

Rack Guard™

INSTALLATION INSTRUCTIONS



TABLE OF CONTENTS

- 1. Rack Guard Overview
Warnings & Caution**
- 2. Installation**
- 3. Power Harness Wiring**
- 4. Remote Sensor Wiring**
- 5. Sensitivity Adjustment**
- 6. Emergency Disable**
- 7. Troubleshoot Wiring**
- 8. Typical Wiring ADS**
- 9. Typical Wiring CMA**

INSTALLATION OF THE RACK GUARD™

Please read all instructions for the Rack Guard™ thoroughly prior to installing this equipment.

WARNING:

The W should be installed by a qualified technician with experience in 120V/240V electrical wiring and commercial dishwasher repair and maintenance. The voltages present in the dish machine are potentially dangerous and caution should be exercised when installing the unit.

CAUTION:

Always ensure that the power breaker to the dish machine is turned off before Rack Guard™ installation, removal, or servicing.

HARDWARE INSTALLATION

Rack Guard™ Overview

The Rack Guard™ is designed to be installed on conveyor type dish machines and serves to turn off the conveyor when dish racks have accumulated on the clean table. Without the Rack Guard™, the repeated force of the dish racks against the hard stop of the clean table can prematurely wear out the racks and the conveyor dish machine equipment. The Rack Guard™ preserves the equipment by interrupting the conveyor of the dish machine when the proximity of the dish rack approaches the Rack Guard™ remote sensor located at the far end of the clean table. The Rack Guard™ module is shown in Figure 1 on the next page. The Rack Guard™ has two connectors that interface to the dish machine equipment. The large Heyco conduit connector houses the 4 conductor pigtail cable that is wired into the dish machine control unit. The smaller diameter remote sensor cable contains the table end sensor on one end and a 3.5mm plug on the other end that is plugged into the Rack Guard™ bottom jack.

INSTALLATION OF THE RACK GUARD™

The Rack Guard™ should be mounted nearby the dish machine control unit. The Rack Guard™ is supplied with minimum of 8 feet of 4 conductor cable. The Rack Guard™ must not be placed under any shroud or cover, cabinet, or Unit large obstruction that could shadow the front panel of the unit. The Rack Guard™ should be positioned such that the front face has clear line-of-sight to the center area of the room in order to allow the proper sensing of the ambient light conditions (daytime vs evening lighting conditions in the dish room).



Figure 1 Rack Guard™

POWER HARNESS WIRING

The Rack Guard™ power harness cable must be wired into the dish machine control unit. Each dish machine model will be unique but examples of a few popular units are shown in the following section wiring diagrams. Both black/ white power connections must be connected to dish machine 120V or 240V line and neutral lines. There are two options to connect the Rack Guard™ red/yellow wires that are used to interrupt the dish machine when the Rack Guard™ triggers. Option A shows the connections that are most common which are wired in series with the dish machine door safety switch. Alternatively, option B can be used to interrupt only the conveyor drive motor. See Figure 2 on next page for basic power harness wiring.

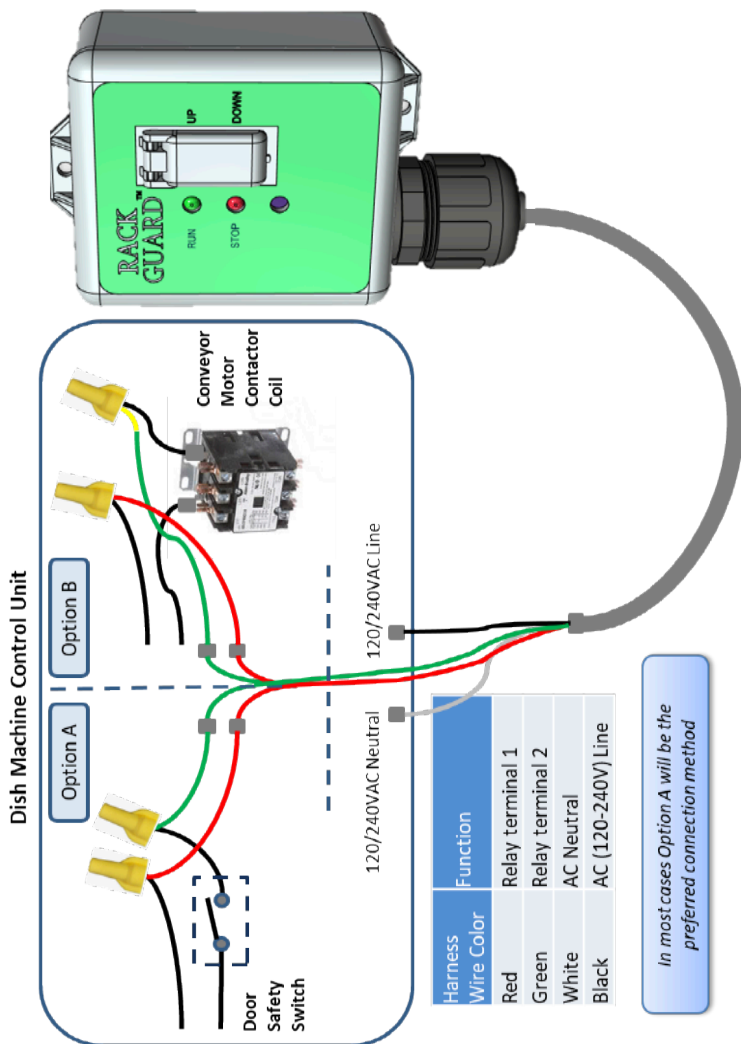


Figure 2: Power Harness Wiring

Figure 2: Power Harness Wiring

REMOTE SENSOR WIRING

Several length remote sensor harnesses are available. Selection depends on the length of the existing clean table, layout of the dish machine and where the Rack Guard™ control unit is mounted. Do not cut the sensor cable. Extra length can be coiled up and zip tied out of the way.

The sensor cable has 1/2"-13 threaded end that requires a 1/2" hole to be drilled into the end of the clean table for mounting. A step drill will work best for drilling the hole.

Locate the sensor at the end of the table so that when the dish rack is pushed to the end of the normal travel, the sensor button head will be in contact with the lower rim of the dish rack. Normal range of sensing will allow the Rack Guard™ to sense the dish rack within a few inches of the end of the table backstop. The installer should try the sensors operation by

holding it in the expected location and operating the machine with the Rack Guard™ to

ensure proper hole location before drilling and permanent mounting.

Typical clean table sensor mounting position is shown in the diagram of Figure 3. When the position of the sensor is determined, drill the 1/2" hole and thread the 3.5mm male connector plug through the hole in the clean table, then through the supplied wing nut and tighten securely. Place a dab of thread sealer or silicone sealant on the threads before tightening to prevent vibration from loosening the wing nut.

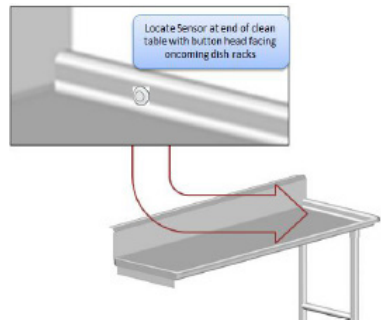


Figure 3: Sensor Mounting Location

SENSITIVITY ADJUSTMENT

The Rack Guard™ includes sensitivity adjustment buttons located under the flip-up protective shroud that can be used to adjust the unit when it is first installed. The unit should function normally from the factory but in certain cases it may be required to adjust the operation at installation time. It is not necessary to adjust the unit after installation as it will compensate automatically to the ambient light conditions of the room. If the Rack Guard™ stops the conveyor too early or intermittently simply push the UP button a few times to bias the operation more toward the RUN direction. If the Rack Guard™ does not stop the conveyor soon enough upon a dish rack coming within a few inches of the remote sensor then push the DOWN button a few times to bias the operation more toward the STOP direction.

The Rack Guard™ is shipped from the factory set to the mid-range of operation. It allows 10 steps up or 10 steps down from the mid-range position. An audible chirp and a brief flash of the LED (either RUN or STOP) will be displayed for each button press 'step' adjustment. The Rack Guard™ can be set back to mid-range by simply clicking all the way to the upper or lower end of the range and counting 10 steps back toward center. Once the adjustment is at the end of the range the button press is ignored (no chirp/no flash).



Figure 4: Adjustment Buttons

EMERGENCY DISABLE

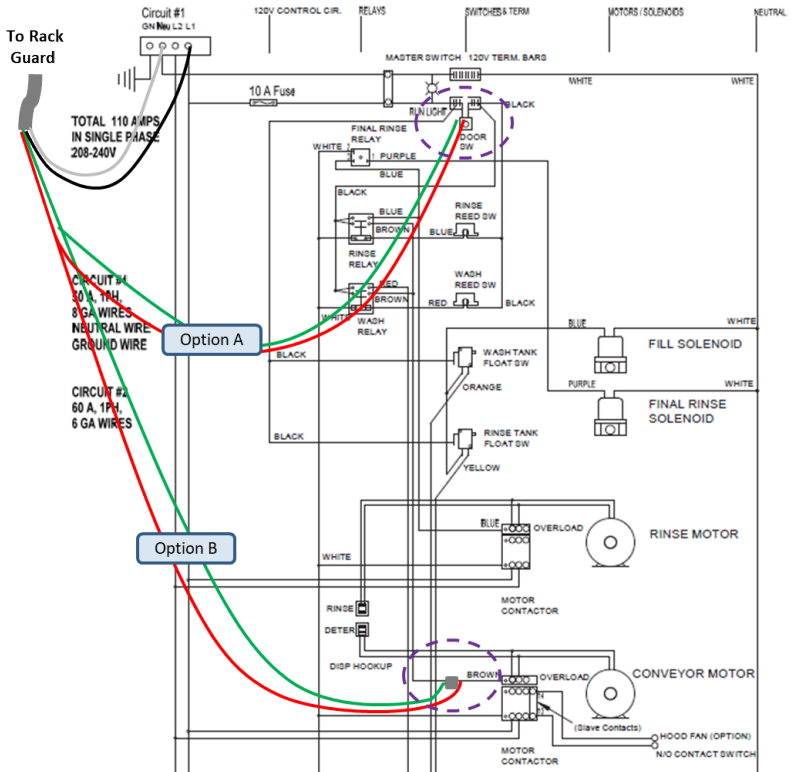
If an emergency situation occurs and the dish machine remains in STOP mode unexpectedly it is possible to override the Rack Guard™ by the following:

Simultaneously press both UP and DOWN buttons together and unit willpower off to allow dish machine to run without Rack Guard™ functionality. Press either the UP or DOWN button once to restart the Rack Guard™.

TROUBLESHOOTING GUIDE

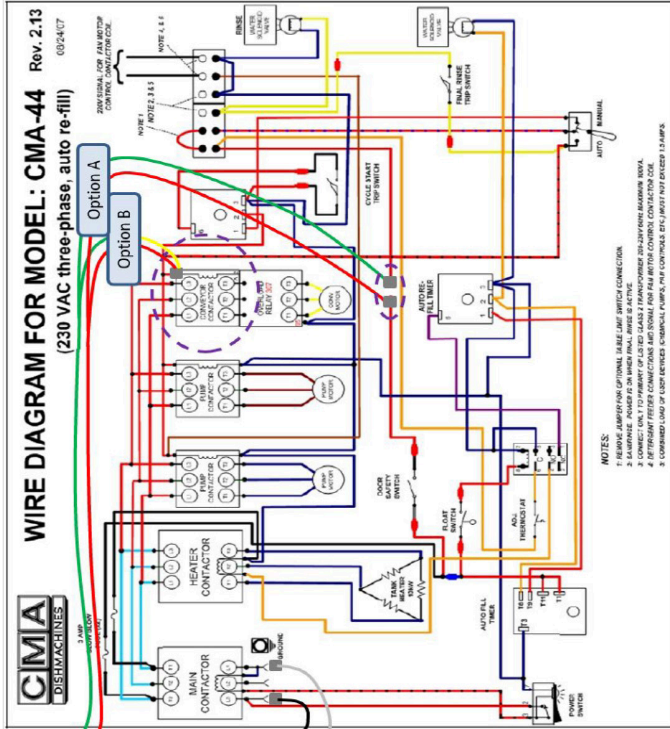
SYMPTOM	LIKELY CAUSE	CORRECTIVE ACTION
No lights illuminated on Rack Guard™ front panel	No power to the unit or unit has been turned off	Check machine breaker Check Black/White wire connections from Rack Guard™ power harness to the dish machine. Hit either UP or DOWN button to restart the Rack Guard™
Dish machine conveyor stops prematurely or intermittently before dish rack approaches sensor	Rack Guard™ sensitivity UP adjustment needed	Open the Rack Guard™ button flap and adjust UP a few clicks and recheck
Dish machine conveyor continues without halting when dish rack up against sensor at end of table	Rack Guard™ sensitivity DOWN adjustment needed	Open the Rack Guard™ button flap and adjust DOWN a few clicks and recheck
Dish machine conveyor continues without halting when dish rack up against sensor at end of table	Rack Guard™ unit positioned in a location obscured from room ambient lighting	Re-position the Rack Guard™ in a location that has clear front panel view of the room with no obstruction or shadowing (do not mount under any shroud or cover that may obscure front panel of Rack Guard™ from room ambient light)
Erratic operation of RUN/STOP	Dirty or damaged table end sensor	Clean or replace (if damaged) the table end sensor

Typical Wiring ADS ADC-44



Typical Wiring CMA-44

To Rack
Guard



TECHINAL SUPPORT

Contact TCD Parts, Inc. (800) 823-8313

