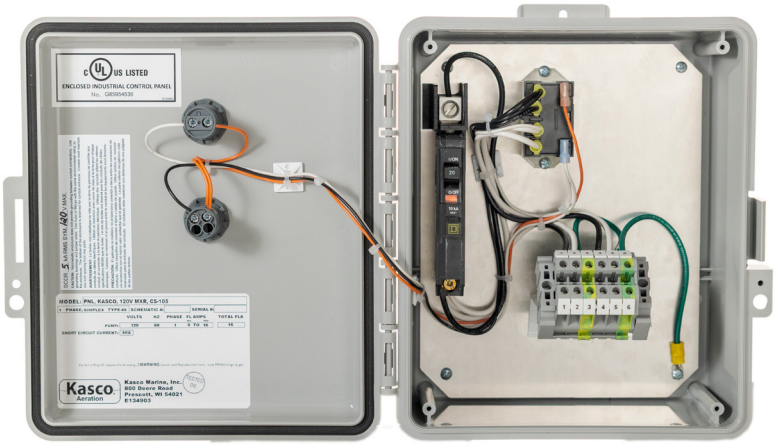
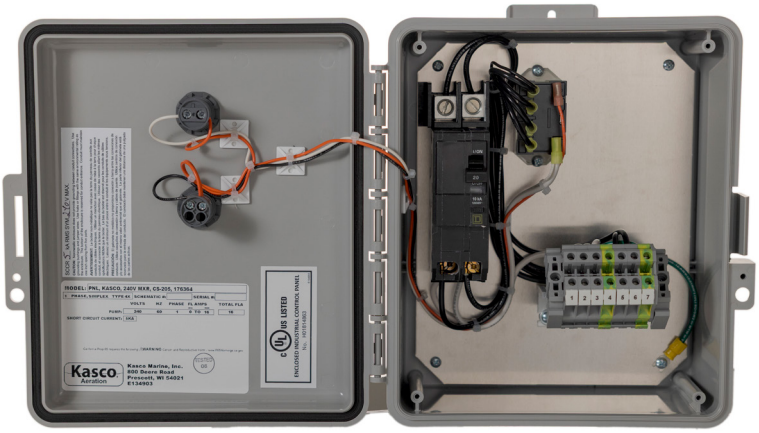
CERTISAFE™ by Kasco





CONTROL PANEL

CS-105, CS-205

Installation & Operation Manual

c UL us LISTED

Document number 852133
Document version number 2025.1.0

800 Deere Rd. Prescott, WI 54021 | 715.262.4488 | support@kascomarine.com | kascomarine.com

TABLE OF CONTENTS

QUESTIONS?

715.262.4488

kascomarine.com | support@kascomarine.com

SAFETY FIRST

- Read and follow all instructions provided with this control panel and instructions provided with your mixer.
- This control panel and the attached equipment is to be installed and service by trained qualified personnel only.
- Test all GFCI (ground fault circuit interrupter) protection devices immediately after installation and every 30 days thereafter.
- Inspect the control panel for any damage and any components that may have loosened during shipping.

PRODUCT OVERVIEW

The CS-105 (120Vac) & CS-205 (240Vac) 60hz, single phase, control panels are engineered to operate and protect Kasco C61 CertiSafe™ Tank Mixers. These UL508a listed control panels are designed for easy installation and operation with included EPD circuit breaker, ON/OFF switch, LED indicator light, field wiring terminals, and UL type 4x enclosure.

Mounting the Control Panel

The installer's mounting structure must support and prevent movement/flexing of the panel. The control panel must be hung level and upright to be waterproof. Mount this panel out of direct sunlight if possible, in a north facing direction to prevent excessive heat buildup.

Integral mounting tabs are provided to mount this panel to your structure. Use three mounting points (one at top and two at bottom of the enclosure).

FIELD WIRING AND CONDUIT PENETRATIONS:

THE BOTTOM OF THE ENCLOSURE IS RESERVED FOR FIELD INSTALLED CONDUIT.
DO NOT INSTALL CONDUITS IN THE TOP OF THE ENCLOSURE.
INSTALLING CONDUITS IN TOP OF ENCLOSURE MAY VOID WARRANTY.

Electrical Wiring

Installer must follow and comply with all local and national electrical codes. Consult a qualified electrician or service person to perform installation. All electrical connections to this panel must be made with proper strain relief cord grip fittings or with conduit connections as required by local and national electric codes.

The bottom of the enclosure is reserved for field installation of these connections.

Prior to energizing this panel ensure all electrical screw terminals are tight and torqued. See wiring diagram for torque values.

POWER CONNECTIONS

Incoming Power Connection (Power Feed)

Provide adequately sized power conductors to prevent excessive voltage drop. Consult with your electrician to properly size power feed conductors. Use copper conductors only. Provide a locking disconnect switch to lockout the control panel for servicing the mixer and this panel as required by code. Connect incoming power feed as detailed on the wiring diagram provided with the control panel.

Installer-provided feed breaker

Installer-provided disconnect switch

Kasco control panel

Feed Circuit Breaker Size

- CS-105 panel requires a 20amp single pole circuit breaker feed. (120Vac)
- CS-205 panel requires a 30amp two pole circuit breaker feed. (240Vac)

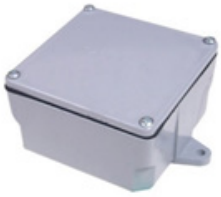
NOTE The CS-205 panel requires a 4-wire feed:

- L1, L2, N, & G
- Voltage between L1 & N must = 120Vac
- Connect L1 to terminal #1

Mixer Power Cord Connection

The mixer is provided with a flexible power cord for connection to a tank mounted junction box or directly to this control panel. Terminate the mixer power cord as detailed in the wiring diagram provided.

Kasco control panel



Installer-provided junction box (if required)

Kasco mixer

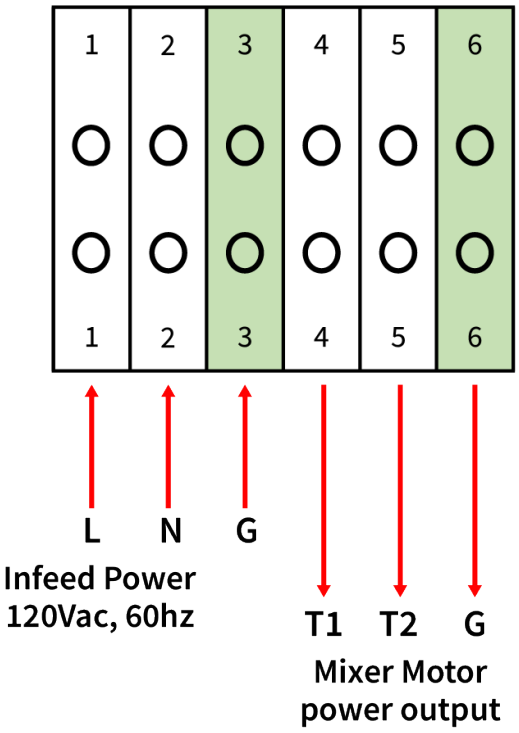
Installer to provide conduit and junction box between the Kasco control panel and mixer if required and install these components according to code requirements.

If connecting the mixer power cord directly to the Kasco control panel, use an appropriately sized cord grip strain relief fitting.

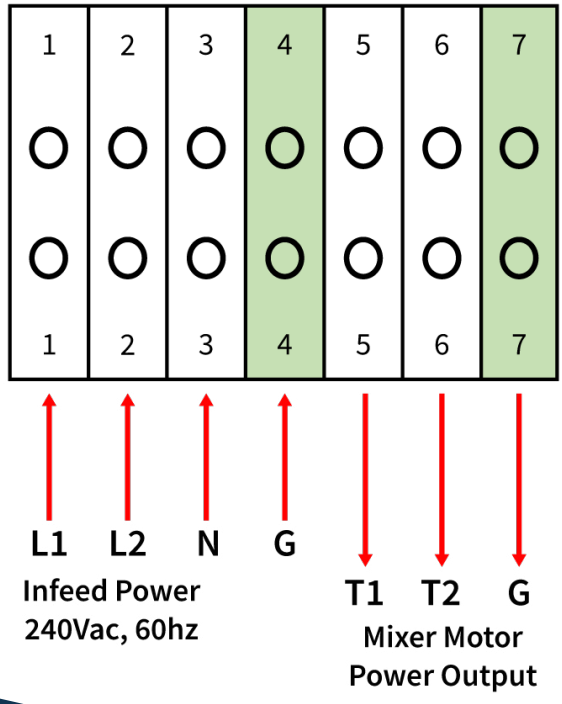
POWER CONNECTIONS (CONT.)

Terminal Connection Diagrams

CS-105 - TB1 CONNECTIONS



CS-205 - TB1 CONNECTIONS



OPERATION

COMPLETELY READ THIS SECTION PRIOR TO ENERGIZING THE CONTROL PANEL.

This control panel provides local operation via the ON/OFF selector switch:

1. Verify the feed voltage is correct to the control panel:
   - CS-105: 120Vac 60hz, single phase
   - CS-205: 208 – 240Vac 60hz, single phase
2. Confirm the mixer is properly installed and submerged in water according to the mixer installation instructions.
3. Once you have verified the correct voltage, and all connections are completed to the control panel, you are ready to power up the control panel
   - Switch on the Feed circuit breaker
   - Switch on the control panel circuit breaker(s)
   - Switch the ON/OFF switch to the ON position to energize the mixer

At this time, the mixer should be operating and the LED indicator light should be illuminated.

4. Verify operation by measuring the motor amp draw on the black or white motor lead wire with a clamp-on amp meter. The amp value should be FLA (full load amp) value of your mixer. Refer to the amp chart in the mixer owner's manual.
5. Record the following data while the mixer is operating in the water under load:

CS-100			
L1-N	Volts	L1	Amps
CS-200			
L1-N	Volts	L1	Amps
L2-N	Volts	L2	Amps
L1-L2	Volts		

Date Installed:

_____ / _____ / _____

Troubleshooting

Voltage measurements can be taken with a digital voltmeter. Amp measurements can be measured with an AC clamp-on amp meter.

Refer to the wiring diagram included with the control panel.

Voltage Measurement Points

Take the following measurements to verify proper voltages in the panel.

CS-105 120Vac Control Panel	
Terminals 1 to 2	120Vac source voltage: range of 114-126Vac
Terminals 4 to 5	Mixer motor power. Range of 114-126Vac when mixer is called to run with the ON/OFF switch

CS-205 240Vac Control Panel	
Terminals 1 to 2	240Vac source voltage: range of 208-240Vac
Terminals 1 to 3	120vac source voltage, terminal 3 is Neutral connection
Terminals 2 to 3	120vac source voltage, terminal 3 is Neutral connection
Terminals 5 to 6	Mixer motor power. Range of 208-240Vac when mixer is called to run with the ON/OFF switch

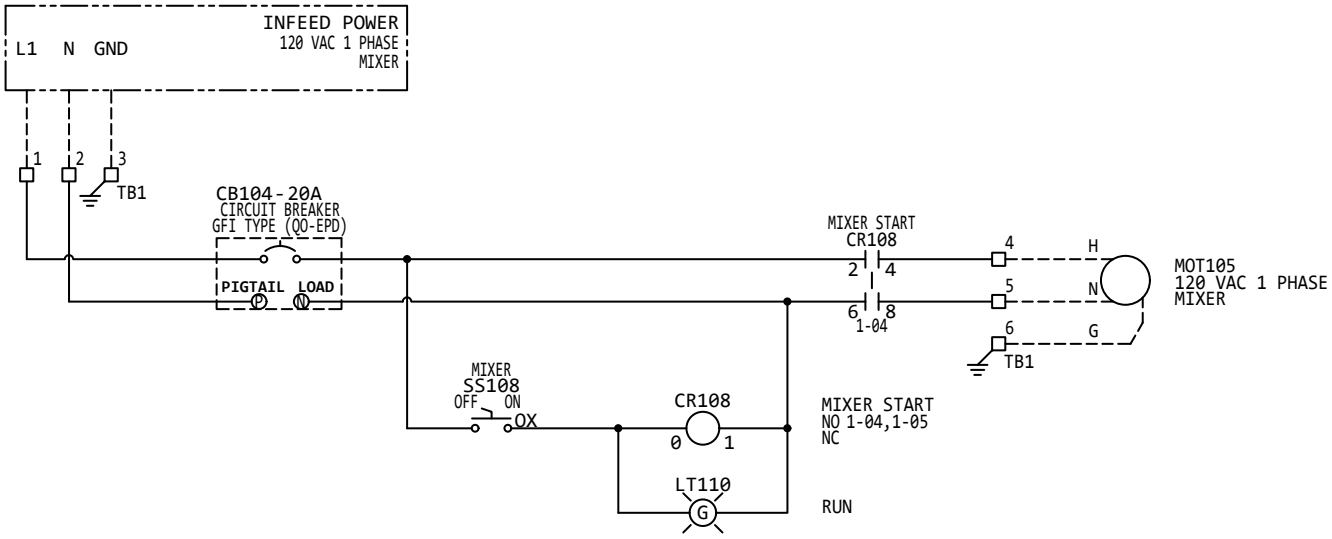
TROUBLESHOOTING SYMPTOMS & CAUSES

Mixer not running.	• Check the ON/OFF switch is in the ON position. • Check for tripped circuit breakers. Check the feed breaker and breakers in this control panel are on. • Check field installed disconnect switch is in the on position. • Measure voltage at terminals to verify incoming power is present, and voltage is present at the mixer motor terminals. • If voltages are present, measure motor amps on one of the mixer motor leads. • 0 amps with voltage present = open circuit. • With the control panel de-energized and locked out. Check for loose wiring connections to the mixer power cord. Disconnect the mixer power cord and ohm the motor connections for continuity. An open circuit would indicate an open in the motor circuit. • Locked rotor amps (LRA) = locked motor due to obstruction or motor failure. • Cycling amps = 0/LRA cycling indicates the mixer is overheating and cycling on the internal motor overload. Check the mixer is not operating out of water, check the propeller for any obstruction. Check the motor shaft spins freely. • If all voltages and connections are correct, an internal failure of the mixer motor may have occurred. Contact an authorized distributor for repair.
Tripped GFCI/EPD circuit breaker.	• GFCI/EPD devices are sensitive to current imbalances in the load circuits they protect. Nuisance GFCI tripping can be caused by poor or redundant grounding points in a circuit. Ensure neutrals and grounds are separated in any downstream circuits of the GFCI Breaker. • Reset the GFCI feed breaker. If breaker continues to trip, check for ground fault in mixer motor and wiring. • Use an insulation tester (megaohm meter) to check for insulation shorts to ground. Inspect wiring for damage. • If the mixer motor megs low, contact an authorized distributor for repair.
Mixer motor amps read significantly lower than FLA (full load amp) motor rating.	• Check the mixer is submerged properly in the tank. The mixer must be fully submerged to operate at full load. Refer to the mixer owner's manual for installation requirements and operating depths.
Mixer motor amps read significantly higher than FLA (full load amp) motor rating. Mixer starts slowly or spins slowly when energized.	• Check there are no obstructions or interference with the mixer propeller. • Check the mixer motor shaft spins freely by hand (disconnect and lock out power prior). • Verify proper voltage is present. • If the mixer starts slowly when energized, or spins slowly; this may indicate low voltage under load. • If all voltages and connections are correct, an internal failure of the mixer motor may have occurred. Contact an authorized distributor for repair.

REPLACEMENT PARTS LIST

Kasco Part #	Drawing reference #	CS-105	CS-205	Part Description
987257	CB109	✓		Circuit Breaker,20A, EPD GFI 30ma, 120V, 1pole, SQD QO-EPD
987258	CB108		✓	Circuit Breaker, 20A, EPD GFI 30ma, 120V, 2pole, SQD QO-EPD
987255	CB108, CB109	✓	✓	Circuit Breaker BASE, MTG, BKR QO 1-3P PLUG ON SQD
987288	TB1	✓	✓	Terminal Block, 30AMP, 26-10AWG, Screw
987511	CR108	✓	✓	Relay, Power, 2 NO, 120V coil
987273	SS108	✓	✓	ON/OFF switch, 22mm,
987267	LT110	✓	✓	Light, Indicator-Pilot, LED, Green, 22mm

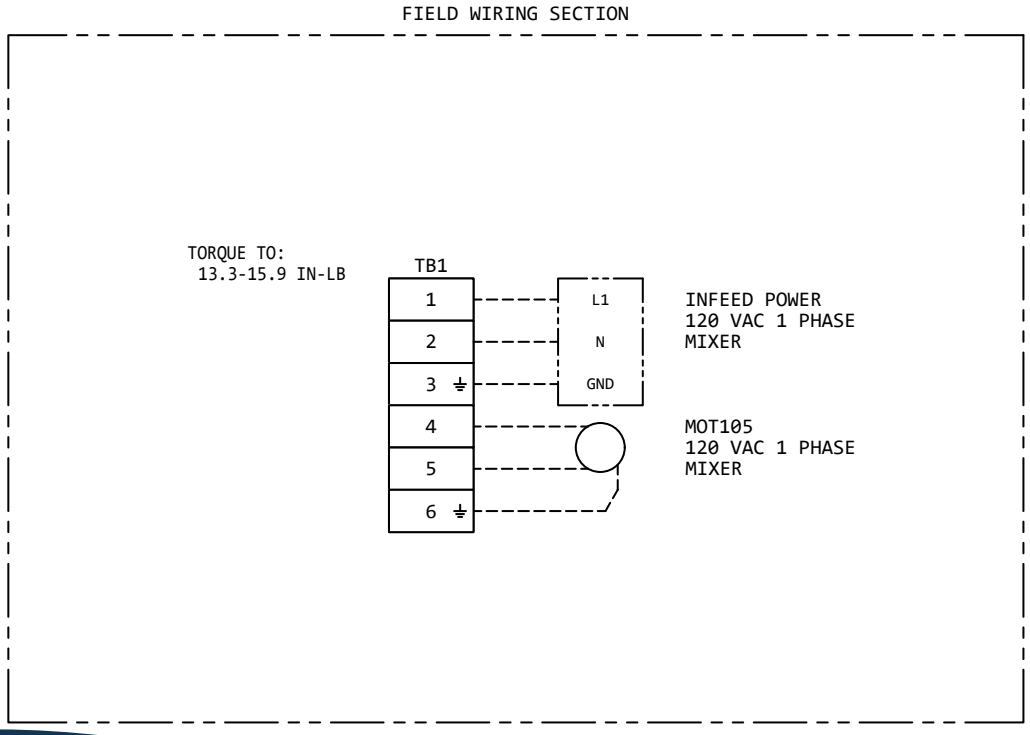
CS-105 SCHEMATICS



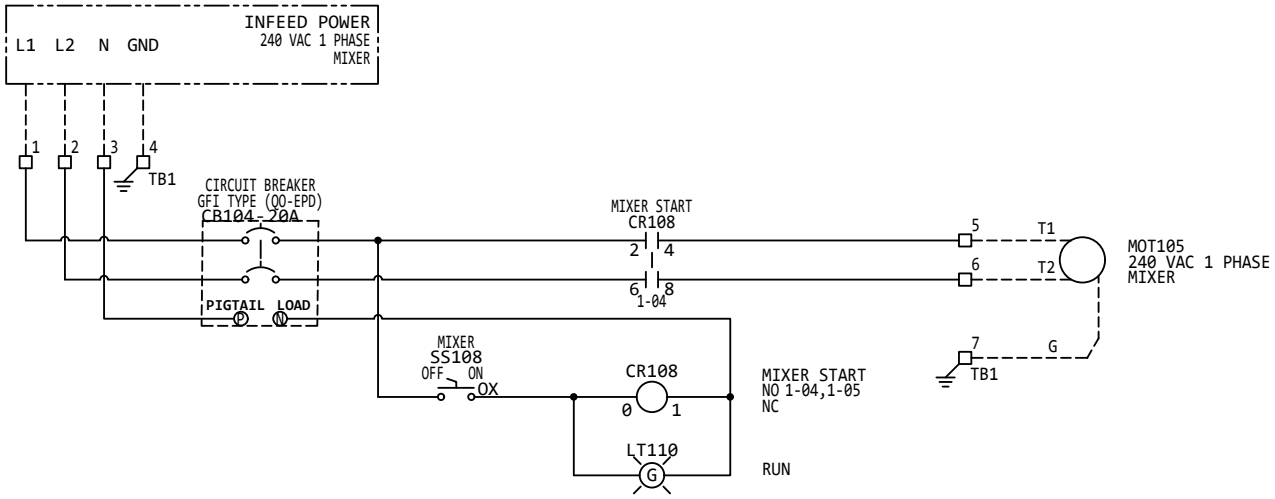
Field Wiring Section

NOTES:

1. FIELD WIRING IS SHOWN ——————————————
2. TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140° F. (60° C.).
3. FIELD WIRING WILL ACCEPT COPPER CONDUCTORS ONLY.
4. CONNECT GROUND LUG IN PANEL TO A SECURE EARTH GROUND.
5. OVERLOAD PROTECTION, MAIN DISCONNECT AND OVER CURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO THE PUMP/MOTOR MANUFACTURER SPECIFICATIONS.



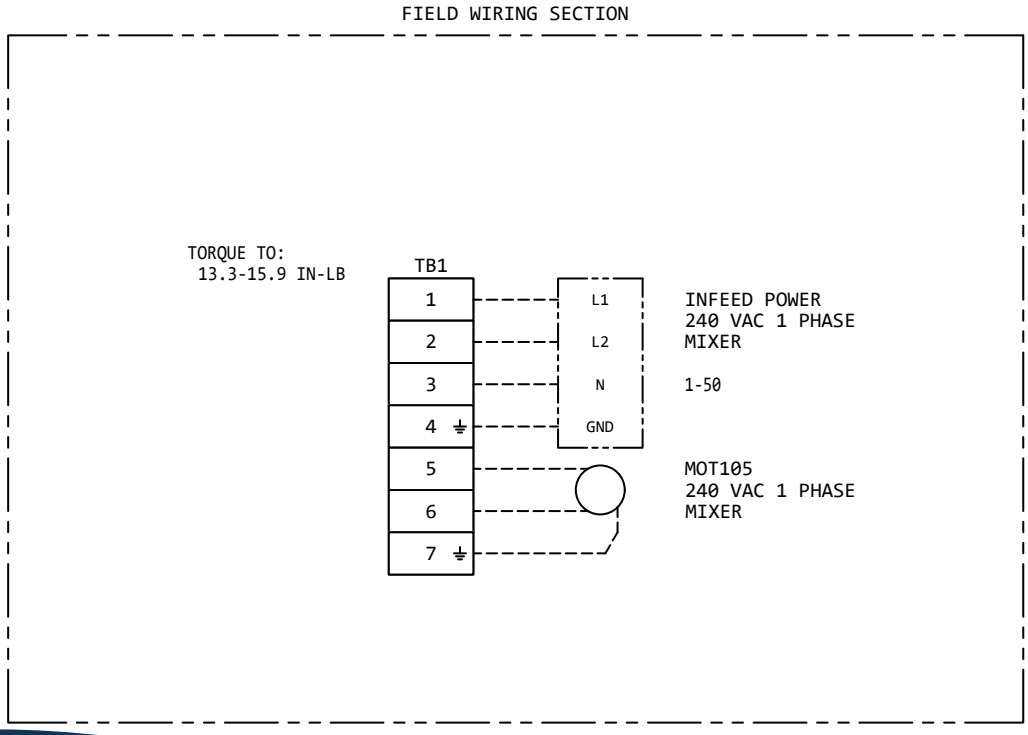
CS-205 SCHEMATICS



Field Wiring Section

NOTES:

1. FIELD WIRING IS SHOWN ----------
2. TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140° F. (60° C.).
3. FIELD WIRING WILL ACCEPT COPPER CONDUCTORS ONLY.
4. CONNECT GROUND LUG IN PANEL TO A SECURE EARTH GROUND.
5. OVERLOAD PROTECTION, MAIN DISCONNECT AND OVER CURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO THE PUMP/MOTOR MANUFACTURER SPECIFICATIONS.



WARRANTY

The CS-105 and CS-205 control panels are offered with a standard 3-year warranty.

Kasco® Marine, Inc. warrants this CertiSafe™ mixing system to be free from defects in material or workmanship under appropriate use and service. The Kasco Marine, Inc. obligation under this warranty is limited to replacing or repairing, without charge, proven defective part while within the warranty period. Customer shall pay shipping charges for returning the unit to Kasco or an Authorized Repair Center.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED. IN NO EVENT WILL KASCO MARINE, INC. BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES.

Any unauthorized modifications to this control panel will void the UL listing and the Kasco warranty.

KASCO PATENTS

To view a full list of Kasco patent and patent-pending information, visit https://kascomarine.com/patents/.

CONTACT US

Kasco Marine
800 Deere Road
Prescott, WI 54021

715.262.4488

kascomarine.com | support@kascomarine.com

c UL us LISTED