Jackson®
Warewashing Systems

# INSTALLATION, OPERATION, AND SERVICE MANUAL

DYNASTAR®

## DYNASTAR SERIES DOOR-TYPE DISHMACHINES

DynaStar Manual • 07610-004-66-53-G

**MANUFACTURER'S LIMITED WARRANTY**
**(APPLICABLE ONLY IN THE UNITED STATES AND CANADA)**

## WARRANTY REGISTRATION:

To register your Jackson Dishmachine's warranty go to **jacksonwws.com/warranty** or call 1-888-800-5672. Failure to register the Dishmachine will void the warranty.

## ONE YEAR LIMITED PARTS AND LABOR WARRANTY

For a period of one (1) year from date of original installation of a new Jackson Dishmachine (but in no event to exceed eighteen (18) months from date of shipment from Jackson's factory), Jackson WWS, Inc. (Jackson) will repair or replace, at its discretion, any original part that proves defective in materials or workmanship at the time the Dishmachine was purchased; provided that (i) the Dishmachine has not been altered, (ii) the Dishmachine has been properly installed, maintained, and operated under normal use conditions and in accordance with the applicable installation, operation and service manual available on the Jackson website, and (iii) a warranty claim is reported to a Jackson Authorized Service Agency within the warranty period. This warranty includes replacement with Jackson specified genuine replacement parts, purchased directly from a Jackson Authorized Parts Distributor or Service Agency. Use of generic replacement parts may create a hazard and shall void this warranty.

**THIS WARRANTY DOES NOT APPLY OUTSIDE THE UNITED STATES AND CANADA.**

Jackson will pay the labor to repair or replace a defective original part as a part of the warranty, provided that a Jackson Authorized Service Agency performs the labor. Any repair or replacement work by anyone other than a Jackson Authorized Service Agency is the sole responsibility of the purchaser. Labor coverage is limited to regular hourly rates; Jackson will not pay overtime premiums or emergency service charges.
Accessory components (such as table limit switches, pressure regulators, and drain water tempering kits) that are not installed by Jackson at the factory and are shipped with the Dishmachine carry only a (1) one-year parts warranty. Labor to repair or replace these components is not included in the warranty or covered by Jackson. Booster heaters not manufactured by Jackson are not covered by this warranty but are warranted by their respective manufacturers.
This warranty is void if any defect or failure is a direct result from shipping, handling, fire, water, accident, alteration, modification, misuse, abuse, flood, acts of God, burglary, casualty, attempted repair by unauthorized persons, use of replacement parts not authorized by Jackson, improper installation, installation not in accordance with local electrical and plumbing codes, if the serial number has been removed or altered, if the Dishmachine is used for any purpose other than originally intended, or if the equipment is installed for residential use.
Jackson does not authorize any other entity or person, including, without limitation, any entity or person who deals in Jackson Dishmachines, to change this warranty or create any other obligation in connection with Jackson Dishmachines.

## TRAVEL LIMITATIONS:

Jackson limits warranty travel time to the customer site within 50 miles of the Jackson authorized service agent's office and during regular business hours. Jackson will not pay for travel time and mileage that exceeds these limits, or any fees such as those for air or boat travel without prior authorization.

## REPLACEMENT PARTS WARRANTY:

For a period of (90) ninety days from the date of installation by a Jackson Authorized Service Agency (but in no event to exceed (180) one-hundred-eighty days from the date of purchase from a Jackson Authorized Parts Distributor or Service Agency), Jackson will repair or replace, at its discretion, any Jackson genuine replacement parts that prove defective in materials or workmanship at the time the replacement parts were installed. This warranty does not include paying the labor to repair or replace the replacement part. This warranty is subject to all conditions, exclusions and limitations applicable to the Dishmachine.

**MANUFACTURER'S LIMITED WARRANTY (CONT.)**
**(APPLICABLE ONLY IN THE UNITED STATES AND CANADA)**

**PRODUCT CHANGES:**

Jackson reserves the right to make changes in design and specification of any component of the Dishmachine as engineering or necessity requires.

**DISCLAIMER OF WARRANTIES:**

**THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF.**

**LIMITATION OF REMEDIES AND LIABILITIES:**

**YOUR SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR OR REPLACEMENT AS PROVIDED HEREIN.**

**UNDER NO CIRCUMSTANCES WILL JACKSON BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THE NATURE OF PENALTIES. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.**

**ITEMS NOT COVERED:**

THIS WARRANTY DOES NOT COVER (1) ADJUSTMENTS INCLUDING, BUT NOT LIMITED TO, TIMER CAMS, THERMOSTATS, DOORS, TANK HEATER ADJUSTMENTS OR CLUTCHES; (2) AIR FREIGHT OR OVERNIGHT FREIGHT; (3) ANY AMOUNT EXCEEDING ORIGINAL PURCHASE PRICE; (4) CLEANING OF DRAIN VALVES, GAS LINES, RINSE/WASH NOZZLES, STRAINERS, SCREENS, OR SPRAY PIPES; (5) CLEANING OR DELIMING OF THE DISHMACHINE OR ANY COMPONENT INCLUDING, BUT NOT LIMITED TO, WASH ARMS, RINSE ARMS AND STRAINERS; (6) CONDITIONS CAUSED BY THE USE OF INCORRECT (NON-COMMERCIAL) GRADE DETERGENTS; (7) CORROSION FROM CHEMICALS DISPENSED IN EXCESS OF RECOMMENDED CONCENTRATIONS; (8) COSMETIC DAMAGE, INCLUDING BUT NOT LIMITED TO, SCRATCHES, DENTS, CHIPS, AND OTHER DAMAGE TO THE DISHMACHINE FINISHES, UNLESS SUCH DAMAGE RESULTS FROM DEFECTS IN MATERIALS AND WORKMANSHIP AND IS REPORTED TO JACKSON WITHIN (30) THIRTY DAYS FROM THE DATE OF INSTALLATION; (9) DAMAGE CAUSED BY LABOR DISPUTE; (10) DAMAGES RESULTING FROM IMPROPER CONNECTION TO UTILITY SERVICE; (11) DAMAGES RESULTING FROM WATER CONDITIONS, INADEQUATE OR EXCESSIVE WATER PRESSURE, ACCIDENTS, ALTERATIONS, IMPROPER USE, ABUSE, HANDLING, OVERLOADS, TAMPERING, IMPROPER INSTALLATION OR FAILURE TO FOLLOW MAINTENANCE AND OPERATING PROCEDURES; (12) DISCOLORATION, RUST OR OXIDATION OF SURFACES RESULTING FROM CAUSTIC OR CORROSIVE ENVIRONMENTS, INCLUDING, BUT NOT LIMITED TO, HIGH SALT CONCENTRATIONS, HIGH MOISTURE OR HUMIDITY, OR EXPOSURE TO CHEMICALS; (13) ELECTRIC BOOSTERS, FEED LINES, FLEX HOSE, FUSES, GARBAGE DISPOSALS, OR GAS PILOTS; (14) EXCESSIVE LIME, MINERAL, OR ALKALINE BUILDUP; (15) EXPENSES DUE TO DISCONNECTION, DELIVERY, RETURN AND REINSTALLATION; (16) FAILURE OF ELECTRICAL COMPONENTS DUE TO CONNECTION OF CHEMICAL DISPENSING EQUIPMENT INSTALLED BY OTHERS; (17) FAILURE OF FACILITY WATER HEATER TO MAKE TEMPERATURE; (18) FAILURE TO MAINTAIN WATER HARDNESS LOWER THAN 3.0 GRAINS, PH BETWEEN 7.0 AND 8.5 AND TOTAL DISSOLVED SOLIDS BELOW 250 PPM; (19) FAILURE TO COMPLY WITH LOCAL ELECTRICAL BUILDING CODES; (20) LEAKS OR DAMAGE RESULTING FROM SUCH LEAKS CAUSED BY THE INSTALLER, INCLUDING THOSE AT MACHINE TABLE CONNECTIONS, OR BY CONNECTION OF CHEMICAL DISPENSING EQUIPMENT INSTALLED BY OTHERS; (21) OPENING OR CLOSING OF UTILITY SUPPLY VALVES OR SWITCHING OF ELECTRICAL SUPPLY CURRENT; (22) PERFORMANCE OF REGULAR MAINTENANCE AND CLEANING AS OUTLINED IN THE OPERATOR'S GUIDE; (23) REMOVAL OR REINSTALLATION OF INACCESSIBLE DISHMACHINES OR BUILT-IN FIXTURES THAT INTERFERE WITH SERVICING, REMOVAL OR REPLACEMENT OF THE DISHMACHINE; (24) REPLACEMENT WEAR ITEMS INCLUDING, BUT NOT LIMITED TO, CURTAINS, DRAIN BALLS, DOOR GUIDES, GASKETS, O-RINGS, SEALS, SQUEEZE TUBES, AND BEARINGS; (25) RESIDENTIAL USE; (26) USE WITH UTILITY SERVICE OTHER THAN THAT DESIGNATED ON THE RATING PLATE.

# REVISION HISTORY

| Revision | Date | Made by | Process | Details |
|---|---|---|---|---|
| A | 4-9-19 | JH | 8681 | Initial release of the manual. |
| B | 11-26-19 | JH | 8693<br>8700 | Added 460 V, NB, and VER models. Added flow pressure range for pumped rinse model. Revised F6 in Fault Codes section. Changed table turndown to 1" ± 1/4". Updated schematics. |
| C | 10-27-20 | JH | 8720<br>8724 | Updated VER system. Added 12 kW rinse heater. Removed Exhaust Fan Timer section. Revised flow pressure range for pumped rinse model. Updated Control Box section. Added F12 in Fault Codes section. Updated P/N of item #19 on pgs. 42 and 46. Updated schematics. |
| D | 1-12-21 | JH | N/A | Added instructions for selecting Turbo rinse option. Revised Deliming instructions. Updated schematics. |
| E | 1-19-22 | JH | 8718 | Added HH-E models to the manual. |
| F | 4-29-22 | JH | 22-1085<br>22-1107 | Added Smart Vent section. Switched program numbers for DynaStar and VER on pg. 22. Added Incoming Water Temperature Check and Firmware Version Check to Programming section. Added F18, F19, and F20 fault codes. Changed I/O module P/N. Added wash arm end-cap o-ring. |
| G | 7-28-23 | JH | 23-1952 | Added links in Control Panel sections to earlier manual with P/Ns of I/O modules for machines before 22D405278. Updated plumbing sections. Added P/N for manifold bracket on HH-E plumbing. Added panels for HH-E. Added rear rack guide. Corrected VER coil P/N. Updated schematics. |

Jackson®
Warewashing Systems

## DynaStar®
**Door-type machine; electrically-heated, high-temp, hot-water sanitizing, with booster heater.**

## DynaStar® NB
**Door-type machine; electrically-heated, high-temp, hot-water sanitizing, without booster heater.**

## DynaStar® VER
**Door-type machine; electrically-heated, high-temp, hot-water sanitizing, with booster heater and VER heat recovery system.**

## DynaStar® HH-E
**High-hood door-type machine; electrically-heated, high-temp, hot-water sanitizing, with booster heater.**

## DynaStar® HH-E NB
**High-hood door-type machine; electrically-heated, high-temp, hot-water sanitizing, without booster heater.**

## DynaStar® HH-E VER
**High-hood door-type machine; electrically-heated, high-temp, hot-water sanitizing, with booster heater and VER heat recovery system.**

**The manufacturer provides technical support for all of the machines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual open when you call so that our staff can refer you, if necessary, to the proper page.**
**Technical support is not available on holidays.**

**Contact technical support toll free at 1-888-800-5672.**

**Technical support is available for service personnel only.**

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# TABLE OF CONTENTS

## SYMBOLS

- Risk of Injury to Personnel

- Risk of Damage to Equipment


- Risk of Electrical Shock


- Caustic Chemicals


- Reference Data Plate


- Lockout Electrical Power

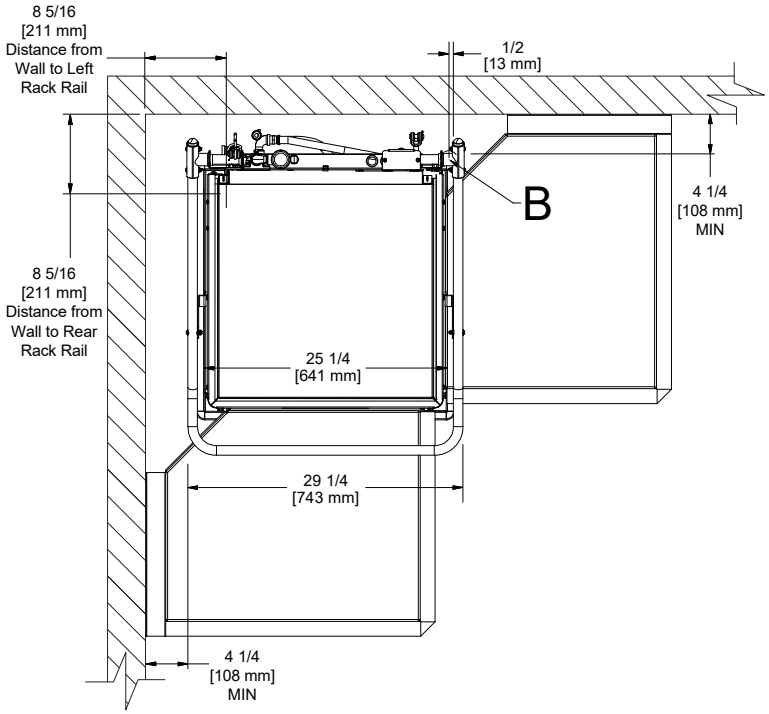
***NOTICE*** - Important Note


- Instructions Hyperlink

## ABBREVIATIONS & ACRONYMS

**ANSI** - American National Standards Institute
**Btu/Hr** - British Thermal Units per Hour
**CFM** - Cubic Feet per Minute
**GHT** - Garden Hose Thread
**GPH** - Gallons per Hour
**GPM** - Gallons per Minute
**GPG** - Grains per Gallon
**HP** - Horsepower
**Hz** - Hertz
**ID** - Inside Diameter
**kW** - Kilowatts
**LLC** - Liquid Level Controller
**MCA** - Minimum Circuit Ampacity
**MIN** - Minimum
**MOP** - Maximum Overcurrent Protection
**NFPA** - National Fire Protection Association
**NPT** - National Pipe Thread
**OD** - Outside Diameter
**PRV** - Pressure Regulating Valve
**PSI** - Pounds per Square Inch
**V** - Volts

# DYNASTAR/NB DIMENSIONS




LEGEND

A - Drain Connection (1 1/2” NPT)

B - Water Inlet (1/2” male NPT)
(Connect to true 1/2" ID line or larger)

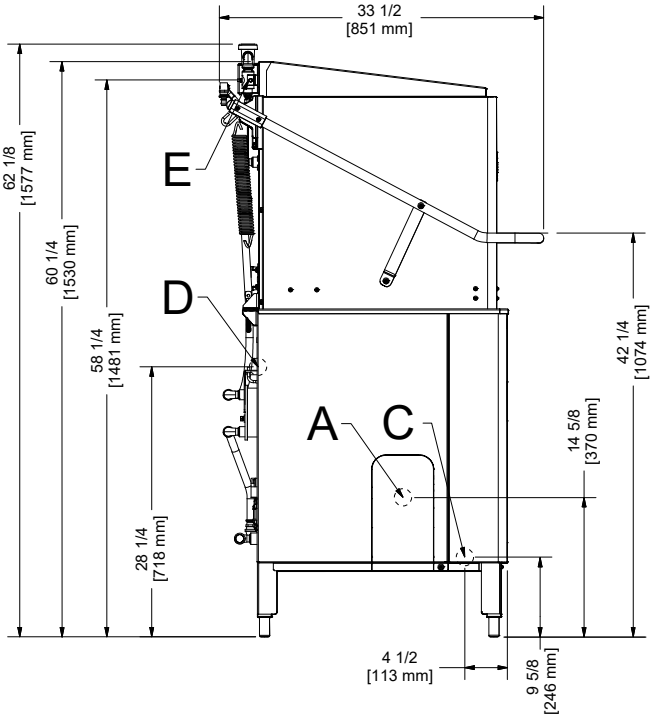
C - Electrical Connection

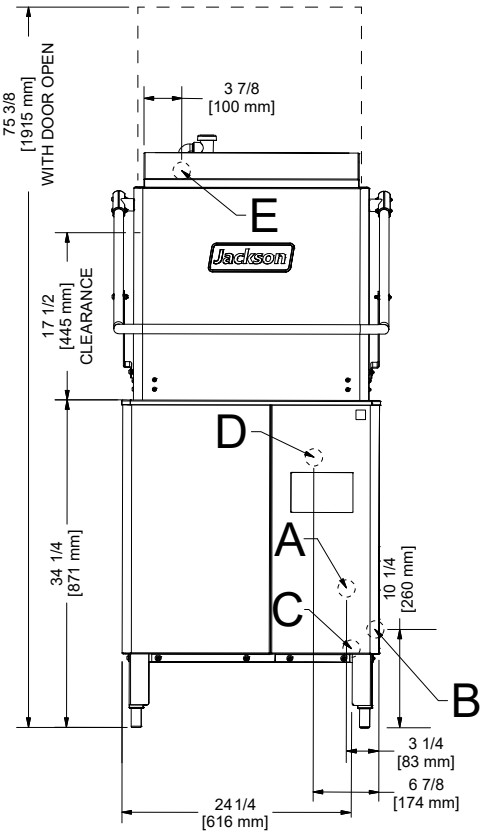
D - Detergent Connection

E - Rinse-aid Connection

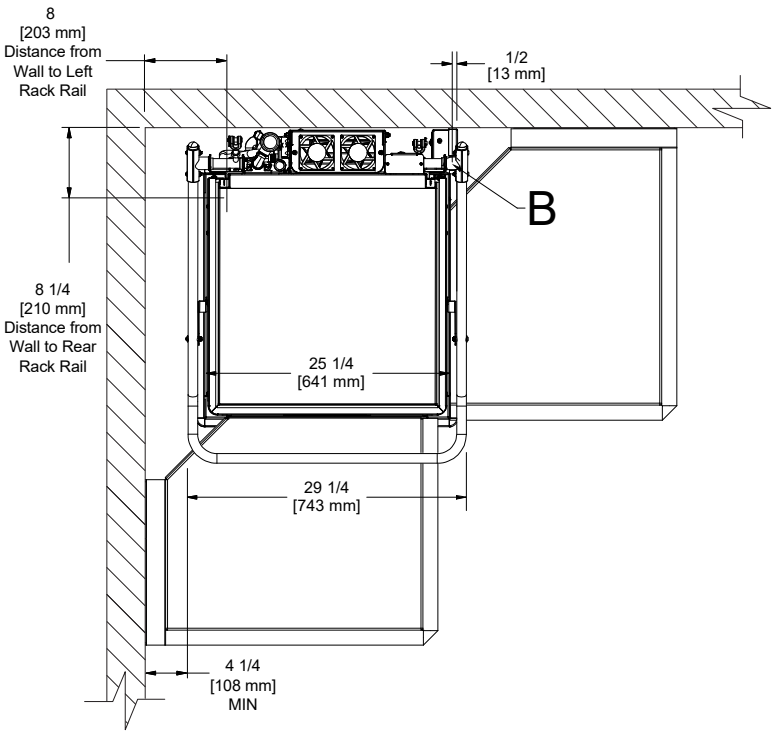
*All dimensions from floor can be increased 1 1/8” using the machine’s adjustable feet.*

*Dish tables are stationary, so the machine must be moved until rack rails line-up properly. As a result, distances from wall to rack rails might vary.*



# DYNASTAR VER DIMENSIONS

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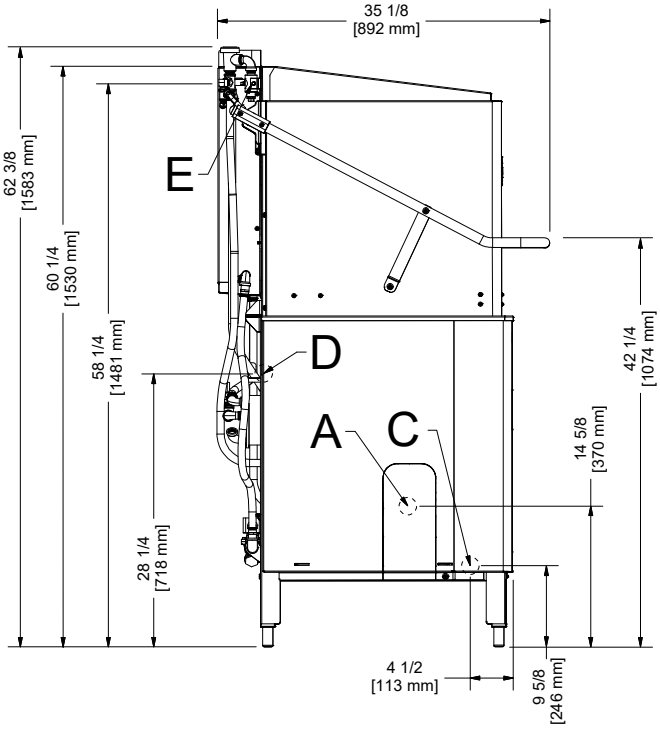
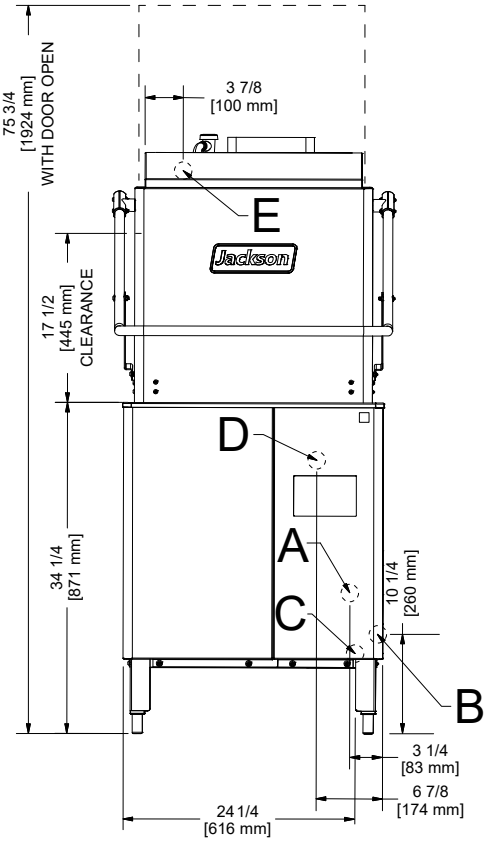
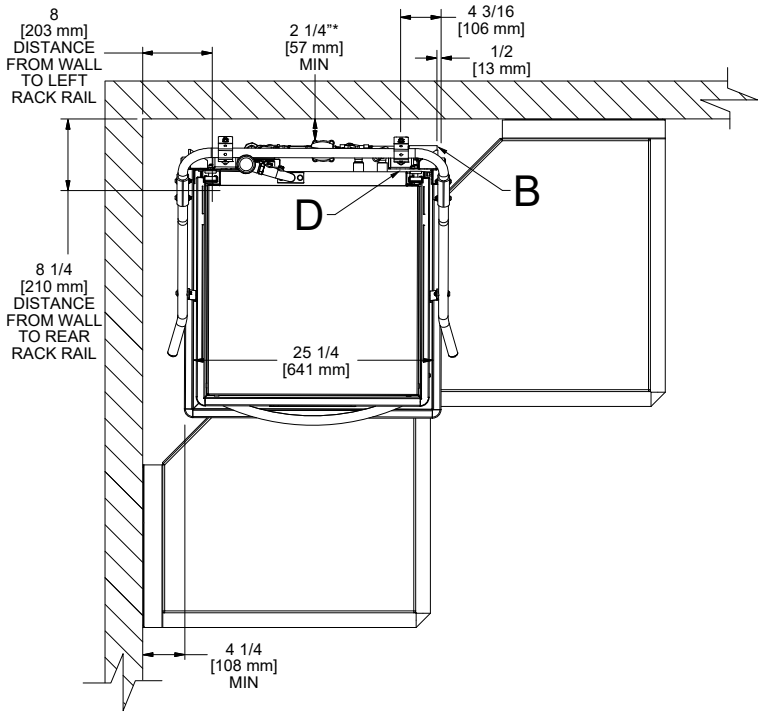


# HH-E/NB DIMENSIONS

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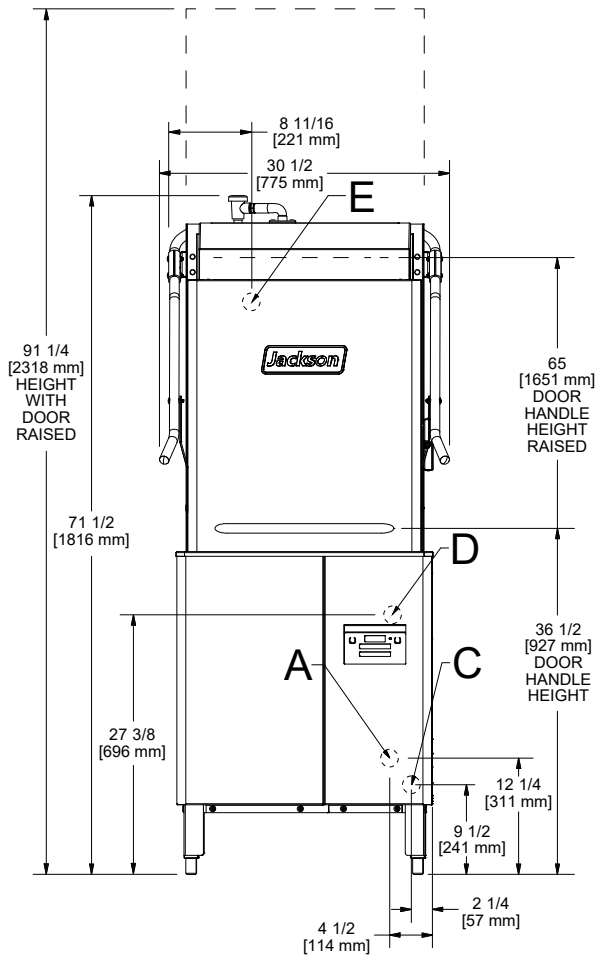
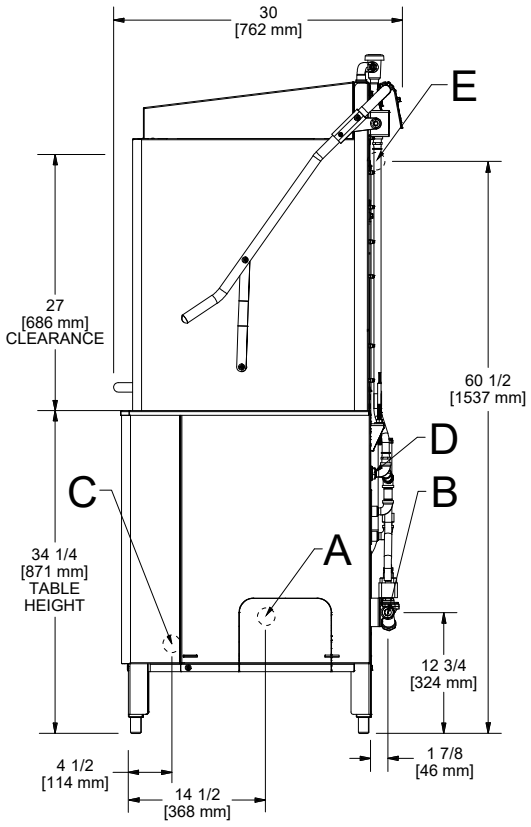
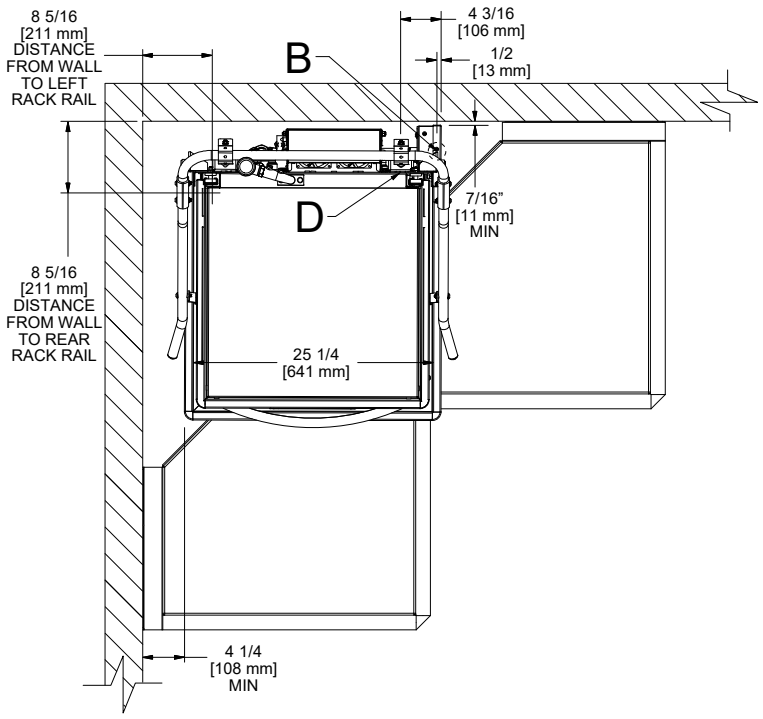
**Back wall clearance 7/16” if optional door interlock is used.*



# HH-E VER DIMENSIONS

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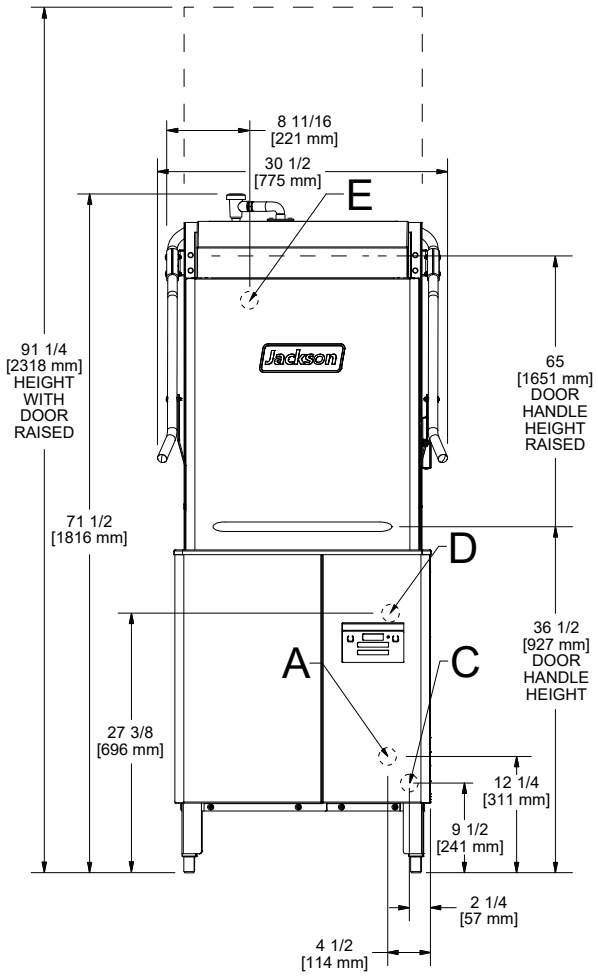
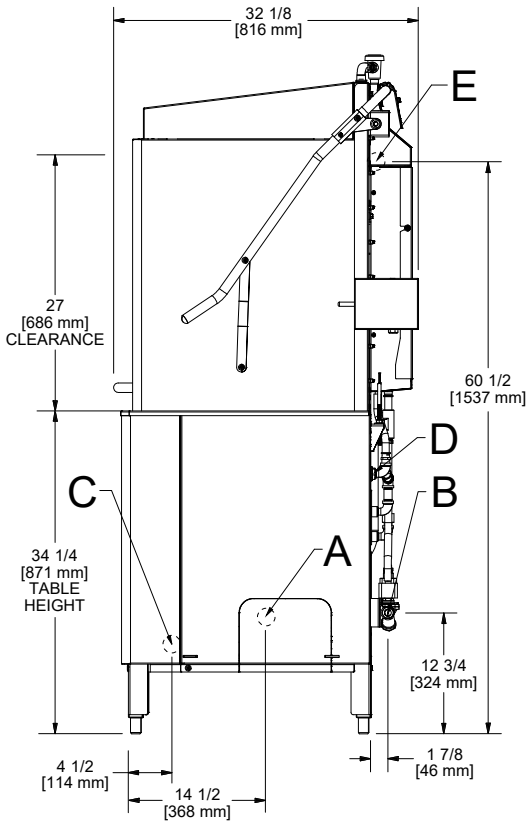


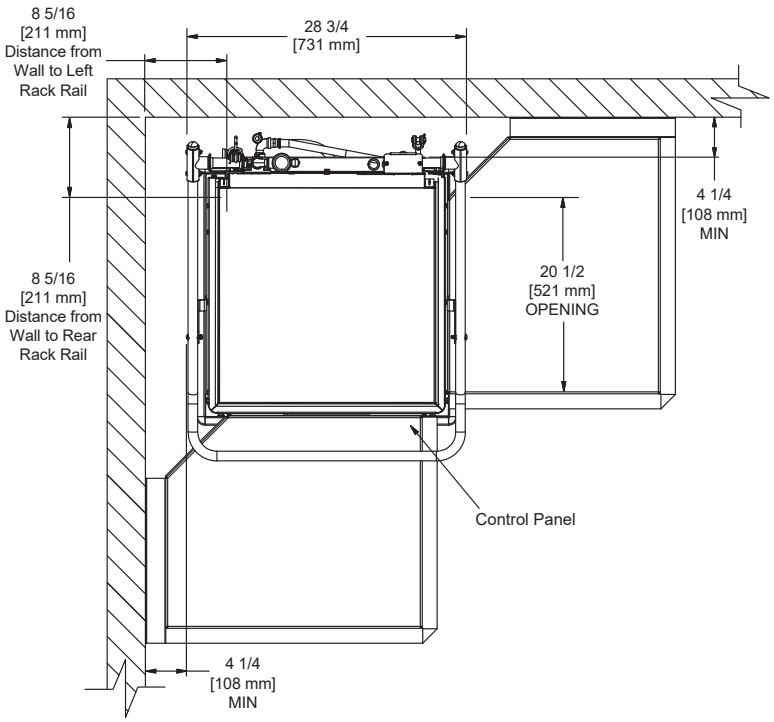
## CORNER INSTALLATION

**DynaStar**
False Panel Option
05700-004-67-60

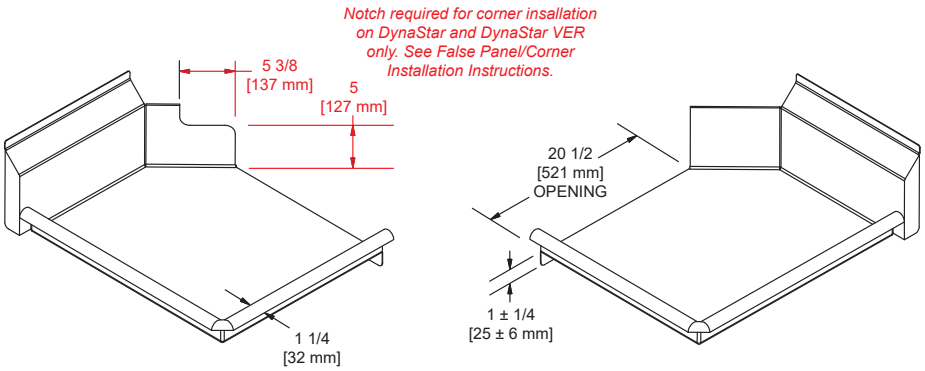
False Panel/Corner
Installation Instructions

**HH-E**
False Panel Option
06401-004-89-11

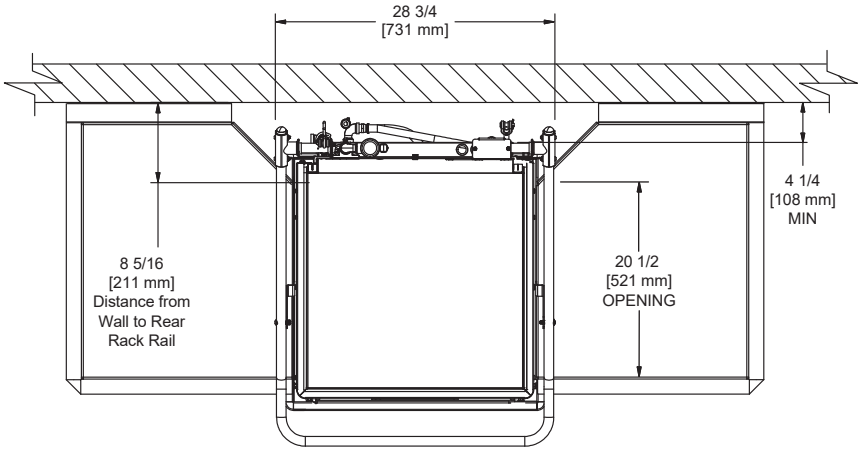
False Panel/Corner
Installation Instructions




*DynaStar shown.*




## STRAIGHT-THROUGH INSTALLATION



## PERFORMANCE/CAPABILITIES

### Operating Capacity:

**DynaStar/NB/HH-E/HH-E NB**

| | |
|---|---|
| Racks per Hour without Load Time | 62 |
| Racks per Hour with Load Time | 57 |
| Dishes per Hour without Load Time | 1550 |
| Dishes per Hour with Load Time | 1425 |
| Glasses per Hour without Load Time | 2232 |
| Glasses per Hour with Load Time | 2052 |

**DynaStar VER/HH-E-VER**

| | |
|---|---|
| Racks per Hour without Load Time | 40 |
| Racks per Hour with Load Time | 38 |
| Dishes per Hour without Load Time | 1000 |
| Dishes per Hour with Load Time | 950 |
| Glasses per Hour without Load Time | 1440 |
| Glasses per Hour with Load Time | 1368 |

### Minimum Operating Cycle (seconds):

| | |
|---|---|
| Cycle 1 Wash Time | 40 |
| Cycle 2 Wash Time | 90 |
| Cycle 3 Wash Time | 220 |
| Rinse Time (Econo) | 11 |
| Rinse Time (Turbo Option) | 14 |
| Dwell Time | 7 |
| Cycle 1 Total Time | 58 |
| Cycle 2 Total Time | 108 |
| Cycle 3 Total Time | 238 |
| VER Condensate Removal | 30* |

### Tank Capacity (gallons/liters):

| | |
|---|---|
| Wash Tank | 8.0/30.3 |
| Rinse Tank | 1.66/6.3 |

**With Smart Vent off. See **Smart Vent** section.*

## WATER REQUIREMENTS

**DynaStar/HH-E**

| | |
|---|---|
| Wash Temperature (Minimum) | 150 °F/66 °C |
| Rinse Temperature (Minimum) | 180 °F/83 °C |
| Inlet Water Temperature | 110 °F/44 °C |
| Flow Pressure (PSI) | 15–65 |
| Water Line Size (NPT) | 1/2” |
| Drain Line Size (NPT) | 1 1/2” |

**DynaStar NB/HH-E NB**

| | |
|---|---|
| Wash Temperature (Minimum) | 150 °F/66 °C |
| Rinse Temperature (Minimum) | 180 °F/83 °C |
| Inlet Water Temperature | 180 °F/83 °C |
| Flow Pressure (PSI) | 10 ± 2 |
| Water Line Size (NPT) | 1/2” |
| Drain Line Size (NPT) | 1 1/2” |

**DynaStar VER/HH-E VER**

| | |
|---|---|
| Wash Temperature (Minimum) | 150 °F/66 °C |
| Rinse Temperature (Minimum) | 180 °F/83 °C |
| Inlet Water Temperature | 40–90 °F/4.4–32.2 °C |
| Flow Pressure (PSI) | 15–65 |
| Water Line Size (NPT) | 1/2” |
| Drain Line Size (NPT) | 1 1/2” |

## ENERGY SPECIFICATIONS

**DynaStar VER/HH-E VER**

| | |
|---|---|
| Latent Heat | 6047 Btu/Hr |
| Sensible Heat | 5834 Btu/Hr |

## ELECTRICAL LOADS

| | |
|---|---|
| Wash Motor HP (208/230 V) | 1 |
| Wash Motor HP (460 V) | 3/4 |
| Wash Motor HP (HH-E 208/230 V) | 2 |
| Wash Motor HP (HH-E 460 V) | 2 |
| Wash Heater kW (208 V) | 4.1 |
| Wash Heater kW (230 V) | 5.2 |
| Wash Heater kW (460 V) | 5.0 |
| Rinse Heater kW (208 V) | 9.0 |
| Rinse Heater kW (230 V) | 11.2 |
| Rinse Heater kW (460 V) | 9.2 |

**NOTICE** *Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may change without notice.*

# ELECTRICAL REQUIREMENTS

*Local codes may require more stringent protection than what is displayed here. Always verify with your electrical service contractor that your circuit protection is adequate and meets all applicable national and local codes. Numbers in this manual are for reference and may change without notice.*

**NOTICE**

*On three-phase machines, imbalanced wild leg goes to L3.*
*Also see the Motor Rotation section.*

**DynaStar & DynaStar VER**

| Volts | Phase | Freq | Wash Motor | Wash Heater | Rinse Motor | Rinse Heater | Total Load | MCA | MOP |
|---|---|---|---|---|---|---|---|---|---|
| 208 | 1 | 60 Hz | 5.0 A | 19.7 A | 0.8 A | 43.3 A | 68.8 A | 70.1 A | 75 A |
| 230 | 1 | 60 Hz | 5.0 A | 21.8 A | 0.8 A | 47.9 A | 75.5 A | 76.7 A | 80 A |
| 208 | 3 | 60 Hz | 5.0 A | 11.4 A | 0.8 A | 25.0 A | 42.2 A | 43.4 A | 45 A |
| 230 | 3 | 60 Hz | 5.0 A | 12.6 A | 0.8 A | 27.7 A | 46.0 A | 47.3 A | 50 A |
| 460 | 3 | 60 Hz | 1.2 A | 6.3 A | 0.8 A | 11.5 A | 19.8 A | 20.2 A | 25 A |

**DynaStar NB**

| Volts | Phase | Freq | Wash Motor | Wash Heater | Rinse Heater | Total Load | MCA | MOP |
|---|---|---|---|---|---|---|---|---|
| 208 | 1 | 60 Hz | 5.0 A | 19.7 A | N/A | 24.7 A | 25.9 A | 30 A |
| 230 | 1 | 60 Hz | 5.0 A | 21.8 A | N/A | 26.8 A | 28.0 A | 30 A |
| 208 | 3 | 60 Hz | 5.0 A | 11.4 A | N/A | 16.4 A | 17.6 A | 20 A |
| 230 | 3 | 60 Hz | 5.0 A | 12.6 A | N/A | 17.6 A | 18.8 A | 20 A |
| 460 | 3 | 60 Hz | 1.8 A | 6.3 A | N/A | 7.5 A | 7.8 A | 15 A |

**HH-E & HH-E VER**

| Volts | Phase | Freq | Wash Motor | Wash Heater | Rinse Motor | Rinse Heater | Total Load | MCA | MOP |
|---|---|---|---|---|---|---|---|---|---|
| 208 | 1 | 60 Hz | 12.1 A | 19.7 A | 0.8 A | 43.3 A | 75.9 A | 78.9 A | 90 A |
| 230 | 1 | 60 Hz | 10.9 A | 22.7 A | 0.8 A | 48.6 A | 83.0 A | 85.8 A | 90 A |
| 208 | 3 | 60 Hz | 12.1 A | 11.4 A | 0.8 A | 25.0 A | 49.3 A | 52.3 A | 60 A |
| 230 | 3 | 60 Hz | 10.9 A | 13.1 A | 0.8 A | 28.1 A | 52.9 A | 55.6 A | 60 A |
| 460 | 3 | 60 Hz | 2.8 A | 6.3 A | 0.8 A | 11.5 A | 21.4 A | 22.1 A | 25 A |

**HH-E NB**

| Volts | Phase | Freq | Wash Motor | Wash Heater | Rinse Heater | Total Load | MCA | MOP |
|---|---|---|---|---|---|---|---|---|
| 208 | 1 | 60 Hz | 12.1 A | 19.7 A | N/A | 31.8 A | 34.8 A | 45 A |
| 230 | 1 | 60 Hz | 10.9 A | 21.8 A | N/A | 33.6 A | 36.3 A | 45 A |
| 208 | 3 | 60 Hz | 12.1 A | 11.4 A | N/A | 23.5 A | 26.5 A | 35 A |
| 230 | 3 | 60 Hz | 10.9 A | 13.1 A | N/A | 24.0 A | 26.7 A | 35 A |
| 460 | 3 | 60 Hz | 2.8 A | 6.3 A | N/A | 9.1 A | 9.8 A | 15 A |

## INSPECTION

***Do not throw away the container if damage is evident!***

Before installing the machine, check packaging and machine for damage. If packaging is damaged, the machine might also be damaged. If there is damage to both packaging and machine, do not throw away packaging. The machine has been inspected and packed at the factory and is expected to arrive in new, undamaged condition. However, rough handling by carriers or others might result in damage to the machine while in transit. If so, do not return the machine to the manufacturer; instead, contact the carrier and ask them to send a representative to the site to inspect the damage and complete an inspection report. You must contact the carrier and dealer within 48 hours of receiving the machine.

## UNPACKING

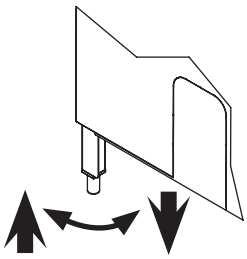
***Check for missing parts!***

While removing the machine from packaging, ensure there are no missing parts. (reference the Parts section). If an item is missing, contact the manufacturer immediately.

## LEVELING

***Machine must be level before operating!***

The machine must be level in its operating location to prevent damage during operation and to ensure best results. The machine comes with four adjustable bullet feet, which can be turned using a pair of channel locks (or by hand if the machine can be raised safely). Ensure the machine is level from side-to-side and front-to-back before making any connections.



## PLUMBING

***The plumber must flush the incoming water line!***

Plumbing connections must comply with all applicable local, state, and national plumbing codes. The plumber must flush incoming water line thoroughly before connecting plumbing. It is crucial to remove all foreign debris from water line that might potentially get trapped in valves or cause an obstruction. Any valves that are fouled as a result of foreign matter left in the water line—and any expenses resulting from this fouling—are not the responsibility of the manufacturer.

The manufacturer does NOT endorse "Tankless On-demand" water heaters for use with their dishmachines. The manufacturer DOES endorse, and highly recommends, standard "Tank" style water heaters, sized to properly handle the water heating requirements of the facility.

## DRAIN LINE CONNECTION

The drain is a gravity-discharge drain. Pitch all piping from the 1 1/2” connection on wash tank 1/4” per foot to floor or sink drain. All piping from the machine to drain must be a minimum 1 1/2” and must not be reduced.

There must be an air-gap between the machine drain line and floor sink or drain. The air-gap must be at least 1.5 times the diameter of drain line. If a grease trap is required by code, ensure it has a flow capacity of 5 GPM.

## WATER SUPPLY CONNECTION

**CAUTION! *1/2" ID MIN water line must be used!***

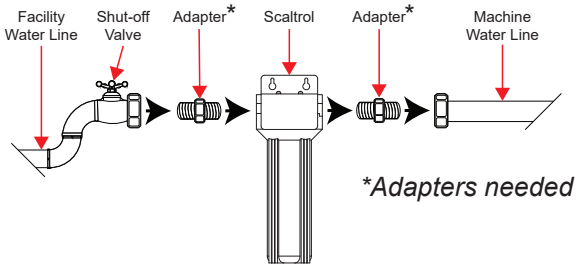
**A water hardness test must be performed!**

***NOTICE*** *Read the Plumbing section on the previous page before proceeding.*

Install water supply line to the machine. Hose or pipe must be 1/2" ID minimum. Using smaller hose or pipe will affect machine performance and related issues are not the responsibility of the manufacturer.

Install a water shut-off valve in the water line between the main supply and the machine to allow access for service.

If water hardness tests greater than 3 GPG, install the Scaltrol Water Treatment system (see the Plumbing Options page) into the water line before the machine's incoming water connection point. If water hardness tests at 3 GPG or less, install the water supply line directly to the machine's incoming water connection point.




**Adapters needed will vary.*

DynaStar and HH-E models are equipped with a rinse pump, so a PRV is not required unless flow pressure is over 65 PSI. Flow pressure under 15 PSI could affect fill/start-up time. DynaStar NB and HH-E NB are not equipped with a rinse pump, so a PRV is recommended (see the Plumbing Options page) and flow pressure is 10 ± 2 PSI.

The manufacturer recommends the installation of a water hammer arrestor in the incoming water line and offers these devices as options. See the Plumbing Options page. This prevents line hammer/hydraulic shock—induced by the solenoid valve as it operates—from causing damage to the equipment.

---

## PLUMBING CHECK

**CAUTION! *Repair all leaks before operating machine!***

1. Slowly turn on water supply to the machine after incoming fill line and drain line have been installed.
2. Check for any leaks and repair as required.

## CHEMICAL CONNECTIONS

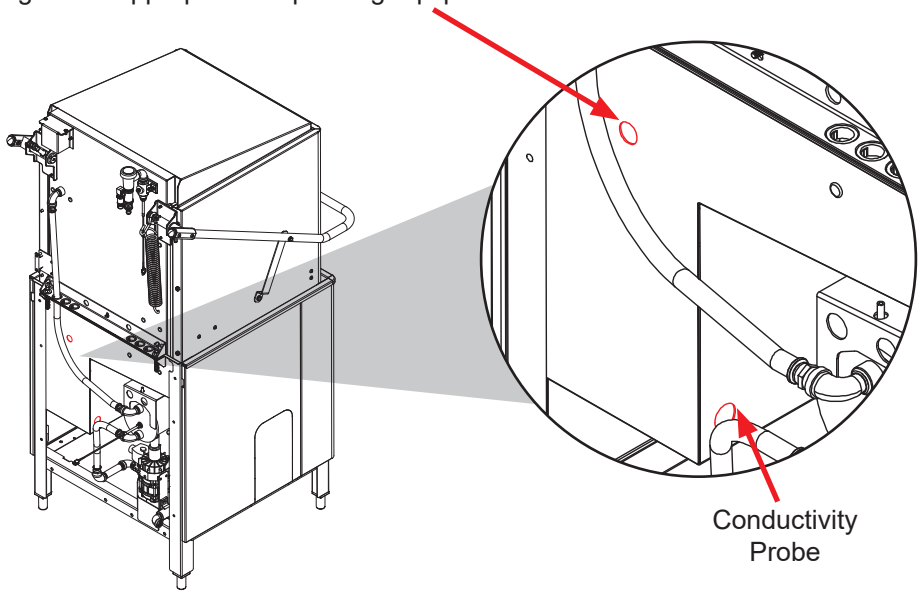
***Chemical connections should be made by the chemical supplier.***

***Using deionized water or other aggressive fluids will result in corrosion and failure of components and will void the warranty.***


**WARNING!** ***Some of the chemicals used in dishwashing may cause chemical burns if they come in contact with skin. Wear protective gear when handling these chemicals. If any skin comes in contact with these chemicals, immediately follow the instructions provided with the chemicals for treatment.***

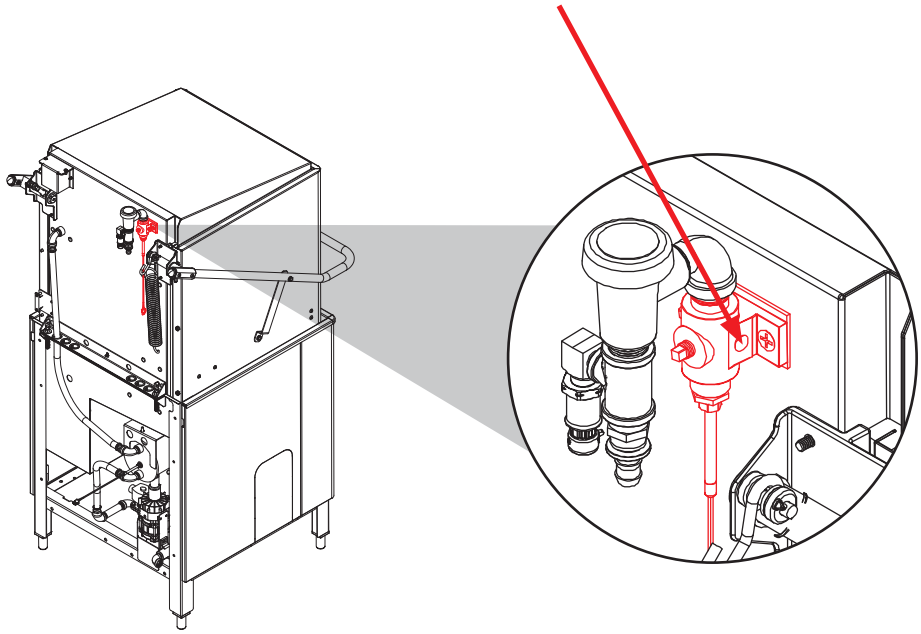
### Detergent

Connect detergent by removing bulkhead fitting on the back of the machine and replacing it with appropriate dispensing equipment.




### Rinse-aid

Connect rinse-aid by removing one of the brass plugs on side of the rinse injector and replacing it with appropriate dispensing equipment.



### Dispenser Electrical Connections

Electrical connections for chemical dispensers are made on a fuse block on the control panel. Click **here** for a depiction of fuse block and connection locations.

## ELECTRICAL POWER CONNECTIONS

***Disconnect electrical power supplies and lockout/tagout in accordance with appropriate procedures and codes at the disconnect switch.***

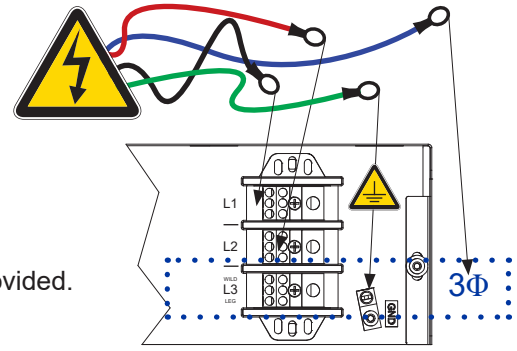
***If necessary, see Heaters page for phase conversion kit.***

Electrical and grounding conductors must comply with the applicable portions of the National Electric Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

Refer to data plate for machine operating requirements, machine voltage, total amperage, and serial number. Data plate is located on right side of the machine.

1. Open control box by using a phillips screwdriver to remove four screws on front cover.
2. Install 3/4" conduit into pre-punched holes in back of control box.
3. Route incoming-power wires, and connect to power block and grounding lug.
4. Install service wires (L3 for 3-Phase) to appropriate terminals as they are marked on the terminal block.

**NOTICE**
*Imbalanced wild leg goes to L3.*




5. Install grounding wire into the lug provided.
6. Tighten connections.

**NOTICE** *"DE-OX" or similar anti-oxidation agent should be used on all power connections.*

**CAUTION!** *Improperly connecting external devices can cause damage to the machine and/or electrical infrastructure! Click* ***here*** *for a wiring guide.*

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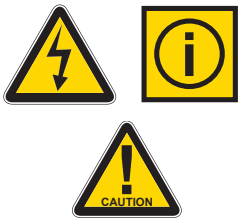
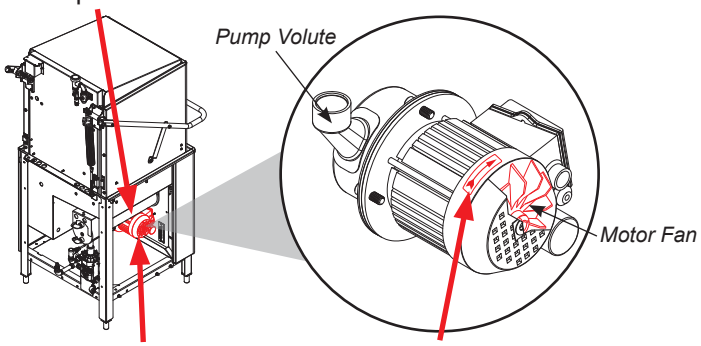
## MOTOR ROTATION




**CAUTION!** ***On 460 V, 3-Phase machines only, verify correct pump motor rotation before operating machine!***

On 460 V, 3-Phase machines only, verify correct pump motor rotation before operating the machine. Failure to do so can result in damage to the machine and components and may void the warranty.

1. Follow Filling the Wash Tub section.
2. Remove left side panel of the machine.




3. Locate wash pump motor and identify arrow decal which shows correct motor rotation (if no decal is present, correct rotation is away from pump volute).
4. Push delime button on display.
5. Observe rotation of motor fan and quickly push delime button again.
6. If rotation is incorrect, disconnect electrical power and reverse L1 and L2 connections at terminal block shown in section above.

## VOLTAGE CHECK


1. Ensure power switch is in OFF position and apply power to the machine.
2. Check incoming power at terminal block and ensure it corresponds to voltage listed on data plate. If not, contact a qualified service agency to examine the problem.

**CAUTION!** *Do not run the machine if voltage is too high or too low (refer to applicable electrical codes).*

3. Shut off service breaker and mark it as being for the machine.
4. Advise all proper personnel of any problems and of location of service breaker.

## SURROUNDING AREA

This is a commercial machine and reaches temperatures that can exceed those generated by a residential machine. Surrounding countertops, cabinets, flooring, and subflooring must be designed and/or selected with these higher temperatures in mind.

**NOTICE** *Any damage to surrounding area caused by heat/moisture to materials that are not recommended for higher temperatures will not be covered under warranty or by the manufacturer.*

## TEMPERATURE SETPOINTS

The temperature setpoints on this machine have been set at the factory. They should only be adjusted by an authorized service agent.

## SMART VENT (VER MODELS)

Smart Vent technology automatically adjusts venting time based on incoming water temperature. This ensures efficient steam elimination at any temperature in the range, without needing a service call to adjust venting time. If Smart Vent is off, machine vents for 30 seconds.

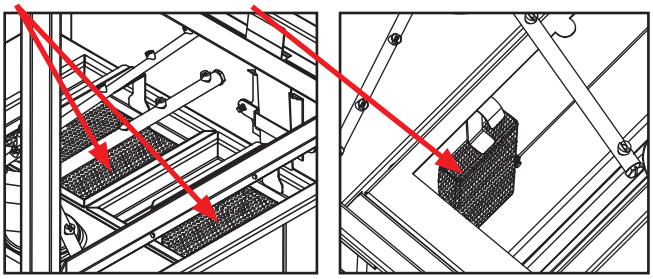
***Doesn't increase water consumption!***

| | |
|---|---|
| < 60 °F | 45 seconds venting |
| 60–64 °F | 40 seconds venting |
| 65–69 °F | 30 seconds venting |
| 70–74 °F | 35 seconds venting |
| 75–79 °F | 40 seconds venting |
| 80–84 °F | 43 seconds venting |
| 85–89 °F | 47 seconds venting |
| 90–95 °F | 50 seconds venting |

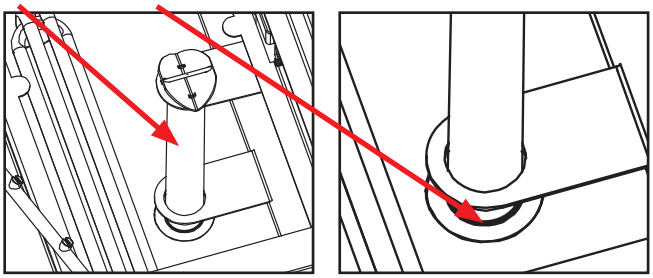
## PREPARATION

Before operating the machine, verify the following:

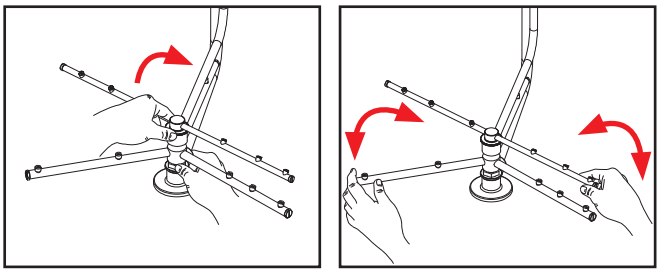
1. Pan strainers and suction strainer are in place and are clean.



2. Standpipe and o-ring are installed.



3. Wash and rinse arms are screwed securely into place and end-caps are tight. Wash and rinse arms should rotate freely.

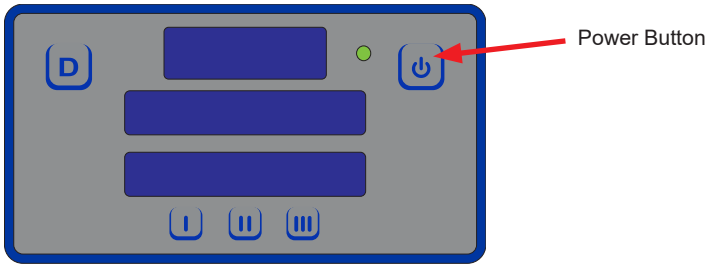


## POWER UP

To energize the machine, turn on power at service breaker. Voltage should have been previously verified as correct. If not, verify voltage.

## FILLING THE WASH TUB

Press power button and display will come on. The machine will fill with water automatically until appropriate water level is reached (just below pan strainers). Wash tub must be completely filled before operating wash pump to prevent damage to components.



## WARE PREPARATION

Proper ware preparation will help ensure good results and fewer re-washes. If not done properly, ware might not come out clean and efficiency of the machine will be reduced. Putting unscraped dishes into the machine affects its performance, so always remove scraps from ware before loading into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside-down in racks so they don't hold water during the cycle. The machine sanitizes as well as cleans, so always properly prepare ware before loading in the machine.

## DAILY MACHINE PREPARATION

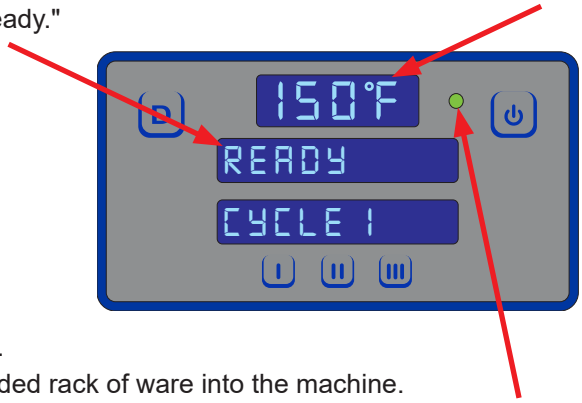
Refer to Preparation section and follow instructions there. Afterward, ensure that chemicals are supplied to the machine. If not, contact your chemical supplier.

When the machine is first powered on for the day/shift, wash tank water must reach set temperature before being operated:

1. Ensure door is closed.
2. Press power button.
3. Machine will fill automatically.
4. Display will show “Heating” until wash tank reaches set temperature.


## WASHING A RACK OF WARE

1. Ensure wash tank temperature has reached set temperature and display shows "Ready."

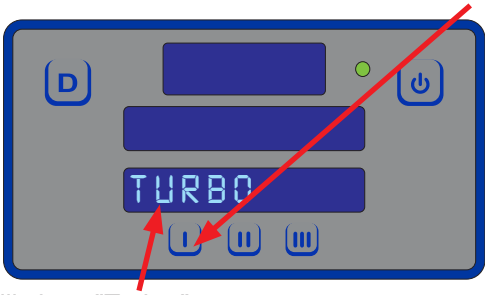



2. Open door.
3. Slide a loaded rack of ware into the machine.
4. Close door. Cycle begins automatically and cycle light comes on.
5. At end of cycle, cycle light will turn off.
6. Open door and remove rack.

## TURBO RINSE

Turbo Rinse option is a longer rinse, ensuring optimal rinse and sanitization.

1. To select Turbo Rinse option, press and hold I button for three seconds.




***Econo = 11 seconds***
***Turbo Option = 14 seconds***

2. Display will show "Turbo."
3. Press and hold I button for three seconds to revert to Econo Rinse. Machine reverts to Econo Rinse (default) when turned off.

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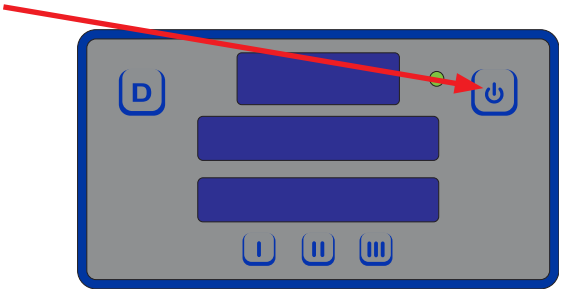
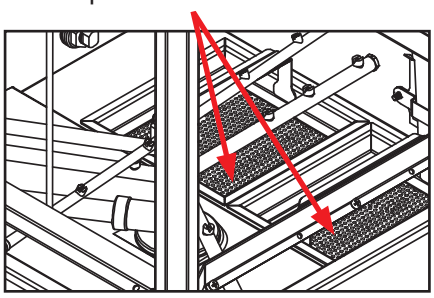
## SHUTDOWN & CLEANING

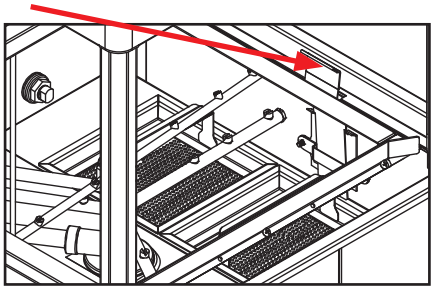
1. Close door.
2. When the machine completes cycle, turn the machine off by pressing power button.



3. Open door.
4. Remove and clean pan strainers and set aside.



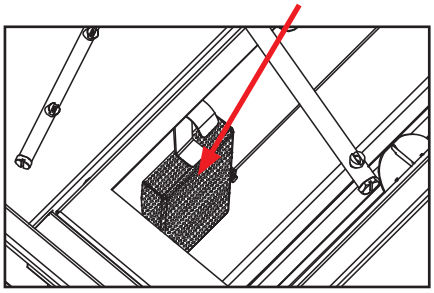
5. Pull drain handle to open position and allow water to drain.



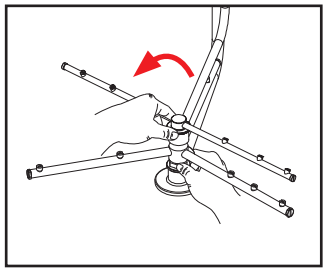

**WARNING! *Wash tank water is hot!***

## SHUTDOWN & CLEANING

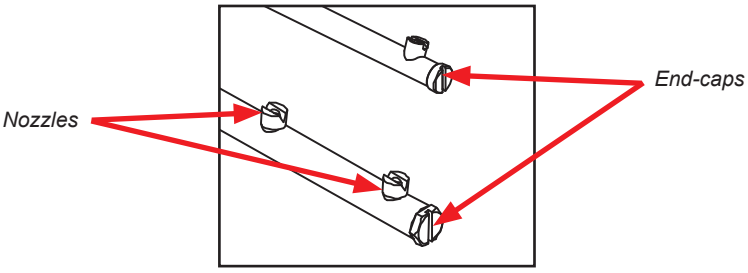
6. Once wash tub is drained, remove suction strainer, clean, and set aside.



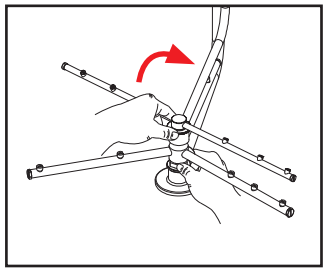
7. Unscrew wash and rinse arms from their manifolds.



8. Verify nozzles and arms are free from obstruction. If clogged, remove end-caps, clean nozzles with a brush (supplied with the machine), and flush with fresh water.




9. Wipe inside of the machine out, removing all soil and scraps.
10. Reassemble wash and rinse arms.
11. Reinstall wash and rinse arms in the machine. Ensure end-caps have been tightened.



12. Push drain handle to closed position.
13. Replace pan strainers and suction strainer.
14. Leave door open so the machine can dry.

## DETERGENT CONTROL

Detergent usage and water hardness are two factors that greatly contribute to the machine's operating efficiency. Using the proper amount of detergent can become a source of substantial savings. A qualified water-treatment specialist can determine what is needed for maximum efficiency from the detergent.

- Hard water greatly affects the performance of the machine, causing the amount of detergent required for washing to increase. If the machine is installed in an area with hard water, the manufacturer recommends the installation of the Scaltrol Water Treatment system (see Plumbing Options page).
- Deposited solids from hard water can cause spotting that will not be removed with a drying agent. Treated water will reduce this occurence.
- Treated water might not be suitable for use in other areas of operation and it might be necessary to install a water treatment system for water going to the machine only. Discuss this option with a qualified water treatment specialist.
- Properly train operators on how much detergent to use per cycle. Meet with a water treatment specialist and chemical supplier to discuss a complete training program for operators.
- This machine requires chemicals for proper operation and sanitization. Third-party chemical feeders are required to pump these chemicals into the machine. Contact a chemical supplier with any questions.

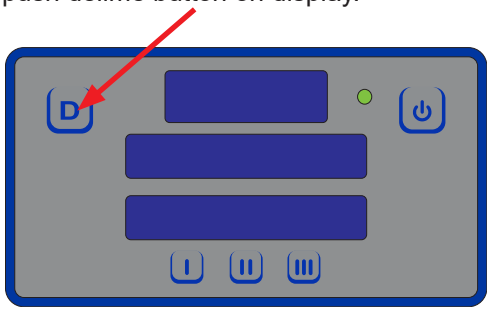
- Water temperature is an important factor in ensuring the machine functions properly. The machine's data plate details what minimum temperatures must be for incoming water supply, wash tank, and rinse tank. If minimum requirements are not met, it's possible dishes will not be clean or sanitized.
- Instruct operators to observe required temperatures and to report when they fall below minimum allowed. A loss of temperature can indicate a larger problem.

## DELIMING

To maintain the machine at its optimum performance level, lime and corrosion deposits must be removed. Water conditions will determine the frequency for deliming. A deliming solution is available from your chemical supplier. Read and follow all instructions on the label.

To delime the machine:

1. Disconnect or turn off all chemical feeder equipment.
2. Remove rinse arms and place in sink with deliming solution.
3. Verify standpipe is in position, turn the machine on, and allow the machine to complete a fill cycle.
4. Open door and verify water level is above standpipe. Add deliming solution per the solution manufacturer's recommendation (water capacity of tank can be verified in Specifications section of this manual).
5. Close door and push delime button on display.




6. Delime cycle runs for eight minutes.
7. Once delime cycle stops, pump will automatically stop.
8. Open door and lift standpipe.
9. Wait five minutes, then inspect inside of the machine. If the machine is not delimed/free of scale, run again.
10. When clean, drain and refill the machine.
11. Run a cycle to remove residual deliming solution.
12. Reinstall rinse arms.
13. Drain and refill the machine.

## SETTING CYCLES

Press and release I button to set cycle 1.

Press and release II button to set cycle 2.

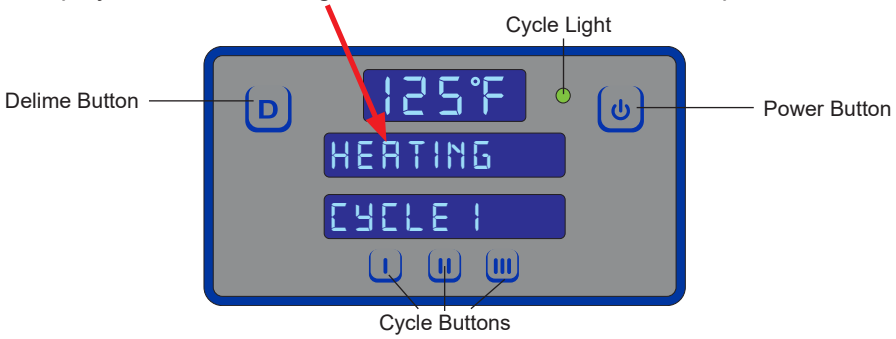
Press and release III button to set cycle 3.

## CHECKING CYCLE COUNT

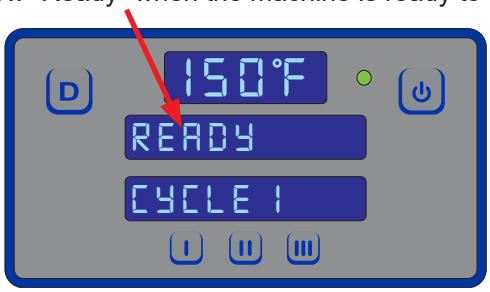
While the machine is powered off, press and hold power button. Total cycle count will display for several seconds, followed by a “power-on” condition.

## GENERAL

1. When the machine is first connected to power mains, display will go through a sequence to show all LEDs are working.
2. Machine will then go into standby mode with display turned off.
3. Press power button.
4. Display will show “Heating” until wash tank reaches set temperature.




5. Display will show “Ready” when the machine is ready to use.




## OPERATIONAL MESSAGES

| DISPLAY | INDICATOR |
|---|---|
| "Check for open door" | Door is open when the machine needs to fill (float switch is down). |
| "Filling" | Indicates initial fill after the machine is first powered on. |
| "Heating" | Wash tank and booster have not reached operating temperature during the machine’s initial heating phase. |
| "Delime" | Delime button has been pressed. |
| "Ready" | Machine is not in a cycle and ready for next rack. |
| "Washing" | Machine is in *wash* phase of a cycle with power to wash pump. |
| "Rinsing" | Machine is in *rinse* phase of a cycle with power to rinse valve; wash pump is turned off. |
| "Sanitizing" | Machine is in *sanitizing* phase of a cycle. Neither wash pump nor rinse valve are turned on. |

## PREVENTATIVE MAINTENANCE


Manufacturer highly recommends that only qualified service personnel perform any maintenance and repairs not specifically discussed in this manual.

**WARNING!** *Unqualified personnel performing maintenance on the machine may void warranty, lead to larger problems, or cause harm to operator.*

Following operating and cleaning instructions in this manual will result in the most efficient results from the machine. As a reminder, here are some steps to take to ensure the machine is being used the way it was designed to work:

1. Ensure water temperatures match those listed on machine data plate. A loss of temperature can indicate a larger problem.
2. Ensure all strainers are clean and securely in place before operating the machine. When cleaning out strainers, do NOT beat them on waste cans. Wipe out strainers with a rag and rinse with water if necessary. Use a toothpick to dislodge any stubborn debris.
3. Ensure all wash and rinse arms are secure in the machine before operating.
4. Ensure standpipe is in position before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure glasses are placed upside-down in rack.
8. Ensure all chemicals being injected into the machine are at correct concentrations.
9. Clean the machine at end of every day/shift per the Shutdown and Cleaning section of this manual.
10. Follow all safety procedures, whether listed in this manual or put forth by local, state, or national codes/regulations.


**CAUTION!**
***Do NOT beat strainers to remove debris!***

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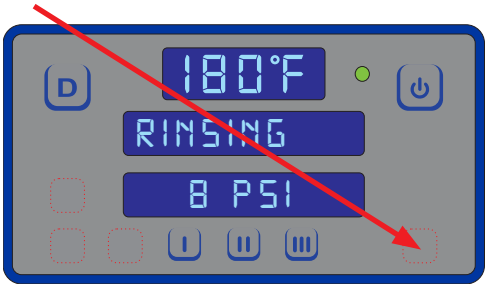
## PSI CHECK

If low-water rinse is observed, rinse pump might not be working properly. To verify, check the PSI.

***A guide to locating hidden buttons is located behind front panel. Lay guide over display and press where indicated. There's also a printable guide at the end of this manual.***

1. Press PSI check button during rinse cycle (if pressed during wash cycle PSI at end of last rinse cycle is displayed).




***This check is for rinse pressure only, not inlet water pressure.***

2. Display will show PSI value. It should be 6–8 PSI (10 ± 2 for NB). If not, contact a qualified service agency.
3. Display will go back to default on next cycle.

## PROGRAMMING

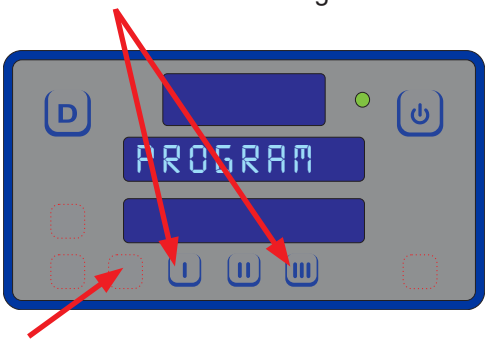
***A guide to locating hidden buttons is located behind front panel. Lay guide over display and press where indicated. There's also a printable guide at the end of this manual.***

*To access programming, the machine should be on and not in cycle.*

*Programming buttons (up-arrow, down-arrow, and select) are hidden on display and are shown below as red outlines.*

**Factory Setup (Model Selection)**

1. Press and hold I and III buttons until “Program” starts flashing (2–3 seconds).




2. Press select button.
3. Use up-arrow or down-arrow button to change program number to correct number in table, based on model.


| Pgrm # | Model |
|---|---|
| 2 | DynaStar |
| 3 | DynaStar VER |
| 4 | DynaStar NB |

4. Press select button.
5. “Program” will flash.
6. Press delime button to exit.

## PROGRAMMING

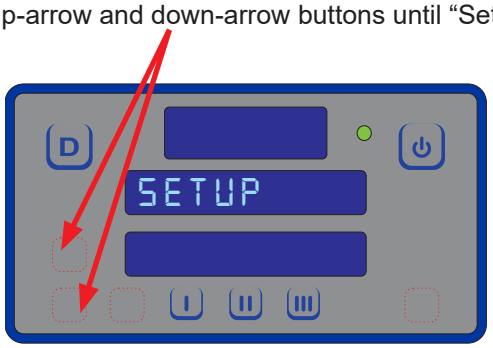
***A guide to locating hidden buttons is located behind front panel. Lay guide over display and press where indicated. There's also a printable guide at the end of this manual.***

*To access programming, the machine should be on and not in cycle.*

*Programming buttons (up-arrow, down-arrow, and select) are hidden on display and are shown below outlined with red dots.*

**User Setup**

1. Press and hold up-arrow and down-arrow buttons until “Setup” starts flashing (2–3 seconds).




2. Use up-arrow button to cycle through categories (will be flashing).
   - Language
   - Temperature Scale
   - Wash Temperature
   - Boost Temperature
   - Wash Offset
   - Rinse Offset
   - Boost Offset
   - Spare Offset


3. Press select button to choose category you want to change.
   - Regardless of category, Steps 5–7 remain same.
4. Use up-arrow button to change options (will be flashing). Numerical options are shown in top window.


5. Press select button to accept changes.
6. Press delime button to exit.

## PROGRAMMING

***A guide to locating hidden buttons is located behind front panel. Lay guide over display and press where indicated. There's also a printable guide at the end of this manual.***

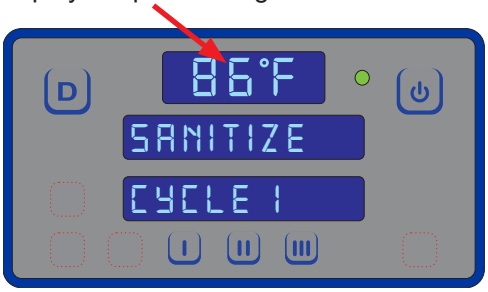
*To access programming, the machine should be on and not in cycle.*

*Programming buttons (up-arrow, down-arrow, and select) are hidden on display and are shown below outlined with red dots.*

### Incoming Water Temperature Check

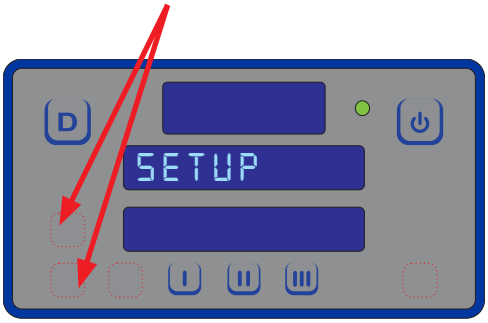
1. When machine is in Sanitize part of cycle (also during Venting if VER model), press PSI check button.


2. Incoming water temperature will display then disappear. Pressing PSI check button again will display temperature again.

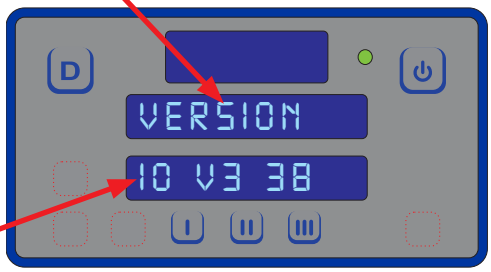



### Firmware Version Check

1. Press and hold up-arrow and down-arrow buttons until “Setup” starts flashing (2–3 seconds).




2. Display changes to “Version” and shows firmware versions of the I/O module and digital display.




*Version scrolls on bottom display.*

| DISPLAY SHOWS | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| "F1 Service needed," "No water in Booster" | 1. Low or no water pressure.<br>2. Faulty booster LLC.<br>3. Faulty inlet valve or fill relay.<br>4. Contactor to booster heater not turning off.<br>5. Faulty temperature input (P12) on I/O module.<br>6. Faulty temperature probe (T3).<br>7. Faulty float switch allows heaters to operate with no water in tank. | 1. Perform PSI check (see Preventative Maintenance page).<br>2. Replace LLC.<br>3. Verify that fill relay is supplying voltage to fill solenoid. Replace faulty component.<br>4. Check for welded contacts. Verify that output from I/O module turns off when above the set temperature.<br>5. Substitute a 1.2 kΩ resistor for T3, and verify that booster heater turns off. If not, replace I/O module.<br>6. Verify booster-probe resistance is correct with respect to temperature (see table on pg. 23). If not, replace T3.<br>7. Replace float switch. |
| "F2 Service needed," "Check booster thermostat" | 1. Contactor to booster heater not turning off.<br>2. Faulty temperature input (P12) on I/O module.<br>3. Faulty temperature probe (T3). | 1. Check for welded contacts. Verify output from I/O module turns off when above set temperature.<br>2. Substitute a 1.2 kΩ resistor for T3, and verify booster heater turns off. If not, replace I/O module.<br>3. Verify booster probe resistance is correct with respect to temperature (see table on pg. 23). If not, replace T3. |
| "F3 No water in wash tank," "Check inlet water and door" | 1. Malfunction of fill solenoid or fill relay.<br>2. Door is open, which inhibits fill mode.<br>3. Faulty door switch. | 1. Replace faulty component.<br>2. Close door to activate door switch.<br>3. Replace or adjust door switch. |
| "F4 Service needed," "Check incoming power" | 1. Incoming power not properly connected.<br>2. L3 is missing (3-phase machines only). | 1. Check connections to heater.<br>2. Verify L3 is present and connected properly. |
| "F5 Service needed," "Check booster thermostat and high limit" | 1. Faulty temperature input (P12) on I/O module.<br>2. Faulty temperature probe (T3).<br>3. Faulty high-limit switch.<br>4. Faulty booster heater.<br>5. Booster-heater contactor not energizing. | 1. Substitute a 1.8 kΩ resistor for T3, and verify booster heater turns on. If not, replace I/O module.<br>2. Verify T3 resistance is consistent with table on pg. 23. If not, replace T3.<br>3. Replace high-limit switch.<br>4. Check booster heater for proper resistance. Replace if incorrect.<br>5. Verify drive voltage to contactor coil is present during a call for heat and that contactor closes. If voltage is present, replace contactor. If voltage is not present, check wiring. |

| DISPLAY SHOWS | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| "F6 Service needed," "No water in wash tank" | 1. Low or no water pressure.<br>2. Faulty inlet valve or fill relay.<br>3. Contactor to wash heater not turning off.<br>4. Faulty temperature input (T1) on I/O module.<br>5. Faulty temperature probe (T1).<br>6. Faulty float switch allows heaters to operate with no water in tub. | 1. Perform PSI check (see Preventative Maintenance page).<br>2. Verify fill relay is supplying voltage to fill solenoid. Replace faulty component.<br>3. Check for welded contacts. Verify output from I/O module turns off when above set temperature.<br>4. Substitute a 1.2 kΩ resistor for T1, and verify wash heater turns off. If not, replace I/O module.<br>5. Verify T1 resistance is correct with respect to temperature (see table on pg. 23). If not, replace T1.<br>6. Replace float switch. |
| "F7 Service needed," "Check wash tank thermostat" | 1. Contactor to wash heater not turning off.<br>2. Faulty temperature input (P10) on I/O module.<br>3. Faulty temperature probe (T1). | 1. Check for welded contacts. Verify output from I/O module turns off when above set temperature.<br>2. Substitute a 1.2 kΩ resistor for T1, and verify wash heater turns off. If not, replace I/O module.<br>3. Verify T1 resistance is correct with respect to temperature (see table on pg. 23). If not, replace T1. |
| "F8 No water in wash tank," "Check inlet water and door" | 1. Malfunction of fill solenoid or fill relay.<br>2. Door is open, which inhibits fill mode.<br>3. Faulty door switch. | 1. Replace faulty solenoid or fill relay.<br>2. Close door to activate door switch.<br>3. Replace or adjust door switch. |
| "F9 Service needed," "Check incoming power" | 1. Incoming power not properly connected.<br>2. L3 is missing (3-phase machines only). | 1. Check connections to heater.<br>2. Verify L3 is present and connected properly. |
| "F10 Service needed," "Check wash tank thermostat and high limit" | 1. Faulty temperature input (T1) on I/O module.<br>2. Faulty temperature probe (T1).<br>3. Faulty high-limit switch.<br>4. Faulty wash heater.<br>5. Wash-heater contactor not energizing. | 1. Substitute a 1.8 kΩ resistor for T1, and verify wash heater turns on. If not, replace I/O module.<br>2. Verify T1 resistance is correct with respect to temperature (see table on pg. 23). If not, replace T1.<br>3. Replace high-limit switch.<br>4. Check wash heater for proper resistance. Replace if incorrect.<br>5. Verify drive voltage to contactor coil is present during a call for heat and that contactor closes. If voltage present, replace contactor. If voltage not present, check wiring. |
| F11 Service needed –check wash tank thermostat | Faulty temperature probe (T1). | Replace probe that connects to P10. |

| DISPLAY SHOWS | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| "F12 Service needed–check booster thermostat" | Faulty temperature probe (T3). | Replace probe that connects to P13. |
| "F13 Communication error," "Check 6-pin cable" | 1. Loose connection in 6-pin cable between display board and I/O module.<br>2. Faulty 6-pin cable between display board and I/O module.<br>3. Faulty communication port on I/O module or display board. | 1. Fully disconnect 6-pin cable at each end, and reconnect each end until a click is heard.<br>2. Inspect for broken wire or unseated terminal by gently pulling on each wire at each end of the cable. Reseat any loose terminals by inserting it fully into housing using long-nosed pliers. Replace cable if broken wire is found.<br>3. Temporarily substitute a verified good display board, and check if F13 message recurs. If so, repeat substitution with a good I/O module. |
| "F14 Service needed," "Check incoming water pressure or LLC" | 1. Low or no water pressure.<br>2. Corroded or faulty tank float.<br>3. Faulty fill valve or fill valve not receiving power. | 1. Perform PSI check (see Preventative Maintenance page).<br>2. Clean or replace tank float.<br>3. Check continuity and replace if faulty. |
| "F17 Excessive inlet water temp" | Inlet water supply too hot. | Ensure inlet water supply is at required temperature. |
| "F18 Bottom tank float" | Corroded or faulty float. | Clean or replace float. |
| "F19 Top tank float" | Corroded or faulty float. | Clean or replace float. |
| "F20 Booster LLC" | Corroded or faulty LLC. | Clean or replace LLC. |

## RESISTANCE-TO-TEMPERATURE VALUES

| R (kΩ) | °F | R (kΩ) | °F |
|---|---|---|---|
| 11.58 | 69.8 | 2.18 | 159.8 |
| 10.37 | 75.2 | 1.58 | 179.6 |
| 9.30 | 80.6 | 1.45 | 185.0 |
| 7.78 | 89.6 | 1.33 | 190.4 |
| 3.05 | 140.0 | 1.16 | 199.4 |
| 2.54 | 150.8 | 0.96 | 212.0 |


**WARNING!** *Inspection, testing, and repair of electrical equipment should only be performed by a qualified service technician. Many tests require the machine to have power to it and live electrical components be exposed. USE EXTREME CAUTION WHEN TESTING THE MACHINE.*

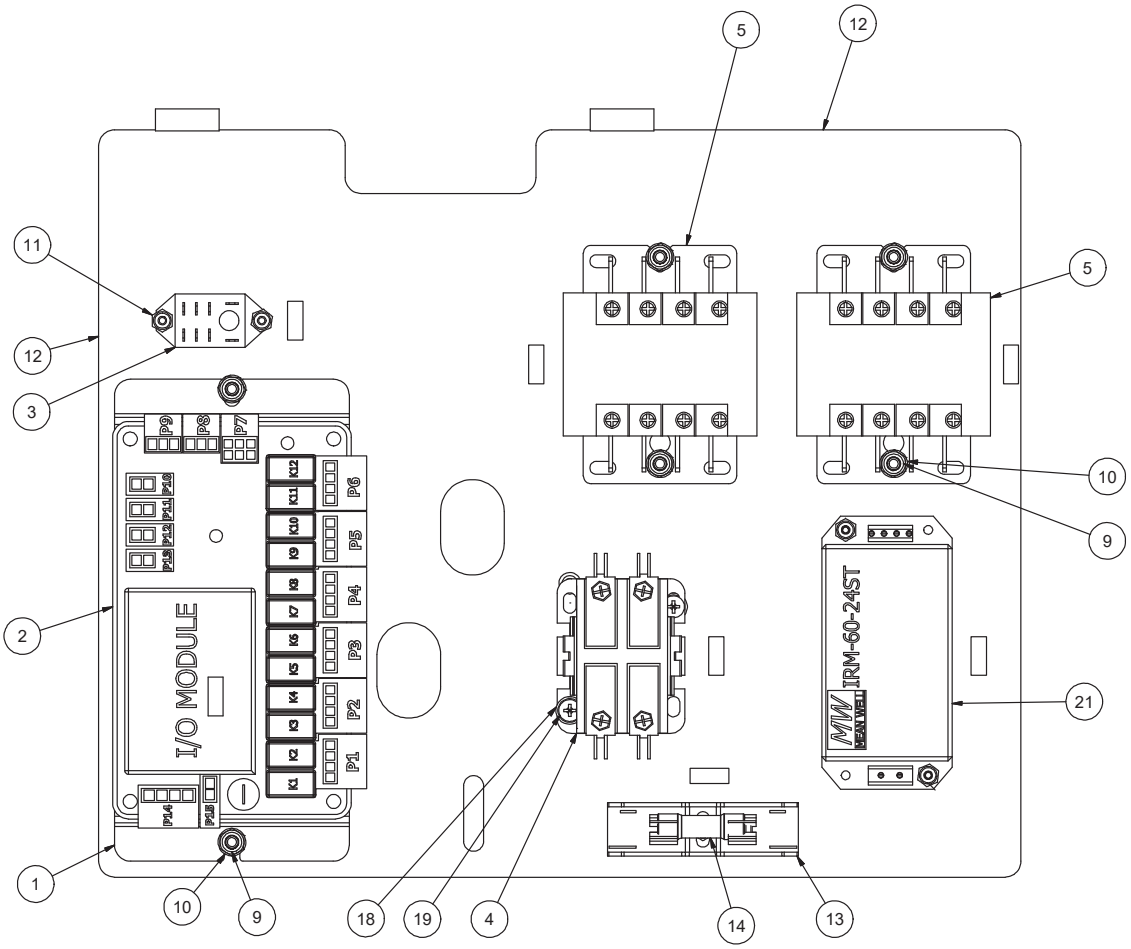
| OBSERVATION | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| Digital display does not illuminate after power button is pressed. | 1. Service breaker tripped.<br>2. Machine not connected to power source.<br>3. Faulty power source. | 1. Reset breaker. If it trips again, contact an electrician to verify amp draw of the machine.<br>2. Verify the machine has been properly connected to power source.<br>3. Verify wiring to breaker switch. |
| Machine does not fill when powered on (door must be closed.) | 1. Tank already full.<br>2. Faulty rinse solenoid valve.<br>3. Faulty door switch.<br>4. Faulty float switch. | 1. N/A<br>2. Repair or replace valve as required.<br>3. Verify wiring of switch; if correct, replace switch.<br>4. Verify wiring of both float switches; if correct, replace switch. |
| Machine will not begin wash cycle upon closing door. | 1. Wash motor faulty/damaged.<br>2. Wash motor contactor faulty.<br>3. Timer module is faulty.<br>4. I/O module is faulty. | 1. Verify wash motor is receiving power; if so, replace motor.<br>2. Verify contactor energizes; if so, with contactor energized, verify continuity across poles; if contacts are open, replace contactor.<br>3. Verify module is receiving power (red LED is on); if so, replace module.<br>4. Verify module is receiving power (green LEDs are on); if so, replace module. |
| Machine continuously washes. | 1. Machine is in Delime mode, which will be indicated on display.<br>2. Timer module is faulty. | 1. Turn off Delime mode by pressing delime button.<br>2. Verify module is receiving power (green LEDs are on); if so, replace module. |
| Wash or rinse heater does not work. | 1. Faulty heater element.<br>2. Faulty heater contactor.<br>3. Faulty temperature probe (T1-wash tank, T3-rinse tank).<br>4. High-limit thermostat is tripped. | 1. Verify element has very low resistance (< 20 Ω) across terminals. If high resistance or open, replace heater.<br>2. Verify contactor energizes; if so, with contactor energized, verify continuity across poles; if contacts are open, replace contactor.<br>3. Measure probe's resistance with ohmmeter, which should be ~10 kΩ at 77 °F. Replace probe if much different than this value.<br>Reference: resistances at 70 °F & 85 °F are ~11.9 kΩ & 7.4 kΩ, respectively.<br>4. Contact a qualified service agency. |
| Machine fills slowly. | 1. Y-strainer is clogged | 1. Clean Y-strainer. |

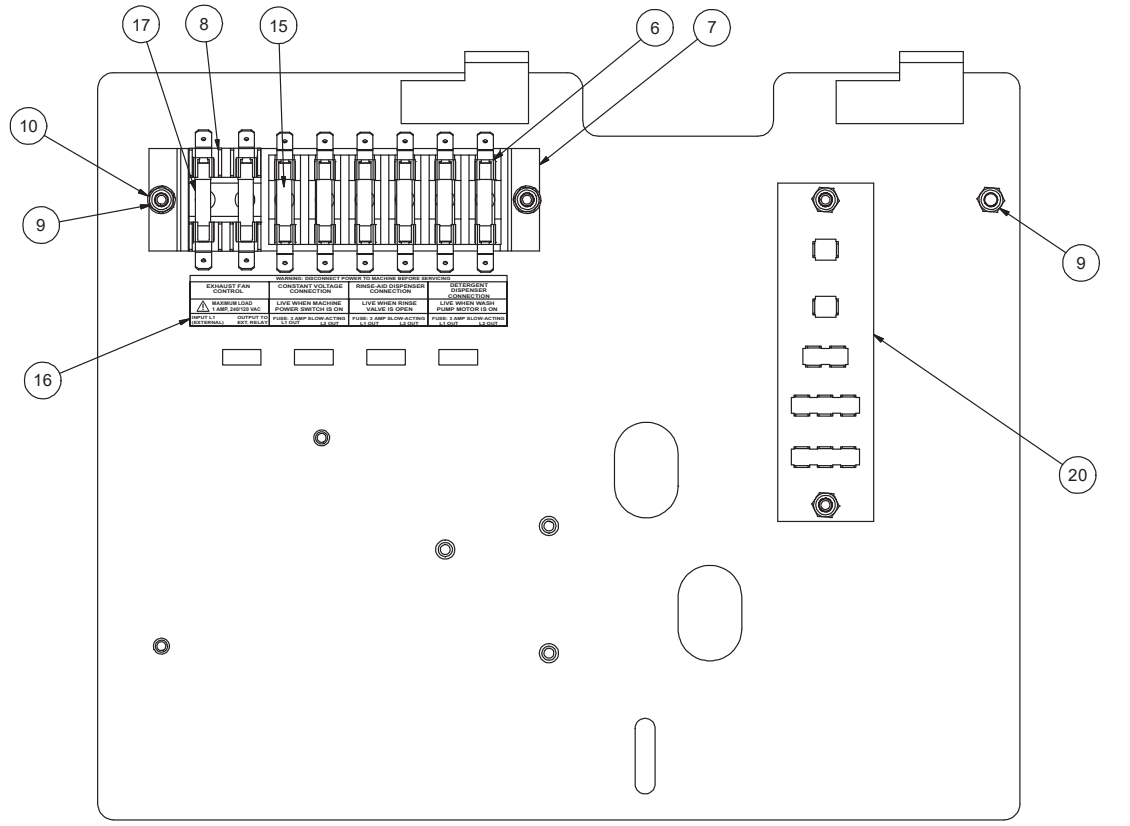
# TROUBLESHOOTING


**WARNING!** *Inspection, testing, and repair of electrical equipment should only be performed by a qualified service technician. Many tests require the machine to have power to it and live electrical components be exposed. USE EXTREME CAUTION WHEN TESTING THE MACHINE.*

| OBSERVATION | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| Rinse water is heated, but not reaching required temperature. | 1. Faulty rinse heater.<br>2. Faulty temperature probe (T2- rinse injector, T3-rinse tank).<br>3. I/O module is faulty. | 1. Verify element has very low resistance (< 20 Ω) across terminals. If high resistance or open, replace the heater.<br>2. Measure probe's resistance with ohmmeter, which should be ~10 kΩ at 77 °F. Replace probe if much different than this value.<br>Reference: resistances at 70 °F & 85 °F are ~11.9 kΩ & 7.4 kΩ, respectively.<br>3. Verify module is receiving power (green LEDs are on); if so, replace module. |
| Low-water rinse. | 1. Rinse pump not performing properly.<br>2. Clogged or obstructed rinse arms. | 1. Perform PSI check (see Preventative Maintenance page).<br>2. Remove and clean rinse arms. |
| Wash water is not reaching required temperature. | 1. Faulty wash heater.<br>2. Faulty temperature probe (T1).<br>3. I/O module is faulty. | 1. Verify element has very low resistance (< 20 Ω) across terminals. If high resistance or open, replace heater.<br>2. Measure probe's resistance with ohmmeter, which should be ~10 kΩ at 77 °F. Replace probe if much different than this value.<br>Reference: resistances at 70 °F & 85 °F are ~11.9 kΩ & 7.4 kΩ, respectively.<br>3. Verify module is receiving power (green LEDs are on); if so, replace module. |
| Door will not close completely. | 1. Improper spring tension.<br>2. Obstruction in door slide channel. | 1. Adjust spring tension to desired stiffness by loosening (not removing) spring bolt nuts near bottom of machine, and adjusting tension. Tighten nuts back when done.<br>2. Remove obstruction. |
| Water leaks at wash pump. | 1. Wash pump seal defective.<br>2. Loose hoses (hose clamps) on wash pump. | 1. Replace seal.<br>2. Tighten hose clamps. |
| Will not rinse during cycle. | 1. Defective rinse solenoid.<br>2. Timer module is faulty. | 1. Repair or replace rinse solenoid.<br>2. Verify module is receiving power (green LEDs are on); if so, replace module. |
| Dishes are not coming clean. | 1. Machine temperatures are below minimum requirements.<br>2. No detergent or too much detergent.<br>3. Solid dispenser canister is empty. | 1. Verify incoming water, rinse water, and wash water match required temperatures as listed on the machine data plate.<br>2. Adjust detergent concentration as required for amount of water held by the machine.<br>3. Replace canister. |

# CONTROL PANEL, 208-230 V



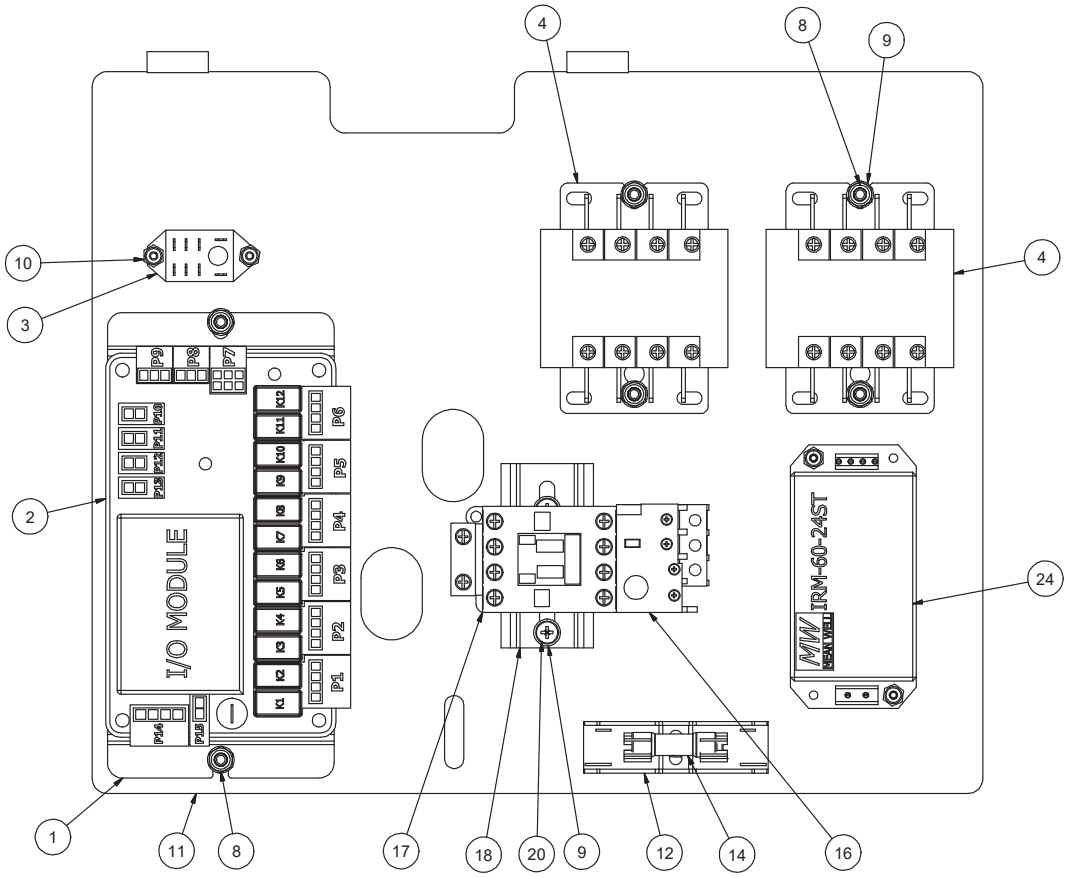



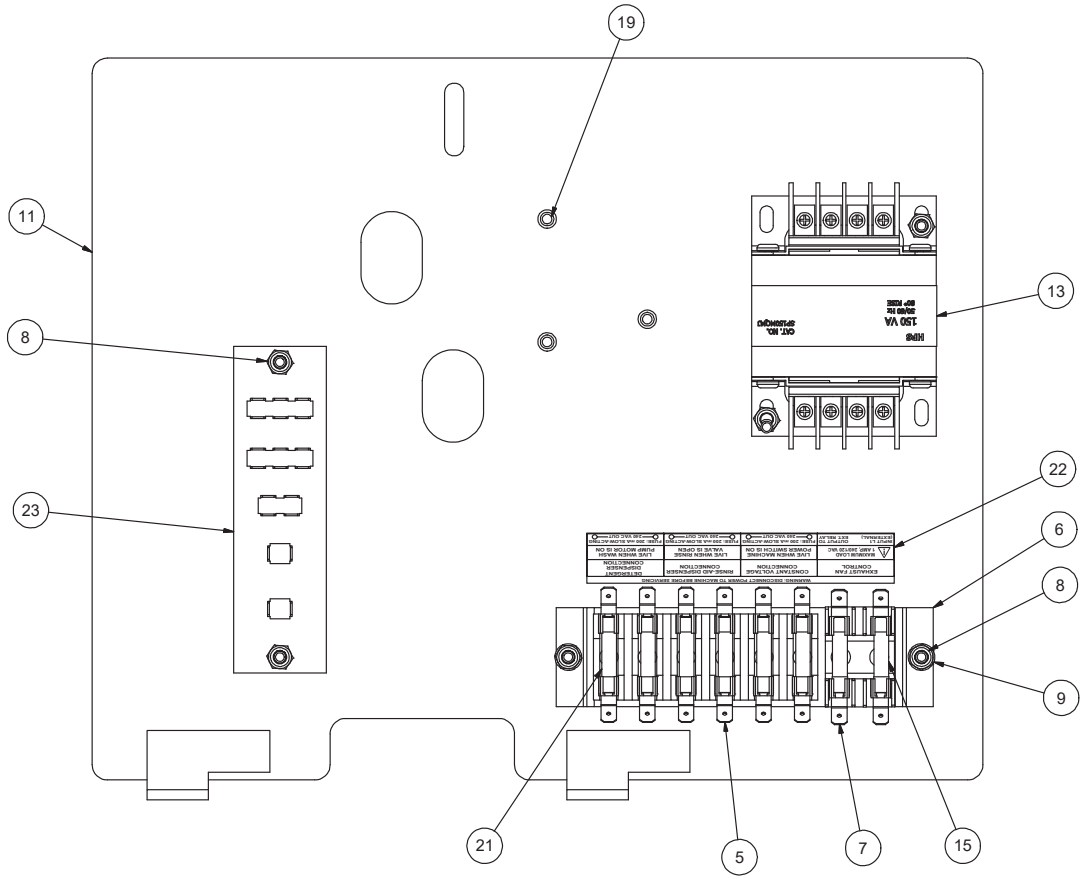
# CONTROL PANEL, 208-230 V

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Bracket, Timer & I/O Board | 05700-004-60-47 |
| 2* | 1 | I/O Module* | 06401-004-76-13* |
| 3 | 1 | Relay | 05945-111-89-75 |
| 4 | 1 | Contactor, 240 V 30 A | 05945-002-74-20 |
| 5 | 2 | Contactor, 4-Pole, 208-240 V 30 A | 05945-004-43-74 |
| 6 | 1 | Fuse Holder, 6-pole | 05920-002-42-13 |
| 7 | 1 | Bracket, Fuse Strip | 05700-002-42-03 |
| 8 | 1 | Fuse Holder, 2-pole | 05920-401-03-14 |
| 9 | 10 | Locknut, 10-24 Hex with Nylon Insert | 05310-373-01-00 |
| 10 | 10 | Washer, Flat | 05311-173-02-00 |
| 11 | 5 | Locknut, 10-24 Hex with Nylon Insert | 05310-373-03-00 |
| 12 | 1 | Panel, Electrical Main | 05700-004-84-06 |
| 13 | 1 | Fuse Holder, Single | 05920-011-72-89 |
| 14 | 1 | Fuse, 10 A | 05920-004-89-65 |
| 15 | 6 | Fuse, Slow-acting, 3 A | 05999-004-44-34 |
| 16 | 1 | Decal, Dispenser Connection | 09905-003-34-09 |
| 17 | 2 | Fuse, Fast-acting, 1 A | 05999-004-47-87 |
| 18 | 3 | Fastener, 10-32 | 05340-111-47-27 |
| 19 | 2 | Screw, 10-32 x 1/2" | 05305-011-44-52 |
| 20 | 1 | Terminal Board | 05940-002-78-97 |
| 21 | 1 | Power Supply (VER) | 05950-004-81-79 |

**Machines with serial numbers before 22D405278 have a different I/O module. Click **here** to open earlier manual.*

# CONTROL PANEL, 460 V

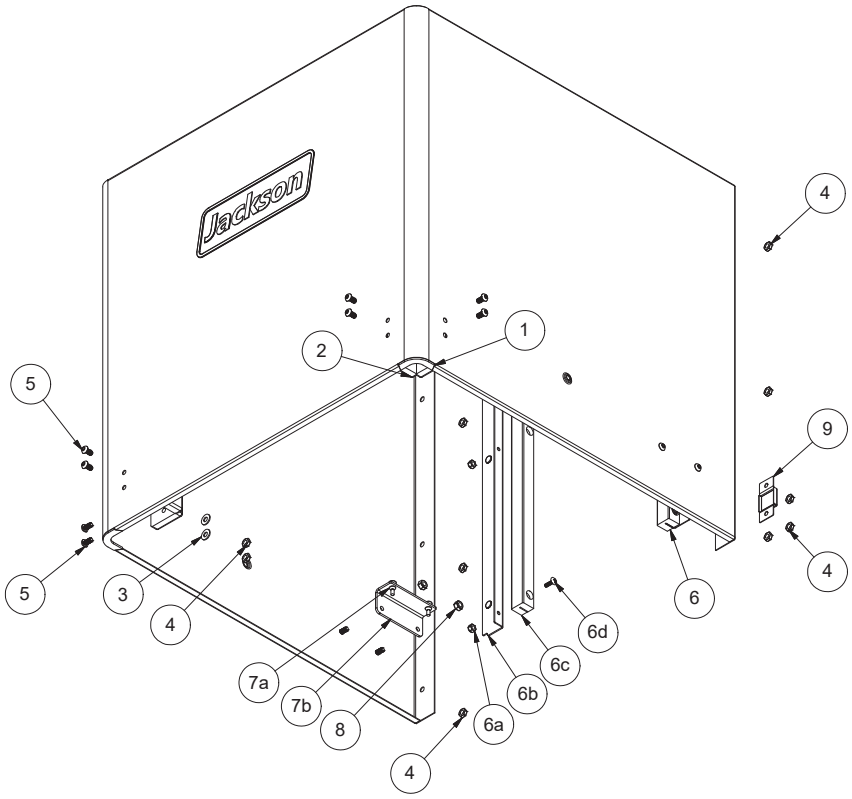


# CONTROL PANEL, 460 V

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Bracket, Timer & I/O Board | 05700-004-60-47 |
| 2* | 1 | I/O Module* | 06401-004-76-13* |
| 3 | 1 | Relay | 05945-111-89-75 |
| 4 | 2 | Contactor, 4-Pole, 208-240 V 30 A | 05945-004-43-74 |
| 5 | 1 | Fuse Holder, 6-pole | 05920-002-42-13 |
| 6 | 1 | Bracket, Fuse Strip | 05700-002-42-03 |
| 7 | 1 | Fuse Holder, 2-pole | 05920-401-03-14 |
| 8 | 10 | Locknut, 10-24 Hex with Nylon Insert | 05310-373-01-00 |
| 9 | 10 | Washer, Flat | 05311-173-02-00 |
| 10 | 3 | Locknut, 10-24 Hex with Nylon Insert | 05310-373-03-00 |
| 11 | 1 | Panel, Electrical Main | 05700-004-84-06 |
| 12 | 1 | Fuse Holder, Single | 05920-011-72-89 |
| 13 | 1 | Transformer, 150 V | 05950-004-71-04 |
| 14 | 1 | Fuse, 10 A | 05920-004-89-65 |
| 15 | 2 | Fuse, Fast-acting, 1 A | 05999-004-47-87 |
| 16 | 1 | Overload | 05945-002-65-02 |
| 17 | 1 | Motor, Contactor | 05945-002-65-00 |
| 18 | 1 | Din-rail, 3" | 05700-011-84-65 |
| 19 | 3 | Fastener, 10-32 | 05340-111-47-27 |
| 20 | 2 | Screw, 10-32 x 1/2" | 05305-011-44-52 |
| 21 | 6 | Fuse, Slow-acting, 200 mA | 05999-004-44-33 |
| 22 | 1 | Decal, Dispenser Connection, 460 V | 09905-004-43-81 |
| 23 | 1 | Terminal Board | 05940-002-78-97 |
| 24 | 1 | Power Supply (VER) | 05950-004-81-79 |

**Machines with serial numbers before 22D405278 have a different I/O module. Click **here** to open earlier manual.*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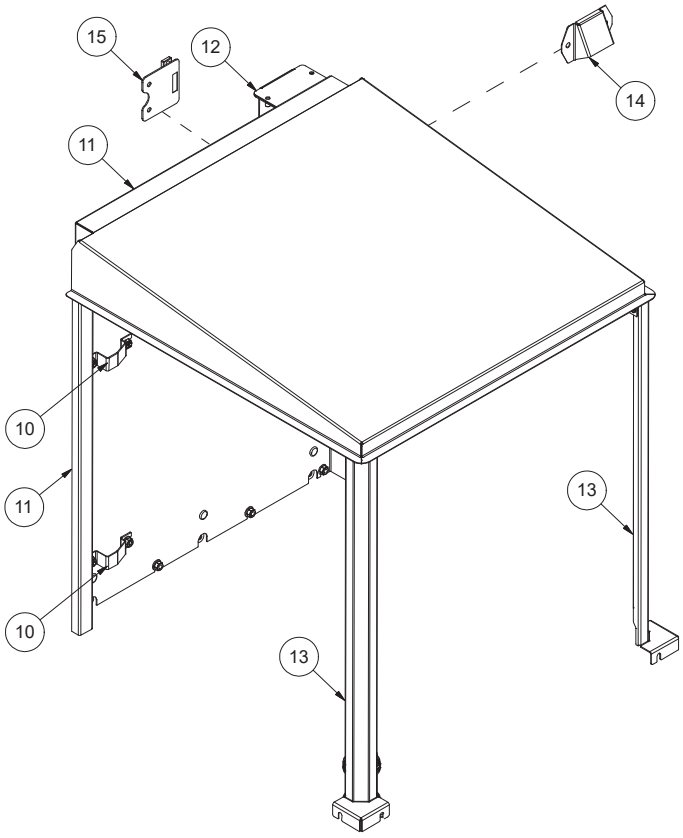
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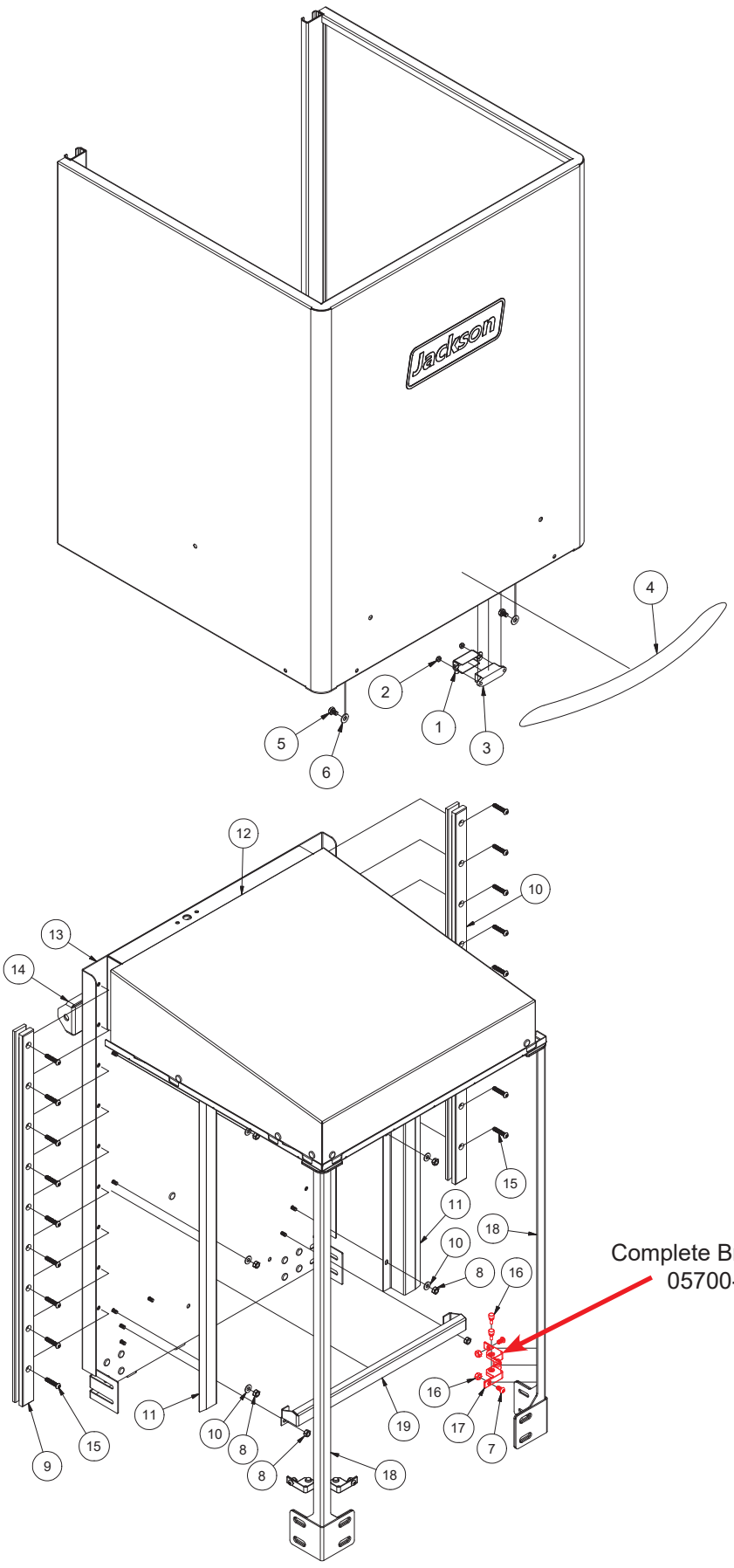
| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 2 | Brace, Hood Front Corner | 05700-004-58-91 |
| 2 | 4 | Guide Block, Front | 09330-004-57-97 |
| 3 | 8 | Washer, 1/4-20 | 05311-174-01-00 |
| 4 | 16 | Locknut, 1/4-20 with Nylon Insert | 05310-374-02-00 |
| 5 | 12 | Screw, 1/4-20 x 1/2" Button Head Hex | 05305-004-62-33 |
| 6 | 1 | Complete Rear Guide Rail Assembly, Left | 05700-004-65-73 |
| | | Complete Rear Guide Rail Assembly, Right | 05700-004-65-74 |
| 6a | 6 | Locknut, 10-32 with Nylon Insert | 05310-373-02-00 |
| 6b | 1 | Bracket, Door Guide, Left | 05700-004-58-03 |
| | | Bracket, Door Guide, Right | 05700-004-58-01 |
| 6c | 2 | Rear Guide Rail | 09330-004-57-96 |
| 6d | 6 | Screw, 10-32 x 5/8" | 05305-003-02-12 |
| 7 | 2 | Complete Door Stop Assembly | 05700-004-65-61 |
| 7a | 4 | Bumper, Door Stop | 05700-004-14-25 |
| 7b | 2 | Bracket, Door Stop | 05700-004-58-61 |
| 8 | 4 | Locknut, 1/4-20 Hex with Nylon Insert | 05310-374-01-00 |
| 9 | 1 | Complete Door Magnet Assembly | 05700-004-67-96 |
| 10 | 2 | Bracket, Manifold | 05700-004-58-88 |
| 11 | 1 | Hood Top | 05700-004-58-12 |
| 12 | 1 | Complete Pressure Switch Assembly | 05700-004-65-60 |
| 12a | 1 | Cover, Pressure Switch (Not Shown) | 05700-004-61-40 |
| 12b | 1 | Wrap, Pressure Switch (Not Shown) | 05700-004-65-58 |
| 12c | 1 | Pressure Switch (Not Shown) | 05945-004-61-43 |
| 13 | 2 | Hood Support | 05700-004-66-10 |
| 14 | 1 | Shield, Air-gap | 05700-002-13-35 |
| 15 | 1 | Door Switch Assembly | 05700-004-65-67 |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Complete Bracket Assembly
05700-005-02-12
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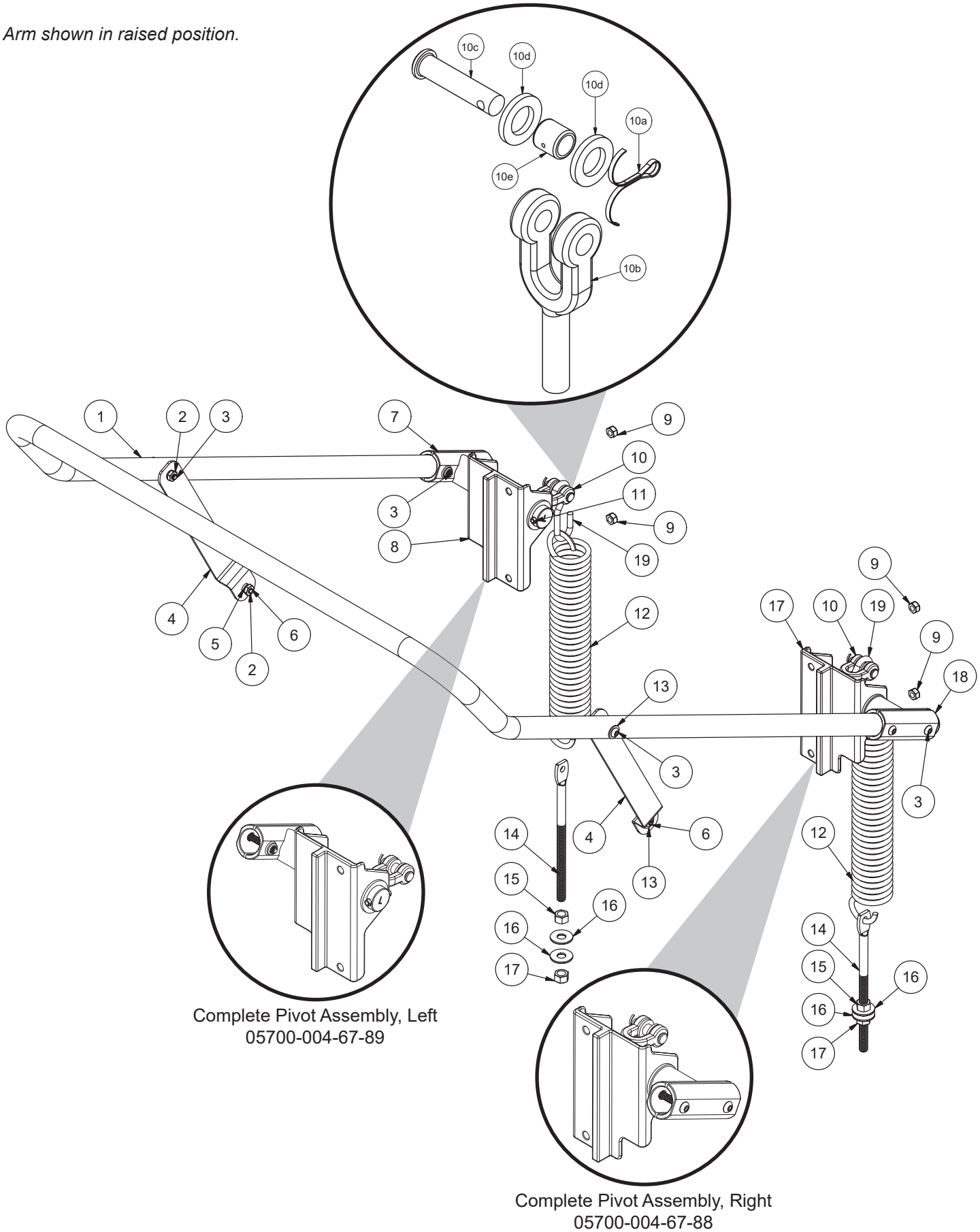
| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Cover, Door Magnet | 96662062 |
| 2 | 2 | Locknut, 6-32 Hex with Nylon Insert | 05310-373-03-00 |
| 3 | 1 | Door Magnet | 05930-002-88-42 |
| 4 | 1 | Door Handle | 05700-003-26-62 |
| 5 | 2 | Bolt, 1/4-20 x 3/8" Hex | 05305-274-20-00 |
| 6 | 2 | Washer, 1/4-20 | 05311-174-01-00 |
| 7 | 4 | Screw, 1/4-20 x 1/2" Button Head Hex | 05305-004-62-33 |
| 8 | 12 | Locknut, 1/4-20 Hex with Nylon Insert | 05310-374-01-00 |
| 9 | 2 | Rail, Door Slide | 09330-004-77-86 |
| 10 | 8 | Washer, 1/4-20 | 05311-174-01-00 |
| 11 | 2 | Cover, Door Track Rear Wall | 05700-004-79-58 |
| 12 | 1 | Hood Top | 05700-004-78-46 |
| 13 | 1 | Hood Back | 05700-005-02-13 |
| 14 | 2 | Bracket, Pivot | 05700-004-91-66 |
| 15 | 18 | Screw, 1/4-20 x 1 1/4" Button Head Hex | 05305-005-01-94 |
| 16 | 4 | Bumper, Door | 05700-004-14-25 |
| 17 | 2 | Bracket, Door Guide Front | 05700-004-95-43 |
| 18 | 2 | Corner Post | 05700-004-94-99 |
| 19 | 1 | Rack Guide, Rear | 05700-005-00-07 |

# DYNASTAR CANTILEVER ARM

*Arm shown in raised position.*




Complete Pivot Assembly, Left
05700-004-67-89

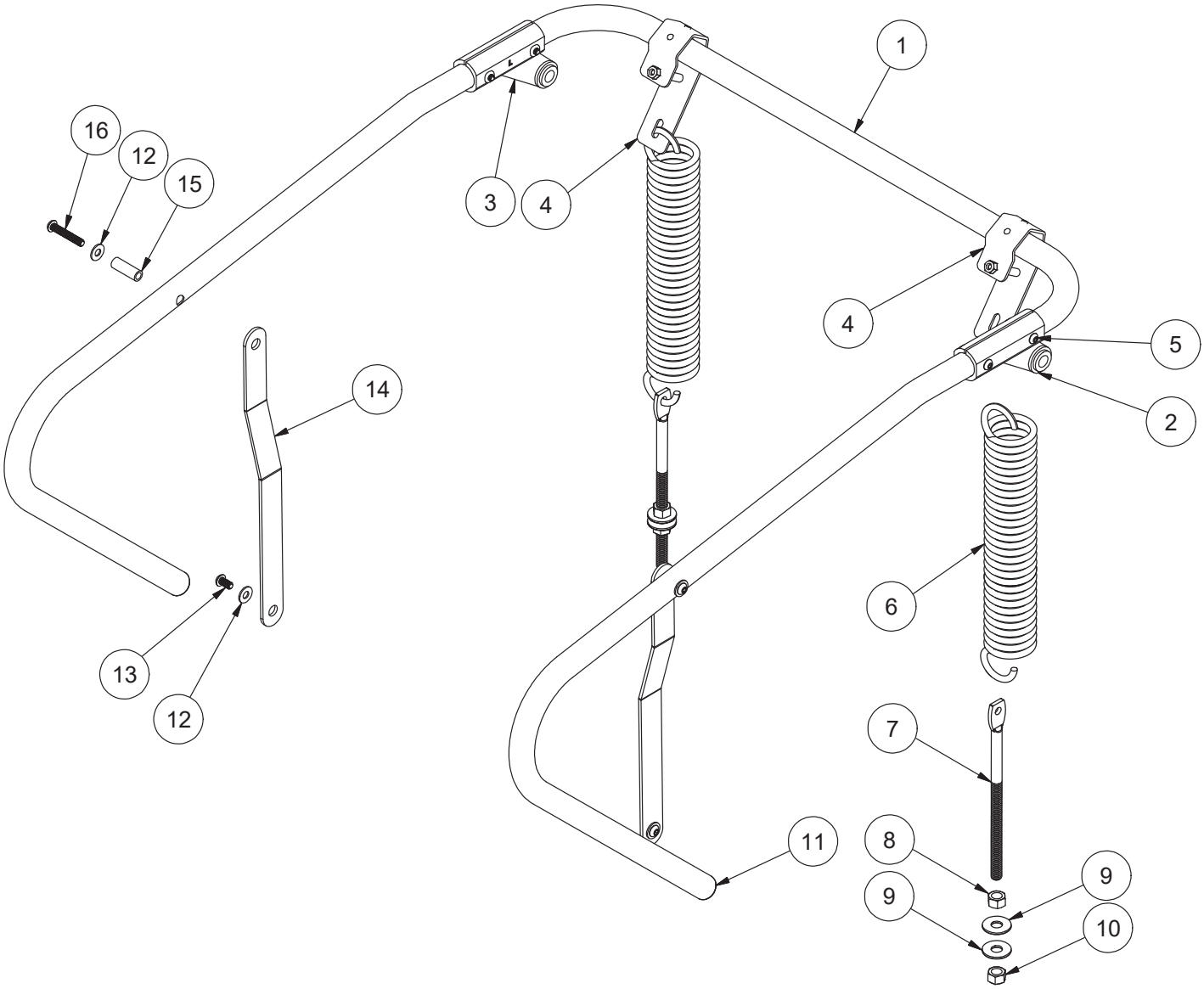
Complete Pivot Assembly, Right
05700-004-67-88

# DYNASTAR CANTILEVER ARM

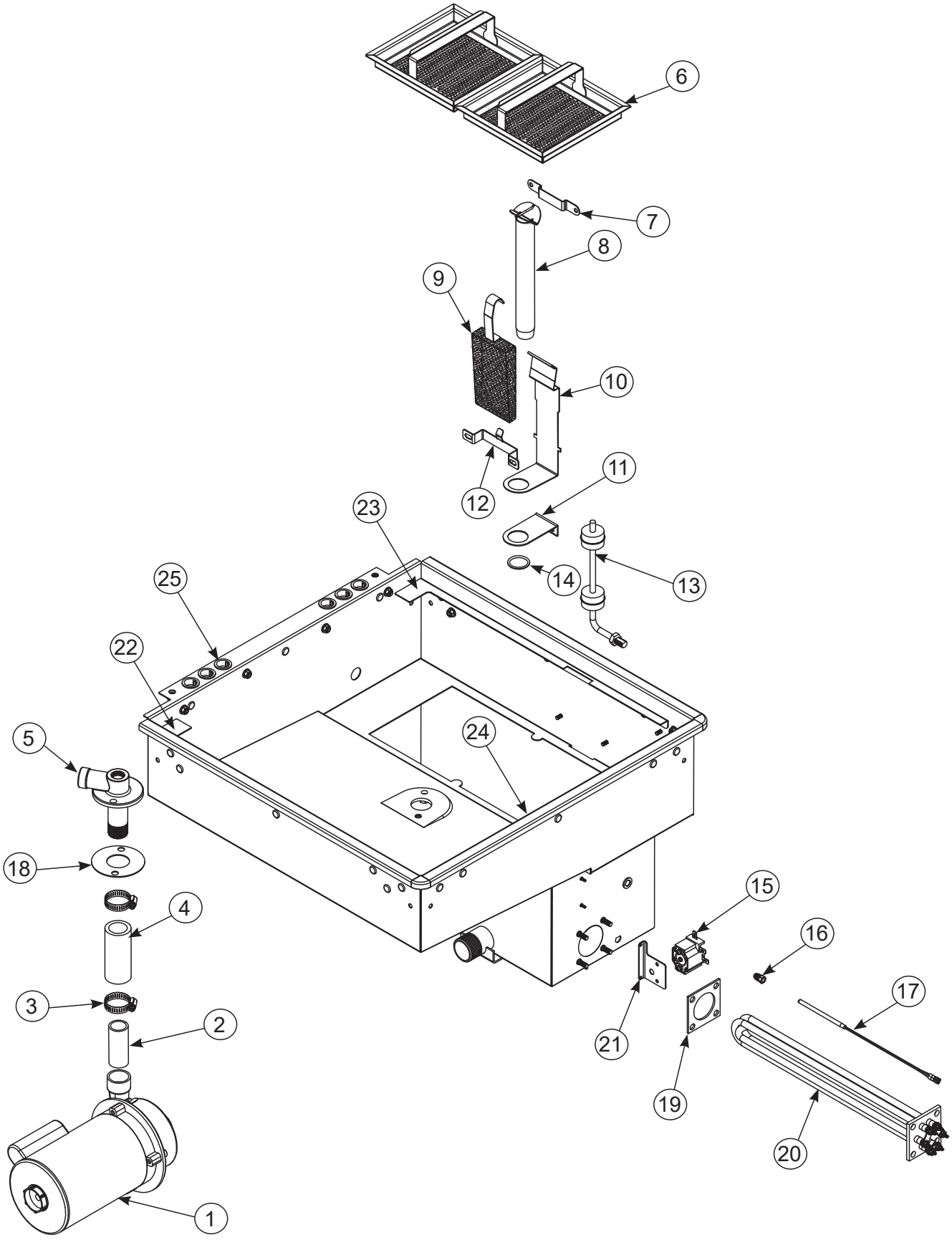
| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Cantilever Arm | 05700-004-58-62 |
| 2 | 4 | Locknut, 1/4-20 Low Profile with Nylon Insert | 05310-374-02-00 |
| 3 | 8 | Screw, 1/4-20 x 1 1/2" Button Head Hex | 05305-004-66-43 |
| 4 | 2 | Link, Hood to Handle | 05700-004-58-64 |
| 5 | 2 | Spacer, PB Bolt | 05700-000-29-40 |
| 6 | 4 | Screw, 1/4-20 x 1/2" Button Head Hex | 05305-004-62-33 |
| 7 | 1 | Pivot, Left | 09515-004-58-53 |
| 8 | 1 | Bracket, Door Pivot, Left | 09515-004-59-98 |
| 9 | 4 | Locknut, 1/4-20 Hex with Nylon Insert | 05310-374-01-00 |
| 10<br>10a<br>10b<br>10c<br>10d<br>10e | 2<br>1 per<br>1 per<br>1 per<br>2 per<br>1 per | Complete Yoke Assembly<br>Cotter Pin<br>Yoke<br>Clevis Pin, 5/16” x 1 3/8”<br>Nylon Washer<br>Bushing | 05700-000-75-77<br>05315-207-01-00<br>05700-000-75-78<br>05315-700-01-00<br>05311-369-03-00<br>03120-100-03-00 |
| 11 | 2 | Spring Pin, 1 1/4" | 05315-407-06-00 |
| 12 | 2 | Door Spring | 05340-004-66-19 |
| 13 | 4 | Washer, 1/4-20 | 05311-174-01-00 |
| 14 | 2 | Bolt, Cantilever Hang Eye | 05306-956-05-00 |
| 15 | 2 | Nut, Hex 3/8-16 | 05310-276-01-00 |
| 16 | 4 | Washer, Impeller 3/8" Flat SS | 05311-176-02-00 |
| 17 | 2 | Locknut, 3/8-16 with Nylon Insert | 05310-011-72-55 |
| 18 | 1 | Pivot, Right | 09515-004-58-52 |
| 19 | 2 | Spring Rod | 05700-004-63-28 |

# HH-E CANTILEVER ARM

*Arm shown in raised position.*



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Cantilever Arm | 05700-004-75-56 |
| 2 | 1 | Pivot, Cantilever Arm Right | 05700-004-81-77 |
| 3 | 1 | Pivot, Cantilever Arm Left | 05700-004-81-78 |
| 4 | 2 | Hook, Spring Cantilever | 05700-004-83-02 |
| 5 | 4 | Screw, 1/4-20 x 1 1/2" Button Head Hex | 05305-004-66-43 |
| 6 | 2 | Door Spring | 05340-004-82-97 |
| 7 | 2 | Bolt, Cantilever Hang Eye | 05306-956-05-00 |
| 8 | 2 | Nut, Hex 3/8-16 | 05310-276-01-00 |
| 9 | 4 | Washer, Impeller 3/8" Flat | 05311-176-02-00 |
| 10 | 2 | Locknut, 3/8-16 with Nylon Insert | 05310-011-72-55 |
| 11 | 2 | Plug, Handle | 96022447 |
| 12 | 4 | Washer, 1/4-20 | 05311-174-01-00 |
| 13 | 4 | Screw, 1/4-20 x 1/2" Button Head Hex | 05305-004-62-33 |
| 14 | 2 | Door Link | 05700-004-78-61 |
| 15 | 2 | Sleeve, Cantilever Arm | 05700-000-85-69 |
| 16 | 2 | Screw, 1/4-20 x 1 1/2" Button Head Hex | 05305-004-66-43 |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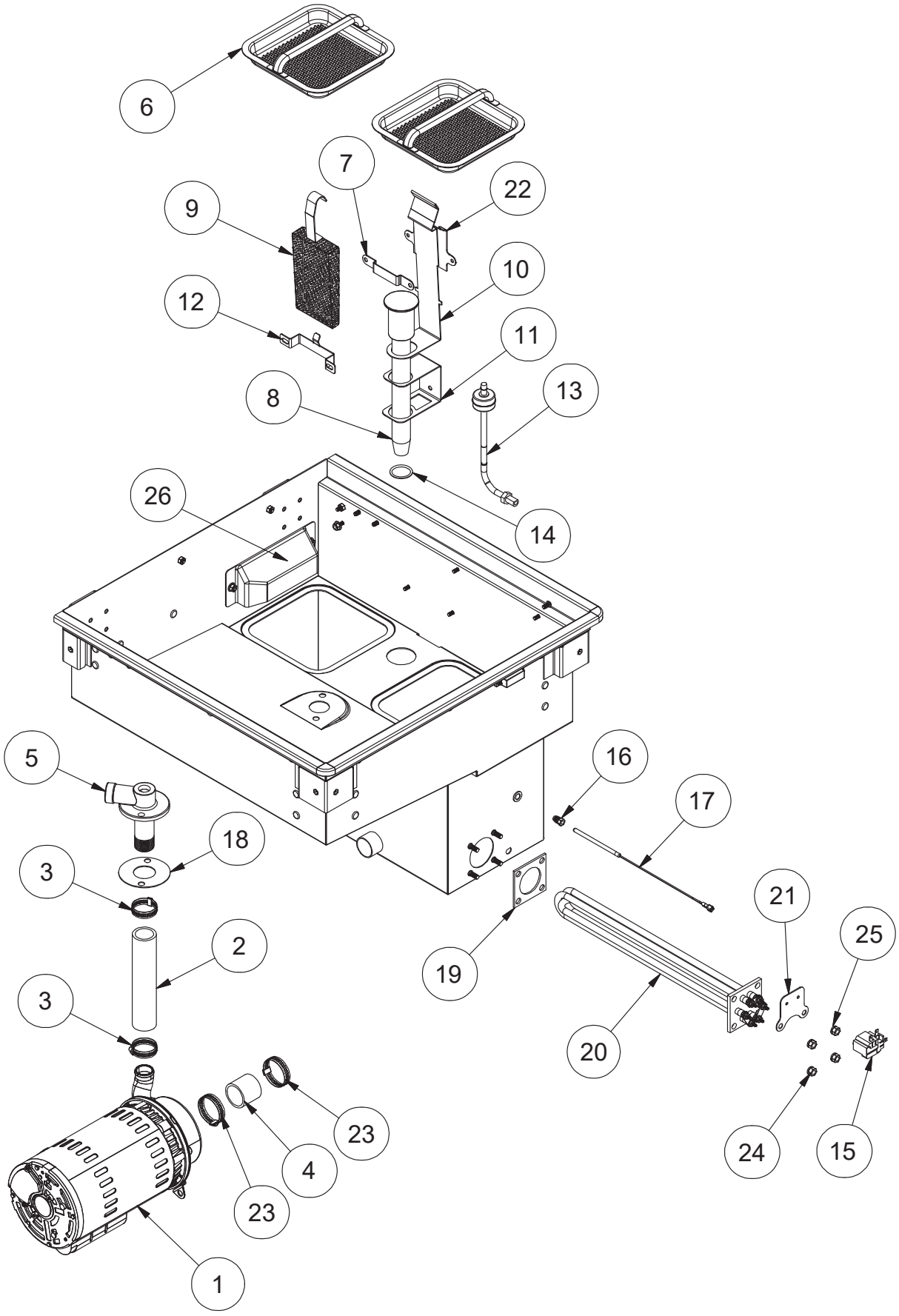
| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Wash Motor | See Wash Motors page. |
| 2 | 1 | Wash Lower Manifold Nipple | 05700-021-34-84 |
| 3 | 2 | Clamp | 04730-719-18-00 |
| 4 | 1 | Discharge Hose | 05700-011-88-24 |
| 5 | 1 | Lower Wash Manifold | 09515-004-60-33 |
| 6 | 2 | Strainer | 05700-004-26-21 |
| 7 | 1 | Standpipe Bracket | 05700-004-26-24 |
| 8 | 1 | Standpipe | 05700-001-25-69 |
| 9 | 1 | Suction Strainer | 05700-001-22-23 |
| 10 | 1 | Standpipe Lift Handle | 05700-004-26-23 |
| 11 | 1 | Standpipe Support | 05700-001-27-55 |
| 12 | 1 | Suction Strainer Bracket | 05700-001-22-24 |
| 13 | 1 | Dual Float Switch | 06680-121-70-71 |
| 14 | 1 | O-ring | 05330-400-05-00 |
| 15 | 1 | Thermostat | 05930-004-33-12 |
| 16 | 1 | Probe Fitting | 05310-924-02-05 |
| 17 | 1<br>1 | Thermistor Probe<br>Plug (NB) (Not Shown) | 06685-004-17-26<br>05700-004-47-32 |
| 18 | 1 | Gasket, Manifold | 05700-111-35-03 |
| 19 | 1 | Wash Heater Gasket | 05330-011-47-79 |
| 20 | 1 | Wash Heater | See Heaters page. |
| 21 | 1 | Thermostat Bracket | 05700-004-36-37 |
| 22 | 1 | Door Stop, Left | 05700-004-58-92 |
| 23 | 1 | Door Stop, Right | 05700-004-57-78 |
| 24 | 1 | Door Stop, Front | 05700-004-57-79 |
| 25 | 6 | Bushing, Snap | 05975-210-09-00 |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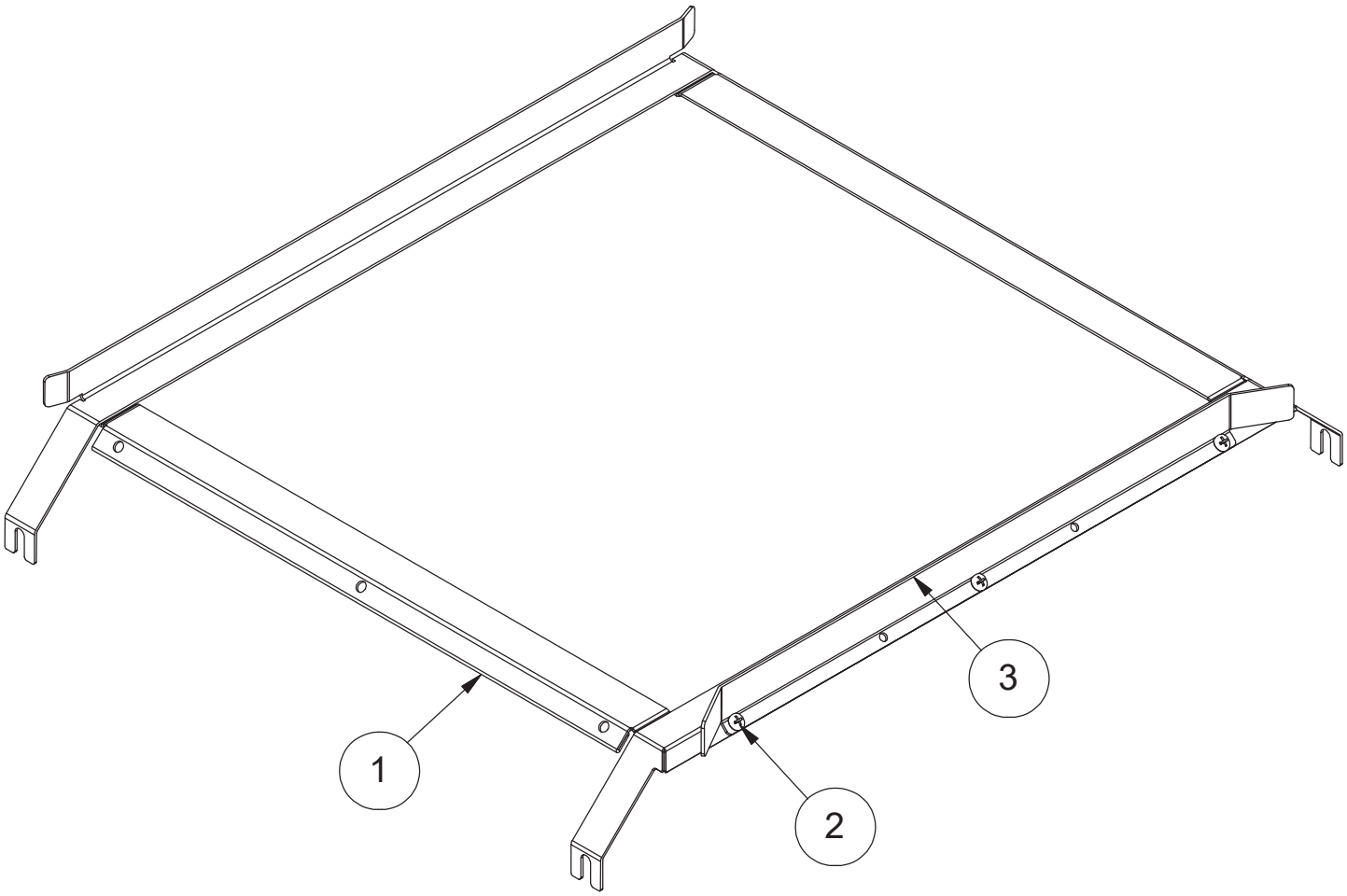
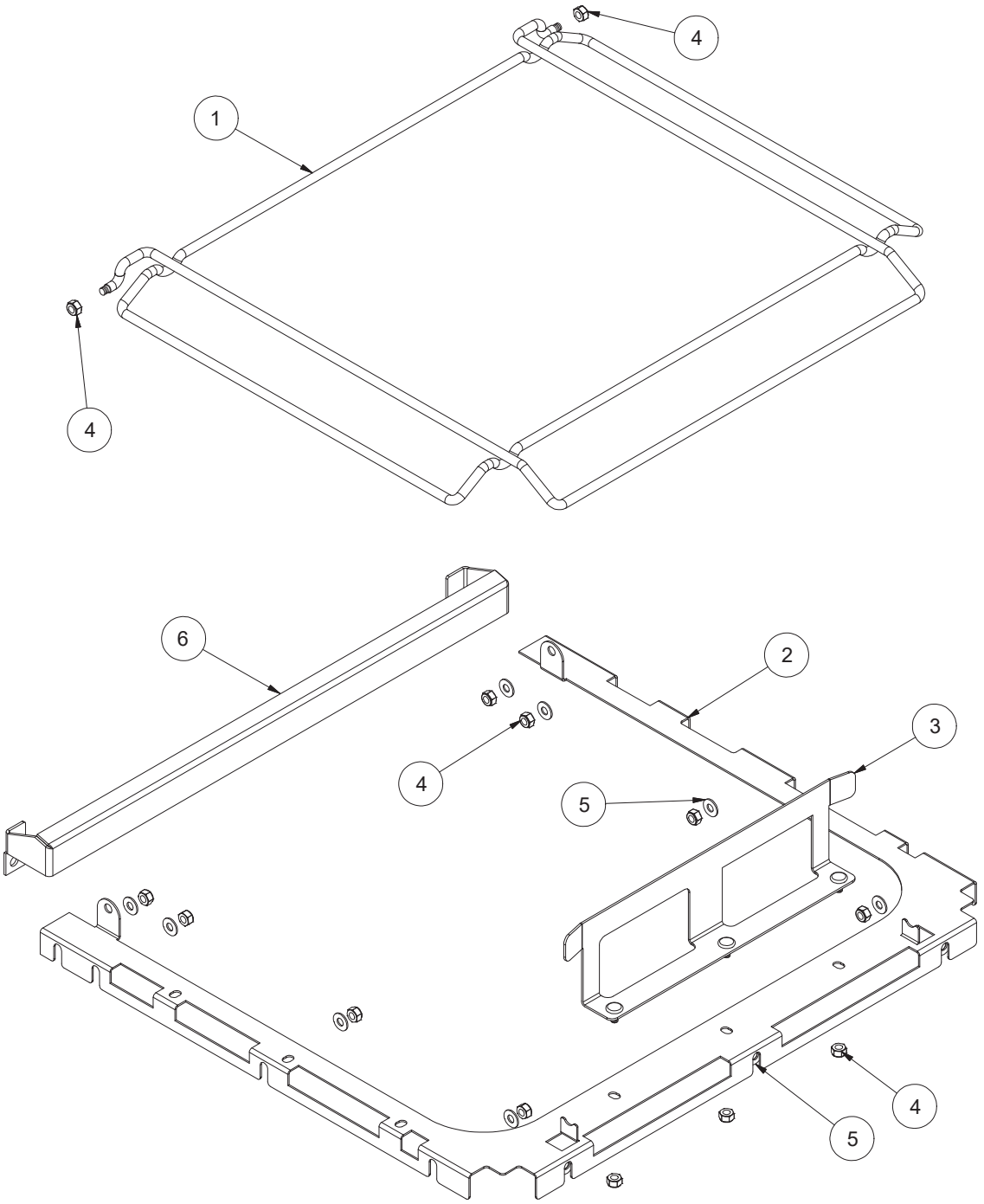
| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Wash Motor | See Wash Motors page. |
| 2 | 1 | Discharge Hose | 05700-004-95-52 |
| 3 | 2 | Clamp | 04730-719-06-09 |
| 4 | 1 | Hose, 1 1/2" x 1 5/8" | 05700-004-84-18 |
| 5 | 1 | Lower Wash Manifold | 05700-002-21-70 |
| 6 | 2 | Strainer | 05700-004-84-14 |
| 7 | 1 | Standpipe Bracket | 05700-004-26-24 |
| 8 | 1 | Standpipe | 09515-004-99-59 |
| 9 | 1 | Suction Strainer | 05700-001-22-23 |
| 10 | 1 | Standpipe Lift Handle | 05700-004-78-62 |
| 11 | 1 | Standpipe Support | 05700-001-27-55 |
| 12 | 1 | Suction Strainer Bracket | 05700-001-22-24 |
| 13 | 1 | Dual Float Switch | 06680-121-70-71 |
| 14 | 1 | O-ring | 05330-400-05-00 |
| 15 | 1 | Thermostat | 05930-004-33-12 |
| 16 | 1 | Probe Fitting | 05310-924-02-05 |
| 17 | 1<br>1 | Thermistor Probe<br>Plug (NB) (Not Shown) | 06685-004-17-26<br>05700-004-47-32 |
| 18 | 1 | Gasket, Manifold | 05700-111-35-03 |
| 19 | 1 | Wash Heater Gasket | 05330-011-47-79 |
| 20 | 1 | Wash Heater | See Heaters page. |
| 21 | 1 | Thermostat Bracket | 05700-004-66-08 |
| 22 | 1 | Standpipe Lift Support | 05700-004-27-94 |
| 23 | 2 | Clamp | 04730-719-18-00 |
| 24 | 4 | Nut, Hex 5/16-18 | 05310-275-01-00 |
| 25 | 4 | Lockwasher, Split 5/16" | 05311-275-01-00 |
| 26 | 1 | Detergent Inlet Cover | 05700-004-99-86 |



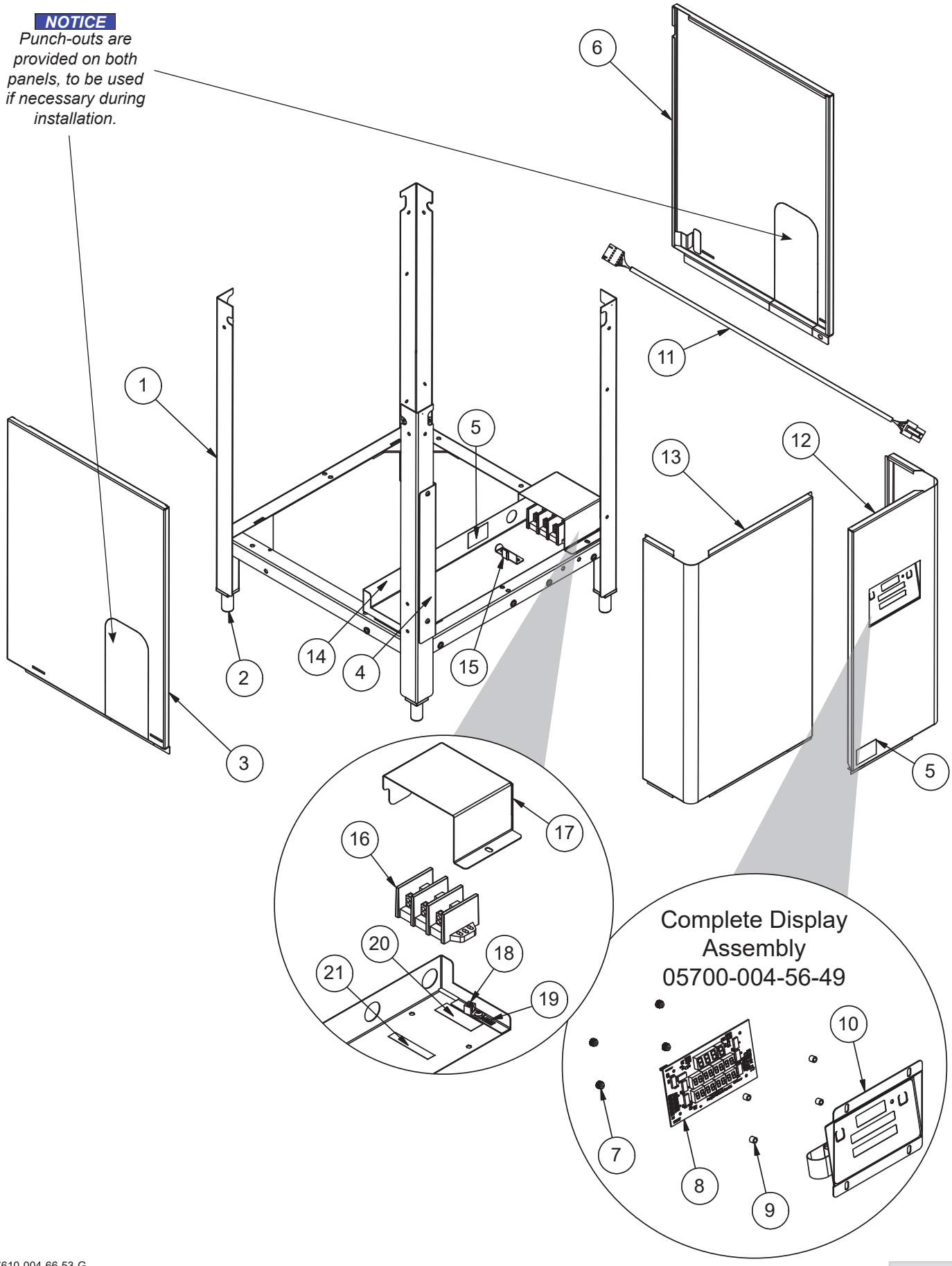

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Rack Support | 05700-004-58-69 |
| 2 | 1 | Rack Guide | 05700-001-28-19 |
| 3 | 3 | Screw, 10-24 x 1/2" | 05305-173-18-00 |




| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Rack Support | 05700-004-95-04 |
| 2 | 1 | Splash Shield | 05700-004-94-44 |
| 3 | 1 | Rack Guide, Front | 05700-004-95-16 |
| 4 | 13 | Locknut, 1/4-20 Hex with Nylon Insert | 05310-374-01-00 |
| 5 | 11 | Washer, 1/4-20 | 05311-174-01-00 |
| 6 | 1 | Rack Guide, Rear | 05700-005-00-07 |

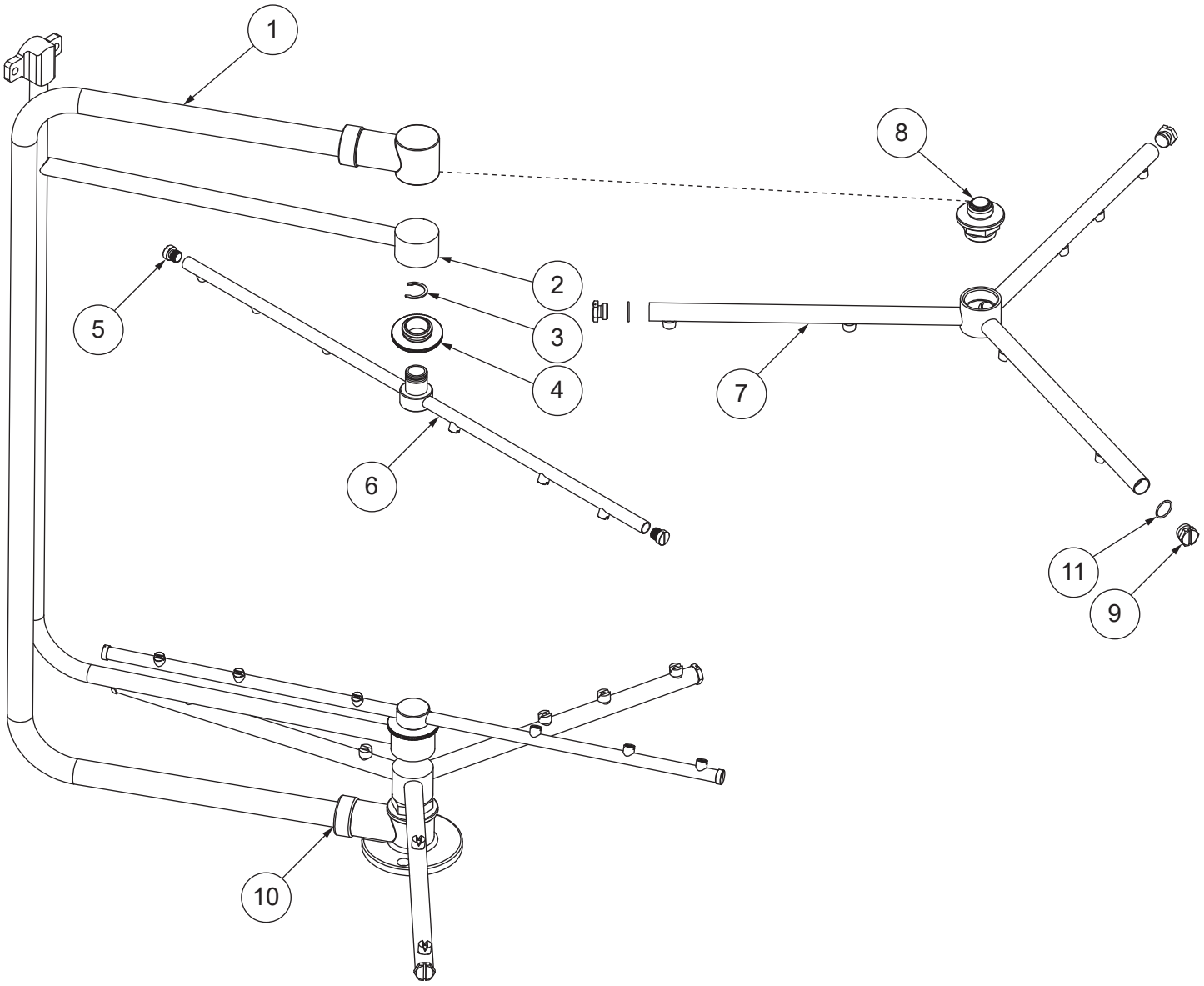
**NOTICE**

*Punch-outs are provided on both panels, to be used if necessary during installation.*



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Frame | 05700-004-60-61 |
| 2 | 4 | Foot, Adjustable | 05340-108-02-06 |
| 3 | 1 | Panel, Left<br>Panel, Left HH-E | 05700-004-64-73<br>05700-004-84-68 |
| 4 | 1 | Bracket, Control Panel Stop | 05700-004-65-45 |
| 5 | 2 | Decal, Warning-Disconnect Power | 09905-100-75-93 |
| 6 | 1 | Panel, Right<br>Panel, Right HH-E | 05700-004-64-74<br>05700-004-84-69 |
| 7 | 4 | Nut, Thumb, 6-32 Nylon | 05310-002-83-12 |
| 8 | 1 | PCB, Digital Display | 05945-004-52-53 |
| 9 | 4 | Spacer, Unthreaded, 9/32" Nylon | 05975-004-47-89 |
| 10 | 1 | Panel and Membrane Switch Assembly | 05700-004-58-72 |
| 11 | 1 | Communication Cable, Display | 05700-004-33-64 |
| 12 | 1 | Panel, Front | 05700-004-66-47 |
| 13 | 1 | Panel, Front Left | 05700-004-57-93 |
| 14 | 1 | Shield, Control Panel | 05700-004-60-62 |
| 15 | 1 | Bracket, Lock | 05700-004-68-47 |
| 16 | 1 | Terminal Block, 3-pole | 05940-011-48-27 |
| 17 | 1 | Cover, Terminal Block | 05700-004-69-49 |
| 18 | 1 | Lug, Ground | 05940-200-76-00 |
| 19 | 1 | Decal, Ground | 09905-011-86-86 |
| 20 | 1 | Decal, Copper Conductors | 09905-011-47-35 |
| 21 | 1 | Decal, L1 L2 L3 (Wild Leg) | 09905-004-37-05 |

# DYNASTAR WASH & RINSE ARMS

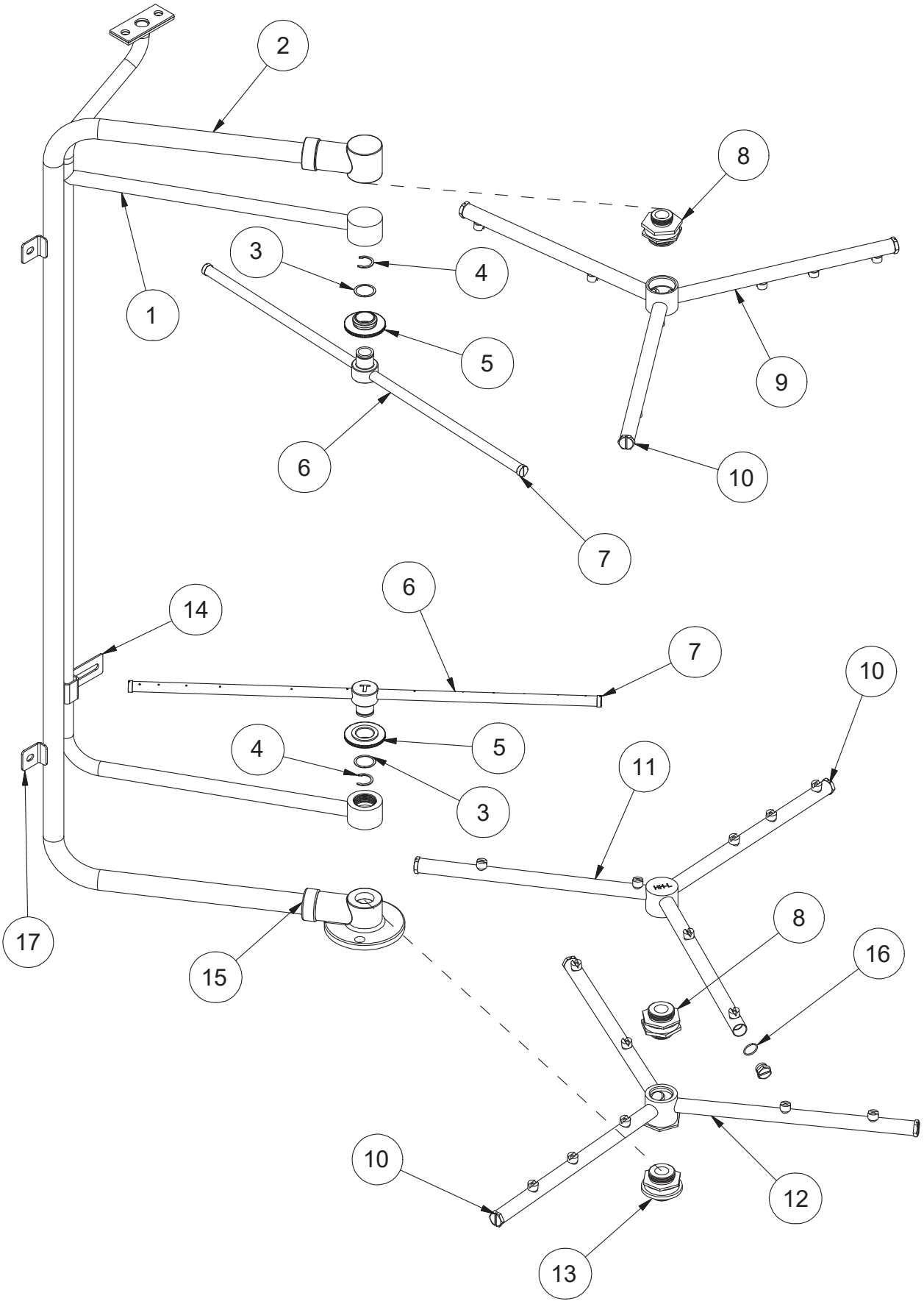


# DYNASTAR WASH & RINSE ARMS

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Wash Manifold | 05700-004-57-86 |
| 2 | 1 | Rinse Manifold | 05700-004-57-83 |
| 3* | 2 | Retaining Ring, Rinse Head Bushing | 05340-112-01-11 |
| 4* | 2 | Bearing Assembly, Rinse Arm | 05700-004-54-71 |
| 5 | 4 | End-cap, Rinse Arm | 05700-004-34-62 |
| 6 | 2 | Complete Rinse Arm Assembly | 05700-004-32-58 |
| | | Rinse Arm | 05700-004-27-62 |
| 7 | 2 | Complete Wash Arm Assembly | 05700-004-32-59 |
| | | Wash Arm | 05700-004-24-81 |
| 8 | 2 | Bearing Assembly, Wash Arm | 05700-021-35-97 |
| 9 | 1 | End-cap, Wash Arm | 05700-011-35-92 |
| 10 | 1 | O-ring, Manifold (Not Shown) | 05330-111-35-15 |
| 11 | 6 | O-ring, Wash Arm End-cap | 05330-005-03-37 |

*Rinse Arm Bearing Kit
(Includes items 3 and 4)
06401-004-57-50

# HH-E WASH & RINSE ARMS



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Rinse Manifold | 05700-004-72-17 |
| 2 | 1 | Wash Manifold | 05700-004-72-12 |
| 3 | 2 | Washer, Rinse Hub | 05311-004-71-42 |
| 4 | 2 | Retaining Ring, Rinse Head Bushing | 05340-112-01-11 |
| 5 | 2 | Bearing Assembly, Rinse Arm | 05700-004-54-71 |
| 6 | 2 | Rinse Arm | 05700-031-49-58 |
| 7 | 4 | End-cap, Rinse Arm | 04730-111-60-41 |
| 8 | 2 | Bearing Assembly, Wash Arm | 05700-003-93-98 |
| 9 | 1 | Wash Arm, Top | 05700-004-78-57 |
| 10 | 9 | End-cap, Wash Arm | 05700-011-35-92 |
| 11 | 1 | Wash Arm, Bottom A | 05700-004-97-90 |
| 12 | 1 | Wash Arm, Bottom B | 05700-004-78-58 |
| 13 | 1 | Bearing Assembly, Wash Arm | 05700-003-93-99 |
| 14 | 1 | Bracket, Rinse Manifold | 05700-005-02-86 |
| 15 | 1 | O-ring, Manifold (Not Shown) | 05330-111-35-15 |
| 16 | 9 | O-ring, Wash Arm End-cap | 05330-005-03-37 |
| 17 | 2 | Bracket, Manifold | 05700-004-58-88 |

Complete Rinse Arm Assembly
(Includes items 8–10)
05700-004-83-82

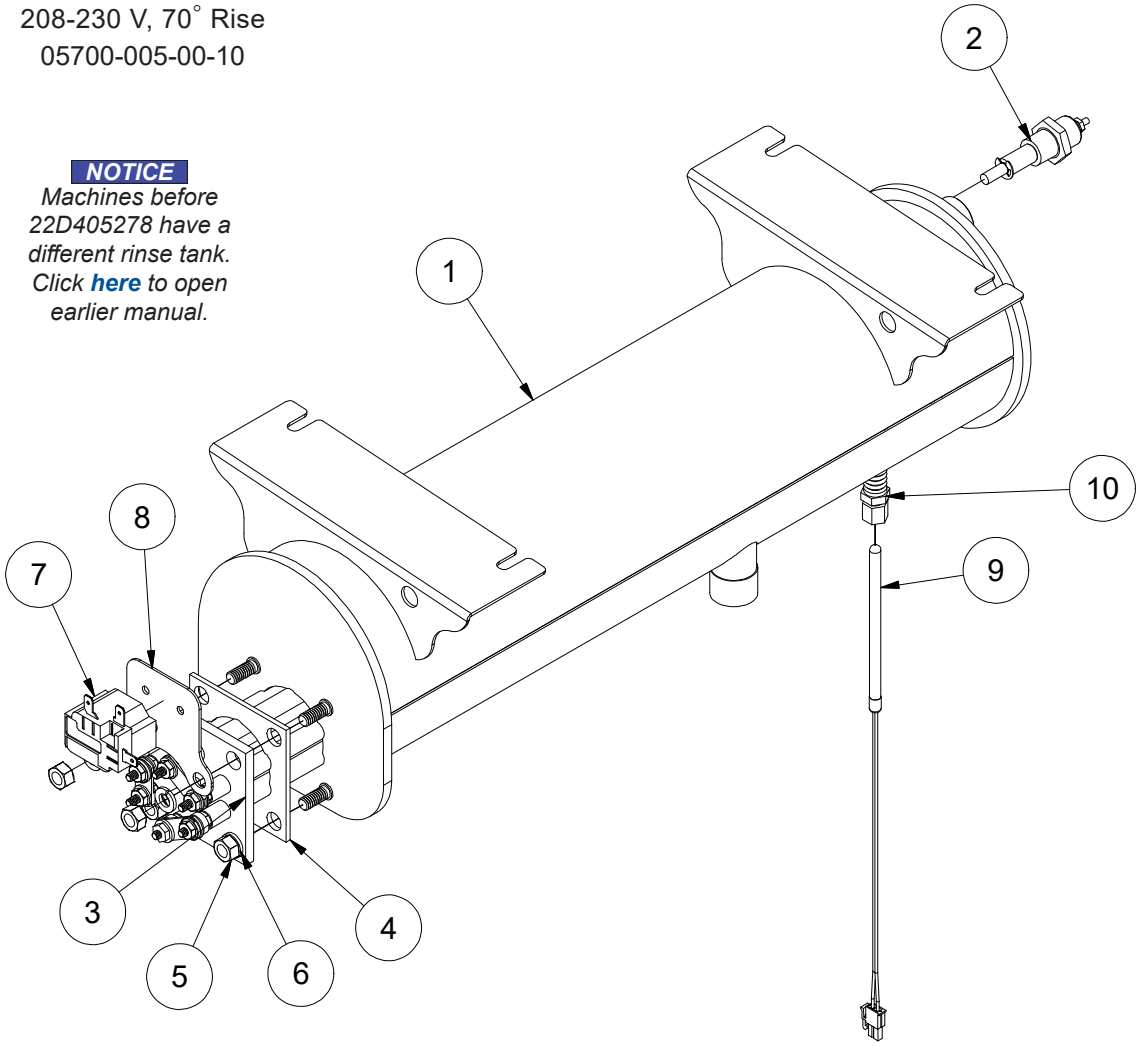
Complete Wash Arm Assembly, Top
(Includes items 3–7)
05700-004-83-84

Complete Wash Arm Assembly, Bottom Double
(Includes items 8 and 10–13)
05700-004-83-83

# DYNASTAR RINSE TANK

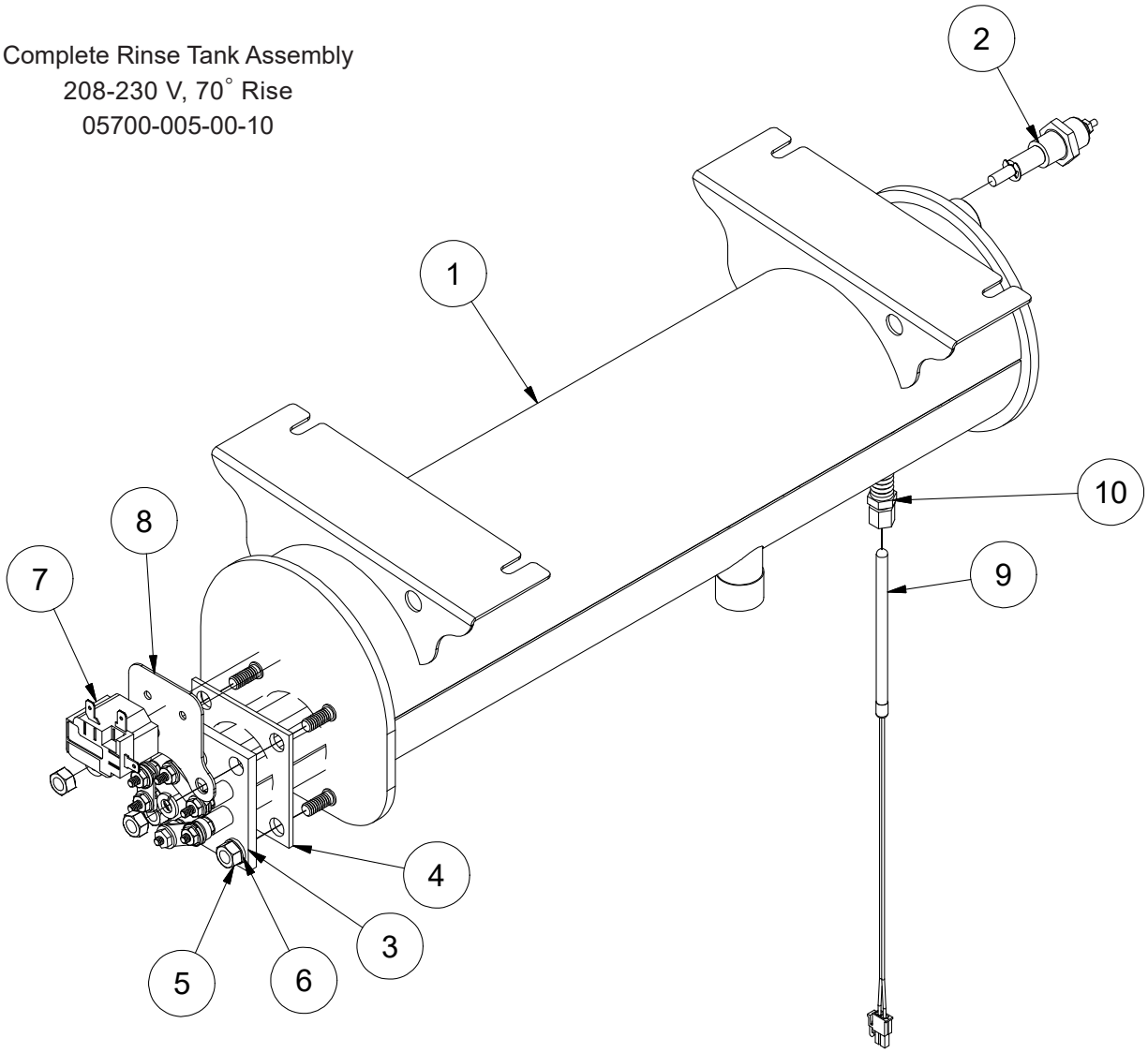
Complete Rinse Tank Assembly
208-230 V, 70˚ Rise
05700-005-00-10

**NOTICE**
*Machines before 22D405278 have a different rinse tank. Click **here** to open earlier manual.*

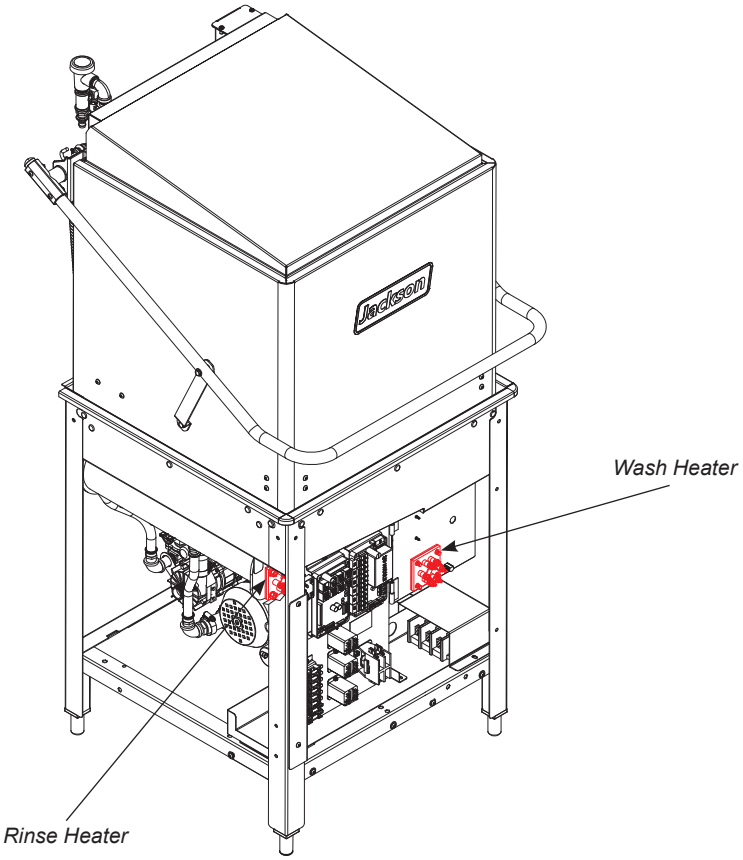



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Tank, Rinse | 05700-004-99-62 |
| 2 | 1 | Probe, High-water | 06680-200-02-68 |
| 3 | 1 | Heater, Rinse | See Heaters page. |
| 4 | 1 | Gasket, Heater | 05330-011-47-79 |
| 5 | 4 | Nut, Hex 5/16-18 | 05310-275-01-00 |
| 6 | 4 | Lockwasher, Split 5/16” | 05311-275-01-00 |
| 7 | 1 | Thermostat, High-limit | 05930-004-33-12 |
| 8 | 1 | Bracket, High-limit | 05700-004-66-08 |
| 9 | 1 | Thermistor Probe | 06685-004-34-58 |
| 10 | 1 | Union, 1/4" | 05700-001-16-52 |

Complete Rinse Tank Assembly
208-230 V, 70˚ Rise
05700-005-00-10




| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Tank, Rinse | 05700-004-99-62 |
| 2 | 1 | High Water Probe | 06680-200-02-68 |
| 3 | 1 | Heater, Rinse | See Heaters page. |
| 4 | 1 | Gasket, Heater | 05330-011-47-79 |
| 5 | 4 | Nut, Hex 5/16-18 | 05310-275-01-00 |
| 6 | 4 | Lockwasher, Split 5/16” | 05311-275-01-00 |
| 7 | 1 | Thermostat, High-limit | 05930-004-33-12 |
| 8 | 1 | Bracket, High-limit | 05700-004-66-08 |
| 9 | 1 | Thermistor Probe | 06685-004-34-58 |
| 10 | 1 | Union, 1/4" | 05700-001-16-52 |




The models covered in this manual come supplied with various heaters, depending on the characteristics of the machine. To ensure you order the correct heater for the model you are servicing, please refer to the following tables:

| MODEL | VOLTS | Hz | PHASE | WASH HEATER | RINSE HEATER |
|---|---|---|---|---|---|
| All Models except NB | 208 | 60 | 1 | 04540-121-47-39 | 04540-004-75-04 |
| All Models except NB | 208 | 60 | 3 | 04540-121-47-39 | 04540-004-75-04 |
| All Models except NB | 230 | 60 | 1 | 04540-121-47-39 | 04540-004-75-04 |
| All Models except NB | 230 | 60 | 3 | 04540-121-47-39 | 04540-004-75-04 |
| All Models except NB | 460 | 60 | 3 | 04540-121-65-99 | 04540-002-29-82 |

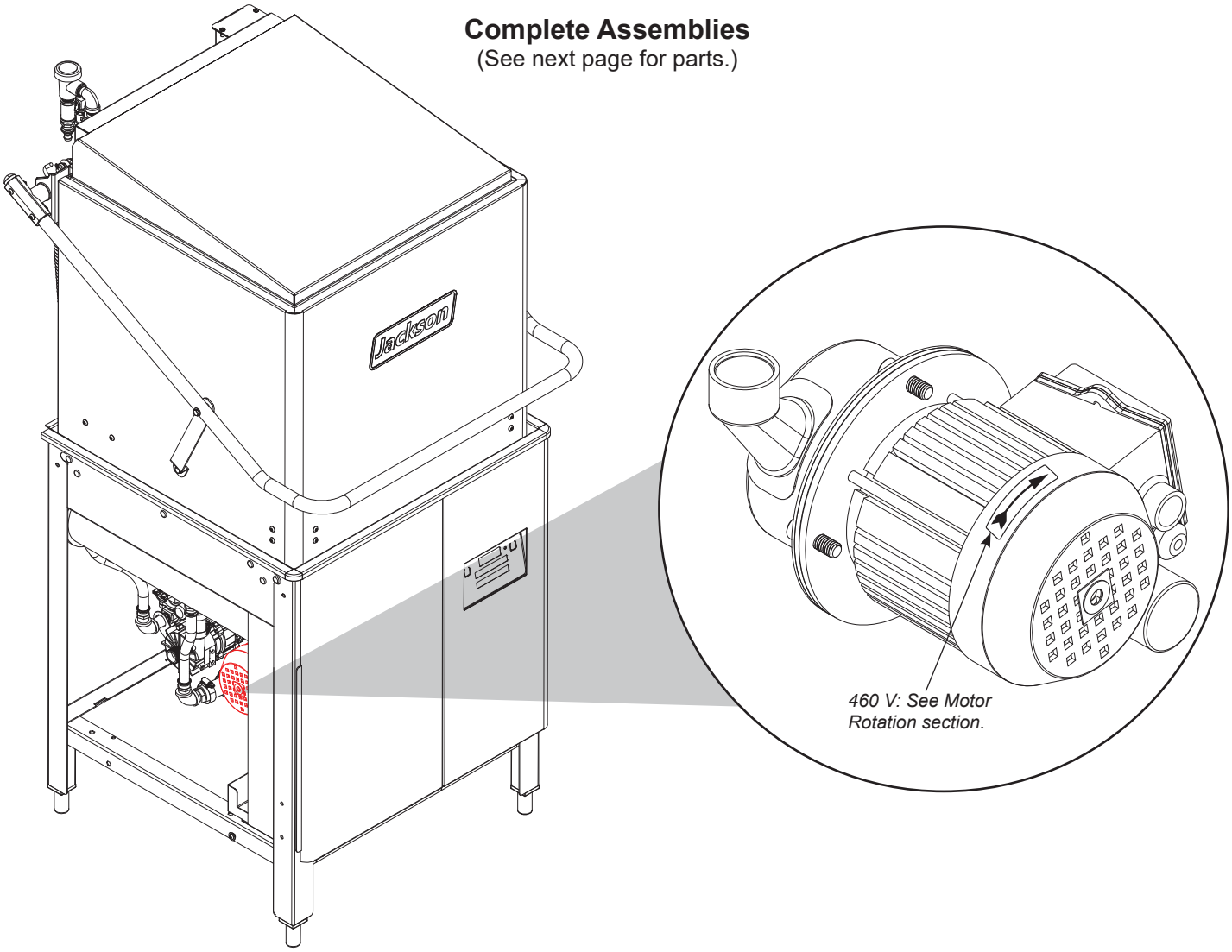
| MODEL | VOLTS | Hz | PHASE | WASH HEATER |
|---|---|---|---|---|
| NB Models | 208 | 60 | 1 | 04540-121-47-39 |
| NB Models | 208 | 60 | 3 | 04540-121-47-39 |
| NB Models | 230 | 60 | 1 | 04540-121-47-39 |
| NB Models | 230 | 60 | 3 | 04540-121-47-39 |
| NB Models | 460 | 60 | 3 | 04540-121-65-99 |

**Heater Phase Conversion Kit**

06401-004-00-22

## Complete Assemblies

(See next page for parts.)




The models covered in this manual come supplied with various wash motor assemblies (a wash motor assembly includes the wash motor and the pump end), depending on the characteristics of the machine. To ensure you order the correct wash motor assembly for the model you are servicing, please refer to the following table:

| MODEL | VOLTS | Hz | PHASE | WASH MOTOR ASSEMBLY |
|---|---|---|---|---|
| DynaStar Series | 208/230 | 60 | 1/3 | 06105-004-24-80[1] |
| DynaStar Series | 460 | 60 | 3 | 06105-121-64-21[2] |

*[1]Use P/N 06105-004-32-04 to order the motor only.*
*[2]Use P/N 06105-002-62-71 to order the motor only.*

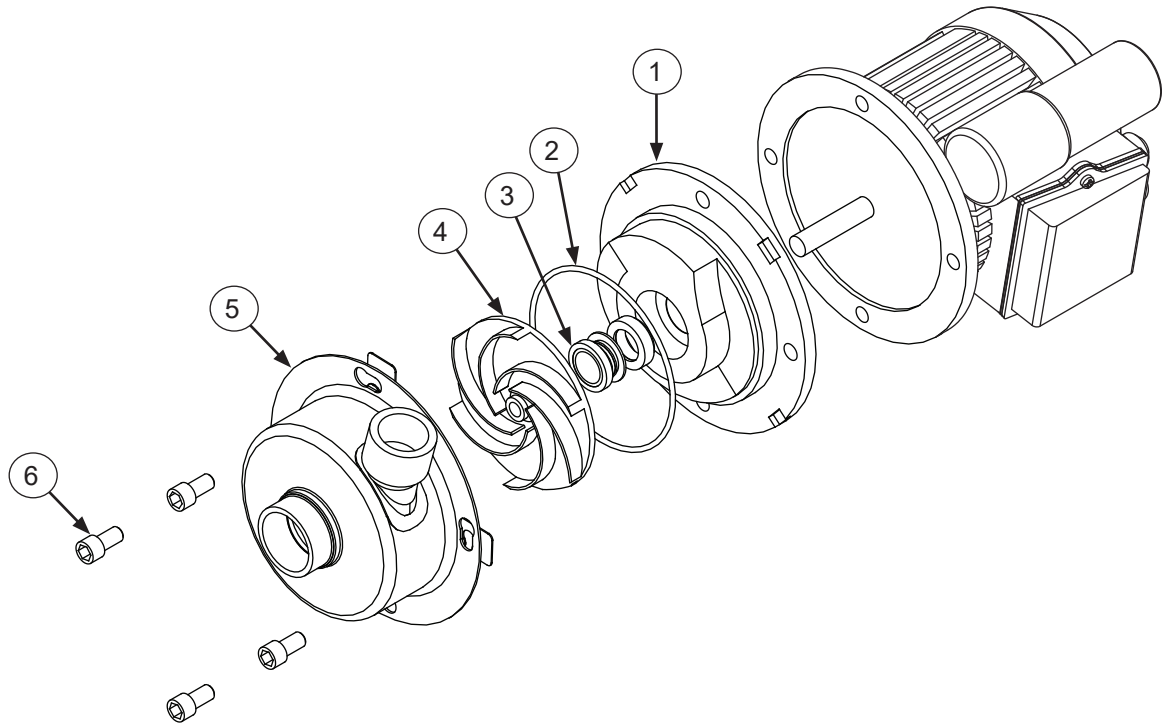
| MODEL | VOLTS | Hz | PHASE | WASH MOTOR ASSEMBLY |
|---|---|---|---|---|
| DynaStar HH-E Series | 208/230 | 60 | 1/3 | 06105-004-85-94 |
| DynaStar HH-E Series | 460 | 60 | 3 | 06105-004-85-95 |

**NOTICE**

*When servicing a wash motor, it is important to refer to the wiring schematic found on the motor to ensure the motor is wired correctly. Different manufacturers of motors might not use the same wire color codes and your new motor might not connect using the same wires. Always refer to the wiring diagrams on the motor you are installing. If the motor you are installing has had the schematic removed, contact the manufacturer immediately for technical support.*

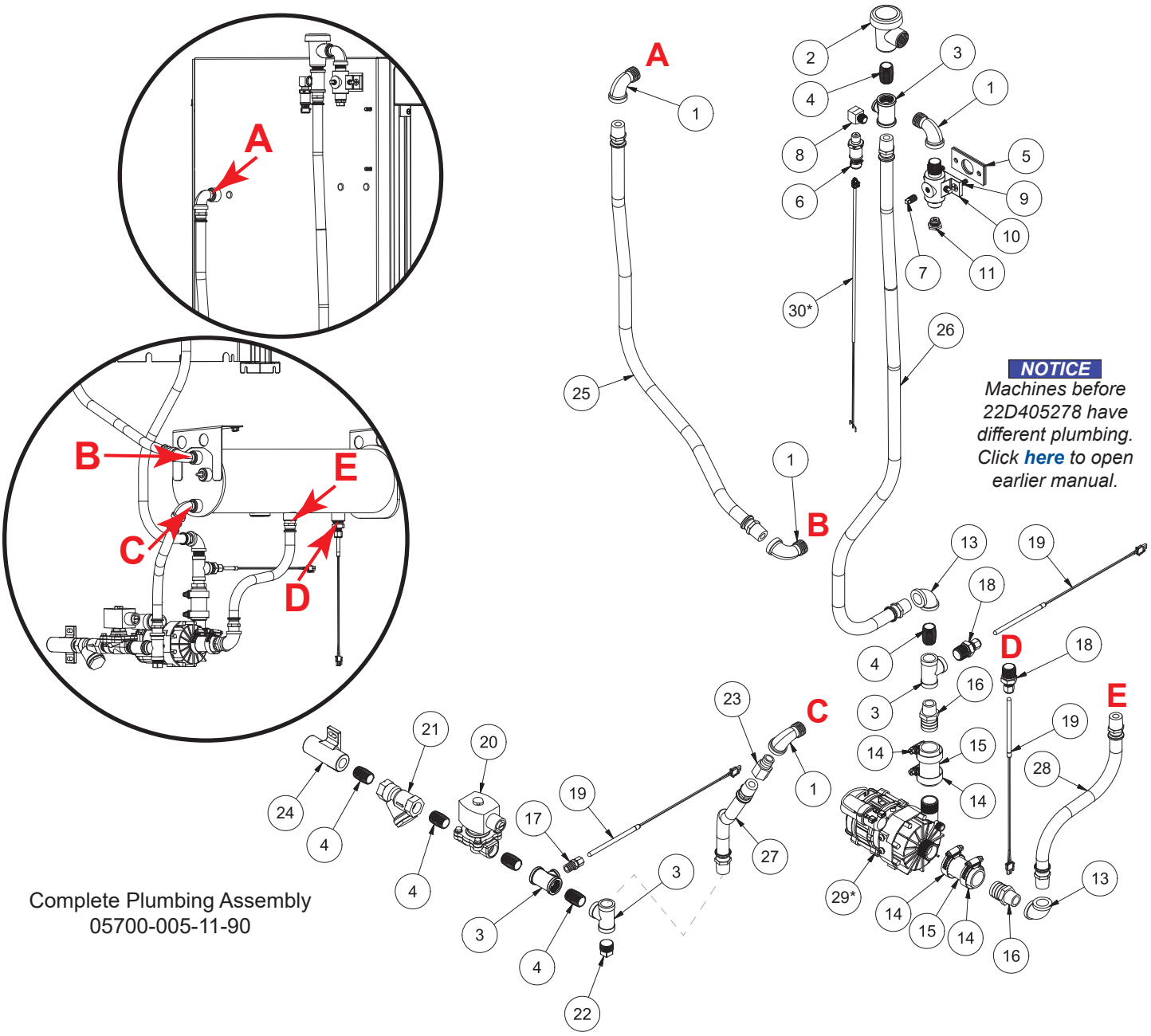
## Parts

(See previous page for complete assemblies.)




The models covered in this manual come supplied with various wash motors (see previous page), depending on the characteristics of the machine. To ensure you order the correct parts for the model you are servicing, please refer to the following table:

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Seal Plate, 208/230 V | 05700-002-81-87 |
| | 1 | Seal Plate, 460 V | 05700-002-06-22 |
| 2 | 1 | Case O-ring, 208/230 V | 05330-002-81-83 |
| | 1 | Case O-ring, 460 V | 05330-002-87-02 |
| 3 | 1 | Mechanical Seal, 208/230 V | 05330-002-34-22 |
| | 1 | Mechanical Seal, 460 V | 05330-002-87-16 |
| 4 | 1 | Impeller Assembly, 208/230 V | 05700-002-81-86 |
| | 1 | Impeller Assembly, 460 V | 05700-002-06-19 |
| 5 | 1 | Pump Casing 208/230 V | 05700-002-85-01 |
| | 1 | Pump Casing 460 V | 05700-002-06-20 |
| 6 | 1 | Case Capscrew, 208/230 V | 05305-002-81-88 |



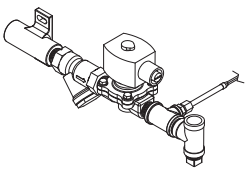

**NOTICE**

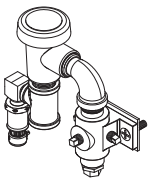
*Machines before 22D405278 have different plumbing. Click **here** to open earlier manual.*

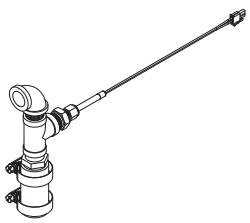
Complete Plumbing Assembly
05700-005-11-90

To order complete assemblies:

| Inlet Plumbing | Vacuum Breaker Plumbing | Rinse Pump Outlet Plumbing |
|---|---|---|
| 05700-004-99-81 | 05700-004-65-63 | 05700-004-66-83 |







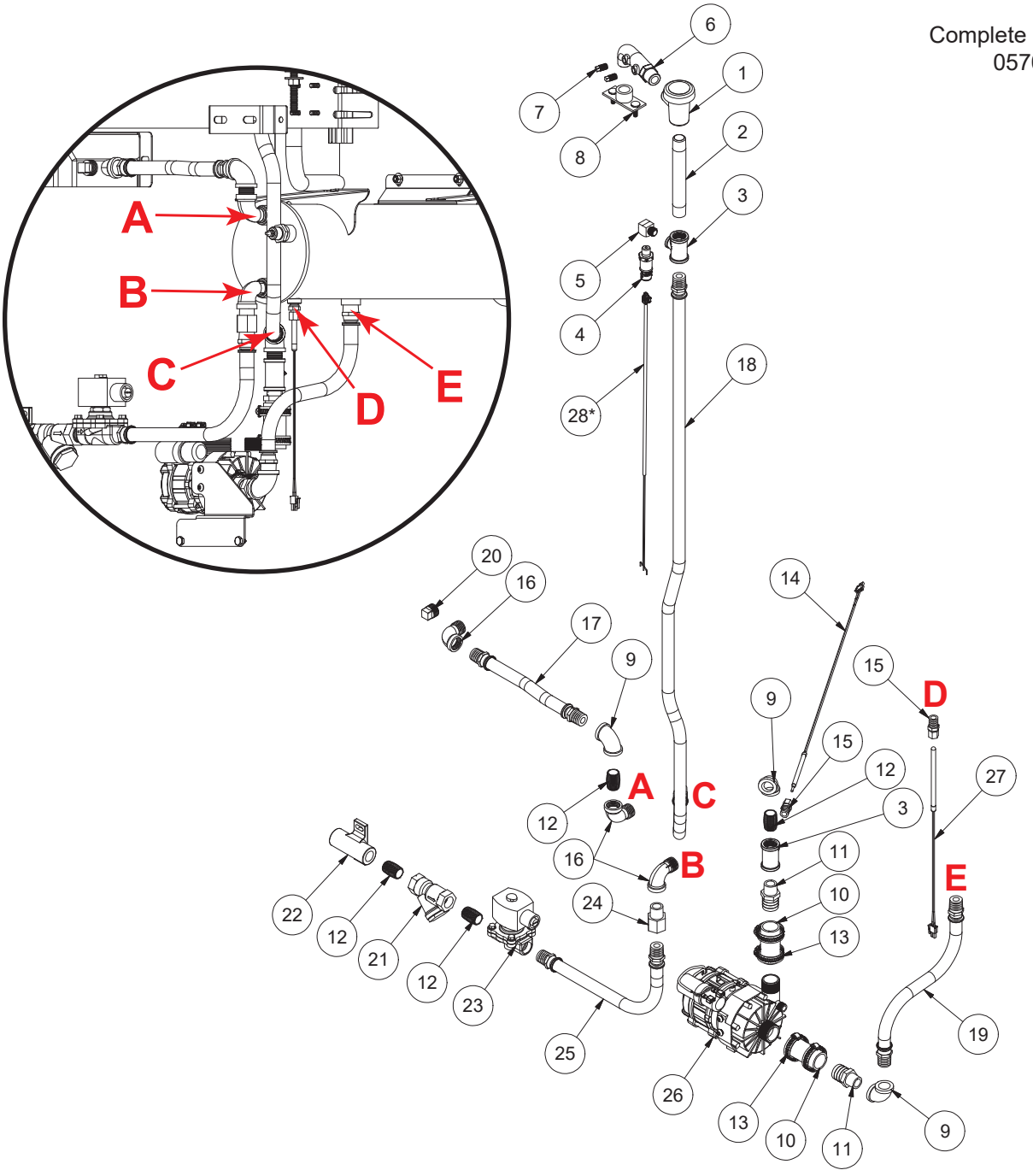
**Part must be ordered separately.*

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 5 | Elbow, 90-Degree 1/2" Street Brass | 04730-206-08-00 |
| 2 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 3 | 3 | Tee | 04730-002-22-56 |
| 4 | 5 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 5 | 2 | Gasket, Rinse Manifold | 05330-003-75-91 |
| 6 | 1 | Pressure Transducer | 05945-004-17-01 |
| 7 | 3 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 8 | 1 | Elbow, 90-Degree 1/4" x 1/4" | 86075017 |
| 9 | 2 | Screw, 1/4-20 x 1" | 05305-011-81-58 |
| 10 | 1 | Injector, Rinse Manifold | 09515-004-22-73 |
| 11 | 1 | Adapter | 05700-002-29-75 |
| 12 | 1 | Fitting, Thermostat Brass | 05700-011-73-73 |
| 13 | 2 | Elbow, 90-Degree 1/2" Brass | 04730-011-42-96 |
| 14 | 4 | Clamp, Hose, 13/16" x 1 1/2" | 04730-719-06-09 |
| 15 | 2 | Hose, Black, 1" ID, 1 1/2" Long | 05700-004-68-24 |
| 16 | 2 | Fitting, 1" x 1/2" Brass | 04730-004-68-25 |
| 17 | 1 | Union, 1/4" Modified | 05700-001-16-52 |
| 18 | 2 | Probe Fitting | 04730-004-71-72 |
| 19 | 2 | Fast-acting Probe | 06685-004-75-99 |
| 20 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 21 | 1 | Y-strainer, 1/2" | 04730-217-01-10 |
| 22 | 1 | Union, 1/2" x 1/2" Brass | 04730-003-62-44 |
| 23 | 1 | Flow Limiter, 1/2" | 04730-004-67-76 |
| 24 | 1 | Casting, 1/2" Flanged Coupling | 05700-004-47-97 |
| 25 | 1 | Hose, 1/2" Red | 05700-005-03-71 |
| 26 | 1 | Hose, 1/2" Red | 05700-004-66-89 |
| 27 | 1 | Hose, 1/2" Blue | 05700-005-03-67 |
| 28 | 1 | Hose, 1/2" Red | 05700-004-67-85 |
| 29* | 1 | Rinse Pump | 05700-004-67-91 |
| 30* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-33-62<br>05700-004-33-59 |

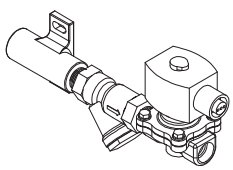
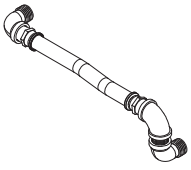
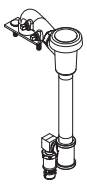
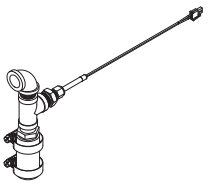
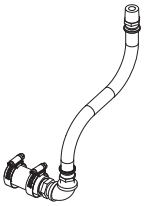
***NOTICE***

*Machines before 22D405278 have different plumbing. Click **here** to open earlier manual.*

Complete Plumbing Assembly
05700-005-02-28




To order complete assemblies:

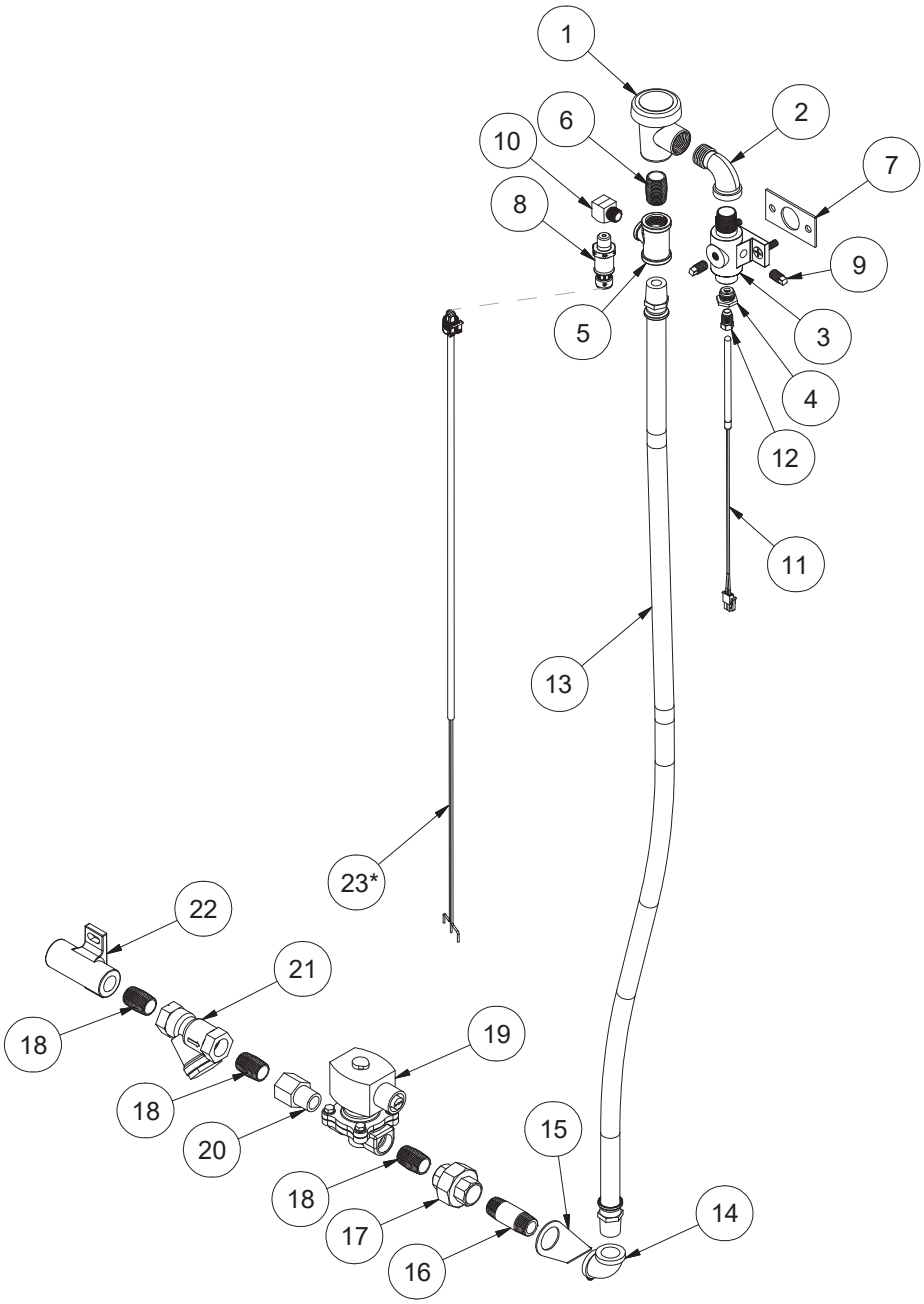
| Inlet Plumbing 05700-005-02-29 | Tank Fill Plumbing 05700-005-00-13 | Rinse Manifold Plumbing 05700-004-84-19 | Rinse Pump Outlet Plumbing 05700-004-66-83 | Rinse Pump Plumbing 05700-004-67-86 |
|---|---|---|---|---|
|  |  |  |  |  |

**Part must be ordered separately.*

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 2 | 1 | Nipple, 1/2" x 6" Brass | 04730-003-62-38 |
| 3 | 2 | Tee | 04730-002-22-56 |
| 4 | 1 | Pressure Transducer | 05945-004-17-01 |
| 5 | 1 | Elbow, 90-Degree 1/4" x 1/4" | 04730-003-77-83 |
| 6 | 1 | Rinse Injector | 09515-004-94-21 |
| 7 | 2 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 8 | 1 | Injector Plate | 05700-002-04-71 |
| 9 | 3 | Elbow, 90-Degree 1/2" Brass | 04730-011-42-96 |
| 10 | 2 | Hose, Black, 1" ID, 1 1/2" Long | 05700-004-68-24 |
| 11 | 2 | Fitting, 1" x 1/2" Brass | 04730-004-68-25 |
| 12 | 4 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 13 | 4 | Clamp, 13/16" x 1 1/2" | 04730-719-06-09 |
| 14 | 1 | Fast-acting Probe | 06685-004-75-99 |
| 15 | 1 | Union, 1/4" Modified | 05700-001-16-52 |
| 16 | 3 | Elbow, 90-Degree 1/2" Street Brass | 04730-206-08-00 |
| 17 | 1 | Hose, 1/2" x 5" | 05700-005-00-14 |
| 18 | 1 | Hose, 1/2" x 48 1/2" | 05700-005-00-27 |
| 19 | 1 | Hose, 1/2" x 10" | 05700-004-67-84 |
| 20 | 2 | Plug, 1/2" | 04730-209-03-00 |
| 21 | 1 | Y-strainer, 1/2" | 04730-217-01-10 |
| 22 | 1 | Coupling, 1/2" | 05700-004-47-97 |
| 23 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 24 | 1 | Flow Limiter, 1/2" | 04730-004-67-76 |
| 25 | 1 | Hose, Booster Inlet, 1/2" | 05700-005-02-30 |
| 26* | 1 | Rinse Pump | 05700-004-67-91 |
| 27 | 1 | Thermistor Probe | 06685-004-34-58 |
| 28* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-33-62<br>05700-004-33-59 |

**NOTICE**

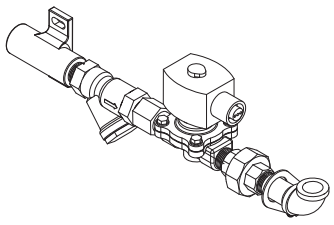
*When servicing plumbing components, take care not to damage the threads of each individual item. Damaged threads can cause leaks and loss of pressure, which could adversely affect the performance of the DynaStar machine. It is strongly recommended that teflon thread tape—used in conservative amounts—be applied to threads when joining components together. It is not advised to use thread sealing compounds, sometimes referred to as "pipe dope." Compounds can be ejected from the threads during the tightening process and become lodged in key components, rendering them useless, including solenoid valves and pressure gauge isolation ball valves.*




To order complete assemblies:

Rinse Injector Plumbing
05700-004-46-48

Inlet Plumbing
05700-004-62-60



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 2 | 1 | Elbow, 90-Degree 1/2" Street Brass | 04730-206-08-00 |
| 3 | 1 | Injector, Rinse Manifold | 05700-004-26-98 |
| 4 | 1 | Adapter | 05700-002-29-75 |
| 5 | 1 | Tee | 04730-002-22-56 |
| 6 | 1 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 7 | 1 | Gasket, Rinse Manifold | 05330-003-75-91 |
| 8 | 1 | Pressure Transducer | 05945-004-17-01 |
| 9 | 3 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 10 | 1 | Elbow, 90-Degree 1/4" x 1/4" | 04730-003-77-83 |
| 11 | 1 | Thermistor Probe | 06685-004-34-58 |
| 12 | 1 | Probe Fitting | 05310-924-02-05 |
| 13 | 1 | Red Hose, NB Inlet, 1/2" | 05700-004-70-90 |
| 14 | 1 | Elbow, 90-Degree 1/2" | 04730-011-42-96 |
| 15<br>15a | 1<br>2 | Bracket, Plumbing<br>Screw, 1/4-20 x 1/2" (Not Shown) | 05700-004-67-50<br>05305-004-62-33 |
| 16 | 1 | Nipple, 1/2" x 2" Brass | 04730-207-19-00 |
| 17 | 1 | Union, 1/2" x 1/2" Brass | 04730-003-62-44 |
| 18 | 3 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 19 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 20 | 1 | Flow Limiter, 1/2" | 04730-004-67-76 |
| 21 | 1 | Y-Strainer, 1/2" | 04730-217-01-10 |
| 22 | 1 | Coupling, 1/2" | 05700-004-47-97 |
| 23* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-33-62<br>05700-004-33-59 |

**NOTICE**

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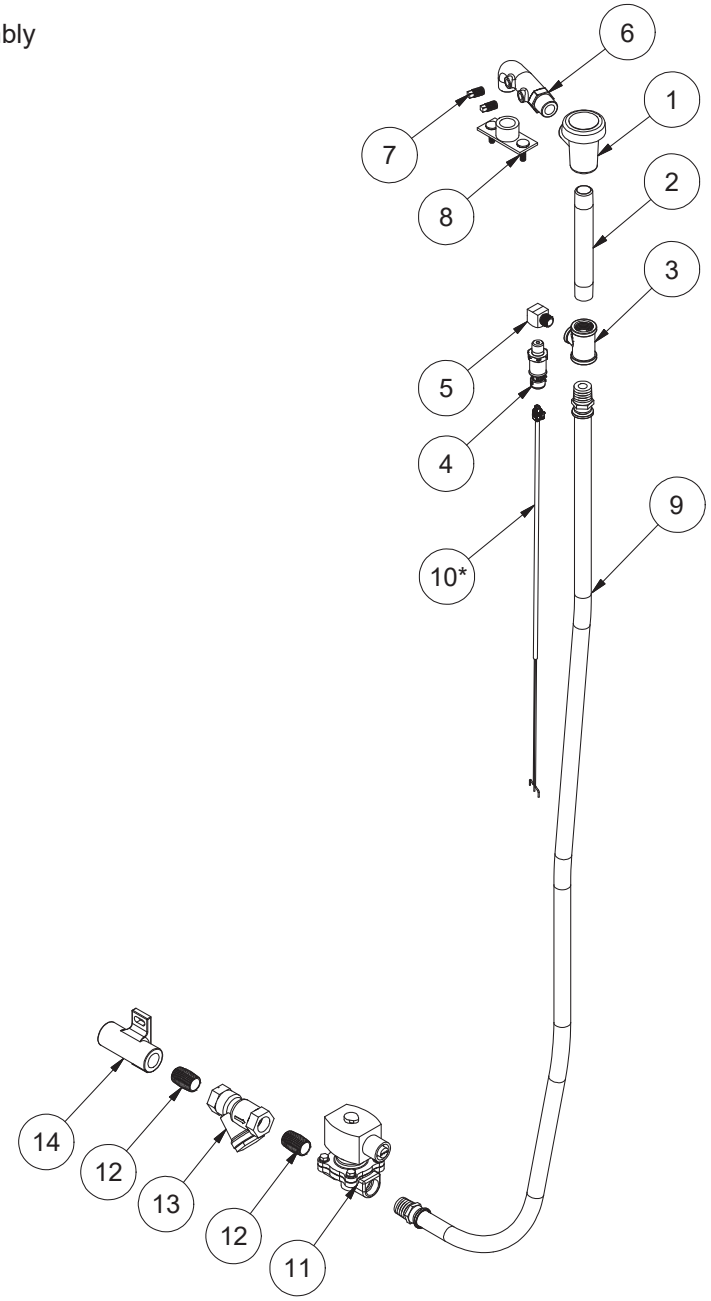
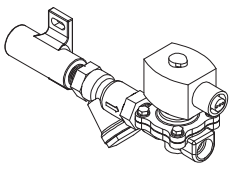
**Part must be ordered separately.*

Complete Plumbing Assembly
05700-005-02-38

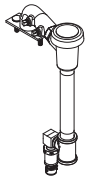



To order complete assemblies:

Inlet
Plumbing
05700-005-02-29



Rinse Manifold
Plumbing
05700-004-84-19



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 2 | 1 | Nipple, 1/2" x 6" Brass | 04730-003-62-38 |
| 3 | 1 | Tee | 04730-002-22-56 |
| 4 | 1 | Pressure Transducer | 05945-004-17-01 |
| 5 | 1 | Elbow, 90-Degree 1/4" x 1/4" | 04730-003-77-83 |
| 6 | 1 | Rinse Injector | 09515-004-94-21 |
| 7 | 2 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 8 | 1 | Injector Plate | 05700-002-04-71 |
| 9 | 1 | Hose, Inlet Water, 1/2" | 05700-005-02-39 |
| 10* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-68-24 |
| 11 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 12 | 2 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 13 | 1 | Y-strainer, 1/2" | 04730-217-01-10 |
| 14 | 1 | Coupling, 1/2" | 05700-004-47-97 |

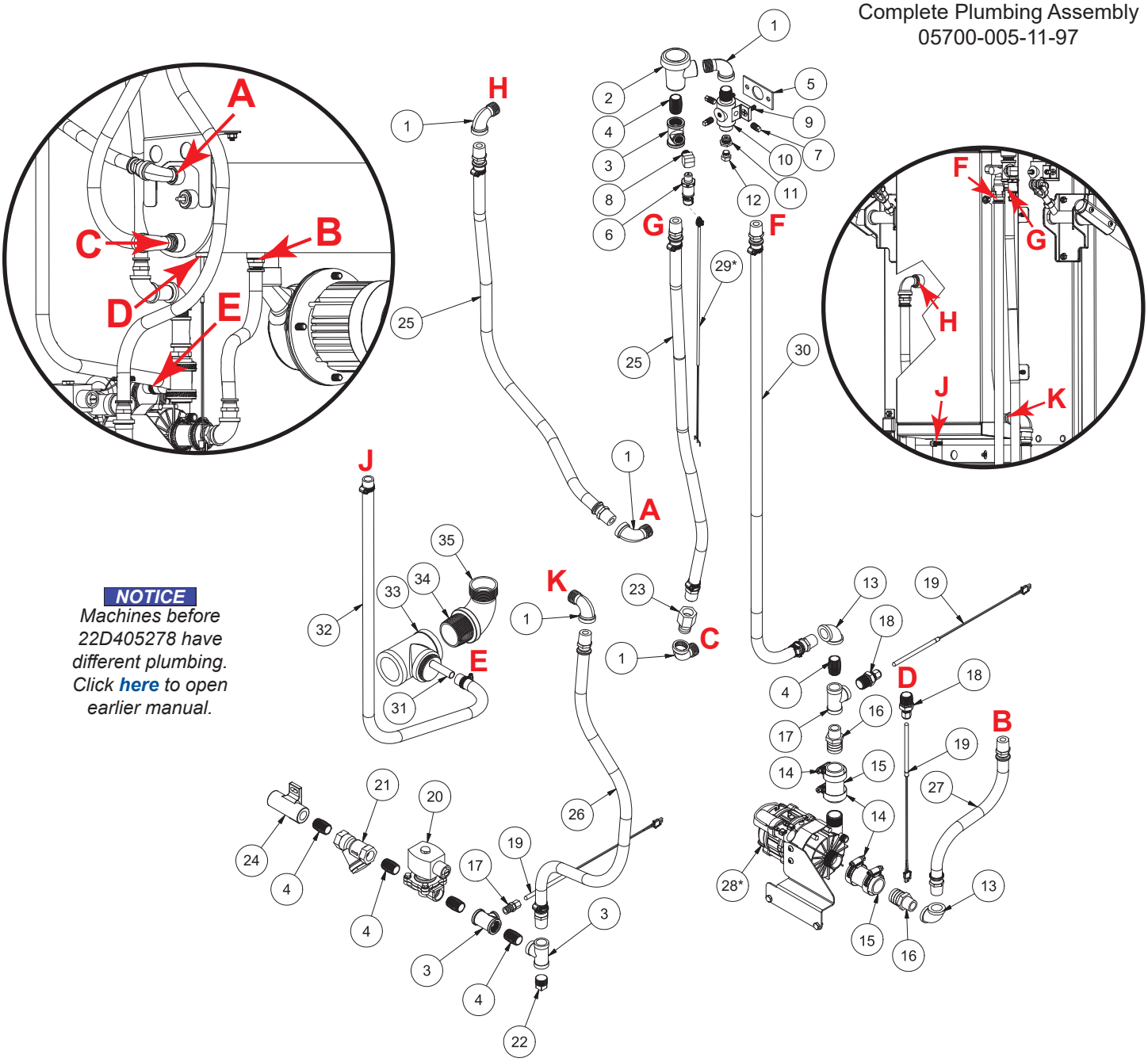
**NOTICE**

*When servicing plumbing components, take care not to damage the threads of each individual item. Damaged threads can cause leaks and loss of pressure, which could adversely affect the performance of the DynaStar machine. It is strongly recommended that teflon thread tape—used in conservative amounts—be applied to threads when joining components together. It is not advised to use thread sealing compounds, sometimes referred to as "pipe dope." Compounds can be ejected from the threads during the tightening process and become lodged in key components, rendering them useless, including solenoid valves and pressure gauge isolation ball valves.*

**Part must be ordered separately.*

# DYNASTAR VER PLUMBING

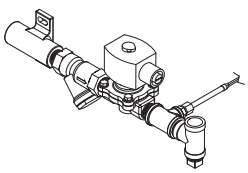
Complete Plumbing Assembly
05700-005-11-97

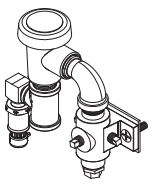


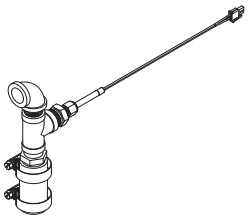

**NOTICE**
*Machines before 22D405278 have different plumbing. Click **here** to open earlier manual.*

To order complete assemblies:

| Inlet Plumbing | Vacuum Breaker Plumbing | Rinse Pump Outlet Plumbing |
|---|---|---|
| 05700-004-99-81 | 05700-004-65-63 | 05700-004-66-83 |







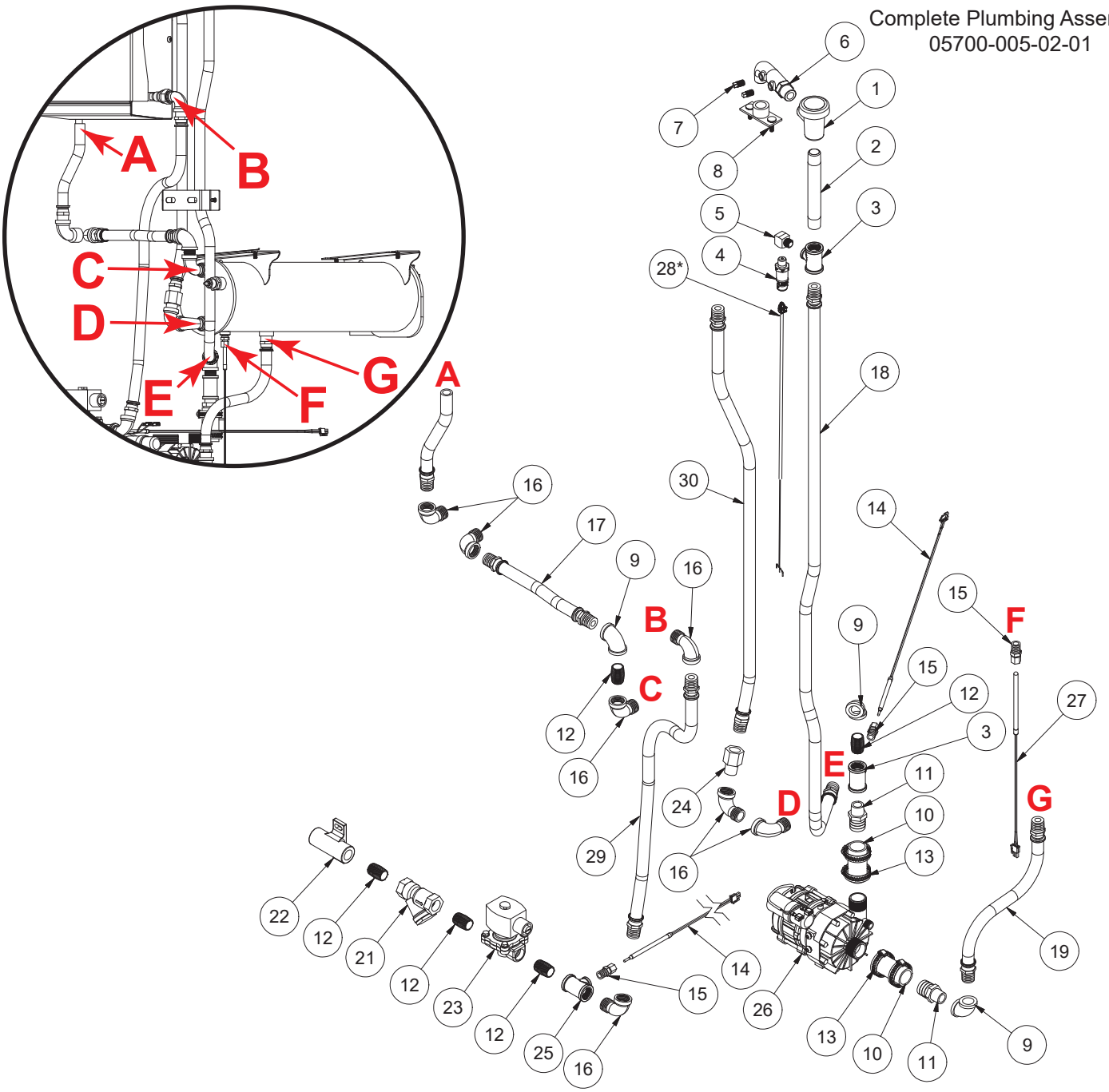
**Part must be ordered separately.*

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 5 | Elbow, 90-Degree 1/2" Street Brass | 04730-206-08-00 |
| 2 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 3 | 2 | Tee | 04730-002-22-56 |
| 4 | 5 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 5 | 2 | Gasket, Rinse Manifold | 05330-003-75-91 |
| 6 | 1 | Pressure Transducer | 05945-004-17-01 |
| 7 | 3 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 8 | 1 | Elbow, 90-degree 1/4" x 1/4" | 86075017 |
| 9 | 2 | Screw, 1/4-20 x 1" | 05305-011-81-58 |
| 10 | 1 | Injector, Rinse Manifold | 09515-004-22-73 |
| 11 | 1 | Adapter | 05700-002-29-75 |
| 12 | 1 | Fitting, Thermostat Brass | 05700-011-73-73 |
| 13 | 2 | Elbow, 90-degree 1/2" Brass | 04730-011-42-96 |
| 14 | 4 | Clamp, Hose, 3/4" x 1 1/2" | 04730-004-66-22 |
| 15 | 2 | Hose, Black, 1" ID, 1 1/2" Long | 05700-004-68-24 |
| 16 | 2 | Fitting, 1" x 1/2" Brass | 04730-004-68-25 |
| 17 | 1 | Union, 1/4" Modified | 05700-001-16-52 |
| 18 | 2 | Probe Fitting | 04730-004-71-72 |
| 19 | 2 | Fast-acting Probe | 06685-004-75-99 |
| 20 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 21 | 1 | Y-strainer, 1/2" | 04730-217-01-10 |
| 22 | 1 | Union, 1/2" x 1/2" Brass | 04730-003-62-44 |
| 23 | 1 | Flow Limiter, 1/2" | 04730-004-67-76 |
| 24 | 1 | Casting, 1/2" Flanged Coupling | 05700-004-47-97 |
| 25 | 2 | Hose, 1/2" Red | 05700-005-03-71 |
| 26 | 1 | Hose, 1/2" Blue | 05700-005-01-97 |
| 27 | 1 | Hose, 1/2" Red | 05700-005-03-77 |
| 28* | 1 | Rinse Pump with Bracket<br>Rinse Pump Only | 05700-004-67-91<br>06105-004-62-68 |
| 29* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-33-62<br>05700-004-33-59 |
| 30 | 1 | Hose, 1/2" Red | 05700-004-73-79 |
| 31 | 1 | Fitting, Drain Coupling | 05700-004-41-00 |
| 32 | 1 | Hose, 1/2" Red | 05700-004-74-45 |
| 33 | 1 | Tee, 1/2" Brass | 04730-011-69-93 |
| 34 | 1 | Nipple, 1/2" Brass | 04730-207-40-00 |
| 35 | 1 | Elbow, 90-degree, 1 1/2" Brass | 04730-206-32-00 |

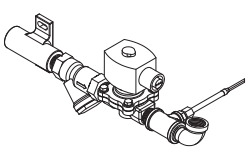
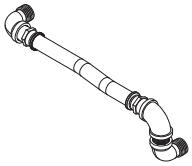
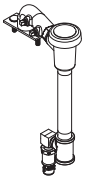
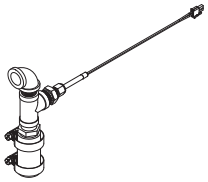
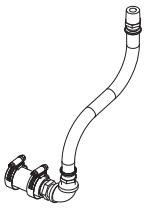
**NOTICE**

*Machines before 22D405278 have different plumbing. Click **here** to open earlier manual.*

# HH-E VER PLUMBING



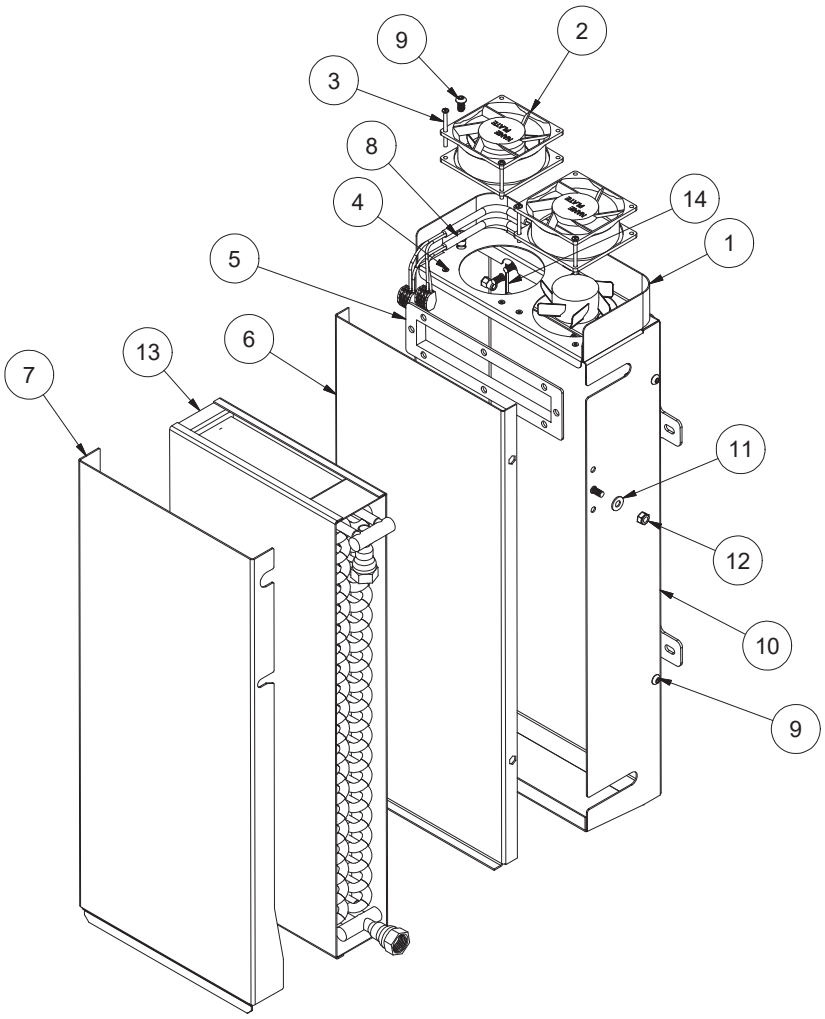

To order complete assemblies:

| Inlet Plumbing 05700-004-99-81 | Tank Fill Plumbing 05700-005-00-13 | Rinse Manifold Plumbing 05700-004-84-19 | Rinse Pump Outlet Plumbing 05700-004-66-83 | Rinse Pump Plumbing 05700-004-67-86 |
|---|---|---|---|---|
|  |  |  |  |  |

**Part must be ordered separately.*

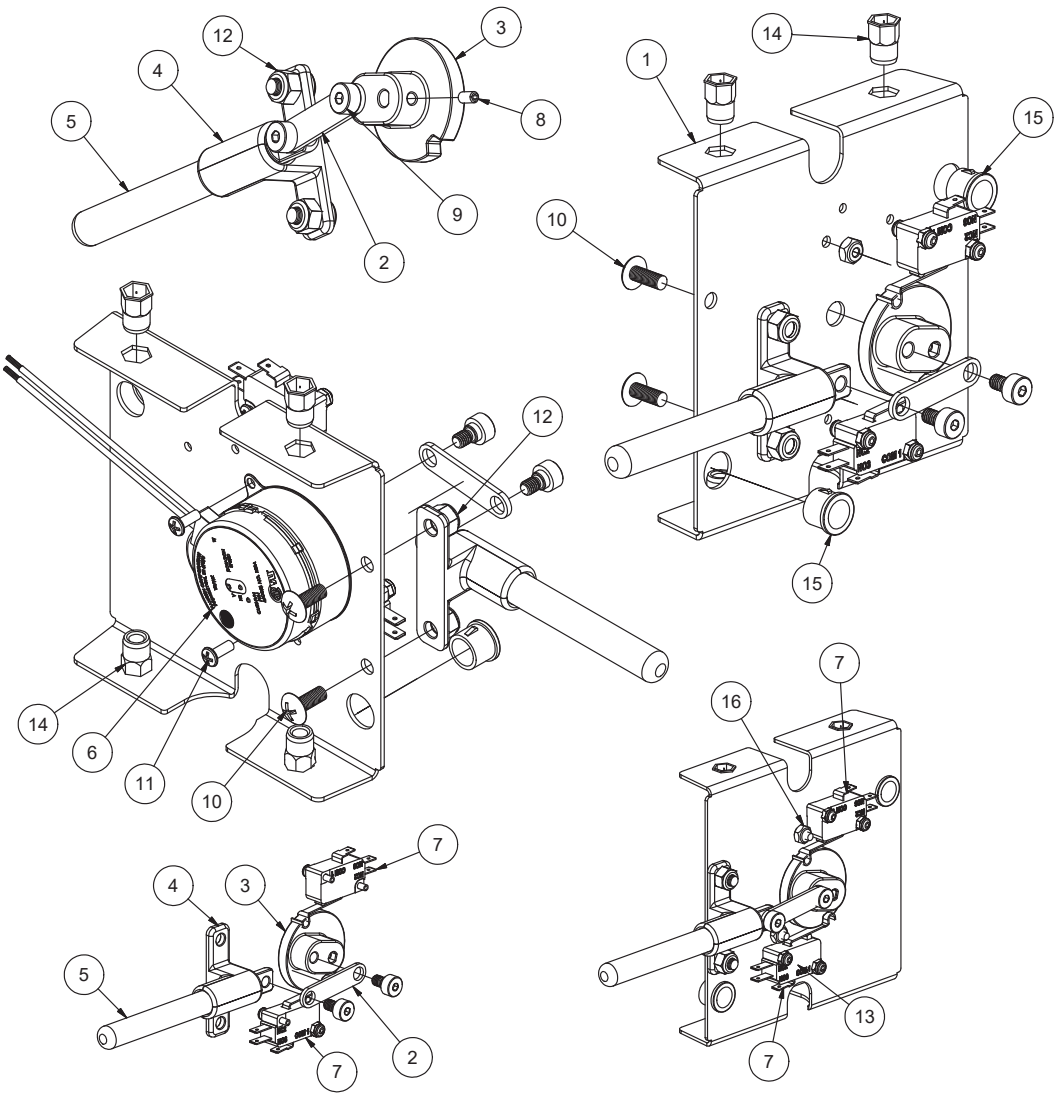
07610-004-66-53-G

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Vacuum Breaker, 1/2" Brass | 04820-003-06-13 |
| 2 | 1 | Nipple, 1/2" x 6" Brass | 04730-003-62-38 |
| 3 | 2 | Tee | 04730-002-22-56 |
| 4 | 1 | Pressure Transducer | 05945-004-17-01 |
| 5 | 1 | Elbow, 90-Degree 1/4" x 1/4" | 04730-003-77-83 |
| 6 | 1 | Rinse Injector | 09515-004-94-21 |
| 7 | 2 | Plug, 1/8" NPT Brass | 04730-209-07-37 |
| 8 | 1 | Injector Plate | 05700-002-04-71 |
| 9 | 3 | Elbow, 90-Degree 1/2" Brass | 04730-011-42-96 |
| 10 | 2 | Hose, Black, 1" ID, 1 1/2" Long | 05700-004-68-24 |
| 11 | 2 | Fitting, 1" x 1/2" Brass | 04730-004-68-25 |
| 12 | 4 | Nipple, 1/2" Close Brass | 04730-207-15-00 |
| 13 | 4 | Clamp, 13/16" x 1 1/2" | 04730-719-06-09 |
| 14 | 1 | Fast-acting Probe | 06685-004-75-99 |
| 15 | 1 | Union, 1/4" Modified | 05700-001-16-52 |
| 16 | 3 | Elbow, 90-Degree 1/2" Street Brass | 04730-206-08-00 |
| 17 | 1 | Hose, 1/2" x 5" | 05700-005-00-14 |
| 18 | 1 | Hose, 1/2" x 48 1/2" | 05700-005-00-27 |
| 19 | 1 | Hose, 1/2" x 10" | 05700-004-67-84 |
| 20 | 1 | Hose, Coil Drain 1/2" | 05700-005-01-99 |
| 21 | 1 | Y-strainer, 1/2" | 04730-217-01-10 |
| 22 | 1 | Coupling, 1/2" | 05700-004-47-97 |
| 23 | 1 | Solenoid Valve, 1/2" | 04810-003-71-56 |
| 24 | 1 | Flow Limiter, 1/2" | 04730-004-67-76 |
| 25 | 1 | Tee, 1/2" x 1/2" x 1/4" | 05700-005-02-30 |
| 26* | 1 | Rinse Pump | 05700-004-67-91 |
| 27 | 1 | Thermistor Probe | 06685-004-34-58 |
| 28* | 1 | Harness<br>Cable, Braided (Not Shown) | 05700-004-33-62<br>05700-004-33-59 |
| 29 | 1 | Hose, 1/2" x 24" | 05700-005-01-97 |
| 30 | 1 | Hose, 1/2" x 30 1/2" | 05700-005-01-98 |

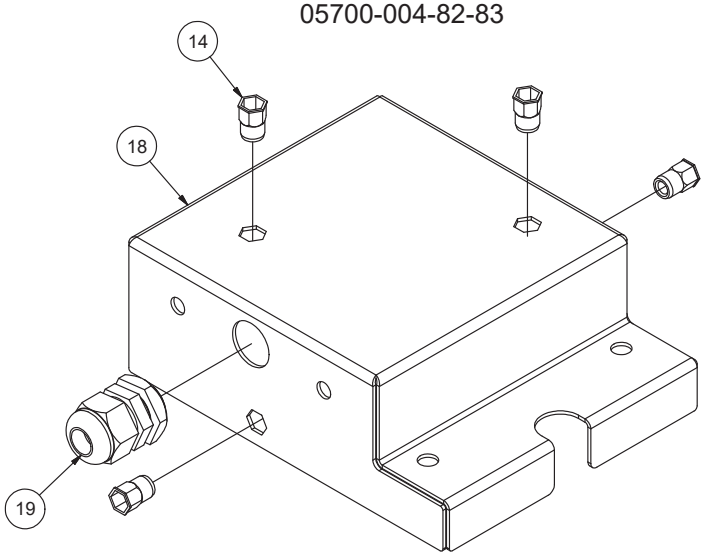



| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Wrap, Coil Box Fans | 05700-004-73-94 |
| 2 | 2 | Fan, 24 V DC | 05999-004-73-32 |
| 3 | 4 | Screw, 6-32 x 1 3/4" | 05305-004-19-80 |
| 4 | 4 | Nut, 6-32 Plated | 05340-118-04-00 |
| 5 | 1 | Air Transfer Seal | 05700-004-40-24 |
| 6 | 1 | Plate, Air-gap | 05700-004-70-32 |
| 7 | 1 | Cover, Coil | 05700-004-70-33 |
| 8 | 6 | Insert, Threaded Hex 1/4-20 | 05310-004-23-96 |
| 9 | 6 | Screw, 1/4-20 x 1/2" Hex | 05305-004-62-33 |
| 10 | 1 | Wrap, Coil | 05700-004-73-67 |
| 11 | 2 | Washer, 1/4-20 | 05311-174-01-00 |
| 12 | 2 | Locknut, 1/4-20 Hex with Nylon Insert | 05310-374-01-00 |
| 13 | 1 | Coil, VER | 04420-004-70-38 |
| 14 | 1 | Gasket, Air Transfer Seal | 05330-004-83-38 |

Complete Interlock Assembly
05700-004-82-84




Complete Interlock Box Assembly
05700-004-82-83



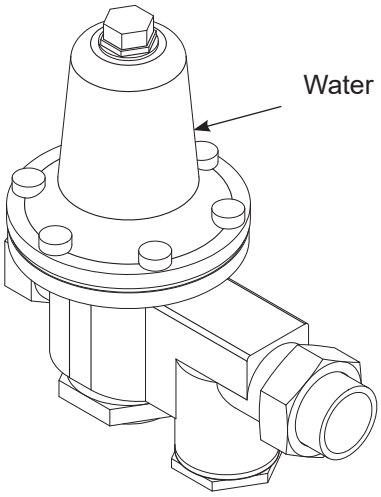
# DOOR INTERLOCK

| ITEM | QTY | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | 1 | Plate, Interlock | 05700-004-82-79 |
| 2 | 1 | Link, Interlock Connector | 05700-004-71-37 |
| 3 | 1 | Interlock Cam | 05700-004-71-39 |
| 4 | 1 | Interlock Guide | 05700-004-71-50 |
| 5 | 1 | Pin, Interlock | 05700-004-71-49 |
| 6 | 1 | Motor, Interlock | 06105-004-70-04 |
| 7 | 2 | Switch, Interlock | 05930-004-71-36 |
| 8 | 1 | Set Screw, 6-32 x 1/4" | 05305-004-71-42 |
| 9 | 2 | Shoulder Screw, 10-32 | 05305-004-71-40 |
| 10 | 2 | Screw, 10-32 x 1/2" | 05305-011-39-36 |
| 11 | 2 | Screw, 6-32 x 3/8" | 05305-171-02-00 |
| 12 | 2 | Locknut, 10-32 with Nylon Insert | 05310-373-02-00 |
| 13 | 5 | Locknut, 4-40 | 05310-279-06-00 |
| 14 | 8 | Insert, Threaded Hex 1/4-20 | 05310-004-23-96 |
| 15 | 2 | Bushing, Lock | 05975-210-05-00 |
| 16 | 2 | Locknut, 6-32 with Nylon Insert | 05310-373-03-00 |
| 17 | 1 | Harness, Door Interlock (Not Shown) | 05700-004-92-05 |
| 18 | 1 | Box, Door Interlock | 05700-004-82-85 |
| 19 | 1 | Fitting | 05975-011-49-03 |

## WATER HAMMER ARRESTOR OPTION

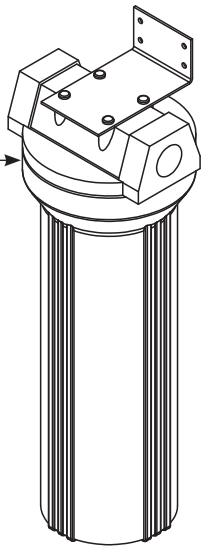
Water Hammer Arrestor, 1/2”
04730-004-58-56

## PRESSURE REGULATING VALVE OPTION

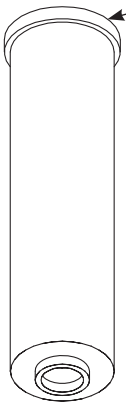


Water Pressure Regulator, 1/2”
04820-100-04-07

## WATER TREATMENT OPTION



Scaltrol System
04730-003-05-76



Replacement Cartridge
(inspect at least every 6 months)
RSC-100

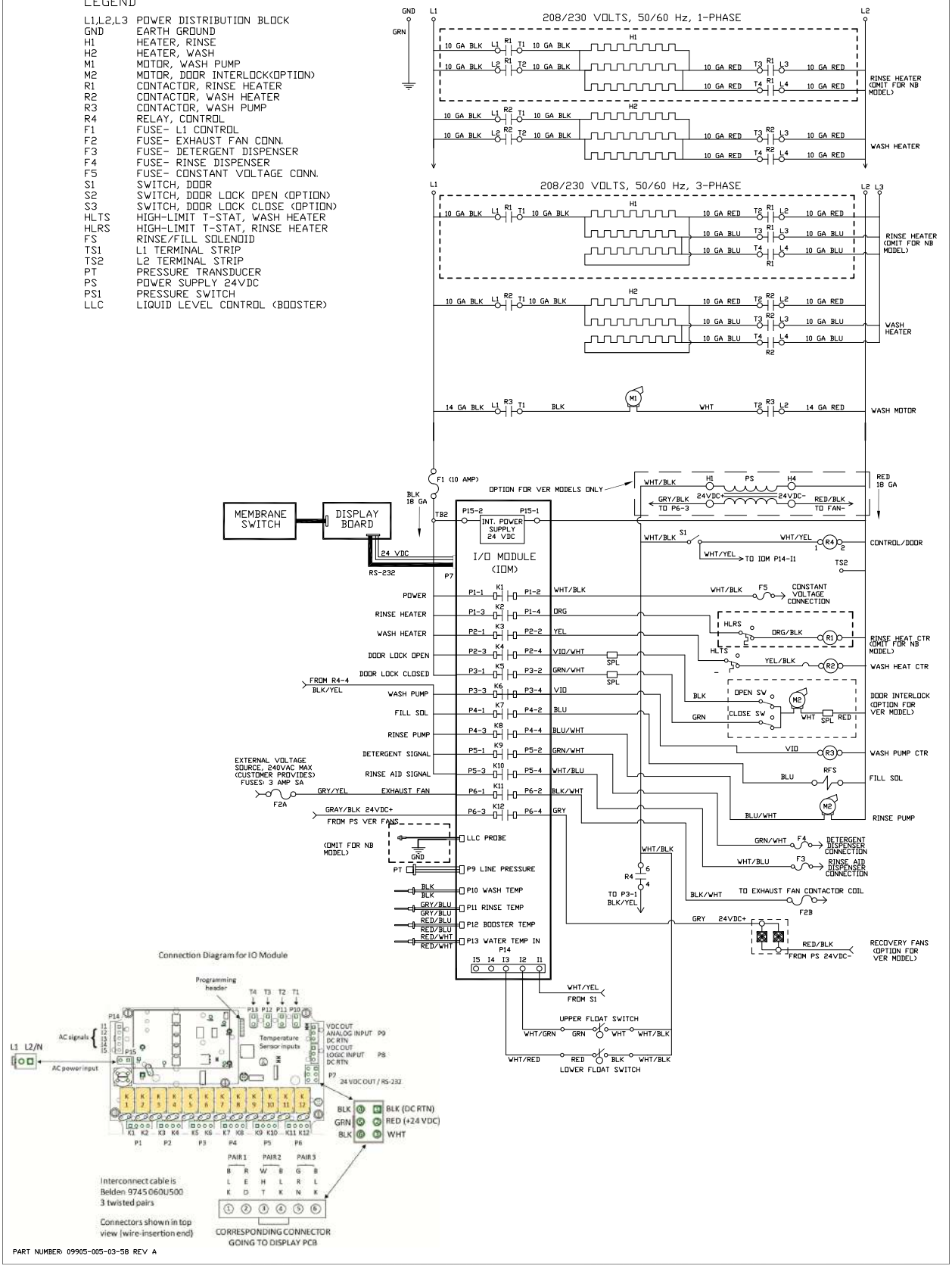
**NOTICE**

*Must be installed vertically. The provided bracket is secured to the wall. Observe proper inlet/outlet water directions (flow directions are molded into the top of the head). Release line pressure before changing cartridges. Delime machine before installation.*

# DYNASTAR & HH-E SCHEMATIC
## STD/VER/NB

LEGEND

| | |
|---|---|
| L1,L2,L3 | POWER DISTRIBUTION BLOCK |
| GND | EARTH GROUND |
| H1 | HEATER, RINSE |
| H2 | HEATER, WASH |
| M1 | MOTOR, WASH PUMP |
| M2 | MOTOR, DOOR INTERLOCK(OPTION) |
| R1 | CONTACTOR, RINSE HEATER |
| R2 | CONTACTOR, WASH HEATER |
| R3 | CONTACTOR, WASH PUMP |
| R4 | RELAY, CONTROL |
| F1 | FUSE- L1 CONTROL |
| F2 | FUSE- EXHAUST FAN CONN. |
| F3 | FUSE- DETERGENT DISPENSER |
| F4 | FUSE- RINSE DISPENSER |
| F5 | FUSE- CONSTANT VOLTAGE CONN. |
| S1 | SWITCH, DOOR |
| S2 | SWITCH, DOOR LOCK OPEN (OPTION) |
| S3 | SWITCH, DOOR LOCK CLOSE (OPTION) |
| HLTS | HIGH-LIMIT T-STAT, WASH HEATER |
| HLRS | HIGH-LIMIT T-STAT, RINSE HEATER |
| FS | RINSE/FILL SOLENOID |
| TS1 | L1 TERMINAL STRIP |
| TS2 | L2 TERMINAL STRIP |
| PT | PRESSURE TRANSDUCER |
| PS | POWER SUPPLY 24VDC |
| PS1 | PRESSURE SWITCH |
| LLC | LIQUID LEVEL CONTROL (BOOSTER) |

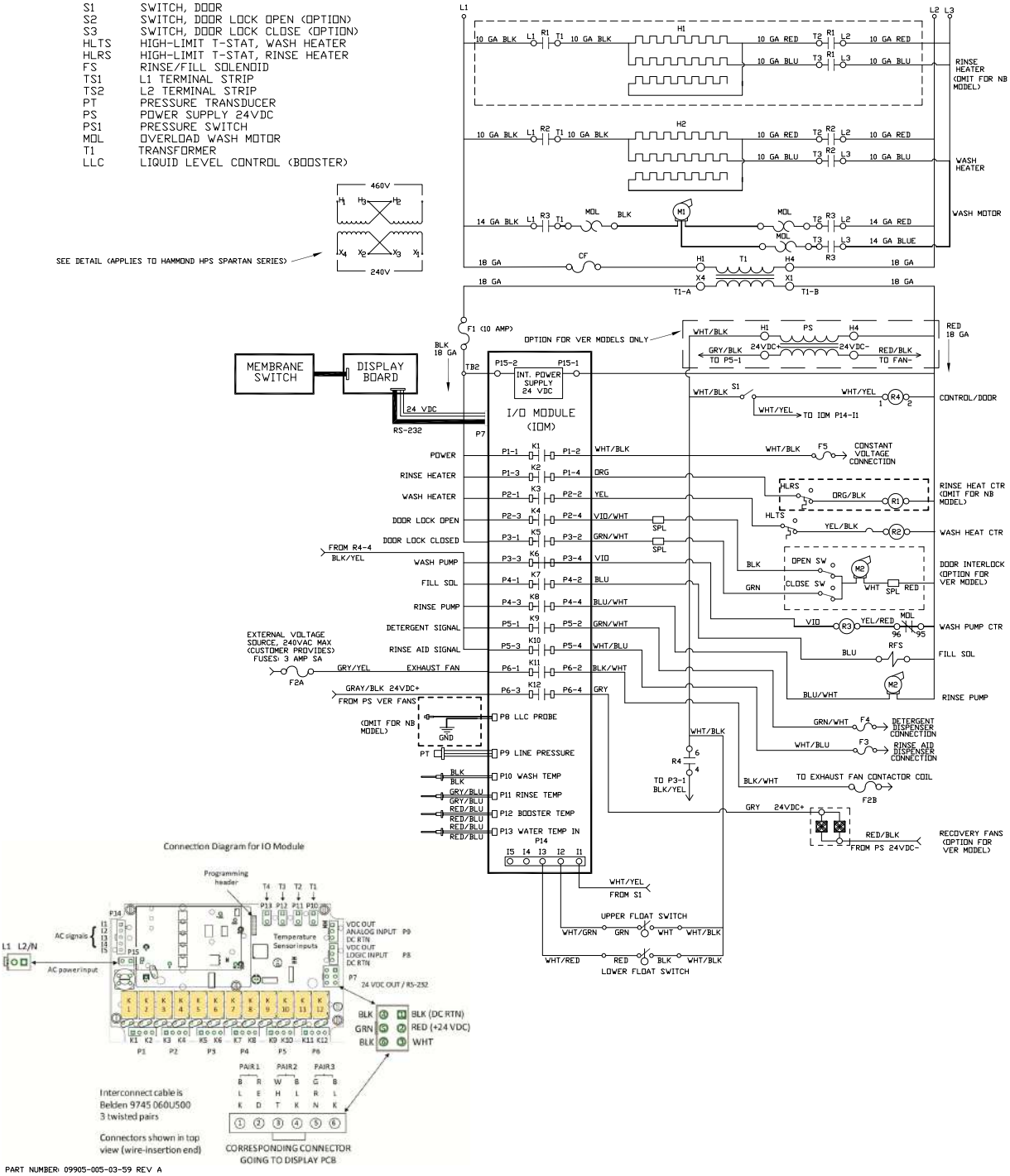


# DYNASTAR & HH-E SCHEMATIC
# STD/VER/NB

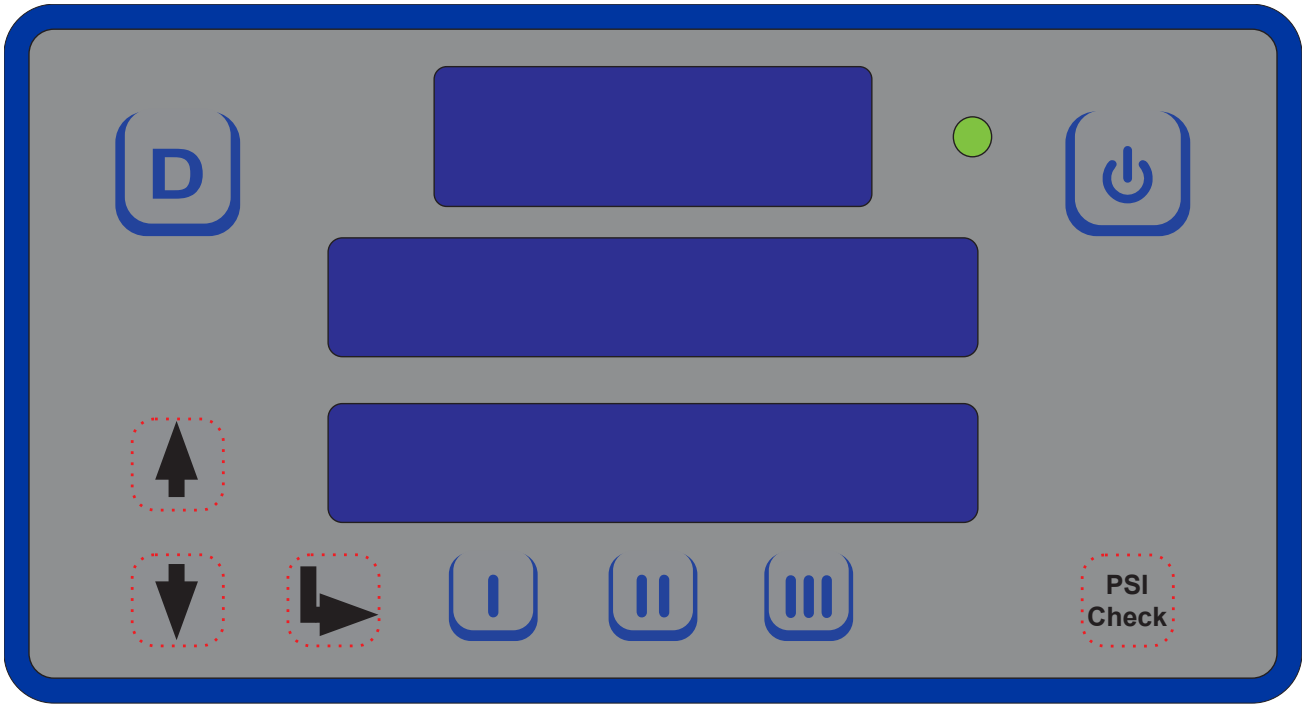
## LEGEND

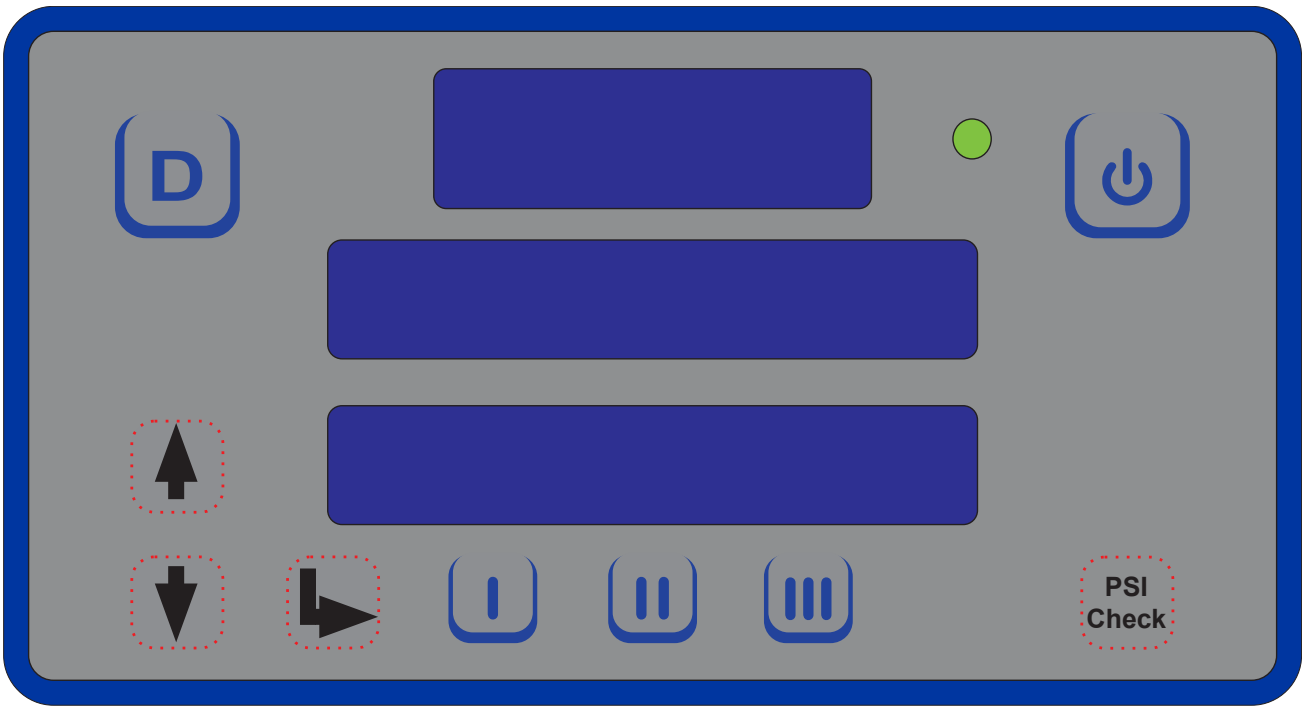
| | |
|---|---|
| L1,L2,L3 | POWER DISTRIBUTION BLOCK |
| GND | EARTH GROUND |
| H1 | HEATER, RINSE |
| H2 | HEATER, WASH |
| M1 | MOTOR, WASH PUMP |
| M2 | MOTOR, DOOR INTERLOCK(OPTION) |
| R1 | CONTACTOR, RINSE HEATER |
| R2 | CONTACTOR, WASH HEATER |
| R3 | CONTACTOR, WASH PUMP |
| R4 | RELAY, CONTROL |
| F1 | FUSE- L1 CONTROL |
| F2 | FUSE- EXHAUST FAN CONN. |
| F3 | FUSE- DETERGENT DISPENSER |
| F4 | FUSE- RINSE DISPENSER |
| F5 | FUSE- CONSTANT VOLTAGE CONN. |
| S1 | SWITCH, DOOR |
| S2 | SWITCH, DOOR LOCK OPEN (OPTION) |
| S3 | SWITCH, DOOR LOCK CLOSE (OPTION) |
| HLTS | HIGH-LIMIT T-STAT, WASH HEATER |
| HLRS | HIGH-LIMIT T-STAT, RINSE HEATER |
| FS | RINSE/FILL SOLENOID |
| TS1 | L1 TERMINAL STRIP |
| TS2 | L2 TERMINAL STRIP |
| PT | PRESSURE TRANSDUCER |
| PS | POWER SUPPLY 24VDC |
| PS1 | PRESSURE SWITCH |
| MOL | OVERLOAD WASH MOTOR |
| T1 | TRANSFORMER |
| LLC | LIQUID LEVEL CONTROL (BOOSTER) |

460 VOLTS, 50/60 Hz, 3-PHASE



This page can be printed and the display guides cut-out.
Lay the cut-out over the display and use the red-dotted lines to locate the hidden buttons.

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