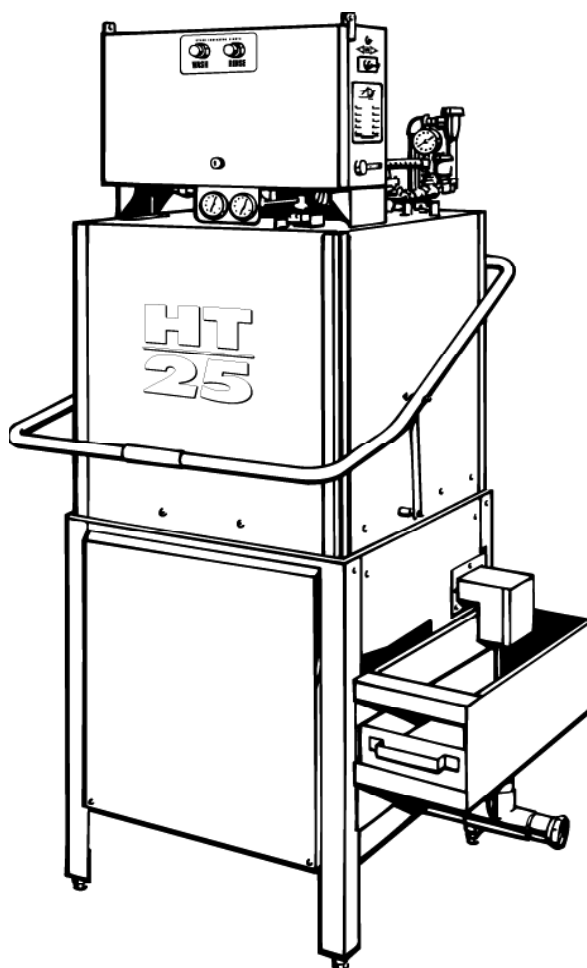


American Dish Service

MODEL HT-25 DISHWASHER



SERVICE MANUAL

900 Blake Street
Edwardsville, Kansas 66111
(913)-422-3700

IMPORTANT:

American Dish Service provides this information as a service to our customers. Keep all instructions for future reference. Although ADS will make every effort to make sure the information in this service manual is correct and up-to-date, ADS does not certify that this is the case, and should you decide to utilize this manual, you do so at your own risk. ADS reserves the right to alter or update this information at any time with out notice. Should you desire to make sure that you have the most up-to-date information, we would direct you to the appropriate document on our web site: www.AmericanDish.com. The instructions and guidelines in this owners manual are given with the assumption that the dishwasher has been installed, operated, and maintained properly and in accordance with all applicable Codes, Ordinances, and Safety requirements. Failure to install, operate, and maintain the machine in this manner will void the ADS Warranty. ADS assumes no liability or control over the installation, maintenance(service), or operation of the equipment. Product failure due to improper installation, maintenance, and operation is not covered under the ADS Warranty.

WARNING:

During the operation of all dishmachines, chemicals, high voltage electricity, and normal operational functions can cause harm, bodily injury, or worse if proper installation, operation, and maintenance are not observed. It is imperative that the operator(s) are trained in the operation and made aware of the hazards that can exist. This is the responsibilty of the owner of this equipment. When installing, operating, or maintaining your dishwasher you must follow all applicable safety requirements, including the wearing of approved personal protective equipment.

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NSF DATA PLATE
NSF Operational Requirements for
MODEL HT-25, Hot water sanitizing, single rack dishmachine
as manufactured by AMERICAN DISH SERVICE

Wash tank minimum temperature: 160° F
Final sanitizing rinse minimum temperature: 180° F
Final rinse minimum pressure: 20 psi
Wash cycle minimum time: 35 seconds
Final rinse minimum time: 10 seconds

MODEL HT-25, Chemical sanitizing, single rack dishmachine

Wash tank minimum temperature: 120° F
Final rinse minimum temperature: 120° F
Final rinse minimum pressure: 20 psi
Wash cycle time: 35 seconds
Final rinse minimum time: 10 seconds
Sanitizer required: 50 ppm available chlorine

**To convert from hot water sanitizing to chemical sanitizing or the reverse,
adjustments shall be conducted by the *manufacturer or its authorized service
agent.***

Listing date 11/4/96

OPERATING INSTRUCTIONS FOR HT-25

INSTALLATION

First steps: Remove the packing material, including the cardboard shield for the tank heater. Place the dishmachine in the desired position, then level the unit by adjusting the bullet feet in each leg. The HT-25 can be used in either corner or inline arrangements. **IMPORTANT. Do not run this machine with the spray arm installed for the first two cycles following the installation.** Rinse out any installation debris (such as grinding shavings or floor grout) that may damage bearings or rotating parts.

TABLE LAYOUT

Both corner table or inline arrangements can be attached to this machine model. For corner layouts, the best arrangement will be with the table intersection meeting on the machine's front left-hand corner (your right hand side). This makes the scrap trap and control box more accessible. The only machine modification needed when changing between the two table layout styles (inline/corner) is moving the tray track rail from the front position to the side position. This is done by removing the two ¼" x 20 hex bolts and re-positioning the rail on the adjacent side. **Note: If you are installing this model in a corner configuration and the table backsplash is over 6" in height, you may be required to modify the table backsplash by cutting a relief for the door arm handle.**

The tray track can be configured in corner or inline styles. The scrap box can be installed on the right or left side. Note: For the corner setup the box must be on the left side of the machine and the front panel (machine's skirt) removed. The opening for the table lip is 21". If the table lip is wider than 21" it must be cut to fit within the door guide opening. The "down turn" lip of the table should not exceed ¾" in length. It is recommended that a distance of at least eight inches (8") of table surface between the scrap sink and the dishmachine.

PLUMBING

Incoming water supply is a single point ½" FPT, with a minimum of 20 PSI (at the final rinse gauge), 180F final rinse, at 60 GPH recovery rate. **Note: A booster heater is required for the final rinse temperature of 180F.** The installation point for incoming water is located on top of the machine, approximately center and toward the rear. DO NOT supply a commercial dishmachine with a 3/8" NPT incoming water line.

SERVICE NOTE: If you are having problems getting **enough pressure during final rinse**, the problem will usually be found in the supply system. Think of the machine as a sprayer on the end of a garden hose. If all of a sudden the water spray drops in pressure, or will not come out with enough pressure, the problem will be found along the hose somewhere. Usually the line is branched to other

fixtures, which causes a reduced flow to the machine. It is recommended that a

single line from the primary water heating system extend to the dishmachine or booster. The pressure regulator on the machine is there to regulate pressure down to 20 psi, if the line pressure is too high. It cannot regulate the pressure up—that is a supply problem. Usually the problem is found in the booster heater, gate valve, inline regulators, or supply pipes.

LINE PRESSURE: Having too little or too much pressure in the final rinse sprays creates result problems. With pressures much above 20 psi, the water begins to atomize and rinsing is threatened. Too little pressure (below 20), spray arm rotation drops, coverage is reduced, 'make-up' water volume is lessened, and soiled wash water stays on the ware. Static line pressure means nothing to the process; running pressure (the pressure reading during final rinse spraying) is the dynamic pressure or flow pressure. The dynamic pressure is what is required to be 20 psi.

[This information is critical but is often overlooked]

The drain on the HT-25 is made from two inch (2") copper pipe, the manifold is attached by "no-hub" plumbing connections to the tank and scrap box drains. The machine is normally shipped with the scrap-box installed on the machine's right-hand side. If the installation requires the scrap-box installed on the machine's left-hand side, the scrap box will require a different drain manifold. This manifold can be order from ADS or soldered in place using "Tees," "elbows," "45 degrees," and straight pipe. SERVICE NOTE: The drain manifold is attached with a plumbing coupler called a "no-hub" which uses a 5/16" nut-driver tool to attach. Any commercial dishmachine of high capacity, should use 2" plumbing for drains; smaller drain lines are more liable to clog. Reducers and 180-degree bends create severe clogging problems.

ELECTRICAL HOOK UP

The electrical hookup on a machine that has motors and heaters is important because of the potential for injury and premature part failure due to faulty supply conductors or service voltage. Undersized wire can cause early failure or intermittent operation. Loose connections can cause burned wires and components over time. Operation of the machine without following manufacturer's specifications will result in costly failures.

IMPORTANT >>>> This equipment requires a NEUTRAL wire

Three Phase Power Requirements:

(Single circuit) 208-230, 3 Phase, 40 amp, 60 Hz service

Wires: three 8 AWG copper wires for power, One 10 AWG wire for Neutral, and a ground wire.

NOTE: 3 Phase has a rotational aspect, check for proper rotation, switch L1 and L2 to reverse the rotation. (If the wash pump sounds loud and the sprays are very low, this indicates the rotation is backward.)

Single Phase Power Requirements:

(Dual circuits) 208-230, 1 Phase, 30/60 amp dual circuit, 60 Hz service

(1) Wires: two 10 AWG copper wires for power, One 10 AWG wire for Neutral, and a ground wire.

(2) Wires: two 6 AWG copper wires for power

NOTE: 1 Phase has no rotational aspect.

SERVICE NOTE: 5/32 Allen wrench is needed for the main power distribution block. The control box electrical conduit hole for the power supply wires is a “one inch conduit” hole. The actual size of the hole is 1 3/8” located on the back wall, left hand side. Also, there is a 1/2” conduit hole, which is actually 7/8” in diameter, located on the bottom of the control box for dispenser connections.

IT IS RECOMMENDED THAT NEW CIRCUIT BREAKERS BE INSTALLED FOR ANY EQUIPMENT THAT CONTAINS ELECTRICAL HEATERS.

Wire size is important to electrical component life, undersized wire will result in premature failure of contactors and motors.

We do not recommend using power from the HT-25 control box to supply power for controls or devices such as exhaust fans.

WARNING: Always turn the power off for the machine before servicing the electrical system.

DISPENSING HOOK UP

The signal for dispensers is 120v and comes from the control circuit (*unlike the ADC conveyor's dispenser signal, which is 208v and comes from the power circuit*). The dispenser hook-up points are marked by a yellow sticker labeled “rinse” and “on” signals. The terminals are located in the lower left-hand corner of the control box. There is an electrical conduit hole on the bottom of the box for the dispenser wires. The control circuit supply power comes from L1 and the Neutral line; it is protected by a 10 amp fuse and has the capacity of running the dispenser's power needs.

A female threaded (1/8” FPT) port is provided on the final rinse manifold. It is located at the base of the manifold flange (mixing chamber) mounted to the hood and pointed toward the rear. A 7/8” hole is provided at the back and center of the wash tank for a chemical inlet position. This is where you would install the bulkhead fitting for detergent feeding into the tank. There is another 7/8” hole for a Chemical Probe located on the front wall of the lower tank, near the machine's centerline.

Do not mount the dispenser on top of the control box (reason: chemical leaking inside electrical controls). Secure all chemical lines and attachment points. Make sure that chemical lines do not run over the top of electrical devices or inlet plumbing. (a leaking sanitizer line can destroy the stainless cabinet and machine components)

SPRAY ARMS

The **wash arms** are interchangeable and rotate on bearings mounted horizontally in the top of the wash arm hub. The four spray arm spokes are welded to the hub. Running a knife or fork across the slot cleans the wash spray slots. Cleaning out the arms can be accomplished by opening the captive end

cap and running water through the arm. The **bearing** can be disassembled for cleaning with a screwdriver, should the need arise. It is not anticipated that disassembly would be required; each time the machine goes into final rinse, a jet of water cleans out the bearing shell. The wash base has a **dome**, which is held by the final rinse tube. This dome controls the direction of water being pumped into the spray base. **WARNING:** Should metal installation materials become lodged between the dome and the hub, the wash arms will stop turning. Metal shavings, and especially sand can score these parts and cause rotation problems for the wash arm. However, once these construction materials are gone, the hub and dome interface will process food-related soils.

The **final rinse arms** are interchangeable and rotate on a bushing **pivot**. The pivot is hollow and supplies the final rinse water to the rotating arm. There is a twist grip attached to the top of the pivot by means of a snap ring. There are two washers made of polymer material, which serve as the rotational bushings for the rinse arm. After the wash arm is set in place over the spray base dome, the final rinse pivot, holding the spray arm, can be screwed into the final rinse tube which holds down the wash dome (There is a hole through the wash arm bearing shells, the pivot goes through that hole and holds the wash arm in place along with securing the final rinse pivot).

AFTER THE INSTALLATION CHECK-UP

1. Check rotation of the Wash motor—see arrow on pump housing. There is a 50% chance that a 3 Phase motor will turn the right direction on installation. If you need to reverse rotation, change the incoming L1 wire with the incoming L2 wire. Single phase machines do not need this procedure.
2. Check for a high leg (delta system, 240v), if a high leg is present (200v) use L3 on the power distribution block for that leg.
3. Check the heater circuit breaker located in the control box; make certain it is in the “on” position. The toggle should be up.
4. Check the water level control mechanism located at the machine’s right rear top of cabinet. Take the cover off the box and inspect the movement of the lever and rod. They should be free moving and without restriction. When the machine is turned on, the water control will fill automatically to the upper limit of the control. It is normal for the water level to be below the scrap trays after initial fill. Several cycles later the machine will begin to overflow into the scrap trap mounted on the side. **SERVICE NOTE:** to test the water control system, turn the machine on and let it fill completely. Then move the lever in the water level box up with your finger, it should begin to fill but shut off as soon as you take your finger away. Do this rapidly 10 or 20 times, it should never stick on or continue to fill. If it does, the problem will be caused by something rubbing on the rod, lever, or weight. In rare cases, the water level switch may have lost the required tension on its return button, and must be replaced. These switches are specifically designed with a certain tension on the button (marked with a 5); other switches will not work in this system.

Check the machine’s operation by placing a rack inside, close the door and push the start button located on either side of the control box. The indicator

1. lamps will show the wash and rinse cycle duration, when the rinse lamp turns off, the cycle is over. The door may now be opened and the rack removed. During the rinse cycle, check the pressure gauge at the final rinse manifold. It should read 20 psi. It can be adjusted to a lower pressure by turning the regulator screw counter-clock wise (CCW)—Remember, up = is down.
2. Check all end caps in the wash and rinse arms. Make sure all the screens and pump filter are in place. Make sure the cardboard packing material is removed from around the tank heater.

THE RULE FOR ALL DISHMACHINES: The Installation is KEY to reduced service problems and complaints.

Important Note:

Before running the machine for the first time, wash out the inside by operating without the spray arms. This will help remove the installation debris and metal filings that cause the spray arms to bind. If they lock up during the first cycle, remove the four arms, then clean the spray base and wash arm hubs. Rinse out the machine by running a cycle without the arms, then dump the tank and refill.

Food soil will not cause this problem. However, installation grit, metallic or PVC shavings will stop the arms from turning. They are forced into the hub and bearing clearances when the pump first starts up. These fragments cause rotation stoppages. This problem will cease after the machine is cleaned and normal operations begin.

MACHINE OPERATION

After the machine is operational and the tables are cleared, remove all packing material (heater supports) then wash out the tank, give attention to any installation debris left over. **DO NOT PUT THE SPRAY ARMS IN UNTIL THE MACHINE HAS RUN SEVERAL CYCLES.** Now, fill the machine by turning on the master switch. The HT-25 will automatically fill with water to an operational level. After the pump motor starts, the machine will fill once more to compensate for the water used by the pump. This is normal operation. Now, place the wash arm on the spray base dome, the wash arms are interchangeable up and down. Now screw in the final rinse spray arm by turning the twist grip pivot into the spray base center tube. It is easier to hold the upper wash arm in place while turning the final rinse arm and securing the entire upper assembly.

Place a rack in the machine and close the doors, push the start button. As the machine runs through the cycle (Both 60 seconds or 45 seconds are available), you will hear the sound of the wash sprays, however, when the final rinse begins, the noise level drops dramatically. Some people have thought it was finished, but observe the cycle light to see when the final rinse is completed. Then open the doors and remove the rack.

WHAT TURNS THE MACHINE ON AND OFF

There is a **timer** that causes the machine to run. The cycle is started when the start button is pressed and the instant start relay is energized, which energizes

the cam timer. Everything is keyed off the master cam. The first cam is the master and it begins the cycle by sending power to the timer motor. The second cam immediately turns on the contactor for the wash motor. The third cam will turn on the final rinse solenoid. The fourth cam switch is a spare.

The heater is controlled by the **thermostat** and the **level control switch (float)**. If there is no water present in the tank when the machine is turned on, the level control switch will turn off the heater and open the fill solenoid. When the tank is full, the switch will shut off the water and then turn on the heater. If the incoming water is hotter than the settings on the thermostat, the thermostat will shut the heater down until the water temperature drops below the set point. NOTE: To increase the temperature set point, turn the thermostat center-rod counter clock-wise (turn to the left). The red light above the Mercury Relay in the control box will show (on) when the thermostat is sending power or when it is satisfied (off) in the temperature of the tank.

A **test** to see if the machine's tray track and tables are set up right is to place a rack on the soil table then push it through the machine and on to the clean table. It should slide easily across all points.

CAUTION:

Always disconnect power to the machine before servicing.

Heaters will remain hot immediately after emptying of machine.

Turn machine off before opening for inspection.

MOTORS

It is recommended that the pump motor be replaced as a unit. This is classified by ADS as "pump motor complete, less cover." The reasoning is: High Temps are generally placed in high volume accounts, which have little space or time for major repairs. The simplest procedure for a fast replacement is to remove the four housing bolts, disconnected the electrical connection and replace with a new unit. This can be accomplished without extensive service knowledge or down time for the restaurant. If there is a problem with the seal, shaft, or impeller the resulting time investment could cause an extended disruption.

This is best managed by preparation rather than reaction. The primary events include *heater/circuit breaker, wash pump/contactor, and damaged or broken parts*. Any of these events can be replaced and operations returned to normal within 20 minutes if the assemblies are readily available. ADS has kits or lists of these major items and they can be purchased in assembled form.

Once a replacement is speedily made, the faulty part can be returned to the shop. At the shop there is enough time and resources to perform an adequate repair; the repaired part then becomes the replacement assembly for the next event. This is the most efficient way to service the high volume business. Expecting even qualified service persons to repair system assemblies can be a risk. It can lead to multiple-day events. All possible or needed resources are simply not available at the restaurant.

3HP MOTOR REPLACEMENT

SEAL REPLACEMENT PROCEDURE

- 1 TURN OFF POWER TO THE MACHINE. Empty water from the wash tank and open pet-cock on wash pump motor.
- 2 Remove the two mounting bolts that secure motor to frame.
Take out the (4) four 3/8" bolts that hold rear pump housing to the front pump cover.
- 3 Slide motor and rear pump housing out of the pump cover. Place the unit on the floor and open the rear access plate on the motor.
- 4 Disconnect the (3) three lead wires that are attached to terminals L1, L2, and L3. Remove the conduit from the motor.
- 5 Remove the impeller by taking out the secure bolt and. The impeller slides off the keyway. If it does not slide off easily, gently tap it from behind. Heavy blows from a hammer will damage the impeller and shaft alignment.
- 6 Remove the (4) four 3/8" x 7/8" bolts that hold the rear pump housing to the motor. Carefully slide the housing off the motor; pay particular attention to the shaft seal. The graphite section (black face) is the part that slides on the motor shaft. The ceramic section (white race) is the part that seats in the rubber boot in the housing. Slide the graphite section off. Be careful not to crack the ceramic when the pump housing is removed from the motor.

Important Note: The 3hp motor shaft extension with the pinned and set screws *adapter* is not field repairable or serviced. It is installed at the factory and must be replaced as an integral part of this motor. However, the 1999 7/8" motor shaft, has only a 1.5" diameter *collar* that slides over the motorshaft. It is sealed with internal O rings and held in place by the impeller. This motor is simpler and can be setup in the field without special tools.

- 7 To assemble, reverse the order above. If you are replacing the seal make sure the rubber boot on the ceramic is fully seated at the bottom of the pump

housing. Make sure the shaft is clean. Put the boot and ceramic section together first, then press it into the housing first. It will be helpful to use some hand soap or dishsoap (Dial) to slide the boot with white ceramic section into the pump housing. **The smooth surface will face out toward you; the grooved side will face the housing.** Do not put grease or oil on the seal. Inspect the graphite section; make sure there are no cracks or chips on the face of the black graphite. Slide this section onto the motor shaft and install the spring and finally the retainer shield. Place the impeller on next. The keyway and slot should be free from damage or distortion. If the keyway is enlarged, the motor will need replacement. If the impeller is also has a damage key slot, it must be replaced.

- 8 When the pump assembly is placed back into the pump cover, properly seat the o-ring gasket and use some lubricant to avoid pinching the o-ring. To

determine whether the O ring is good or not, roll it between your fingers. You should not feel a flat spot.

HI TEMP DESIGN

The term “Hi Temp” refers to the sanitation process of the dishmachine. Or, in other words, the type of process used to achieve an acceptable kill rate in bacteria. There are typically two methods, chemical or thermal sanitizing. In high temperature (thermal kill) sanitizing, the surface of the dishware must reach a temperature of 165F for a minimum of ten seconds. This is accomplished by spraying 180F water over the dishware during the final rinse. This elevated temperature meets the Heat Unit Equivalent (H.U.E.) tests required for NSF certification.

The HT-25 supports both methods of sanitizing, NSF lists the HT-25 as a dual sanitizer. This means the machine’s design can serve in both roles. The final rinse system delivers high temperature sanitizing or chemical sanitizing sprays with the same water consumption rates. The choice of the boosted incoming hot water (min. 180F) or chemical dispenser application (min. 50 ppm chlorine) is a result of the equipment added to the machine (booster or 3 product dispenser). The best application of the HT-25 is the High Temp sanitizing.

HT-25 Commercial Dishmachine

QUESTIONS TO EVALUATE OPERATION OF MACHINE

1. Will the machine fill with water when it is turned on for the first time during a new work period? If it does not, is the “ON” light illuminated when the master switch is turned on? If not, the machine will need electrical service. **[Service issue]**
2. When the machine fills with water, what is the incoming water temperature? It should be 158F for Hot Water Sanitizing and 120F for Chemical Sanitizing. This requirement is supplied by the building’s primary water heating source. **[Building maintenance issue]**
3. After the machine has filled with water, a rack of dishes can be pushed into the machine on the “soil table” side, and the door closed. Push the start button, the wash pump should begin operation. If it does not, look at the inspection door, is it fully closed? **[Operator issue]**

Does the machine continually fill, causing the primary water-heating source to run out of hot water? This condition will be a result of water escaping from the

1. tank. **From the wash tank**, the likely cause will be water not coming in from the final rinse or leaking out of the drain. **[Install and service issue]**
2. Is the *final rinse* water at the correct temperature? 180F min. for Hot Water and 120F min. for Chemical. The correct final rinse temperature is critical to operational temperature. **[Building maintenance issue]**
3. If a surging sound is coming from the wash pump, check the pump filter and tank trays. They may be filled with soil. Clean the filter and trays, refill the machine. **[Operator issue]**
4. Check for free rotation of the spray arms. Both wash and final rinse arms should turn freely. Upper and lower arms are interchangeable. If an arm is not turning freely, remove the arm and look for debris that may be lodged in the bearing area or against the hub (rotating part) and dome (stationary part of base). **[Operator issue]**
5. Chemical supply is provided by the chemical company. **[Service issue]**
6. Glass appearance is often referred to as "results." If the results are poor, there are several factors, which effect the outcome of the washing process. Rinsing is the most challenging aspect for any dishmachine. The following are three areas of problem sources.

First is procedure. If the dishes are not placed so the sprays can reach the surface, the results will be poor. If large amounts of soil are left on the dishware, this may slow the washing process.

Second is temperature and water condition. If the water has lower temperature and scale producing elements, results will suffer. The machine cannot overcome these problems. They must be treated before being used in the dishmachine. This is a building issue.

Third, installation problems are the # 1 cause of service disruptions. If the machine is improperly installed no amount of tuning or adjustment can compensate for the lack of essential elements. The installer must return and correct the omitted elements of the installation.

HT-25

Preventive Maintenance Schedule

Three General areas must be inspected

- 1) Spray Arm Rotation
- 2) Water control mechanism
- 3) Final Rinse Pressure

SPRAY ARM ROTATION

- 1) Run a cycle, lift the door quickly to see if both upper and lower wash arms are turning (about 60 RPM), you will get wet doing this.
- 2) When final rinse turns on, do the same procedure by lifting the doors quickly and observe both upper and lower final rinse arms (about 60 RPM)
- 3) Check that end caps are in place and spray slots and tips are clear. Turn arms, all should turn freely.

WATER CONTROL MECHANISM

- 1) Check for free movement of suspended rod and weight
- 2) Suspended weight is free moving and clear
- 3) Lever is free moving and has 1/16" clearance from box or attaching locknut. Operate the lever 10 or 20 times with the tank full of water, it should not stick on "fill." If it does stick, the problem will be interference with the rod, weight, or the switch button spring may be too weak.

FINAL RINSE PRESSURE

- 1) Pressure at the final rinse manifold should be 20 PSI. Below 20 will reduce rotation and coverage, about 20 will make it more difficult to inject chemicals in the stream of the manifold.
- 2) Adjusting the pressure regulator on the machine will not make up for low pressure coming to the machine.

NORMAL CHECKS

- 1) Check for bent or damaged parts
- 2) Screens and trays are all in good order
- 3) Drains are clear
- 4) Dispenser is functional and adjusted w/no leaks of chemical
- 5) Curtains are in place and clean
- 6) Correct leaks to avoid damaged motor
- 7) Spray patterns are consistent and typical
- 8) Check racks
- 9) Lime build-up on any dishmachine is a problem

AMERICAN DISH SERVICE

Limited Warranty

Parts and Labor

American Dish Service warrants to the original purchaser that its products are free of defects in material and workmanship and agrees to repair or replace, at its option, any parts that prove to be defective within ninety (90) days from date of purchase. American Dish Service may require reasonable proof of your date of purchase. Therefore, you should retain your copy of the invoice or shipping document.

In addition, American Dish Service will exchange any part covered under this limited warranty which is found defective, as determined by American Dish Service, under normal use and service up to two hundred and seventy (270) days following the first ninety (90) day limited warranty period as described above, excluding feed line, flexible hose, and squeeze tubes.

The warranty does not cover equipment subject to accidents, freight damage, improper power and/or plumbing hookups, or lack of routine required maintenance as determined by American Dish Service. This warranty is void if the defect is due to improper installation, high chemical concentrations, misuse, modification of the machine, repair or servicing other than by an authorized American Dish Service dealer, or authorized agent, or operated in a manner contrary to applicable factory instructions herein or failure to perform all required maintenance.

The timer cams for water and chemicals are adjustable. Proper adjustment is the responsibility of the installer of the equipment. This warranty does not extend to machine malfunction resulting from improper cam adjustment.

All warranty work for machines will be performed, within the ninety (90) day period, during normal working hours, by an authorized agent receiving prior authorization by American Dish Service. Overtime charges and expediting charges such as "overnight" and "air freight" will be the responsibility of those requesting service outside normal American Dish Service procedures. Expenses due to disconnections, delivering, returning, and reinstalling the machine are borne by the purchaser and are not the responsibility of American Dish Service. Travel charges for time and mileage outside normal service area (75miles) shall be the responsibility of those requesting service.

Defective parts become the property of American Dish Service. Parts replaced within the warranty period carry warranty only until the end of the original limited warranty. Replacement parts not supplied by American Dish Service will relieve American Dish Service of all future liability and responsibility. American Dish Service will provide the names of the nearest authorized dealers upon request.

ADS is not responsible nor liable for any conditions of erosion or corrosion caused by corrosive detergents, acids, lye or other chemicals used in the washing or cleaning process.

This warranty is void outside of the United States of America.

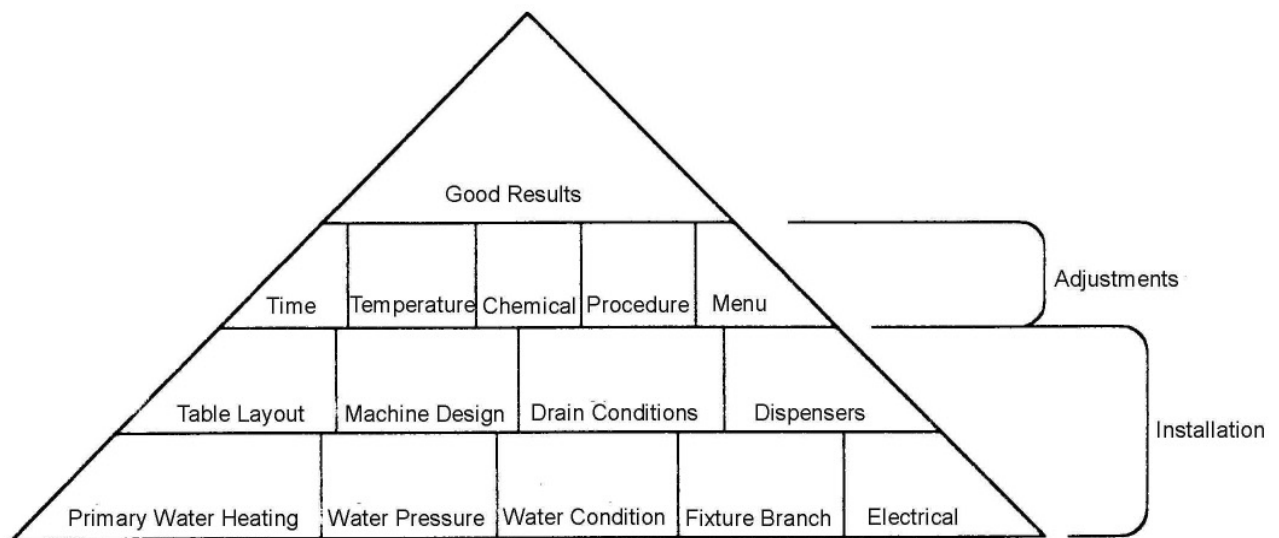
AMERICAN DISH SERVICE HAS MADE NO WARRANTIES THAT THE GOODS SOLD OR SERVICES PROVIDED ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE AND THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED WHICH EXTEND BEYOND THE EXPRESS LIMITED WARRANTY CONTAINED IN THIS AGREEMENT. UNDER NO CIRCUMSTANCES SHALL AMERICAN DISH SERVICE BE LIABLE FOR ANY LOST SALES, LOST PROFITS OR ANY OTHER INTANGIBLE LOSS OR ANY OTHER SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR ANY INABILITY TO USE THE PRODUCTS SOLD BY AMERICAN DISH SERVICE.

American Dish Service's liability under this agreement shall in no event exceed the amount paid for the equipment purchased from American Dish Service. This warranty will be void if the Warranty Registration Card is not returned to American Dish Service within 30 days of the equipments installation.

This warranty is void if the equipment is installed for residential use.

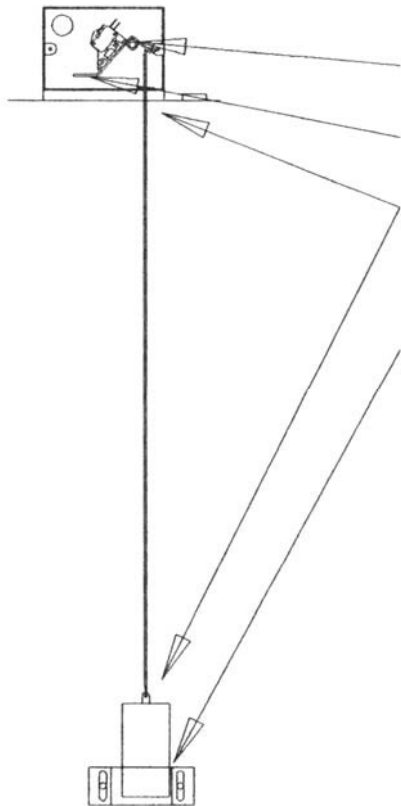
Any action under the terms of this Warranty must be commenced within one year from the date of purchase of the equipment.

Elements in Cleaning Process



NOTE: Adjustments can not correct Installation Errors

WATER CONTROL MECH.



1. Free moving flipper and rod
2. 1/16" clearance on holddown nut (flipper)
3. Wires are clear of mech.
4. Rod has no interference with tube or box
5. Armor tube is seated in the upper socket
6. Bracket has equal clearance on both sides
7. Bracket is secure in upper position
8. Weight is 238 grams
9. Switch is tested: 5oz-min 6oz-max
10. Wash rod is 35.187" long (o/a)
11. Rinse rod is 29.25" long (o/a)



MODEL HT-25 SPECIFICATIONS

U.S. REGISTERED PATENTS

Rated Capacity (Racks/Hour)	72 NSF Rated
Wash Tank Capacity	11 Gal. (41.63 Liters)
Water Temperature, Wash	160° F. (71° C.)
Water Temperature, Rinse	180° F. (82.2° C.)
Water Consumption	0.85 Gallons/Rack (3.593 Liters/Rack)
Wash Motor	3 HP

ELECTRICAL REQUIREMENTS: 3-PH, 208/240V, 40amp, 60 Hz
5-wire connection(neutral, ground, 3 #8 power wires, 50a capacity)
Single PH: 208/240V, dual circuits 60/30 amp, 60 Hz
Circuit 1: (neutral, ground, 2 #10 ga. wires, 40a capacity)
Circuit 2: (2 #6 ga. wires, 75a capacity)

HT-25/HT-34 W/FACORY INSTALLED BOOSTER: (3-Ph Only) single point
Connection req's 208/240V, 3Ph, 50a, 5-wire connection (Neutral, Ground,
3 #8 ga. power wires, 65 a capacity) High leg goes to L-3

Wash Heater	8KW
Rack Size	19-3/4" x 19-3/4" (50.2 cm x 50.2 cm)
Door Clearance	18" (45.72 cm)
Water Inlet (1)	1/2" F.P.T.
Drain	2" F.P.T.
Height (All Doors Closed)	74" (187.96 cm)
Width, Table to Table (Inline Model)	25" (63.5 cm)
Width w/ Scrap Accumulator (Overall)	37" (93.9 cm)
Depth (Overall)	33.5" 85.0 cm
Shipping Weight	485 lbs. (219.9 kg.)
Shipping Volume	81.51 cu. feet

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MODEL HT-25 SPECIFICATIONS

U.S. REGISTERED PATENTS

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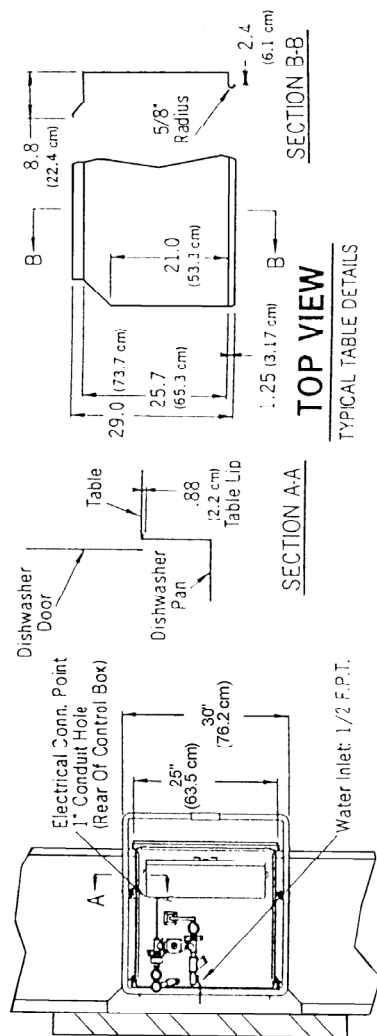
Electrical Requirements 3PH, 208V, 60 Hz, 40 Amp
 NOTE: 3PH, requires 8 AWG phase wires, w/10 AWG Neutral Wire, and clean circuits with Ground.

1PH, 208/240V, 60 Hz, 60/30 Amp
 NOTE: 1PH 60 Amp requires 3 AWG phase wires.
 30 Amp requires 10 AWG phase wires w/10 AWG Neutral Wire, and clean circuits with Ground.

NOTE: Call Factory for Requirements for Booster Heater.

Wash Heater	8KW
Rack Size	19-3/4" x 19-3/4" (50.2 cm x 50.2 cm)
Door Clearance	18" (45.72 cm)
Water Inlet (1)	1/2" F.P.T.
Drain	2" F.P.T.
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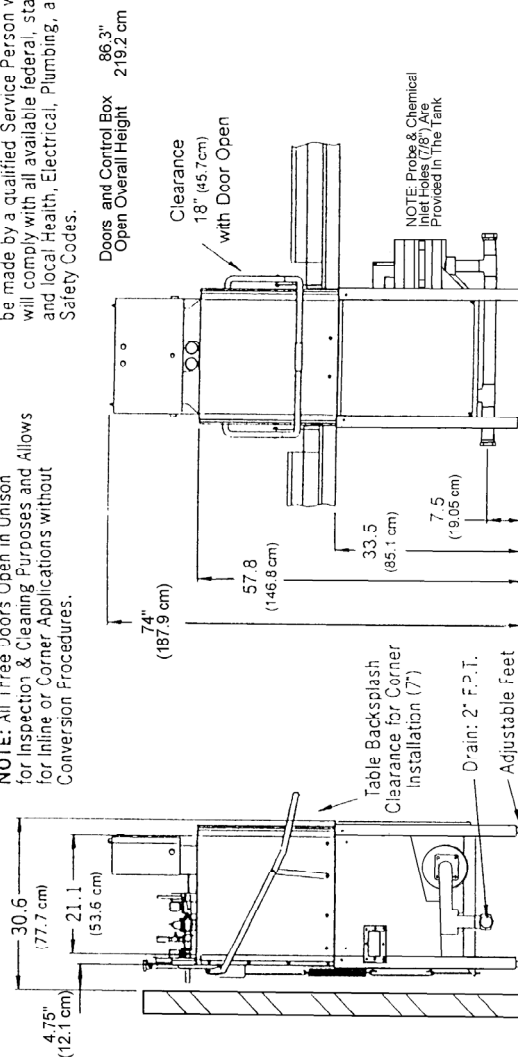
TOP VIEW

* Manufacturer reserves the right to modify these specifications in compliance with regulatory agencies and manufacturing expediency.

CAUTION:

Electrical and plumbing connections must be made by a qualified Service Person who will comply with all available federal, state, and local Health, Electrical, Plumbing, and Safety Codes.

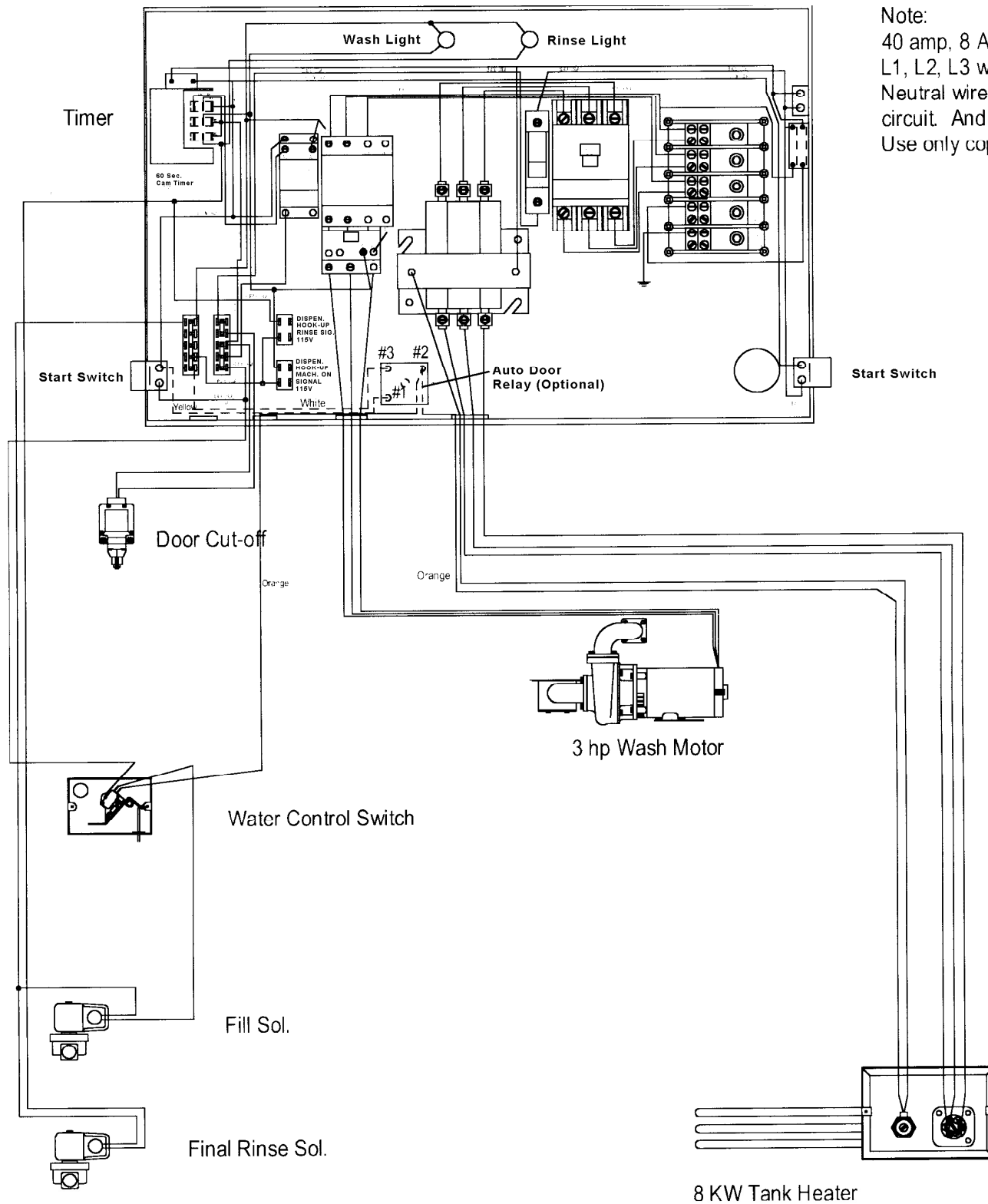
NOTE: All Three Doors Open in Unison for Inspection & Cleaning Purposes and Allows for Inline or Corner Applications without Conversion Procedures.



SIDE VIEW

FRONT VIEW

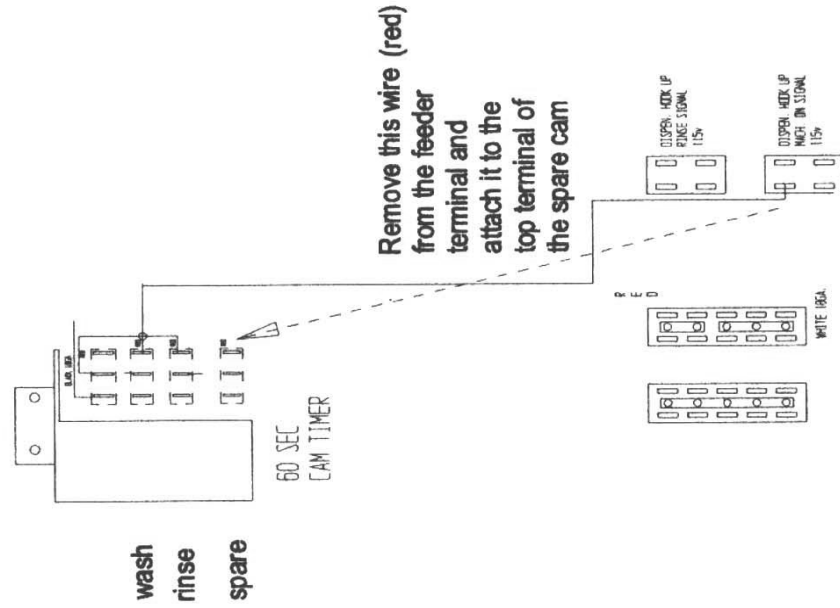
HT-25 Wire Control, 3 Phase, 208/220v



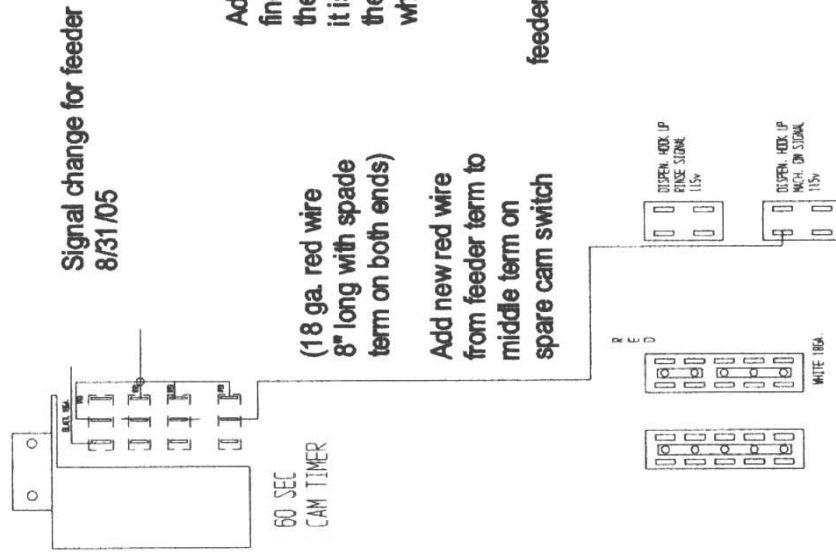
Note:
40 amp, 8 AWG on
L1, L2, L3 wires. W/
Neutral wire for control
circuit. And ground wire.
Use only copper wire.

HT timer modification To avoid feeder activation during initial filling

Step #1

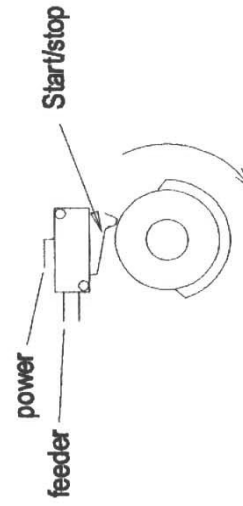


Step #2



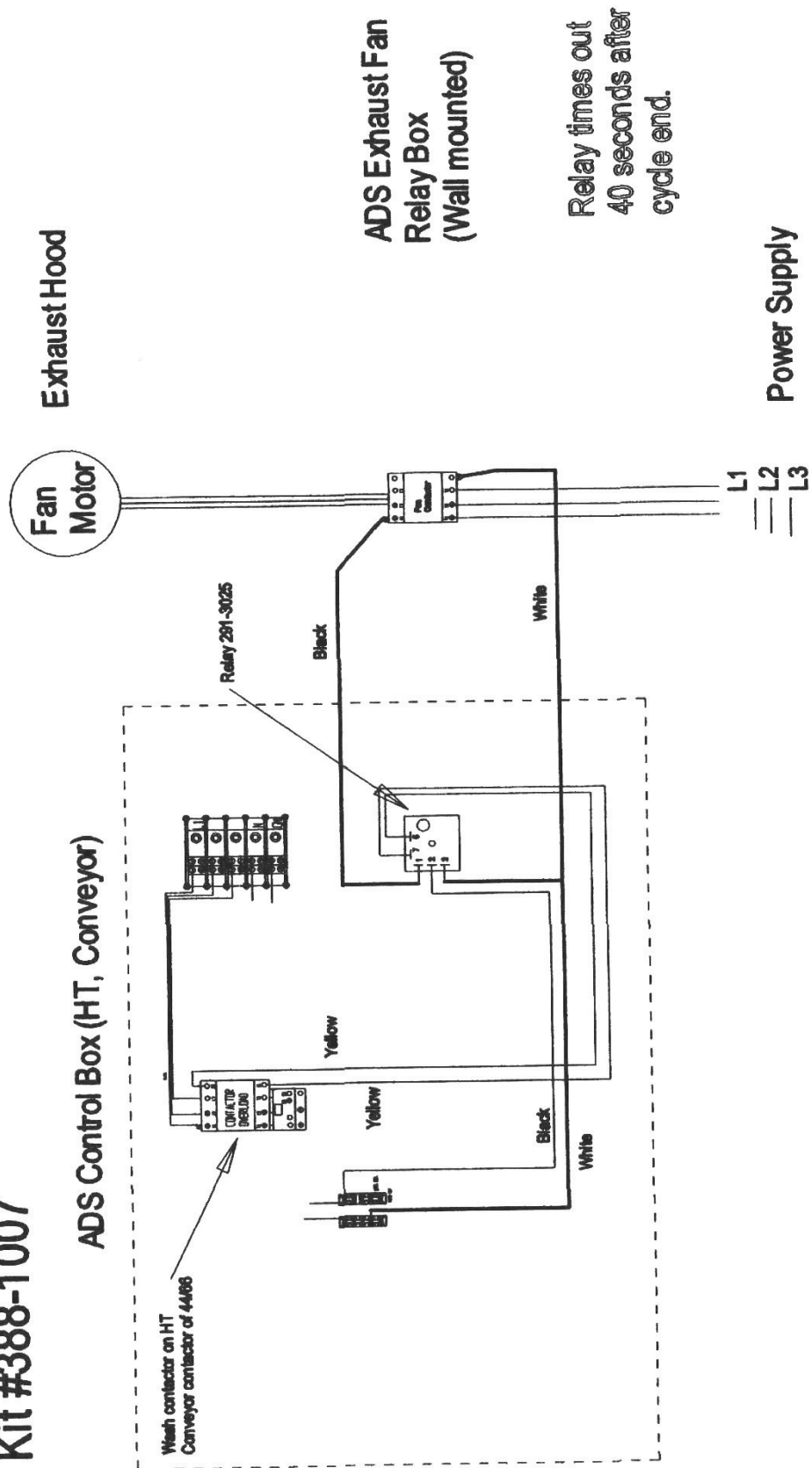
Step #3

Adjust wheels of spare cam so the switch finger is down on low cam during the first half of the cycle. Adjust so it is up during charging the tank for the initial fill, then down when the wheel comes to a stop.

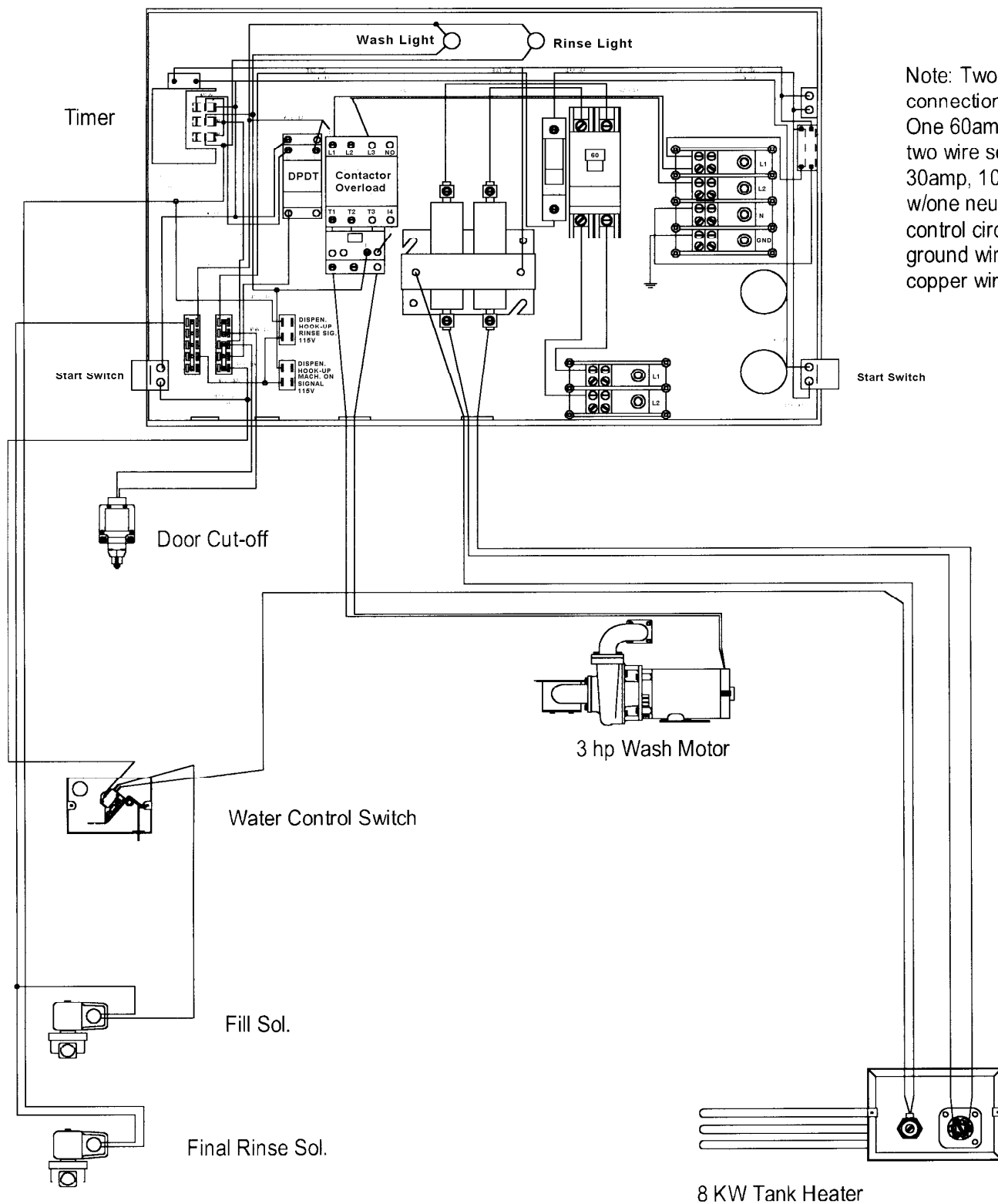


Kit #388-1007

ADS Control Box (HT, Conveyor)



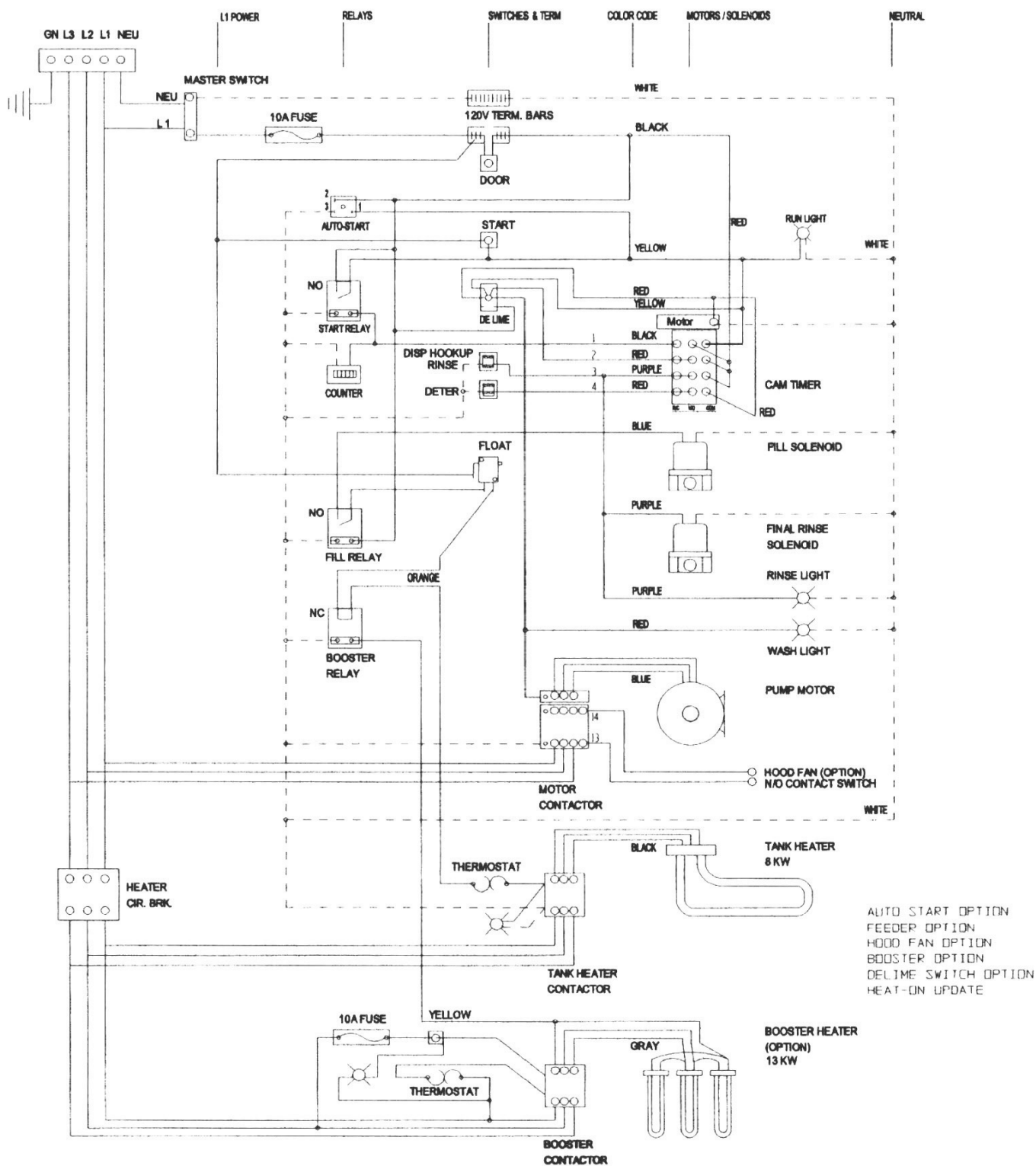
HT-25 Wire Control, I Phase, 208/220v



Note: Two power connections needed. One 60amp, 6 AWG, two wire service. One 30amp, 10 AWG, w/one neutral wire for control circuit. And a ground wire. Use only copper wire.

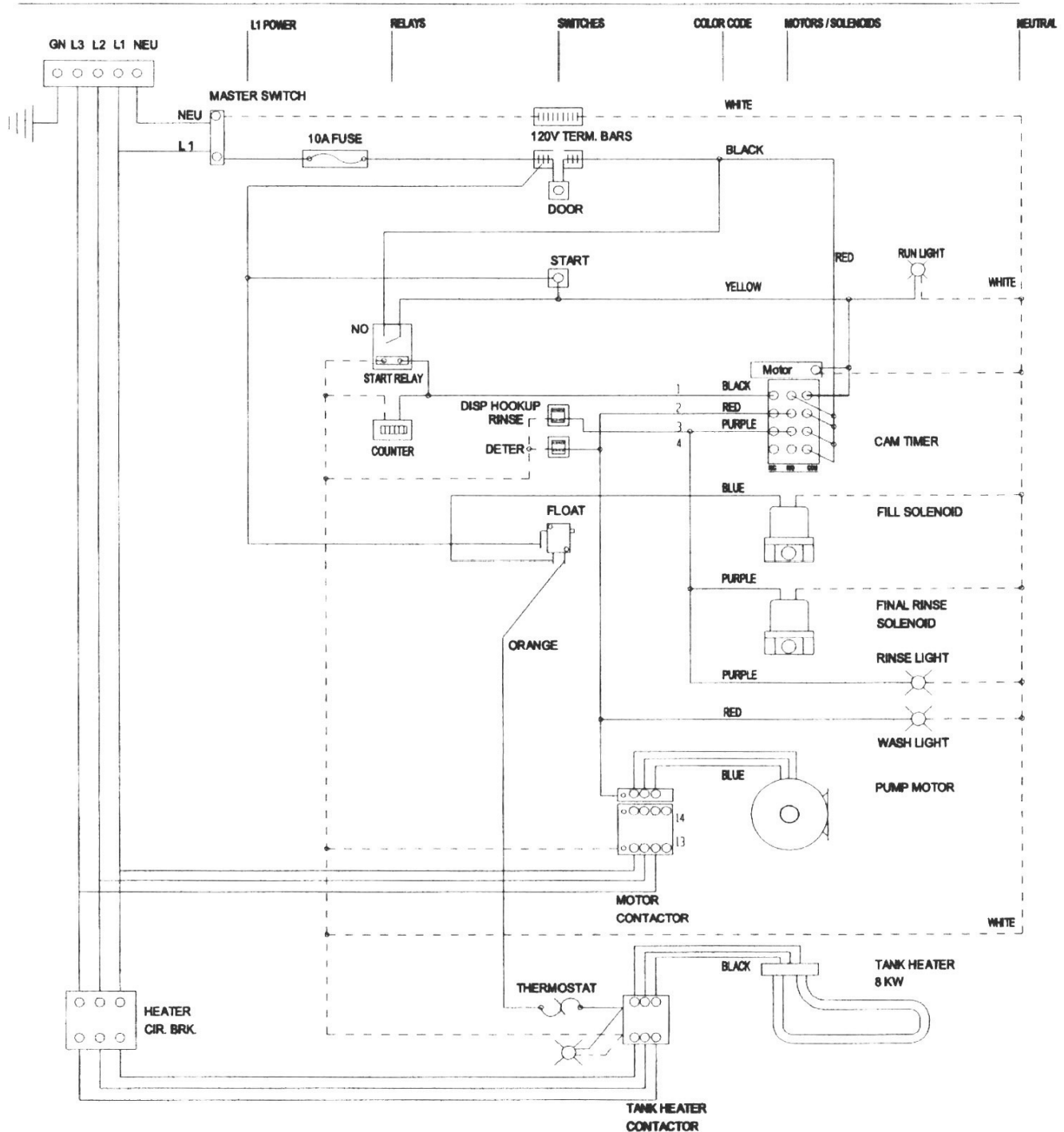
MODEL: HT-25 INCLUDING ALL OPTIONS OF 2005

12/05



ADS WIRE CHART (LADDER) MODEL: HT-25 ORIGINAL 1995 WIRING

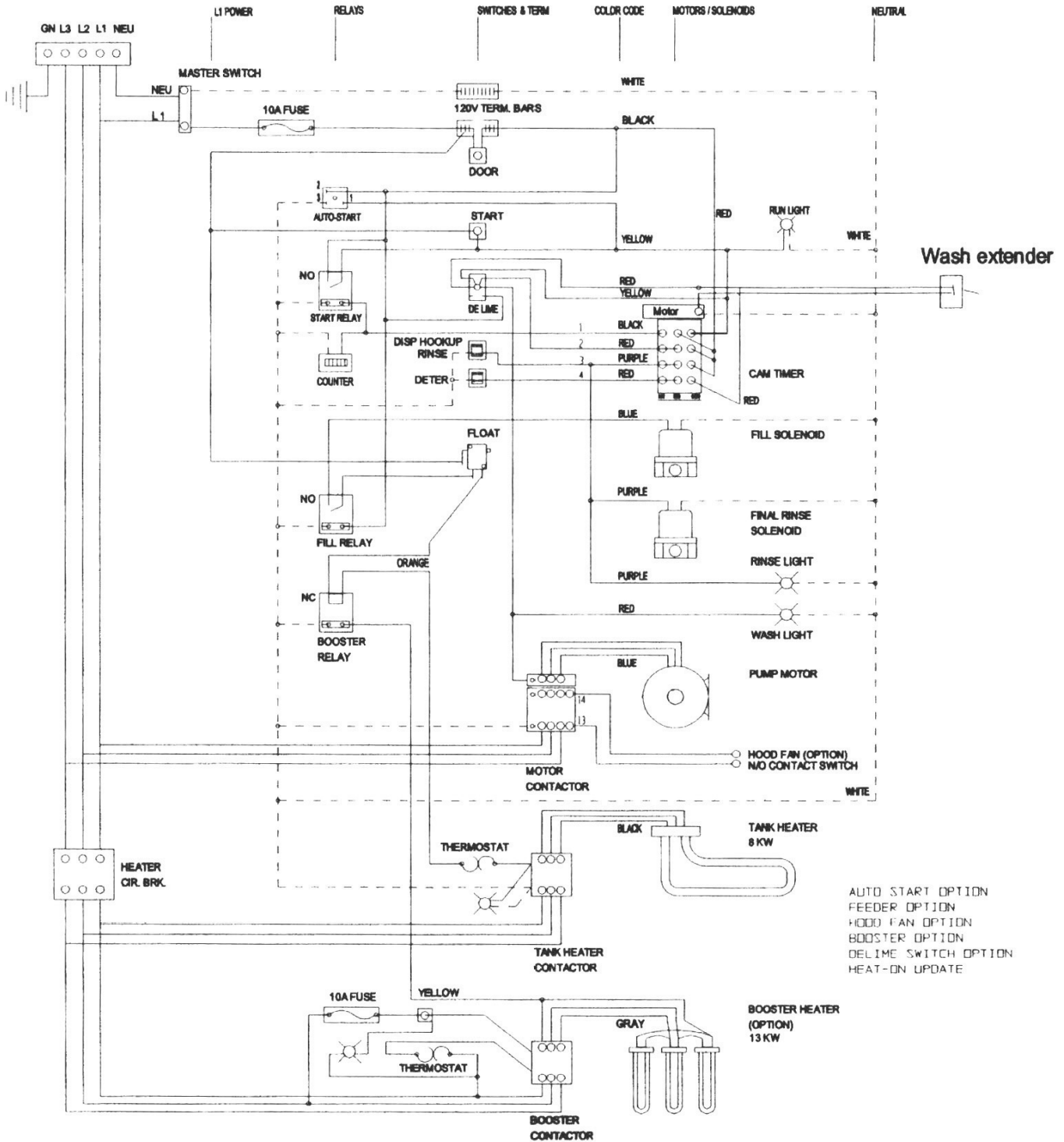
12/05



ADS Wire Chart (Ladder)

Model: HT-34/25 INCLUDING ALL OPTIONS OF 2005

9/07



**COMMERCIAL DISHWASHING MACHINE
AMERICAN DISH SERVICE
Model: HT-25, 208V/240V, 3 phase,
40 amp Circuit Breaker, 8 AWG Copper Wire
(3)three wires for the power supply,
(1)one wire for ground,
(1)one 12 AWG wire for nuetral
Based on THHN wire for circuit protection.**

HATCO Electric Booster Heater
Model: C-12, 208V or 240V, 3 phase, 12kw
50amp Circuit Breaker, 8 AWG copper wire
(3)three wires for the power supply
(1)one wire for grounding
Based on THHN wire for circuit protection.

THREE PHASE DATA CHART HT-25					
ITEM	VOLTS	AMP	CIR/BKR	WIRE	CONDUIT
WASH MTR	208 24C	9 8	15 amc 15 amc	10 AWG 10 AWG	1/2" 1/2"
WASH HTR (8KW)	208 24C	29 25	40 amc 30 amc	8 AWG 10 AWG	3/4" 1/2"
WASH HTR (12KW)	208 24C	33 29	50 amc 40 amc	8 AWG 8 AWG	3/4" 3/4"

Date based on 1990 NEC tables

(DUAL VOLTAGE HOOK-UP)

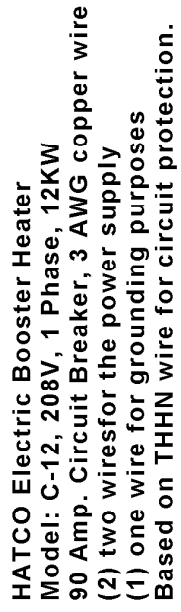
Model: HT-25, 208V, 1 Phase, dual voltage

#1 (2)two wires, 10AWG, 30A/208V

(1)one wire for grounding purposes

Based on THHN wire for circuit protection.

Based on THHN wire for circuit protection.

Data based on 1990 NEC tables

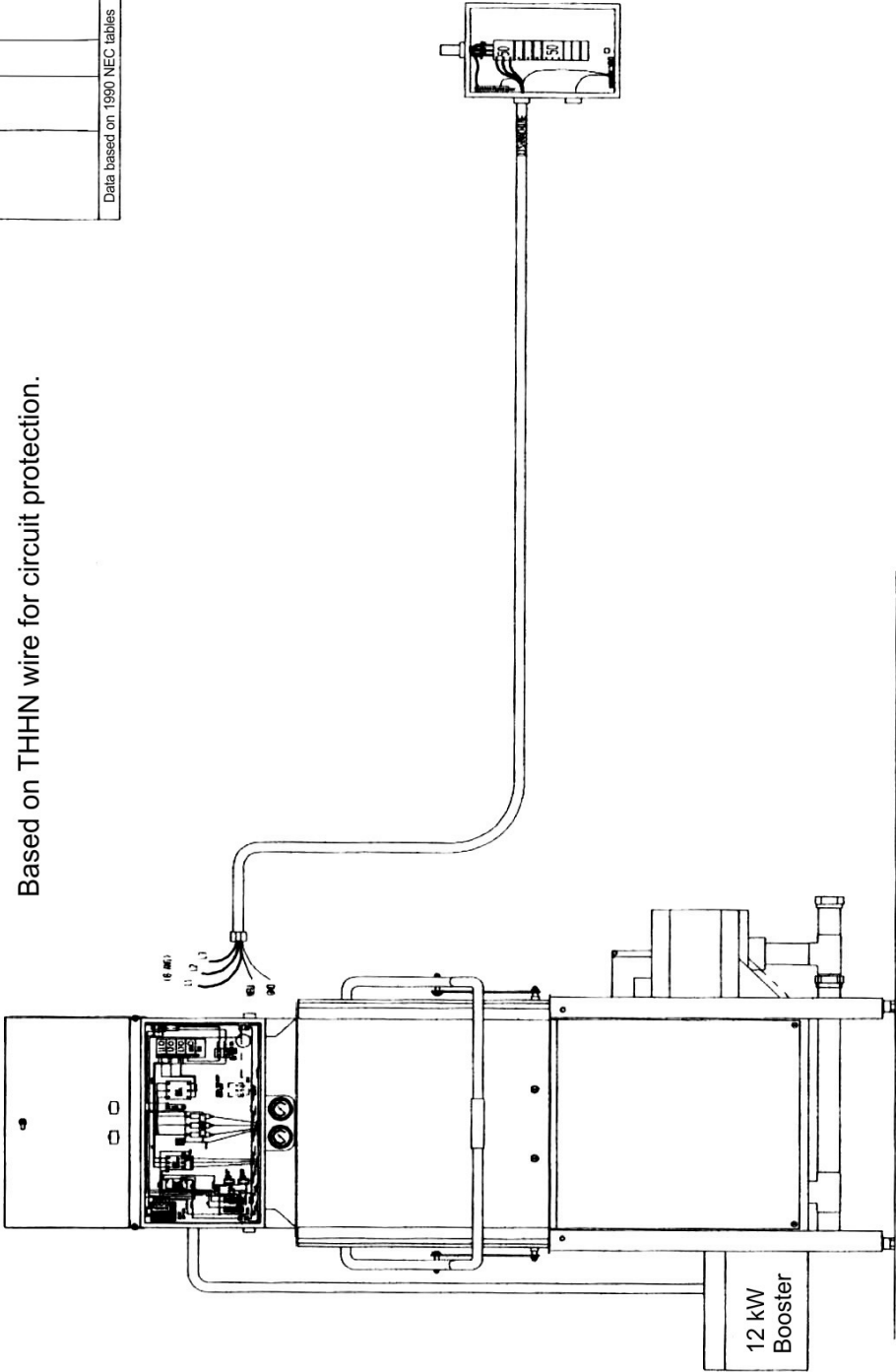
III Phase

COMMERCIAL DISHMACHINE w/BOOSTER

- 12 kW booster (inter-latched to reduce amp requirement)
- Model: HT-25, 208v/240v, 3ph
- 50 amp Cir. Brkr, 8 AWG copper wire
- (3) three wires for power supply
- (1) one wire for ground
- (1) one wire, 12 AWG wire for Neutral

1" conduit hole (1.375 DIA.)

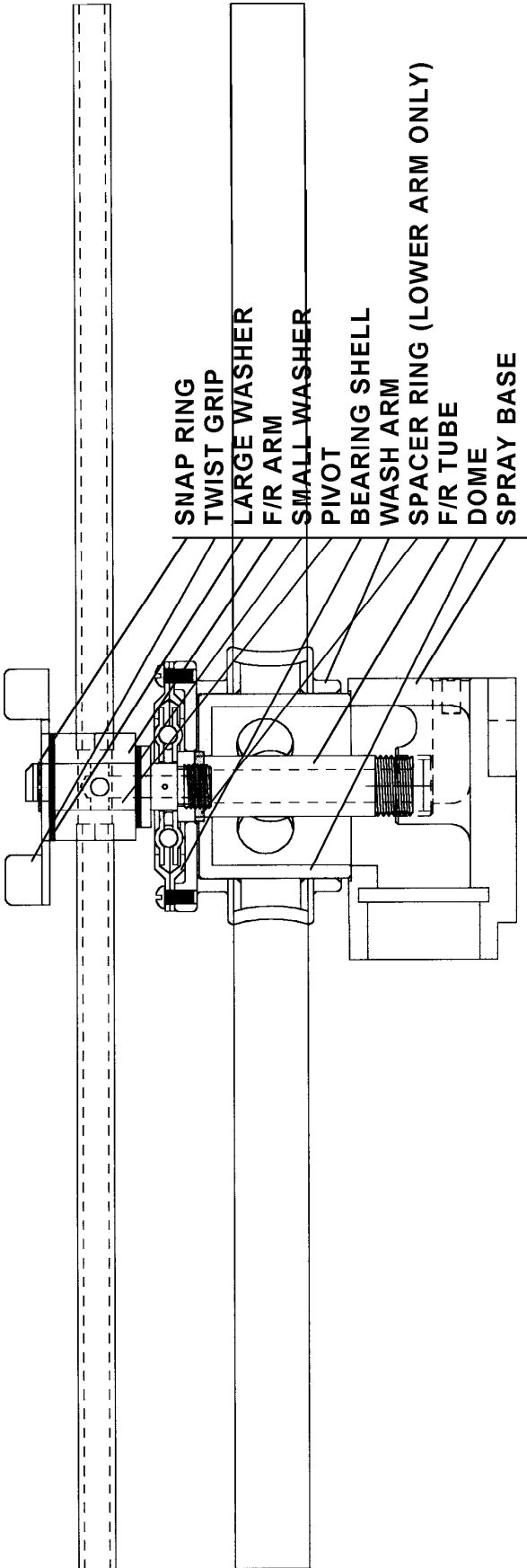
Based on THHN wire for circuit protection.



THREE PHASE DATA CHART					HT-25
ITEM	VOLTS	AMP	CIRBRK	WIRE	CONDUIT
WASH MTR	208	9	15amp	10AWG	1/2"
	240	8	15amp	10AWG	1/2"
WASH MTR (8kW)	208	29	40amp	8AWG	3/4"
	240	25	30amp	10AWG	1/2"
WASH MTR (12kW)	208	33	50amp	8AWG	3/4"
	240	29	40amp	8AWG	3/4"

Data based on 1990 NEC tables

HT-25 Update #1 (Rinse Arm Interchange) 6/18/97



ADS BULLETIN #022-44

CONVEYOR DISHMACHINES

Effective date 9/24/99

Subject: 3HP Wash Motor (#291-1002)—auxiliary shaft (#200-5040)

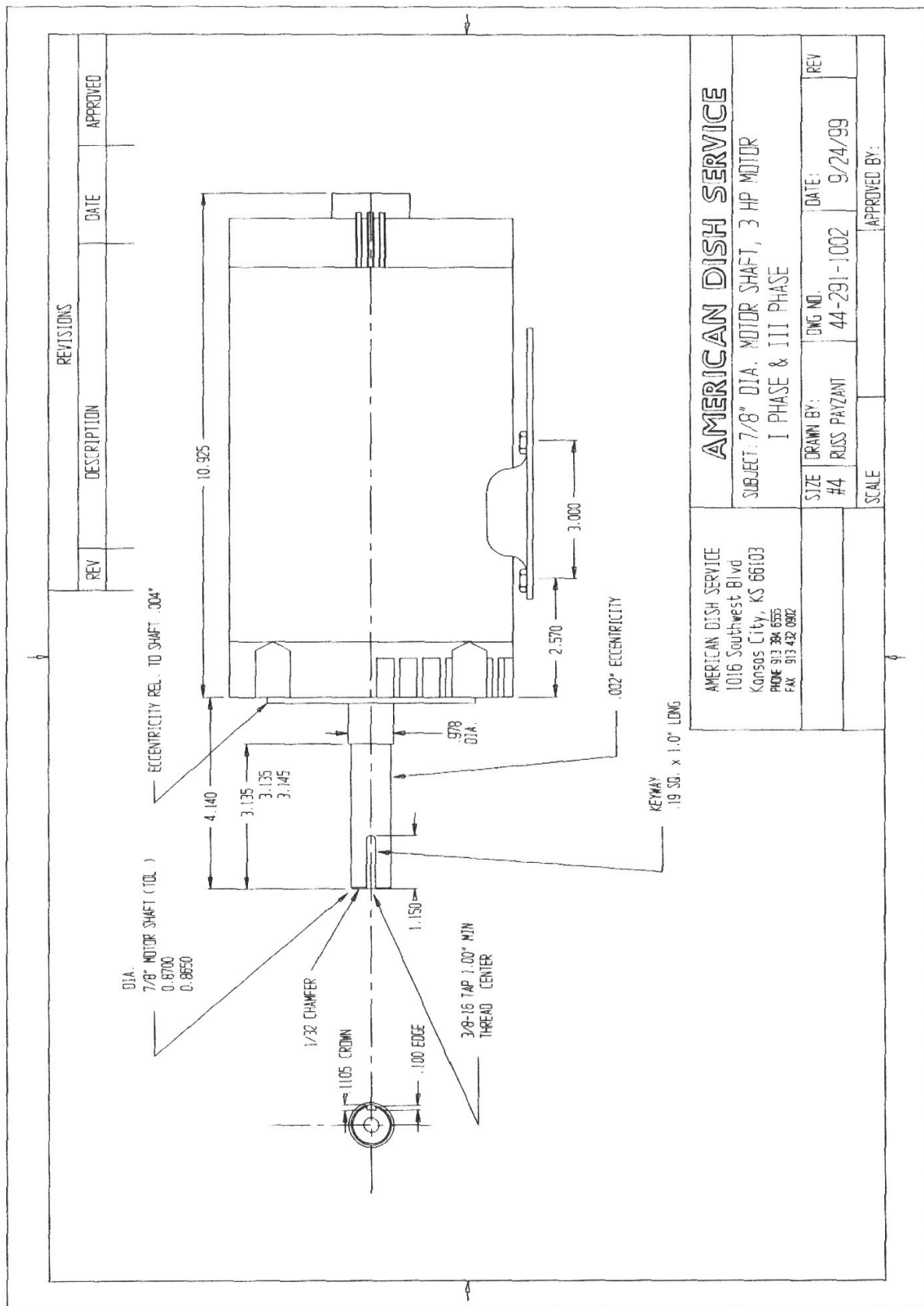
Action: Changed motor shaft to 7/8" dia. from original 5/8" dia., eliminated the auxiliary shaft, and added 1.5" dia. collars (#284-6203) for the existing seal. Motor part number remains the same as before.

Explanation: This 7/8 motor and collar sleeve are superseding parts for the 5/8 motor and auxiliary shaft, which are no longer used or sold. All replacement orders for motors will be filled with the 7/8" dia. motor and will include the 1.5" collar with "O" rings (#289-6618), installed on the shaft. (IMPORTANT: The original auxiliary shaft will not be offered for repair orders, only on condition that the customer assumes responsibility for motor failure.)

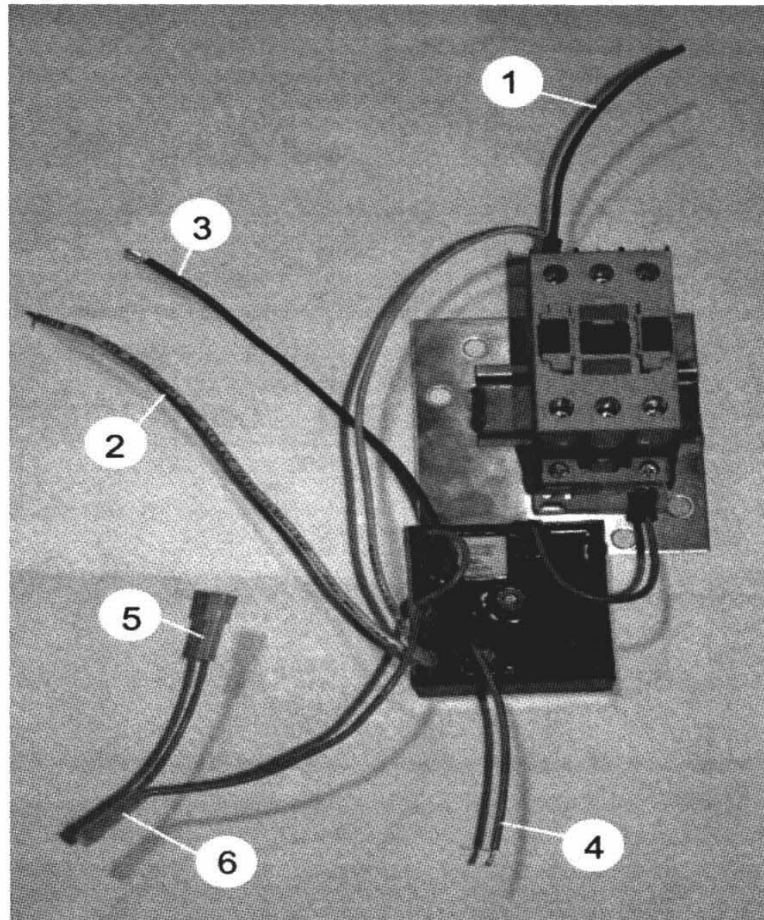
Instructions: Installation of the impeller is identical to prior procedures. The advantage of the new design is simplicity, instead of having to align two separate rotating shafts, only one shaft exists. This simplifies assemble and decreases the likelihood of misalignment. The collar sleeve is held in place by the impeller. The locking secure bolt (#098-1613) must be replaced each time it is used, do not reuse the secure bolt. This bolt holds the impeller in place, but only the key and keyway take up the rotational force on the impeller. Rotational alignment of the sleeve is more accurate than the former auxiliary shaft, and is accomplished by clearance and tolerance. The "O" rings act as a seal for the shaft.

NOTE: Formerly, it was considered that alignment for the 3 horsepower pump was so critical, no field service of the motor and auxiliary shaft would be performed. Auxiliary shafts were not sold for that reason. The manufacturer considered the motor and auxiliary shaft one integral part. All pinning and installation of the shaft was a factory procedure for liability reasons.

RLP



P/N 291-3006 has been superseded by 288-1070



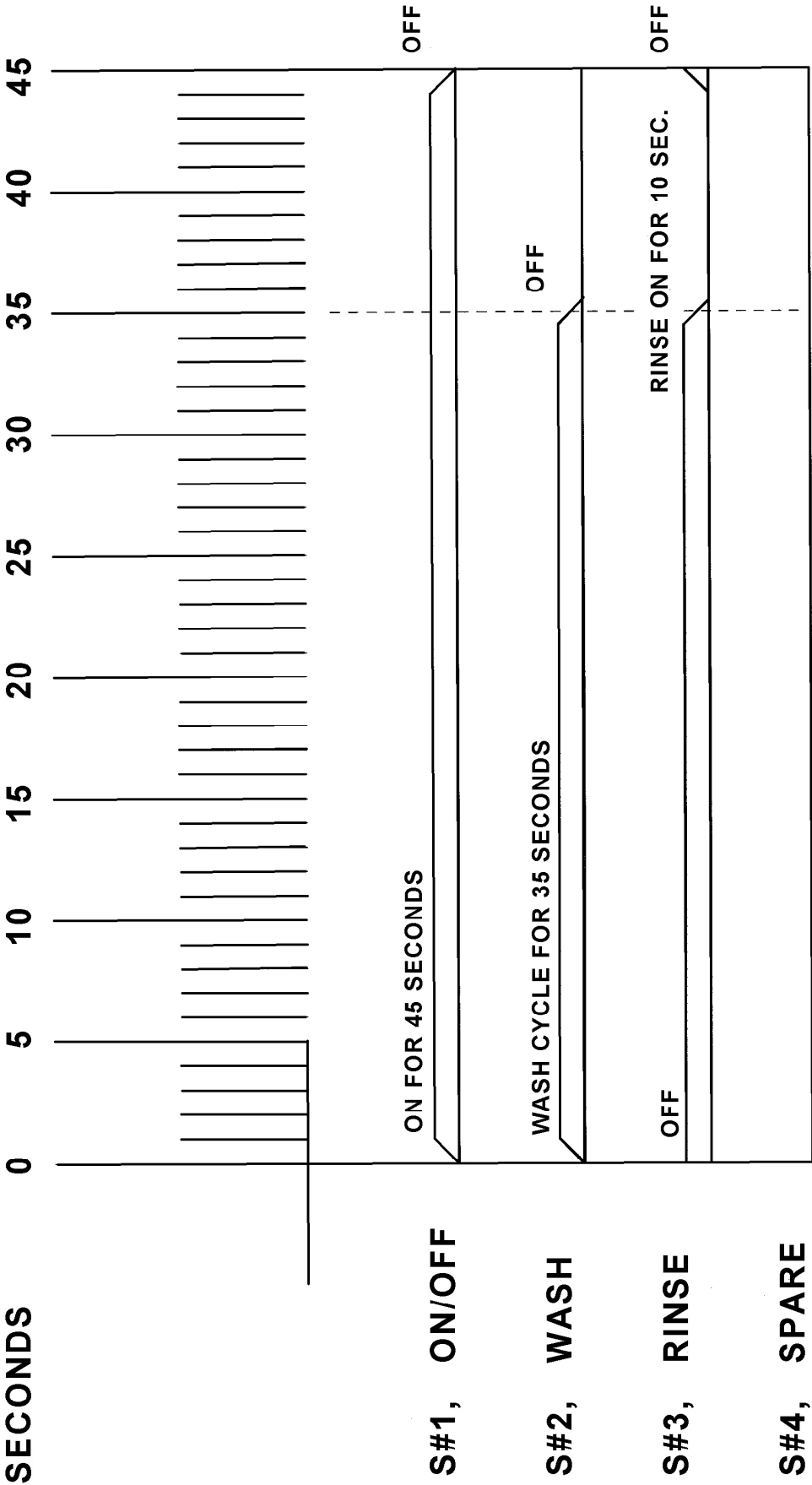
INSTALLATION INSTRUCTIONS: TO BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN

- #1 Shut-off power to the machine at main breaker panel. Then remove cover of Heater Relay power box.
- #2 Remove wires from existing wash heater relay, and remove relay from the power box.
- #3 Install new wash heater contactor kit using existing studs and locknuts.
- #4 Connect the two black wires #'s 1 and 3 to the two black wires on the indicator light using two of the butt connectors provided in the kit.
- #5 Connect the white wire #2 to the white wire coming from the rinse heater relay using another butt connector.
- #6 Connect the orange wire #4 to the orange wire coming from the thermostat with a butt connector.
- #7 Find the orange wire coming from the control box and going to the thermostat in the wash tank. Separate it at the molex connector and plug connector #'s 5 and 6 into the appropriate male and female connectors.
- #8 Re-connect the three incoming power lines to terminals L1, L2, and L3 on the top of the contactor.
- #9 Re-connect the three heater power supply lines to terminals T1, T2, and T3 on the bottom of the contactor.
- #10 Verify that all connections in the heater wiring circuit are secure and tight.
- #11 Turn main power supply on at the main breaker box and check for proper heater operation. Replace cover of the heater relay power box.

NOTE: To dispose of the mercury relay, package the relay for shipment and contact American Dish Service for a return shipment call tag (800)-922-2178.

Booster Heater Specifications									
Model	KW	40F Rise	70F Rise	Ship. Wt.	ADS Stock	Amp/208/3ph	Amp/208/1ph	Amp/240/3ph	Amp/240/1ph
C-6	6 kW	60 gph	34 gph	118 lbs.	stock	40a, 8AWG	40a, 8AWG	30a, 10AWG	40a, 8AWG
C-12	12 kW	120 gph	69 gph	120 lbs.	stock	50a, 8AWG	90a, 3AWG	40a, 8AWG	70a, 4AWG
C-15	15 kW	151 gph	86 gph	120 lbs.	stock	60a, 6AWG	90a, 3AWG	50a, 3AWG	90a, 3AWG
C-24	24 kW	241 gph	138 gph	142 lbs.	stock	100a, 3AWG	150a, 1/0	90a, 3AWG	125a, 1AWG
C-27	27 kW	271 gph	155 gph	142 lbs.	stock	100a, 3AWG	175a, 2/0	90a, 3AWG	150a, 1/0
C4 - C18	21" long	21" tall	13" wide						
C24 & up	24" long	18" tall	18" wide						
All tanks	6 Gallons								
Volt avail.	208v, I & III	240v, I & III	480v, III						
B-13	13.5	80	40		ADS built	40a, 8AWG	Not available	40a, 8AWG	Not available
2 gal tank									

HT-25 TIMER CYCLE TIMES



NOTES:

American Dish Service

*Manufacturer of low and high temperature
Commercial Dishwashers and Glasswashers*

900 Blake Street
Edwardsville, Kansas 66111
Ph:(913) 422-3700
Fax:(913) 422-6630