PERLICK®

Installation & Operation Manual

Commercial Glasswasher

Model PKHT24A

Model PKHT24A Shown

COMMERCIAL WAREWASHING EQUIPMENT*
NSF/ANSI 3

LISTED
COMMERCIAL
DISHWASHER
864T

Note: *Some US States may require Energy Star ratings for Commercial Dishwashers. The specifier or installer is responsible for knowing their local codes, standards, and regulatory requirements.*

PKHT24A.IO.1
Rev 5.29.25

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The PKHT24A is a hot water sanitizing, single rack, undercounter glasswasher. It is a stand-alone machine featuring a self-contained booster heater. The only external connections necessary are power supply, water supply, drainpipe, and optional chemical dispensers. The machine uses re-circulated wash water and fresh water final-rinse.

Operation of the PKHT24A is extremely user friendly. To initially fill the machine each day, push the power switch to the “ON” position. The machine will automatically fill to the correct level. The wash tank heater will maintain the wash water temperature at 160°F. The booster heater will produce a minimum of 180°F final rinse water each cycle.

The supply water to the PKHT24A must be a minimum of 120°F at 24 psi (Pounds per Square Inch) with a 6 gpm (Gallons Per Minute) flow rate and 60 gph (Gallons Per Hour) recovery rate. The pipe supplying the water must be a minimum of a 1/2”. The plumbing connection is located at the back of the machine. (See specification sheet).The drain is a 1” barbed fitting connection located at the upper left-hand corner (facing the back) of the machine.

This manual provides a complete reference guide to the PKHT24A. The first section explains how the machine is packaged and what to look for when receiving the machine. This manual explains how to install and set up the machine for use. Requirements are given for plumbing, wiring, and space considerations. These are always taken into consideration by our well-trained sales representatives prior to the order being placed. In the manual, guidance is also given for installation to ensure that the machine will be able to run at optimum conditions.

The machine’s functions are mostly automatic and take little training to put into full operation. The Operation section of the manual may be used for instruction and procedures when required. We make this portion of the manual easy to understand so that all levels of operators are able to understand the machine’s operation. The Operation section also includes diagnostic considerations for the machine when problems occur.

We are committed to providing the best products and customer service, and we welcome your feedback.

SPECIFICATIONS

		METRIC EQUIVALENT
WATER CONSUMPTION		
PER RACK	.68 GAL.	(2.57)
PER HOUR	19 GAL.	(72.1)
OPERATING CYCLE		
WASH TIME-SEC	99	99
RINSE TIME-SEC	11	11
DWELL TIME-SEC	10	10
TOTAL CYCLE	2 MIN.	2 MIN.
OPERATING CAPACITY		
RACKS PER HOUR	28	28
WASH TANK CAPACITY	2.5 GAL.	(9.46 L)
PUMP CAPACITY	38 GPM	(144 LPM)
WATER REQUIREMENTS		
REQUIRED MINIMUM TEMP. *	120°F	(43°C)
RECOMMENDED TEMP. **	140°F	(60°C)
WATER INLET	½"	1.27cm
DRAIN CONNECTION	1"	2.54cm
RINSE PRESSURE SET	20 PSI±5 PSI	1.41 kg/cm^2
CYCLE TEMPERATURES		
WASH-°F	160°F	(65.5°C/71°C)
RINSE -°F	180°F -195°F	(82°C/90°C)
FRAME DIMENSIONS		
DEPTH	25"	(63.5 cm)
WIDTH	24"	(60.96 cm)
HEIGHT	33 ¼"	(84.45 cm)
MAX CLEARANCE FOR GLASSWARE	14 ¼"	(28.6 cm)

ELECTRICAL RATING*	**208 VOLTS** 1 PH—60 Hz	**230 VOLTS** 1 PH—60 Hz
	30 AMPS	32 AMPS
BOOSTER HEATER	5.3 kW	6.5 kW
WASH PUMP MOTOR	¾ HP	¾ HP
WASH TANK HEATER	2.2 kW	2.9 kW

THIS SYSTEM REQUIRES THREE POWER WIRES, WHICH INCLUDES A CURRENT CARRYING NEUTRAL. AN ADDITIONAL FOURTH WIRE MUST BE PROVIDED FOR MACHINE GROUND.

SHIPPING WEIGHT	234#	(106 kg)

* For machines having "SAFETY TEMP" feature. ** For faster heat recovery.

OPERATIONAL CYCLE

The PKHT24 operational cycle has a total cycle time of 2 minutes (120 seconds). The steps listed below detail the individual functions that are executed during each operational cycle.

1. With the machine powered up, toggling the START switch begins a cycle.

a) Toggling the START switch energizes both the Cam Timer motor and the Instant Start Relay. The Instant Start Relay latches ON the power to the Cam Timer motor so that the START switch can be released a moment after it has been toggled without the Cam Timer motor losing power.

b) After about 1.5 seconds the Cam Timer's first cam — the Cam Timer Motor Cam — latches ON the power to the Cam Timer motor and drops out the Instant Start Relay. The Cam Timer motor continues to run for a total of 2 minutes, at which time it switches OFF — resetting the Cam Timer — and waits for the next START command.

2. The Cam Timer's third cam controls the Wash Pump. The Wash Pump comes ON about 3 seconds into the Operational Cycle and continues to run for 94 seconds. This 94-second period is the Wash Cycle.

3. About 3 seconds after the Wash Cycle has completed the Cam Timer's second cam, which controls the Rinse Cycle, turns ON — energizing the Water Solenoid — and stays ON for 16 seconds. This 16-second period is the Rinse Cycle.

4. When the Cam Timer assembly approaches the final rinse portion of the cycle, the "Safe-T-Temp" sixth micro switch will pause Cam Timer assembly if the booster heater has not reached 180 degrees. The machine will remain in wash cycle mode until 180-degree rinse temperature is reached, and at this time the Cam Timer will advance automatically into the rinse cycle and dispense 180 degrees rinse water over the glassware.

5. The 4th cam controls the drain. The drain comes on before the Rinse Cycle ends and stays on until the proper water level is reached.

6. Cam switches 6 and 7 control the detergent and rinse pumps respectively. They turn ON at the beginning of the wash and rinse cycle respectively and run for a few seconds to provide sufficient detergent and rinse aid. These cams can be adjusted as necessary for proper chemical dosage. See section 4.1.1 Cam Adjustment.

Note: Use only commercial-grade high temperature detergents and rinse additives recommended by your chemical professional. Do not use detergents and rinse additives formulated for residential dishwashers.

GETTING STARTED

Receiving and Installation

The glasswasher is shipped from the factory in a corrugated box on a wooden pallet. The installation guidelines give a systematic procedure for setting up the machine.

Start by removing the packaging material. Unwrap the machine and check for the following component parts:

The Wash Tank Scrap Screen is shipped inside the wash cavity of the machine. This screen must be in place during operation. It has been designed to perform two basic functions:

1. Strain water that is circulating through the spray arms and pump assembly.
2. A basket to catch broken glass, or heavy solids that may plug the impeller.

Set the machine in place, and level from side-to-side and front-to-back. Steam generated from normal operation may escape from door. Wood, laminates, veneers, etc. are unsuitable materials for use in areas exposed to dishwasher steam and detergents. Stainless steel or other moisture-resistant shields are recommended for surfaces adjacent to sides and tops of under counter dishwashers.

Electrical[1]

Prior to installation make sure the electrical supply is compatible with the specifications on the machines data plate. Single-phase 208/240 volt, 60 Hz dedicated circuit should be used to supply electrical energy to the PKHT24A Glasswasher (see specification sheet on page 4). This system requires two power wires. An additional third wire must be provided for ground. Approximately 4-feet of ¾" flexible conduit with power leads (L-1, L-2, Ground) extending out of the conduit are provided for easily connecting the power at installation. The power connection must be located such that there is sufficient length of the flexible conduit remaining to permit the machine to be moved for cleaning.

WARNING: Electrical and grounding connections must comply with local electrical codes.

DO NOT USE POWER CORD OR GFI OUTLET

This unit **MUST BE** hard-wired to a dedicated appropriately sized circuit breaker.

Note: For supply connections, use copper wire only rated at 90°C minimum.

Plumbing[2]

Warning: The plumber connecting this machine is responsible for making certain that the water lines are THOROUGHLY FLUSHED OUT BEFORE connecting the dishwasher

The machine is equipped with a 1/2" NPT connection located at the lower left-hand corner (facing the back) of the machine. A 140°F water line should be plumbed to this point (see specification sheet). The water line used must be of sufficient length and flexibility to permit the machine to be moved for cleaning.

[1,2] All electrical and plumbing connections must be made by a qualified person who will comply with all available federal, state, and local health, electrical, plumbing and safety codes.

The supply water to the PKHT24A must be a minimum of 120°F at 24 psi (Pounds per Square Inch) with a 6 gpm (Gallons Per Minute) flow rate and 60 gph (Gallons Per Hour) recovery rate. The pipe supplying the water must be ½" minimum. The plumbing connection is located at the back of the machine. (See specification sheet on page 4).

WARNING: If water pressure exceeds 50 psi, pressure reducing valve (PRV) is recommended.

WARNING: Perlick recommends utilizing a water softening system to maintain water hardness measurements of 3.5 gpg (grains per gallon) or less. This will assure maximum results and optimum operation of the dish machine.

Detergent And Rinse Dispenser

The built-in chemical dispenser assembly has easy access for chemical settings on the cam timer.

Note: Use only commercial-grade detergents and rinse aids recommended by your chemical professional. Do not use detergents and rinse aids formulated for residential dishwasers.

Safety-Temp Feature

The Safety-Temp feature assures the final rinse cycle is always at a consistent minimum of 180 degrees.

How it works: The Safety-Temp function operates off the fifth cam (labeled “SafeTtemp”) on the timer assembly. When the cam timer assembly completes the wash cycle, and approaches the final rinse portion of the cycle, the Safety-Temp micro switch will drop into the cam slot and pause the cam timer assembly if the booster heater has not reached 180 degrees. The machine will remain in wash cycle mode until 180 degree rinse temperature is met, and at this time the cam timer will advance automatically into the rinse cycle and dispense 180 degrees rinse water over the glassware.

Installer Checklist

- ❒ Glasswasher checked for concealed damage
- ❒ Hot water supply is 120° F (60 C) — minimum
- ❒ Incoming water supply line is ½” — minimum
- ❒ Incoming water supply is 6 GPM minimum at 24 psi
- ❒ Supply circuit breaker for machine is properly sized (40 amp)
- ❒ Service voltage and phase type are correct to machine data plate
- ❒ Drain hose is installed with air gap (discharge 1” above drain)
- ❒ Glasswasher is properly grounded
- ❒ Glasswasher is properly leveled
- ❒ Machine circuit breaker is labeled “GLASSWASHER”
- ❒ Machine has been “hard-wired” with correctly sized wire

OPERATION

Initial Setup

Rinse and Wash Temperatures

1. Turn the Power switch to the “ON” position.
2. After the machine has warmed up for about 10-15 minutes, note the wash and rinse temperatures. The wash temperature must be 160°F minimum. The rinse temperature must be 180°F minimum.
3. If necessary, adjust the wash tank thermostat up by using the ^ button. If necessary, adjust the booster temperatures by removing the lower front panel and turning the booster heater thermostat adjustments clockwise to increase, counterclockwise to decrease.

Post Instructions

1. Install wall chart and instruct machine operator on proper cleaning and operation of the PKHT24A.

Startup Procedures

1. Open the door of the machine and check that the scrap screen is in place, and that the spray arms and end plugs are secure.
2. Close the door of the machine and turn the Power switch to the “ON” position.
3. The machine will automatically fill to the correct level. The fill timer in the upper control drawer may be adjusted as needed.
4. Allow the machine 10-15 minutes to heat up, 160F on the “WASH” temperature display before continuing.
5. Press the rocker switched marked “START” - the machine will automatically begin its cycle
6. Check the machine’s operating temperatures and adjust if necessary. See the Rinse and Wash Temperatures section above.
7. At the end of the wash period, drain the machine by pushing the rocker switch marked “DRAIN”. Clean the wash tank screen and scrap tray screen. Remove and clean the spray arms. (See wall chart instructions).
8. To prime chemical dispensers press and hold down the prime switch until product is discharging into machine.
9. Drain machine and power machine off at end of day.

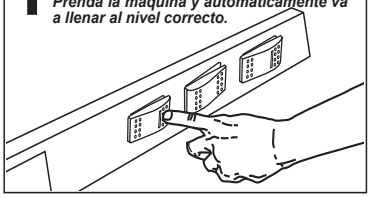
OPERATING AND CLEANING INSTRUCTIONS FOR MODEL PKHT24A

INSTRUCCIONES DE LIMPIEZA Y OPERACION DE MODELO PKHT24A

ENERGY STAR

1 Turn on power and machine will fill automatically to correct level.

Prenda la maquina y automaticamente va a llenar al nivel correcto.



2 Start machine by pushing start button.

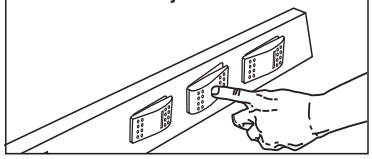
Para empezar la maquina, cierre la puerta y oprima el boton de encendido.

CAUTION: DO NOT START until wash temperature reads 160°.

No empiece el ciclo hasta que la temperatura sea 160°.

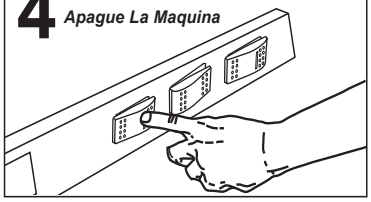
3 Drain machine by pressing drain button.

Para vaciar la maqina: Oprima el boton de drenaje.



Turn off power.

4 *Apague La Maquina*

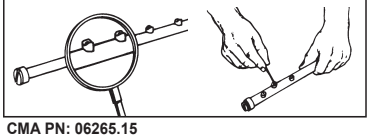


5 If spray arms are clogged remove by turning bearings counter clockwise.

Si los brazos de rociado se tapan, sera necesario sacarlos desenroscandolos para el lado izquierdo.

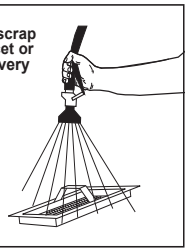
6 Inspect top and bottom spray arm jets daily. Use toothpick and push trash into spray arm. Remove end plugs and flush with water.

Use un palillo para abrir los orificios. Destapar por las puntas, removiendo el tapon y enjuagelos con agua.



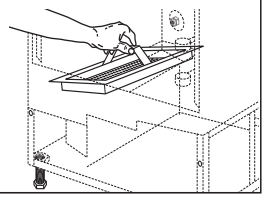
7 Hand remove and thoroughly clean scrap screen under faucet or Pre-Rinse Hose every shift.

Remueva el filtro de el interior de el tanque de desperdicios. Lave el filtro con el rociador de agua cada turno.



8 Replace all scrap screen back into position.

Regrese el filtro a su lugar.

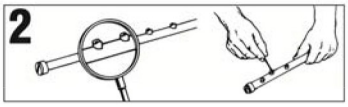


CMA PN: 06265.15

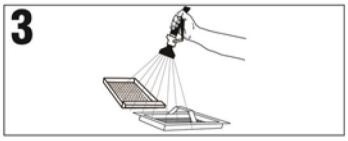
PREVENTIVE MAINTENANCE FOR MODEL PKHT24A

1 

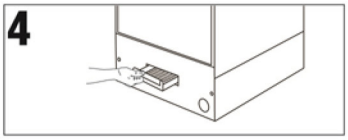
If rinse arm jets are clogged, remove rinse arm (by turning bearing counter clockwise) and clean out rinse jets with paper clip or small pointed object.

2 

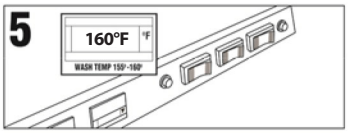
Inspect top and bottom spray arms daily. Use toothpick to push debris into spray arm. Remove end plugs and flush with water.

3 

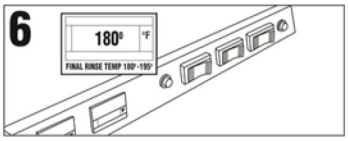
Remove and thoroughly clean scrap tray, and scrap drawer daily.

4 

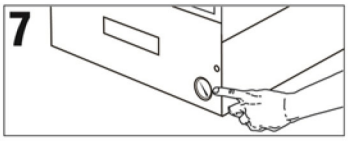
Replace screens after cleaning.

5 

Confirm wash temperature is 160°F

6 

Check rinse temperature. Minimum 180°F. Notify supervisor if rinse temperature is below 180°F.

7 

Check rinse pressure. Should be 24 psi.

8 

Check chemical containers for product. Confirm correct product line is in the bucket.
RED - Detergent
BLUE - Rinse Aid

9 

Check machine for leaks.

Quick Service Guide

TECHNICAL ISSUE	CAUSE	SOLUTION
Door leaks	Machine is not level or is leaning forward	Adjust machine legs to level
	Wash arm end cap is missing	Replace end cap
	Door gasket issue	Replace gasket
Thermometer failure	Loose wire at display, board or transformer	Secure connectors
	Faulty temperature sensing wire	Correct, replace
	Faulty temperature sending unit	Replace unit
	Faulty transformer	Replace transformer
	Scaled heating element	Clean scale from heater
Rinse water temperature too low/ high	Booster heater's thermostat not properly set	Adjust thermostat
	Incoming water temperature to booster heater below 140 F	Adjust external water heater in the facility
Pump motor not running	Loose lead connections	Check and crimp connectors
	Faulty #3 micro switch	Replace micro switch
	Faulty contactor	Replace contactor
	Faulty wash pump motor	Replace wash pump motor
Pump motor runs continuously	Faulty #3 micro switch	Replace micro switch
	Faulty contactor	Replace contactor
Low water pressure in the final rinse	Water regulator not adjusted properly	Adjust regulator to 18-20 psi
	Clogged final rinse spray jets	Clean jets
	Missing final rinse spray end cap	Replace end cap
	Low incoming water pressure from facility	Increase pressure to 18-20 psi
Scrap trap overflows overnight	Faulty water solenoid diaphragm	Clean or replace diaphragm
Poor cleaning results	Low wash or rinse water temperature	Check temperature settings
	Wash arm bearing or jets	Clean bearing and arm jets
	Rinse arm bearing or jets	Clean bearing and arm jets
	Tank discharge screen dirty	Clean screen
Wash tank will not drain	Drain valve not operating	Check power to drain valve
	Drain valve faulty	Replace drain valve

Troubleshooting

TECHNICAL ISSUE	CAUSE	SOLUTION
Machine inoperative	Power off at circuit breaker	Reset circuit breaker
	Defective power switch	Replace power switch
Motor inoperative	Door is open	Close door
	Control panel is pulled out	Secure control panel
	Defective reed switch	Replace reed switch
	Defective timer assembly	Replace timer assembly*
	Defective pump motor contactor	Replace contactor
	Defective motor	Replace motor
Motor runs with door open	Defective reed switch	Replace reed switch
	Defective pump motor contactor	Replace contactor
Heater - No heat	High limit switch opened or defective	Reset or replace switch
	Defective thermostat	Replace thermostat
	Defective heater contactor	Replace heater contactor
	Defective heater	Replace heater
Heater - Keeps running	Defective thermostat	Replace thermostat
	Defective heater contactor	Replace heater contactor
Low heat during operation	Low incoming water temperature (below 140 F)	Turn up supply water heater or insulate supply water pipe
	Thermostat out of adjustment	Adjust thermostat
	Cold water mixing with supply	Isolate hot water from cold water
	Defective heater	Replace heater
Low rinse water pressure	Pressure regulator out of adjustment	Adjust pressure regulator
	Defective pressure gauge (actual pressure is fine)	Replace pressure gauge
Regulator at maximum but rinse pressure still low	Insufficient water supply	Supply larger supply line
	Defective water solenoid valve	Replace water solenoid valve
Low rinse water flow	Low rinse water pressure	See "Low rinse water pressure" in TECHNICAL ISSUE column
	Rinse arm spray nozzles are limed	De-lime rinse arm spray nozzles
No rinse water flow	Defective water solenoid valve	Replace water solenoid valve
	Defective (Rinse Relay) ice cube relay	Replace ice cube relay
Rinse water runs with door open	Defective reed switch	Replace reed switch

* The timer assembly motor or micro switches can be replaced independently if those are the only components that have failed.

Troubleshooting

TECHNICAL ISSUE	CAUSE	SOLUTION
With power on, activating start switch does not begin cycle	Defective start switch (cycle light will not light either)	Replace start switch
	Defective timer assembly	Replace timer assembly*
Start switch requires > 1 second activation to run cycle	Defective (Instant Start) ice cube relay	Replace ice cube relay
Activating fill switch does not fill machine	Defective drain/fill switch	Replace drain/fill switch
	Defective water solenoid valve	Replace water solenoid valve
Fill (rinse water) won't shut off	Defective water solenoid valve	Replace water solenoid valve
	Defective drain/fill switch	Replace drain/fill switch
	Defective timer assembly	Replace timer assembly*
	Defective (Rinse Relay) ice cube relay	Replace ice cube relay
Activating drain switch does not drain machine	Drain hose is kinked	Un-kink drain hose
	Defective drain/fill switch	Replace drain/fill
Cycle light does not light while cycle runs	Defective cycle light	Replace cycle light (green)
Power light does not light but machine runs	Defective power light	Replace power light (red)
Wash tank or final rinse temperature does not display	Defective digital thermometer	Replace digital thermometer
Both the wash tank temperature and the final rinse temperature do not display	Defective thermometer transformer	Replace thermometer transformer
Wash tank or final rinse displays wrong temperature	Defective digital thermometer	Replace digital thermometer
	Defective thermister	Replace thermister

* The timer assembly motor or micro switches can be replaced independently if those are the only components that have failed.

PARTS KIT

Parts Kit

P/N	DESCRIPTION	Qty.
15504.00	Motor Contactor, 2-Pole 20 Amp	1
15504.50	Heater Contactor, 2-Pole 35 Amp	1
00501.00	2 Minute Timer Motor	1
00631.00	Ice Cube Relay 120V	1
00707.00	1/2 Water Solenoid Repair Kit J/E	1
00738.15	Solenoid Coil JE 220V	1
15523.00	Rocker Switch Start Momentary	1
15523.50	Rocker Switch Drain/Fill	1
15524.00	Rocker Switch Power Maintained	1
00556.10	Reed Switch	1
03623.00	1/2" Vacuum Breaker Repair Kit - Watts	1
00707.00	1/2" Water Solenoid Repair Kit - JE	1
04113.00	L1X/L1-C Drain Valve 120V	1
00206.70	Pump Seal Kit	1
13417.89	Heater Thermostat	1
17523.60	High Limit Switch 200F	1
00411.00	Microswitch	1
03203.01	Dual Temperature Display Kit	1
00738.15	Solenoid Coil JE 115V/60Hz	1

CUSTOMER NOTICE

PKHT24 Installation Guidelines

Improper installation of this product may void the warranty on this machine. Please follow these guidelines for recommended installation and to ensure the warranty of this model is applicable.

Glasswasher Installation Requirements

1. Machine must be level. Adjust leveling feet to accommodate uneven floor surfaces.
2. Drain height should not exceed maximum height of 16”. Connect supplied drain line to three-way valve on back of machine and gravity feed to the floor drain.
3. PRV must be adjusted to not exceed 20 psi.
4. Water supply to machine must be a minimum 110°F.
5. A four-wire, (neutral, ground and two 110v lines) 220v single phase connection is required. There is a six-foot cord provided with the machine. We recommend a minimum 50-amp dedicated circuit, but you should consult your local building code requirements for proper breaker size.

Activating/Adjusting the Booster Heater

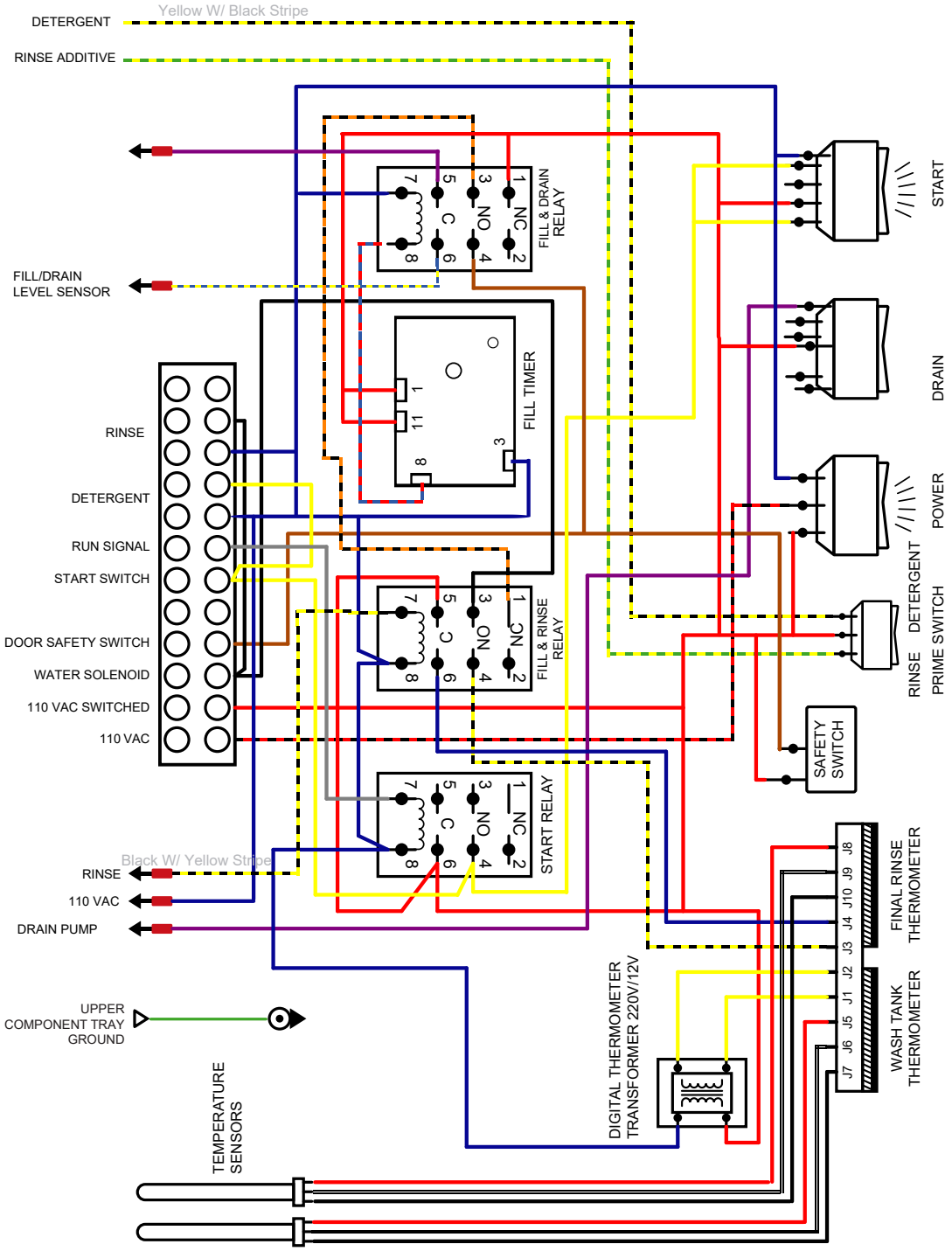
1. Booster heater must be filled with water prior to connecting the blue wire from high limit switch. The high limit switch can be found by removing the front panel and locating the red button on the front of the heater tank.
2. Once the booster heater has been connected, the thermostat should be adjusted to maintain 180°F during the final rinse cycle. The thermostat is located on the front of the booster tank and is accessible by removing the front panel on the machine.

Automatic Dispensing Equipment

1. Applications utilizing automated dispensers for administering ware wash chemicals must use 110v dispenser equipment. There is a 110v power block for installing this equipment inside the control panel.

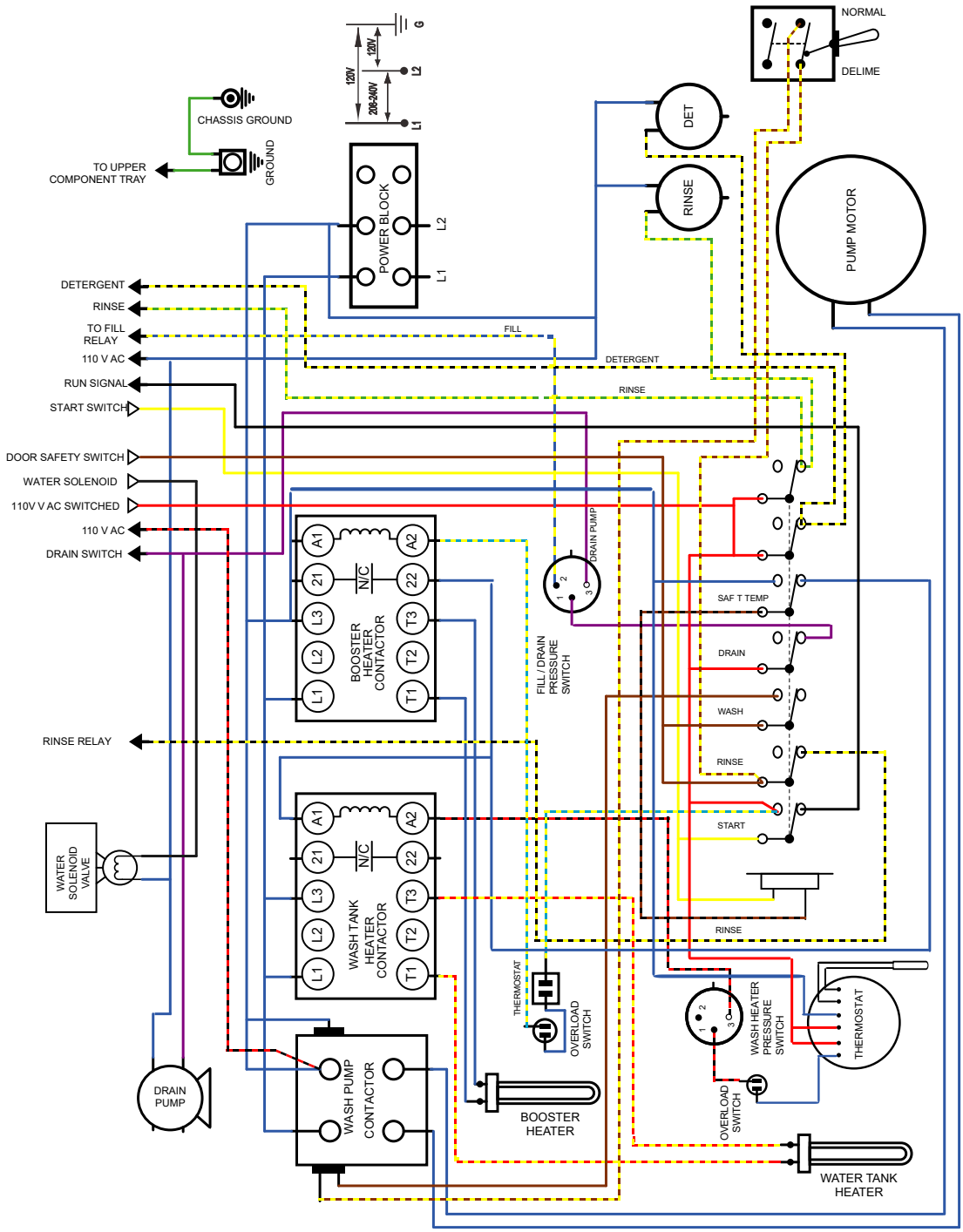
Electrical Diagram

PKHT24A Control Drawer



Electrical Diagram

PKHT24A Power Box



THE

PERLICK®

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Rev. 5.9.25