kit Number	Description
C00006-001	115 V, Two-sided Monochrome Retrofit
C00006-002	115 V, One-sided Monochrome Retrofit
C00006-003	115 V, Two-sided Monochrome Retrofit (Units Already Equipped with Cash Acceptors)*
C00006-004	115 V, One-sided Monochrome Retrofit (Units Already Equipped with Cash Acceptors)*
C00006-005	220 V, Two-sided Monochrome Retrofit
C00006-006	220 V, One-sided Monochrome Retrofit
C00006-007	115 V, Two-sided Monochrome Retrofit (Grey Option Door)
C00006-008	115 V, One-sided Monochrome Retrofit (Grey Option Door)
C00006-009	115 V Two-sided Composite Monochrome and Cash Acceptor Retrofit**
C00006-010	115 V One-sided Composite Monochrome and Cash Acceptor Retrofit**

\* Cash Acceptor is not included. Cash Acceptor ready Option Door is included.

\*\* Includes the Cash Acceptor.

*Note: C00006-00X kits may be installed in The Advantage Series units with or without optimized electronics. Pay attention to differences in cabling procedures, for optimized and non-optimized units.*

The following C00009-00X kits upgrade non-CRIND units to CRIND units with Monochrome LCD. These composite kits contain both a C00006-00X Monochrome kit and a C00004-00X CRIND kit (and a C00005-00X Cash Acceptor Kit, where applicable). Install C00004-00X CRIND kit first. Instructions are in MDE-2727 CRIND Retrofit for The Advantage Series. After installing CRIND device, use this document to install C00006-00X Monochrome LCD. After the CRIND device and Monochrome LCD are installed, refer to MDE-2628 Cash Acceptor Retrofit Kits for The Advantage series, for installation instructions.

Kit Number	Description
C00009-001	115 V, Two-sided CRIND with Monochrome Retrofit
C00009-002	115 V, One-sided CRIND with Monochrome Retrofit
C00009-003	115 V, Two-sided CRIND with Monochrome and Cash Acceptor Retrofit
C00009-004	115 V, One-sided CRIND with Monochrome and Cash Acceptor Retrofit
C00009-005	115 V, Two-sided CRIND with Monochrome Retrofit (Grey Option Door)
C00009-006	115 V, One-sided CRIND with Monochrome Retrofit (Grey Option Door)
C00009-009	220 V, 50 Hz Two-sided CRIND with Monochrome Retrofit
C00009-010	220 V, 50 Hz One-sided CRIND with Monochrome Retrofit

*Note: Depending upon the age of the unit, some of The Advantage Series models may require additional components for proper installation of the Monochrome retrofit kits listed in this manual. Refer to MDE-3425 CRIND Retrofit and CRIND Option Kit Selection Guide, for complete kit selection guidance.*

## Table of Contents

Topic	Page
<a href="#">Introduction</a>	1
<a href="#">Important Safety Information</a>	5
<a href="#">Installation</a>	7

## Required Tools

The following tools are required for the installation of the kit:

- Allen Wrench Set
- Nut Driver Set
- Screwdriver, Standard
- Screwdriver, Phillips®
- Wire Cutters

## Specifications

Power Requirements	Dedicated isolated ground receptacle USA/Canada: 115 VAC nominal, 50/60 Hz
Current	4.0 A @ 115 VAC 2.0 A @ 230 VAC
Operating Environment	Minimum temperature: -22 °F (-30 °C) Maximum temperature: 130 °F (55 °C) Humidity: 5% to 95% Rh (non-condensing)

## Parts List

The following kits upgrade units equipped with CRIND to CRIND with Monochrome LCD. Each kit may also be part of a composite kit (C00009-00X) which upgrades a non-CRIND unit to CRIND with Monochrome LCD.

Part Number	Description	C0006							
		-001	-002	-003	-004	-005	-006	-007	-008
K94247-01	Software, Monochrome V15.x.x	1	1	1	1	1	1	1	1
N16599-48	Washer, Flat	0	0	4	2	0	0	0	0
N23175-03	Label, Retrofit Assy	1	1	1	1	1	1	1	1
N23700-01	Decal, Patent/Copyright	1	1	1	1	1	1	1	1
N23727-G1	Cable, DC Power	1	1	1	1	1	1	1	1
N23736-01	Plug, Keypad Support	2	1	2	1	2	1	2	1
Q10178-09	Cable Tie	10	10	10	10	10	10	10	10
Q10340-29	Spacer, Round	0	0	4	2	0	0	0	0
Q11011-01	Connector, Jumper	2	2	2	2	2	2	2	2
Q11270-34	Screw, Machine Head, Phillips 6-32	0	0	4	2	0	0	0	0
Q11890-02	Nut, Hex with Serrated Flange	5	3	5	3	5	3	5	3
Q11890-03	Nut, Hex with Serrated Flange	11	6	11	6	11	6	11	6
Q11899-12	Tape, Single-sided Neoprene	0.044	0.022	0.044	0.022	0.044	0.022	0.044	0.022
Q12083-28	Screw, Sems Phillips 8-32	5	3	5	3	5	3	5	3
Q12969-01	Label, Attention Static	2	2	2	2	2	2	2	2

Part Number	Description	C0006							
		-001	-002	-003	-004	-005	-006	-007	-008
Q13459-01	Clamp, 2" Ribbon Adhesive	10	10	10	10	10	10	10	10
R17995-G7	Cable Assembly Regulator/Logic	1	1	1	1	1	1	1	1
R19245-G3	Assembly, Slide Bar Latch	0	0	2	1	0	0	0	0
R20317-01	Gasket, Left Option Door	2	1	2	1	2	1	2	1
R20318-01	Gasket, Left Option Door	0	0	2	1	0	0	0	0
R20402-G2	Cable, Transformer Adaptor	2	1	2	1	2	1	2	1
T18172-G2	Printer Mounting Bracket	0	0	2	1	2	1	0	0
T18172-G3	Printer Mounting Bracket	2	1	0	0	0	0	2	1
T18229-G3	Door Alarm Cable Dual	0	0	2	0	0	0	0	0
T18229-G4	Door Alarm Cable Single	0	0	0	1	0	0	0	0
T19501-G1	Monochrome CPU Board	1	1	1	1	1	1	1	1
T19519-G2	Cable, Ballast Power	1	1	1	1	1	1	1	1
T19613-G03	Left Option Door Assembly*	2	1	0	0	2	1	0	0
T19613-G04	Left Option Door Assembly (Cash Acceptor)*	0	0	2	1	0	0	0	0
T19613-G06	Left Option Door Assembly*	0	0	0	0	0	0	2	1
T19943-01	Bracket, Card Reader Cover	2	1	2	1	2	1	2	1
T19944-01	Bracket, Card Reader Base	2	1	2	1	2	1	2	1
T50038	Keypad Overlay (OE)	0	0	0	0	0	0	0	0
T50044	Option Door Overlay (OE)	0	0	0	0	0	0	0	0
W03690-G3	Option Door Cable	1	1	0	0	1	1	1	1
W03690-G4	Option Door Cable	1	0	0	0	1	0	1	0
W03690-G7	Option Door Cable (Cash Acceptor)	0	0	1	1	0	0	0	0
W03690-G8	Option Door Cable (Cash Acceptor)	0	0	1	0	0	0	0	0

\* Rain shield for Monochrome display already installed on new Option Doors.

## Composite Kits

Composite Kit Number	Description	Monochrome Kit Number(s)
C00006-009	115 V, Two-sided Composite Monochrome and Cash Acceptor Retrofit	C00006-003
C00006-010	115 V, One-sided Composite Monochrome and Cash Acceptor Retrofit	C00006-004
C00009-001	115 V, Two-sided CRIND with Monochrome Retrofit	C00006-001
C00009-002	115 V, One-sided CRIND with Monochrome Retrofit	C00006-002
C00009-003	115 V, Two-sided CRIND with Monochrome and Cash Acceptor Retrofit	C00006-003
C00009-004	115 V, One-sided CRIND with Monochrome and Cash Acceptor Retrofit	C00006-004
C00009-005	115 V, Two-sided CRIND with Monochrome Retrofit (Grey Door)	C00006-007
C00009-006	115 V, One-sided CRIND with Monochrome Retrofit (Grey Door)	C00006-008
C00009-009	220 V, 50 Hz Two-sided CRIND with Monochrome Retrofit	C00006-005
C00009-010	220 V, 50 Hz One-sided CRIND with Monochrome Retrofit	C00006-006



# Important Safety Information

**Note:** Save this Important Safety Information section in a readily accessible location.

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.


## Preliminary Precautions


You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.

## Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

**⚠ WARNING**

 The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.

 You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

## Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

## Evacuating, Barricading and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:



- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

## Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code (NEC)*, Occupational Safety and Hazard Association (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

## Replacement Parts

Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury or damage to the equipment:



**DANGER:** Alerts you to a hazard or unsafe practice which will result in death or serious injury.



**WARNING:** Alerts you to a hazard or unsafe practice that could result in death or serious injury.



**CAUTION with Alert symbol:** Designates a hazard or unsafe practice which may result in minor injury.

**CAUTION without Alert symbol:** Designates a hazard or unsafe practice which may result in property or equipment damage

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

## Important Safety Information

### No Open Fire



Open flames from matches, lighters, welding torches or other sources can ignite fuels and their vapors.

### No Sparks - No Smoking



Sparks from starting vehicles, starting or using power tools, burning cigarettes, cigars or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

### Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/ Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

### Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

### Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

#### WARNING



Gasoline ingested may cause unconsciousness and burns to internal organs.

Do not induce vomiting.

Keep airway open.

Oxygen may be needed at scene.

Seek medical advice immediately.

#### WARNING



Gasoline inhaled may cause unconsciousness and burns to lips, mouth and lungs.

Keep airway open.

Seek medical advice immediately.

#### WARNING



Gasoline spilled in eyes may cause burns to eye tissue.

Irrigate eyes with water for approximately 15 minutes.

Seek medical advice immediately.

#### WARNING



Gasoline spilled on skin may cause burns.

Wash area thoroughly with clear water.

Seek medical advice immediately.

#### WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the workstation location. Seek medical advice/recommended treatment if DEF spills into eyes.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.



### Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

# Installation

## Before Beginning



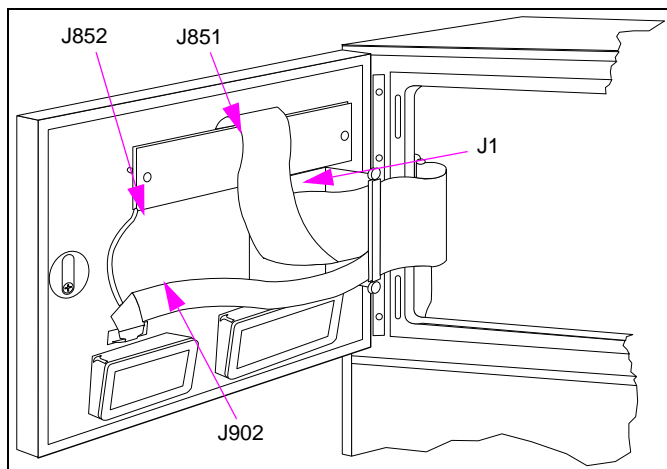
	<b>WARNING</b>
	Working on dispenser electronics with power applied may result in electrocution and damage to electronic components. Turn off power to the unit before beginning the work.

- 1 Read all instructions before beginning the installation.
- 2 Follow all the safety information. Refer to [“Important Safety Information”](#) on [page 5](#).
  - Barricade the work area.
  - Do not allow vehicles or unauthorized people in work area.
  - Do not use power tools in work area.
  - Do not permit smoking or open flames in work area.
  - Wear protective gear while performing this installation.
- 3 Record all mechanical and electronic totals.
- 4 Turn off power to unit, unit lights, and CRIND device.
  - Use system circuit breakers.
  - Multiple disconnects may be required.
  - Isolate each pump at distribution box.
  - Refer to MDE-2531 Pump and Dispenser Start-up and Service for OSHA lock-out/tag-out procedures.
- 5 Use electrostatic precautions.

## Removing the Existing Hardware

### Removing the CRIND Option Door

Figure 1: CRIND Option Door



To remove the CRIND Option Door, proceed as follows:

- 1 Open the main access door. Refer to MDE-2531 Pump and Dispenser Start-up and Service for OSHA lock-out/tag-out procedures, for instructions.
- 2 Remove all cables from the CRIND Option Door.
- 3 Remove cables from the following locations (see [Figure 1](#)):

Connector	Location	Side A	Side B
J252 (40-pin)	P252 on CRIND Logic Board	X	X
J558 (4-pin)	P558 on CRIND Regulator Board*	-	X
J557 (4-pin)	P558 on CRIND Regulator Board*	X	-

\* See "Cable Block Diagrams" on [page 21](#).

- 4 Remove and discard Single-line CRIND Option Door Cables.  
*Note: Cable designators may vary depending on unit.*
- 5 Remove CRIND Option Doors and set aside. Retain hinge rods.
- 6 Remove the CRIND Card Reader from the old Option Door and retain for reuse. If the CRIND speaker is mounted to the Card Reader bracket, remove the speaker and retain for reuse.

*Note: When installing composite CRIND/Monochrome Kit (C00009-00X), correct CRIND Card Reader is pre-installed on the Option Door, along with the C00004-00X CRIND kit.*



## Removing the Cash Acceptor Cable

*Note: Follow this procedure, only if the unit has a previously installed Cash Acceptor.*

The W03690-G0X Option Door Cable provided with Monochrome kits replaces older Cash Acceptor Cables, with the exception of the Cash Acceptor Power Cable. Remove and discard Cash Acceptor Data Cable as follows.

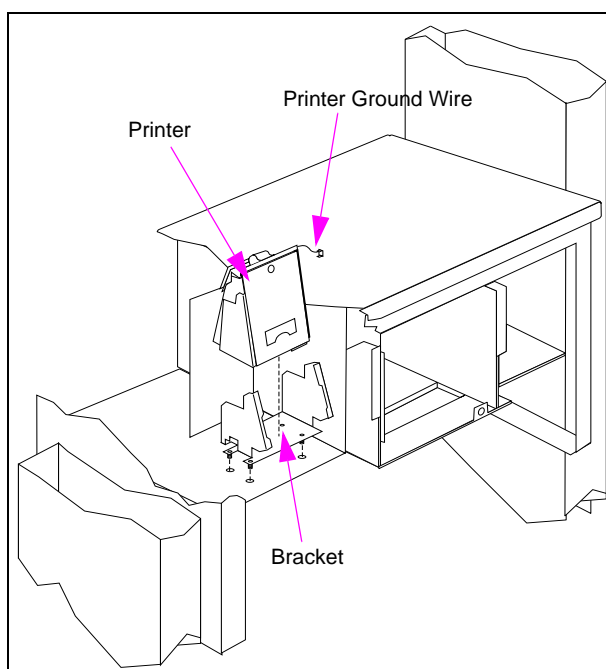
*Note: Do NOT remove the Cash Acceptor Power Cable (connector J137A/B from the CRIND power supply line filter).*

Connector	Location	Side A	Side B
J138 (18-pin)	P138 on Cash Acceptor	X	X
J151 (2-pin)	P151 on Cash Acceptor	X	X
J269 (10-pin)	P269 on CRIND Logic Board*	X	X

\* See "Cable Block Diagrams" on page 21.

## Removing the CRIND Printer

**Figure 2: CRIND Printer**



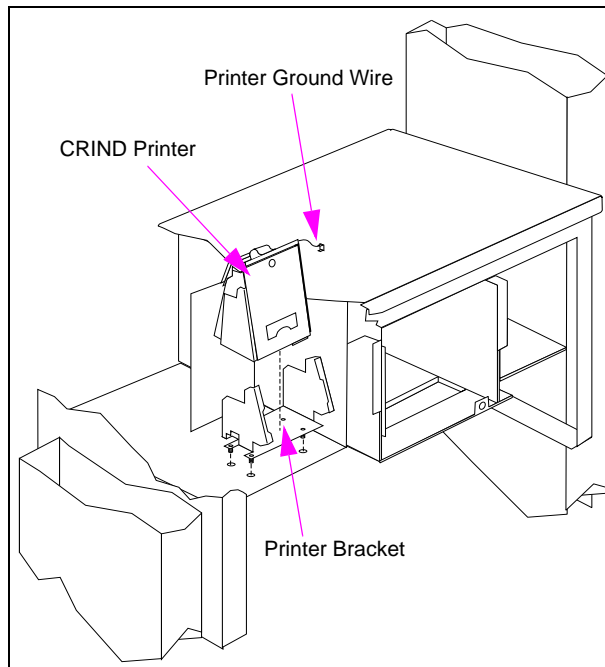
To remove the CRIND printer, proceed as follows:

- 1 Remove cables from the CRIND printer.
- 2 Remove the printer ground wire from the vertical divider.
- 3 Remove the printer from the bracket and retain the printer for reuse.
- 4 Remove the printer bracket and discard.

## Installing the Monochrome LCD Retrofit Kit

### Installing the CRIND Printer

Figure 3: CRIND Printer



To install the CRIND printer, proceed as follows:

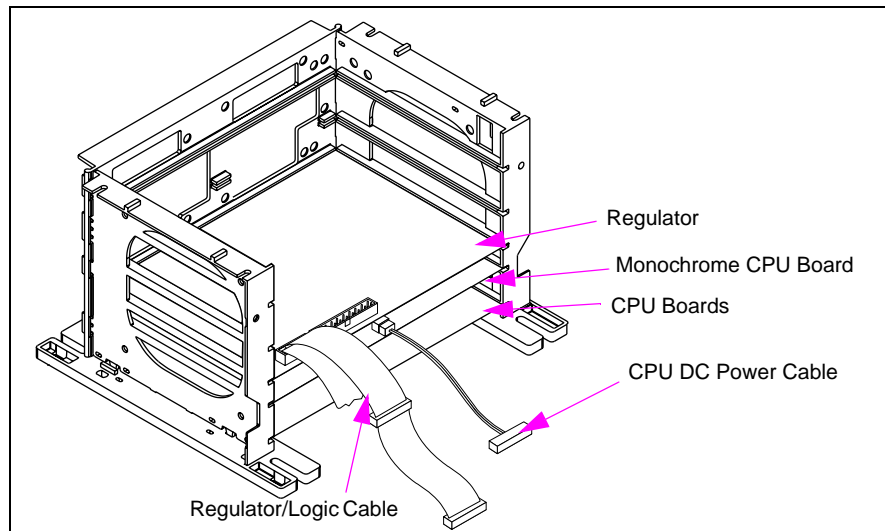
- 1 Install the printer bracket T18172-GX onto the printer shelf. Do not tighten fasteners.

*Note: Units with Cash Acceptor require printer bracket T18172-G2. Units without Cash Acceptor require printer bracket T18172-G3.*

- 2 Install the CRIND printer into the printer bracket. Tighten fasteners.
- 3 Align the printer assembly so that the printer chute hangs over the edge of the printer shelf.  
*Note: Correct alignment is critical. The printer must be positioned such that the printer gasket is compressed to approximately 50% when the Option Door is closed, in order to maintain a watertight seal.*
- 4 Install the printer ground wire to the vertical divider.

## Installing the Monochrome CPU Board

**Figure 4: Monochrome CPU Board**



To install the Monochrome CPU Board, proceed as follows:

- 1 Remove screws or retainer clips and card retainer bracket from the card cage.
- 2 Install the T19501 Monochrome CPU Board in the card cage.
  - For non-optimized units, place the Monochrome CPU Board between Regulator and CPU Boards.
  - For units with optimized electronics, place the Monochrome CPU Board in the top slot.

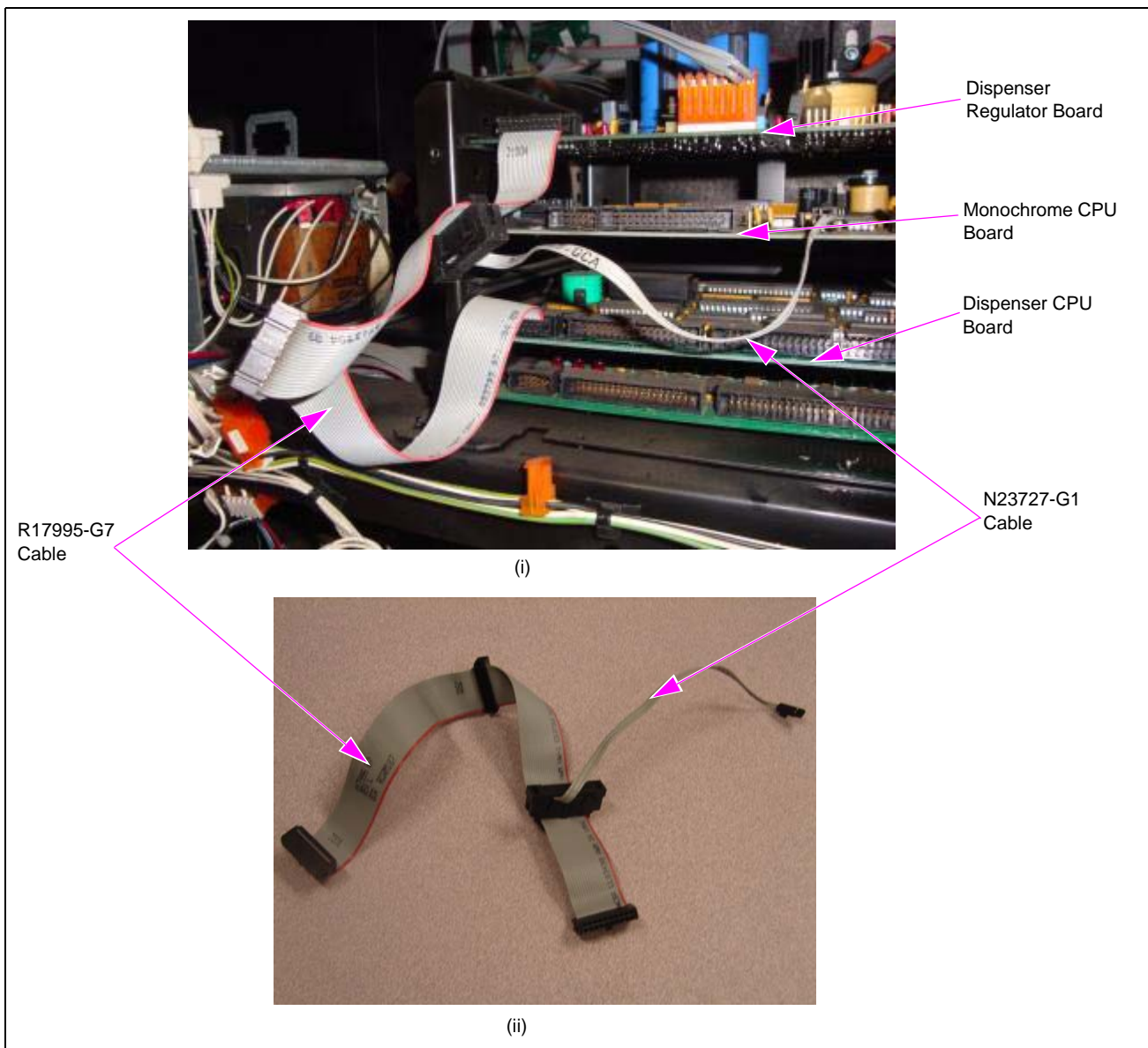
*Note: Placement of boards may vary, depending on specific model configuration.*

- 3 If unit is 4-grade or was manufactured before April 1999 and does not have optimized electronics:
  - Remove the existing modular card cage Power Cable and replace with the R17995-G7 Regulator/Logic Cable.
  - Install the N23727-G1 CPU DC Power Cable to P2014 on the Monochrome CPU Board and to the free connector on R17995-G7 Regulator/Logic Cable.

*Note: If the unit has optimized electronics (manufactured since April 1999), refer to [“Connecting Cables”](#) on page 14.*

Connector on R17995-G7 Cable	Board	Port on the Board
<b>R17995-G7 Regulator/Logic Cable</b>		
J1104	Dispenser Regulator Board	P501
J201	Dispenser CPU Board	P201
<i>Note: The J501 Connector on the R17995-G7 Cable is not used.</i>		
<b>N23727-G1 Cable</b>		
J301	Monochrome CPU Board	P2014

**Figure 5: Connecting the R17995-G7 Regulator/Logic Cable to the Monochrome CPU Board**

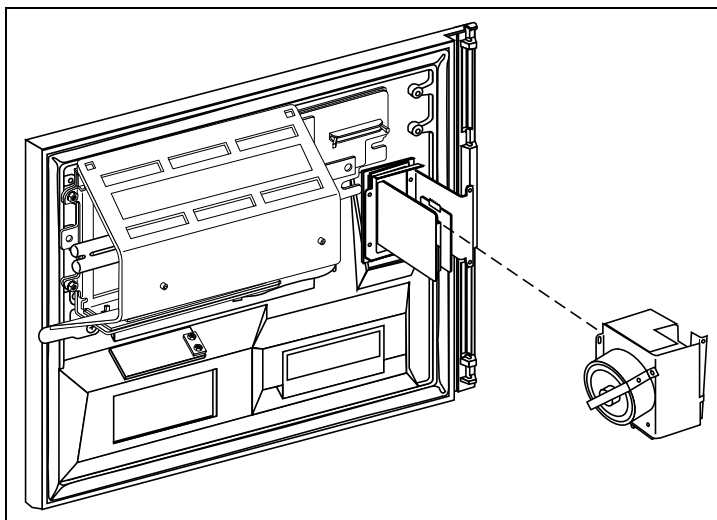


- 4 If the unit was manufactured after April 1999, connect the W03690-GX to R20306 CRIND Regulator Board.

W03690-GX Connector	To this Connector
SK2	SK2 on T20306 CRIND Regulator Board
J2014	P2014 on T19501 Monochrome CPU Board

## Installing the Option Doors

Figure 6: Option Doors



To install the Option doors, proceed as follows:

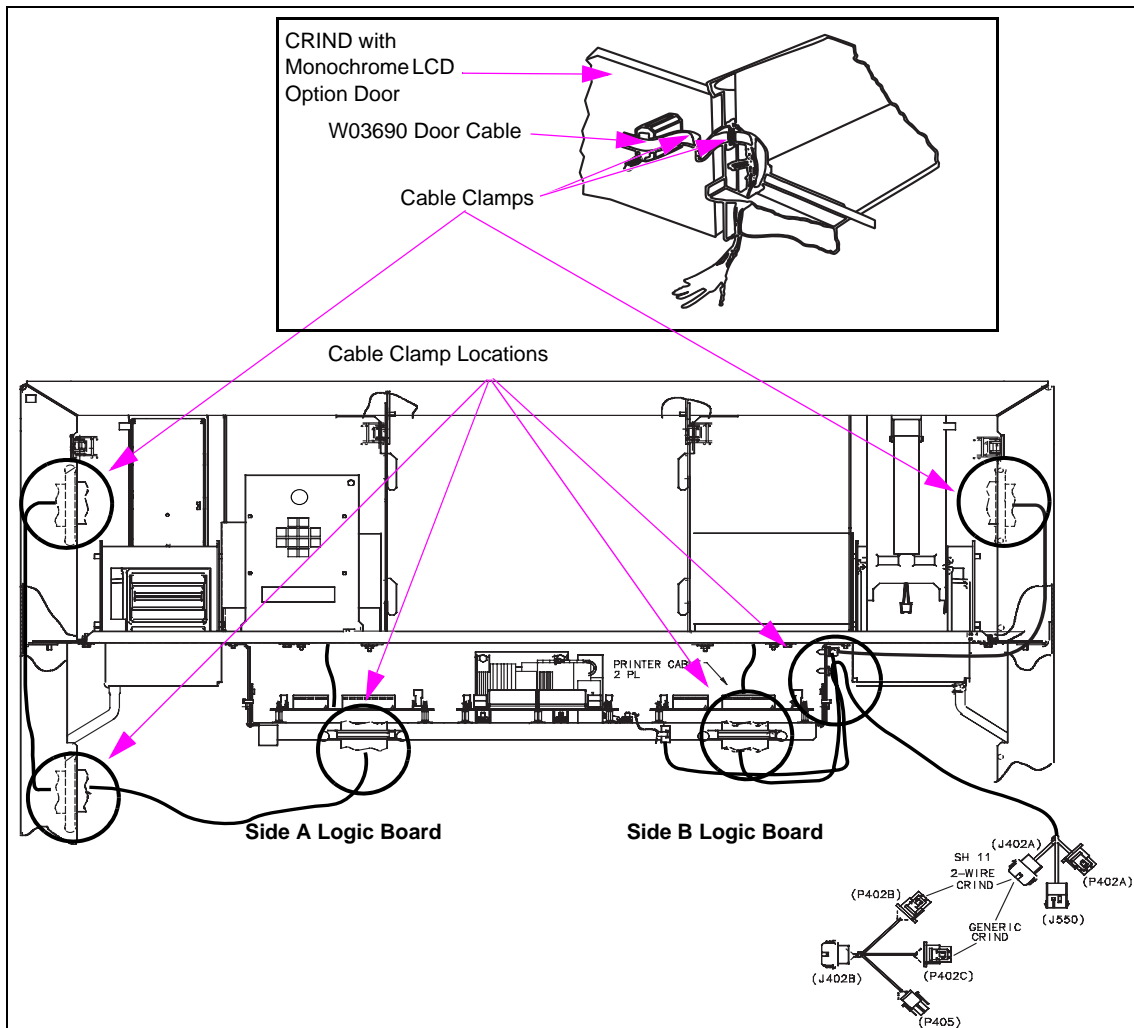
- 1 Install the T19613-G0X Option Door. Use the hinge rod retained from the old Option Door. Apply graphics to the door. Refer to MDE-2620 Graphic Panel Application for The Advantage Series, for additional instructions.
- 2 Install the Card Reader and Card Reader Bracket (removed from old door) onto the Monochrome LCD Option Door.  
*Note: Remove the old Card Reader Gasket and replace with the Neoprene strip from the kit.*
- 3 If the CRIND speaker was mounted to the Card Reader Bracket on old door, then assemble the speaker removed from the old door, T19943-01 Card Reader cover bracket, and T19944-01 Card Reader cover base. Install the assembled cover to the Card Reader Bracket.
- 4 Install the adhesive Neoprene tape to the upper edge of the main door to afford additional moisture protection when the left Option Door is closed.

## Connecting Cables

### Installing the Cable Clamps

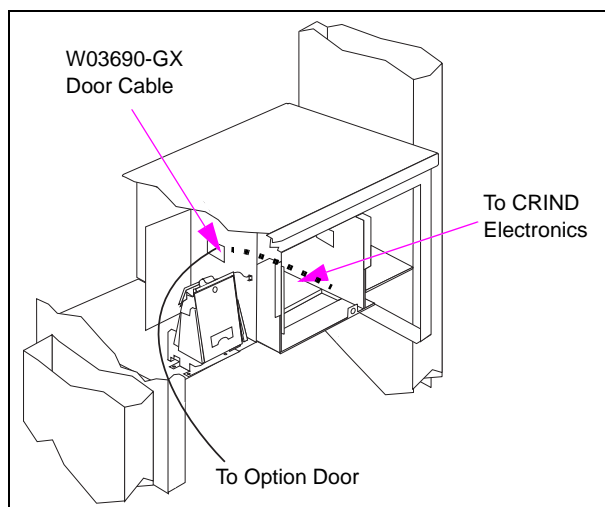
**Figure 7: Cable Clamps**

*Note: Install cable clamps at the locations shown in Figure 7.*



*Note: In units with U-shaped CRIND, route the Door Cable behind the CRIND printer and through the vertical divider, as shown in [Figure 8](#).*

**Figure 8: Door Cable**



### Installing the Option Door Cable

To install the option door cable, proceed as follows:

- 1 Disconnect J566 and J563 (two-sided units only) connectors from the CRIND Regulator Board (see “[Cable Block Diagrams](#)” on [page 21](#)).
- 2 Route the W03690-GX Cable through cable clamps and connect to following devices on Option Door (see [Figure 8](#)).

W03690-GX Connector	Side A	Side B	To This Connector
J1 (7-wire Cable)	X	X	P1 on Card Reader
J902 (13-wire)	X	X	P902 on Keypad
J2085 (6-wire)	X	X	P2085 on Lamp Assembly
J2016 (34-pin)	X	X	P2016 on Monochrome Display
J151 (2-position)	X	X	P151 on top of Cash Acceptor

- 3 Connect the W03690-GX Option Door Cable to CRIND Logic Board(s) (see “[Cable Block Diagrams](#)” on [page 21](#)).

W03690-GX Connector	Side A	Side B	To This Connector
J253 (13-wire)	X	X	P253 on CRIND Logic Board
J254 (7-wire)	X	X	P254 on CRIND Logic Board
J268A (30-position)	X	-	P268 on Side A CRIND Logic Board
J268B (30-position)	X	-	P268 on Side B CRIND Logic Board
J269 (10-pin)	X	X	P269 on CRIND Logic Board

- 4 Connect the W03690-GX Option Door Cable to Monochrome CPU Board (see “[Cable Block Diagrams](#)” on [page 21](#) for more information).

W03690-GX Connector	Side A	Side B	To This Connector
J2015A (34-pin)	X	-	P2015A on T19501 Monochrome CPU Board
J2015B (34-pin)	-	X	P2015B on T19501 Monochrome CPU Board
J2013 (10-pin)	X	-	P2013 on T19501 Monochrome CPU Board

- 5 Connect the W03690-GX Option Door Cable to the T19869 Cable (see “[Cable Block Diagrams](#)” on [page 21](#) for more information).

W03690-GX Connector	Side A	Side B	To This Connector
P553 (2-pin)	X	-	J553 on T19869-G1 Cable
P554 (2-pin)	-	X	J554 on T19869-G1 Cable

- 6 Connect the W03690-GX Option Door Cable to the T19519 Ballast Power Cable.

W03690-GX Connector	Side A	Side B	To This Connector
J2086A	X	-	P2086A on T19519 Cable (Refer to “ <a href="#">Installing Ballast Assemblies and Power Cables</a> ” on <a href="#">page 17</a> )
J2086B	-	X	P2086B on T19519 Cable (Refer to “ <a href="#">Installing Ballast Assemblies and Power Cables</a> ” on <a href="#">page 17</a> )

### Adapting the Cash Acceptor Door Alarm

- 1 If the unit is already equipped with the Cash Acceptor, replace existing Door Alarm Cables with T18229-GX Cables found in the Monochrome kit.

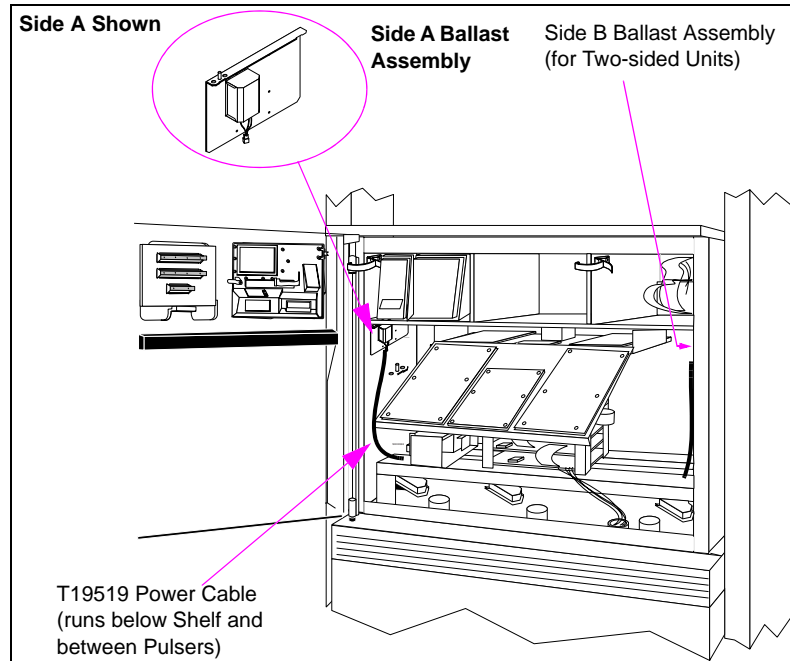
*Note: New cables have a 2-pin connector to install to J268C/D. The old door alarm cables are connected directly to P268 on the Logic Board. This is no longer possible with the Monochrome unit.*

- 2 If required, adjust the proximity switch and actuator positions in the door alarm circuit with parts provided in the Monochrome kit.



## Installing Ballast Assemblies and Power Cables

**Figure 9: Ballast Assemblies and Power Cables**

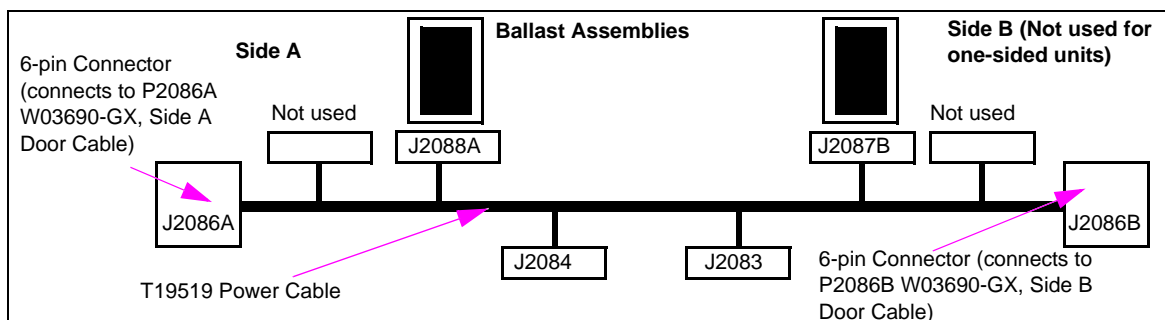


*Note: Ballast assemblies must be installed flush against side wall.*

To install the ballast and power cables, proceed as follows:

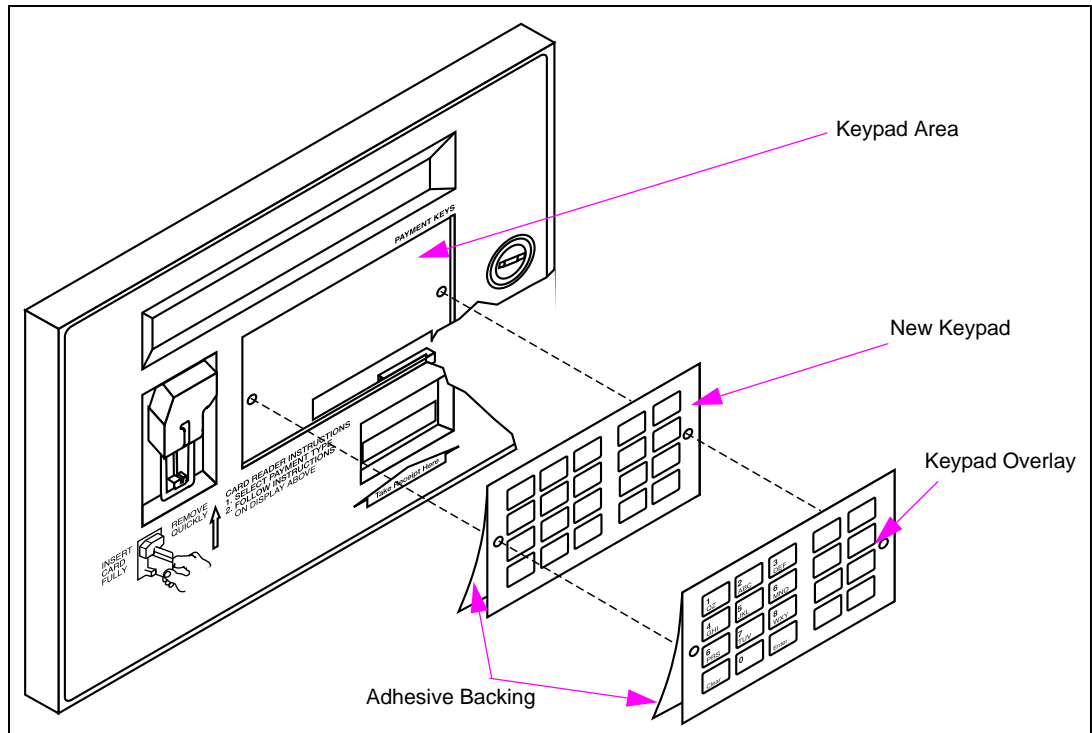
- 1 Mount the ballast assembly to the bottom of the printer shelf, as shown in [Figure 9](#).
  - For single-sided units, mount the ballast assembly on the left, facing Side A of the unit.
  - For two-sided units, mount the ballast assembly on both sides of the unit.
- 2 Route the T19519 Power Cable on the air gap tray between the ballast assemblies (see “[Cable Block Diagrams](#)” on [page 21](#)).
- 3 Make cable-ballast connections as shown in [Figure 10](#). Wires must not interfere with the pulser gearing.

**Figure 10: Cable-ballast Connections**



## Installing the Monochrome Keypad and Keypad Overlay

Figure 11: Monochrome Keypad Overlay



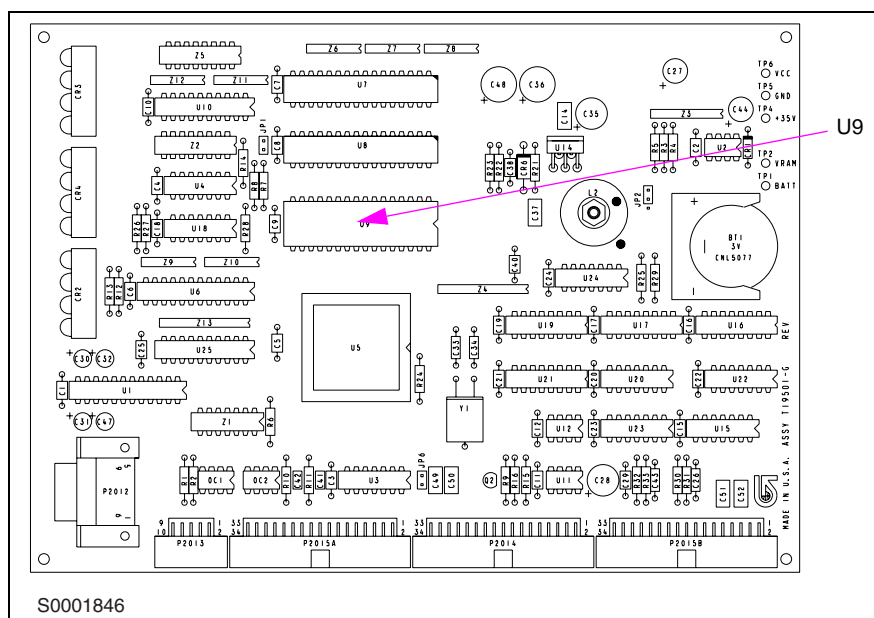
To install the Monochrome keypad and the keypad overlay, proceed as follows:

- 1 Remove adhesive backing from the new keypad.
- 2 Route the P902 Cable from the keypad through the opening in the Option Door.
- 3 Install keypad to the recessed keypad area on the Option Door.  
*Note: Exercise caution when installing the keypad. The adhesive surface on the Keypad overlay, bonds on contact.*
- 4 Remove adhesive backing from keypad overlay.
- 5 Apply keypad overlay to the keypad. Ensure that the overlay buttons are aligned with the keypad.  
*Note: Ensure that air bubbles are not trapped between the overlay and keypad. Air bubbles may expand in warm weather and cause false key activations.*
- 6 Install the P902 to J902 on the Option Door Cable.

## Installing the Software

### Installing the Monochrome Controller

Figure 12: Monochrome Controller

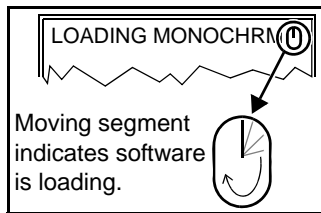


To install the Monochrome Controller, proceed as follows:

- 1 Install the K94247-01 Monochrome controller modular electronic software to position U9 on the T19501-G1 Monochrome CPU Board. Refer to MDE-2410 Modular Electronic Software Installation, for instructions.
- 2 Ensure that the CRIND BIOS is version 20.1.3 or later. If upgrade is required, refer to MDE-2410 Modular Electronic Software Installation, for instructions.
- 3 Ensure that jumpers JP1, JP2, and JP6 on the T19501 Monochrome CPU Board are not used. Refer to MDE-2562 CRIND Service Manual, for more information.
- 4 Ensure that the controller is configured properly. The CRIND device must be configured to the proper data loop before powering up the unit.  
*Note: Some non-Gilbarco® controllers require communications established with the pump before communications with the CRIND device begins.*
- 5 Move Universal Distribution Box jumpers J1 through J8 from NORMAL to ISOLATE.
- 6 Close all doors or bezels.

**7** Perform a Coldstart.

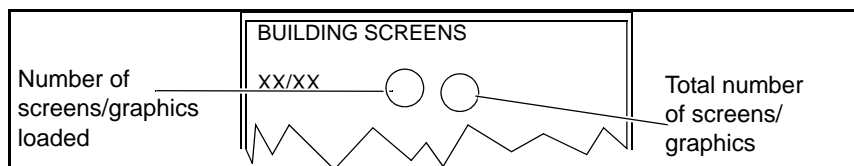
- The Monochrome LCD will display the following message, indicating that Monochrome software is loading. Refer to MDE-2562 CRIND Service Manual, for additional information.



*Note: If a new version of CRIND BIOS is installed, the system will automatically perform a coldstart on power-up.*

*Note: You may download one or more units at a time. The download will last approximately 10 minutes for each fueling position.*

- For G-SITE® only, after software is loaded, the CRIND device will load the Monochrome screens and graphics into memory. The following screen appears.



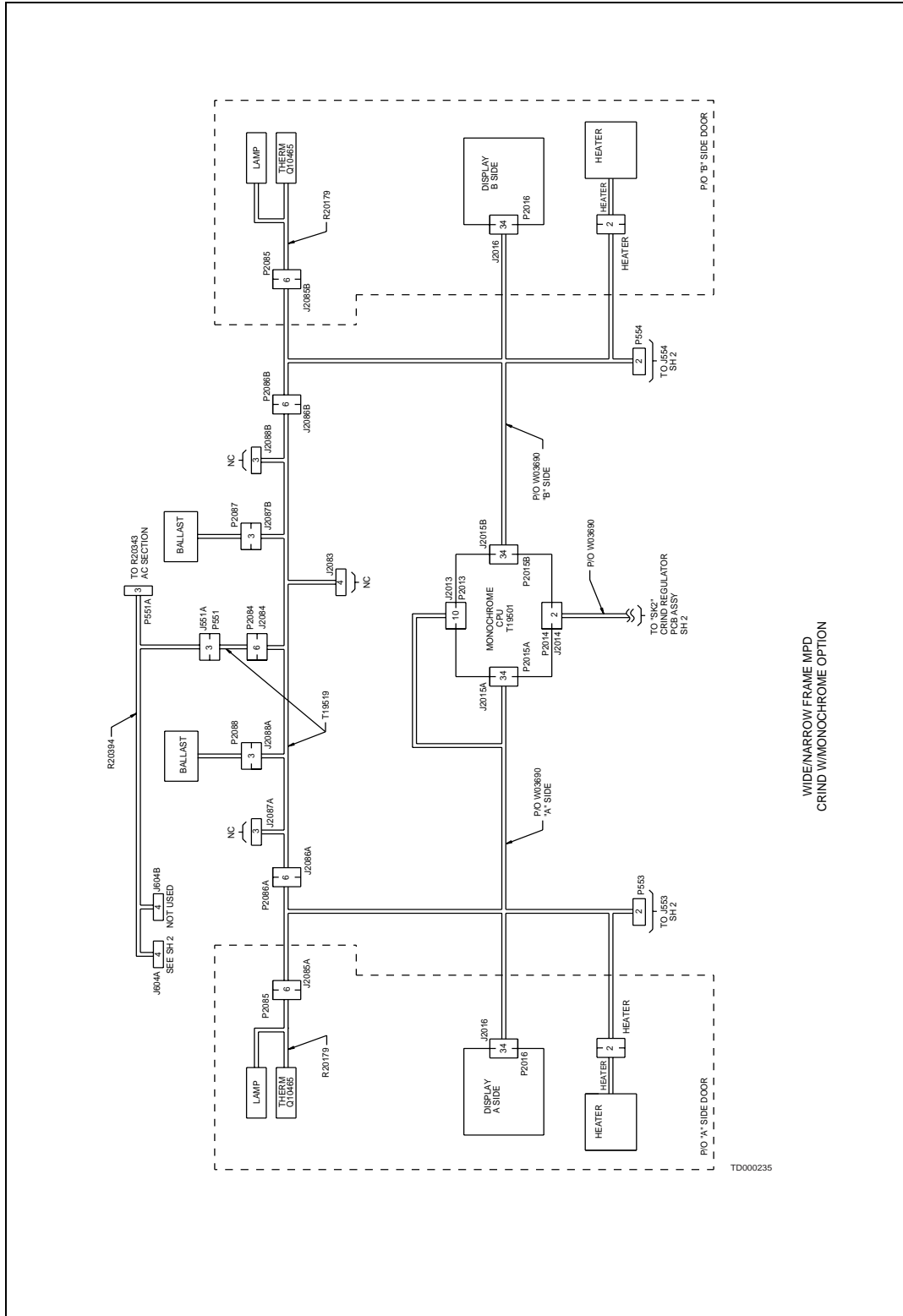
**8** Perform CRIND diagnostics to ensure proper operation. Refer to MDE-2562 CRIND Service Manual, for additional instructions on CRIND diagnostics.

### Adjusting the Screen Display

You must adjust the initial contrast correctly to ensure that the display is acceptable in all situations. Use CRIND diagnostic function 20 to adjust the display contrast for best viewing. Make the text as dark as possible without darkening the background.

# Cable Block Diagrams

Figure 13: The Advantage Wide/Narrow Frame CRIND with Monochrome Option (1 of 2)





# Option Door Cables

Figure 15: W03690-G3 Option Door Cable

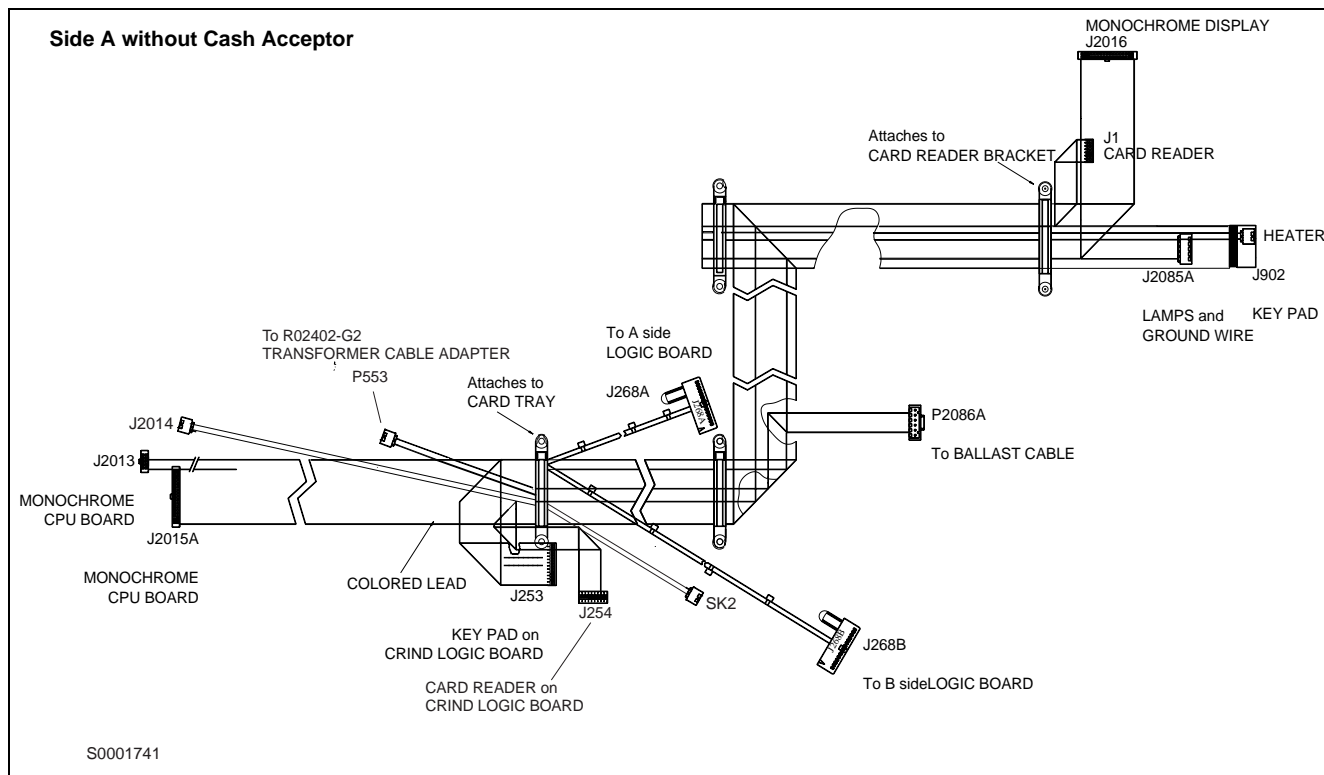


Figure 16: W03690-G4 Option Door Cable

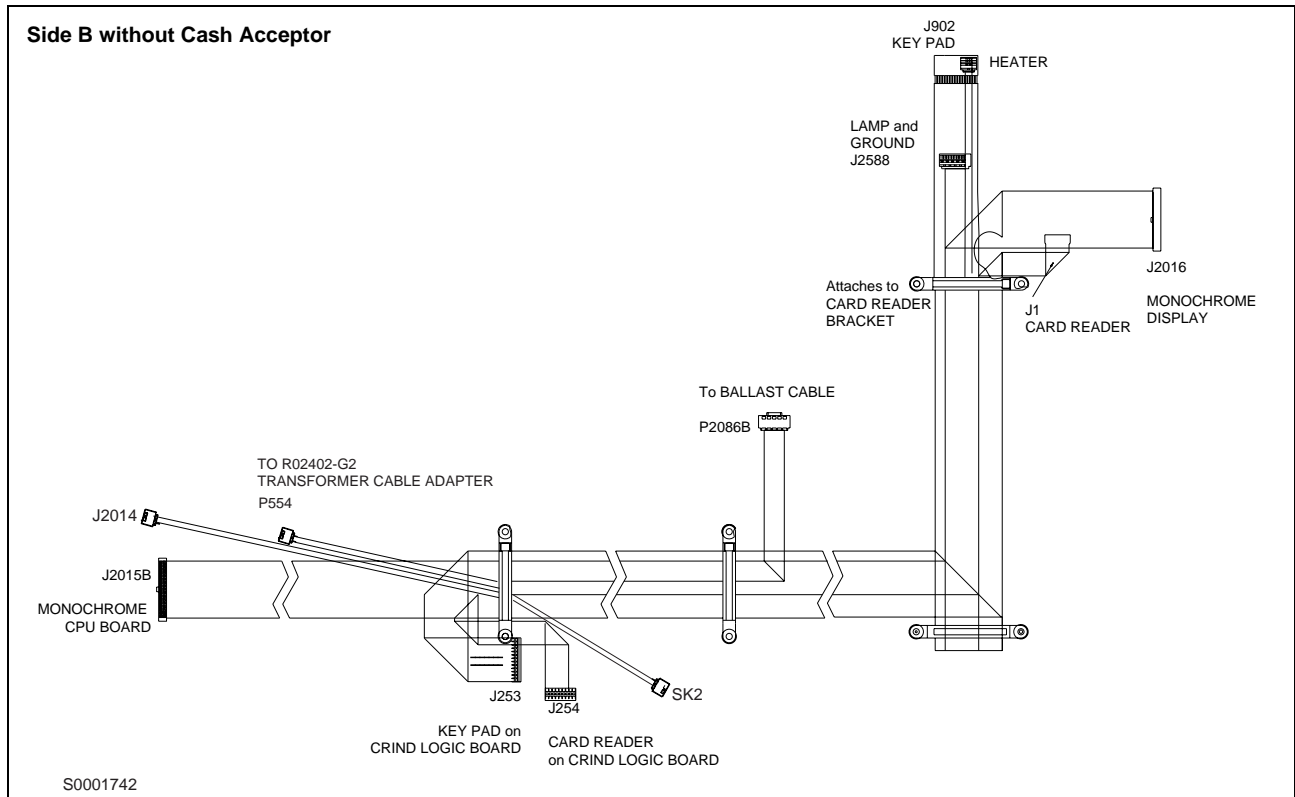


Figure 17: W03690-G7 Option Door Cable

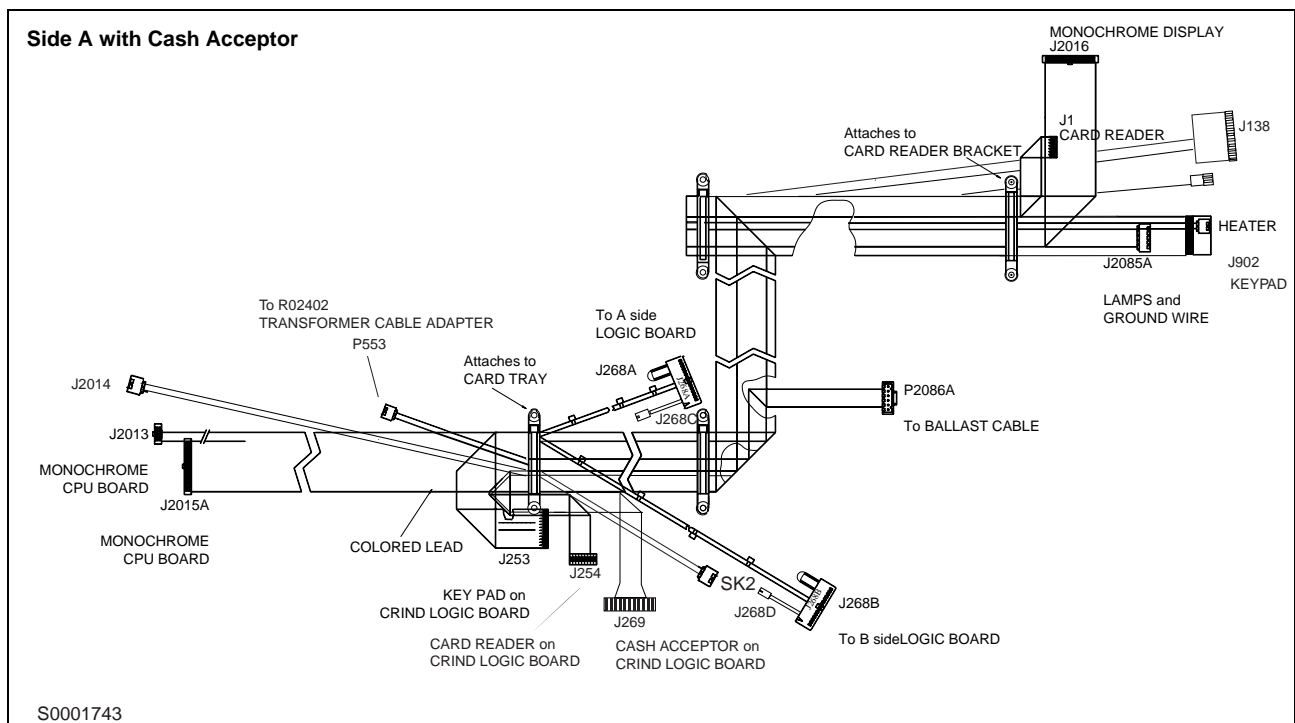
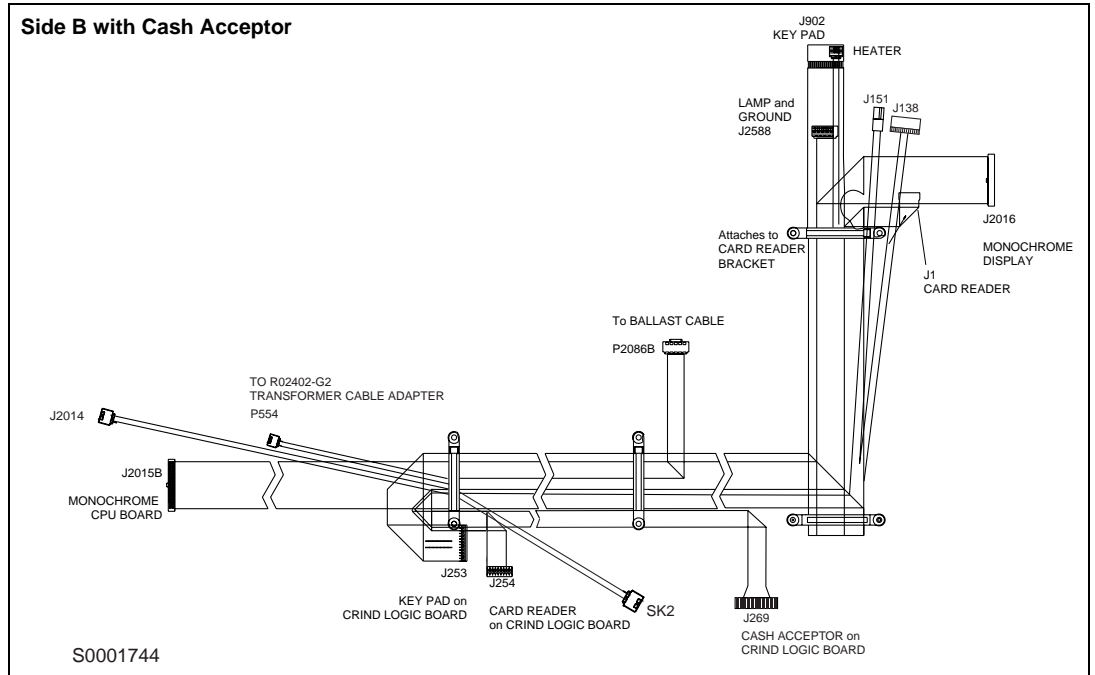




Figure 18: W03690-G8 Option Door Cable



*CRIND®*, *Gilbarco®*, *G-SITE®*, *MPD®*, *The Advantage® Series*, and *TRIND®* are registered trademarks of Gilbarco Inc. *Phillips®* is a registered trademark of The Phillips Screw Co.



© 2010 Gilbarco Inc.  
7300 West Friendly Avenue · Post Office Box 22087  
Greensboro, North Carolina 27420  
Phone (336) 547-5000 · <http://www.gilbarco.com> · Printed in the U.S.A.  
MDE-3228E Monochrome LCD Retrofit Kits for The Advantage® Series · January 2010