

**INSTALLATION INSTRUCTIONS**

Original Issue Date: 4/13  
Model: **20-3250 kW Generator Sets  
with Decision-Maker® 550 and 6000 Controllers**  
Market: **Industrial, Residential, and Marine**  
Subject: **Controller Front Panel Service Replacement  
Kits GM87202-1, -2, -3, -4, and -5**

**Introduction**

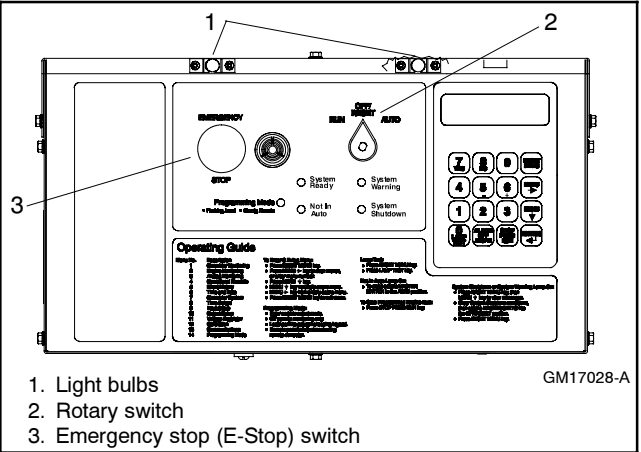
The front panel service replacement kit provides an assembly for replacing a damaged or non-functional controller keypad (membrane) switch. Service replacement kits GM87202-1, -2, and -3 also include a new status display/alarm horn circuit board.

The Decision-Maker® 550 controller originally equipped with the optional keyswitch requires a new keyswitch (included in the respective kit) as the old keyswitch does not fit in the new panel design. See Figure 1 for service kit variations. See Figure 2, Figure 3, and Figure 4 for controller identification.

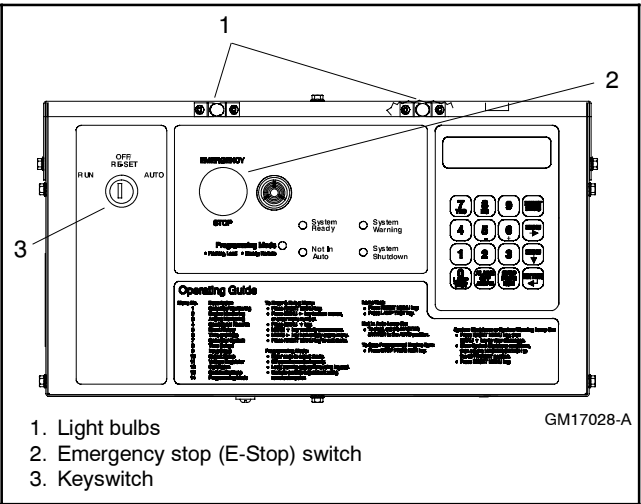
There are two styles of controller mounting. If the controller is on top of the junction box, it is referred to as standard style. If the controller is internal to the junction box, it is referred to as pedestal style.

| Kit Part No. | Decision-Maker®<br>Controller | Switch Type | Junction Box<br>Style |
|--------------|-------------------------------|-------------|-----------------------|
| GM87202-1    | 550                           | Rotary      | Standard              |
| GM87202-2    | 550                           | Key         | Standard              |
| GM87202-3    | 550                           | Key         | Pedestal              |
| GM87202-4    | 6000                          | Key         | Standard              |
| GM87202-5    | 6000                          | Key         | Pedestal              |

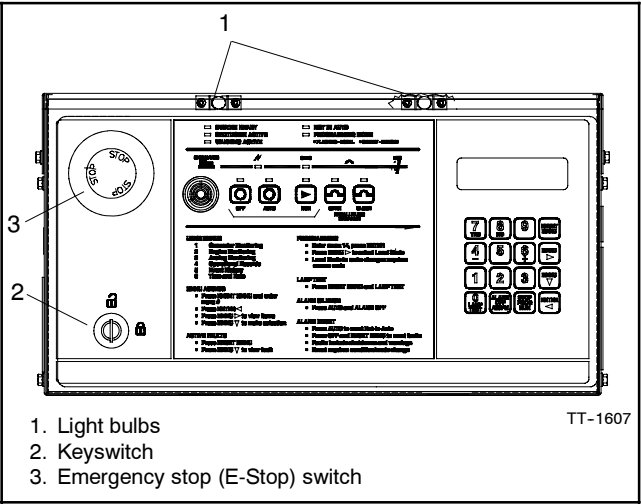
**Figure 1** Controller Service Replacement Kits



**Figure 2** 550 Controller with Rotary Switch



**Figure 3** 550 Controller with Keyswitch



**Figure 4** 6000 Controller

Read the entire installation procedure and compare the kit parts with the parts list in this publication before beginning installation. Perform the steps in the order shown.

Always observe applicable local and national electrical codes.

## List of Related Literature

Separate literature contains controller operation, communication, and software information not provided in this manual. Figure 5 lists the available literature part numbers.

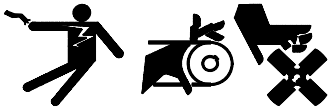
| Manual Descriptions                            | Literature Part No.                                         |
|------------------------------------------------|-------------------------------------------------------------|
| Generator Set/Controller Wiring Diagram Manual | Multiple Part Numbers<br>Contact your<br>Distributor/Dealer |
| Decision-Maker® 550 Operation Manual           | TP-6200                                                     |
| Decision-Maker® 6000 Operation Manual          | TP-6750                                                     |
| Controller Service Manual                      | TP-6356                                                     |
| SiteTech™ Software Manual                      | TP-6701                                                     |

Figure 5 Related Literature

## Safety Precautions

Observe the following safety precautions while installing the kit.

**⚠ WARNING**



**Accidental starting.**  
**Can cause severe injury or death.**

Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

(Decision-Maker® 550 Controller)

**Disabling the generator set. Accidental starting can cause severe injury or death.** Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

(Decision-Maker® 6000 Controller)

**⚠ WARNING**



**Hazardous voltage. Moving parts.**  
**Can cause severe injury or death.**

Operate the generator set only when all guards and electrical enclosures are in place.

**Grounding electrical equipment. Hazardous voltage can cause severe injury or death.** Electrocutation is possible whenever electricity is present. Ensure you comply with all applicable codes and standards. Electrically ground the generator set and related equipment and electrical circuits. Turn off the main circuit breakers of all power sources before servicing the equipment. Never contact electrical leads or appliances when standing in water or on wet ground because these conditions increase the risk of electrocution.

**Connecting the battery and the battery charger. Hazardous voltage can cause severe injury or death.** Reconnect the battery correctly, positive to positive and negative to negative, to avoid electrical shock and damage to the battery charger and battery(ies). Have a qualified electrician install the battery(ies).

**Short circuits. Hazardous voltage/current can cause severe injury or death.** Short circuits can cause bodily injury and/or equipment damage. Do not contact electrical connections with tools or jewelry while making adjustments or repairs. Remove all jewelry before servicing the equipment.

### NOTICE

**Electrostatic discharge damage.** Electrostatic discharge (ESD) damages electronic circuit boards. Prevent electrostatic discharge damage by wearing an approved grounding wrist strap when handling electronic circuit boards or integrated circuits. An approved grounding wrist strap provides a high resistance (about 1 megohm), *not a direct short*, to ground.

# Installation Procedure

## 1. Remove the generator set from service.

- 1.1 Place the generator set master switch to the OFF position (Decision-Maker® 550 controller).  
OR  
Press the generator set master control OFF/RESET button (Decision-Maker® 6000 controller).
- 1.2 Disconnect the power to the battery charger, if equipped.
- 1.3 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

## 2. Determine which procedure to use based on kit number.

Use the table below to determine which procedure is required.

| Kit Part No. | Controller | Selector Switch | Junction Box | Go to Step |
|--------------|------------|-----------------|--------------|------------|
| GM87202-1    | 550        | Rotary          | Standard     | 3          |
| GM87202-2    | 550        | Key             | Standard     | 5          |
| GM87202-3    | 550        | Key             | Pedestal     | 5          |
| GM87202-4    | 6000       | Key             | Standard     | 7          |
| GM87202-5    | 6000       | Key             | Pedestal     | 7          |

**Figure 6** Controller Service Replacement Kits

## 3. Removal of the front panel and connections (Kit GM87202-1).

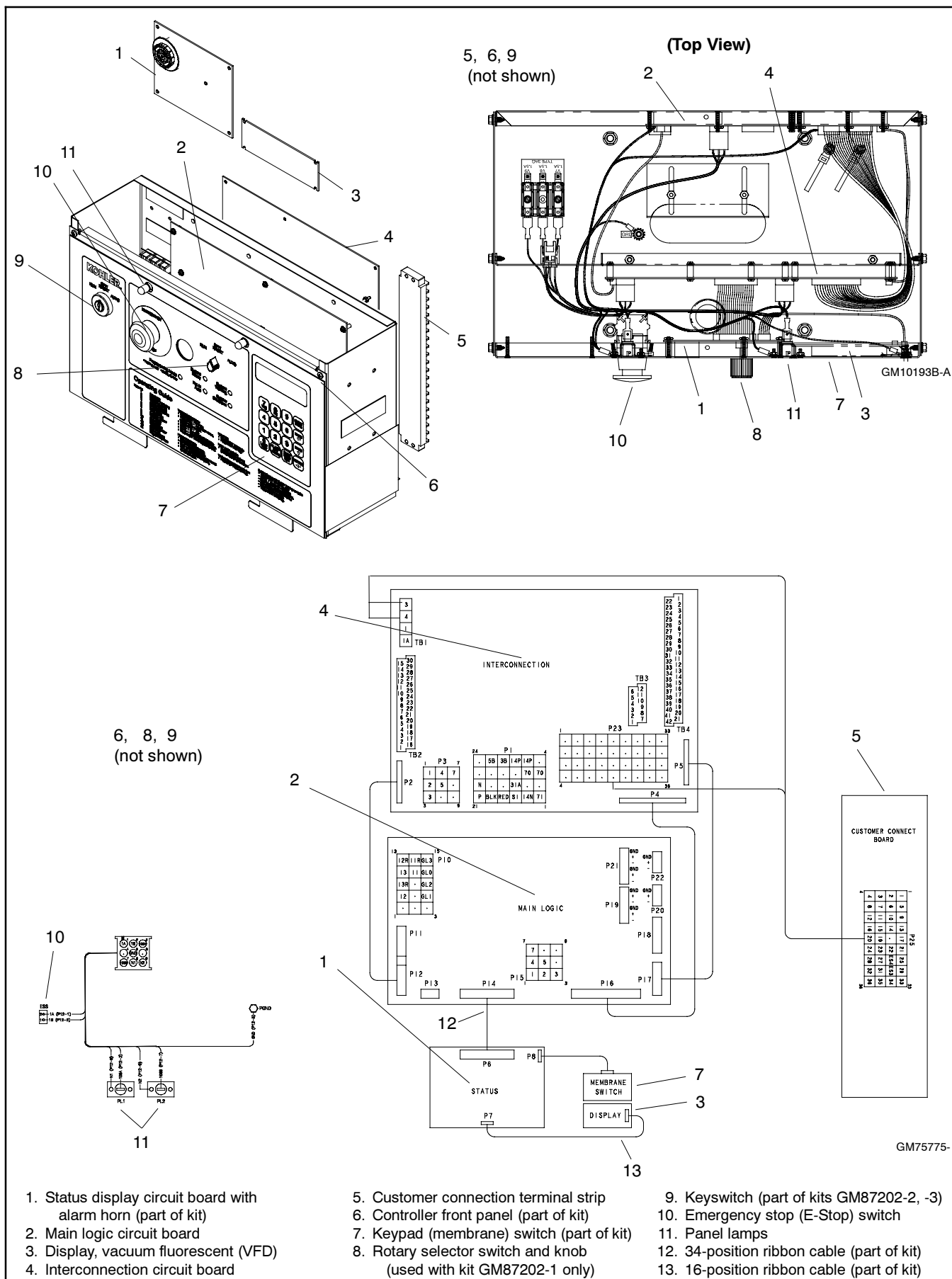
Refer to Figure 7 for Decision-Maker® 550 controller front panel replacement.

- 3.1 Remove the controller screws and cover.
- 3.2 Remove the rotary selector switch knob by loosening both set screws and remove the retaining nut. Save the retaining nut and knob as they will be used later.
- 3.3 Remove the bottom center screw, remove the two top screws, loosen the two side screws and flip down the front panel.
- 3.4 Remove the lamps, hardware, and lamp sockets at the front panel upper edge. Remove the nut from the ground wire. Save the lamps and components as they will be used later.
- 3.5 Disconnect the 34-position ribbon cable (from status display/alarm horn circuit board P6) at the main logic circuit board P14 connector.

- 3.6 Disconnect the 16-position ribbon cable (from status display/alarm horn circuit board P7) at the vacuum fluorescent display connector.
- 3.7 Remove four screws, lock washers, and fiber washers to remove the vacuum fluorescent display (VFD) from the existing front panel. Save the VFD and components as they will be used later.
- 3.8 Disconnect the contact block from the back of the emergency stop (E-Stop) switch. Loosen and remove the mounting flange and remove the E-stop switch from the existing front panel. Save the E-stop switch and components as they will be used later.
- 3.9 Remove the two side screws and remove the existing front panel.
- 3.10 Go to Step 4.

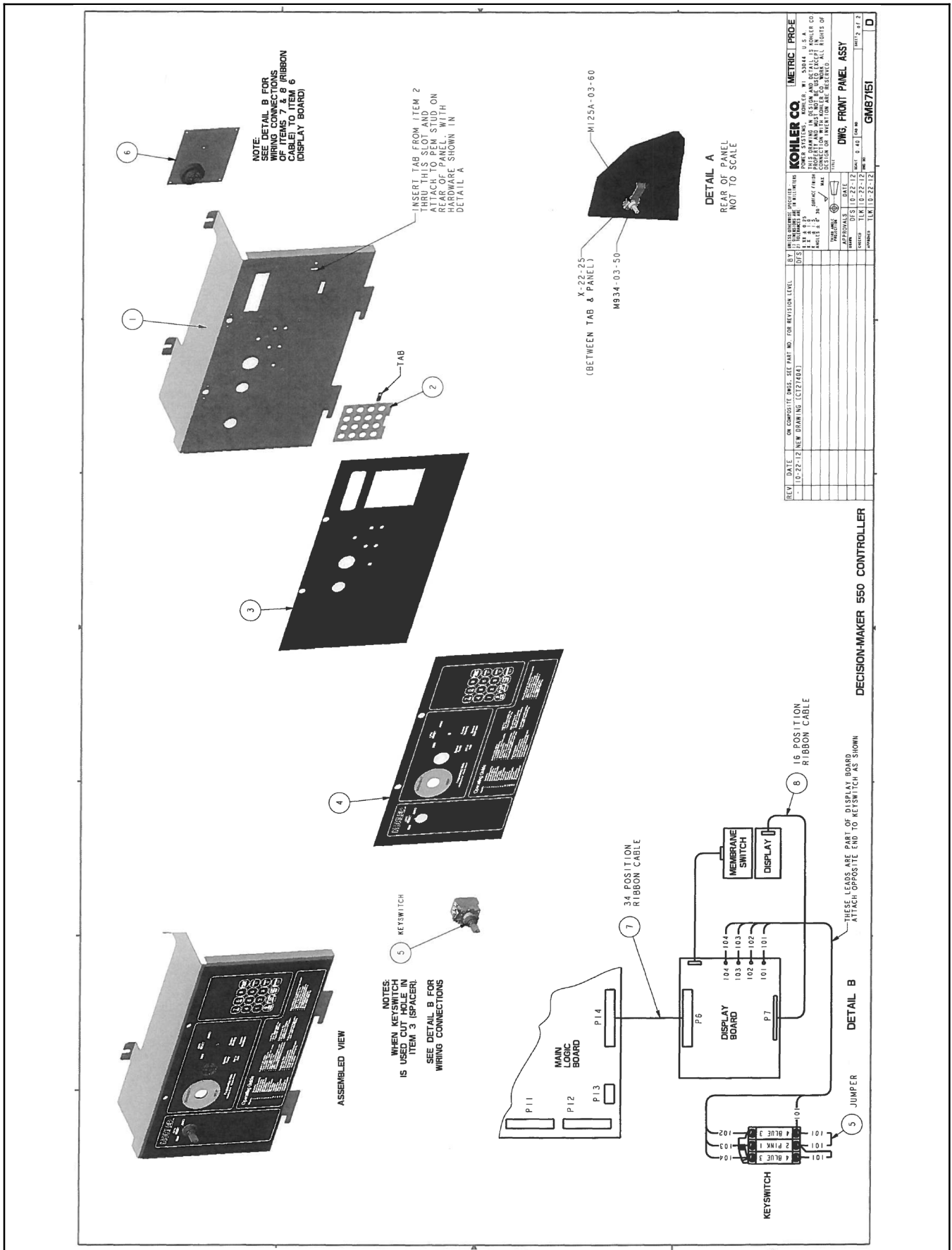
## 4. Replacement of the front panel and connections (Kit GM87202-1).

- 4.1 Install the emergency stop (E-Stop) switch in the front panel. Install and tighten the mounting flange. Reattach the contact block to the back of the E-stop switch.
- 4.2 Install the vacuum fluorescent display (VFD) using four fiber washers, lock washers, and screws.
- 4.3 Connect the 16-position ribbon cable from the new status display/alarm horn circuit board P7 to the vacuum fluorescent display connector.
- 4.4 Connect the 34-position ribbon cable from the new status display/alarm horn circuit board P6 to the main logic circuit board P14 connector.
- 4.5 Install the rotary selector switch retaining nut. Install the knob pointing upward and tighten both set screws. Rotate the knob pointer and verify that the pointer corresponds with each switch position (Run, Off/Reset, and Auto) as shown on the front panel silkscreen. If required, loosen the set screws, reposition the knob, and then retighten the set screws.
- 4.6 Install the lamp sockets, hardware, and lamps at the front panel upper edge. Attach the ground wire to the stud using the existing nut.
- 4.7 Verify that the new front panel has all the wiring connected.
- 4.8 Replace front panel and five screws.
- 4.9 Replace the controller cover and screws.
- 4.10 Go to Step 9.



**Figure 7** Decision-Maker® 550 Controller Components and Wiring





**Figure 9** Decision-Maker® 550 Controller Front Panel Assembly, Drawing GM87161B-

**5. Removal of the front panel and connections (Kits GM87202-2 and GM87202-3).**

Refer to Figure 7, Figure 8, and Figure 9 for Decision-Maker® 550 controller front panel replacement.

- 5.1 Remove the controller screws and cover (kit GM87202-2 only).
- 5.2 Remove the bottom center screw, remove the two top screws, loosen the two side screws and flip down the front panel (kit GM87202-2 only).
- 5.3 Remove the two screws at the upper corners of the front panel (kit GM87202-3 only).
- 5.4 Remove the lamps, hardware, and lamp sockets at the front panel upper edge. Remove the nut from the ground wire. Save the lamps and components as they will be used later.
- 5.5 Disconnect the 34-position ribbon cable (from status display/alarm horn circuit board P6) at the main logic circuit board P14 connector.
- 5.6 Disconnect the 16-position ribbon cable (from status display/alarm horn circuit board P7) at the vacuum fluorescent display connector.
- 5.7 Remove four screws, lock washers, and fiber washers to remove the vacuum fluorescent display (VFD) from the existing front panel. Save the VFD and components as they will be used later.
- 5.8 Disconnect the contact block from the back of the emergency stop (E-Stop) switch. Loosen and remove the mounting flange and remove the E-stop switch from the existing front panel. Save the E-stop switch and components as they will be used later.
- 5.9 Make note of the wiring connections and remove the keyswitch leads 101, 102, 103, and 104 from the keyswitch. The existing keyswitch will not be reused.
- 5.10 Remove the two side screws and remove the existing front panel (kit GM87202-2 only).
- 5.11 Slide the existing front panel slightly to the right and lift the front panel from the slotted holes (kit GM87202-3 only).
- 5.12 Go to Step 6.

**6. Replacement of the front panel and connections (Kits GM87202-2 and GM87202-3).**

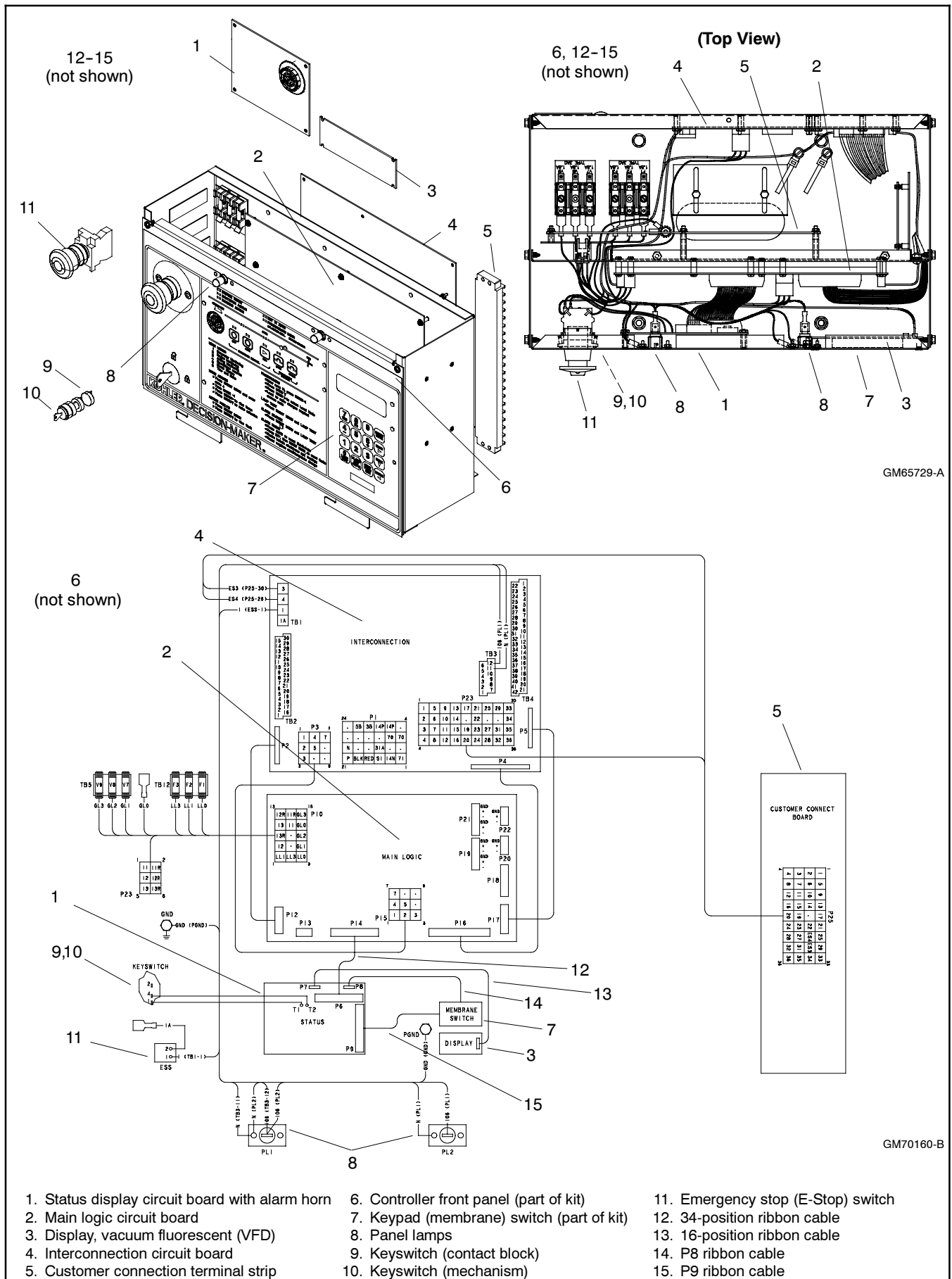
- 6.1 Place the new front panel in the slotted holes.
- 6.2 Reattach the keyswitch leads 101, 102, 103, and 104 to the new keyswitch.
- 6.3 Install the emergency stop (E-Stop) switch in the front panel. Install and tighten the mounting flange. Reattach the contact block to the back of the E-stop switch.
- 6.4 Install the vacuum fluorescent display (VFD) using four fiber washers, lock washers, and screws.
- 6.5 Connect the 16-position ribbon cable from the new status display/alarm horn circuit board P7 to the vacuum fluorescent display connector.
- 6.6 Connect the 34-position ribbon cable from the new status display/alarm horn circuit board P6 to the main logic circuit board P14 connector.
- 6.7 Install the lamp sockets, hardware, and lamps at the front panel upper edge. Attach the ground wire to the stud using the existing nut.
- 6.8 Verify that the new front panel has all the wiring connected.
- 6.9 Replace the front panel and five screws (kit GM87202-2 only).
- 6.10 Replace the two screws at the upper corners of the front panel (kit GM87202-3 only).
- 6.11 Replace the controller cover and screws (kit GM87202-2 only).
- 6.12 Go to Step 9.

**7. Removal of the front panel and connections (Kits GM87202-4 and GM87202-5).**

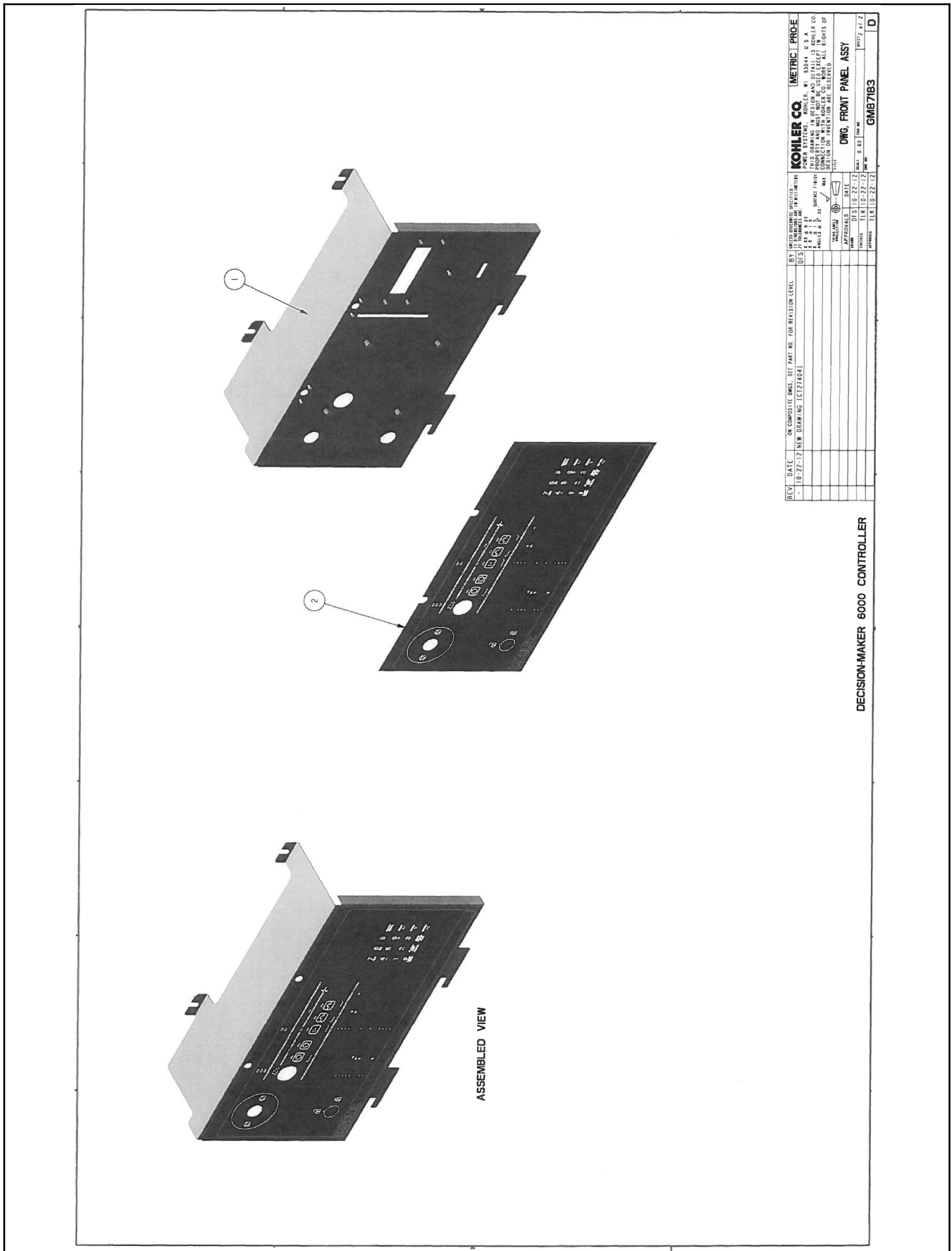
Refer to Figure 10, Figure 11, and Figure 12 for the Decision-Maker® 6000 controller front panel replacement.

- 7.1 Remove the controller screws and cover (kit GM87202-4 only).
- 7.2 Remove the bottom center screw, remove the two top screws, loosen the two side screws and flip down the front panel (kit GM87202-4 only).
- 7.3 Remove the two screws at the upper corners of the front panel (kit GM87202-5 only).

- 7.4 Remove the lamps, hardware, and lamp sockets at the front panel upper edge. Remove the nut from the ground wire. Save the lamps and components as they will be used later.
  - 7.5 Disconnect the 34-position ribbon cable (from status display/alarm horn circuit board P6) at the main logic circuit board P14 connector.
  - 7.6 Disconnect the 16-position ribbon cable (from display circuit board P7) at the vacuum fluorescent display connector.
  - 7.7 Disconnect the ribbon cable (from status display/alarm horn circuit board P8) at the keypad (membrane) switch.
  - 7.8 Disconnect the ribbon cable (from status display/alarm horn circuit board P9) at the keypad (membrane) switch.
  - 7.9 With the wiring connected, remove four nuts, lock washers, and nuts to remove the status display/alarm horn circuit board from the existing front panel. Save the alarm horn circuit board and components as they will be used later.
  - 7.10 Remove four screws, lock washers, and fiber washers to remove the vacuum fluorescent display (VFD) from the existing front panel. Save the VFD and components as they will be used later.
  - 7.11 Disconnect the contact block from the back of the emergency stop (E-Stop) switch. Loosen and remove the mounting flange and remove the E-stop switch from the existing front panel. Save the E-stop switch and components as they will be used later.
  - 7.12 Remove the contact block with wiring from the back of the keyswitch. Remove the nut and gasket from the keyswitch and remove the keyswitch from the front panel. Save the keyswitch and components as they will be used later.
  - 7.13 Remove the two side screws and remove the existing front panel (kit GM87202-4 only).
  - 7.14 Slide the existing front panel slightly to the right and lift the front panel from the slotted holes (kit GM87202-5 only).
  - 7.15 Go to Step 8.
- 8. Replacement of the front panel and connections (Kits GM87202-4 and GM87202-5).**
    - 8.1 Place the new front panel in the slotted holes.
    - 8.2 With the gasket on the keyswitch install the keyswitch in the new front panel and align with the notched hole. Install the nut and reattach the contact block with wiring to the back of the keyswitch.
    - 8.3 Install the emergency stop (E-Stop) switch in the new front panel. Install and tighten the mounting flange. Reattach the contact block to the back of the E-stop switch.
    - 8.4 Install the vacuum fluorescent display (VFD) using four fiber washers, lock washers, and screws.
    - 8.5 With the wiring connected, install the status display/alarm horn to the new front panel using four spacers, lock washers, and nuts.
    - 8.6 Reconnect the ribbon cable (from status display/alarm horn circuit board P9) at the keypad (membrane) switch.
    - 8.7 Reconnect the ribbon cable (from status display/alarm horn circuit board P8) at the keypad (membrane) switch.
    - 8.8 Connect the 16-position ribbon cable from the status display/alarm horn circuit board P7 to the vacuum fluorescent display connector.
    - 8.9 Connect the 34-position ribbon cable from the status display/alarm horn circuit board P6 to the main logic circuit board P14 connector.
    - 8.10 Install the lamp sockets, hardware, and lamps at the front panel upper edge. Attach the ground wire to the stud using the existing nut.
    - 8.11 Verify that the new front panel has all the wiring connected.
    - 8.12 Replace the front panel and five screws (kit GM87202-4 only).
    - 8.13 Replace the two screws at the upper corners of the front panel (kit GM87202-5 only).
    - 8.14 Replace the controller cover and screws (kit GM87202-4 only).
    - 8.15 Go to Step 9.







**Figure 12** Decision-Maker® 6000 Controller Front Panel Assembly, Drawing GM87183B-

## 9. Restore power to the generator set.

- 9.1 Check that the generator set master switch is in the OFF position (Decision-Maker® 550 controller).
- 9.2 Reconnect the generator set engine starting battery, negative (-) lead last.
- 9.3 Reconnect power to the battery charger, if equipped.

## 10. Verify functionality of the controller.

- 10.1 Use the respective controller operation manual and check that the keypad and digital display function. Press the lamp test key.
- 10.2 Use Menu 14 to set the local Programming Mode on and Menu 6 to set the Time and Date. Refer to the respective controller operation manual for procedures. Be sure to turn the local programming mode off when complete.
- 10.3 Start the generator set to verify that the controller master switch is functional.
- 10.4 Stop the generator set when test is complete.

## Parts List

### Controller Front Panel Service Replacement Kits

| Kit: GM87202-1 |                                         |             |
|----------------|-----------------------------------------|-------------|
| Qty.           | Description                             | Part Number |
| 1              | Front panel assembly, DEC 550           | GM87151-1   |
| 1              | Cable, ribbon, 34 position, P6-P14      | GM10120     |
| 1              | Cable, ribbon, 16 pos., P7 display      | GM10124     |
| 1              | Switch, keypad (membrane)               | GM10188     |
| 1              | Decal, Decision-Maker 550               | GM10190     |
| 1              | Spacer, membrane switch                 | GM10191     |
| 1              | Panel, front                            | GM10213     |
| 1              | Status display/alarm horn circuit board | A-365485    |

| Kit: GM87202-2 |                                         |             |
|----------------|-----------------------------------------|-------------|
| Qty.           | Description                             | Part Number |
| 1              | Front panel assembly, DEC 550           | GM87151-2   |
| 1              | Cable, ribbon, 34 position, P6-P14      | GM10120     |
| 1              | Cable, ribbon, 16 pos., P7 display      | GM10124     |
| 1              | Switch, keypad (membrane)               | GM10188     |
| 1              | Decal, Decision-Maker 550               | GM85996     |
| 1              | Spacer, membrane switch                 | GM10191     |
| 1              | Panel, front                            | GM85997     |
| 1              | Status display/alarm horn circuit board | GM17398     |
| 1              | Switch, 3-position keyed                | GM85980     |
| 1              | Lead, switch jumper                     | GM86030     |

| Kit: GM87202-3 |                                         |             |
|----------------|-----------------------------------------|-------------|
| Qty.           | Description                             | Part Number |
| 1              | Front panel assembly, DEC 550           | GM87151-3   |
| 1              | Cable, ribbon, 34 position, P6-P14      | GM10120     |
| 1              | Cable, ribbon, 16 pos., P7 display      | GM10124     |
| 1              | Switch, keypad (membrane)               | GM10188     |
| 1              | Decal, Decision-Maker 550               | GM85996     |
| 1              | Spacer, membrane switch                 | GM10191     |
| 1              | Panel, front                            | GM86028     |
| 1              | Status display/alarm horn circuit board | GM17398     |
| 1              | Switch, 3-position keyed                | GM85980     |
| 1              | Lead, switch jumper                     | GM86030     |

| Kit: GM87202-4 |                                |             |
|----------------|--------------------------------|-------------|
| Qty.           | Description                    | Part Number |
| 1              | Front panel assembly, DEC 6000 | GM87183-1   |
| 1              | Switch, keypad (membrane)      | GM62798     |
| 1              | Panel, front                   | GM78596     |

| Kit: GM87202-5 |                                |             |
|----------------|--------------------------------|-------------|
| Qty.           | Description                    | Part Number |
| 1              | Front panel assembly, DEC 6000 | GM87183-2   |
| 1              | Switch, keypad (membrane)      | GM62798     |
| 1              | Panel, front                   | GM78091     |

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler® generator set distributor for availability.