



# **TECHNICAL MANUAL**

Installation, Operation and Maintenance Instructions

## **TRAC 321-2**

### **Tray Washers**

TRAC 321-2

TRAC 321-2 RPW

Insinger Machine Company  
6245 State Road  
Philadelphia, PA 19135-2996

**800-344-4802**

Fax: 215-624-6966

[www.insingermachine.com](http://www.insingermachine.com)

*Thank you for purchasing a quality Insinger product.*

In the space provided below please record the model, serial number and start-up date of this unit:

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Start-Up Date: \_\_\_\_\_

When referring to this equipment please have this information available.

Each piece of equipment at Insinger is carefully tested before shipment for proper operation. If the need for service should arise please contact your local Authorized Insinger Service Company.

To find your local authorized Service Company please visit our web site, [www.insingermachine.com](http://www.insingermachine.com) or call Insinger at 800-344-4802.

For proper activation of the Insinger Limited Warranty, a SureFire™ Start-up should be completed on your machine. Refer to the Introduction section in this manual for an explanation of Insinger's SureFire™ Start-up and Check-out Program.

Please read the Insinger Limited Warranty and all installation and operation instructions carefully before attempting to install or operate your new Insinger product.

To register your machine for warranty, or for answers to question concerning installation, operation, or service contact our Technical Service Department.

<b>TECHNICAL SERVICE CONTACTS</b>	
Toll-Free	800-344-4802
Fax	215-624-6966
e-mail	<a href="mailto:service@insingermachine.com">service@insingermachine.com</a>
Web site	<a href="http://www.insingermachine.com">www.insingermachine.com</a>

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# ESSENTIAL SERIES

Project \_\_\_\_\_  
Item \_\_\_\_\_  
Quantity \_\_\_\_\_  
CSI - 11400 \_\_\_\_\_  
Approval \_\_\_\_\_  
Date \_\_\_\_\_

## TRAC<sup>321-2</sup>

### Automatic Single Tank Tray Washer

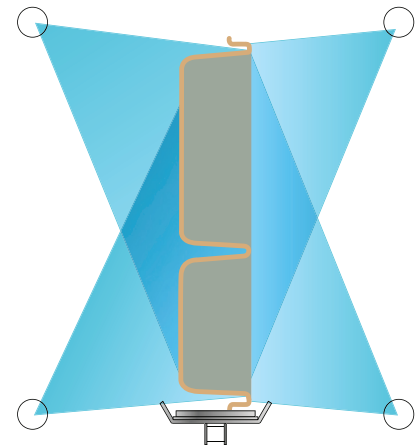
- Automatic conveyor, single tank tray washer with recirculating pre-wash, wash and fresh water final rinse.
- 248 gallons/hour final rinse consumption
- Capacity is 528 trays per hour (based on a 15" tray)

### STANDARD FEATURES

- Tank heat: 15 kW electric immersion heater or steam injector
- Capillary thermometers for wash and rinse
- In-line thermometer for final rinse
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- Vents with adjustable damper controls
- SureFire® Start-Up & Check-Out Service
- Single point electrical connection: motor, controls and tank heat (Booster requires a separate connection)
- Inspection door
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- Low water protection
- Detergent connection provision
- Top mounted NEMA 12 control panel
- Simplified scrap screen design
- Door safety switch
- Standard frame drip proof motors
- Override switch for de-liming
- End caps/pipe plugs secured to prevent loss
- Tray unload table

### OPTIONS

- Stainless steel steam coil tank heat
- Steam booster
- Electric booster
- Pressure reduction valve and line strainer
- Security package
- Insulated hood and door
- Chemical sanitizer injector package for low temperature operations (pump by others)
- Tray Dryer
- Tray Stacker



Insinger's traywashers were developed specifically to optimally clean and sanitize ware by reaching all corners and crevices with a vertical spray.





# TRAC<sup>321-2</sup> Automatic Single Tank Tray Washer

Capacity Per Hour	528 trays
Tank Capacity	24.1 gallons
Motor Size	2 hp (wash) 1/15 hp (conveyor)
Electric Usage	15 kW wash tank 27 kW booster 40° rise 45 kW booster 70° rise
Steam Consumption at 20 psi min.	54 lbs./hour tank
Final Rinse Peak Flow at 20 psi min.	4.1 gallons/minute
Final Rinse Consumption at 20 psi min.	248 gallons/hour
Exhaust Hood Requirement	100 CFM Load 300 CFM unload
Peak Rate Drain Flow	9 gallons/minute
Shipping Weight	700 lbs.

Machine Electrical*		
Motors, Controls, Tank Heat	Steam	Electric without booster
208/3/60	8.5	50.1
240/1/60	N/A	N/A
240/3/60	7.8	43.9
480/3/60	3.9	21.9
380/3/50	4.7	27.5

\*Booster heater wired separately. Machine load only listed above.

## SPECIFICATIONS

**CONSTRUCTION-** Hood and tank constructed of 16 gauge type 304 S/S. Hood unit of all welded seamless construction. S/S frame, legs and feet. All internal castings are non-corrosive lead free nickel alloy, bronze or S/S.

**DOORS-** Extra large die formed 18-8 type 304 S/S front inspection door riding in all S/S channels. A triple ply leading edge on the door channels made of S/S with no plastic or nylon sleeves or liners used. Two intermediate S/S door-safety stops on the door.

**CONVEYORS-** One S/S roller conveyor chain with tray cradles. Width between guide rails is factory-adjustable from 1.5" to 3.7". Conveyor accommodates trays up to 15" high. Conveyor drive system includes direct drive gear motor with frictionless, trouble-free overload release system continuously running. Trays conveyed automatically through washing and rinsing systems powered by independent conveyor motor.

**PUMP-** Centrifugal type "packless" pump with a brass petcock drains. Construction includes ceramic seal and a balanced cast impeller on a precision ground stainless steel shaft, extension or sleeve. All working parts mounted as an assembly and removable as a unit without disturbing pump housing. 2 hp wash motor standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

**CONTROLS-** Top mounted control cabinet, NEMA 12 rated with heat insulation provided between hood and control cabinet, housing motor controls and overload protection, transformer, contactors and all dishwasher integral controls. All controls safe low voltage 24 VAC.

**ENERGY SAVER-** Electric photo-eye automatically operates the final rinse solenoid only when a tray passes, saving water and energy. The eye also activates an adjustable timer control. If no tray passes during the set time, the machine shuts down.

**SPRAY SYSTEM-** Wash and final rinse spray systems are made of 18-8 type 304 stainless steel pipe. Wash assemblies removable without the use of tools.

**WASH-** Four wash arms threaded into S/S manifold. (2 on each side of conveyor). Each pipe designed with 8 high pressure action cleansing slots. The slots are precision milled for water control producing a fan spray.

**FINAL RINSE-** Eight nozzle assemblies on either side of conveyor threaded into S/S pipes. Nozzle assemblies produce a fan spray reducing water consumption, maximizing heat retention.

**DRAIN-** Drain valve externally controlled. Overflow assembly with skimmer cap is removable without the use of tools for drain line inspection. Heater is protected by low water level control.

**UNLOAD TABLE-** a stainless steel tray unload table receives clean trays. Table constructed with guide rails which ease the trays onto table.





# ESSENTIAL SERIES

Project \_\_\_\_\_  
Item \_\_\_\_\_  
Quantity \_\_\_\_\_  
CSI - 11400 \_\_\_\_\_  
Approval \_\_\_\_\_  
Date \_\_\_\_\_

## TRAC<sup>321-2</sup> RPW Automatic Double Tank Tray Washer

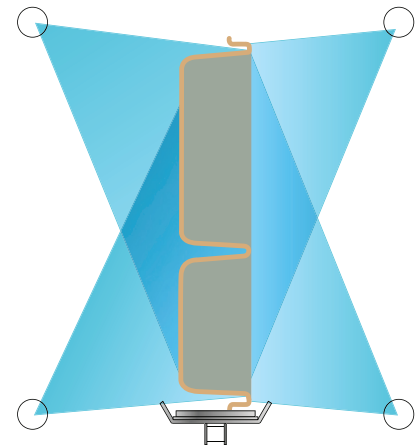
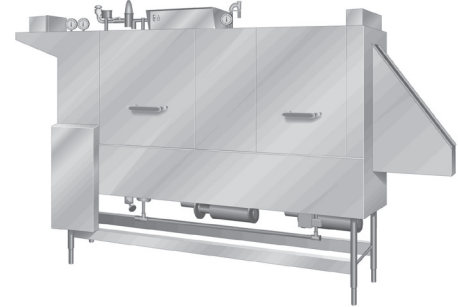
- Automatic conveyor, double tank tray washer with recirculating wash and fresh water final rinse.
- 248 gallons/hour final rinse consumption
- Capacity is 528 trays per hour (based on a 15" tray)

### STANDARD FEATURES

- Tank heat: 15 kW electric immersion heater or steam injector
- Capillary thermometers for wash and rinse
- In-line thermometer for final rinse
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- Vents with adjustable damper controls
- SureFire® Start-Up & Check-Out Service
- Single point electrical connection: motor, controls and tank heat (Booster requires a separate connection)
- Inspection door
- S/S frame, legs and feet
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- Automatic tank fill
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# TRAC<sup>321-2</sup> RPW

## Automatic Double Tank Tray Washer

Capacity Per Hour	528 trays
Tank Capacity	10.3 gallons (pre-wash) 22.5 gallons (wash)
Motor Size	1/2 hp (pre-wash) 2 hp (wash) 1/15 hp (conveyor)
Electric Usage	15 kW wash tank 27 kW booster 40° rise 45 kW booster 70° rise
Steam Consumption at 20 psi min.	54 lbs./hour tank
Final Rinse Peak Flow at 20 psi min.	4.1 gallons/minute
Final Rinse Consumption at 20 psi min.	248 gallons/hour
Exhaust Hood Requirement	100 CFM Load 300 CFM unload
Peak Rate Drain Flow	14 gallons/minute
Shipping Weight	800 lbs.

Machine Electrical*		
Motors, Controls, Tank Heat	Steam	Electric without booster
208/3/60	8.5	50.1
240/3/60	7.8	43.9
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**CONTROLS-** Top mounted control cabinet, NEMA 12 rated with heat insulation provided between hood and control cabinet, housing motor controls and overload protection, transformer, contactors and all dishwasher integral controls. All controls safe low voltage 24 VAC.

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**UNLOAD TABLE-** a stainless steel tray unload table receives clean trays. Table constructed with guide rails which ease the trays onto table.

## TRAC 321-2 TRAYWASHER SERIES

### INTRODUCTION

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the TRAC 321-2 and TRAC 321-2RPW traywashers.

The installation instructions are intended for qualified equipment installers.

The operation and cleaning instructions are intended for the daily users of the equipment.

The maintenance and drawing sections are intended for qualified service and/or maintenance technicians.

Replacement parts may be ordered directly from our factory or from your local Authorized Insinger Service Company.

### Surefire™ Start-Up Program

Insinger is proud to offer our exclusive Surefire™ Start-up & Check-out Program to our commercial customers. This service is included in the purchase price of your new Insinger dishwasher. We will provide an authorized factory service technician for the initial start-up of your new Insinger dishwasher to ensure it is running correctly. Please call the factory or your local Insinger Sales or Service Representative to schedule this service.

### NSF 3 requirements for detergent and chemical sanitizer dispensers

This machine must be operated with an automatic detergent feeder and, if applicable, an automatic chemical sanitizer feeder, including a visual means to verify that detergents and sanitizers are delivered or a visual or audible alarm to signal if detergents and sanitizers are not available for delivery to the respective washing system. Please see instructions for electrical and plumbing connections located in this manual and in the feeder equipment manual.

### Intended Use

Insinger traywashers may only be used for cleaning institutional trays.

Any change in design or use of the dishwasher carried out without the written permission of Insinger, will lead to warranty nullification.

If damage is caused to the dishwasher due to failure to observe the instructions given in this manual, no claims under the warranty agreement can be submitted to Insinger Machine Company.

### DEFINITIONS



Throughout this guide you will find the following terms: **WARNING, CAUTION, & NOTE.**

**WARNING** indicates potential physical danger.

**CAUTION** indicates potential equipment damage.

**NOTE** indicates helpful operating hints or tips.

You will visually be able to identify each as shown below:

	<b>WARNING:</b> Indicates potential physical danger.
<b>CAUTION:</b>	
Indicates potential equipment damage.	
	<b>NOTE:</b> Indicates helpful operating hints or tips.

### SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedures. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

#### Keep Away From Live Circuits

Operating personnel must at all times observe all safety regulations. Do not replace components or make adjustments inside the equipment with the power supply turned on. Under certain conditions, dangerous potentials may exist when the power control is in the off position. To avoid casualties and injuries, always remove power, red tag and lockout machine, and ground a circuit before touching it.

#### Do Not Service or Adjust Alone

Under no circumstances should any person reach into or enter the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

#### Resuscitation

Personnel working with or near high voltages should be familiar with modern methods of resuscitation. Such information may be obtained from the Bureau of Medicine and Surgery.

**INSINGER MACHINE COMPANY LIMITED WARRANTY**

Insinger Machine Company, Inc. (Insinger) hereby warrants to the original retail purchaser of this Insinger Machine Company, Inc. product, that if it is assembled and operated in accordance with the printed instructions accompanying it, then for a period of either 15 months from the date of shipment from Insinger or 1 year (12 months) from the date of installation or start-up that said Insinger product shall be free from defects in material and workmanship. Whichever one of the two aforesaid limited warranty time periods is the shortest shall be the applicable limited warranty coverage time period.

Insinger may require reasonable proof of your date of purchase; therefore, you should retain your copy of invoice or shipping document.

This limited warranty shall be limited to the repair or replacement of parts which prove defective under normal use and service and which on examination shall indicate, to Insinger's satisfaction, they are defective. Any part that is claimed to be defective and covered by this limited warranty must be returned to Insinger. An RMA# must be obtained from the Insinger Warranty Department before returning any material. Return may be done through an Authorized Service Agency. Furnish serial number of machine and RMA # with shipment and send to:

Insinger Machine Company  
6245 State Road  
Philadelphia, PA 19135-2996

If Insinger's inspection confirms the defect and the claim, Insinger will repair or replace such part without charge and return it to you freight or postage prepaid.

This limited warranty does not cover any failure or accident, abuse, misuse, alteration, misapplication, improper installation, fire, flood, acts of God or improper maintenance or service, or failure

to perform normal and routine maintenance as set out in the instruction booklet (operating instructions) or for improper operation or failure to follow normal operating instructions (as set out in the instruction booklet). Insinger is not responsible nor liable for any conditions of erosion or corrosion caused by corrosive detergents, acids, lye or other chemicals used in the washing and or cleaning process.

Service must be done by either Insinger Appointed Service Agencies or agencies receiving prior authorization from Insinger.

All warranty work must be done during normal working hours, unless purchaser receives prior authorization from Insinger.

There are no other express warrants except as set forth herein and any applicable implied warranties of merchantability and fitness are limited in duration to the period of coverage of this express written limited warranty. This limited warranty supersedes all other express warranties, implied warranties of merchant-ability and fitness or limited warranties as of this date, January 1, 1998. Some states do not allow limitation on how long an implied warranty lasts so this limitation may not apply to you.

Insinger is not liable for any special, indirect or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation nor exclusion may not apply to you.

Insinger does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, installation, use, removal, return or replacement of its equipment: and no such representations are binding on Insinger.

## TRAC 321-2 TRAYWASHER SERIES INSTALLATION INSTRUCTIONS

These installation instructions are intended for qualified equipment installers:

### PLACEMENT

Carefully uncrate the machine. Take caution not to damage components which may be mounted on the top or sides of the machine.

Set the unit in place and adjust the feet to level the machine.

### TABLING

Load and unload tables should be pitched towards the machine to return excess water into the machine.

Fasten the tables to the load and unload side of the machine. Most installations require fastening the turn-down lip of the dish tables to the side of the machine with flathead countersunk screws.

The table design should provide horizontal clearance of 30" for servicing. Install rack guides on exit table using mounting studs provided.

### ELECTRICAL CONNECTIONS

Connect electrical lines sized for the correct voltage, current and phase of the machine. These should agree with the machine requirements indicated on the nameplate and labels on the control panel.

Machines not provided with a single-point connection require two separate electrical connections for:

1. pumps and control circuit
2. wash tank heater(s)

If an electrical booster is provided, connect the booster directly to power source.

#### CAUTION:

Connections must be made to a circuit breaker or fused disconnect as provided by the end-user and required by local codes. A laminated wiring diagram is inside the control panel.

#### CAUTION:

As with any 3 phase system, an electrician must check all motors for proper phasing, i.e., Pump motors must be running in direction indicated by arrow on housing.

### MECHANICAL CONNECTIONS

All lines must be flushed prior to use to remove debris.

Connect a 110°F (for 70°F rise) or a 140°F (for 40°F rise) water line for tank fills and booster as tagged and noted on the installation drawings.

If machine is provided with steam heat connect the steam lines and steam condensate lines as tagged and noted on installation drawings.

Connect the drain lines. Drain lines must be as specified on installation drawings.

If a booster is provided, a 110°F (for 70°F rise) or a 140°F (for 40°F rise) water connection is necessary. A steam booster also requires a condensate line.

#### CAUTION:

Drain lines must be as specified on installation drawings. Drain line should be properly vented and should have fall of not less than 1/4" to the foot of proper flow.

#### CAUTION:

Some area plumbing codes require drains to flow into an open gap with an opening twice the diameter of the pipe. Check with your local plumbing codes for the type of drain connection required.

#### CAUTION:

Do not reduce the size of lines as specified in installation drawings. All lines are sized to facilitate necessary flows, pressures, etc.

**HVAC**

Ventilation system should be sized to provide adequate ventilation per machine specs. Refer to spec sheet.

Stainless steel, watertight ducting should be connected to the vent cowls on each end of the machine. Refer to spec sheet and installation drawing.

**CHEMICALS**

Upon completed installation of the traywasher, contact a local detergent/chemical supplier for the correct chemicals for your machine.

Electrical connection points for the detergent dispenser and rinse injector are located inside the control panel. Refer to the machine wiring diagram for the proper connection points.

Dispensers may be connected on either the primary voltage side of the machine or the 24VAC control voltage side.

The detergent density probe should be placed in the hole provided.

**CAUTION:**

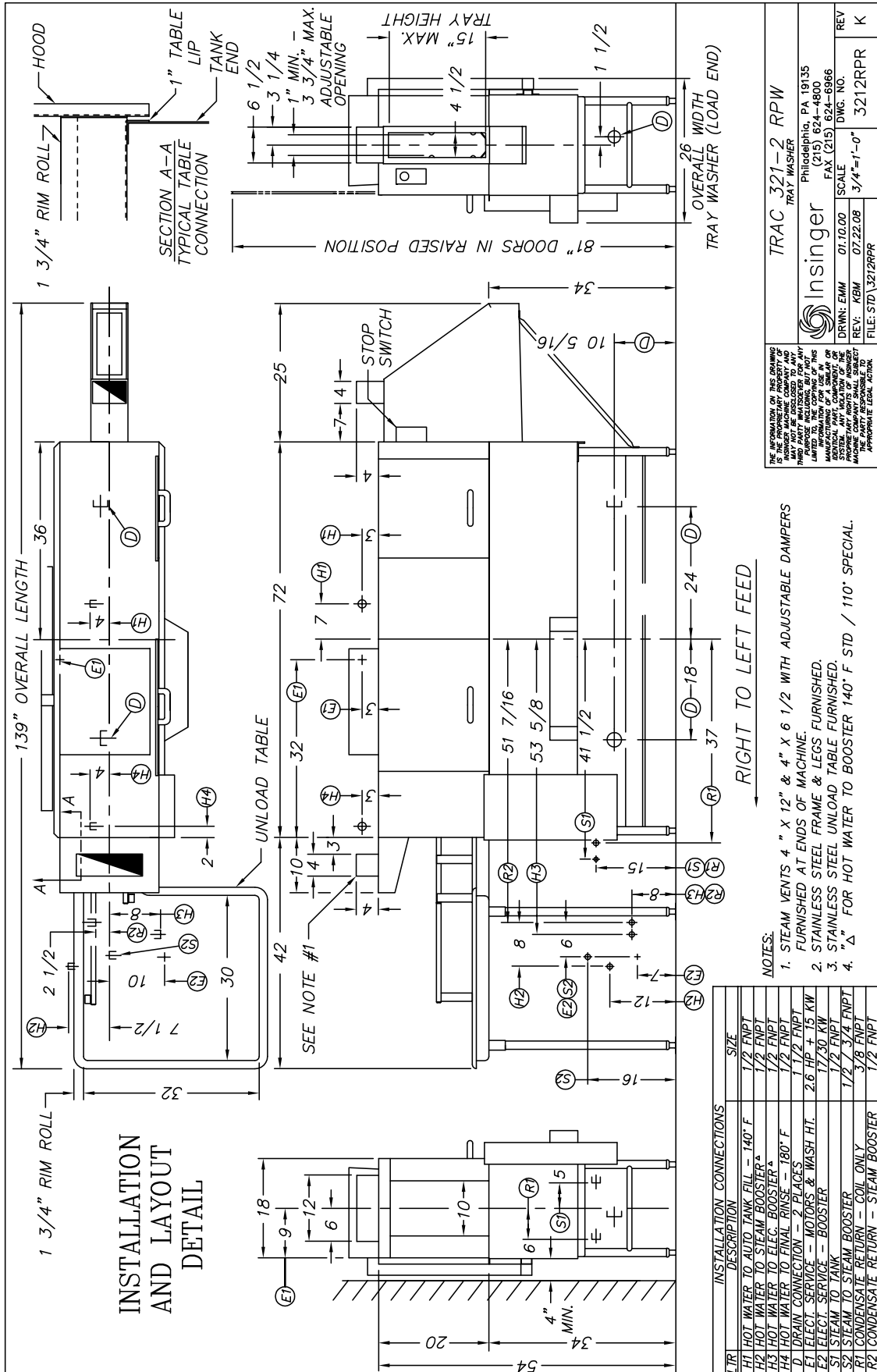
When connecting on the 24VAC control voltage side of the transformer, total KVA must not exceed 50VA.







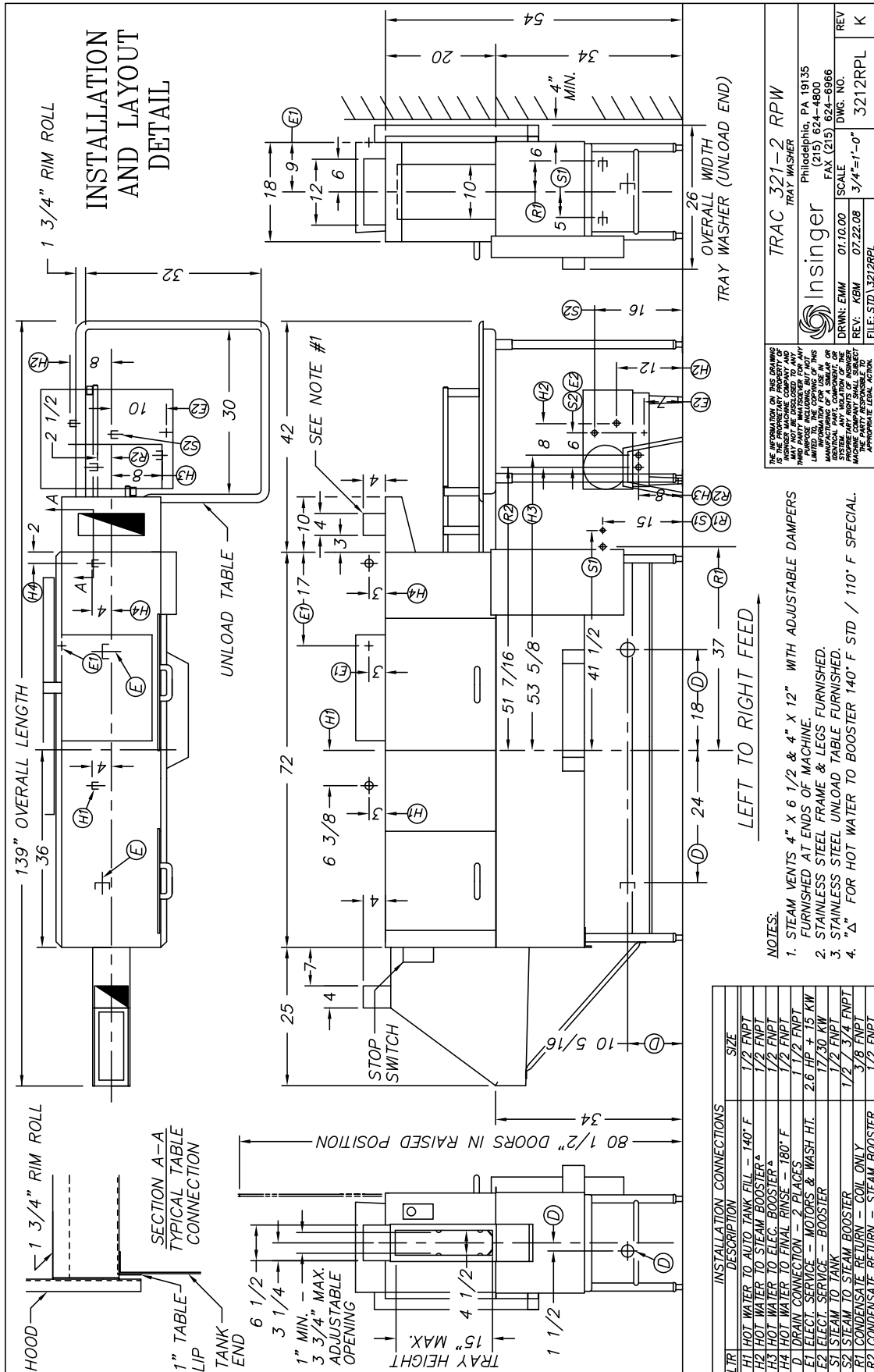


**Installation Drawing : TRAC 321-2 RPW RH**


THE INFORMATION ON THIS DRAWING IS THE PROPERTY OF INSINGER MACHINE COMPANY AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE COMPANY ASSUMES NO LIABILITY FOR ANY DAMAGE OR LOSS OF PROFITS OR BUSINESS INTERRUPTIONS CAUSED BY THE USE OF THIS DRAWING, EVEN IF ADVISED OF THE POSSIBILITY THEREOF. THE PARTY RESPONSIBLE FOR APPROPRIATE LEGAL ACTION.

- NOTES:**
1. STEAM VENTS 4" X 12" & 4" X 6 1/2" WITH ADJUSTABLE DAMPERS FURNISHED AT ENDS OF MACHINE.
  2. STAINLESS STEEL FRAME & LEGS FURNISHED.
  3. STAINLESS STEEL UNLOAD TABLE FURNISHED.
  4. "A" FOR HOT WATER TO BOOSTER 140° F STD / 110° SPECIAL.

INSTALLATION CONNECTIONS	SIZE
H1 HOT WATER TO AUTO TANK FILL - 140° F	1/2 FNPT
H2 HOT WATER TO STEAM BOOSTER*	1/2 FNPT
H3 HOT WATER TO ELEC. BOOSTER*	1/2 FNPT
H4 HOT WATER TO FINAL RINSE - 180° F	1/2 FNPT
D DRAIN CONNECTION - 2 PLACES	1 1/2 FNPT
E1 ELECT. SERVICE - MOTORS & WASH HT.	2.6 HP + 15 KW
E2 ELECT. SERVICE - BOOSTER	17/30 KW
S1 STEAM TO TANK	1/2 FNPT
S2 STEAM TO STEAM BOOSTER	1/2 / 3/4 FNPT
R1 CONDENSATE RETURN - COIL ONLY	3/8 FNPT
R2 CONDENSATE RETURN - STEAM BOOSTER	1/2 FNPT



**TRAC 321-2 TRAYWASHER SERIES****OPERATION INSTRUCTIONS**

These instructions are intended for the daily users of this machine:

**PREPARING MACHINE**

1. Place drain overflow tube in drain basket. Close all tank drain valves. One drain is provided for each tank of the traywasher.
2. Check for proper installation and cleanliness of all internal, removable components such as suction strainers, scrap screens, and spray manifolds.
3. Ensure all water and steam lines are open.
4. Ensure electrical circuits are on.
5. Close machine doors.

**NOTE:**

An interlock is provided to shut the machine down if the doors are open, therefore the machine will not run if doors are opened. Machines provided with the optional Security Package do not have this feature.

**STARTING MACHINE**

1. Move the power switch to the "ON" position. The power light will illuminate. The tank(s) will automatically fill. When the tanks are full the tank heat will operate automatically.

**NOTE:**

To ensure proper operation of the auto tank fill feature and the tank heaters, the level float located in each tank **MUST** be cleaned daily.

2. Press the GREEN button to start the pumps and conveyor.
3. The system is now ready for operation. All ware should be properly scrapped.

**WASHING A TRAY**

1. Place the tray on the conveyor belt. The tray will pass through the machine cycles.

**NOTE:**

The photo-eye located at the entrance chute of the machine should be cleaned daily of lime build-up for proper operation of the energy saver feature and the final rinse.

**SHUTDOWN**

1. Press the RED stop button to turn the pumps and conveyor OFF.
2. Move the Power toggle switch to the "OFF" position.
3. Drain the machine.

**CAUTION:**

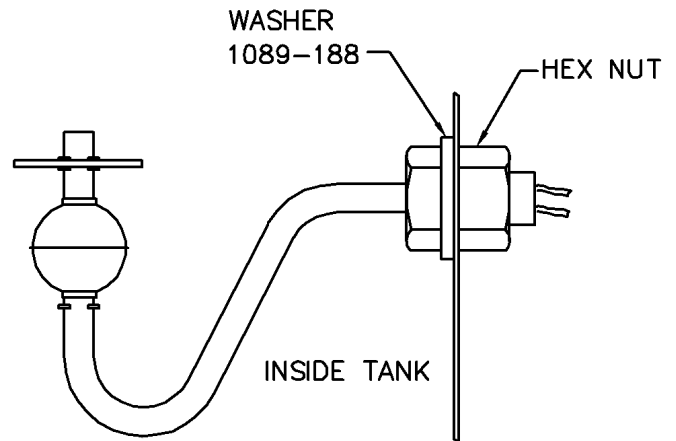
Ensure the Power toggle switch is in the "OFF" position before draining the machine.

4. Refer to the CLEANING INSTRUCTIONS for proper clean-up of the dishmachine.
5. Report any unusual occurrences to qualified service personnel.

**TRAC 321-2 TRAYWASHER SERIES**
**CLEANING INSTRUCTIONS**
**DAILY CLEANING**

The following cleaning procedures should be done daily, at the end of the shift:

1. Remove all internal removable parts including spray manifolds, scrap screens, drain overflow tubes, suction strainers and curtains.
2. Remove the end caps from the spray manifolds and clean with the brush provided. Flush the manifolds.
3. Flush scrap screens of matter.
4. Clean drain overflow tube.



**DE5-60:** Liquid Level Float

**CAUTION:**

V-cup seal on the drain overflow tube may become gummed which will not allow the overflow tube to seat properly. This will cause the drain to leak water. Remove any build-up on the V-cup seal. When the seal becomes worn, replace.

5. Clean suction strainers of build-up.

**CAUTION:**

Improper cleaning of suction strainers will cause the pumps to cavitate. This will cause poor washing results.

6. Clean tank level floats (1 per tank) with a plastic abrasive pad. DO NOT use steel wool.

**CAUTION:**

Level floats must be cleaned daily. Build-up of grease and scum will cause faulty operation of tank fill and heating system.

7. Clean curtains. When curtains are beyond cleaning or torn they should be replaced.
8. Final rinse nozzles should be cleaned of matter.
9. Clean the photo-eye lenses with a damp, soft cloth.
10. Doors should be left open to allow drying of interior surfaces.

**WEEKLY CLEANING**

1. The entire machine should be wiped down using an industrial grade stainless steel cleaner.
2. Under the supervision of your detergent supplier the machine interior must be properly de-limed.


**NOTE:**

The water quality in some areas requires de-liming to be done more frequently. Contact your detergent supplier for recommended de-liming frequency.

**TRAC 321-2 TRAYWASHER SERIES**
**MAINTENANCE REQUIREMENTS**

This section is intended for qualified service and/or maintenance technicians.

The following maintenance should be conducted quarterly:

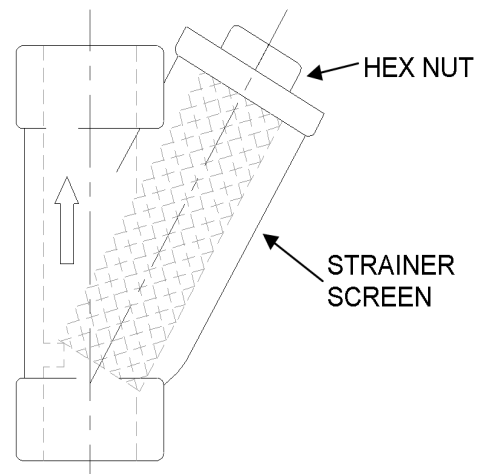
1. Remove and clean the strainer screens on water and steam lines. If the screens cannot be cleaned, replace.
2. Inspect the condition of the fill solenoid valve seats and diaphragms. Replace as necessary.
3. Inspect drain O-Rings for leakage. Replace where necessary.
4. Adjust conveyor chain tension using adjustment bolts located at machine entrance chute.

**MAINTENANCE PROCEDURES**
**Solenoid Valve Disassembly (SK-5825)**

1. Disconnect the power supply to the machine.
2. Turn off the water supply.
3. Remove cap on top of the coil. Remove the coil.
4. Remove the 4 hex bolts and lift bonnet from valve body. Note positioning of spring and plunger.
5. Remove main piston.
6. Inspect for dirt, wear or lime build-up. Clean or replace as required.
7. Reassemble in reverse of disassembly.

**Line Strainer Disassembly**

1. Shut off water supply.
2. Remove large hex nut on bottom of strainer body.
3. Remove strainer screen. Inspect and clean or replace as necessary.
4. Reassemble in reverse of disassembly. Water flow must be same direction as arrow on line strainer body. Use new gaskets to insure a tight seal.



Line Strainer Assembly

**Pump Disassembly**

1. Before disassembling pump ensure there are no obstructions in the pump intake by removing and cleaning the suction strainer (inside tank).


**NOTE:**

It is not necessary to remove the pump housing from the machine to disassemble the pump.

2. Remove the pump motor and impeller adaptor by removing the 4 hex bolts attaching them to the pump housing.
3. Repair or replace the pump parts as required.
4. Reassemble in reverse of disassembly.

**Final Rinse**

The final rinse is actuated by a photo-eye located on the entrance chute (not used on machines with the security package option). As a tray passes the photo-eye the beam is broken. The Final Rinse timer (P/N DE7-27) will energize the final rinse solenoid. The final rinse water will then flow.


The Energy Saver timer (P/N DE7-28) is also reset keeping the machine running.

Both timers are adjustable by turning the potentiometer located on the timer board. The final rinse timer is adjustable between 0-60 seconds. The energy saver timer is adjustable between 0-300 seconds.

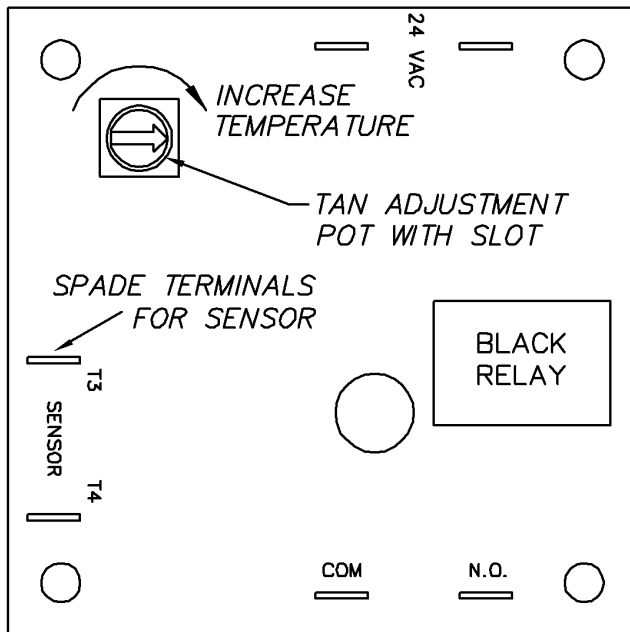
### Tank Heat Temperature Adjustment

A temperature control board is provided in the control panel for easy adjustment of tank temperature. Though tank temperature is set during factory testing it is sometimes necessary to re-adjust the temperature at start-up.

1. Locate the temperature control board (P/N DE9-251). Use the Control Panel Layout drawing located in PART 7, Electrical Schematics and Parts.
2. Adjust the tank temperature to the correct temperature by turning the potentiometer located on the temperature control board. An arrow on the potentiometer indicates increase.



**NOTE:**  
 Correct temperatures are:  
 Prewash - below 140°F  
 Wash - minimum 150°F  
 Final Rinse - 180°F to 195°F



**DE9-251:** Tank Temperature Control Board

### Troubleshooting Tank Temperatures

If the temperature does not change follow the below procedures.

#### Electric Heat:


1. Check the temperature control board (P/N DE9-251) for proper operation. If the temperature control board is faulty, replace.
2. Verify tank heat contactor is working correctly. If not, replace.
3. Verify all immersion heaters are working properly and are not limed. If not, replace.

#### Steam Heat:

1. Check the temperature control board (P/N DE9-251) for proper operation. If the temperature control board is faulty, replace.
2. Verify steam pressure per machine specifications.
3. Verify steam trap is not clogged. If so, clean and/or replace.

### Immersion Heater Replacement (SK-4703)

1. The immersion heater **MUST** be completely submerged at all times. If this is not the case contact a qualified service technician. The heated surface should never be in contact with sludge.
2. Remove the housing covering the wiring terminations. Disconnect the immersion heater wires.
3. Remove the immersion heater by loosening and removing the large hex nut.
4. Install in reverse of removal.



**NOTE:**  
 Use plumbers putty as gasketing around the immersion heater installation nut.



### Motor Overloads

All motors used on Insinger Machines are provided with motor overloads. Motor overloads are adjusted when the machines are factory tested. Should it be necessary to adjust the motor overloads in the field first verify the motor current draw for the voltage the machine is using.

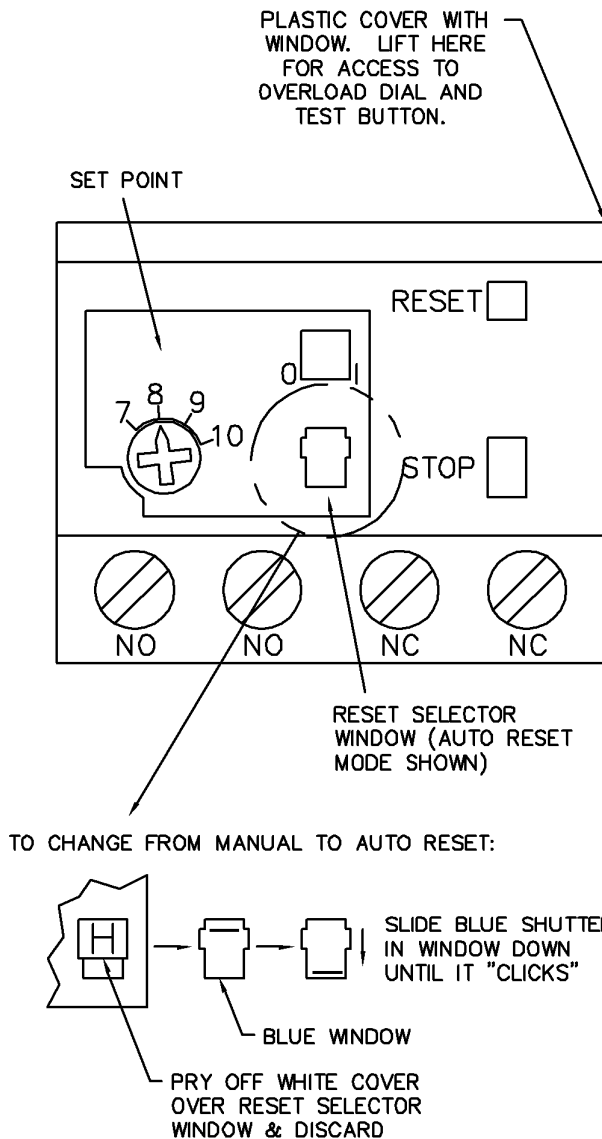
Refer to the Control Panel Layout drawing located in PART 7 to identify the overload, adjust by turning the dial to the appropriate AMP draw.

### Level System

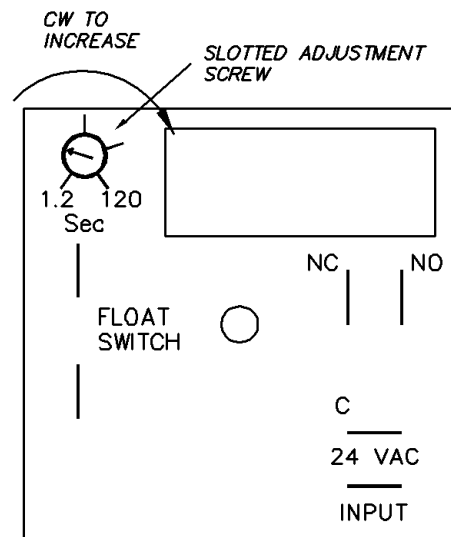
The level control system consists of one level timer (P/N DE7-35) and one level float (P/N DE5-60) in the wash tank and one level float (P/N DE5-60) in the prewash tank.

When the system is powered-up, the tank(s) will begin to fill (assuming no water is in the tanks).

Once the level float is actuated, the timer begins to time-out and continues the filling process until the tank(s) is full.



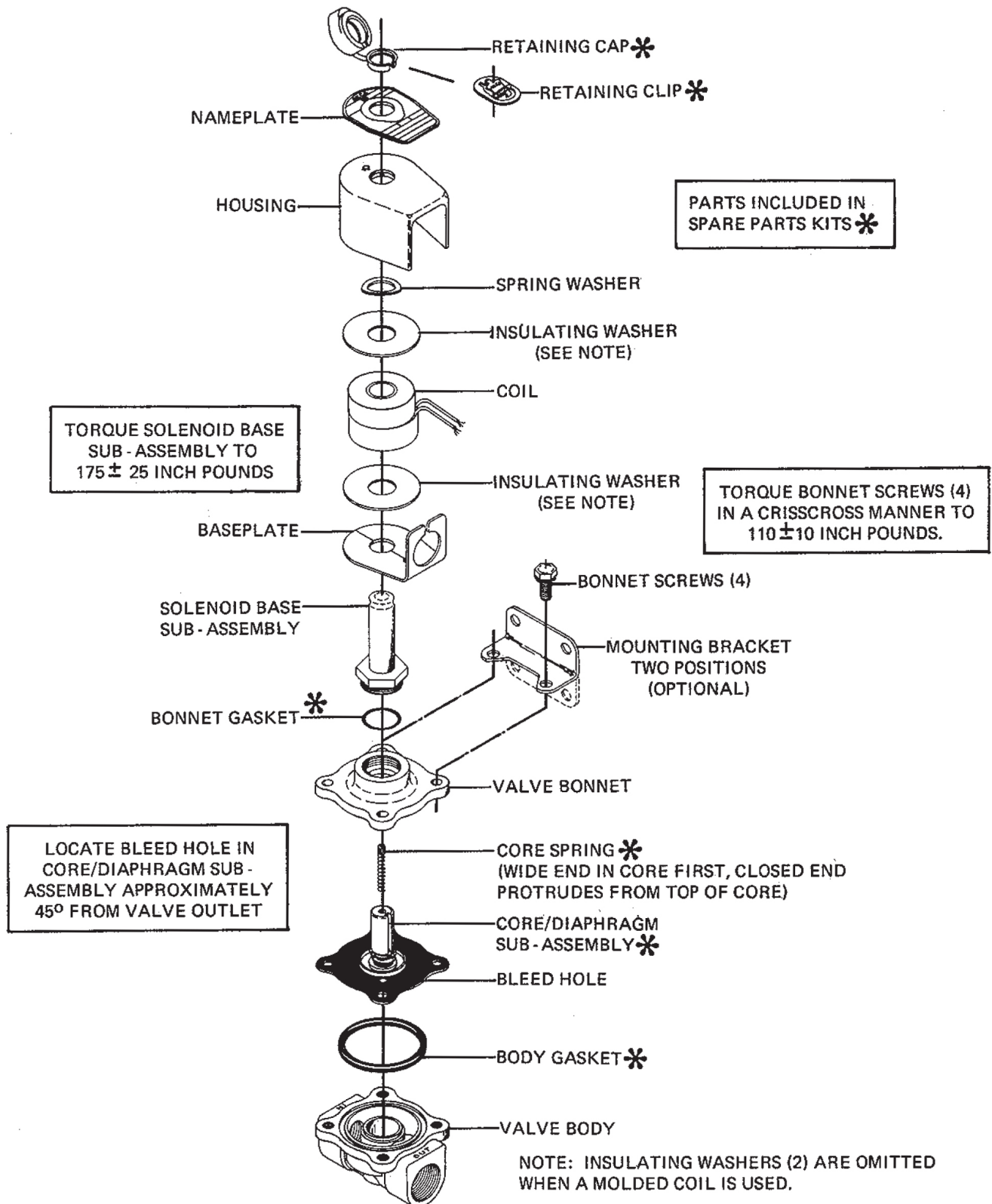
Motor Overload Relay

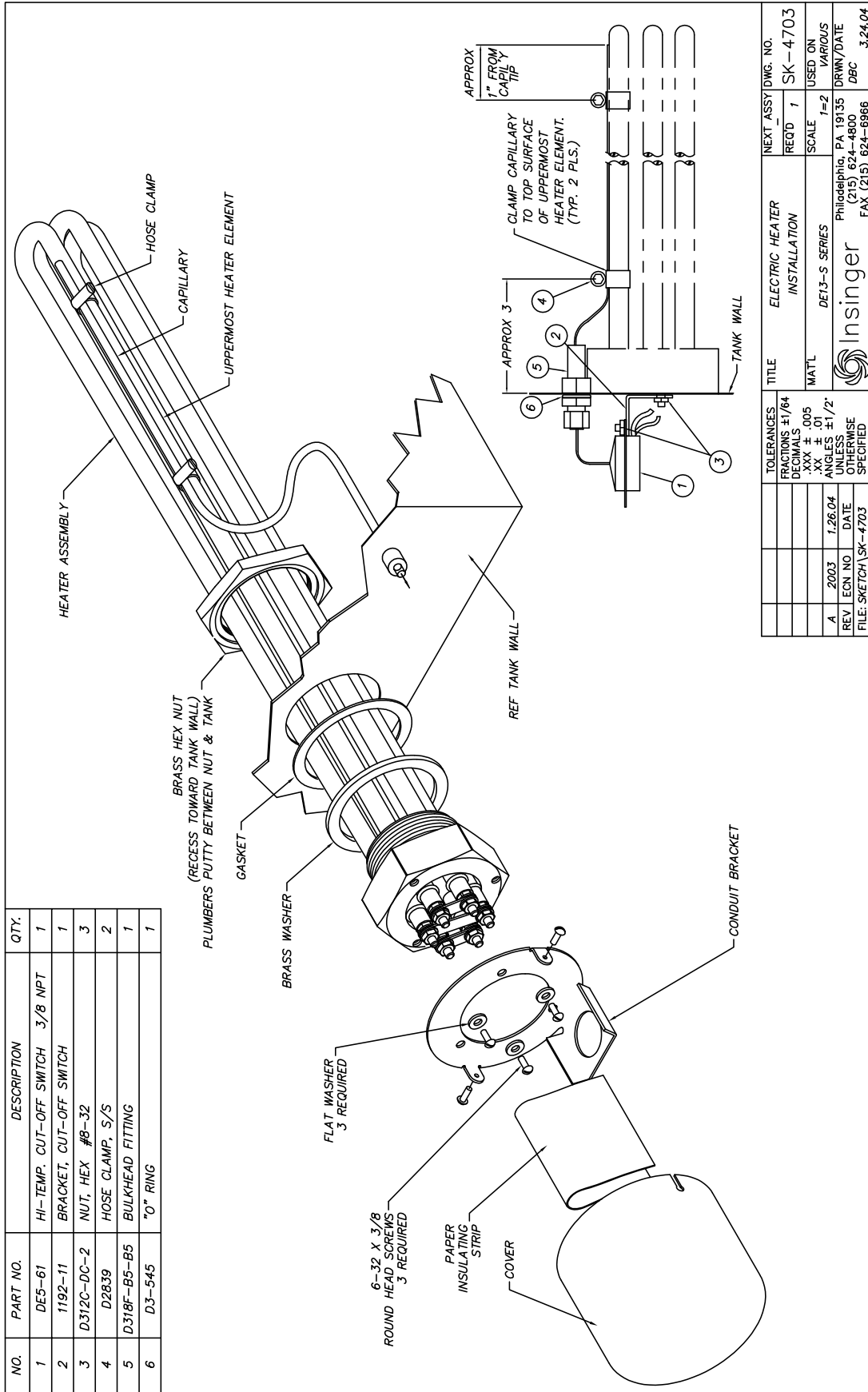


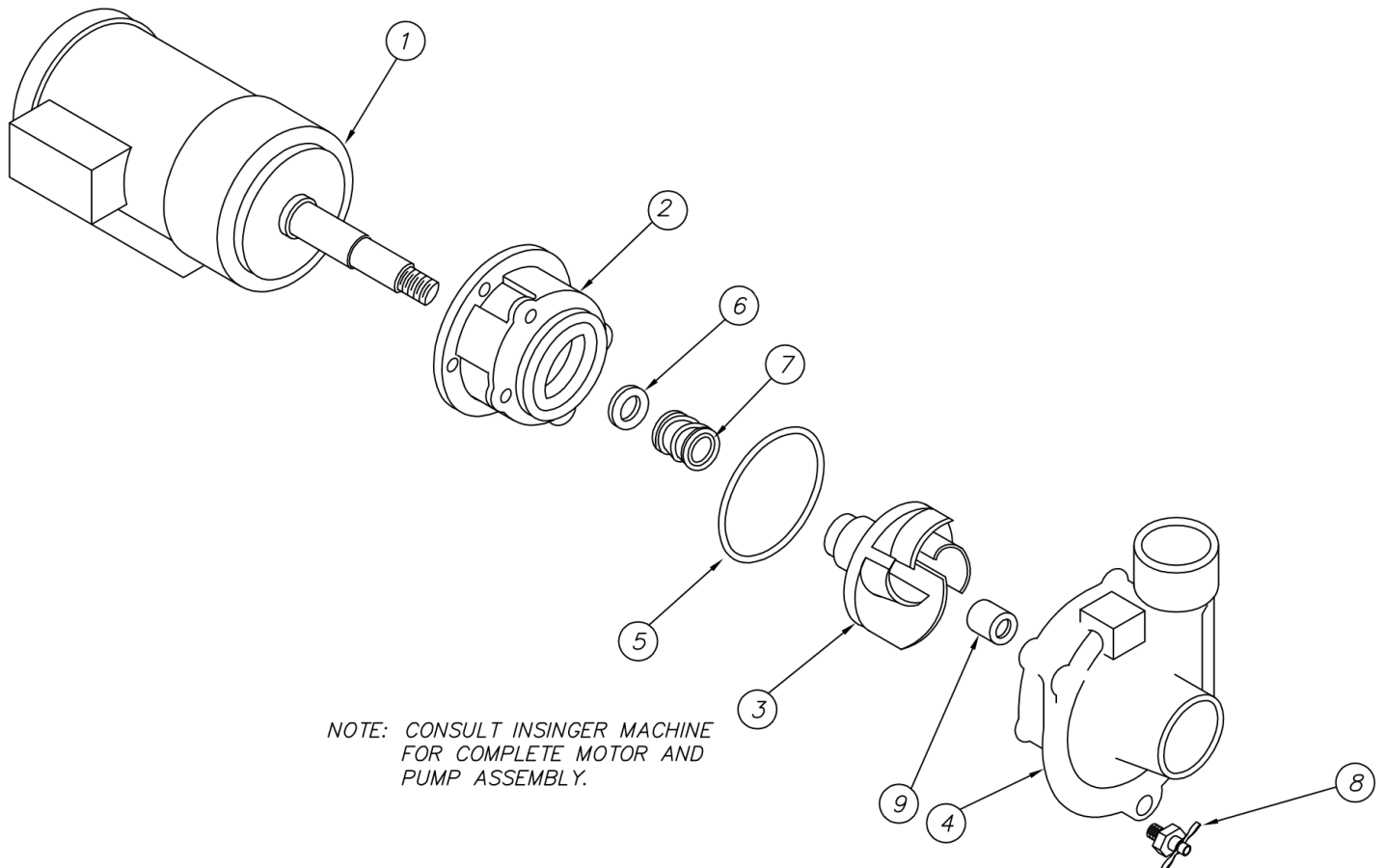
DE7-35: Liquid Level Timer

### CAUTION:

Dirty level floats will cause the tank heat to energize with no water in the tanks. Level floats MUST be cleaned daily.

**SK-5825 : Final Rinse Solenoid Valve**


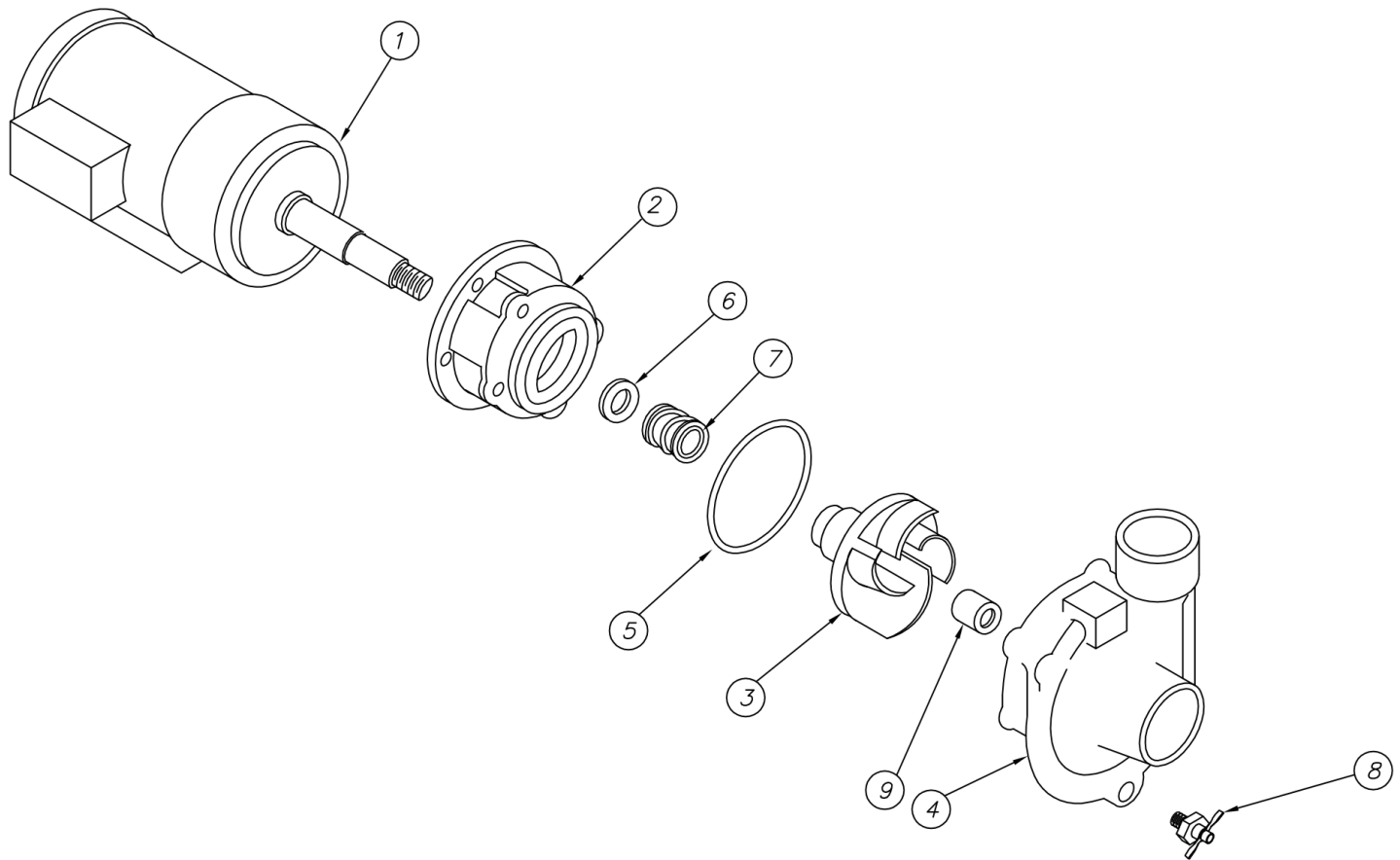
**SK-4703 : Electric Heater Installation**




REV C - 03/06/18

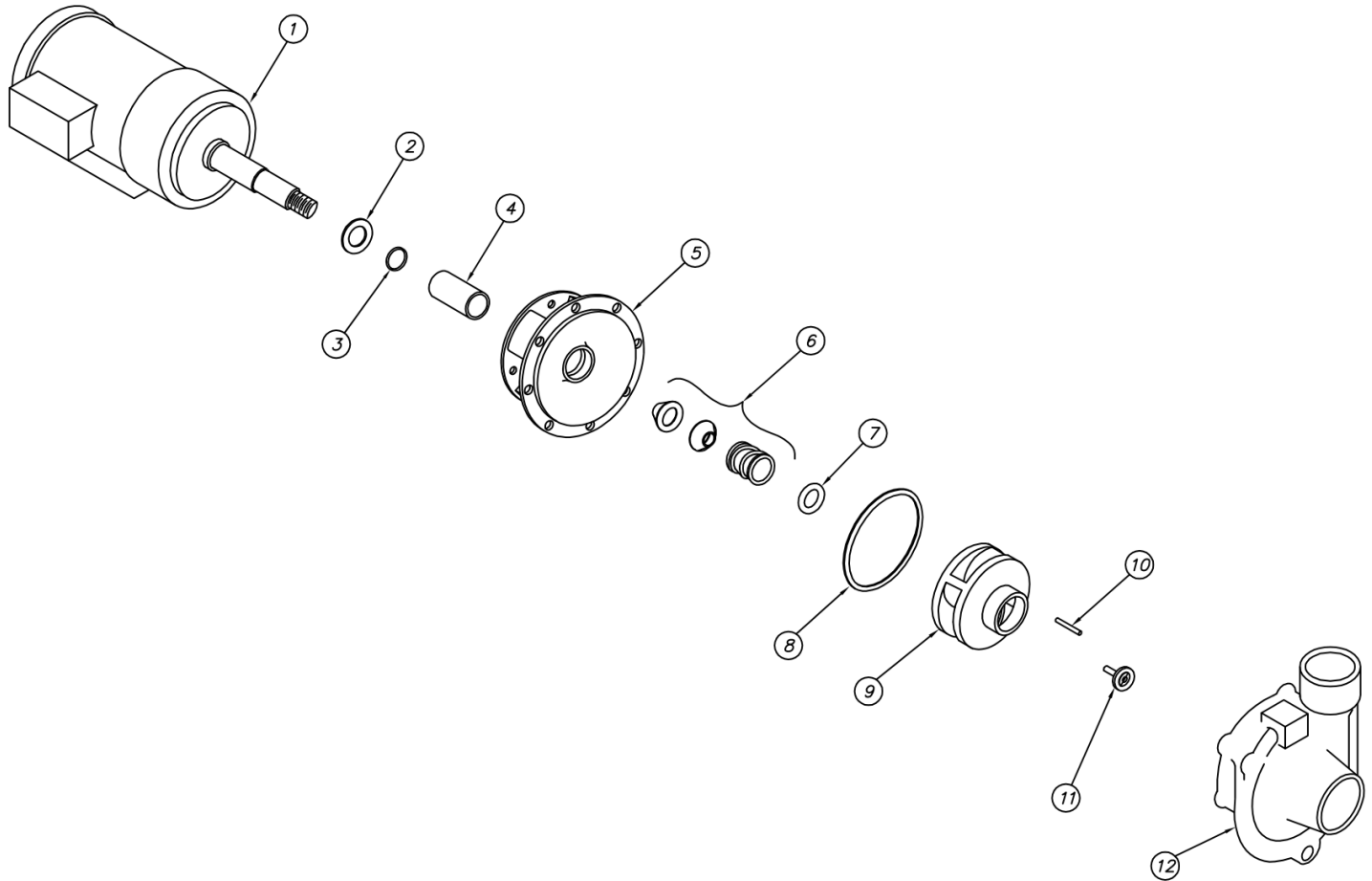
ITEM	PART NO.	DESCRIPTION	QTY
1		Motor 1/2 HP	1
2	D431	Adapter	1
3	D432	Impeller 3"	1
4	D434	Casing	1
5	D2-532	O-Ring	1
* 6	D2-533	Flinger	1
7	D2-534	Seal Assembly	1
8	D329-5	Drain Petcock 1/4" IPS	1
9	D3-808	Impeller Retaining Nut	1

\* 3 Phase Motors Only



REV B - 04/10/06

ITEM	PART NO.	DESCRIPTION	QTY
1		Motor 2 HP	1
2	D431	Adapter	1
3	D443	Impeller 4 3/8"	1
4	D434	Casing	1
5	D2-532	O-Ring	1
6	D2-533	Flinger	1
7	D2-534	Seal Assembly	1
8	D329-5	Drain Petcock 1/4" IPS	1
9	D3-808	Impeller Retaining Nut	1



REV A - 06/06/06

ITEM	PART NO.	DESCRIPTION	QTY
1		Motor 3 HP	1
2	104.000.165	Flinger	1
3	116.000.117	O-Ring, Shaft	1
4	110.000.178	Shaft Sleeve, Bronze	1
5	132.000.194	Adapter, Iron - JM140/180	1
6	101.000.168	Seal, 1 1/2"	1
7	104.000.175	Seal Retainer	1
8	116.000.146	Gasket, Case	1
9	-	Impeller, 4 3/4"	1
10	102.000.102	Key	1
11	118.000.111A	Impeller Retainer	1
12	130.000.169	Case	1

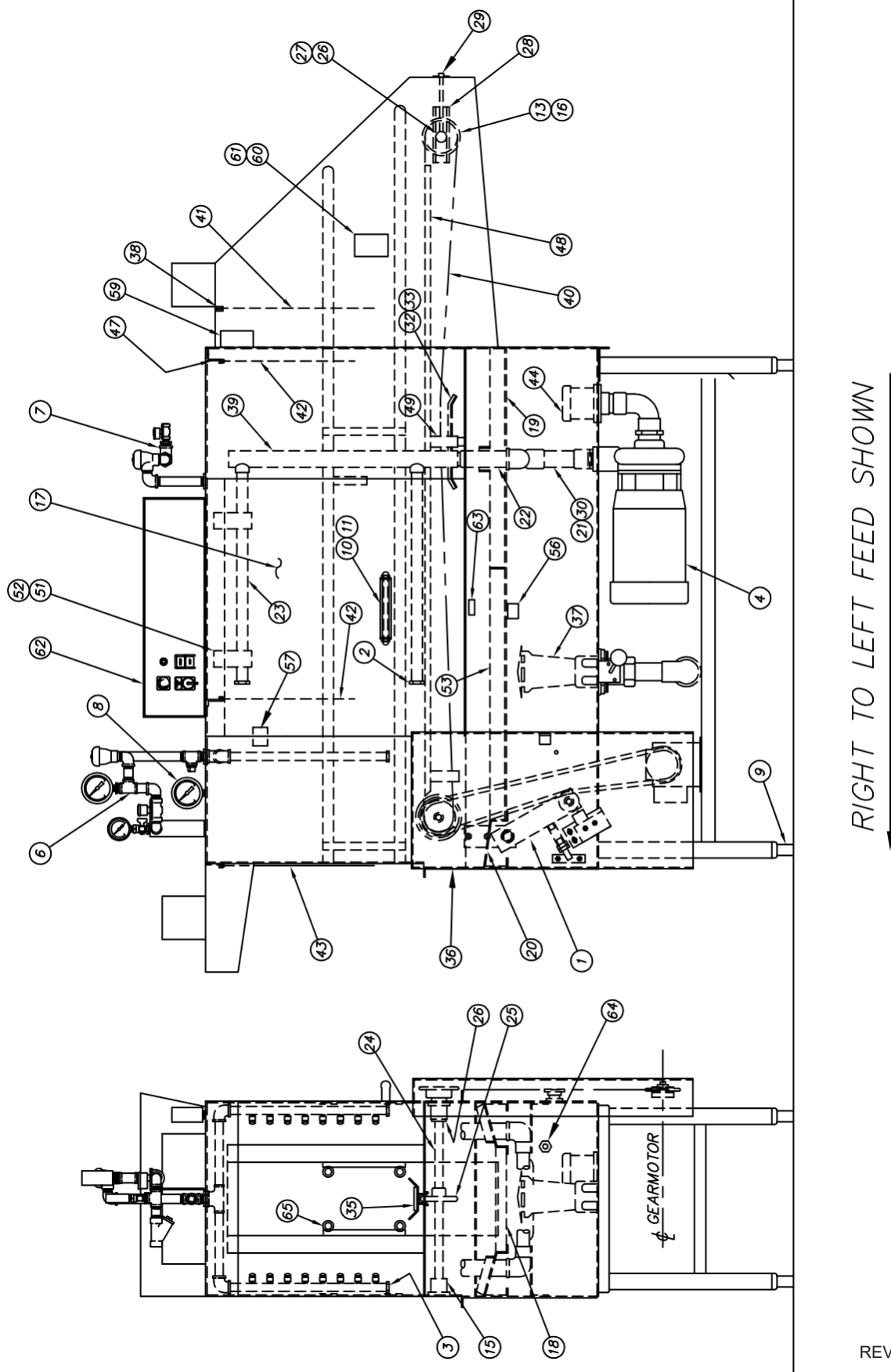
**TROUBLESHOOTING**

TECHNICAL ISSUES	POSSIBLE CAUSES	SOLUTIONS
<b>Machine will not operate</b>	<ol style="list-style-type: none"> <li>1. No power</li> <li>2. Blown fuse or tripped breaker</li> <li>3. Motor overloads tripped</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power supply</li> <li>2. Replace fuse; reset breaker</li> <li>3. Reset overload</li> </ol>
<b>Tank will not hold water</b>	<ol style="list-style-type: none"> <li>1. Drain not closed</li> <li>2. Drain overflow not seated or installed</li> <li>3. Pump petcock opened</li> <li>4. Overflow v-seal dirty/worn</li> </ol>	<ol style="list-style-type: none"> <li>1. Close drain</li> <li>2. Reseat or install drain overflow</li> <li>3. Close pump petcock</li> <li>4. Clean/replace v-seal</li> </ol>
<b>Tank fills beyond overflow</b>	<ol style="list-style-type: none"> <li>1. Obstruction in overflow tube or drain line</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove obstruction</li> </ol>
<b>Water leaks around door</b>	<ol style="list-style-type: none"> <li>1. Doors not seating</li> <li>2. Clogged spray pipe</li> </ol>	<ol style="list-style-type: none"> <li>1. Reseat doors</li> <li>2. Clean spray pipe with brush</li> </ol>
<b>Weak or ineffective spray</b>	<ol style="list-style-type: none"> <li>1. Clogged spray pipe</li> <li>2. Manifolds not installed properly</li> <li>3. Obstruction in pump</li> <li>4. Pump rotation reversed</li> <li>5. Suction strainer clogged</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean spray pipe with brush pipe</li> <li>2. Ensure proper placement of upper and lower pipes</li> <li>3. Clear obstruction through pump inspection plate</li> <li>4. Arrow on pump housing indicates direction, correct electrically</li> <li>5. Clean suction strainer</li> </ol>
<b>Weak or ineffective final rinse spray</b>	<ol style="list-style-type: none"> <li>1. Lime deposits in spray nozzles</li> <li>2. Low water pressure</li> <li>3. Clogged line strainer</li> <li>4. Closed water supply valve</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace nozzles</li> <li>2. Adjust to 20PSI</li> <li>3. Remove line strainer and clean</li> <li>4. Open ball valve</li> </ol>
<b>Water hammer</b>	<ol style="list-style-type: none"> <li>1. Excessive water line pressure</li> </ol>	<ol style="list-style-type: none"> <li>1. Install water hammer valve</li> </ol>
<b>Machine vibrates or is noisy</b>	<ol style="list-style-type: none"> <li>1. Pump rotation reversed</li> </ol>	<ol style="list-style-type: none"> <li>1. Arrow on pump housing indicates direction, correct electrically</li> </ol>
<b>Final rinse will not shut off</b>	<ol style="list-style-type: none"> <li>1. Final rinse solenoid valve clogged</li> <li>2. Diaphragm worn</li> <li>3. Solenoid valve still powered-up</li> </ol>	<ol style="list-style-type: none"> <li>1. Disassemble valve and clean internal parts of scale or replace</li> <li>2. Replace with solenoid valve repair kit</li> <li>3. Check final rinse actuating circuit for proper operation</li> </ol>



**TROUBLESHOOTING**

TECHNICAL ISSUES	POSSIBLE CAUSES	SOLUTIONS
<b>Tank not filling/tank heat coming on with no water in tank</b>	<ol style="list-style-type: none"> <li>1. Level float dirty</li> <li>2. Level control system not working</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean level float</li> <li>2. Troubleshoot level control circuit</li> </ol>
<b>Tank temperature too low/high</b>	<ol style="list-style-type: none"> <li>1. Thermostat not adjusted</li> <li>2. Heat circuitry not working</li> <li>3. Electric heat - power turned off</li> <li>4. Electric heat - immersion heaters limed</li> <li>5. Steam heat - steam turned off</li> <li>6. Steam heat - not enough steam</li> <li>7. Steam heat - condensate traps clogged</li> <li>8. Gas heat - gas turned off</li> <li>9. Gas heat - pilot not lit (if provided)</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust thermostat</li> <li>2. Troubleshoot circuitry</li> <li>3. Check circuit breakers</li> <li>4. De-lime machine</li> <li>5. Turn steam on</li> <li>6. Adjust steam pressure per machine specs</li> <li>7. Clean or replace condensate traps</li> <li>8. Turn on gas</li> <li>9. Re-light pilot</li> </ol>



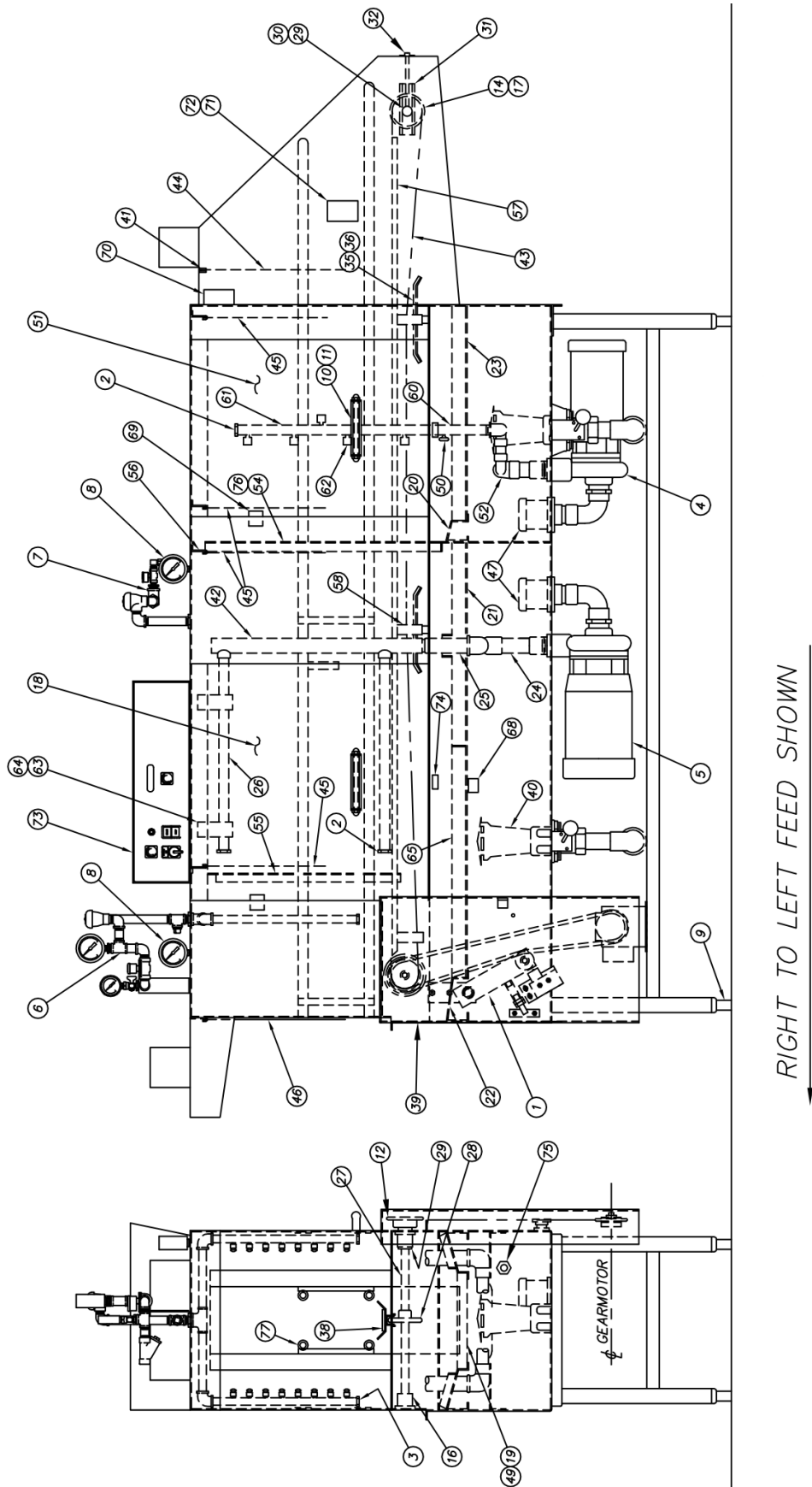
**SK-3246 : TRAC 321-2 Assembly**

ITEM	PART NO.	DESCRIPTION	QTY
1	1094-121	Drive Mechanism	1
2	D2-554-2A	Plug 3/4-10 UNC with Hole	4
3	D2-554-2	Plug 3/4-10 UNC	2
4	***	Pump/Motor - Wash (2 or 3 HP)	1
5	-	-	-
6	1094-30	Final Rinse Assembly	1
7	1072-27	Tank Fill Assembly - Auto	1
	973-27	Tank Fill Assembly - Manual	1
8	D2390	Temperature Gauge	1
9	D2874	Adjustable Foot	4
10	RC-15-20	Door Handle	1
11	RC-15-21	Door Rod	1
12	-	-	-
13	D2895	Spacer	1
14	-	-	-
15	D2-104	Shaft Bearing	2
16	D2857	Sprocket	1
17	1448-8	Door - Wash	1
18	1094-5	Scrap Screen - Wash	2
19	1094-7	Tray Spacer - Wash Discharge	2
20	1072-20	Tray Spacer - Wash End	1
21	1094-11	Discharge Line Manifold - Wash 2 HP	1
22	1094-12	Pipe Extension - Wash	2
23	1094-16	Spray Pipe - Wash	4
24	982-55	Drive Shaft	1
25	975-55	Sprocket	1
26	D2-525	Spacer	3
27	982-59	Shaft - Follower	1
28	975-43A	Channel	2
29	982-92	Adjustment Screw	2
30	1176-17	Discharge Line Manifold - Wash 3 HP	1
31	-	-	-
32	973-16	Chain Guide	2
33	973-16A	Wear Strip	2

\*\*\* Specific Pump/Motor data needed for Part #

**SK-3246 : TRAC 321-2 Assembly**

ITEM	PART NO.	DESCRIPTION	QTY
34	-	-	-
35	1361-241	Urethane Crown & Retainer Assembly for Cradle	22
36	1098-73	Mechanism Guard	1
37	954-50	Drain Assembly	1
38	973-21	Curtain Plate	1
39	1094-14	Spray Manifold - Wash	2
40	1094-97	Chain Assembly (Stand Alone Washer)	1
41	1094-33	Curtain - Enter	1
42	1094-40	Curtain - Center	2
43	1094-38	Curtain - Exit	1
44	D2-541	Suction Strainer	1
45	-	-	-
46	-	-	-
47	1094-20	Baffles - Top	2
48	982-40	Track - Chain Guide	1
49	982-38	Track Support	2
50	-	-	-
51	1094-22	Front Spray Pipe Support - Wash	2
52	1094-25	Rear Spray Pipe Support - Wash	2
53	1094-8	Tray Spacer - Wash	2
54	-	-	-
55	-	-	-
56	1072-44	Support - Tray Spacers	2
57	D2715A	Door Latch	2
58	-	-	-
59	DE5-70	Switch - Emergency Stop	1
60	D2727-1	Photo Eye - Receiver	1
61	D2727	Photo Eye - Light Source	1
62	SK-3126	Control Box & Components (Commercial)	1
63	DE5-37	Magnetic Door Switch	1
64	DE5-60	Liquid Level Float	1
65	1443-1	Guide Rail Assembly (1/2" Round S/S Rod)	1
	1448-19	Guide Rail Assembly (Pobco)	1

**SK-3242 : TRAC 321-2 RPW Assembly**


REV F - 05/04/16

**SK-3242 : TRAC 321-2 RPW Assembly**

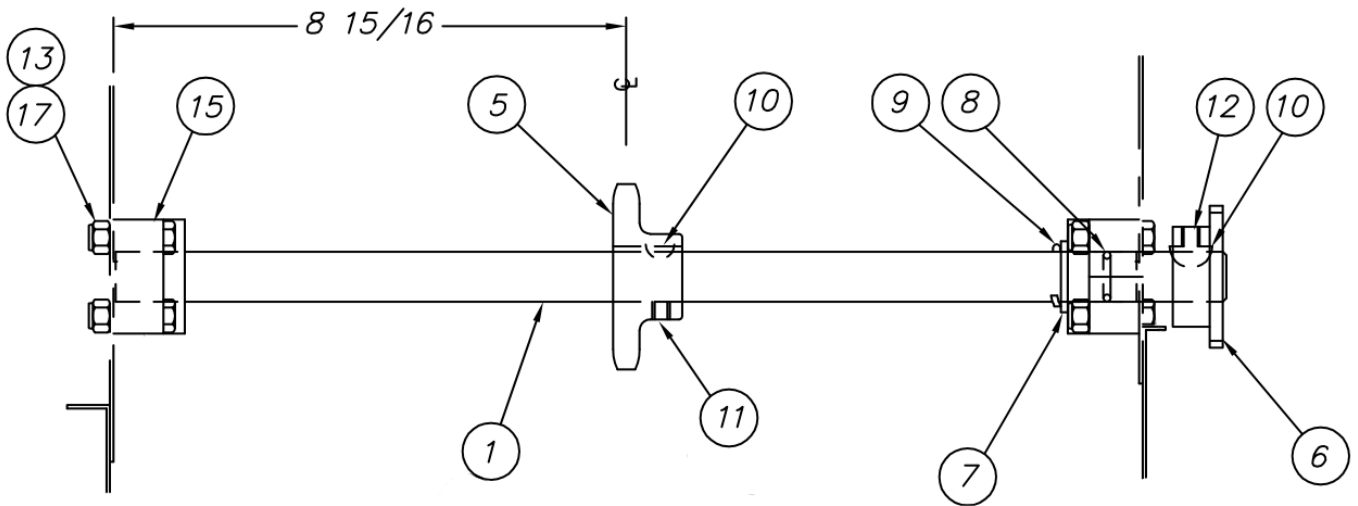
ITEM	PART NO.	DESCRIPTION	QTY
1	1094-121	Drive Mechanism	1
2	D2-554-2A	Plug 3/4-10 UNC with Hole	6
3	D2-554-2	Plug 3/4-10 UNC	2
4	***	Pump/Motor - Prewash (1/2 HP)	1
5	***	Pump/Motor - Wash (2 or 3 HP)	2
6	1094-30	Final Rinse Assembly	1
7	1072-27	Tank Fill Assembly - Auto	1
	1072-26	Tank Fill Assembly - Manual	1
8	D2390	Temperature Gauge	2
9	D2874	Adjustable Foot	4
10	RC-15-20	Door Handle	1
11	RC-15-21	Door Rod	1
12	D2647	Driven Sprocket	1
13	-	-	-
14	D2895	Spacer	1
15	-	-	-
16	D2-104	Shaft Bearing	2
17	D2857	Sprocket	1
18	1448-8	Door - Wash	1
19	1094-5	Scrap Screen - Wash	2
20	1072-22	Tray Spacer - Prewash Divider	1
21	1094-7	Tray Spacer - Wash Discharge	2
22	1072-20	Tray Spacer - Wash End	1
23	1098-8	Tray Spacer - Prewash (specify R or L)	2
24	1094-11	Discharge Line Manifold - Wash 2 HP	1
25	1094-12	Pipe Extension - Wash	2
26	1094-16	Spray Pipe - Wash	4
27	982-55	Drive Shaft	1
28	975-55	Sprocket	1
29	D2-525	Spacer	3
30	982-59	Shaft - Follower	1
31	975-43A	Channel	2
32	982-92	Adjustment Screw	2
33	-	-	-
34	-	-	-
35	973-16	Chain Guide	2
36	973-16A	Wear Strip	2
37	-	-	-
38	1361-241	Urethane Crown & Retainer Assembly for Cradle	30

\*\*\* Specific Pump/Motor data needed for Part #

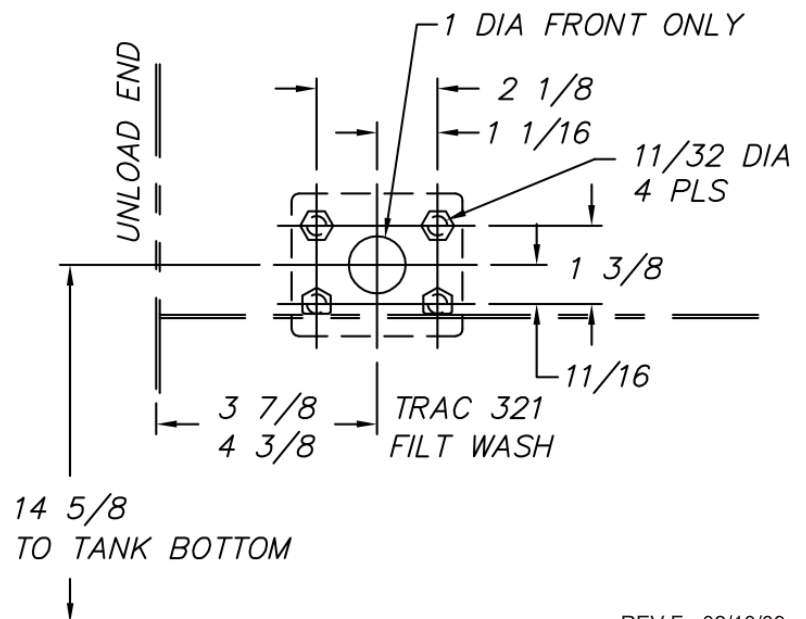
**SK-3242 : TRAC 321-2 RPW Assembly**

ITEM	PART NO.	DESCRIPTION	QTY
39	1098-73	Mechanism Guard	1
40	954-50	Drain Assembly	2
41	973-21	Curtain Plate	1
42	1094-14	Spray Manifold - Wash	2
43	1098-146	Chain Assembly (Stand Alone Washer)	1
44	1094-33	Curtain - Enter	1
45	1094-40	Curtain - Center	4
46	1094-38	Curtain - Exit	1
47	D2-541	Suction Strainer	2
48	-	-	-
49	1098-9	Scrap Screen - Prewash	2
50	562-87A	Locking Screw	2
51	1449-7	Door - Prewash	1
52	1072-14	Manifold - Prewash Discharge (specify R or L)	1
53	-	-	-
54	1072-23A	Baffle - Side @ Tank Divider	2
55	1072-23	Baffle - Side @ Rear Wash Tank	1
56	1098-5	Baffles - Top	4
57	1072-32	Track - Chain Guide	1
58	982-38	Track Support	3
59	-	-	-
60	970-25A	Pipe Extension - Prewash	2
61	982-66	Spray Pipe - Prewash	2
62	D2712	Spray Nozzle - Prewash	10
63	1094-22	Front Spray Pipe Support - Wash	2
64	1094-25	Rear Spray Pipe Support - Wash	2
65	1094-8	Tray Spacer - Wash	2
66	-	-	-
67	-	-	-
68	1072-44	Support - Tray Spacers	2
69	D2715A	Door Latch	1
70	DE5-70	Switch - Emergency Stop	2
71	D2727-1	Photo Eye - Receiver	1
72	D2727	Photo Eye - Light Source	1
73	SK-3126	Control Box & Components (Commercial)	1
74	DE5-37	Magnetic Door Switch	2
75	DE5-60	Liquid Level Float	1
76	1098-149	Adjustable Baffle	2
77	1444-1	Guide Rail Assembly (1/2" Round S/S Rod)	1
	1449-13	Guide Rail Assembly (Pobco)	1



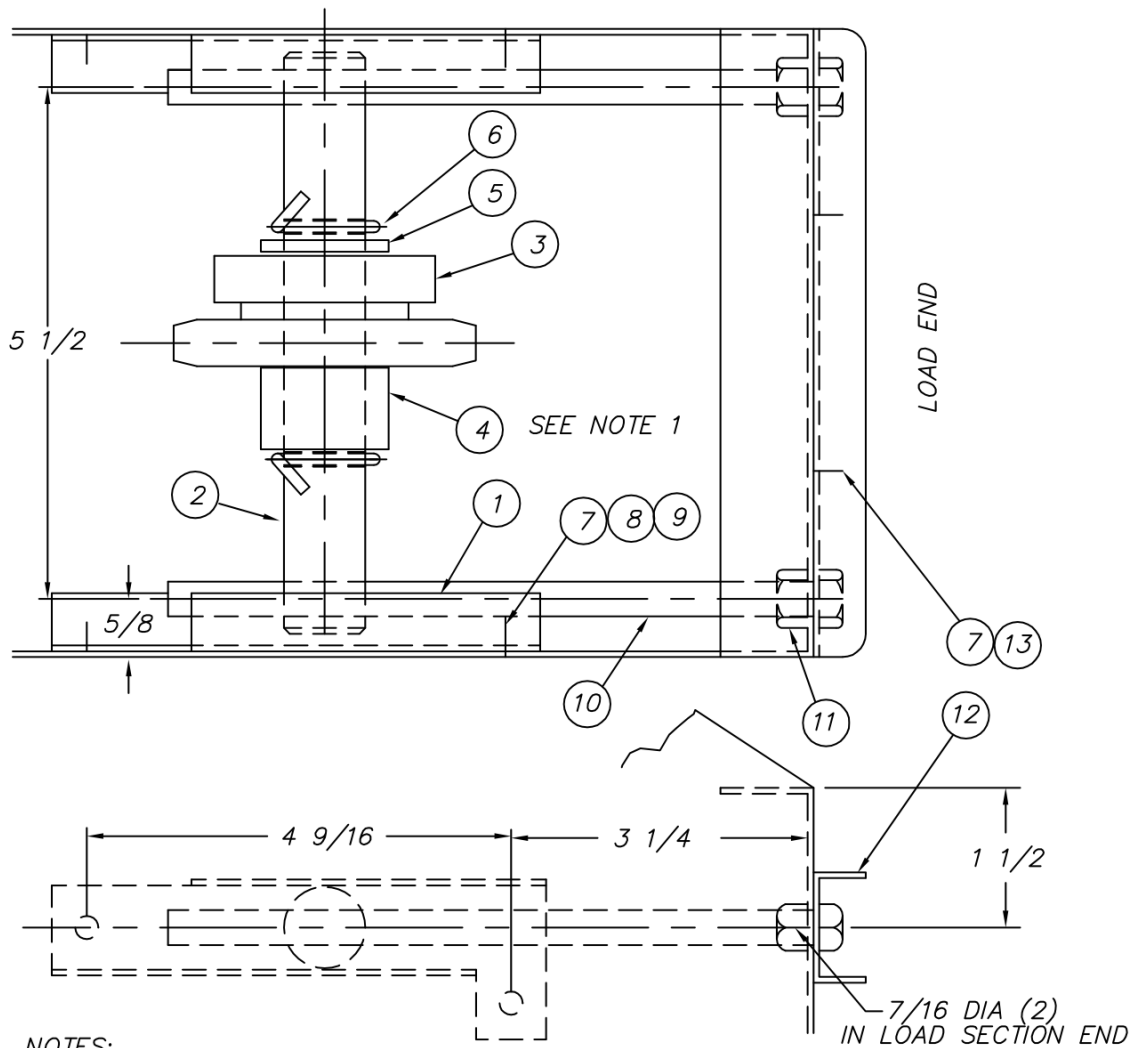


REF:  
 FOR CHAIN DRAWING SEE  
 1094-97 (TRAC 321-2)  
 1098-146 (TRAC 321-2 RPW)



REV F - 02/10/09

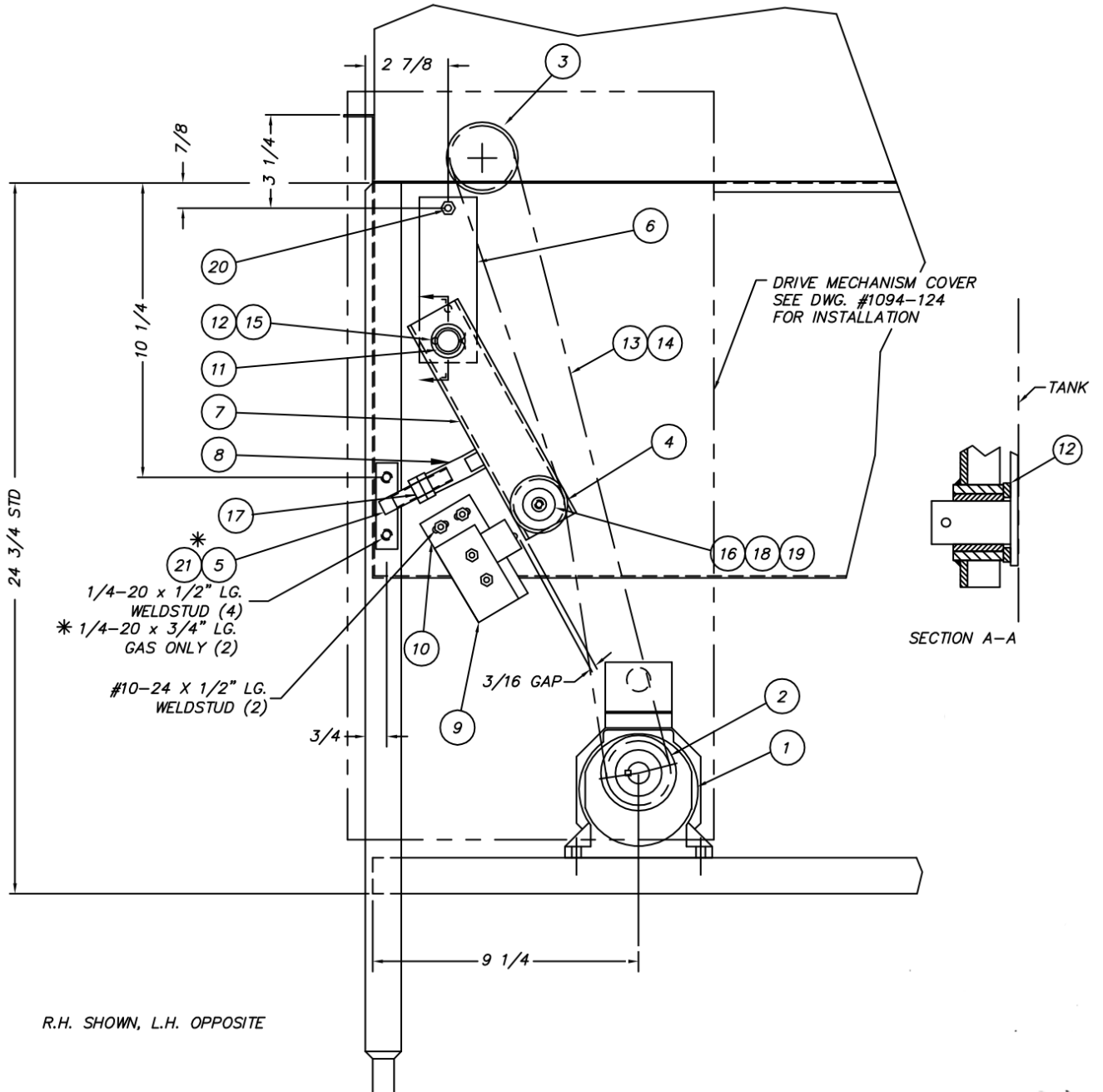
ITEM	PART NO.	DESCRIPTION	QTY
1	982-55	Drive Shaft	1
5	975-55	Sprocket, Conveyor Chain	1
6	982-56	Sprocket (41B14 7/8 Bore)	1
7	D2-525	Washer 1 3/8" x 7/8" x 1/8"	1
8	D2-585	O-Ring (01-115)	1
9	D311-1	Cotter Pin 1/8" x 1 1/2"	1
10	D302-4	Woodruff Key # 11	2
11	D309C-HC-3H	Set Screw 5/16-18 x 3/8"	1
12	D309C-HC-5H	Set Screw 5/16-18 x 5/8"	2
13	D312C-HC-5	5/16-18 UNC Stop Nut	8
15	1162-110	Bearing (UHMWPE)	2
17	D309C-HC-11A	HHCS 5/16-18 x 1 3/8"	8

**982-58 : Follower Shaft Assembly**

**NOTES:**

- 1) IF ITEM #4 IS NOT AVAILABLE,  
USE D2-525 (7) PLACES

REV E - 08/29/02

ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	975-43A	A	Follower Shaft Channel RH & LH	1 EA
2	982-59	A	Shaft	1
3	D2857	A	Sprocket, UHMW	1
4	D2859	A	Hub Spacer x 7/8" Lg.	1
5	D2-525	A	Spacer	1
6	-	-	Cotter Pin 1/8" x 1 1/2" S/S	2
7	D309C-GC-3G	-	Weldstud 1/4-20 x 3/8" Lg.	6
8	D313C-2G	-	Lockwasher 1/4"	4
9	D312C-GC-2	-	Hex Nut 1/4-20	4
10	982-92	A	Adj. Screw 3/8-16	2
11	D312C-JC-1	-	Hex Nut 3/8-16	2
12	982-91	A	Channel Support	1
13	D312C-JC-5	-	Locknut 3/18-16	2



USE	GEARMOTOR PN	HP	RPM	FREQ (HZ)	DRIVE SPROCKET NUMBER	SPROCKET PN	CHAIN LINKS	CHAIN OFFSET	CONN
STD	SEE CHART	1/15	15	60	41B14-3/4 KSS	D2899	101	1	1
STD	SEE CHART	1/15	12.5	50	41B16-3/4 KSS	D2900	103	1	1
GAS	SEE CHART	1/15	15	60	41B14-3/4 KSS	D2899	105	1	1

GEARMOTOR VOLTAGE	GEARMOTOR PN
208-230/3/60	D2883
220/3/50	D2883
380/3/50	D2885
460/3/60	D2884

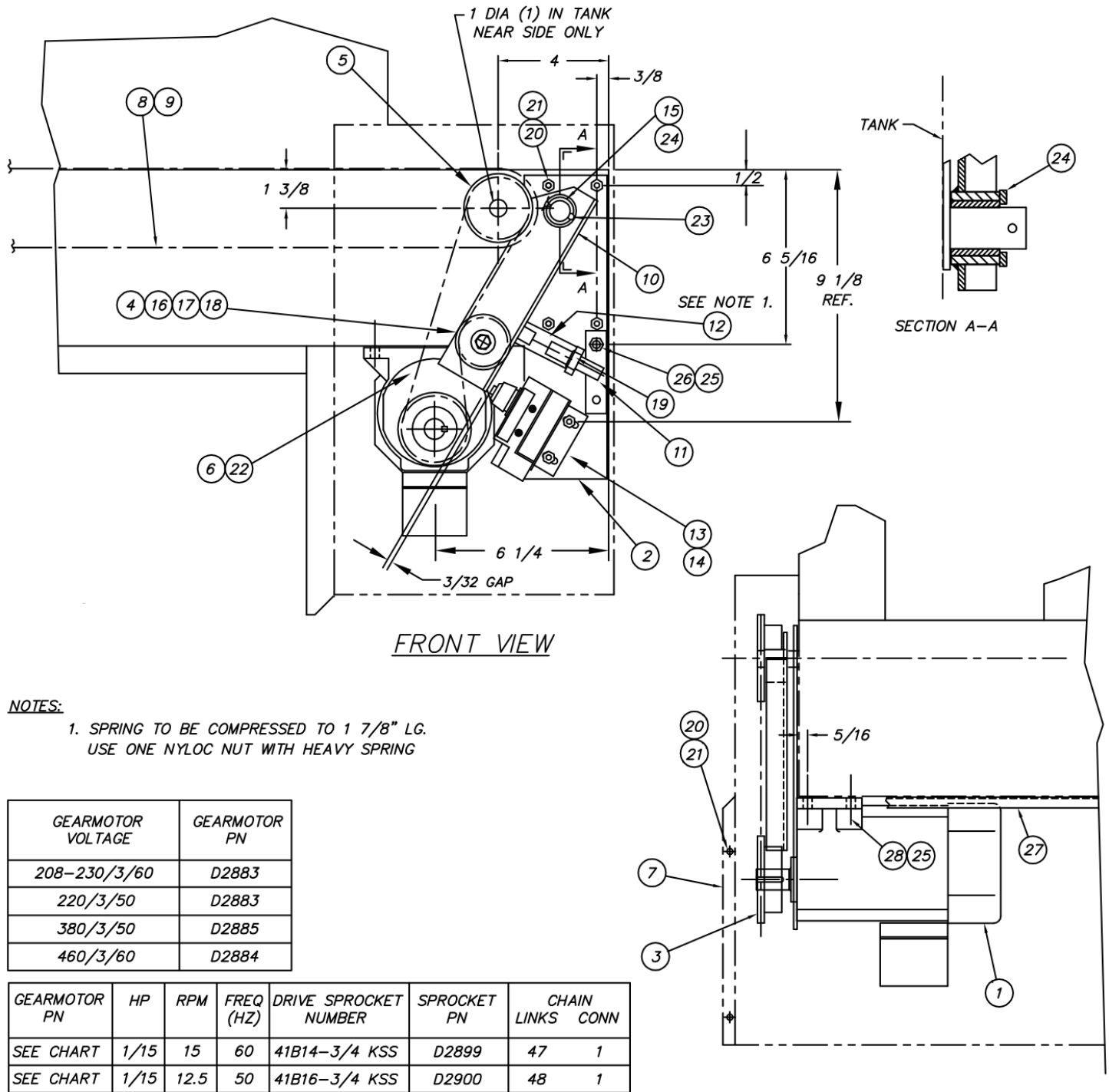
**NOTES:**

1. SPRING TO BE COMPRESSED TO 2 1/8" LG.
2. THIS DRAWING NOT USED FOR TRAY WASHER/ TRAY DRYER COMBINATION WITH SINGLE CHAIN (CONTINUOUS) CONVEYOR.

REV D - 04/26/02

**1094-121 : Drive Mechanism Assembly**

ITEM	PART NO.	DESCRIPTION	QTY
1	SEE CHART	Gearmotor Brother BGLM18	1
2	SEE CHART	Sprocket, Drive	1
3	D2647	Sprocket, Drive 14T with Keyway	1
4	820-35	Sprocket, Assembly, Idler	1
5	1397-4	Adjustable Spring Stop	1
6	1397-6	Pivot Shaft Weldment	1
7	1397-2	Idler Sprocket Arm	1
8	D2780	Spring	1
9	D2215A	Microswitch	1
10	1094-123	Microswitch Bracket	1
11	D2771	Bushing, 1" OD x 3/4" ID x 7/8" Lg.	1
12	D2-525	Washer, Nylon 1/8" Thick	1
13	D308B-41	#41 Chain (see chart)	1
14	D308B-41-CL	Connecting Link, #41 Chain	1
15	D311-1	Cotter Pin, 1/8" Diameter x 1 1/2" Lg.	1
16	D3-824	Washer, 5/16" ID x 1 1/8" OD	1
17	D312C-LC-1	Hex Jam Nut, 1/2-13	2
18	D313C-H2	Lockwasher, 5/16"	1
19	D309C-HC-3	Capscrew, 5/16-18 UNC x 3/4" Lg.	1
20	D312C-GC-5	Locknut 1/4-20	4
21	1493-34	Spring Stop Spacer (Gas Heat Only)	1

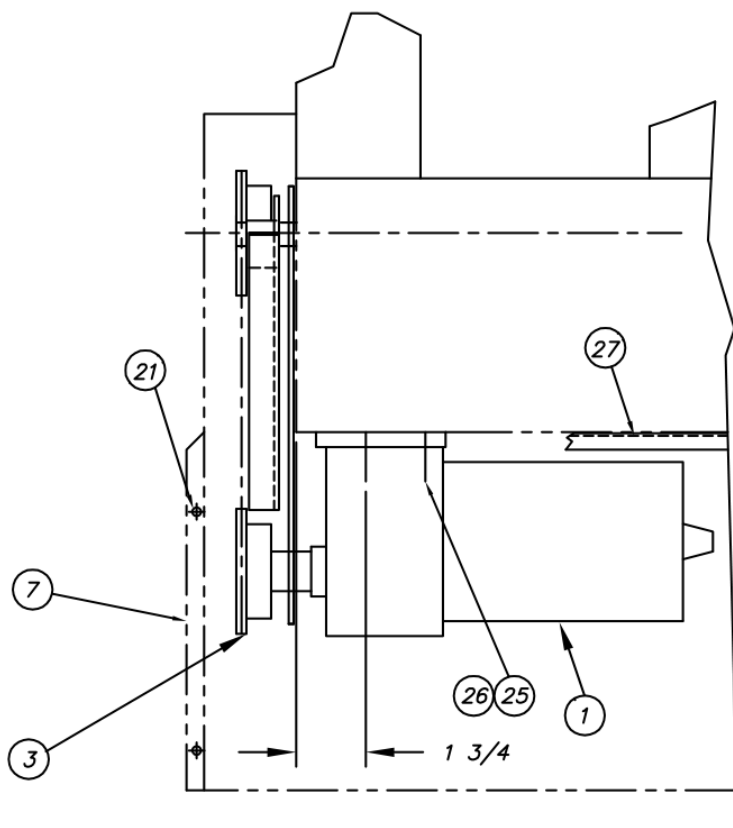
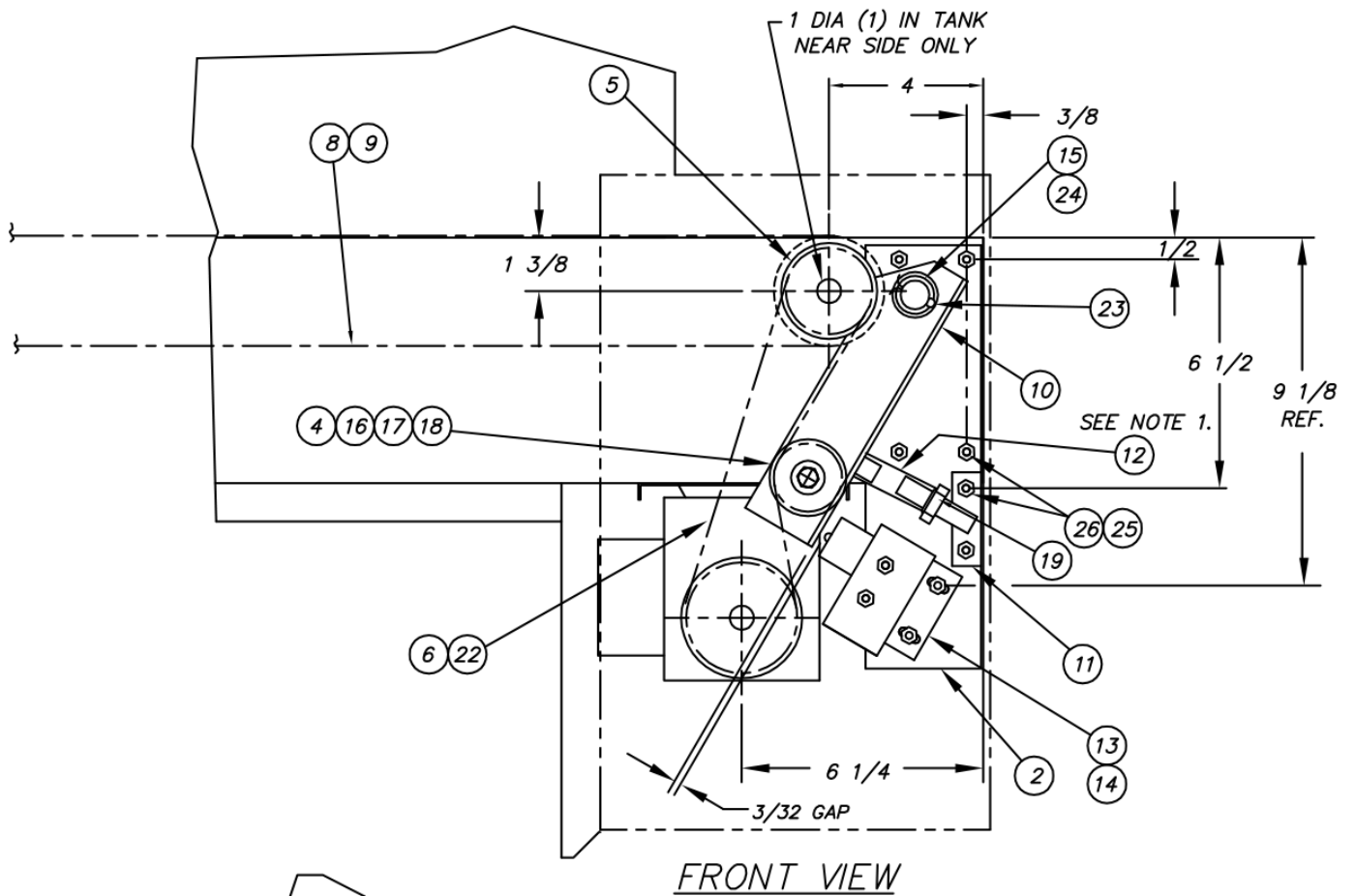
**1361-148 : Drive & Chain Assembly w/ Tray Dryer (Brother AC)**


L.H. MACHINE SHOWN - R.H. MACHINE OPPOSITE

REV C - 01/29/10

**1361-148 : Drive & Chain Assembly w/ Tray Dryer (Brother AC)**

ITEM	PART NO.	DESCRIPTION	QTY
1	SEE CHART	Gearmotor, Brother BGLM18	1
2	1361-137	Pivot Shaft Mounting Plate	1
3	SEE CHART	Motor Sprocket	1
4	820-35	Sprocket Assembly, Idler	1
5	1361-149	Drive Shaft Assembly	1
6	D308B-41	#41 Chain (See Chart)	1
7	1361-31	Cover, Gear Motor	1
8	1361-157	Chain Assembly (TRAC 321)	1
9	1098-165	Chain Assembly (TRAC 321 RPW)	1
10	1361-136	Idler Arm	1
11	1397-4	Adjustable Spring Stop	1
12	D2834	Spring, Compression - Heavy	1
13	D2215A	Microswitch	1
14	967-78	Microswitch Bracket	1
15	D2771	Bushing, 1" OD x 3/4" ID	1
16	D309C-HC-3	Capscrew, 5/16-18 x 3/4" Lg.	1
17	D313C-H2	Lockwasher, 5/16"	1
18	D3-824	Washer, 5/16" ID x 1 1/8" ID	1
19	D312C-LC-10	Thin (Jam) Stop Nut 1/2-13	1
20	D309C-EF-3G	Weldstud #10-32 x 3/8"	8
21	D312C-EF-5	Locknut #10-32	8
22	D308B-41-CL	Connecting Link, #41 Chain	1
23	D311-1	Cotter Pin, 1/8" Diameter x 1 1/2" Lg.	1
24	D2-525	Washer, Nylon	1
25	D312C-GC-5	Locknut, 1/4-20	8
26	D309C-GC-5	Weldstud, 1/4-20 x 5/8" Lg.	4
27	1361-162	Reinforcement Channel	1
28	D309C-GC-8	Weldstud, 1/4-20 x 1" Lg.	4

**1361-214 : Drive & Chain Assembly (Dayton DC)**


L.H. MACHINE SHOWN  
R.H. MACHINE OPPOSITE

**NOTES:**

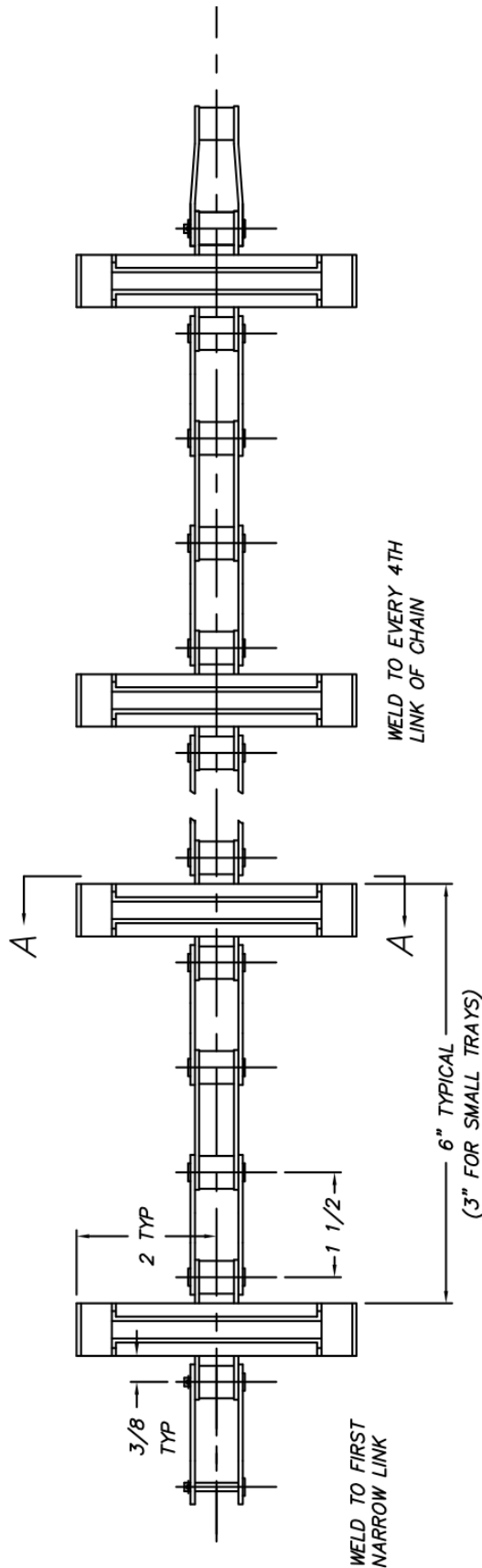
1. SPRING TO BE COMPRESSED TO 1 7/8" LG. USE ONE NYLOC NUT WITH HEAVY SPRING
2. THIS DWG. WAS #1361-148 REV A. USE FOR CUSTOMERS REQUIRING VARIABLE SPEED DC DRIVE.

REV A - 01/29/10

**1361-214 : Drive & Chain Assembly (Dayton DC)**

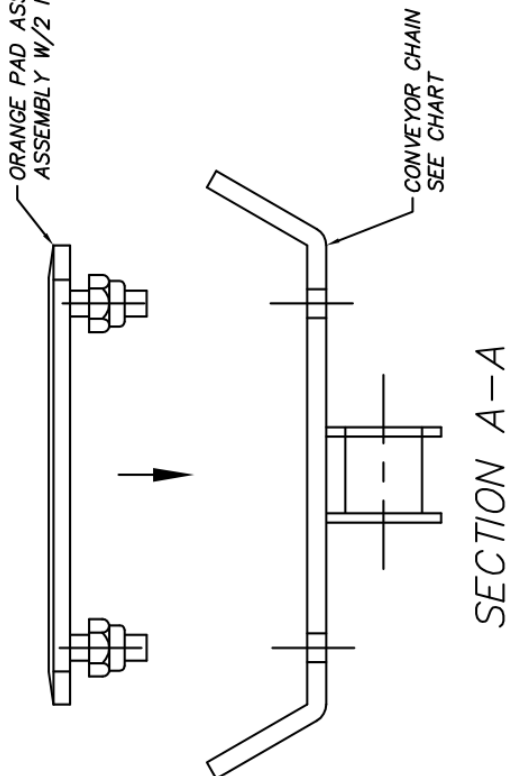
ITEM	PART NO.	DESCRIPTION	QTY
1	-	Motor, Dayton 4Z130A	1
2	1361-137	Pivot Shaft Mounting Plate	1
3	1165-29	Sprocket, 41B18	1
4	820-35	Sprocket Assembly, Idler	1
5	1361-149	Drive Shaft Assembly	1
6	D308C-41-CL	Chain, #41 x 53 Links	1
7	1361-31	Cover, Gear Motor	1
8	1361-157	Chain Assembly (TRAC 321)	1
9	1098-165	Chain Assembly (TRAC 321 RPW)	1
10	1361-136	Idler Arm	1
11	1397-4	Adjustable Spring Stop	1
12	D2834	Spring, Compression - Heavy	1
13	D2215A	Microswitch	1
14	967-78	Microswitch Bracket	1
15	D2771	Bushing, 1" OD x 3/4" ID	1
16	D309C-HC-3	Capscrew, 5/16-18 x 3/4" Lg.	1
17	D313C-H2	Lockwasher, 5/16"	1
18	D3-824	Washer, 5/16" ID x 1 1/8" OD	1
19	D312C-LC-10	Thin (Jam) Stop Nut 1/2-13	1
20	D309C-EF-4G	Weldstud #10-32" x 1/2"	4
21	D312C-EF-5	Locknut #10-32"	4
22	D308B-41-CL	Connecting Link, #41 Chain	1
23	D311-1	Cotter Pin, 1/8" Diameter x 1 1/2" Lg.	1
24	D2-525	Washer, Nylon	1
25	D312C-GF-5	Locknut, 1/4-32	10
26	D309C-GF-4	Weldstud, 1/4-32 x 1/2" Lg.	10
27	1361-162	Reinforcement Channel	1



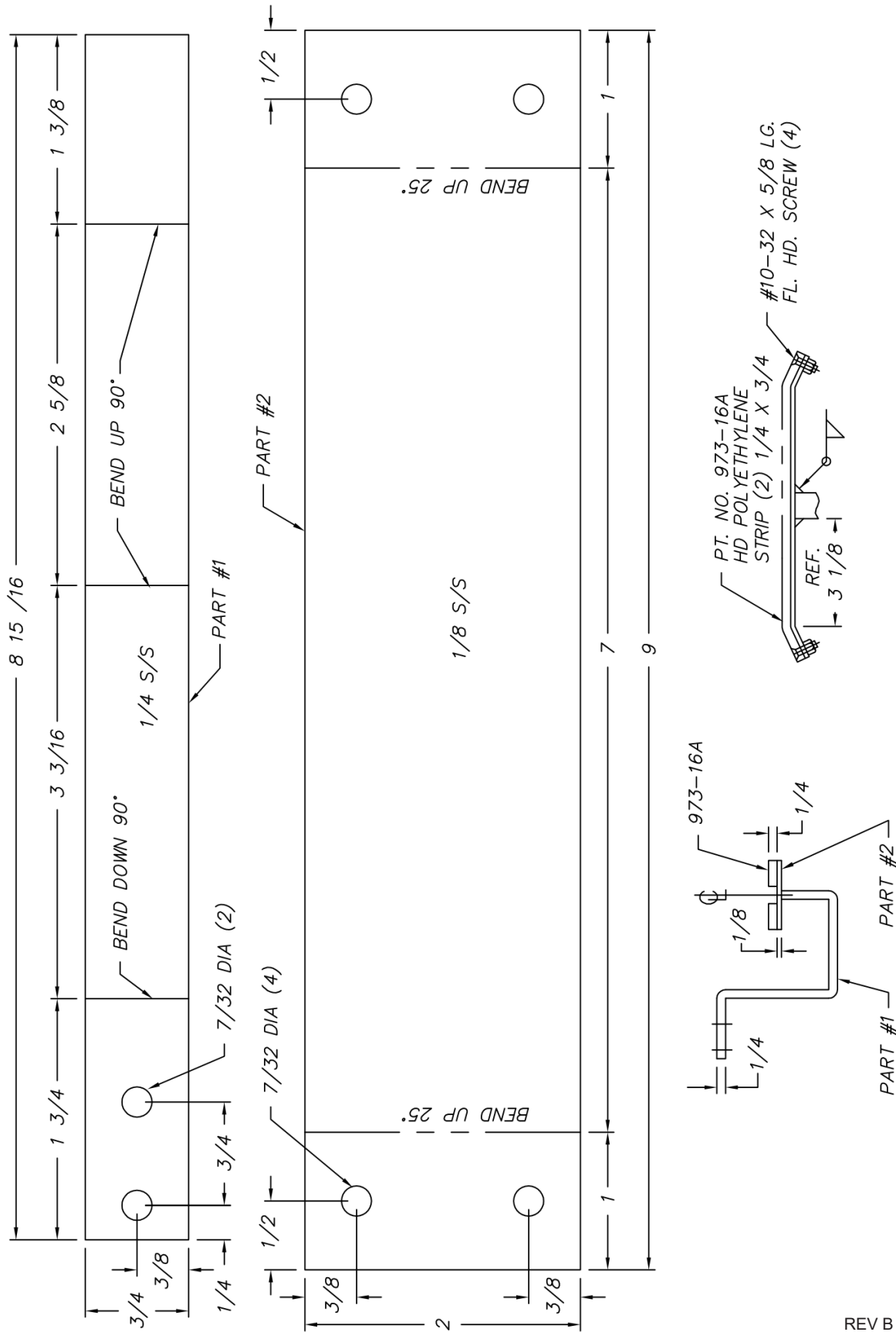


ORANGE PAD ASSEMBLY #1361-241  
ASSEMBLY W/2 NUTS #1361-241K

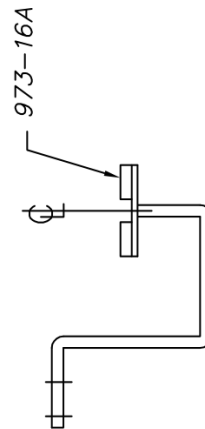
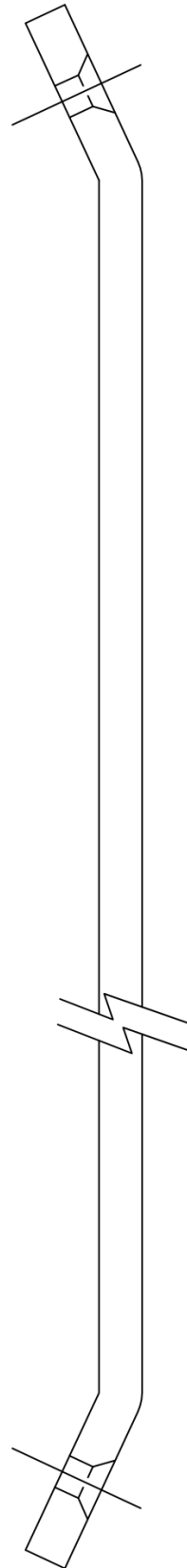
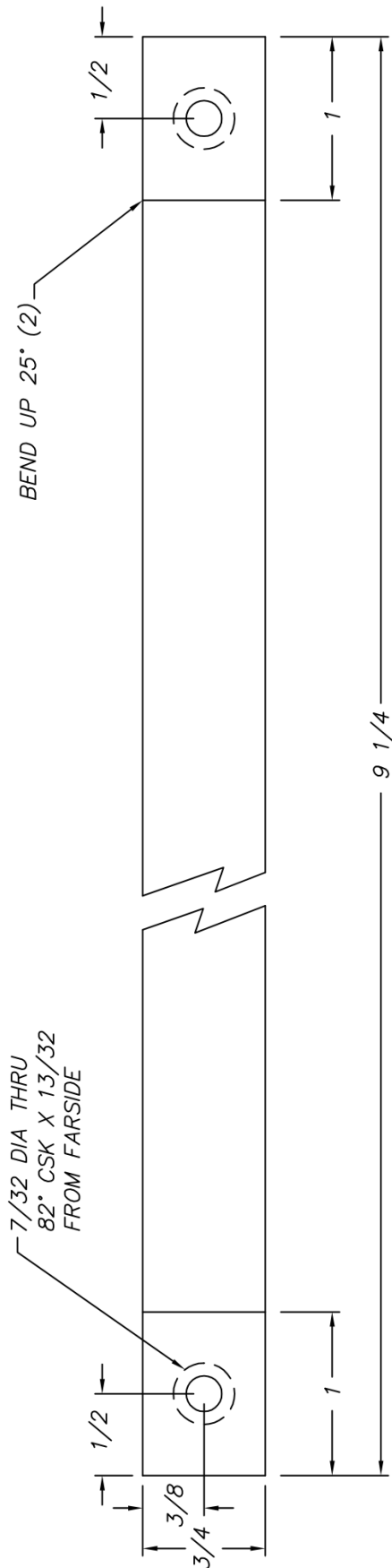
STD CHAIN (6" CENTERS)			
USED ON	PART #	LENGTH	PAD QTY
TRAC 321 ONLY	1094-97	133 1/2"	23
TRAC 321RPW ONLY	1098-146	181 1/2"	31
TRAC 321 + TD	1361-157	226 1/2"	39
TRAC 321RPW + TD	1098-165	277 1/2"	46



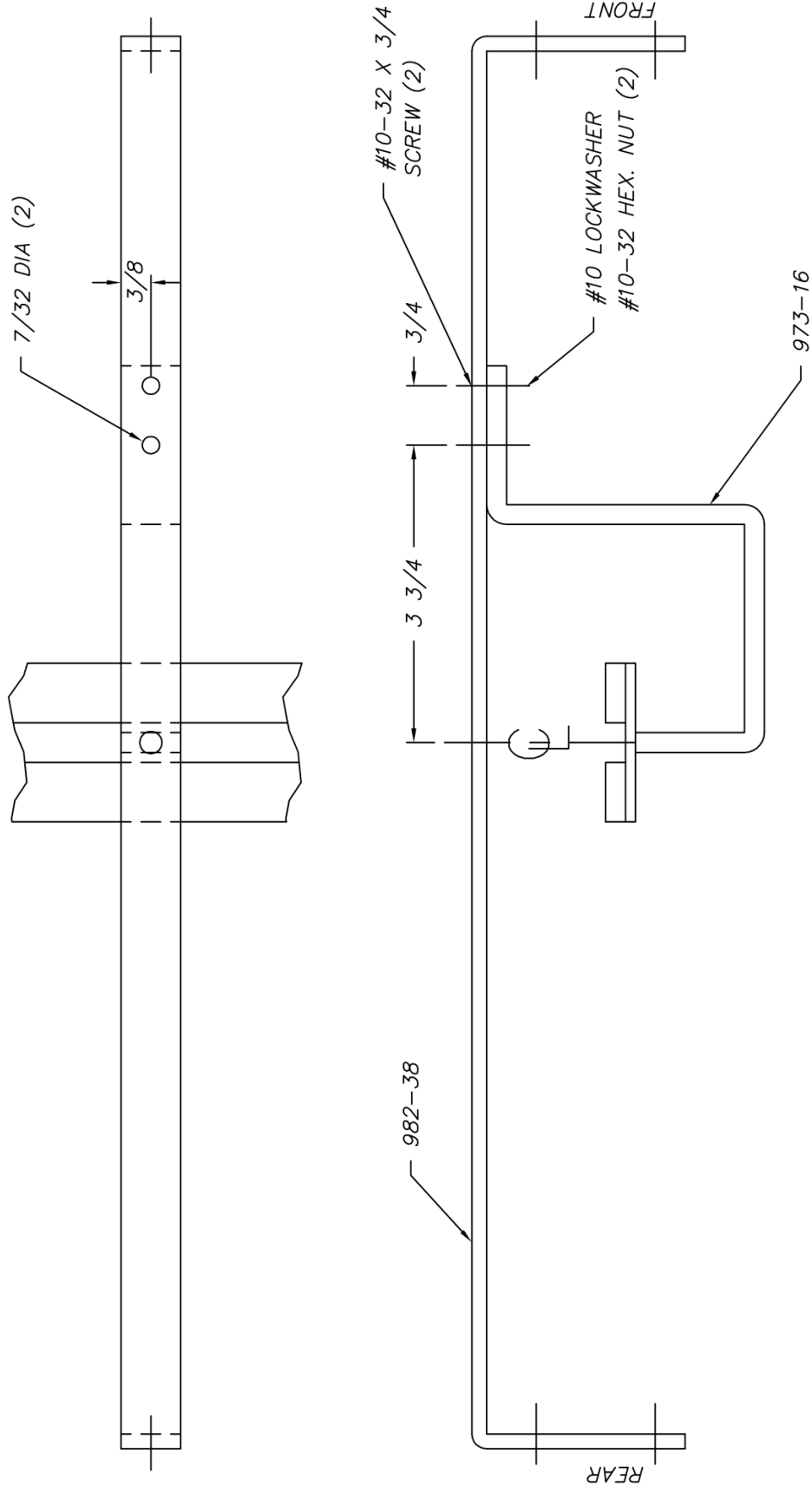
REV A - 05/10/16



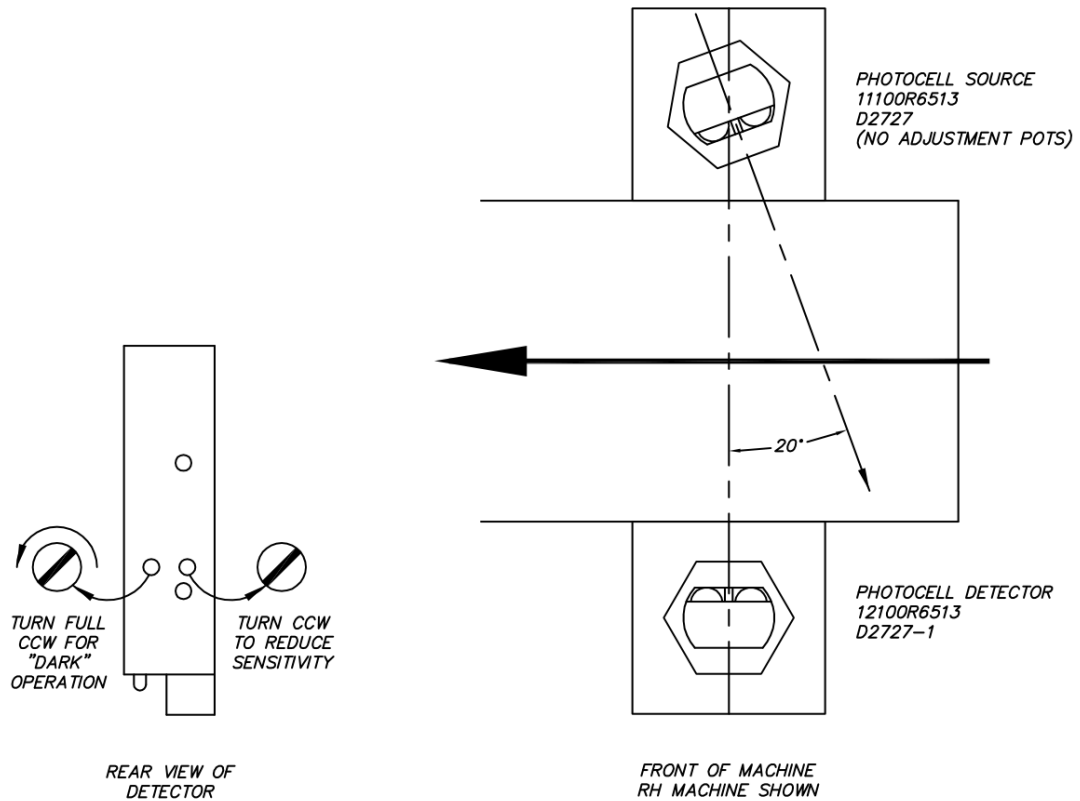
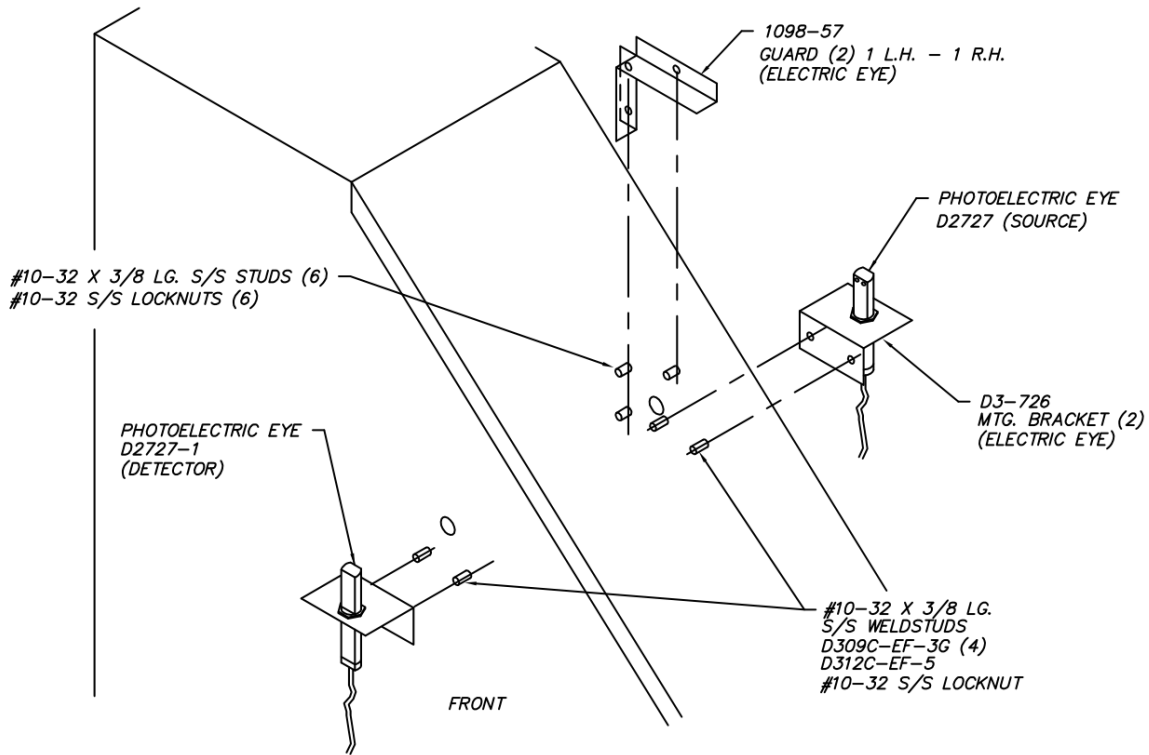
REV B - 06/24/96

**973-16A : Chain Guide (Poly Strip)**


REV B - 06/24/96

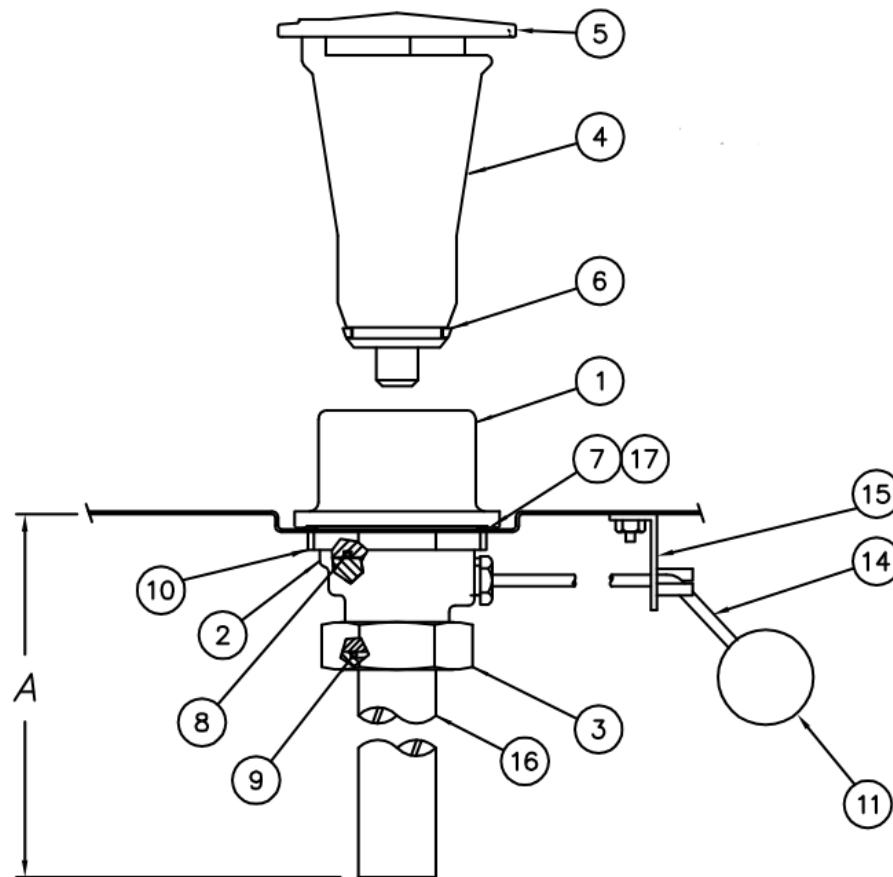
**982-39 : Chain Guide & Track Bracket Assembly**


REV A - 12/28/82

**1098-75 : Photoelectric Eye Installation**


R.H. SHOWN L.H. OPPOSITE

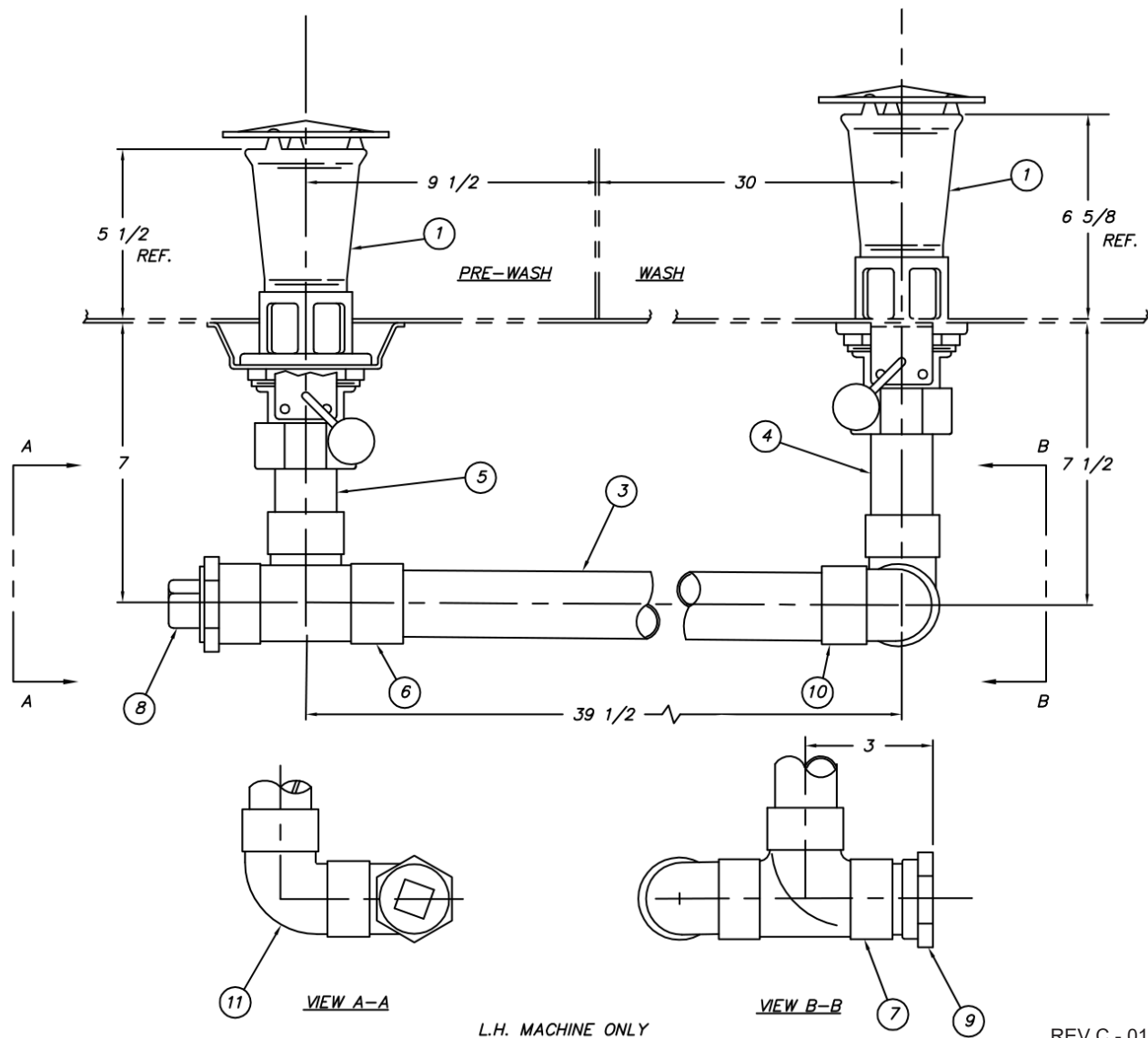
REV B - 07/05/00

**954-1 : Drain Assembly**


ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	954-50A	A	Upper Valve Body	1
2	954-50B	A	Lower Valve Body	1
3	954-50C	A	O-Ring Nut	1
4	954-50D	A	Overflow Tube	1
5	D-193	A	Skimmer Cup	1
6	D2-557	-	"U" Cup Seal	1
7	954-9	-	Sealing Washer	1
8	D2-549	-	O-Ring	1
9	D2-550	-	O-Ring	1
10	D-305A	-	Drain Jam Nut	1
11	D2-507	-	Ball	1
12	-	-	-	-
13	-	-	-	-
14	970-55	A	Drain Handle Assembly	1
15	SEE TABLE	A	Bracket	1
16	SEE TABLE	-	Copper Tubing 1 1/2" CTS	1
17	D3-559	-	Sealant (1.5 oz)	1
	D3-560	-	Sealant (11 oz)	1

	TRAC 321	TRAC 321 RPW
Required per machine	1	2
"A" Dimension	7 5/16"	-
Item #15	954-8	954-8 954-8A
Item #16	D207A- B12-16	-

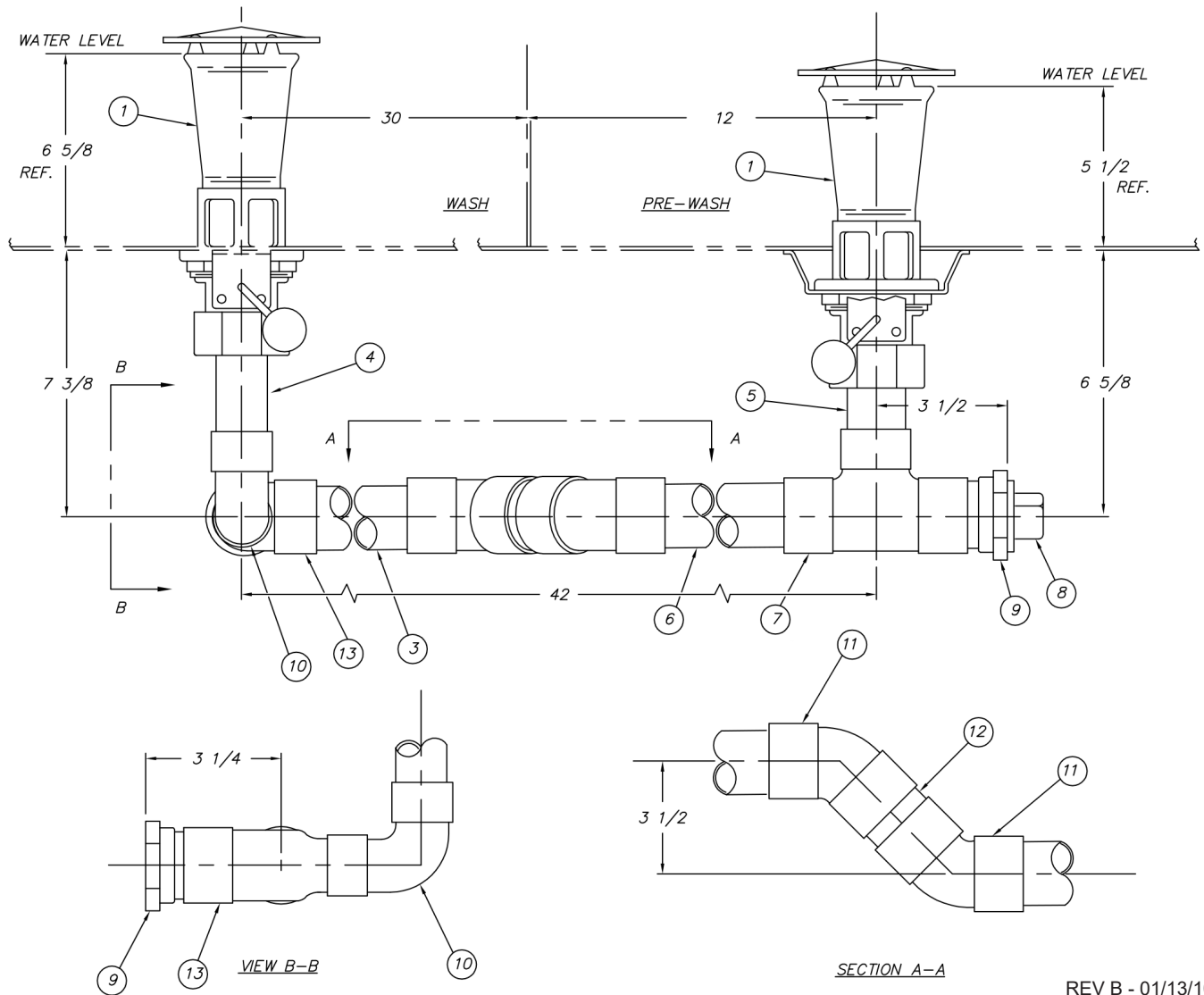
REV N - 05/11/10



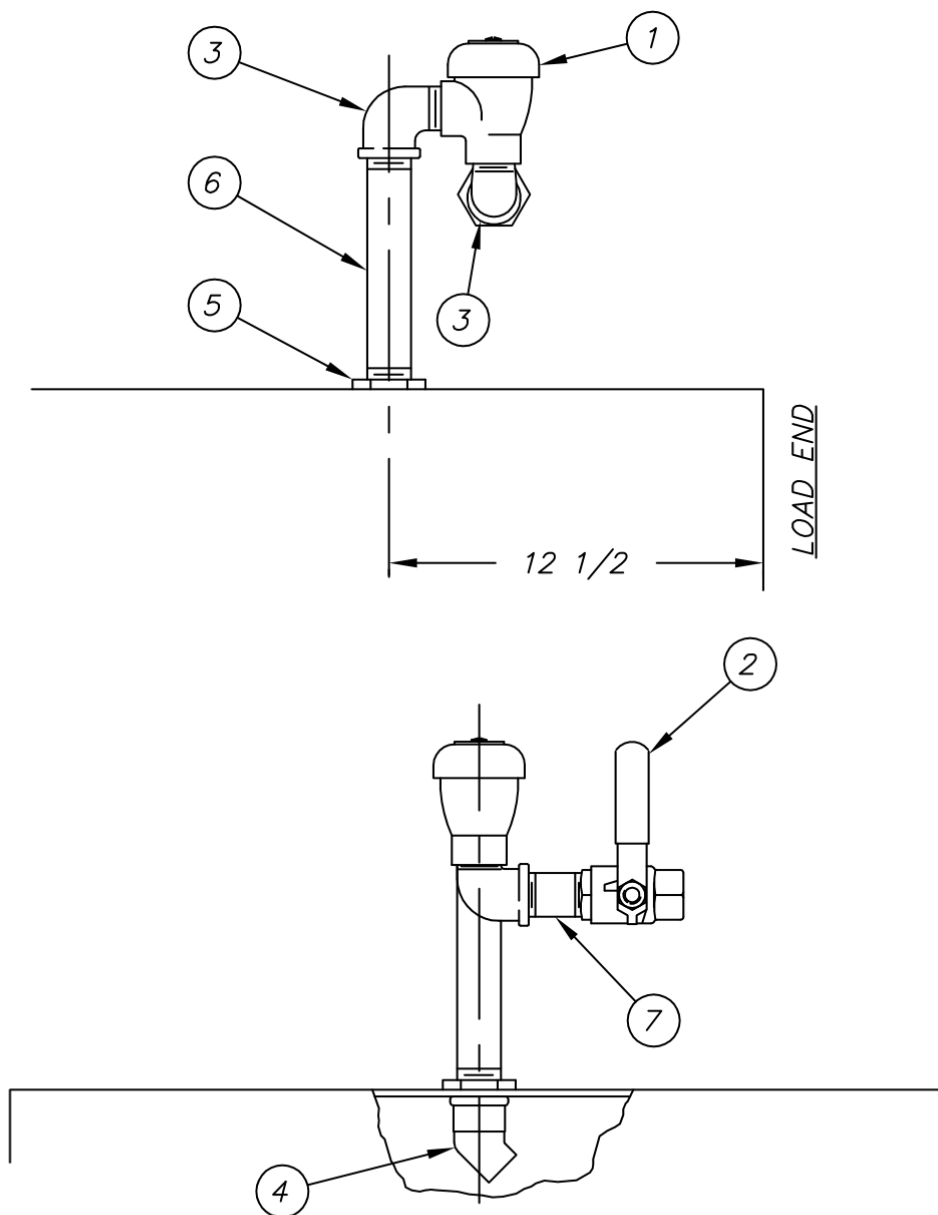
REV C - 01/13/10

ITEM	PART NO.	DESCRIPTION	QTY
1	954-1	Drain Assembly	2
2	-	-	-
3	D207A-B16-146	Copper Tubing 2" CTS x 36 1/2" Lg.	1
4	D207A-B12-16	Copper Tubing 1 1/2" CTS x 4" Lg.	1
5	D207A-B12-12	Copper Tubing 1 1/2" CTS x 3" Lg.	1
6	D320A-J1J3H3	Tee 2" FIPS x 2" C x 1 1/2" C	1
7	D320A-J3J3H3	Tee 2" C x 2" C x 1 1/2" C	1
8	D328A-J-A	Pipe Plug 2" IPS	1
9	D317A-J1-J4	Adaptor 2" FIPS x 2" FTG	1
10	D316A-J3-J4	Street Elbow 90° 2" C x 2" FTG	2
11	D316A-H3-H4	Street Elbow 90° 1 1/2" C x 1 1/2" FTG	1



**1072-56 : Single Drain Assembly RH**


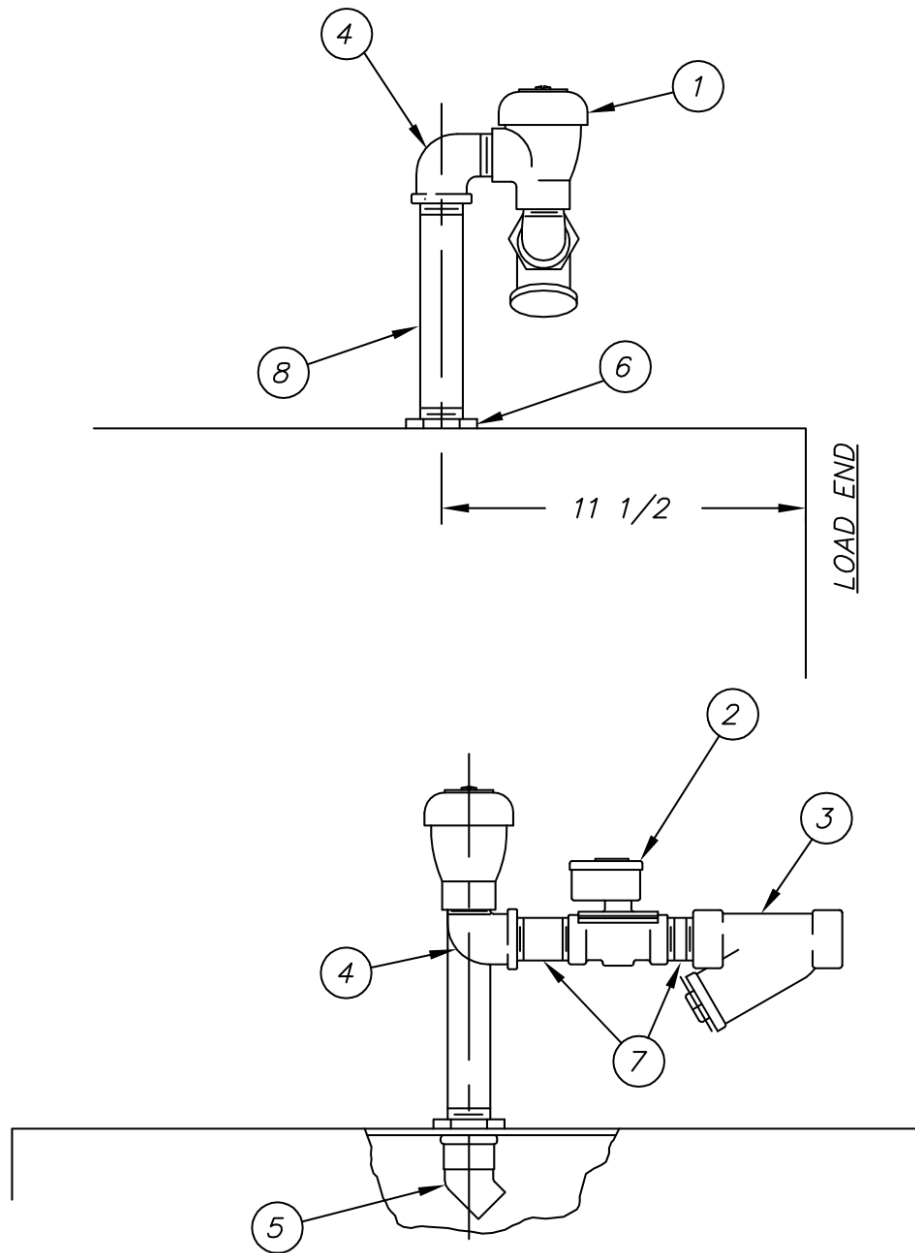
ITEM	PART NO.	DESCRIPTION	QTY
1	954-1	Drain Assembly	2
2	-	-	-
3	D207A-B16-94	Copper Tubing 2" CTS x 23 1/2" Lg.	1
4	D207A-B12-18	Copper Tubing 1 1/2" CTS x 4 1/2" Lg.	1
5	D207A-B12-8	Copper Tubing 1 1/2" CTS x 2" Lg.	1
6	D207A-B16-42	Copper Tubing 2" CTS x 10 1/2" Lg.	1
7	D320A-J3J3H3	Tee 2" C x 2" C x 1 1/2" C	1
8	D328A-J-A	Pipe Plug 2" IPS	1
9	D317A-J1-J4	Adaptor 2" FIPS x 2" FTG	2
10	D316A-H3-H4	Street Elbow 90° 1 1/2" C x 1 1/2" FTG	1
11	D315A-J3-J3	Elbow 45° 2" C	2
12	D207A-B16-14	Copper Tubing 2" CTS x 3 1/2" Lg.	1
13	D348A-J3H3J3	Tee 2" C x 1 1/2" C x 2" C	1

**973-27 : TRAC 321-2 Manual Tank Fill Assembly**


*R.H. SHOWN - L.H. OPPOSITE*

REV F - 08/27/01

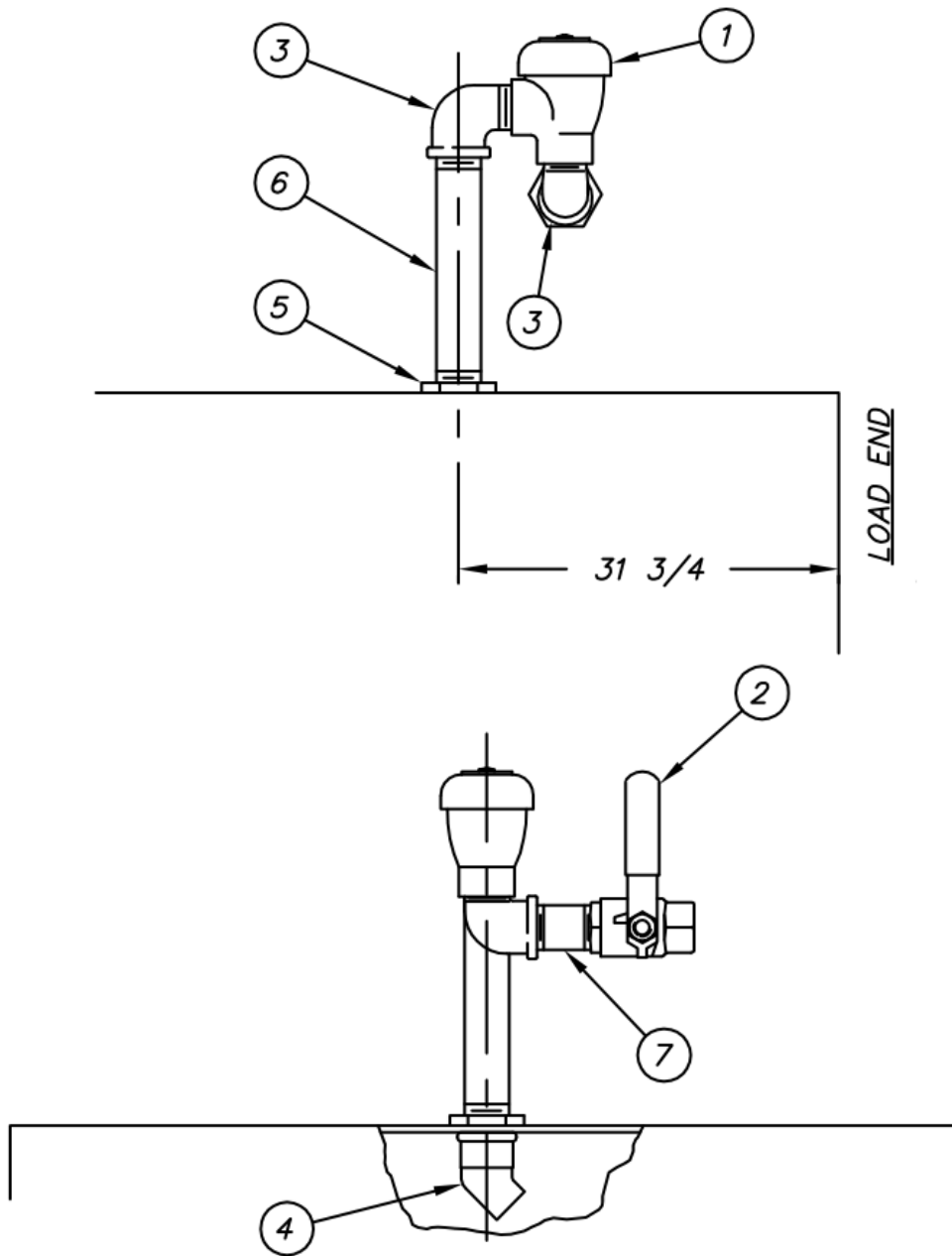
ITEM	PART NO.	DESCRIPTION	QTY
1	D2241	Vacuum Breaker 1/2" IPS	1
2	D2339	Ball Valve 1/2" IPS	1
3	D316F-D1-D2	Street Elbow 90° 1/2" IPS	2
4	D315F-D1-D3	Elbow 45° 1/2" FIPS x 1/2" C	1
5	D326F-D1	Locknut 1/2" IPS	1
6	D314F-DL-44	Nipple Long One End 1/2" IPS x 5 1/2" Lg.	1
7	D314F-DC-00	Close Nipple 1/2" IPS	1

**973-28 : TRAC 321-2 Auto Tank Fill Assembly**


*R.H. SHOWN – L.H. OPPOSITE*

REV F - 08/29/01

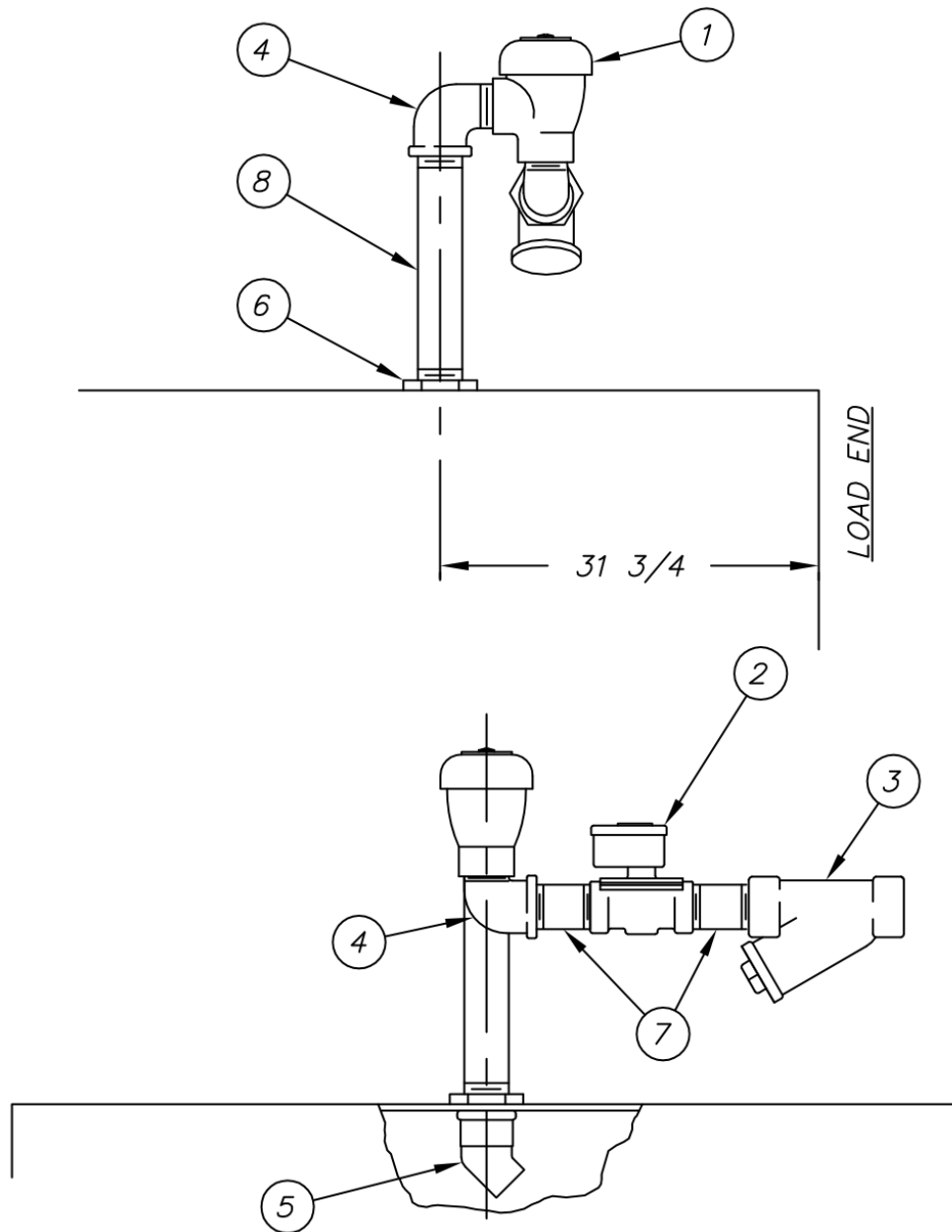
ITEM	PART NO.	DESCRIPTION	QTY
1	D2241	Vacuum Breaker 1/2" IPS	1
2	D2930	Solenoid Valve 1/2" IPS	1
3	D2483A	"Y" Strainer	1
4	D316F-D1-D2	Street Elbow 90° 1/2" IPS	2
5	D315F-D1-D3	Elbow 45° 1/2" FIPS x 1/2" C	1
6	D326F-D1	Locknut 1/2" IPS	1
7	D314F-DC-00	Close Nipple 1/2" IPS	2
8	D314F-DL-48	Nipple Long One End 1/2" IPS x 6" Lg.	1

**1072-26 : TRAC 321-2 RPW Manual Tank Fill Assembly**


*R.H. SHOWN – L.H. OPPOSITE*

REV D - 08/24/01

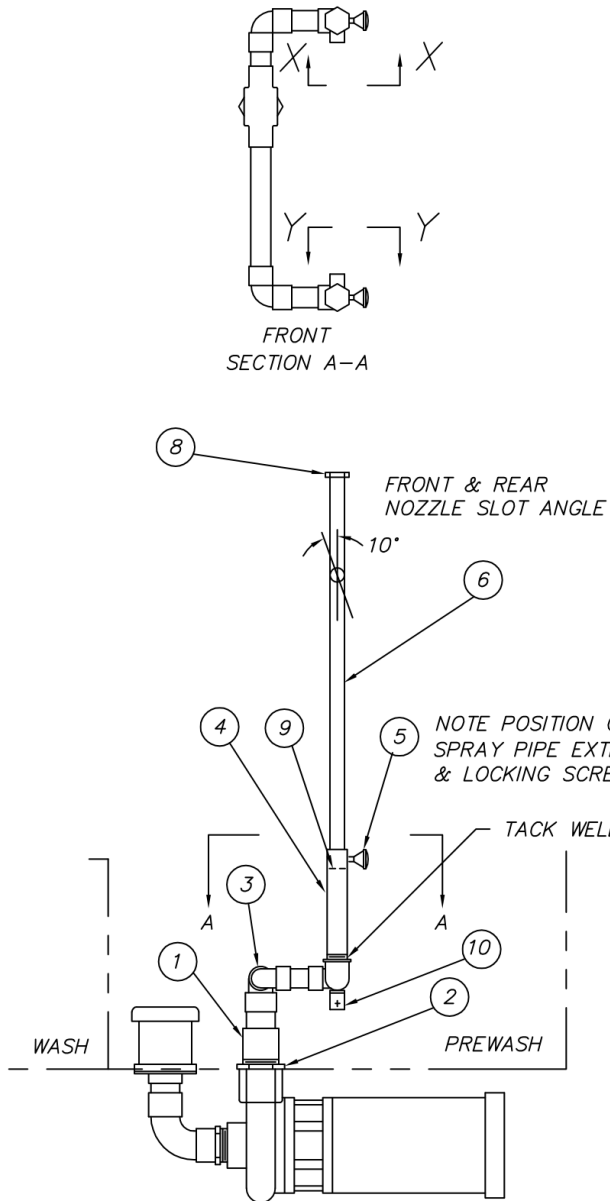
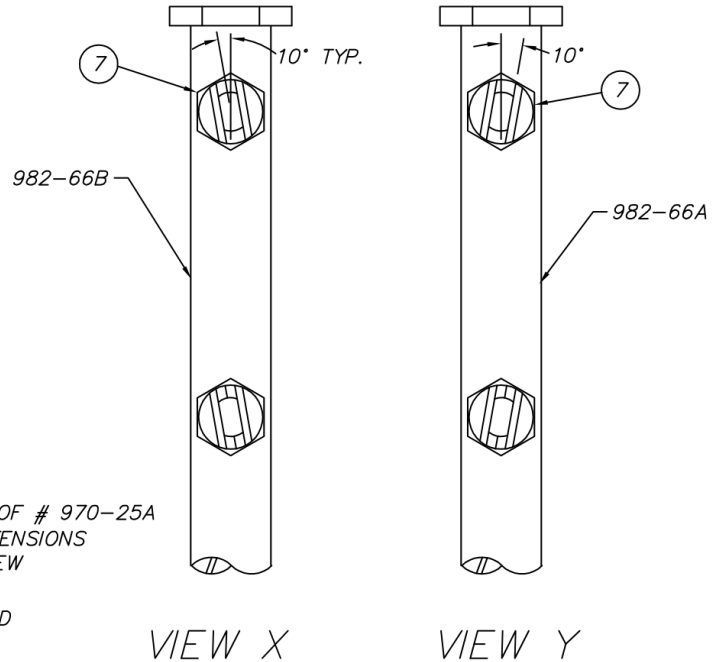
ITEM	PART NO.	DESCRIPTION	QTY
1	D2241	Vacuum Breaker 1/2" IPS	1
2	D2339	Ball Valve 1/2" IPS	1
3	D316F-D1-D2	Street Elbow 90° 1/2" IPS	2
4	D315F-D1-D3	Elbow 45° 1/2" FIPS x 1/2" C	1
5	D326F-D1	Locknut 1/2" IPS	1
6	D314F-DL-44	Nipple Long One End 1/2" IPS x 5 1/2" Lg.	1
7	D314F-DC-00	Close Nipple 1/2" IPS	1

**1072-27 : TRAC 321-2 RPW Auto Tank Fill Assembly**


*R.H. SHOWN - L.H. OPPOSITE*

REV E - 08/27/01

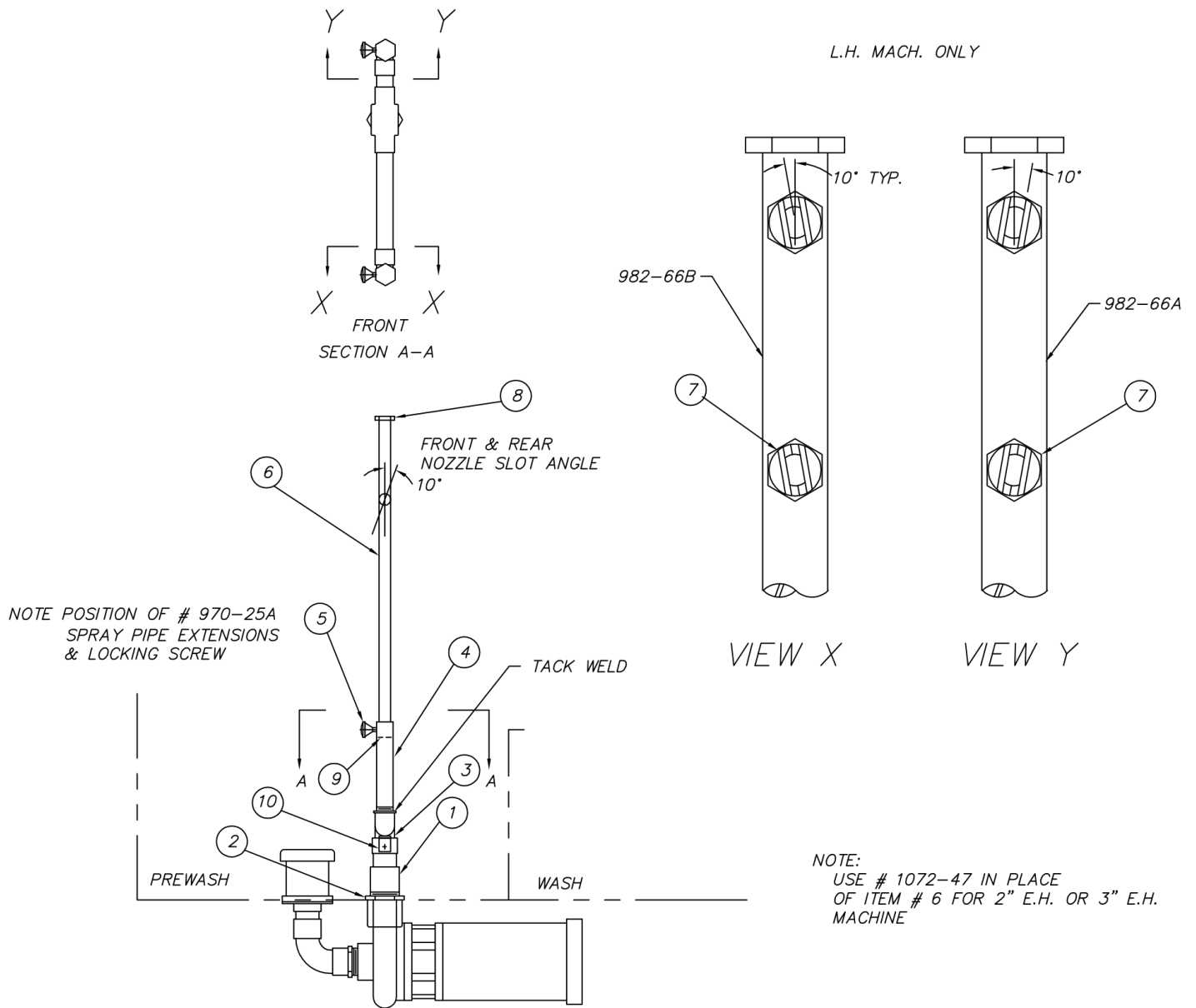
ITEM	PART NO.	DESCRIPTION	QTY
1	D2241	Vacuum Breaker 1/2" IPS	1
2	D2930	Solenoid Valve 1/2" IPS	1
3	D2483A	"Y" Strainer	1
4	D316F-D1-D2	Street Elbow 90° 1/2" IPS	2
5	D315F-D1-D3	Elbow 45° 1/2" FIPS x 1/2" C	1
6	D326F-D1	Locknut 1/2" IPS	1
7	D314F-DC-00	Close Nipple 1/2" IPS	2
8	D314F-DL-48	Nipple Long One End 1/2" IPS x 6" Lg.	1

**1072-16R : Prewash Discharge Line Assembly RH**

*R.H. MACH. ONLY*


NOTE:  
USE # 1072-47 IN PLACE  
OF ITEM # 6 FOR 2" E.H. OR 3" E.H.  
MACHINE

REV F - 05/12/99

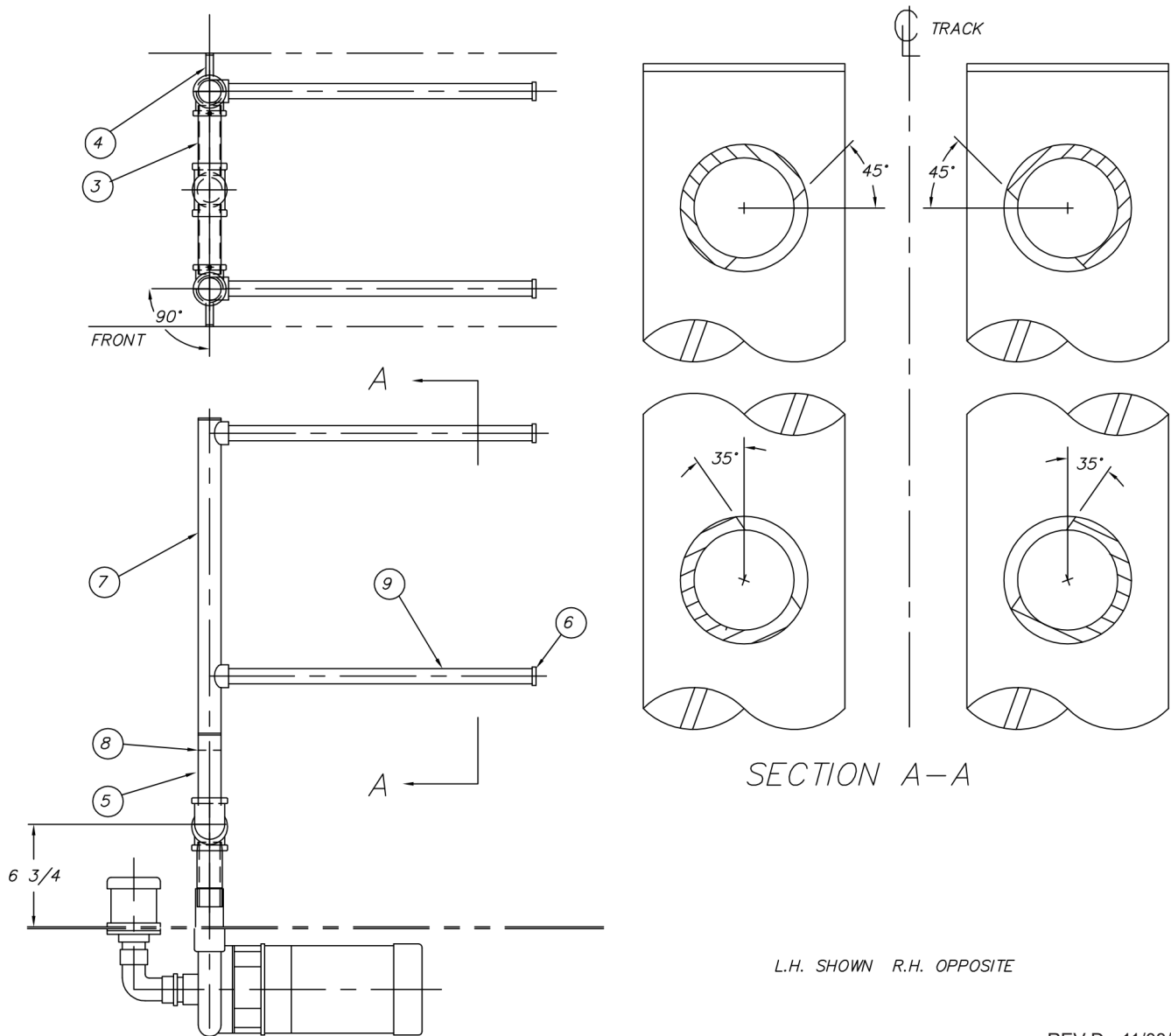
ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	963-11	A	Discharge Nipple	1
2	D326J-H1	-	Locknut 1 1/2" IPS	1
3	1072-14R	B	Discharge Manifold	1
4	970-25A	A	Spray Pipe Extension	2
5	562-87A	A	Locking Screw	2
6	982-66	A	Spray Pipe	2
7	D-2712	-	Nozzle H 1/4 U-8070	10
8	D2-554-2	A	Plug 3/4-10 UNC-2A	2
9	D2-570	-	O-Ring (01-020)	2
10	970-53	A	Bracket - Discharge Line	2

**1072-16L : Prewash Discharge Line Assembly LH**


REV F - 05/12/99

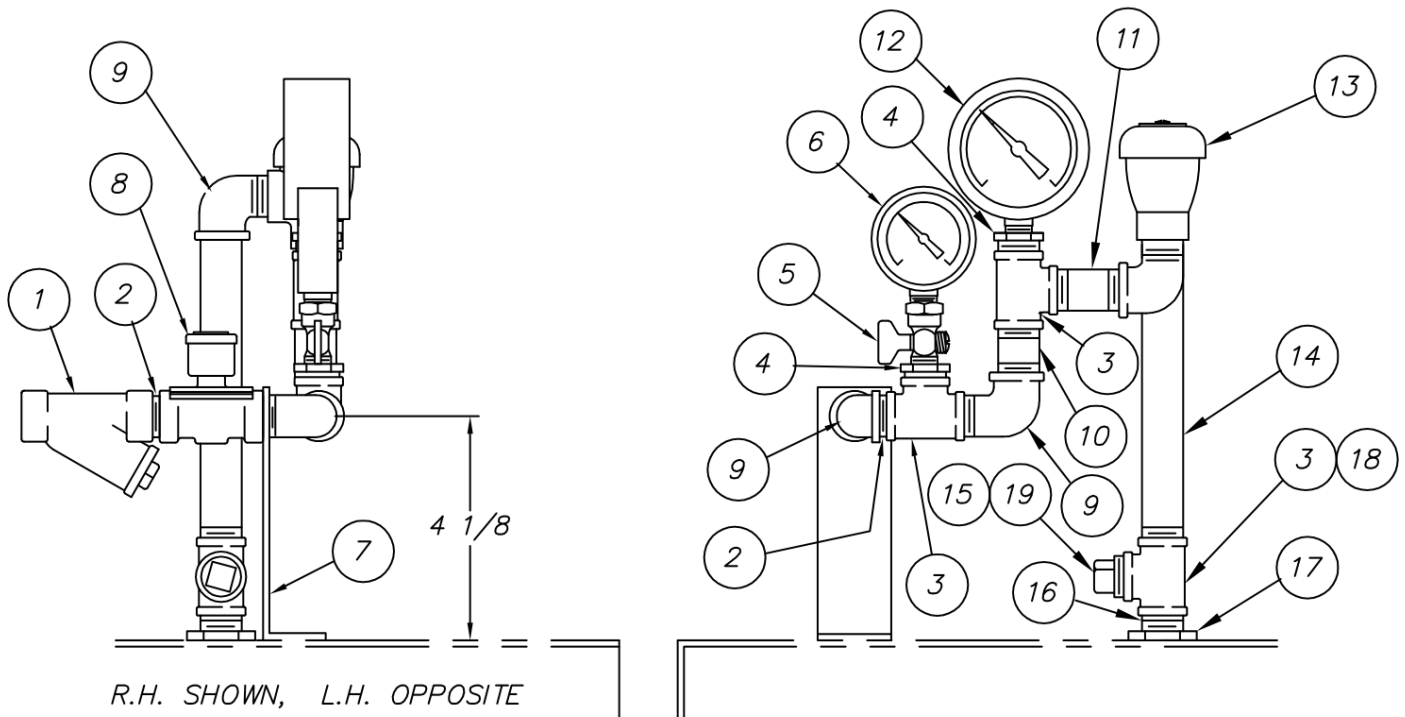
ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	963-11	A	Discharge Nipple	1
2	D326J-H1	-	Locknut 1 1/2" IPS	1
3	1072-14L	B	Discharge Manifold	1
4	970-25A	A	Spray Pipe Extension	2
5	562-87A	A	Locking Screw	2
6	982-66	A	Spray Pipe	2
7	D-2712	-	Nozzle H 1/4 U-8070	10
8	D2-554-2	A	Plug 3/4-10 UNC-2A	2
9	D2-570	-	O-Ring (01-020)	2
10	970-53	A	Bracket - Discharge Line	2





REV D - 11/08/99

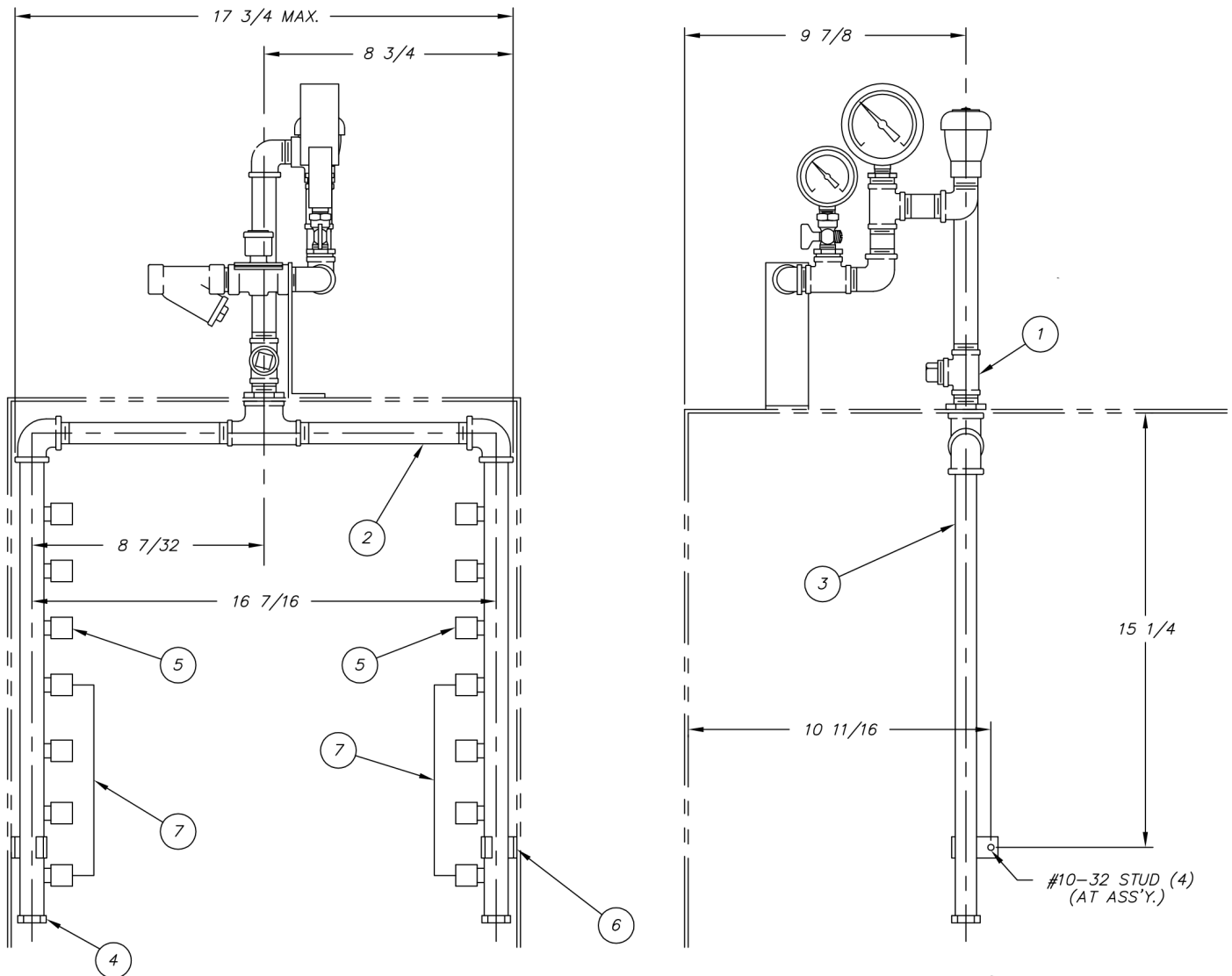
ITEM	PART NO.	SIZE	DESCRIPTION	QTY
3	-	-	Discharge Manifold	1
	1094-11	B	for 2 HP Motor	
	1176-17	B	for 3 HP Motor	
	1493-6R	B	for Gas Heat RH 3 HP Motor	
	1493-6L	B	for Gas Heat LH 3 HP Motor	
4	1094-17	A	Bracket - Discharge Line	2
5	1094-12	A	Extension - Manifold	2
6	D2-554-2	A	Plug 3/4-10	4
7	1094-14	A	Spray Manifold	2
8	D-584	-	O-Ring (01-026)	2
9	1094-16	A	Spray Pipes	4

**982-30A : Final Rinse Piping Assembly**


REV F - 06/12/15

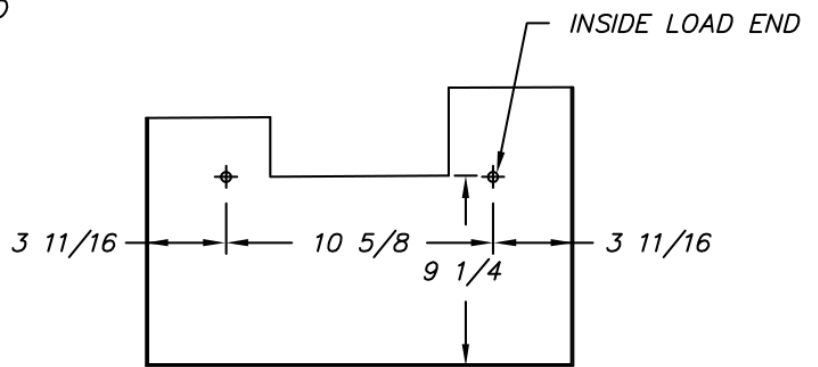
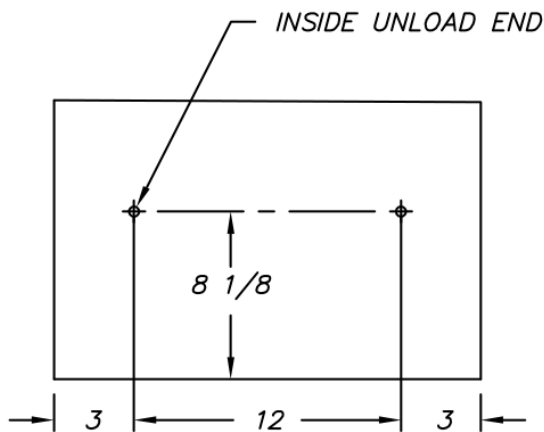
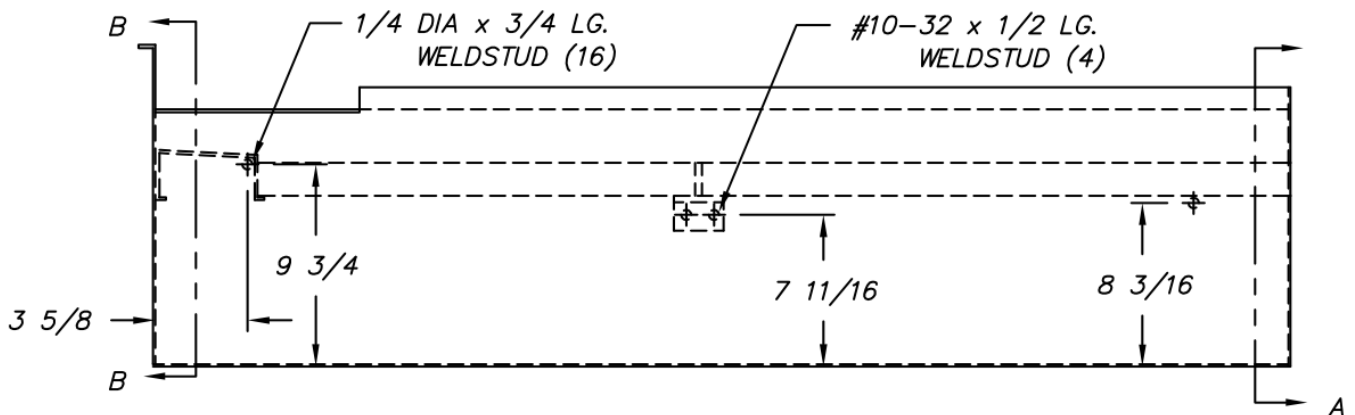
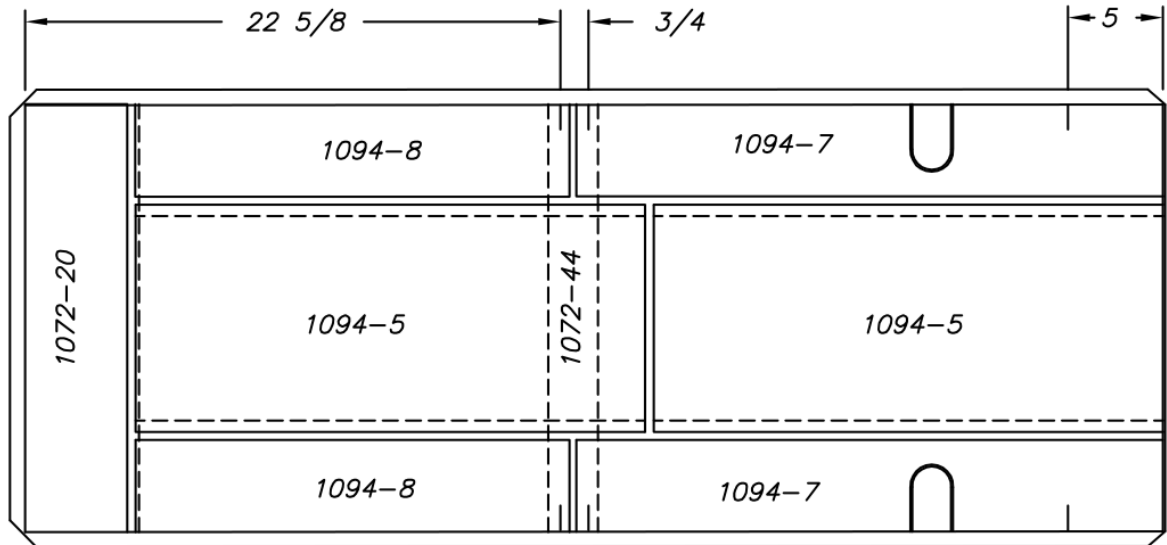
ITEM	PART NO.	DESCRIPTION	QTY STANDARD	QTY CHEMICAL
* 1	D2483A	"Y" Strainer 1/2" IPS	1	1
2	D314F-DC-00	Close Nipple 1/2" IPS	2	2
3	D320F-D1D1D1	Tee 1/2" IPS	3	2
4	D322F-D2-B1	Hex Reducer 1/2" MIPS x 1/4" FIPS	2	2
5	D2497	Petcock 1/4" IPS	1	1
6	SK-1433	Pressure Gauge	1	1
7	951-79	Bracket	1	1
8	D2930	Solenoid Valve 1/2" IPS	1	1
9	D316F-D1-D2	90° Street Elbow 1/2" IPS	3	3
10	D314F-DA-12	Nipple 1/2" IPS x 1 1/2" Lg. All Thread	1	1
11	D314F-DS-16	Nipple 1/2" IPS x 2" Lg.	1	1
12	D2495	Temperature Gauge 1/4" IPS	1	1
13	D2241	Vacuum Breaker 1/2" IPS	1	1
14	D314F-DS-48	Nipple 1/2" IPS x 6" Lg.	1	-
	D314C-DS-48	Nipple 1/2" IPS x 6" Lg. S/S	-	1
15	D328F-D2-A	Pipe Plug 1/2" IPS	1	-
16	D314F-DA-14	1/2" IPS x 1 3/4" Lg. All Thread	1	-
	D314C-DA-14	1/2" IPS x 1 3/4" Lg. All Thread S/S	-	1
17	D326F-D1	Locknut 1/2" IPS	1	1
18	D320C-D1D1D1	Tee 1/2" IPS S/S	-	1
19	D322C-D2-B1	Hex Reducer 1/2" MIPS x 1/4" FIPS S/S	-	1

\* Not required when connecting to booster

**1094-30 : Final Rinse Piping Assembly**


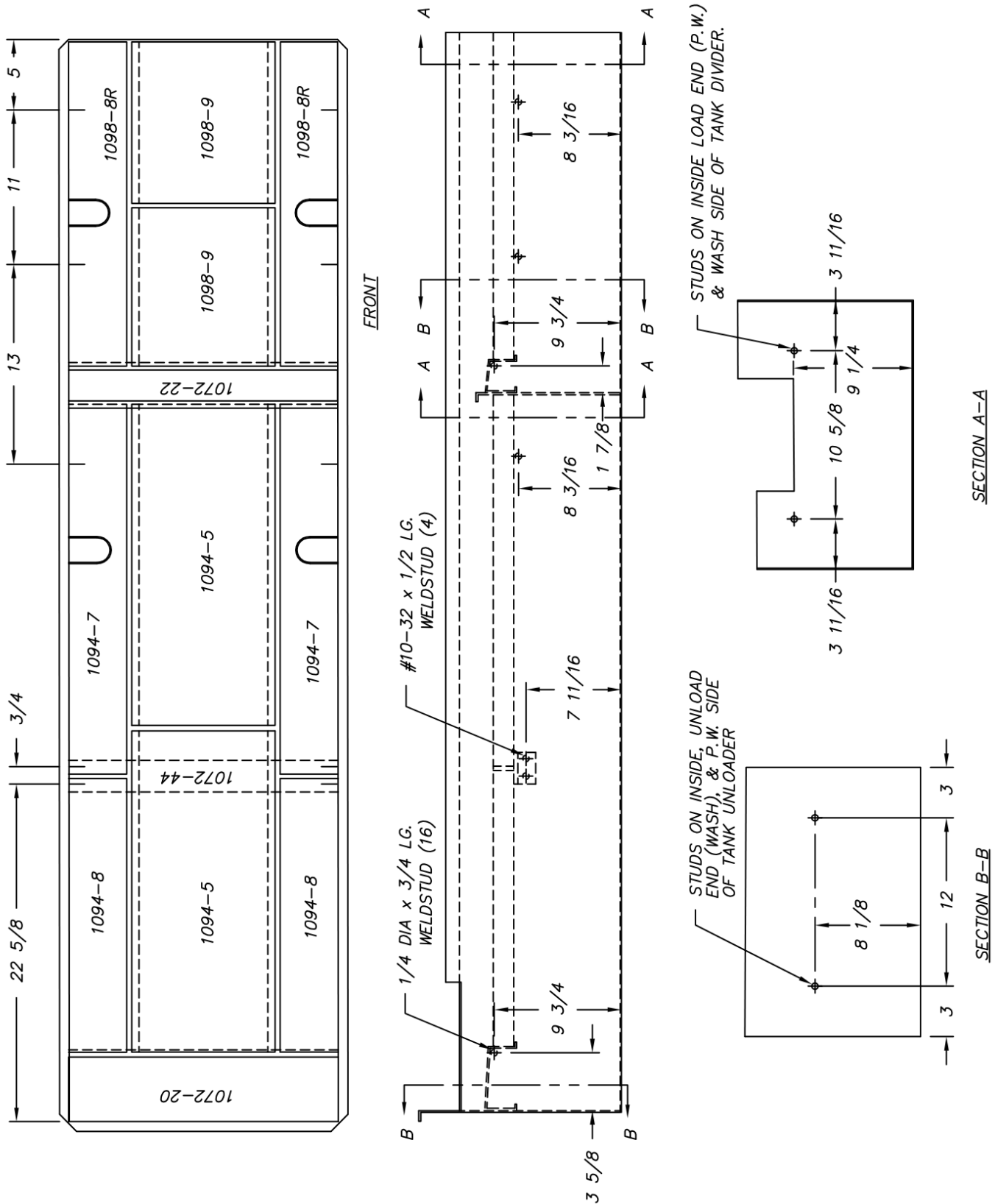
REV F - 12/15/99

ITEM	PART NO.	DESCRIPTION	QTY
1	982-30A	Final Rinse Piping Assembly	1
2	1094-29	Manifold Assembly - Final Rinse	1
3	982-28	Spray Pipe S/S 1/2" IPS for Standard	2
	982-28B	for 2" X-High	2
	982-28C	for 3" X-High	2
4	D2-554-2	Plug 3/4-10 UNC-2A	2
5	D2700	Spray Nozzle (1503)	6
6	982-29	Clamp S/S	2
7	D2699	Spray Nozzle (1505)	8

**1094-4 : TRAC 321-2 Scrap Screen Locations**


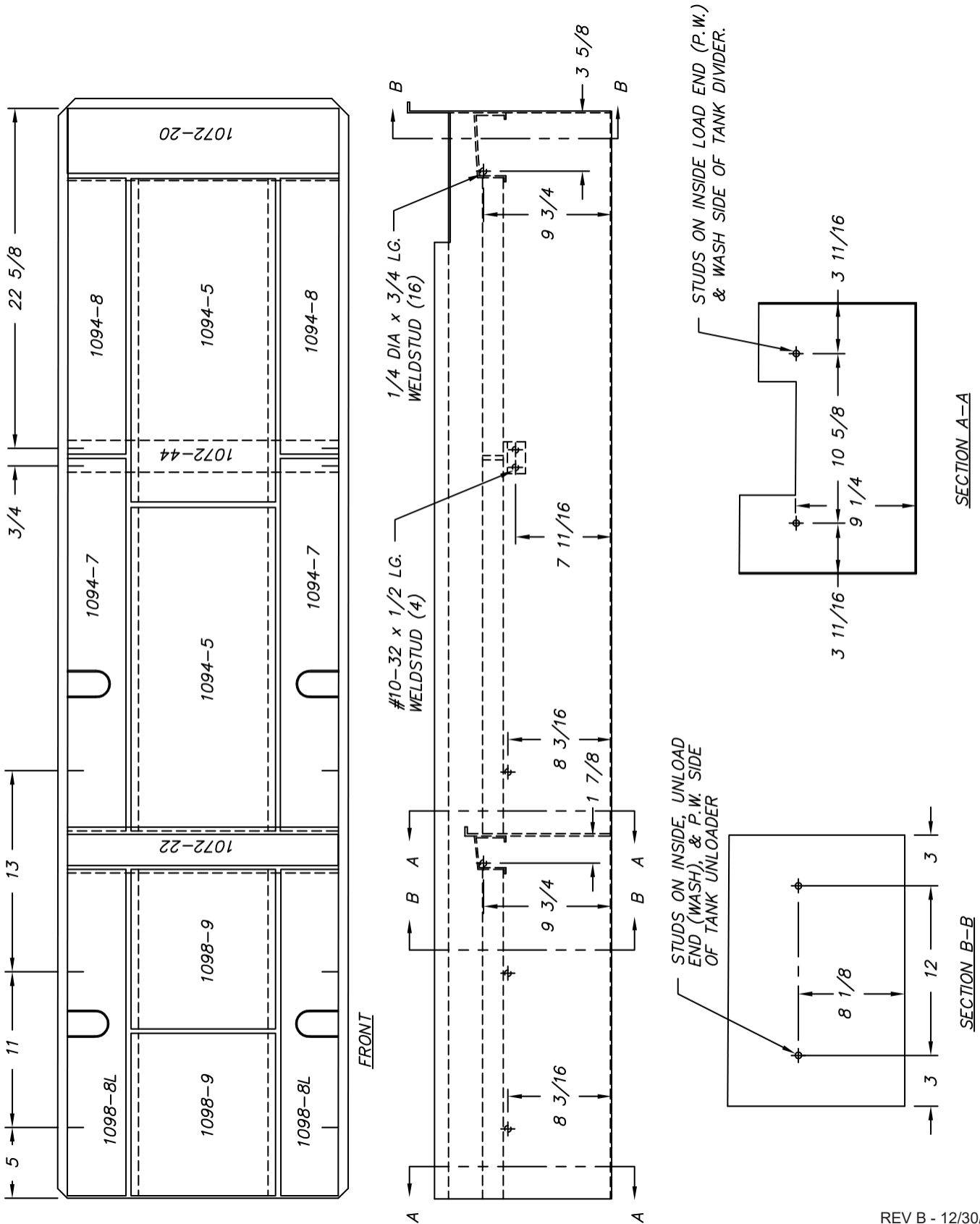
R.H. SHOWN, L.H. OPPOSITE

REV B - 12/30/11

**1098-7R : TRAC 321-2 RPW Scrap Screen Locations RH**


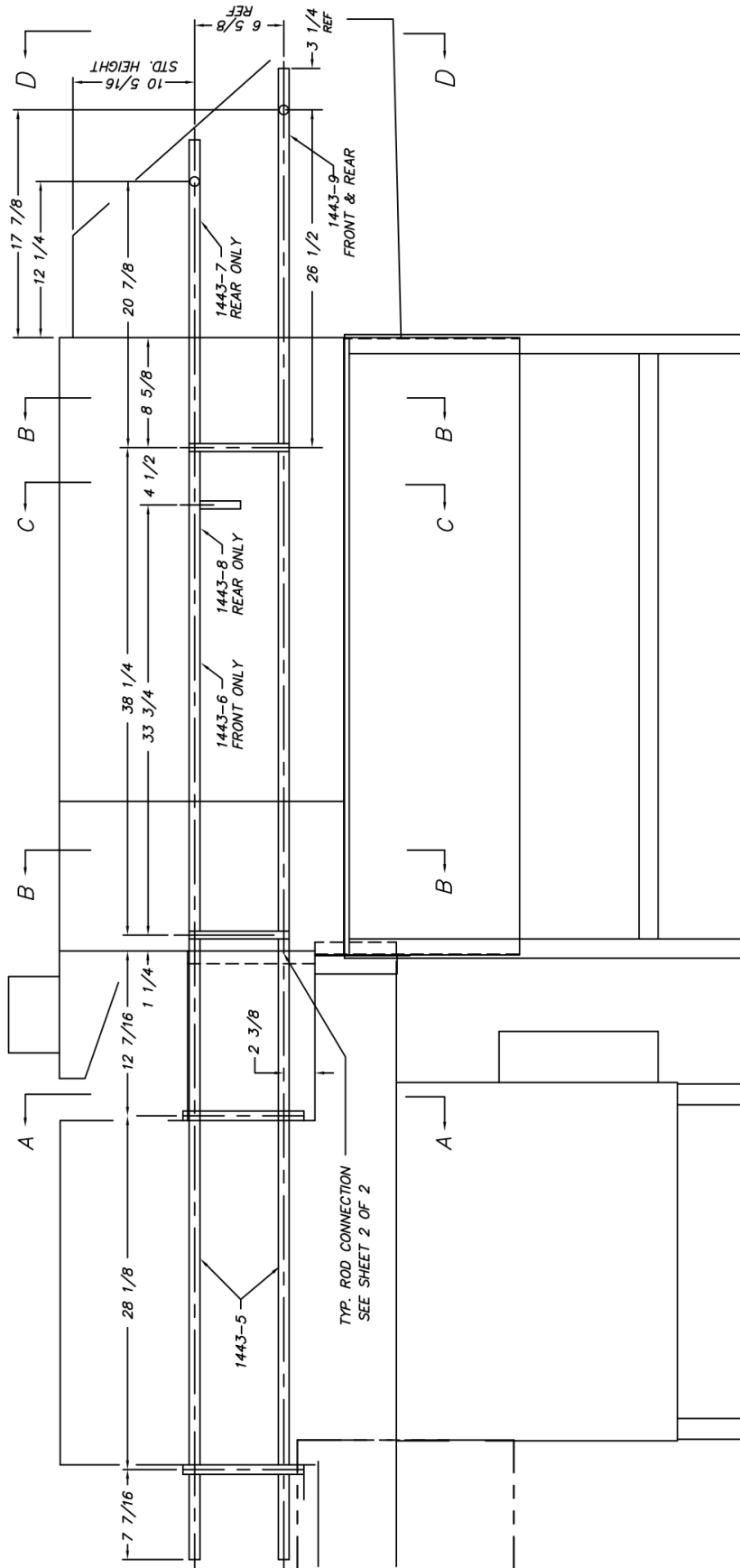
R.H. MACHINE ONLY

REV B - 12/30/11

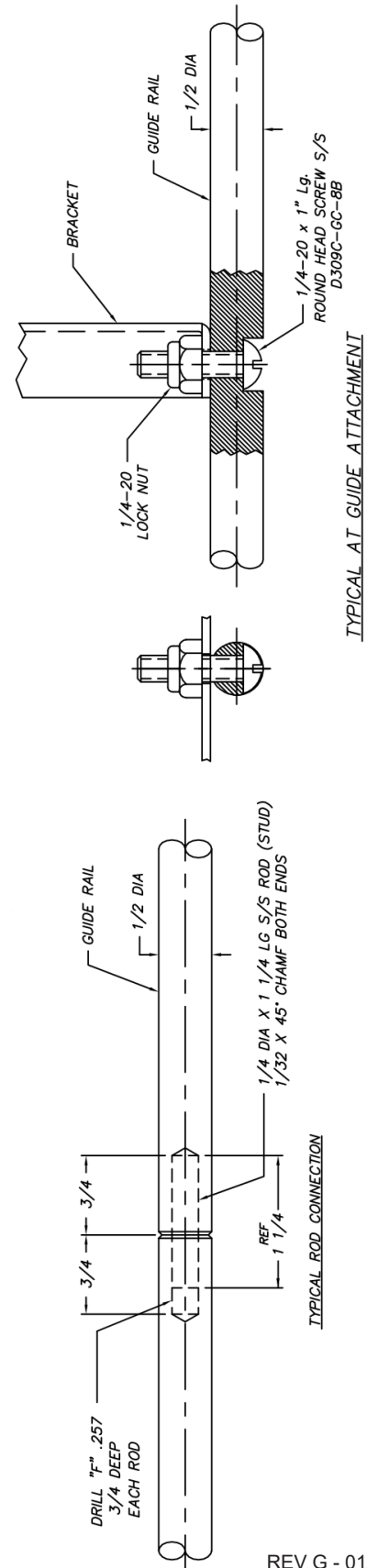
**1098-7L : TRAC 321-2 RPW Scrap Screen Locations LH**


L.H. MACHINE ONLY

REV B - 12/30/11

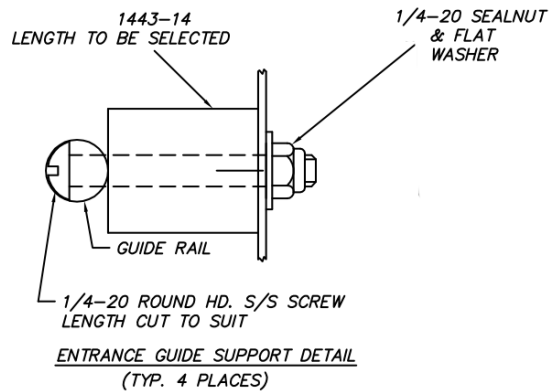
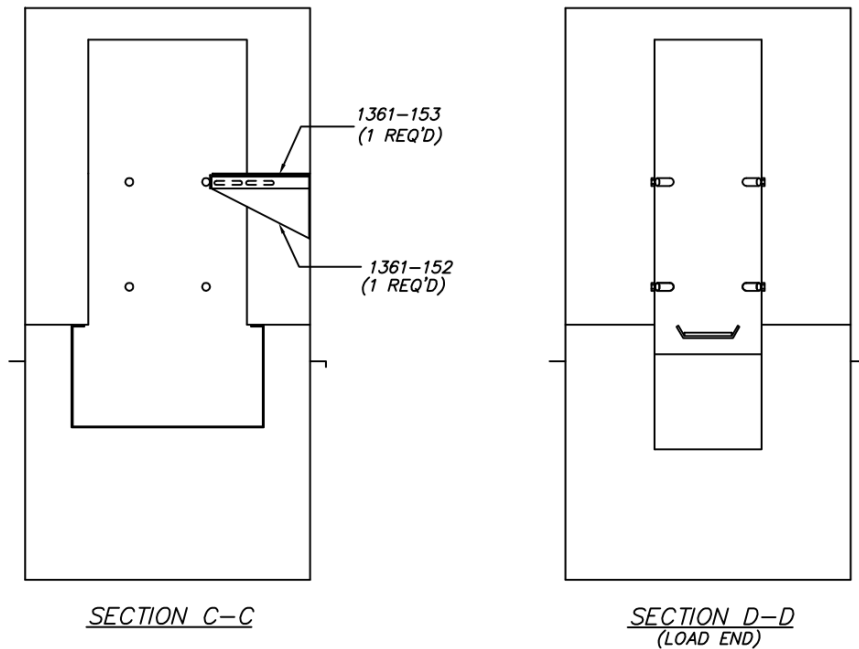
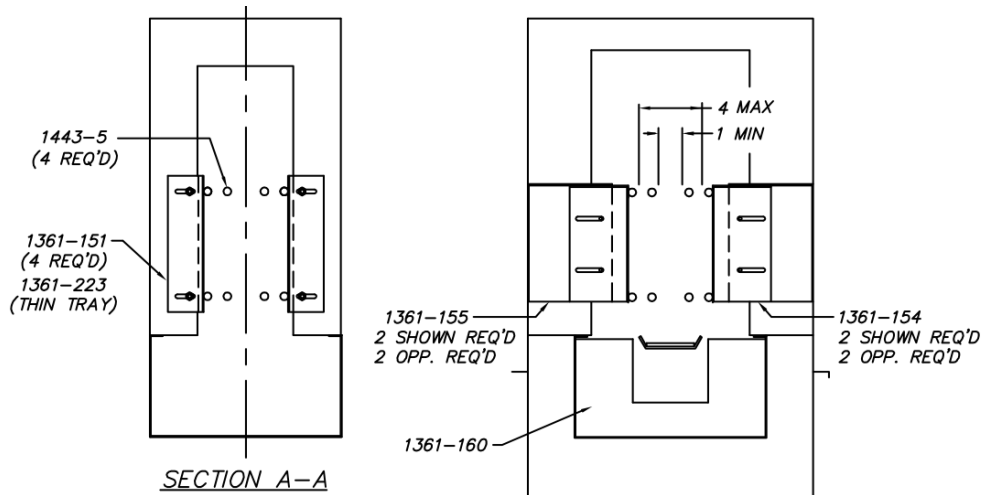


NOTE: FOR STAND-ALONE TRAC 321, IGNORE VIEW A-A, OMIT #1443-5 RAILS

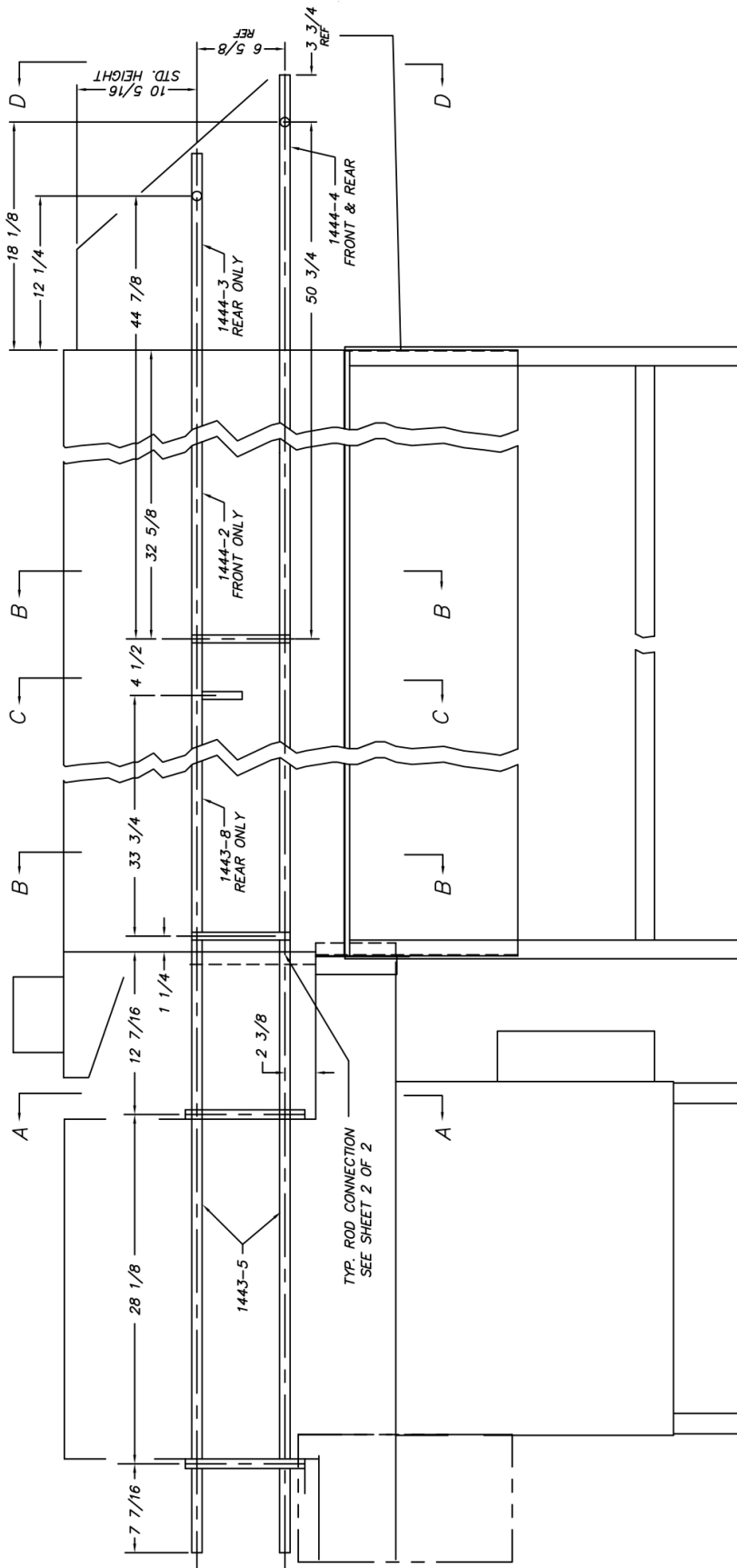


REV G - 01/28/10

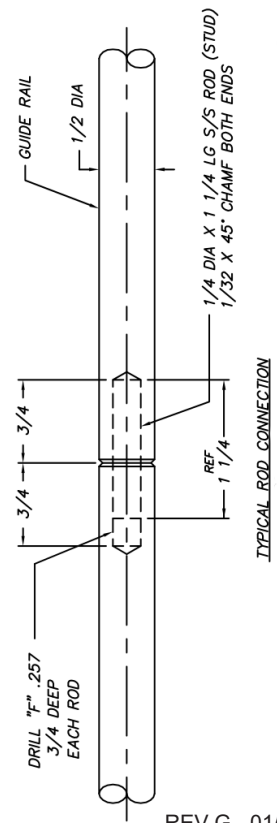
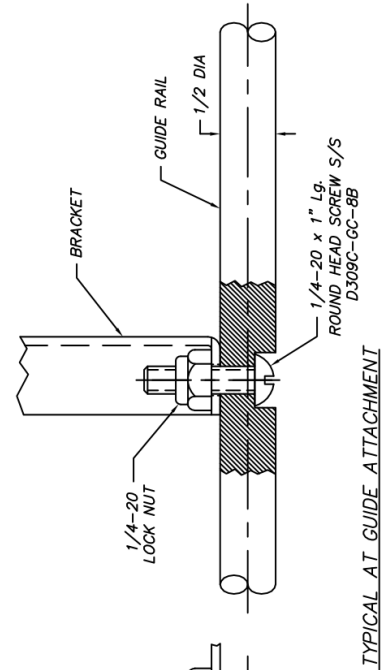


**1443-1 : TRAC 321-2 S/S Guide Rails**


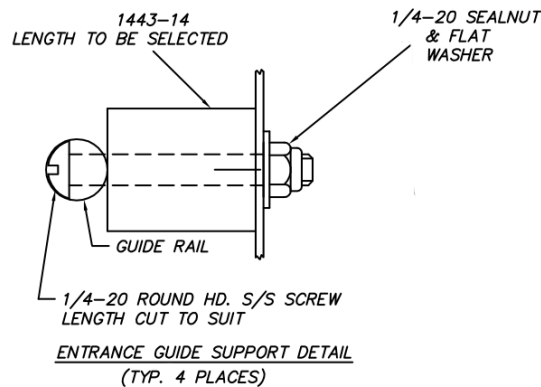
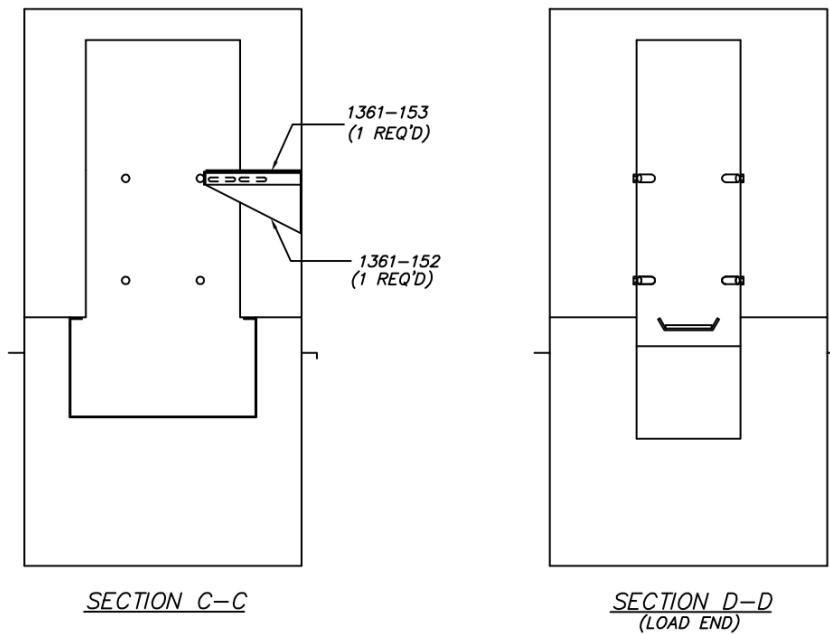
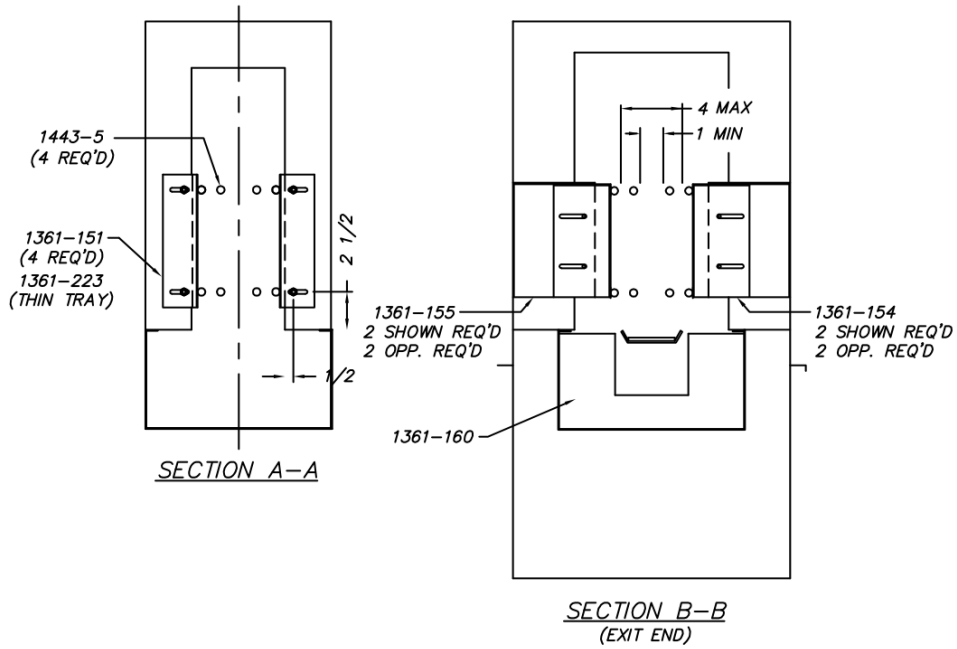
REV G - 01/28/10

**1444-1 : TRAC 321-2 RPW S/S Guide Rails**


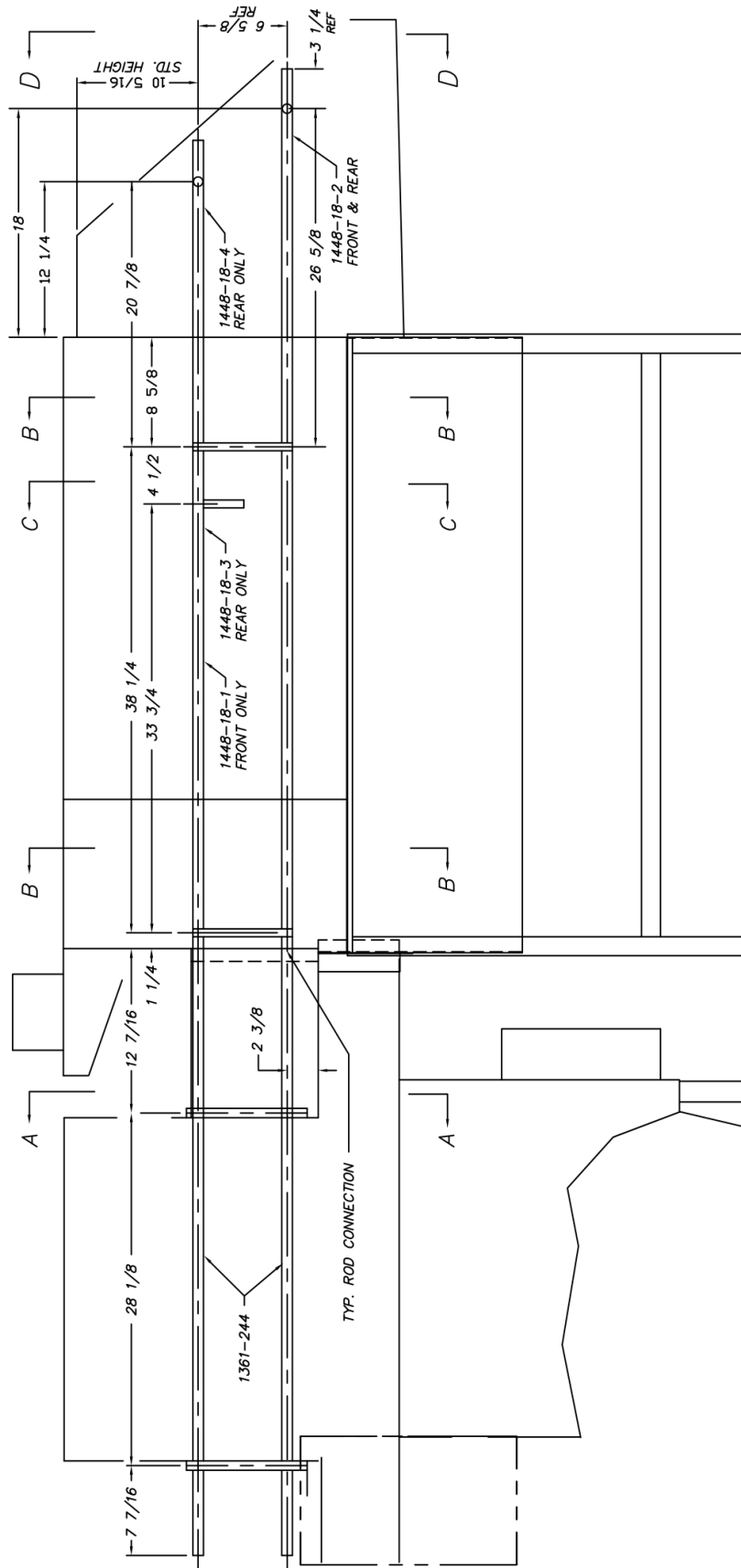
NOTE: FOR STAND-ALONE TRAC 321, IGNORE VIEW A-A, OMIT #1443-5 RAILS



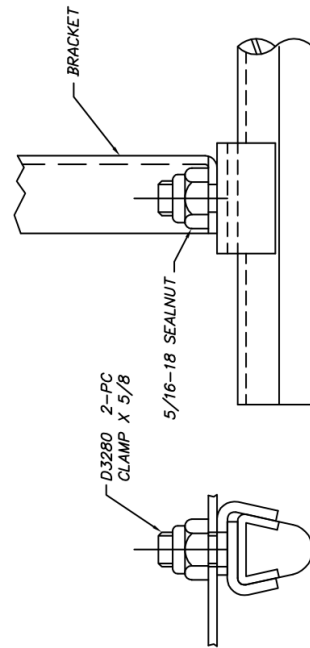
REV G - 01/28/10

**1444-1 : TRAC 321-2 RPW S/S Guide Rails**


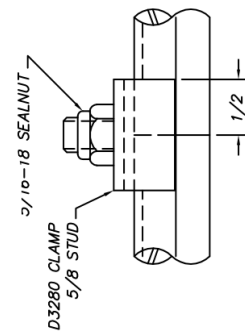
REV G - 01/28/10



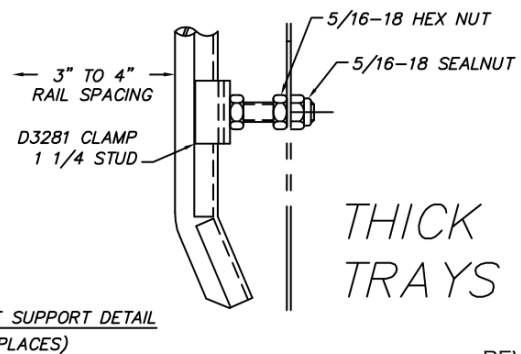
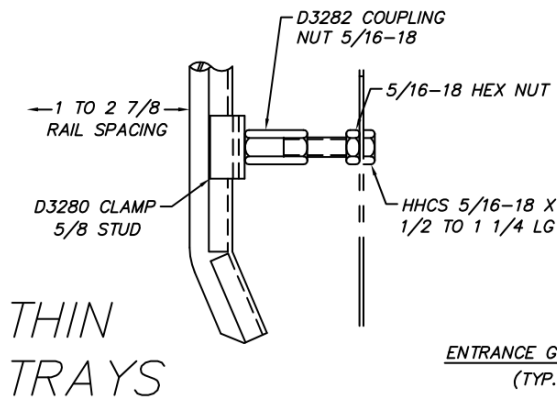
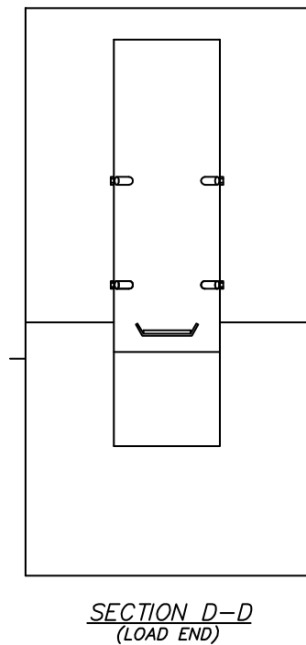
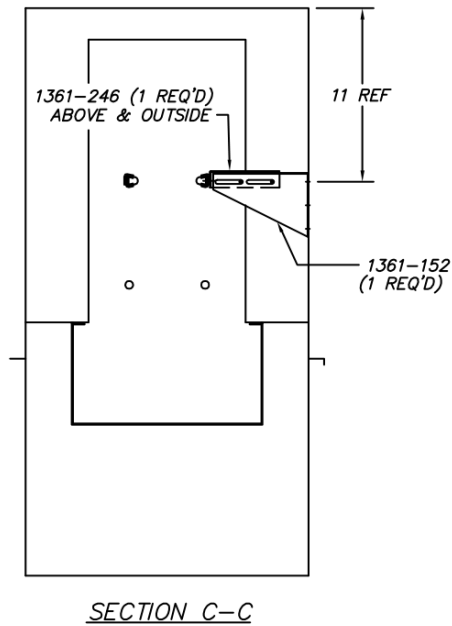
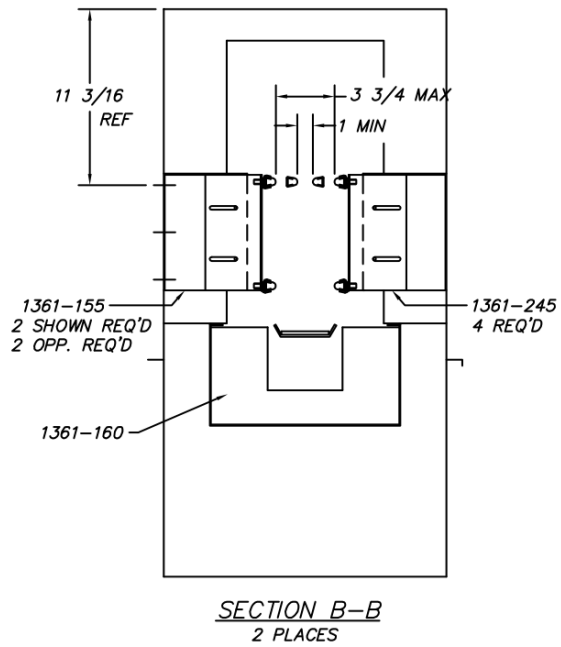
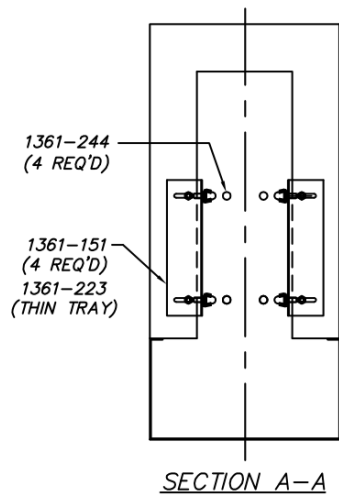
NOTE: FOR STAND-ALONE TRAC 321, IGNORE VIEW A-A, OMIT #1361-244 RAILS



TYPICAL AT GUIDE ATTACHMENT

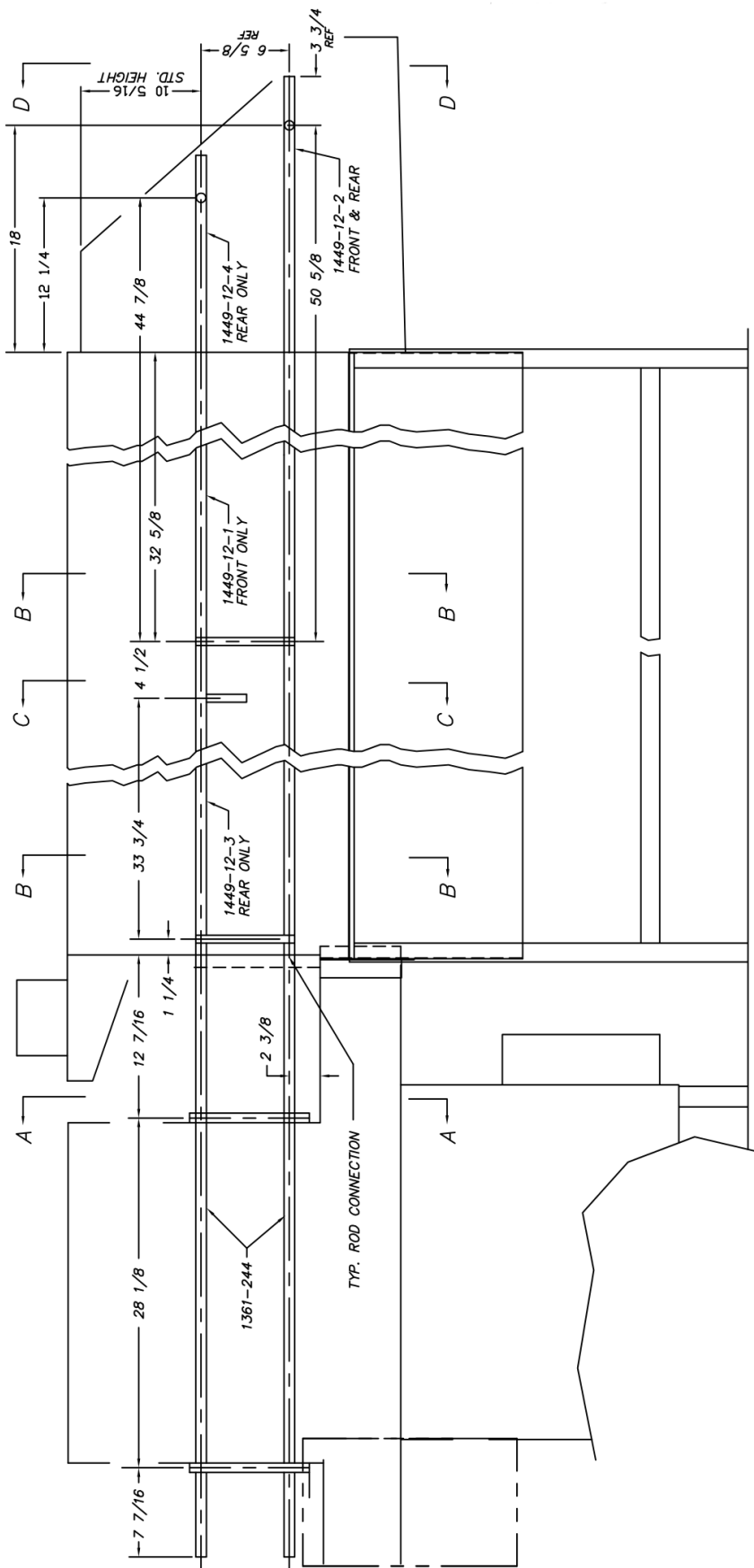


TYP. ROD CONNECTION

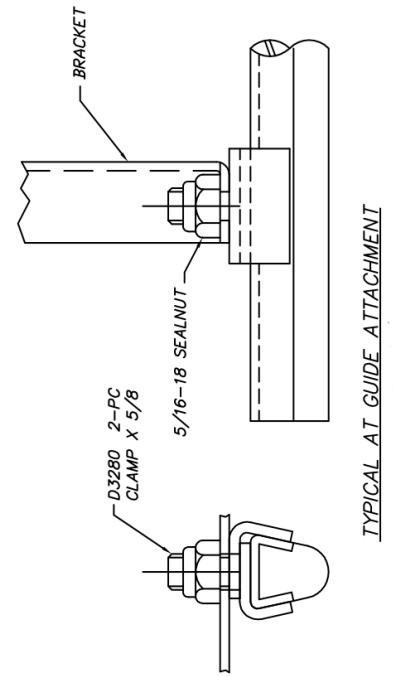


ENTRANCE GUIDE SUPPORT DETAIL  
(TYP. 4 PLACES)

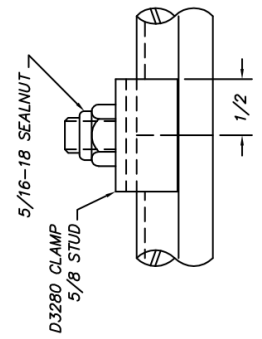
REV A - 10/02/95

**1449-13 : TRAC 321-2 RPW Pobco Guide Rails**


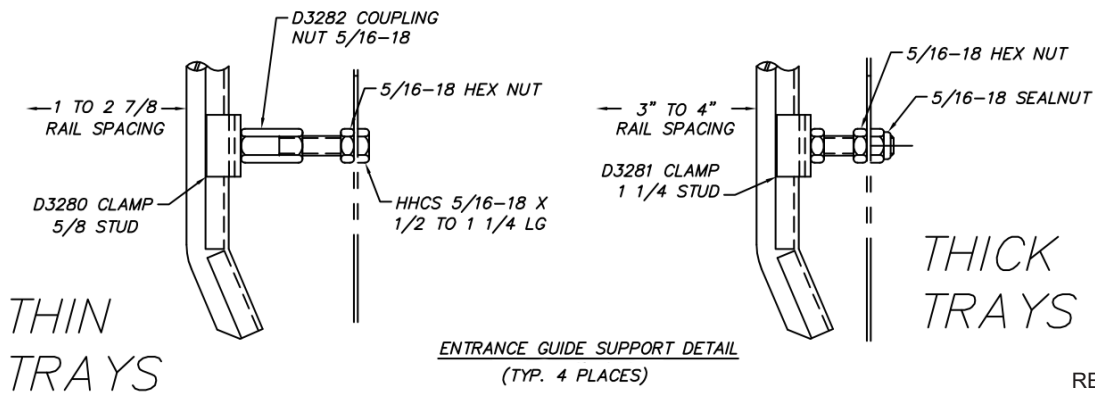
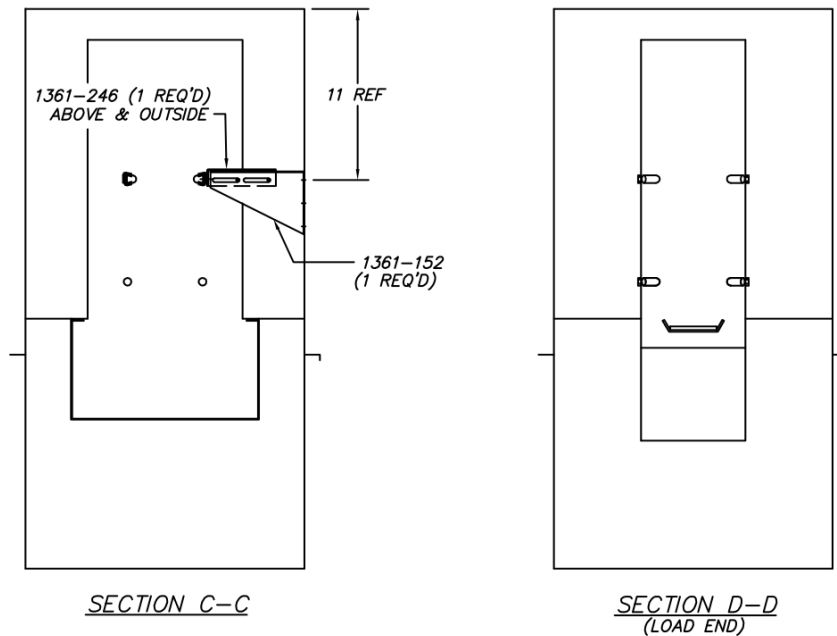
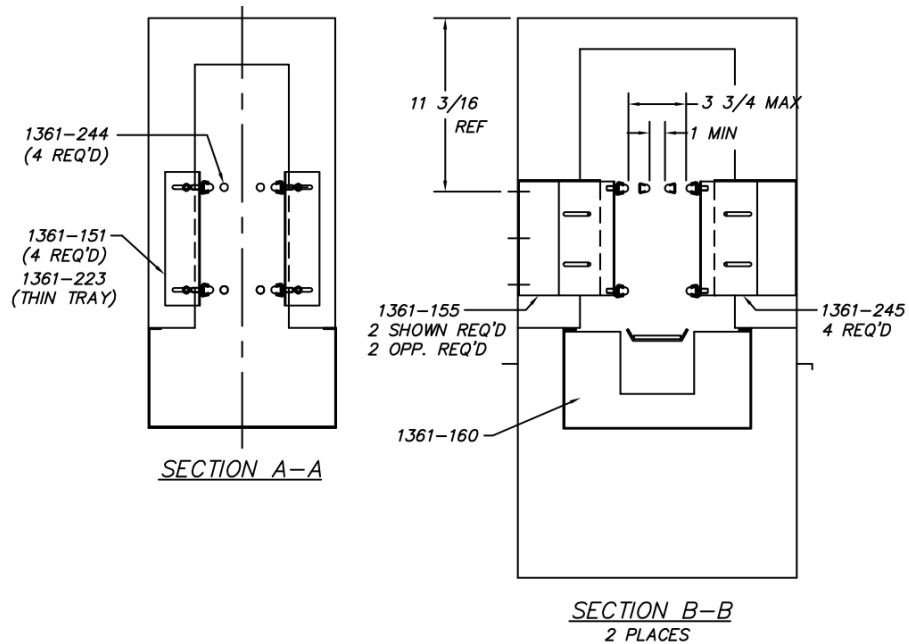
NOTE: FOR STAND-ALONE TRAC 321-RPW, IGNORE VIEW A-A, OMIT #1361-244 RAILS



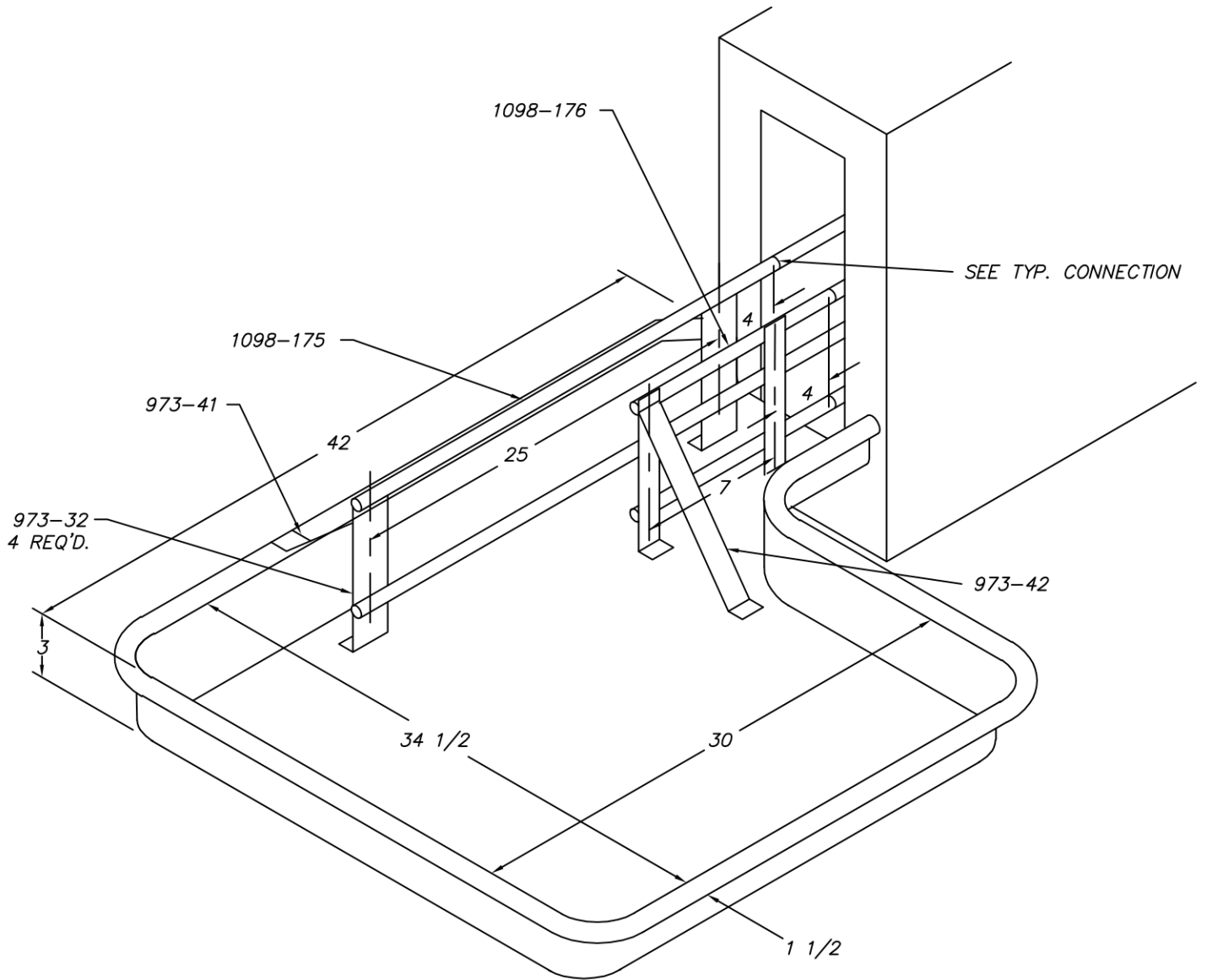
TYP. AT GUIDE ATTACHMENT



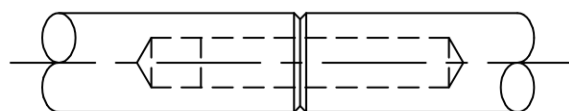
TYP. ROD CONNECTION

**1449-13 : TRAC 321-2 RPW Pobco Guide Rails**


REV A - 03/24/15



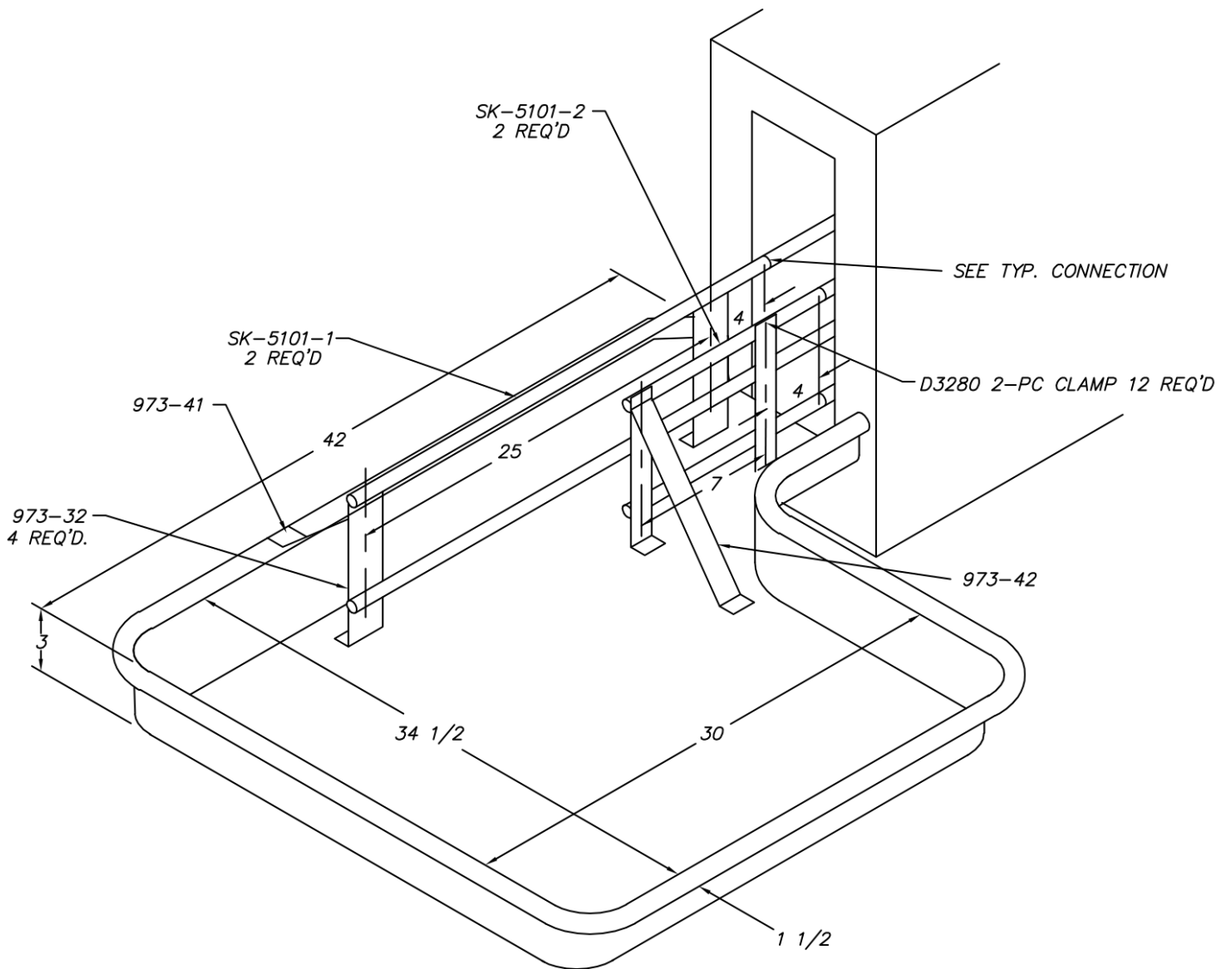
R.H. SHOWN L.H. OPPOSITE



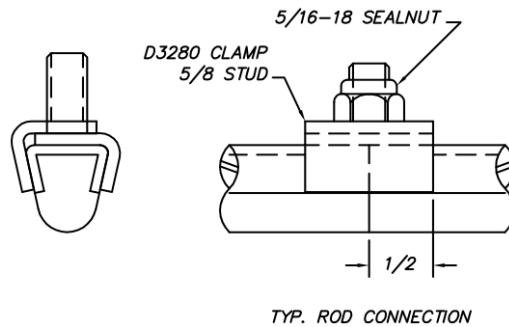
TYP. CONNECTION

REV E - 12/17/04

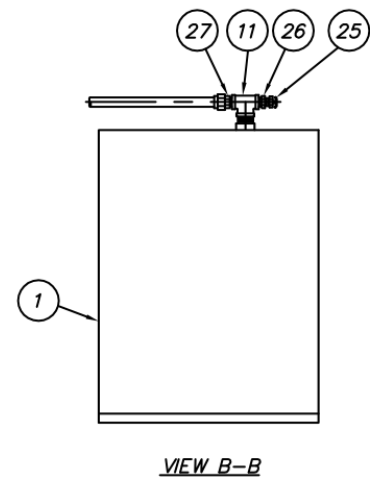
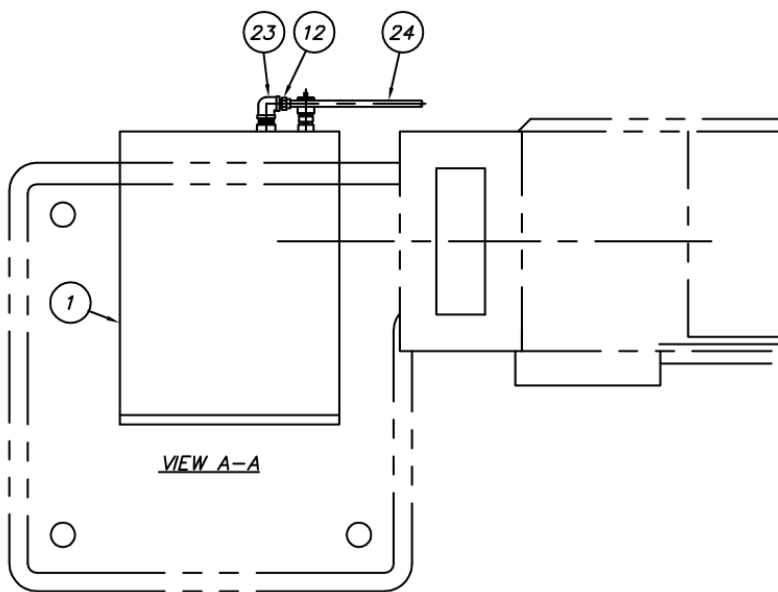
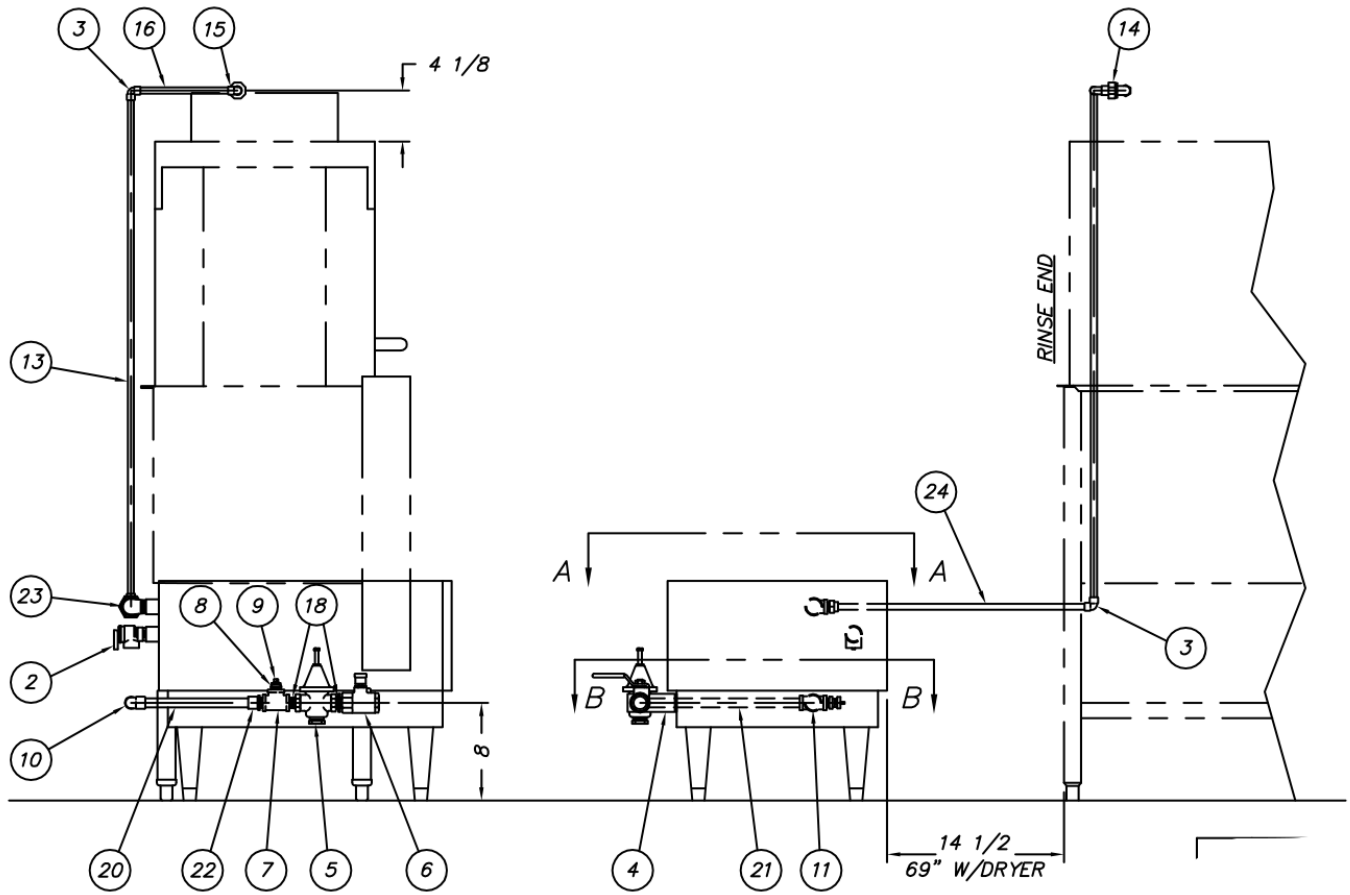




R.H. SHOWN L.H. OPPOSITE



REV F - 05/05/15

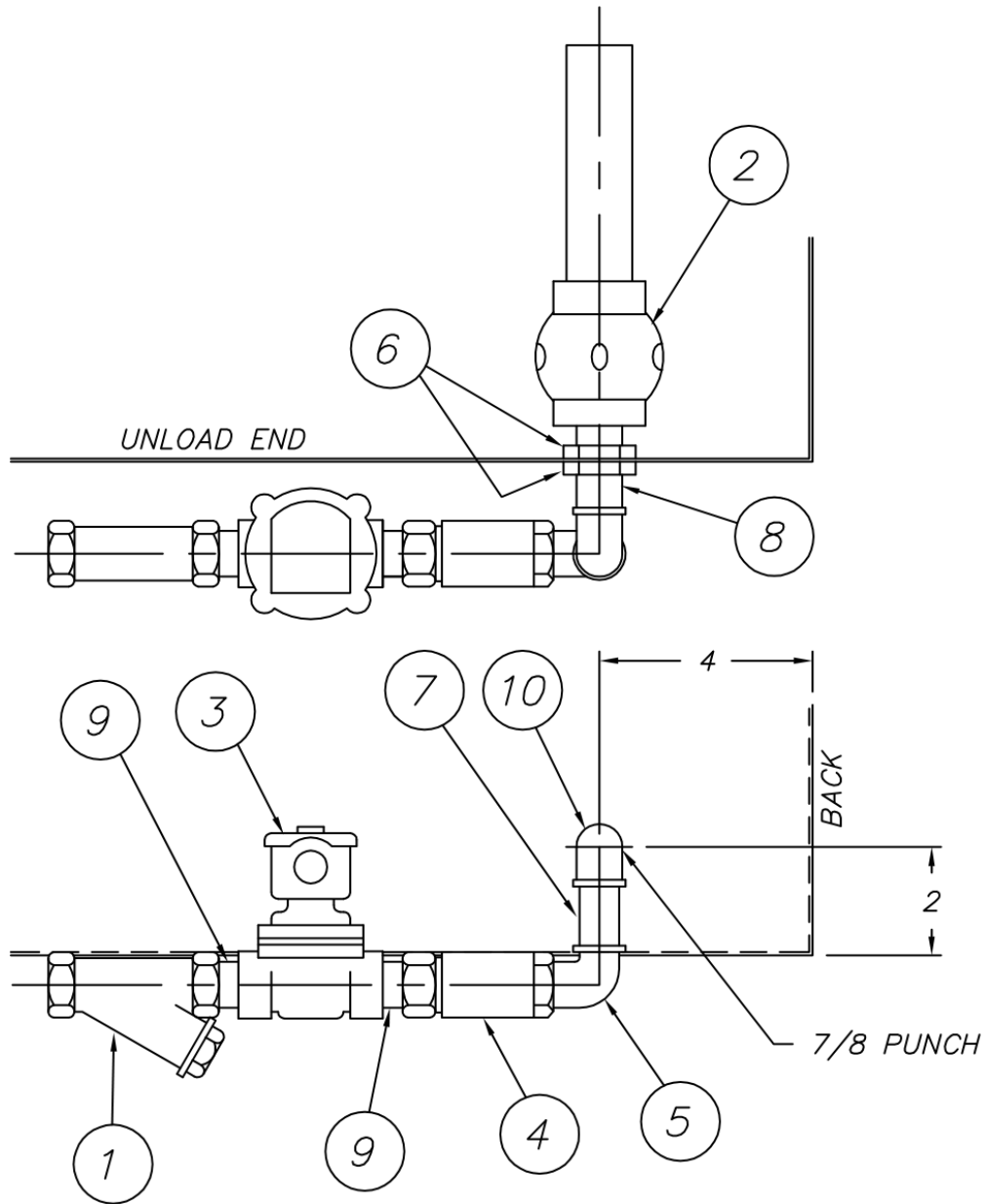


R.H. SHOWN

REV E - 06/01/10

**982-48R : Electric Booster Assembly RH**

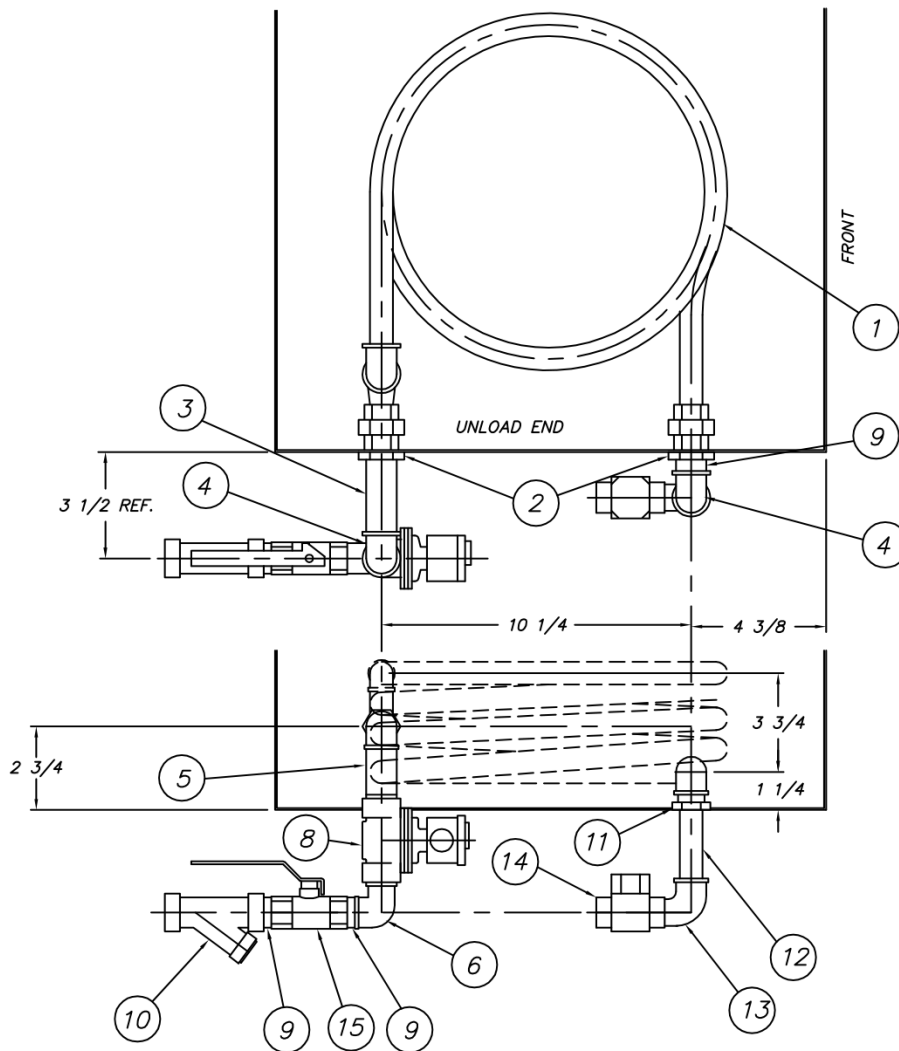
ITEM	PART NO.	DESCRIPTION	QTY
1	C24-58	Electric Booster	1
2	-	Relief Valve 3/4" IPS	1
3	D316A-D3	90° Elbow 1/2" C	2
4	925-49	Bracket	1
5	D2508	Pressure Regulator	1
6	D2340	Ball Valve 3/4" IPS	1
7	D320F-E1-E1-E1	Tee 3/4" IPS	1
8	D322F-E2-B1	Reducer 3/4" MIPS x 1/4" FIPS	1
9	D328F-B2A	Pipe Plug 1/4" IPS	1
10	D316A-E3-E3	90° Elbow 3/4" C	1
11	D320F-D1-E1-E1	Tee 1/2" FIPS x 3/4" FIPS x 3/4" FIPS	1
12	D318A-D3-D2	Union 1/2" MIPS x 1/2" C	1
13	D207A-B4-164	Copper Tubing 1/2" x 41" Lg.	1
14	D319A-D3-D2	90° Union Elbow 1/2" MIPS x 1/2" C	1
15	D316A-D3-D4	90° FTG. Elbow 1/2" C x 1/2" FTG.	1
16	D207A-B4-32	Copper Tubing 1/2" x 8" Lg.	1
17	D207A-B4-42	Copper Tubing 1/2" x 10 1/2" Lg.	1
18	D314F-EC-00	Nipple Close 3/4" IPS	2
19	D207A-B6-39	Copper Tubing 3/4" CTS x 9 3/8" Lg.	1
20	D207A-B6-20	Copper Tubing 3/4" x 5" Lg.	1
21	D207A-B6-47	Copper Tubing 3/4" x 11 5/8" Lg.	1
22	D317A-E3-E2	Adaptor 3/4" MIPS x 3/4" C	1
23	D316F-E1-D1	90° Elbow 3/4" FIPS x 1/2" FIPS	1
24	D207A-B4-84	Copper Tubing 1/2" x 21" Lg.	1
25	D329-5	Drain Cock 1/4" IPS	1
26	D322F-D2-B1	Reducer 1/2" MIPS x 1/4" FIPS	1
27	D318A-E3-E2	Union 3/4" C x 3/4" MIPS	1



L.H. SHOWN R.H. OPPOSITE

REV A - 08/31/82

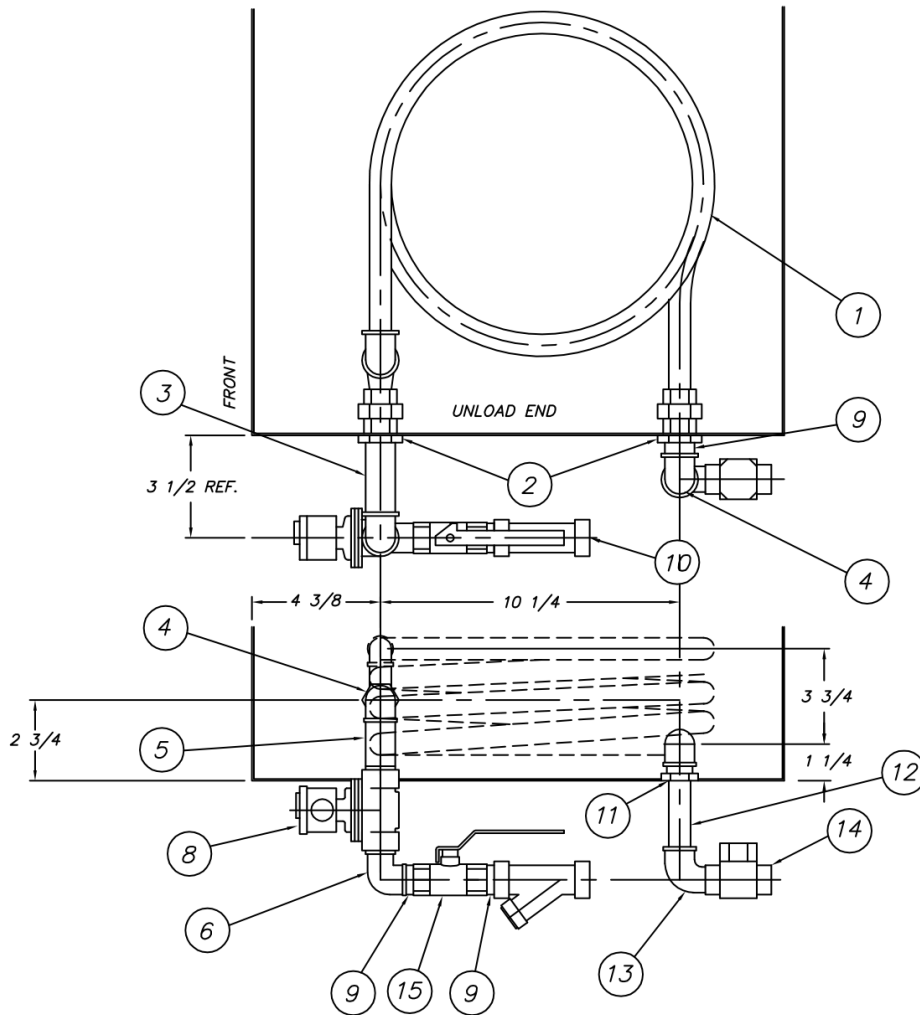
ITEM	PART NO.	DESCRIPTION	QTY
1	D-2483	"Y" Strainer 1/2" IPS	1
2	D-942	Penberthy Injector 1/2" IPS	1
3	D2945	Solenoid - Asco 1/2" IPS	1
4	D-2453	Check Valve 1/2" IPS	1
5	D316A-D1-D2	90° Street Elbow 1/2" IPS	1
6	D326A-D1	Locknut 1/2" IPS	2
7	D314A-DS-16	Nipple 1/2" IPS x 2" Lg.	1
8	D314A-DS-20	Nipple All Thread 1/2" IPS x 2 1/2" Lg.	1
9	D314A-DC	Nipple - Close 1/2" IPS	2
10	D316A-D1	90° Elbow 1/2" IPS	1



REV E - 02/19/10

R.H. MACHINE ONLY

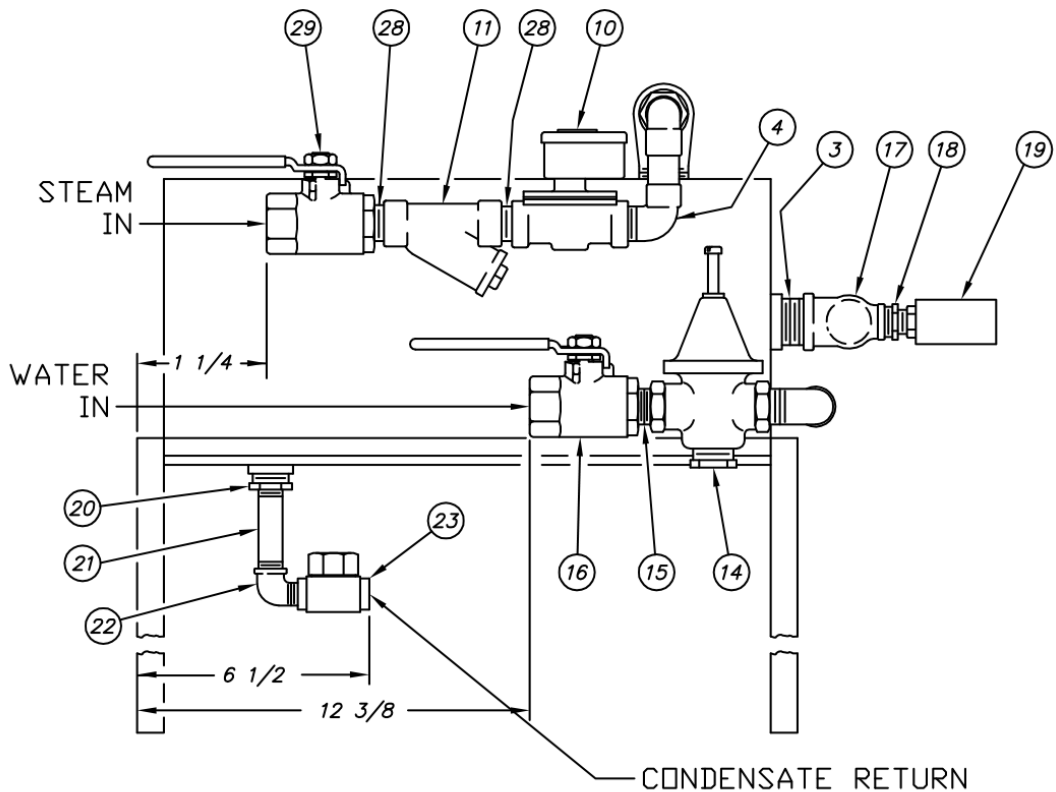
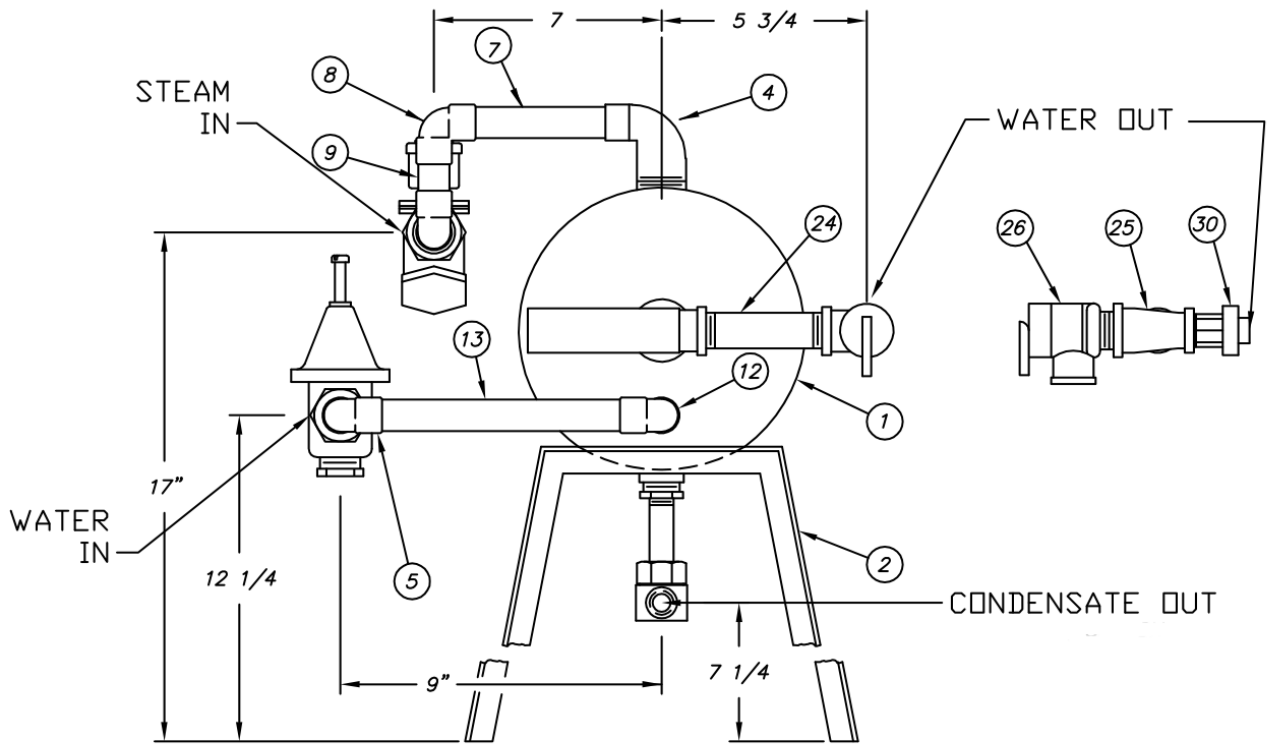
ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	982-46	A	Steam Coil S/S	1
2	D326A-D	-	Locknut 1/2" IPS	2
3	D314A-D2-30	-	Nipple 1/2" IPS x 3 3/4" Lg.	1
4	D316A-D1	-	90° Elbow 1/2" IPS	2
5	D314A-D2-20	-	Nipple 1/2" IPS x 2 1/2" Lg.	1
6	D316A-D1-D2	-	90° Street Elbow 1/2" IPS	1
7	-	-	-	-
8	D2945	-	Solenoid Valve 1/2" IPS	1
9	D314A-DCL	-	Close Nipple 1/2" IPS	3
10	D-2483A	-	"Y" Strainer 1/2" IPS	1
11	D322A-D2-C1	-	Hex Reducer 1/2" x 3/8" IPS	1
12	D314A-C14	-	Nipple 3/8" IPS x 3 1/2" Lg.	1
13	D316A-C1-C2	-	90° Street Elbow 3/8" IPS	1
14	D-2102	-	Steam Trap 3/8" IPS	1
15	D-2339	-	Ball Valve 1/2" IPS	1



L.H. MACHINE ONLY

REV E - 02/19/10

ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	982-46	A	Steam Coil S/S	1
2	D326A-D	-	Locknut 1/2" IPS	2
3	D314A-D2-30	-	Nipple 1/2" IPS x 3 3/4" Lg.	1
4	D316A-D1	-	90° Elbow 1/2" IPS	2
5	D314A-D2-20	-	Nipple 1/2" IPS x 2 1/2" Lg.	1
6	D316A-D1-D2	-	90° Street Elbow 1/2" IPS	1
7	-	-	-	-
8	D2945	-	Solenoid Valve 1/2" IPS	1
9	D314A-DCL	-	Close Nipple 1/2" IPS	3
10	D-2483A	-	"Y" Strainer 1/2" IPS	1
11	D322A-D2-C1	-	Hex Reducer 1/2" x 3/8" IPS	1
12	D314A-C14	-	Nipple 3/8" IPS x 3 1/2" Lg.	1
13	D316A-C1-C2	-	90° Street Elbow 3/8" IPS	1
14	D-2102	-	Steam Trap 3/8" IPS	1
15	D-2339	-	Ball Valve 1/2" IPS	1



R.H. MACHINE SHOWN - L.H. MACHINE OPPOSITE

REV F - 11/08/05

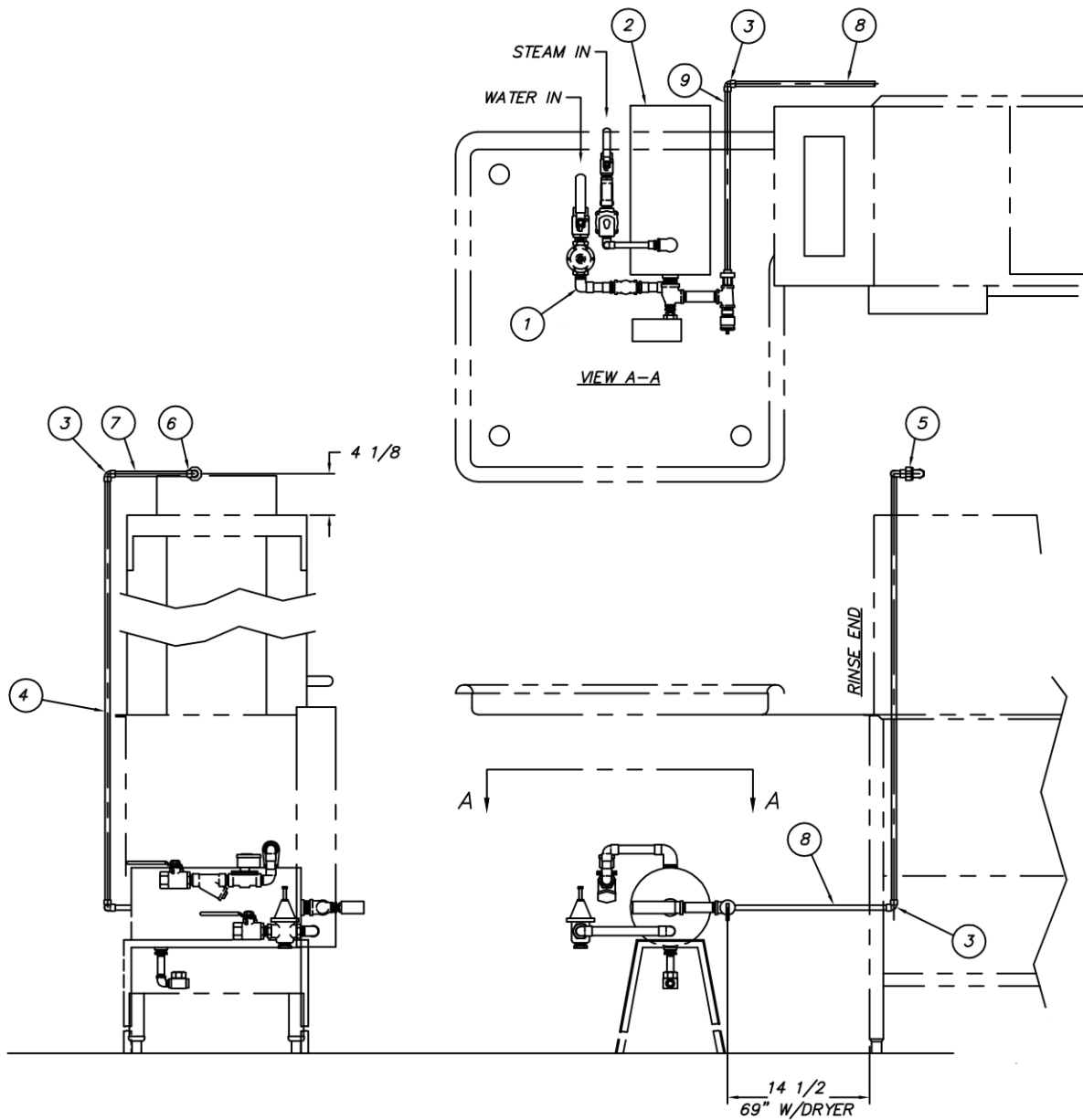
**1394-7 : Steam Booster Assembly**

ITEM	PART NO.	DESCRIPTION	QTY
* 1	D-2100	Steam Booster (I-2)	1
2	278-1	Booster Stand	1
3	D314F-FC-00	Close Nipple 1" IPS	1
4	D316A-F3-F2	90° Street Elbow 1" C x 1" MIPS	2
5	D316A-D3-D2	90° Elbow 1/2" C x 1/2" MIPS	1
6	-	-	-
7	D207A-K8-23	Copper Tubing 1" CTS x 5 5/8" Lg.	1
8	D316A-F3-F3	90° Elbow 1" C	1
9	D207A-K8-10	Copper Tubing 1" CTS x 2 1/2" Lg.	1
10	D2947	Solenoid Valve 1" IPS (Steam 24V)	1
11	D2252	"Y" Strainer 1" IPS	1
12	D316A-E2-D3	90° Elbow 3/4" MIPS x 1/2" C	1
13	D207A-K4-32	Copper Tubing 1/2" CTS x 8" Lg.	1
14	D2508A	Pressure Regulator & Strainer 1/2" IPS	1
15	D314F-DC-00	Close Nipple 1/2" IPS	1
16	D2339	Ball Valve 1/2" IPS	1
17	D320F-F1D1D1	Tee 1" IPS x 1/2" IPS x 1/2" IPS	1
18	D322F-D2-C1	Hex Reducer 1/2" MIPS x 3/8" FIPS	1
** 19	D-2396	Thermostat	1
20	D322F-E2-D1	Hex Reducer 3/4" MIPS x 1/2" FIPS	1
21	D314F-DS-20	Nipple 1/2" IPS x 2 1/2" Lg.	1
22	D316F-D1-D2	90° Street Elbow 1/2" IPS	1
23	D2102A	Steam Trap 1/2" IPS	1
24	D314F-DS-32	Nipple 1/2" IPS x 4" Lg.	1
25	D320F-E1D1D1	Tee 3/4" FIPS x 1/2" FIPS x 1/2" FIPS	1
26	D2507	Pressure Relief Valve 3/4" IPS	1
27	-	-	-
28	D314F-FC-00	Close Nipple 1" IPS	2
29	D2379	Ball Valve 1" IPS	1
30	D318A-D3-D2	Union, 1/2" C x 1/2" M	1

\* Add suffix "NM" for non-magnetic machines

\*\* Use Part # D-2396 as standard and Part # D-2301 when low temperature cut-off is specified

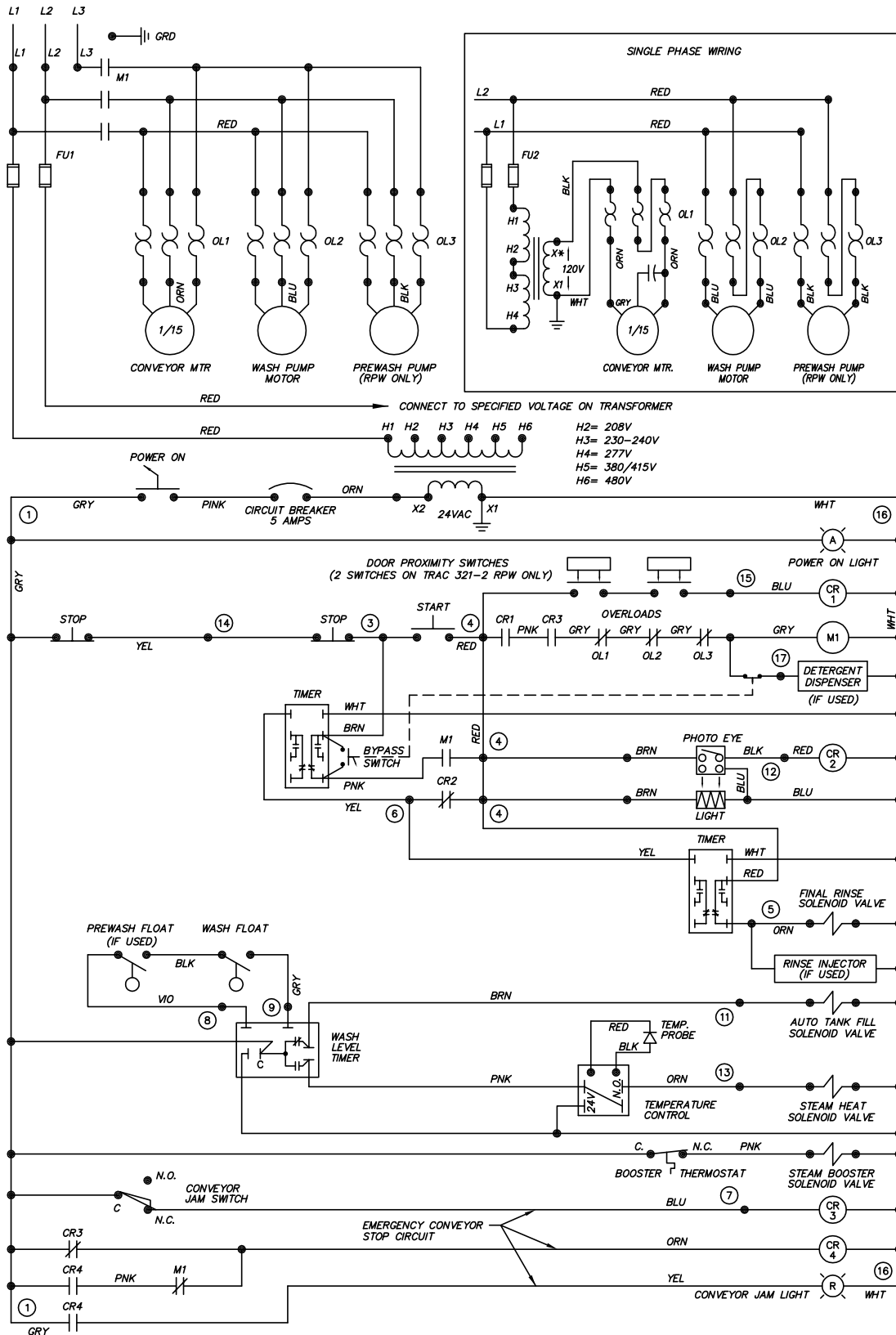


**982-45 : Piping Assembly Steam Booster to Final Rinse**


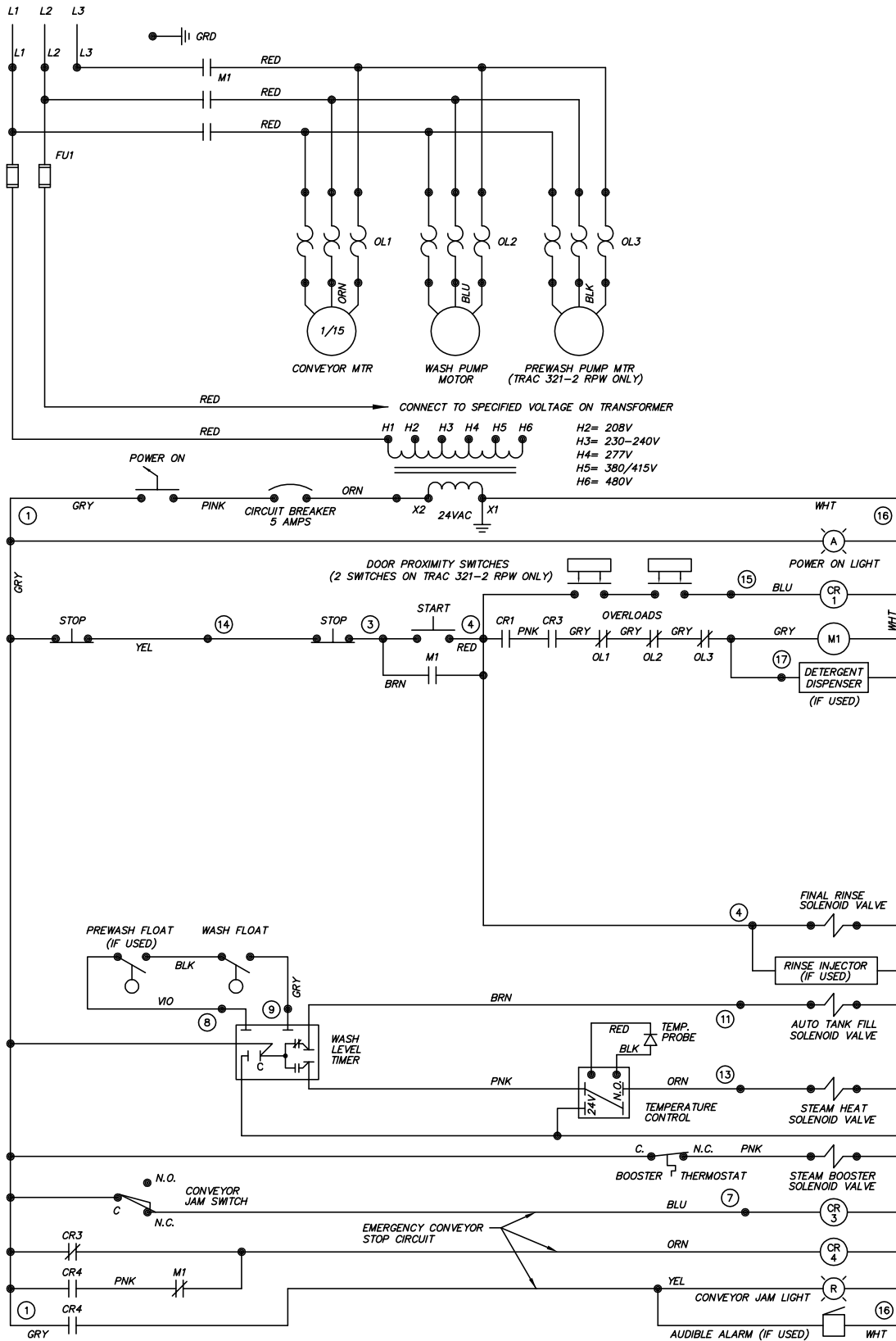
R.H SHOWN - L.H. OPPOSITE

REV A - 09/20/17

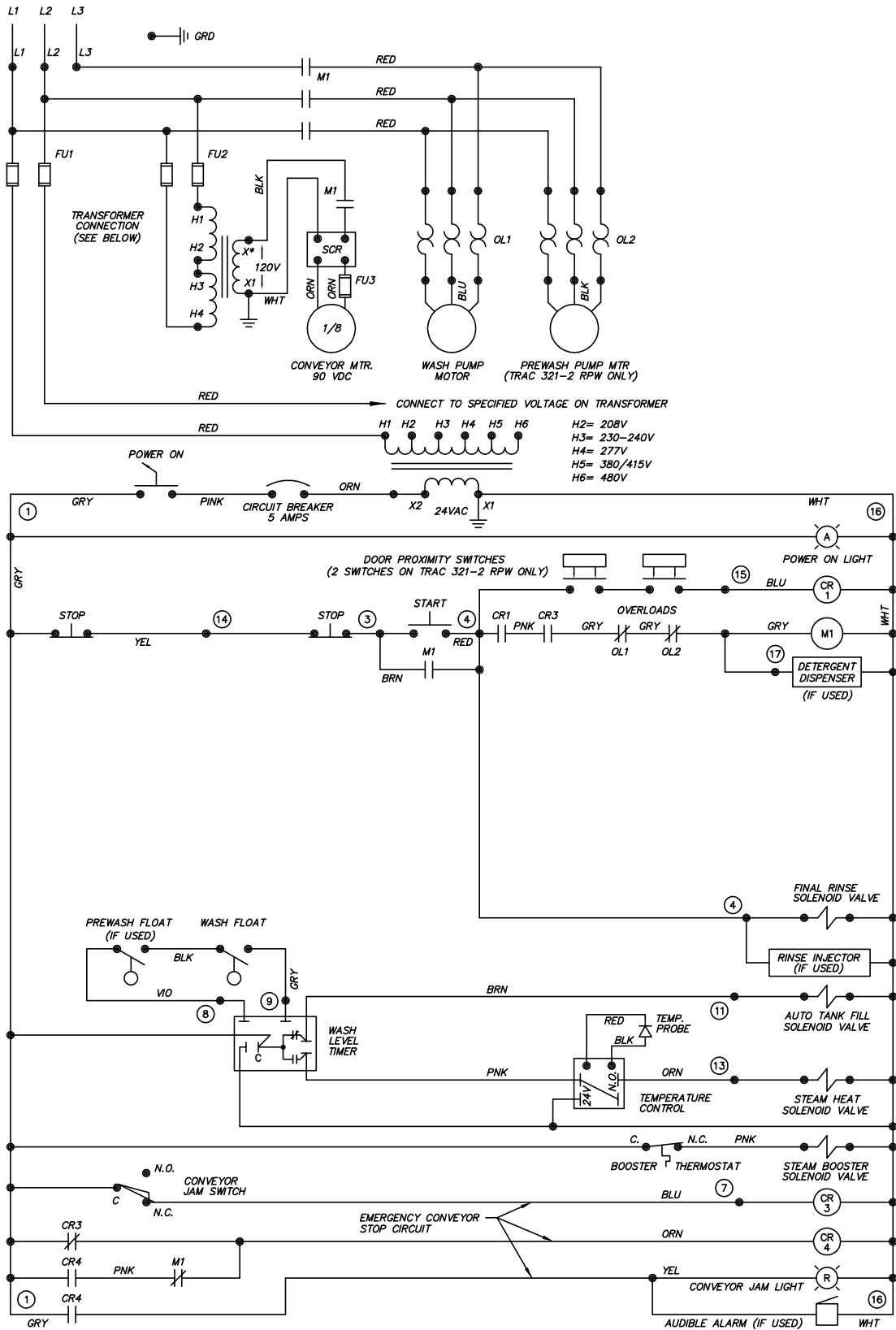
ITEM	PART NO.	DESCRIPTION	QTY
1	1447-1	Steam Booster Weldment	REF
2	1394-7	Steam Booster Piping Assembly 70° Rise	1
3	D316A-D3	90° Elbow 1/2" C	3
4	D207A-B4-172	Copper Tubing 1/2" x 43" Lg.	1
5	D319A-D3-D2	90° Union Elbow 1/2" MIPS x 1/2" C	1
6	D316A-D3-D4	90° FTG. Elbow 1/2" C x 1/2" FTG.	1
7	D207A-B4-32	Copper Tubing 1/2" x 8" Lg.	1
8	D207A-B4-84	Copper Tubing 1/2" x 21" Lg.	1
	D207A-B4-302	Copper Tubing 1/2" x 75 1/2" Lg.	1
9	D207A-B4-70	Copper Tubing 1/2" x 17 1/2" Lg.	1

**WTRAC010 : Steam Heat AC Drive Motor**


K	1931	4.12.02	TITLE	TRAY WASHER	DWG. NO.
J	1800	9.7.00		STEAM HEAT - AC DRIVE MOTOR	WTRAC010
H	1583	12.1.97			
REV	ECN	NO	DATE		
FILE:	WTRAC010			Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 07.15.95

**WTRAC011 : Steam Heat AC Drive Motor (Security)**


		TITLE	TRAY WASHER	DWG. NO.	WTRAC011
B	1800	9.7.00	STM HT-SECURITY PKG-AC DRIVE		
A	1583	12.1.97			
REV	ECN NO	DATE	Philadelphia, PA 19135 (215) 624-4800	DRWN/DATE	MFJ
FILE: WIRE\WTRAC011			FAX (215) 624-6966		7.14.97

**WTRACNEW : Steam Heat DC Drive Motor (Security)**


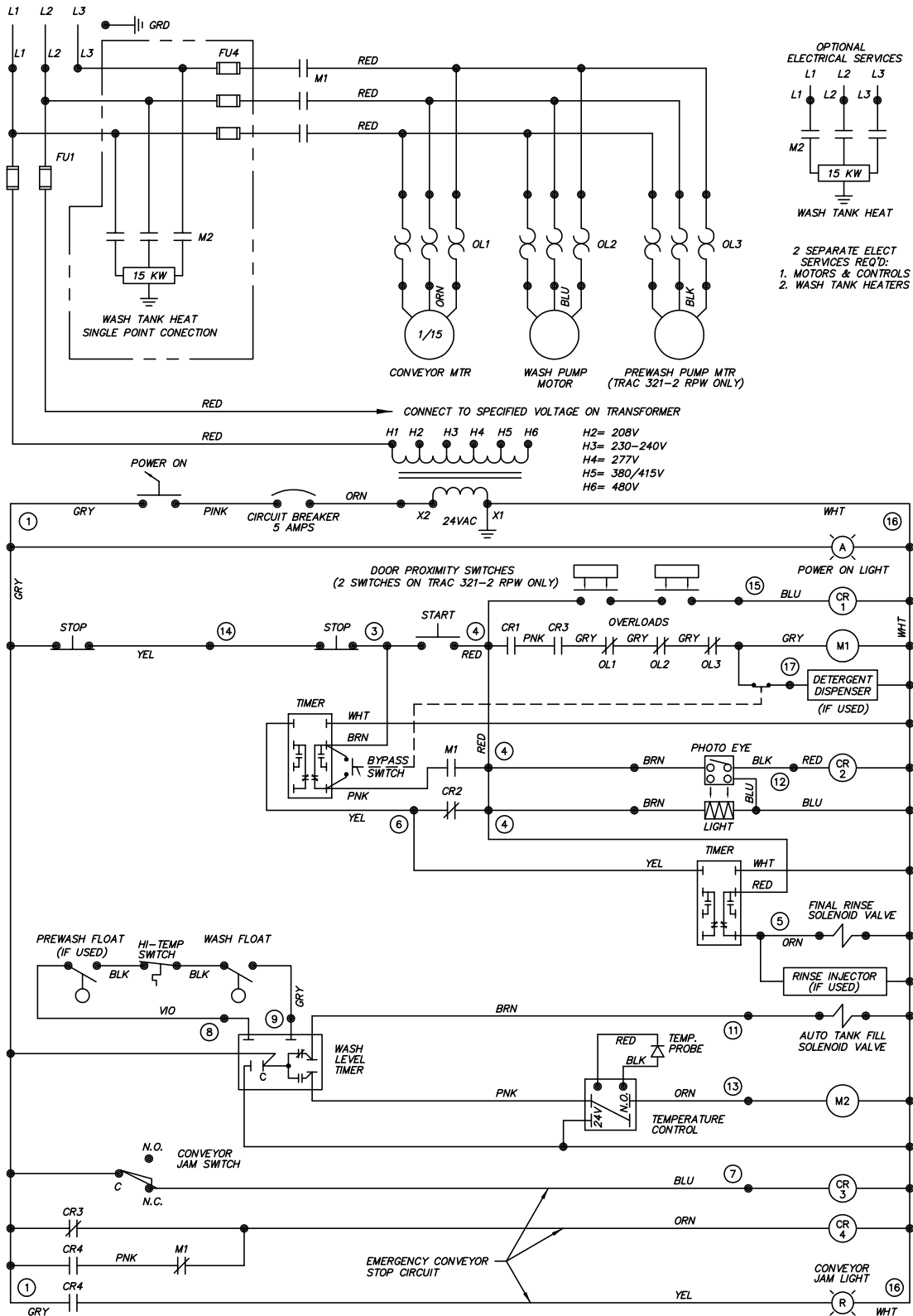
CONNECT TO SPECIFIED VOLTAGE ON TRANSFORMER

H1 H2 H3 H4 H5 H6

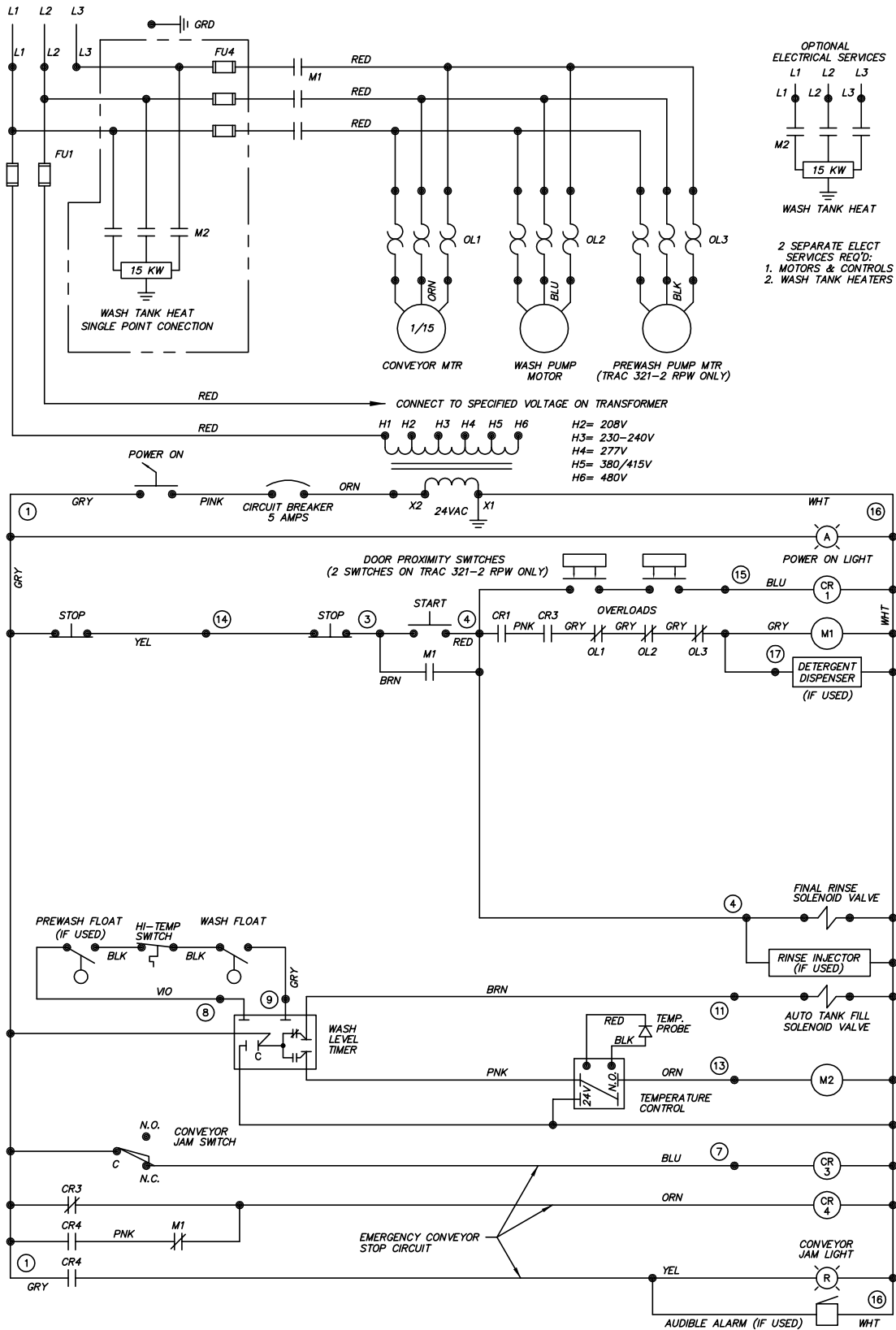
H2= 208V  
H3= 230-240V  
H4= 277V  
H5= 380/415V  
H6= 480V

CONVEYOR MOTOR TRANSFORMER CONNECTIONS				
	208 VAC	230 VAC	380 VAC	480 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
	-	-	-	H2 TO H3
X*	X3	X2	X3	X2

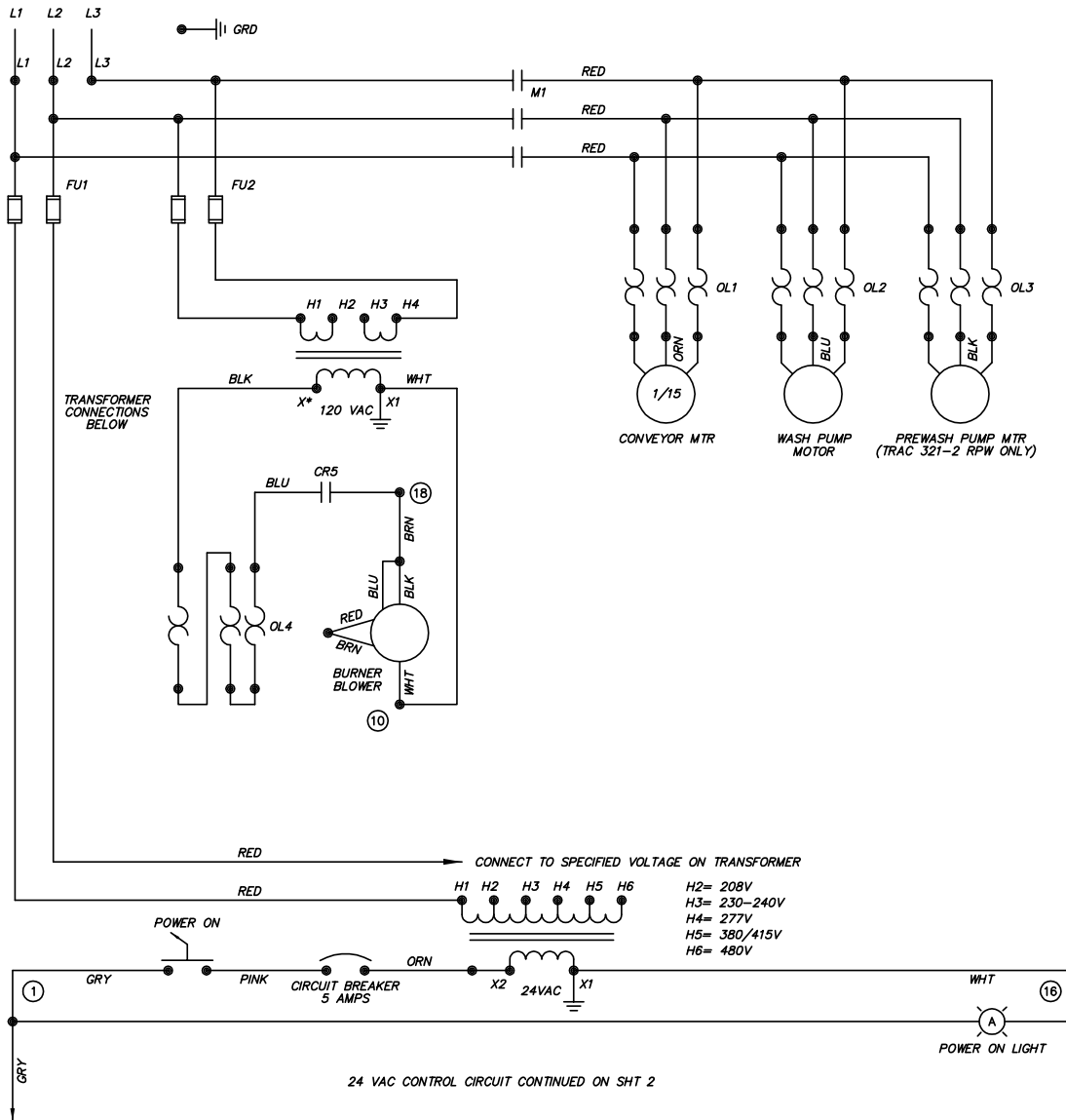
TITLE		TRAY WASHER		DWG. NO.	
STM HT-SECURITY PKG-DC DRIVE		WTRACNEW			
REV	ECN NO	DATE	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		
FILE: WIRE\WTRACNEW			DRWN/DATE	MFJ 2.15.01	

**WTRAC020 : Electric Heat AC Drive Motor**


K	1988	7.7.03	TITLE	TRAY WASHER	DWG. NO.
J	1800	9.7.00		ELECTRIC HEAT, AC DRIVE MOTOR	WTRAC020
H	1583	12.1.97			
REV	ECN NO	DATE	Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 07.15.95
FILE:	WIRE\WTRAC020				

**WTRAC021 : Electric Heat AC Drive Motor (Security)**


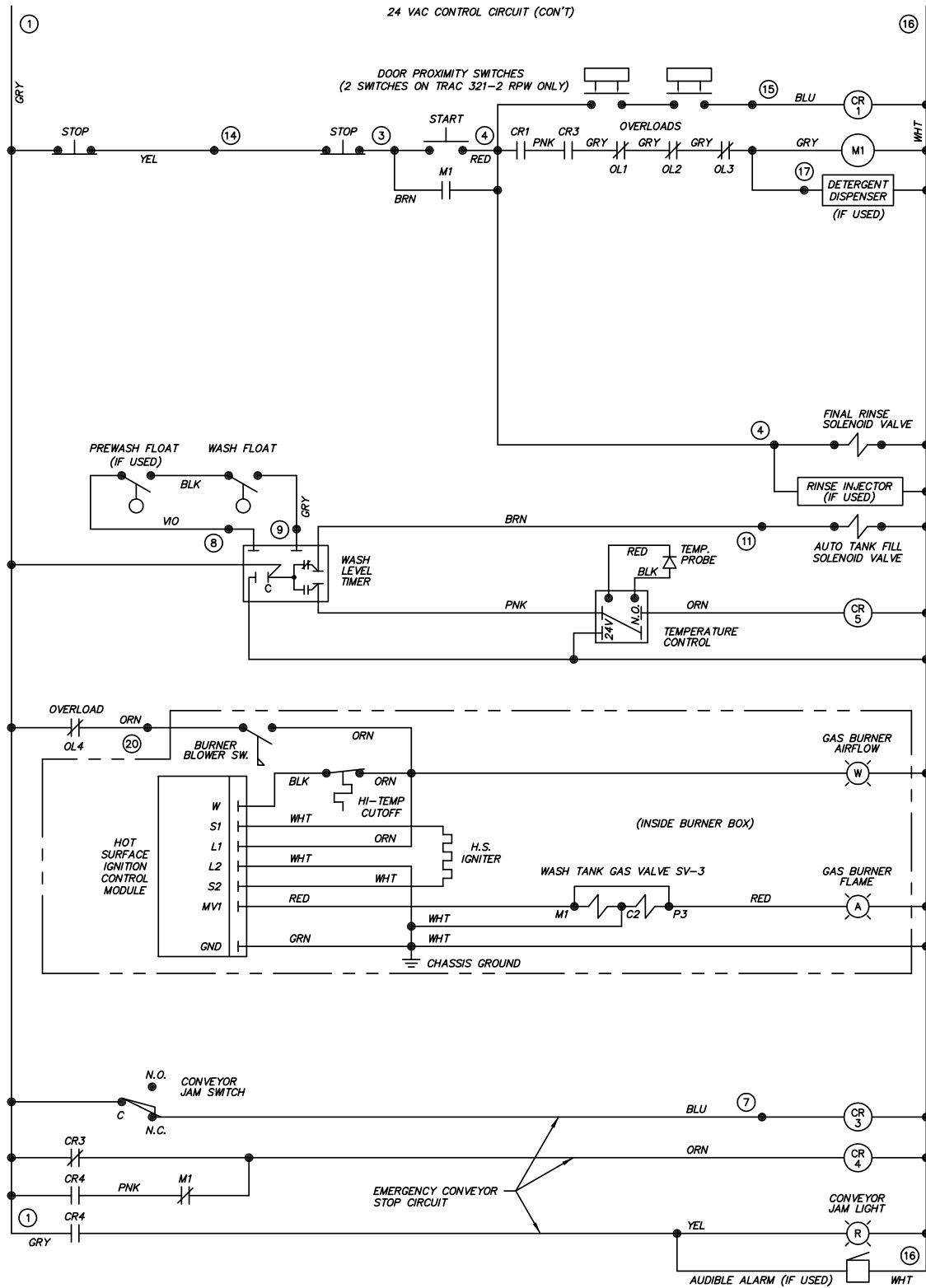
E	1988	7.7.03	TITLE	TRAY WASHER	DWG. NO.
D	1800	9.7.00		ELECT HT-SECURITY PKG-AC DRV	WTRAC021
C	1583	12.1.97			
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE
FILE:	WIRE\WTRAC021				MFJ 11.1.95



CONVEYOR & BLOWER XFMR CONNECTIONS				
	208 VAC	230 VAC	380 VAC	480 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
X*	X3	X2	X3	X2
				H2 TO H3

SHEET 1 OF 2

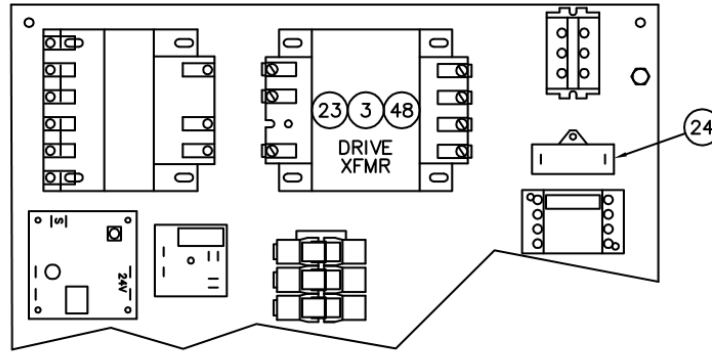
		TITLE TRAY WASHER GAS HEAT - SECURITY PKG		DWG. NO. WTRAC071	
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE	MFJ
FILE: WIRE\WTRAC071					

**WTRAC071 : Gas Heat (Security)**


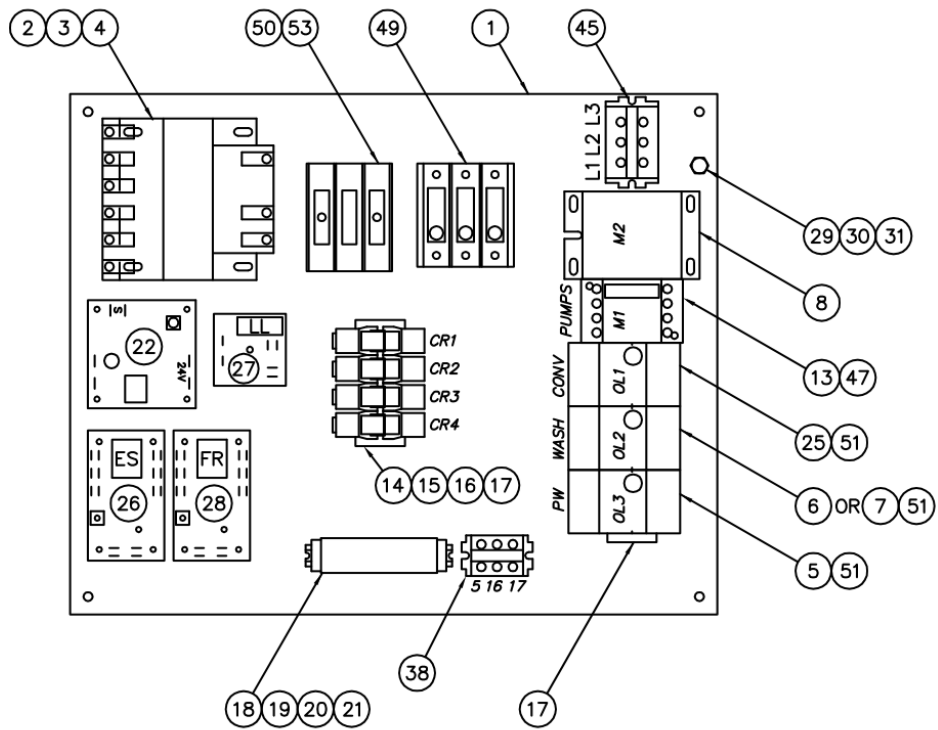
SHEET 2 OF 2

			TITLE	TRAY WASHER GAS HEAT - SECURITY PKG	DWG. NO.	WTRAC071
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE	MFJ 12.27.99
FILE: WIRE\WTRAC071						

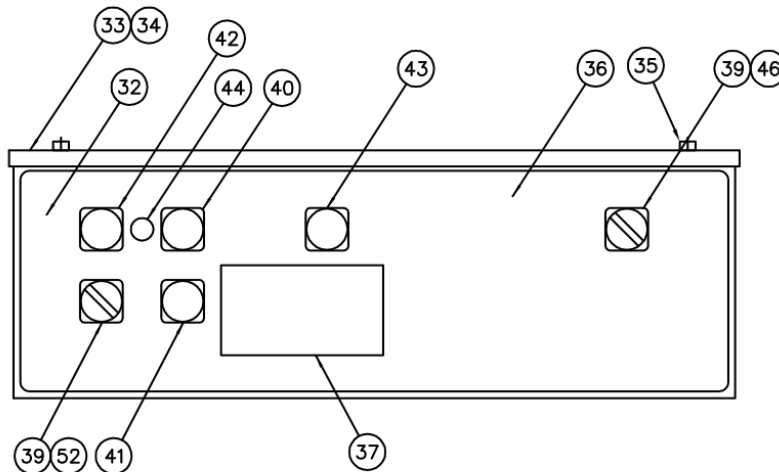


**SK-3126 : Control Panel Layout (AC Drive)**


STEAM HEAT SINGLE PHASE ONLY



18 x 14 1/2 PANEL



REV U - 03/08/18

**SK-3126 : Control Panel Layout (AC Drive)**

ITEM	PART NO.	DESCRIPTION	QTY
1	SK-3773	Component Mounting Plate	1
2	DE6-9	Control Transformer (150 VA, 24 VAC)	1
3	DE9-164	Fuse Block (150 & 250 VA XFMR)	1
4		<b>Fuse (150 VA Transformer Primary)</b>	2
	DE9-167	460V, FNQ-R-1	
	DE9-199	380V, FNQ-R-1.25	
	DE9-170	220V - 230V, FNQ-R-2	
	DE9-171	208V, FNQ-R-2.25	
5		<b>Overload Relay (1/2 HP Prewash Pump)</b>	1
	DE2-50	460/3/60 1 - 1.7A	
	DE2-50	380/3/50 1 - 1.7A	
	DE2-52	230/3/60 1.6 - 2.5A	
	DE2-52	220/3/50 1.6 - 2.5A	
	DE2-54	220/1/60 4 - 6A	
	DE2-52	208/3/60 1.6 - 2.5A	
6		<b>Overload Relay (2 HP Wash Pump)</b>	1
	DE2-53	460/3/60 2.5 - 4A	
	DE2-53	380/3/50 2.5 - 4A	
	DE2-55	230/3/60 5.5 - 8A	
	DE2-55	220/3/50 5.5 - 8A	
	DE2-57	220/1/60 9 - 13A	
	DE2-55	208/3/60 5.5 - 8A	
7		<b>Overload Relay (3 HP Wash Pump)</b>	1
	DE2-54	460/3/60 4 - 6A	
	DE2-54	380/3/50 4 - 6A	
	DE2-56	230/3/60 7 - 10A	
	DE2-56	220/3/50 7 - 10A	
	DE2-58	220/1/60 12 - 18A	
	DE2-56	208/3/60 7 - 10A	
8		<b>Contactor (15 kW Electric Wash Tank Heat)</b>	1
	DE1-109	460/3/60 30 A RES	
	DE1-109	380/3/50 30 A RES	
	DE1-110	230/3/60 50 A RES	
	DE1-110	220/3/50 50 A RES	
	DE1-94	220/1/60 SP47	
	DE1-110	208/3/60 50 A RES	
13	DE1-93	Contactor (Motors) All 3 Phase CC18	1
14	DE2-37	Relay Base	4
15	DE2-38	Relay	4
16	DE3-43	Relay Hold Down Spring	4
17	DE9-84	DIN Rail (35 mm)	1
18	DE3-42	DIN Rail (15 mm)	1

**SK-3126 : Control Panel Layout (AC Drive)**

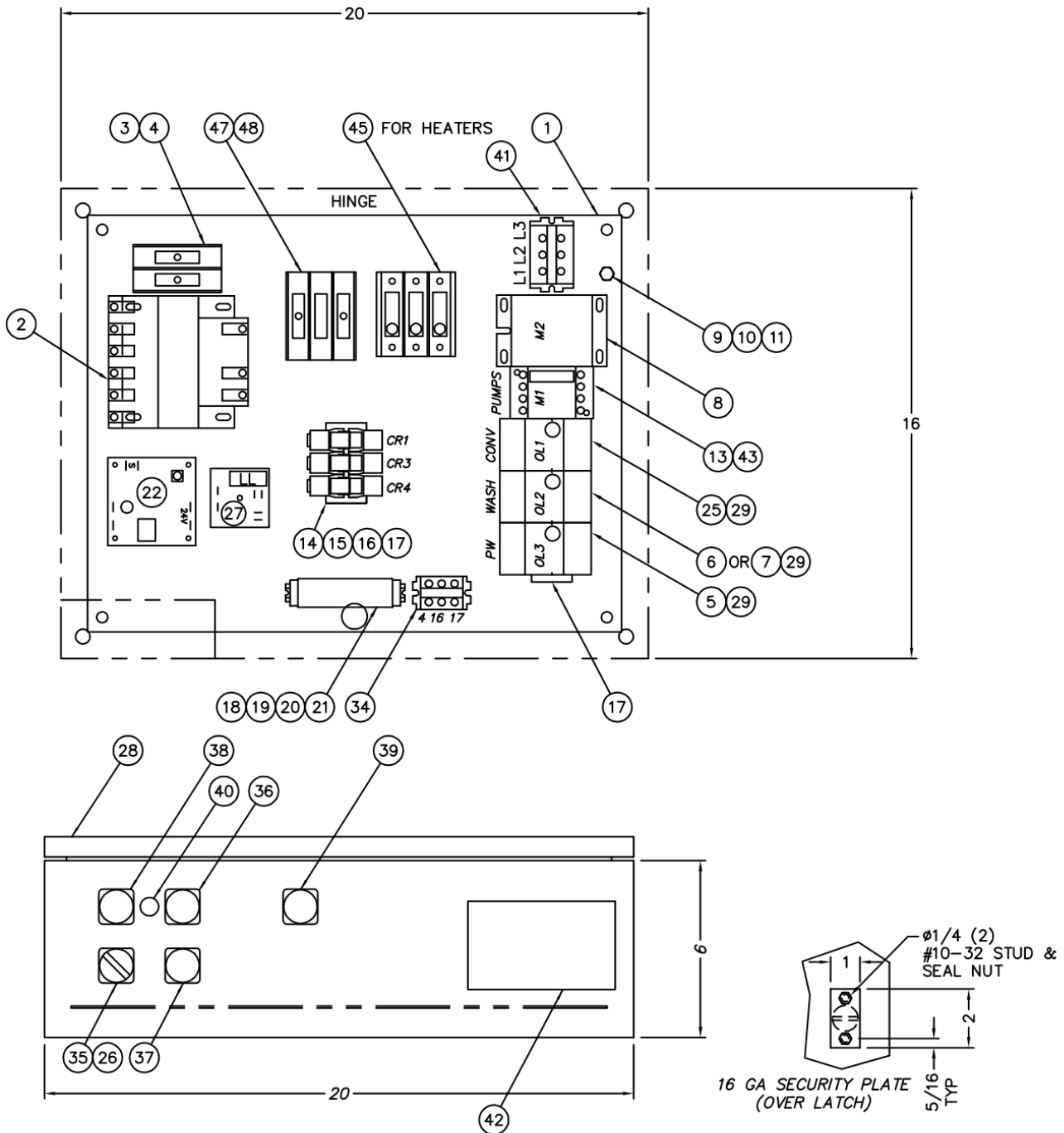
ITEM	PART NO.	DESCRIPTION	QTY
19	DE3-39	Terminal Section	AR
20	DE3-40	Terminal End Cover Plate	1
21	DE3-41	Terminal End Clamp	2
22	DE9-251	Temperature Control Board	1
23		<b>Drive Transformer (250 VA, 120 VAC)</b>	1
	DE6-10	All except 208 & 380V	
	DE6-21	208 & 380V	
24	D2888	Capacitor (120V Conveyor Motor Only)	1
25		<b>Overload Relay (1/15 HP Conveyor Drive)</b>	1
	DE2-91	460/3/60 .16 - .25A	
	DE2-91	380/3/50 .16 - .25A	
	DE2-92	230/3/60 .25 - .40A	
	DE2-92	220/3/50 .25 - .40A	
	DE2-92	208/3/60 .25 - .40A	
	DE2-49	115/1/60 .63 - 1A	
26	DE7-28	Time Delay Board (Energy Saver)	1
27	DE7-35	Timer (Liquid Level)	1
28	DE7-27	Final Rinse Timer	1
29	D309C-GC-4G	Grounding Stud	1
30	D313C-G5	Lockwasher, 1/4"	1
31	D312C-GC-2	Hex Nut, 1/4-20	1
32	1282-19	Control Box	1
33	1282-23	Control Box Cover	1
34	9007-001	Gasket	1
35	D312C-EF-5	Nut	4
36	SK-3700	Decal	1
37	SK-3715	Data Decal	1
38	DE3-9	Terminal Block Assembly	1
39	DE8-58	Selector Switch Assembly	2
40	DE8-64	Pushbutton Assembly - Start	1
41	DE8-65	Pushbutton Assembly - Stop	1
42	DE8-62	Pilot Light Assembly - Yellow	1
43	DE8-61	Pilot Light Assembly - Red	1
44	DE9-43	Circuit Breaker (5A)	1
45	DE3-3	Terminal Block Assembly	1
46	DE8-60	Contact Block - NC	1
47	DE1-123	Auxiliary Contact - NC	1
48		<b>Fuse (250 VA Transformer Primary)</b>	2
	DE9-169	460V, FNQ-R-1.8	
	DE9-170	380V, FNQ-R-2	
	DE9-174	220V - 230V, FNQ-R-3.5	
	DE9-175	208V, FNQ-R-4	

**SK-3126 : Control Panel Layout (AC Drive)**

ITEM	PART NO.	DESCRIPTION	QTY
49	DE3-152	Power Distribution Block	1
50	DE9-186	Fuse Block (Single Point Connection)	1
51	DE2-60	Overload Base	AR
52	DE8-59	Contact Block, NO	1
53	-	Fuse Single Point Connection	3
<b>PARTS NOT SHOWN</b>			
-		<b>Electric Immersion Heater (5kW)</b>	3
	DE13-SD73	440 - 480 V, 3 PH	
	DE13-SD53	380 V, 3 PH	
	DE13-SD43	220 - 240 V, 3 PH	
	DE13-SD23	208 V, 3 PH	
-	DE5-70	Stop Pushbutton Station	1
-	DE9-252	Temperature Sensor	1

<b>FUSE REQUIREMENTS</b>				
	208 V	230 V	380 V	460 V
<b>TRAC 321</b>				
2 HP Wash Pump	15 A	15 A	10 A	6 A
3 HP Wash Pump	20 A	15 A	10 A	10 A
<b>TRAC 321 RPW</b>				
2 HP Wash Pump	15 A	15 A	10 A	10 A
3 HP Wash Pump	20 A	20 A	15 A	10 A

<b>FUSE PART NO.</b>		
6 A	FNQ-R-6	DE9-177
10 A	FNQ-R-10	DE9-181
15 A	FNQ-R-15	DE9-183
20 A	FNQ-R-20	DE9-184
25 A	FNQ-R-25	DE9-220

**SK-3805 : Control Panel Layout Security Pkg (AC Drive)**


REV N - 03/08/18

FUSE REQUIREMENTS				
	208 V	230 V	380 V	460 V
<b>TRAC 321</b>				
2 HP Wash Pump	15 A	15 A	10 A	6 A
3 HP Wash Pump	20 A	15 A	10 A	10 A
<b>TRAC 321 RPW</b>				
2 HP Wash Pump	15 A	15 A	10 A	10 A
3 HP Wash Pump	20 A	20 A	15 A	10 A

FUSE PART NO.		
6 A	FNQ-R-6	DE9-177
10 A	FNQ-R-10	DE9-181
15 A	FNQ-R-15	DE9-183
20 A	FNQ-R-20	DE9-184
25 A	FNQ-R-25	DE9-220

**SK-3805 : Control Panel Layout Security Pkg (AC Drive)**

ITEM	PART NO.	DESCRIPTION	QTY
1	SK-3806	Component Mounting Plate	1
2	DE6-9	Control Transformer (150 VA, 24 VAC)	1
3	DE9-185	Fuse Block, 2 Pole	1
4		<b>Fuse (150 VA Transformer Primary)</b>	2
	DE9-167	460V, FNQ-R-1	
	DE9-199	380V, FNQ-R-1.25	
	DE9-170	220V - 230V, FNQ-R-2	
	DE9-171	208V, FNQ-R-2.25	
5		<b>Overload Relay (1/2 HP Prewash Pump)</b>	1
	DE2-50	460/3/60 1 - 1.7A	
	DE2-50	380/3/50 1 - 1.7A	
	DE2-52	230/3/60 1.6 - 2.5A	
	DE2-52	220/3/50 1.6 - 2.5A	
	DE2-54	220/1/60 4 - 6A	
	DE2-52	208/3/60 1.6 - 2.5A	
6		<b>Overload Relay (2 HP Wash Pump)</b>	1
	DE2-53	460/3/60 2.5 - 4A	
	DE2-53	380/3/50 2.5 - 4A	
	DE2-55	230/3/60 5.5 - 8A	
	DE2-55	220/3/50 5.5 - 8A	
	DE2-57	220/1/60 9 - 13A	
	DE2-55	208/3/60 5.5 - 8A	
7		<b>Overload Relay (3 HP Wash Pump)</b>	1
	DE2-54	460/3/60 4 - 6A	
	DE2-54	380/3/50 4 - 6A	
	DE2-56	230/3/60 7 - 10A	
	DE2-56	220/3/50 7 - 10A	
	DE2-58	220/1/60 12 - 18A	
	DE2-56	208/3/60 7 - 10A	
8		<b>Contactors (15 kW Electric Wash Tank Heat)</b>	1
	DE1-109	460/3/60 30 A RES	
	DE1-109	380/3/50 30 A RES	
	DE1-110	230/3/60 50 A RES	
	ED1-110	220/3/50 50 A RES	
	DE1-95	220/1/60 EEC80-G	
	DE1-110	208/3/60 50 A RES	
9	D309C-GC-4G	Grounding Stud	1
10	D313C-G5	Lockwasher, 1/4"	1
11	D312C-GC-2	Hex Nut, 1/4-20	1
13	DE1-93	Contactors (Motors) All 3 Phase CC18	1
14	DE2-37	Relay Base	3
15	DE2-38	Relay	3

**SK-3805 : Control Panel Layout Security Pkg (AC Drive)**

ITEM	PART NO.	DESCRIPTION	QTY
16	DE3-43	Relay Hold Down Spring	3
17	DE9-84	DIN Rail (35 mm)	1
18	DE3-42	DIN Rail (15 mm)	1
19	DE3-39	Terminal Section	AR
20	DE3-40	Terminal End Cover Plate	1
21	DE3-41	Terminal End Clamp	2
22	DE9-251	Temperature Control Board	1
25		<b>Overload Relay (1/15 HP Conveyor Drive)</b>	1
	DE2-91	460/3/60 .16 - .25A	
	DE2-91	380/3/50 .16 - .25A	
	DE2-92	230/3/60 .25 - .40A	
	DE2-92	220/3/50 .25 - .40A	
	DE2-92	208/3/60 .25 - .40A	
	DE2-49	115/1/60 .63 - 1A	
26	DE8-59	Contact Block - NO	1
27	DE7-35	Timer (Liquid Level)	1
28	DE9-247	Control Box, 20 x 16 x 6	1
29	DE2-60	Overload Base	AR
34	DE3-9	Terminal Block Assembly	1
35	DE8-58	Selector Switch Assembly	1
36	DE8-64	Pushbutton Assembly - Start	1
37	DE8-65	Pushbutton Assembly - Stop	1
38	DE8-62	Pilot Light Assembly - Yellow	1
39	DE8-61	Pilot Light Assembly - Red	1
40	DE9-43	Circuit Breaker (5A)	1
41	DE3-3	Terminal Block Assembly	1
42	SK-3715	Data Decal	1
43	DE1-123	Auxiliary Contact - NC	1
45	DE3-152	Power Distribution Block	1
47	DE9-186	Fuse Block (Single Point Connection)	1
48	-	Fuse (Single Point Connection)	3
<b>PARTS NOT SHOWN</b>			
-		<b>Electric Immersion Heater (5kW)</b>	3
	DE13-SD73	440 - 480 V, 3 PH	
	DE13-SD53	380 V, 3 PH	
	DE13-SD43	220 - 240 V, 3 PH	
	DE13-SD23	208 V, 3 PH	
-	DE5-70	Stop Pushbutton Station	1
-	DE9-231	Optional Audible Conveyor Jam Alarm	1
-	DE9-252	Temperature Sensor	1



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