



INSTALLATION INSTRUCTIONS

PART NUMBER	154-8853C
PART DESCRIPTION	OIL HEAD RELAY KIT
REV DATE	6/16/17
MACHINE MODELS	KUSTODIAN MODEL C



Should only be performed by a Kegel Certified Level 1 technician

TOOLS NEEDED:

Phillip Screwdriver

3/8 wrench

Very Important

Insure that you will have access to the software and that your PLC is upgraded prior to installing the hardware.



TECHNICAL NOTE

Please thoroughly read the instructions prior to performing the installation of this assembly.

To avoid any potential problems, if at any time during the process you have a question, stop and contact our Tech Support department at the numbers listed below.

Please visit our growing library of videos to see if these instructions are available!



www.youtube.com/user/KegelBowling81



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This upgrade is done with the center plate removed from the machine! Please review the instructions. If you are uncomfortable in doing the following steps, please contact Kegel or your Distributor, to have a Kegel certified technician to perform the upgrade for you.

The below items must be installed on your lane machine prior to installing this kit

Kustodian Model A machines will need an A to C upgrade kit (154-8870), Transfer Brush upgrade (158-8430) and the Head Relay upgrade kit w/relays (154-8853C).

- Kustodian Model B machines will need a B to C upgrade kit (154-8871); Transfer Brush upgrade (158-8430) and the Head Relay upgrade kit w/relays (154-8853C).
- Kustodian Model C machines will need (154-8853C) and the Transfer Brush upgrade kit (158-8430).

1. With power removed from the lane machine, open up the center compartment and locate the center control panel. Using a Philips screwdriver, remove the four screws that fasten the plate to the lane machine. Set these in a safe place for replacement.
2. Remove the black communication plug from the top of the PLC. Carefully tilt the plate up towards you so that you can view the wires and connections down in the center compartment. Carefully, follow each of the wire bundles down to each of the Molex connectors and unplug. You may have to remove some wire ties to expose some of these bundles.
3. Now that the plate is resting on a nice, clean area on your workbench, we will start by replacing the Din rail piece located in your kit. Carefully remove ALL the relays that are located on the existing Din Rail. The LY2 type relays can be removed by taking a small flat blade screwdriver and inserting in the tab at the bottom of the relay base and pulling out and away from the base. This will allow you to tilt the relay base up and away from the Din Rail. The green relay tower can be removed by sliding this off the Din Rail once the LY2's are removed.
4. Now safely remove the Din Rail from the center plate. Locate the new Din Rail from the upgrade kit, and using the same hardware, fasten the new Din Rail to the center plate.
5. Carefully reinstall the relays in the same order they were removed.



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6. In the kit, locate the new LY2 relays with the wiring attached to them. Attach these relay bases to the far right end of the newly installed Din Rail. These will now be referred to as CR12 and CR 13 in order from left to right. Now it is time to wire these relays into place. (see attached picture of relay plate)
7. Locate the Brown wire and the Red wire with the spade connectors on them coming from CR12. Attach the Brown wire to CR11-7 and the Red wire will run in front of the other relays over to CR4-11.
8. In the back of the green relay tower, locate the Gray wire going to CR4 A2- and remove this wire. In order for it to have enough length, it will be necessary to cut the wire ties that are holding together the bundle of wires. Pull the Gray wire back through the bundle and reroute the wire so that it runs in front of all of the relays. Attach this wire to CR13-5.
9. Next, do the same thing with the Yellow/Red wire located on CR5 A2- in the back of the green relay tower. Pull wire back through the bundle and run in front to CR12-5 and fasten.
10. On the front side of the Green relay tower, locate the Gray wire on CR4 – 14. Pull this wire back through and route 'behind' the relays to CR12-4. It will be necessary to remove some wire ties to make this easier.
11. Also on the front side of the relay tower, locate the Yellow/Red wire on CR5-14. Pull this wire back through and route 'behind' the relays to CR13-4. It will be necessary to remove some wire ties to make this easier.
12. Inside the kit, locate the Yellow jumper wire with the 3 connections on it. Install this jumper on Input 1CH02 and 1ch03 and run the long portion of the jumper around to the front side of the PLC Microprocessor and fasten to any of the existing solid Yellow COM wires on the terminal strip.



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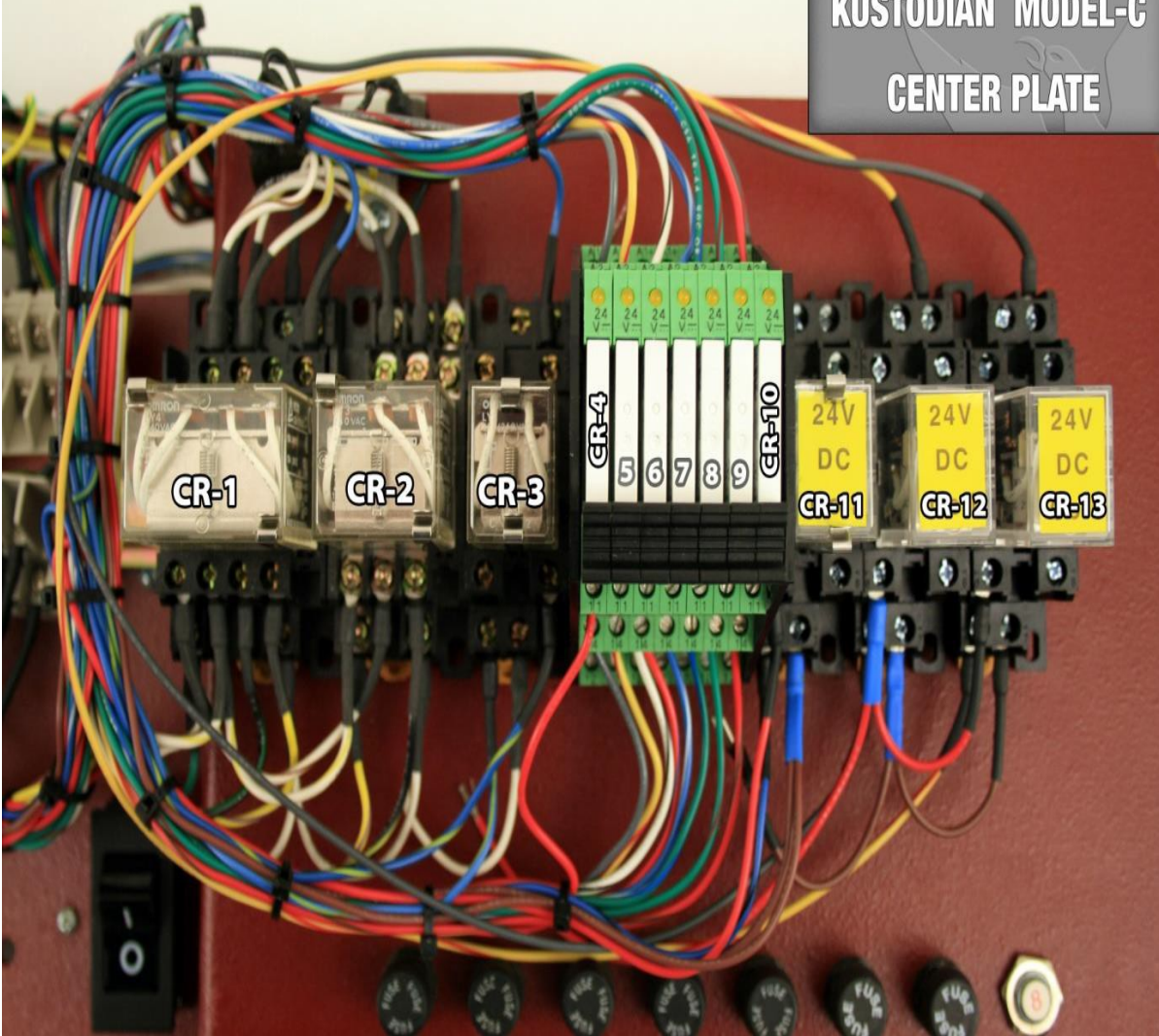
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KUSTODIAN MODEL-C CENTER PLATE



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