



TECHNICAL MANUAL
Door Type Dishwashing Machine

Commander 18-6

18-6

18-6C

18-6H

18-6HC

18-6VG

18-6HVG

Installation, Operation and Maintenance Instructions

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

800-344-4802

Fax 215-624-6966

www.insingermachine.com

Thank you for purchasing this quality Insinger product.

On 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.

A Service Network Listing is provided on our web site, www.insingermachine.com or call Insinger at 800-344-4802 for your local authorized servicer.

For proper activation of the Insinger Limited Warranty a SureFire™ Start-Up & Check-Out Service should be completed on your machine. Refer to the Introduction section in this manual for an explanation of Insinger SureFire™ Start-Up & 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 by phone, fax or the internet or for answers to question concerning installation, operation, or service contact our Technical Services Department:

TECHNICAL SERVICE CONTACTS	
Toll-Free	800-344-4802
Fax	215-624-6966
e-mail	service@insingermachine.com
Web site	www.insingermachine.com

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 Project _____ CSI - 11400 _____
 Item _____ Approval _____
 Quantity _____ Date _____

COMMANDER 18-6

Automatic Single Tank Door Type Dishwasher

- Automatic door type, single tank dishwasher with timed wash and rinse cycle
- 0.72 gallon/rack
- Capacity is 65- 20" x 20" racks per hour or 1625 dishes per hour
- Fully automatic operation
- RackAware™ Automatic Rack Sensing System only runs a cycle when a rack is present
- Selectable 2 minute extended wash cycle
- Field convertible straight through to corner
- Digital temperature indicators for wash and rinse temperature



RackAware™ Automatic Rack Sensing System* only runs a cycle when a rack is present

STANDARD FEATURES

- SureFire® Start-Up & Check-Out Service
- Non-proprietary commercially available pump motor and parts
- "Easy Clean" front-mounted wash tank
- Tank heat: electric immersion heater or steam injectors
- Top-mounted NEMA 12 control panel
- Single point electrical connection: motor, controls, heater and optional built-in booster (when selected)
- Door safety switch
- Low water protection
- Override switches for de-liming and extended wash cycle on front control panel
- Vent fan connection provision
- Easy-glide doors
- Detergent connection provision
- Manifold clean-out brush
- S/S frame, legs and feet
- S/S front panel
- End caps/pipe plugs secured to prevent loss

OPTIONS

- VaporGuard™ Condensation Removal System (refer to VaporGuard accessory sheet for information)
- Pressure reduction valve and line strainer
- Stainless steel steam coil tank heat
- Steam booster
- Built-in electric booster
- Remote electric booster
- Security package
- Totally enclosed motor
- Door activated drain closer
- Plastic 20" x 20" racks (plate or silver)
- Drain quench system

Commander 18-6

AUTOQUOTES



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COMMANDER 18-6

Automatic Single Tank Door Type Dishwasher

Capacity Per Hour	65 racks 1625 dishes 80-160 meals		
Tank Capacity	6.4 gallons		
Motor Size	1 hp (wash)		
Electric Usage	5.0 Kw 208v 5.0 Kw 240v 5.0 Kw 380v 5.0 Kw 480v		
	Built-in booster 40° - 70° rise 10.1 Kw 208v 13.5 Kw 240v 13.5 Kw 380v 13.5 Kw 480v		
Steam Consumption at 20 psi min.	11 lbs./hour tank 22 lbs./hour booster 40° rise 43 lbs./hour booster 70° rise		
	6.0 Kw remote booster 40° rise 12.0 Kw remote booster 70° rise		
Final Rinse Peak Flow at 20 psi min.	4.36 gallons/minute		
Final Rinse Consumption at 20 psi min.	47 gallons/hour 0.72 gallons/rack		
Exhaust Hood Requirement	500 cfm		
Peak Rate Drain Flow	9 gallons/minute		
Shipping Weight	400 lbs.		
Current Draw Amps	Steam	Electric w/o booster	Electric w/ built-in booster
208/1/60	9.3	33.3	81.9
240/1/60	8.1	28.9	85.2
208/3/60	5.1	19	47
240/3/60	4.2	16.2	48.7
480/3/60	2.3	8.3	24.5
380/3/50	2.8	10.4	30.9

Note: Due to product improvement we reserve the right to change information and specifications without notice.

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 or bronze.

DOORS- Three (both sides and front) simultaneously opening doors. Operating doors have fingertip control, balanced by externally mounted springs. (Corner installations have two simultaneously opening doors at right angles.) All doors have easy-glide strips. Extra large die formed type 304 S/S doors ride in all S/S channels. A triple ply leading edge on the door channels made of S/S.

PUMP- Centrifugal type "packless" pump with a brass petcock drain. 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. One 1 hp motor, standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

CONTROLS- Top mounted control cabinet, NEMA 12 rated, housing motor controls and overload protection, transformer, contactors and all dishwasher integral controls. Integrated rack sensing system.

SPRAY SYSTEM- Wash and rinse spray systems made of type 304 stainless steel pipe threaded into cast hub assemblies. Upper and lower wash and rinse spray assemblies are removable without the use of tools.

WASH- 2 power spinning wash arms above and 2 power spinning wash arms below. On top, each wash arm is designed with 8 nozzles (16 total). On the bottom, each wash arm is designed with 4 slots (8 total). The slots are precision milled for water control and produce a fan spray.

FINAL RINSE- 2 power spinning rinse arms above and 2 power spinning wash arms below. On top, each rinse arm is designed with 2 nozzles (4 total). On the bottom, each rinse arm is designed with 4 nozzles (8 total). The nozzles 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.


 Project _____ CSI - 11400 _____
 Item _____ Approval _____
 Quantity _____ Date _____

COMMANDER 18-6H

Automatic Extra High Single Tank Door Type Dishwasher

DESIGN

- Automatic door type, single tank dishwasher with timed wash and rinse cycle
- 0.72 gallon/rack
- Capacity is 65- 20" x 20" racks per hour or 1625 dishes per hour
- Fully automatic operation
- RackAware™ Automatic Rack Sensing System* only runs a cycle when a rack is present
- Selectable 2 minute extended wash cycle
- Handles mixer agitators, 18" x 26" sheet pans, utensils & mixing bowls up to 60 quarts
- Field convertible straight through to corner
- Digital temperature indicators for wash and rinse temperature



RackAware™ Automatic Rack Sensing System* only runs a cycle when a rack is present

STANDARD FEATURES

- Door safety switch
- Detergent connection provision
- Fully automatic operation
- Non-proprietary commercially available pump motor
- Easily removable pump suction strainer
- Tank heat: 5 Kw electric immersion heater or steam injector
- SureFire® Start-Up & Check-Out Service
- Easy-glide doors
- Single point electrical connection: motor, controls, heater and optional built-in booster (when selected)
- Top-mounted NEMA 12 control panel
- "Easy Clean" front-mounted wash tank
- Manifold clean-out brush
- S/S frame, legs and feet
- S/S front panel
- Automatic tank fill
- Low water protection
- Override switches for de-liming and extended wash cycle on front control panel
- Vent fan connection provision
- End caps/pipe plugs secured to prevent loss


Commander 18-6H

OPTIONS

- VaporGuard™ Condensate Removal System* (Refer to VaporGuard accessory sheet for information)
- Pressure reduction valve and line strainer
- Stainless steel steam coil tank heat
- Steam booster
- Built-in electric booster
- Remote electric booster
- Security package
- Totally enclosed motor
- Door activated drain closer
- Plastic 20" x 20" racks (plate or silver)
- Drain quench system

*Patent Pending

AUTOQUOTES



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COMMANDER 18-6H

Automatic Extra High Single Tank Door Type Dishwasher

Capacity Per Hour	65 racks 1625 dishes 80-160 meals		
Tank Capacity	6.4 gallons		
Motor Size	2 hp (wash)		
Electric Usage	5.0 Kw Built-in booster 40° or 70° rise 10.1 Kw 208v 13.5 Kw 240v 13.5 Kw 380v 13.5 Kw 480v 6.0 Kw remote booster 40° rise 12.0 Kw remote booster 70° rise		
Steam Consumption at 20 psi min.	18 lbs./hour tank 22 lbs./hour booster 40° rise 43 lbs./hour booster 70° rise		
Final Rinse Peak Flow at 20 psi min.	4.36 gallons/minute		
Final Rinse Consumption at 20 psi min.	47 gallons/hour 0.72 gallons/rack		
Exhaust Hood Requirement	400 cfm		
Peak Rate Drain Flow	9 gallons/minute		
Shipping Weight	600 lbs.		
Current Draw Amps	Steam	Electric w/o booster	Electric w/ built-in booster
208/1/60	13.7	32.0	80.5
240/1/60	11.9	33.3	89.5
208/3/60	8.0	21.9	49.9
240/3/60	7.2	19.2	51.7
480/3/60	3.6	9.6	25.9
380/3/50	4.4	12.0	32.6

Note: Due to product improvement we reserve the right to change information and specifications without notice.

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 or bronze.

DOORS- Three (both sides and front) simultaneously opening doors. Operating doors have fingertip control, balanced by externally mounted springs. (Corner installations have two simultaneously opening doors at right angles.) All doors have easy-glide strips. Extra large die formed type 304 S/S doors ride in all S/S channels. A triple ply leading edge on the door channels made of S/S.

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CONTROLS- Top mounted control cabinet, NEMA 12 rated, housing motor controls and overload protection, transformer, contactors and all dishwasher integral controls. Integrated rack sensing system.

SPRAY SYSTEM- Wash and rinse spray systems made of type 304 stainless steel pipe threaded into cast hub assemblies. Upper and lower wash and rinse spray assemblies are removable without the use of tools.

WASH- 2 power spinning wash arms above and 2 power spinning wash arms below. On top, each wash arm is designed with 8 nozzles (16 total). On the bottom, each wash arm is designed with 4 slots (8 total). The slots are precision milled for water control and produce a fan spray.

FINAL RINSE- 2 power spinning rinse arms above and 2 power spinning wash arms below. On top, each rinse arm is designed with 2 nozzles (4 total). On the bottom, each rinse arm is designed with 4 nozzles (8 total). The nozzles 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.

**COMMANDER 18-6 DOOR TYPE
DISHWASHER SERIES****INTRODUCTION****Purpose**

The purpose of this technical manual is to provide installation, operation, cleaning and maintenance directions.

A section is provided for replacement parts.

Scope

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the Insinger Commander Series dishwashers.

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 parts sections are intended for qualified service and/or maintenance technicians. Replacement parts may be ordered directly from our factory or from your local Insinger Authorized Service Agency. You can speak to the Insinger Technical Services Department, 800/344-4802, or e-mail us at service@insingermachine.com. When calling for warranty information or replacement parts please provide the model and serial number of your Insinger Equipment. These important numbers should be noted in this manual on the spaces provided on the opening page.

Surefire™ Start-up & Check-out 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 at optimum levels from the very first pass. Please call the factory or your local Insinger Sales Representative to schedule this service.

NSF 3-2008 requirements for detergent and chemical sanitizer dispensers.

This machine must be operated with an automatic detergent dispenser 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 and sanitizing systems. Please see instructions for electrical and plumbing connections located in this manual and in the feeder equipment manual.

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:

**NOTE:**

Indicates helpful operating hints or tips.

**WARNING:**

Indicates potential physical danger.

CAUTION:

Indicates potential equipment damage.

Door Type Dishwashing Machine

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 high voltage supply turned on. Under certain conditions, dangerous potentials may exist when the power control is in the off position. To avoid casualties, always remove power, red tag 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.

INSINGER MACHINE COMPANY LIMITED WARRANTY- COMMERCIAL MARINE USE

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 (installation manual), then for a period of 15 months from the date of installation on board the vessel, that said Insinger product shall be free from defects in material and workmanship.

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

This limited warranty shall be limited to the 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. Furnish serial number of machine with shipment and send to:

Insinger Machine Company, Inc.
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. If part damages are not covered, Insinger will contact the customer and advise.

If a factory trained authorized technician is required to repair or replace defective parts or material during the 18 month warranty period, the cruise line will be responsible for the payment of travel expense and a minimum of four hours labor.

Labor will be billed to the customer at a reduced rate of \$40.00 per hour. If sailing with a vessel is required, then an eight hour per day minimum will apply.

This limited warranty does not cover accident, abuse, misuse, alteration, misapplication, improper installation, fire, flood, 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, caring and or cleaning process.

Warranty service must be done by either Insinger Appointed Service Agencies or agencies, customers galley engineers receiving 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 merchantability and fitness or limited warranties as the above date.

Insinger does not authorize any person or company locally or overseas 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.

INSTALLATION INSTRUCTIONS
Commander 18-6 Series & CS Series
Placement

Carefully uncrate machine. Take caution not to damage components which may be mounted on the top or sides of the machine. Set unit in place and adjust the feet to level 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.

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.

A single-point electrical connection is provided for the pumps, control circuit, and wash tank heater.

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

If the Insinger Self-Contained booster is provided the machine comes standard with a Single-Point Connection (to include the booster).

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.

Fuse Sizing Chart

Model	208VAC/3PH	240VAC/3PH	380VAC/3PH	480VAC/3PH	220VAC/1PH
18-6 (C) Steam heat	10A	10A	6A	6A	15A
18-6 (C) Electric heat	20A	20A	10A	10A	35A
18-6 (C) Electric heat Insinger SCB	60A	50A	30A	25A	90A
18-6H (C) Steam heat	10A	10A	10A	6A	20A
18-6H (C) Electric heat	25A	25A	15A	15A	40A
18-6H (C) Electric heat Insinger SCB	60A	60A	35A	30A	100A

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

Connect hot water (see specific unit info) lines for tank fill/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 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.

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:

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

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 must be sized to provide adequate ventilation per machine specs. Refer to spec sheet.

Chemicals

Upon the completed installation of the dishwasher, contact a local detergent/chemical supplier for the correct chemicals for your soil load and geographical area.

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

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

CAUTION:

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

The detergent density probe should be installed in the hole provided & labeled in the wash tank. A switch on the control panel labeled "De-lime" is provided for delimiting the machine. When activated, this switch will keep the machine in an indefinite wash cycle. A switch on the control panel labeled "Heavy Cycle" provide an extended 2 minute wash cycle.

Tabling

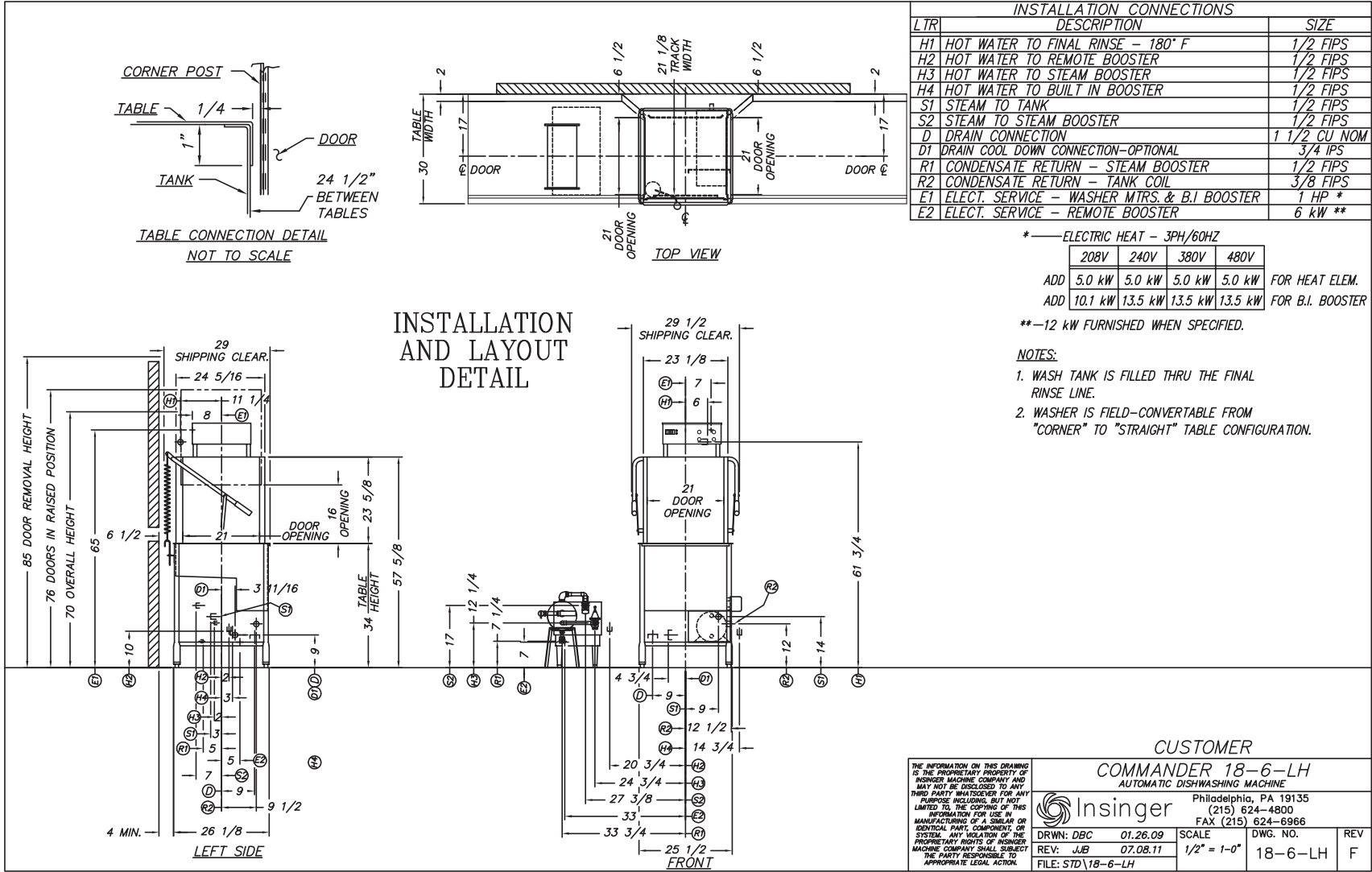
Load and unload tables should be pitched towards the machine to return excess water into the machine.

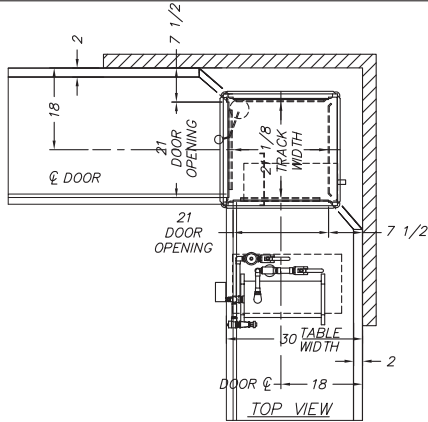
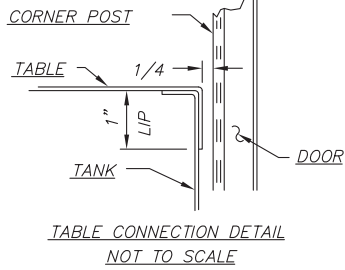
Insinger dishmachines are user-friendly, making them easy to operate and maintain. By following the operation procedure and general cleaning procedures your Insinger dishwasher will give you years of trouble free service.



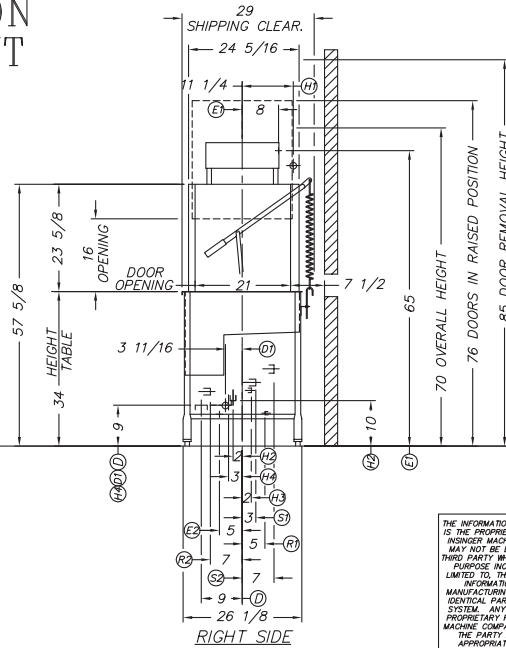
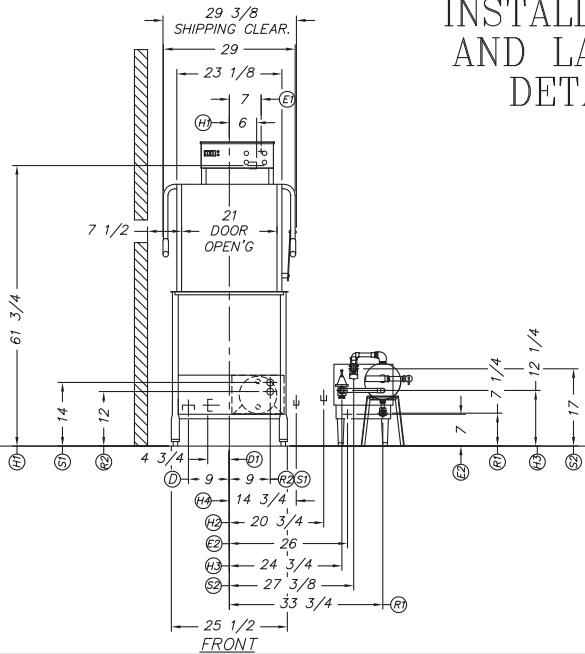
Insinger®

PART 2 INSTALLATION INSTRUCTIONS





INSTALLATION AND LAYOUT DETAIL



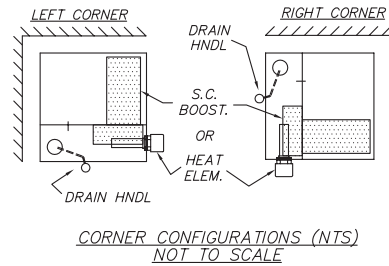
INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
H1	HOT WATER TO FINAL RINSE - 180° F	1/2 FIPS
H2	HOT WATER TO REMOTE ELEC. BOOSTER	1/2 FIPS
H3	HOT WATER TO STEAM BOOSTER	1/2 FIPS
H4	HOT WATER TO BUILT IN BOOSTER	1/2 FIPS
S1	STEAM TO TANK	1/2 FIPS
S2	STEAM TO STEAM BOOSTER	1/2 FIPS
D	DRAIN CONNECTION	1 1/2 CU NOM
D1	DRAIN COOL DOWN CONNECTION-OPTIONAL	3/4 IPS
R1	CONDENSATE RETURN - STEAM BOOSTER	1/2 FIPS
R2	CONDENSATE RETURN - STEAM COIL	3/8 FIPS
E1	ELECT. SERVICE - WASHER MTRS. + BUILT IN BOOSTER	1 HP *
E2	ELECT. SERVICE - REMOTE BOOSTER	6 kW **

* — ELECTRIC HEAT - 3PH/60HZ

	208V	240V	380V	480V	
ADD	5.0 kW	5.0 kW	5.0 kW	5.0 kW	FOR HEAT ELEM.
ADD	10.1 kW	13.5 kW	13.5 kW	13.5 kW	FOR B.I. BOOSTER

** — 12 kW FURNISHED WHEN SPECIFIED.

- NOTES:
1. WASH TANK IS FILLED THRU THE FINAL RINSE LINE.
 2. WASHER IS FIELD-CONVERTABLE FROM "CORNER" TO "STRAIGHT" TABLE CONFIGURATION.



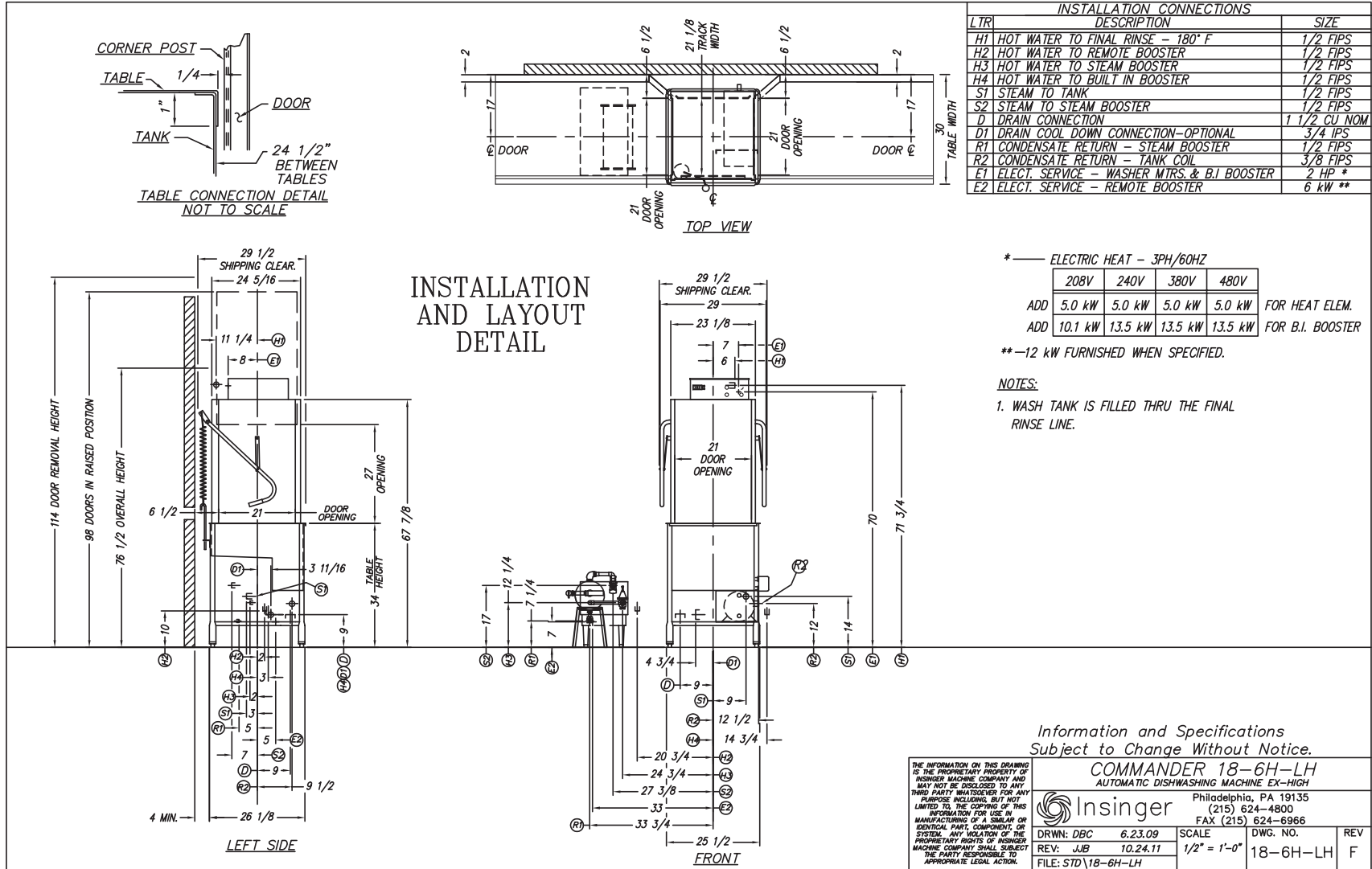
Information and Specifications
Subject to Change Without Notice.

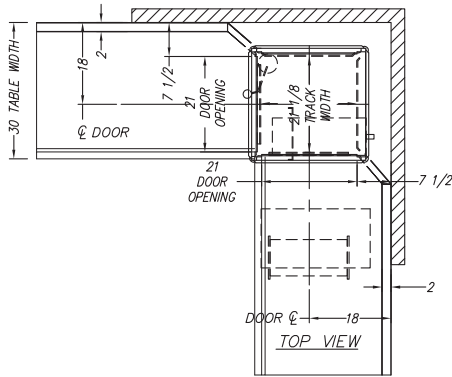
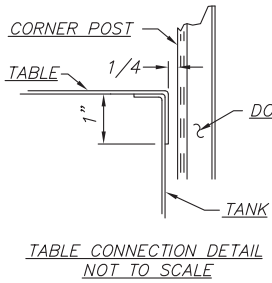
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COMMANDER 18-6C
AUTOMATIC DISHWASHING MACHINE

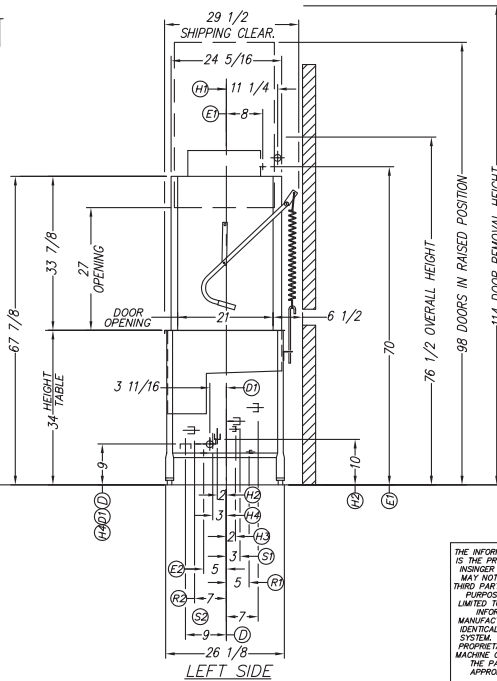
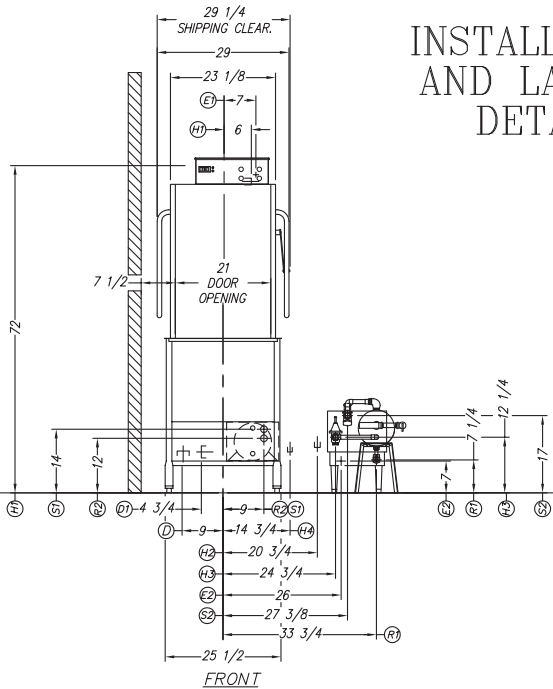
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

DRWN: DBC 01.26.09 SCALE DWG. NO. REV
REV: JJB 07.08.11 1/2" = 1-0" 18-6C F
FILE: STD\18-6C





INSTALLATION AND LAYOUT DETAIL



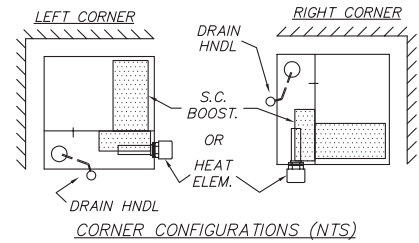
INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
H1	HOT WATER TO FINAL RINSE - 180° F	1/2 FIPS
H2	HOT WATER TO REMOTE BOOSTER	1/2 FIPS
H3	HOT WATER TO STEAM BOOSTER	1/2 FIPS
H4	HOT WATER TO BUILT IN BOOSTER	1/2 FIPS
S1	STEAM TO TANK	1/2 FIPS
S2	STEAM TO STEAM BOOSTER	1/2 FIPS
D	DRAIN CONNECTION	1 1/2 CU NOM
D1	DRAIN COOL DOWN CONNECTION-OPTIONAL	3/4 IPS
R1	CONDENSATE RETURN - STEAM BOOSTER	1/2 FIPS
R2	CONDENSATE RETURN - TANK COIL	3/8 FIPS
E1	ELECT. SERVICE - WASHER MTRS. & B.I. BOOSTER	2 HP *
E2	ELECT. SERVICE - REMOTE BOOSTER	6 kW **

* - ELECTRIC HEAT - 3PH/60HZ

208V	240V	380V	480V	
ADD 5.0 kW	5.0 kW	5.0 kW	5.0 kW	FOR HEAT ELEM.
ADD 10.1 kW	13.5 kW	13.5 kW	13.5 kW	FOR B.I. BOOSTER

** - 12 kW FURNISHED WHEN SPECIFIED.

- NOTES:
1. WASH TANK IS FILLED THRU THE FINAL RINSE LINE.
 2. WASHER IS FIELD-CONVERTABLE FROM "CORNER" TO "STRAIGHT" TABLE CONFIGURATION.



Information and Specifications
Subject to Change Without Notice.

COMMANDER 18-6HC
AUTOMATIC DISHWASHING MACHINE EX-HIGH CORNER INSTALL.

Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

DRWN: DBC	6.24.09	SCALE	DWG. NO.	REV
REV: JJB	10.24.11	1/2 = 1'-0"	18-6HC	F
FILE: STD\18-6HC				

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Insinger dishmachines are user-friendly, making them the easiest dishmachines on the market to operate and maintain.

By following these operating procedures your Insinger dishwasher will give you years of trouble free service.

OPERATION INSTRUCTIONS

1. Ensure drain overflow tube is in place. Close all tank drain valve.
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 & steam lines are open. Ensure electrical circuits are on.
4. Close machine doors.
5. Press the power switch to the ON position. The switch will light up red when on. The machine will fill the tank, run through a complete wash/rinse cycle and shut-off.
6. When the tank is full the tank heat will operate automatically. Proper wash tank temperature is 160° F minimum. Proper final rinse temperature is 180° F minimum at 20 PSI ± SPSI, while in the final rinse cycle.

CAUTION:

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

7. Open doors.
8. Insert a rack of soiled dishware in machine and lower doors. The machine is equipped with RackAware™ and will start the wash and rinse automatically. When the rinse indicator light goes off the machine cycle is complete.

CAUTION:

Overloading racks will minimize the proper cleaning of ware.



WARNING:

Do not open the doors during the wash/rinse cycle as hot water is being sprayed. An interlock is provided to stop the wash/rinse cycle if the doors are opened but hot water may spray out if doors are opened too quickly.

9. Open doors and remove rack of clean ware. For continuous operation repeat steps 7 & 8.
10. Upon completion of ware cleaning press the power switch to the "OFF" position. The switch light will go off.
11. Refer to the cleaning procedures for proper clean-up of the dishmachine.
12. A switch on the control panel labeled "De-lime" is provided for use when de-liming the machine. When activated, this switch will keep the machine in an indefinite wash cycle.
13. A switch on the control panel labeled "Heavy Cycle" will activate the extended wash cycle for heavily soiled ware.
14. Report any unusual occurrences to qualified service personnel.

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

Cleaning Procedures, Daily

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



NOTE:

V-cup seal on the drain overflow tube may become gummed not allowing the overflow tube to seal. This will cause the drain to leak water. Remove any build-up on the V-cup seal. When the seal becomes worn, replace with part #D2-557.

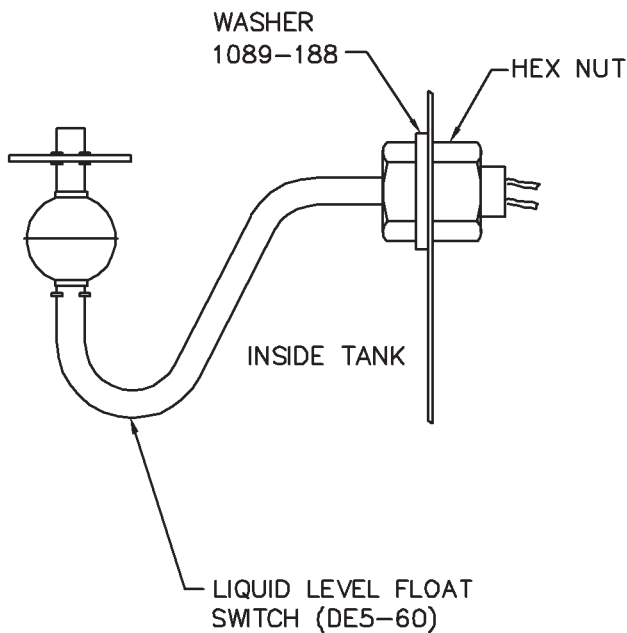
CLEANING PROCEDURES (continued)

5. Clean suction strainers of build-up.


NOTE:

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

6. Clean the tank level float with a plastic abrasive pad (do not use steel wool).


CAUTION:

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


NOTE:

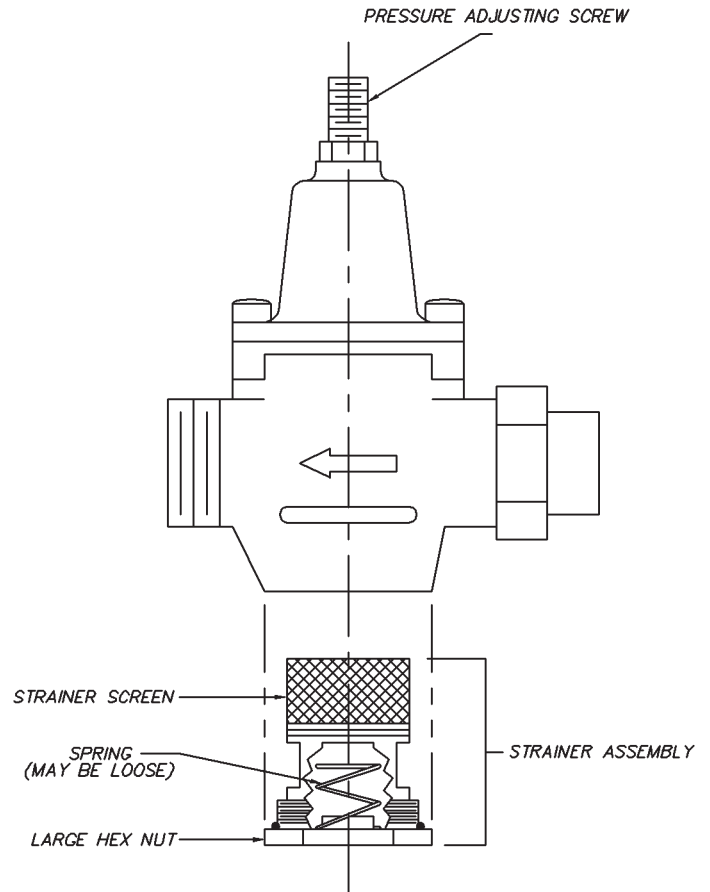
Upper and lower wash & rinse pipes are not the same.

7. Final rinse nozzles should be cleaned of matter clogging the jet spray.

8. The doors should be left open to allow drying of interior surfaces.

PRESSURE ADJUSTMENT

Pressure in the final rinse must be maintained at 20 ± 2 psi. Adjustment of the pressure is made with the adjusting screw on the pressure reducing valve.



SKETCHA\SK-4689 PRESSURE REDUCING VALVE

If there are flow or pressure problems with the pressure reducing valve, CAREFULLY remove the strainer assembly and clean the strainer screen. Be careful not to damage the Hex nut o-ring


NOTE:

The pressure reducing valve is supplied only on units equipped with optional booster

The following is a basic guide for the repair and replacement of common dishwasher parts. Refer to the Basic Services Guide for troubleshooting tips.

MAINTENANCE REQUIREMENTS

Daily

1. Refer to the operations and cleaning instructions provided in this manual for daily cleaning procedures.

Weekly

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.

Quarterly

1. Remove and clean the strainer screens on the water and steam lines. If the screens cannot be cleaned, replace.
2. Inspect the condition of the solenoid valve seats, and diaphragms. Replace where necessary.
3. Inspect drain O-Rings for leakage. Replace where necessary.
4. Check door spring tension and adjust where necessary.
5. Check wash and rinse hub bushing/bearing and replace where necessary.

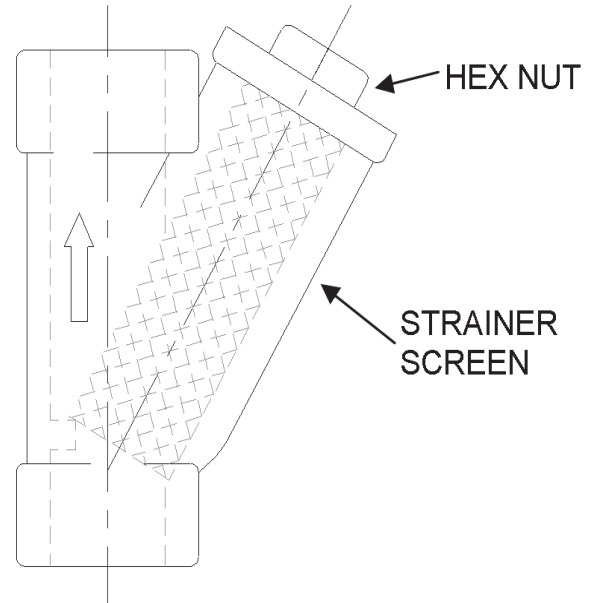
MAINTENANCE PROCEDURES

Solenoid Valve Disassembly

(See dwg. SK-4692)

1. Disconnect the power supply to the machine. Turn off the water supply.
2. Remove cap on top of the coil. Remove the coil.
3. Remove the 4 hex bolts and lift bonnet from valve body. Note positioning of spring and plunger.
4. Remove main piston.

5. Inspect for dirt, wear or lime build-up. Clean or replace as required.
6. Reassemble in reverse of disassembly.



Liner Strainer Disassembly

1. Shut off water or steam 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.



NOTE:

Supplied only on units without optional boosters.

Pump Disassembly

1. Before disassembling pump ensure there are no obstructions in the pump intake. Remove and clean the suction strainer (inside tank). See dwg. SK-2456 & SK-2923



NOTE:

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


Pump Disassembly (Continued)

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

Immersion Heater Replacement

See dwg. #SK-4703

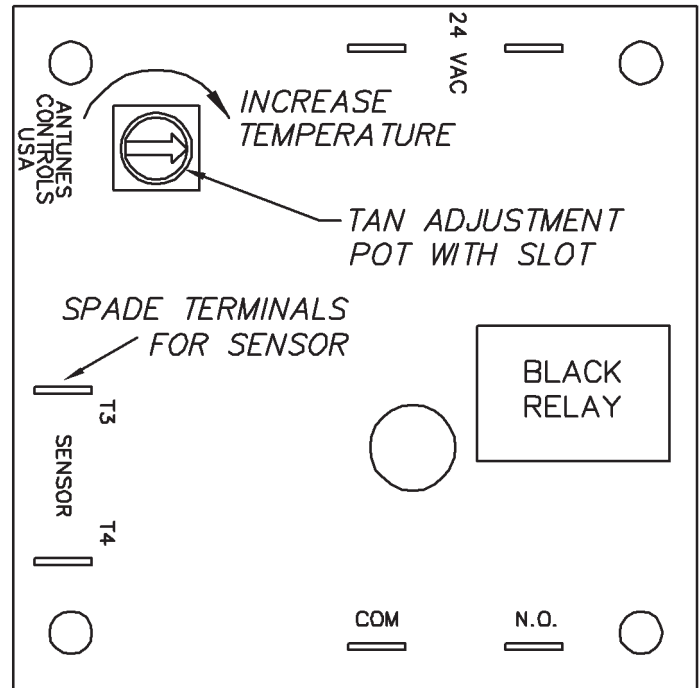
1. The immersion heater **MUST** be completely submerged at all times. If this is not the case contact a qualified service technician. The heated surface should never be in contact with sludge. See dwg. SK-4703.
2. Remove the housing covering the wiring terminations. Disconnect the immersion heater wires.
3. Remove the immersion heater by loosening and removing the large hex nut.
4. The taper side of the nut must face toward wall of tank.
5. Remount Hi-Temp cutoff switch to top heavy element. (See dwg. #1433-3).



NOTE:
Use plumbers putty as gasketing around the immersion heater to minimize leaks.

Tank Heat Temperature Adjustment

1. A temperature control board is provided in the control panel for easy adjustment of tank temperature. Though tank temperature is adjusted during the machines factory test it is sometimes necessary to re-adjust the temperature at start-up.
2. Locate the temperature control board. Use the control panel layout drawing located in Section 4, Electrical Schematic and Replacement Parts.
3. Adjust the tank temperature to the desired temperature by turning the potentiometer located on the temperature control board. An arrow on the potentiometer indicates increase.
4. If the temperature does not change refer to Troubleshooting Tank Temperatures in the next section.



TANK TEMPERATURE CONTROL BOARD
(DE9-251)

Troubleshooting Tank Temperatures
Electric Heat

1. If temperature does not change check the temperature control board (P/N DE9-251) 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 not limed. If not, replace.

Steam Heat

1. If temperature does not change check the temperature control board (P/N DE9-251) 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, replace.

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.

Using the Control Panel Component Layout Dwg. located in Section 3 to identify the overload adjust by turning the dial to the appropriate AMP draw.

When changing a motor always check OK setting against name plate FLA.

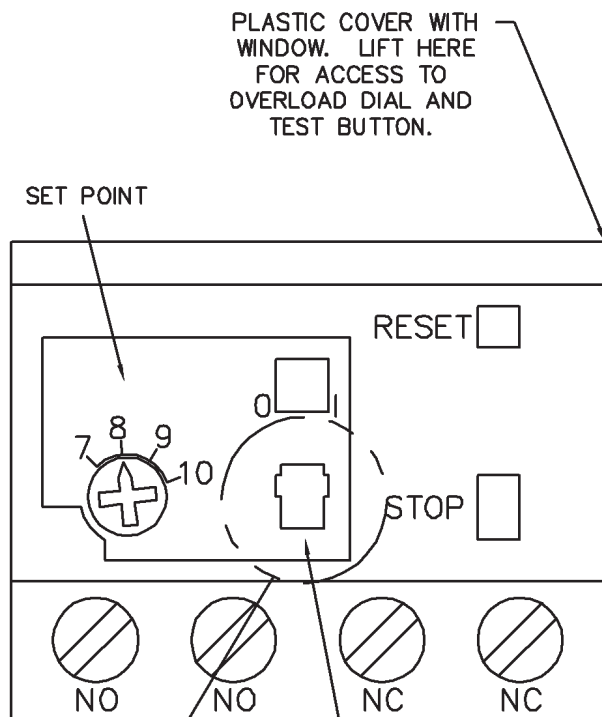
Level System

The level control system consists of one overflow timer (P/N DE7-35) and one level float (P/N DEF-60) per tank.

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

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

Also consists of a Hi-Limit switch in electric heated unit. Hi-Limit in series with float. Inspect Hi-Limit for damage. Be careful when cleaning not to damage it.



PLASTIC COVER WITH WINDOW. LIFT HERE FOR ACCESS TO OVERLOAD DIAL AND TEST BUTTON.

SET POINT

RESET

STOP

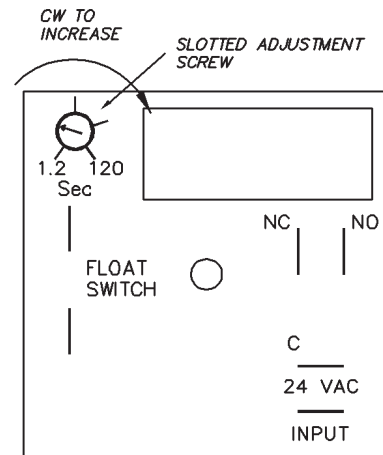
NO

NO

NC

NC

RESET SELECTOR WINDOW (AUTO RESET MODE SHOWN)



Liquid Level Timer DE7-35
Sk-4698



NOTE:

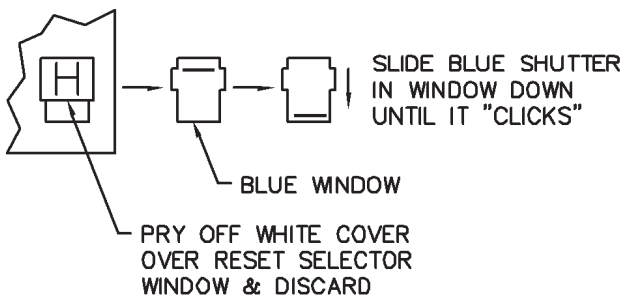
The overflow timer MUST be adjusted during initial start-up. Adjustment depends on water fill pressure. The water level MUST be 1/4" below the lip of the overflow tube. Adjust by increasing or decreasing the potentiometer on the level timer.



NOTE:

Dirty level floats will cause the tank heat to energize with no water in the tanks. LEVEL FLOATS MUST BE CLEANED DAILY.

TO CHANGE FROM MANUAL TO AUTO RESET:

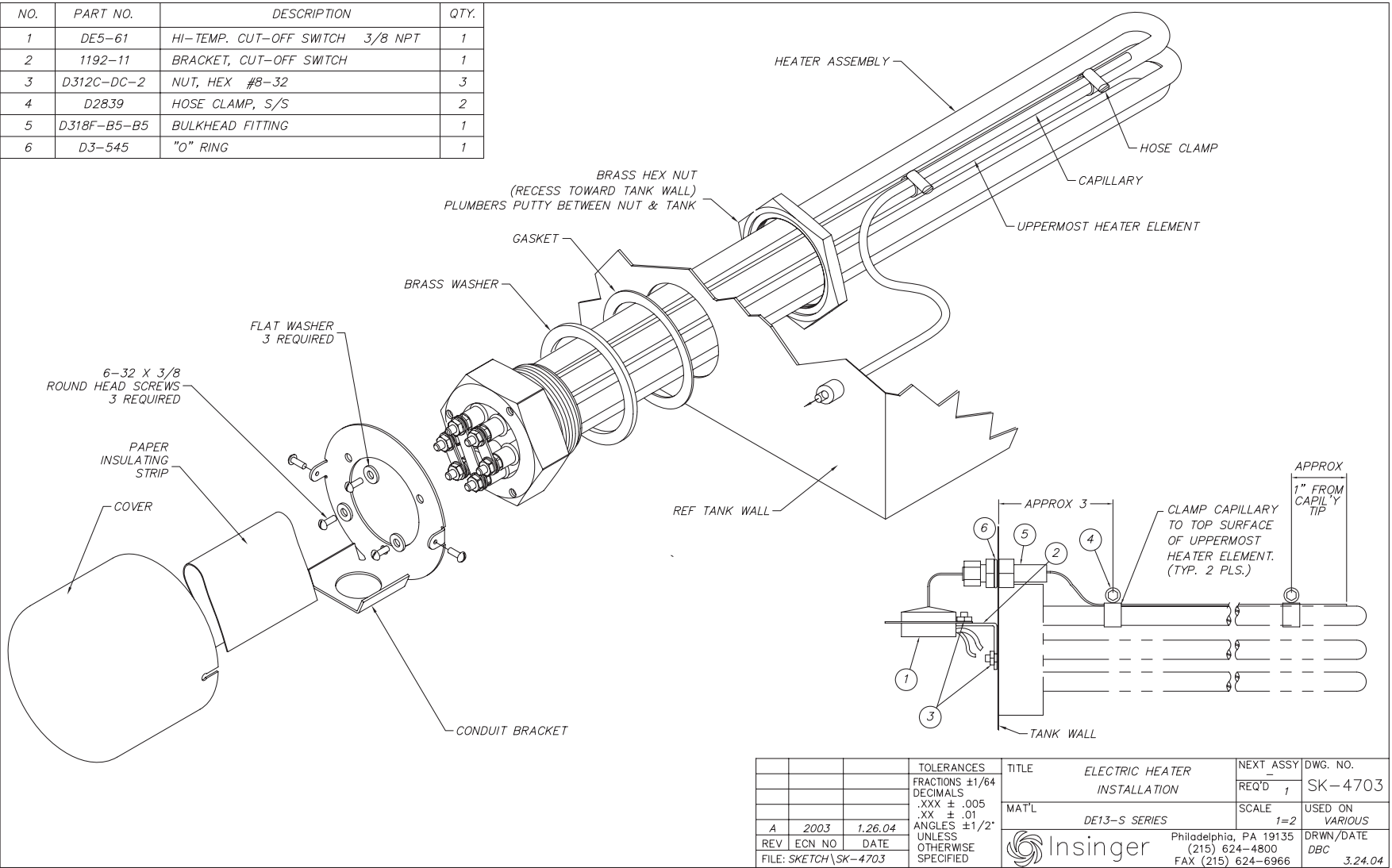




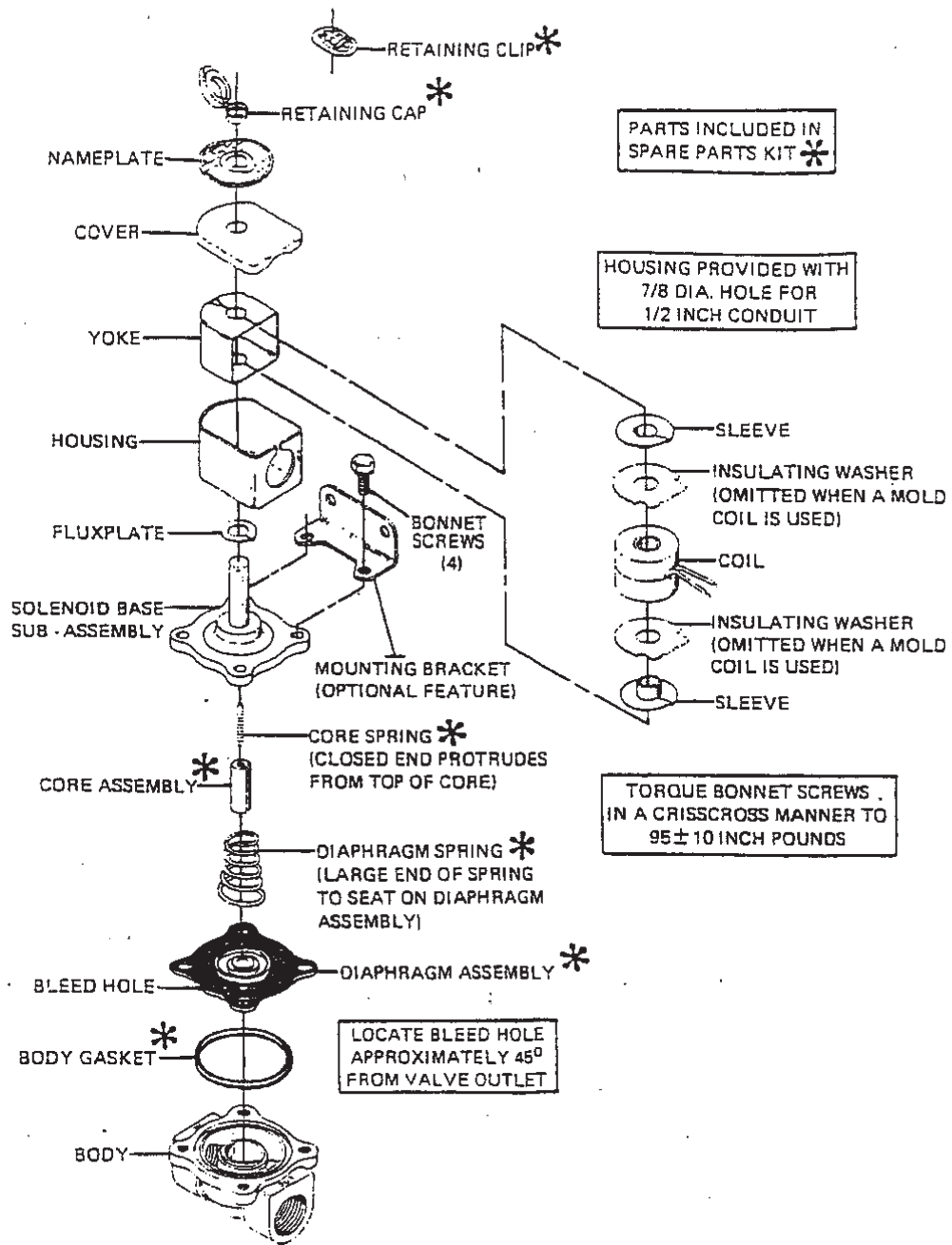
Insinger®

PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

NO.	PART NO.	DESCRIPTION	QTY.
1	DE5-61	HI-TEMP. CUT-OFF SWITCH 3/8 NPT	1
2	1192-11	BRACKET, CUT-OFF SWITCH	1
3	D312C-DC-2	NUT, HEX #8-32	3
4	D2839	HOSE CLAMP, S/S	2
5	D318F-B5-B5	BULKHEAD FITTING	1
6	D3-545	"O" RING	1



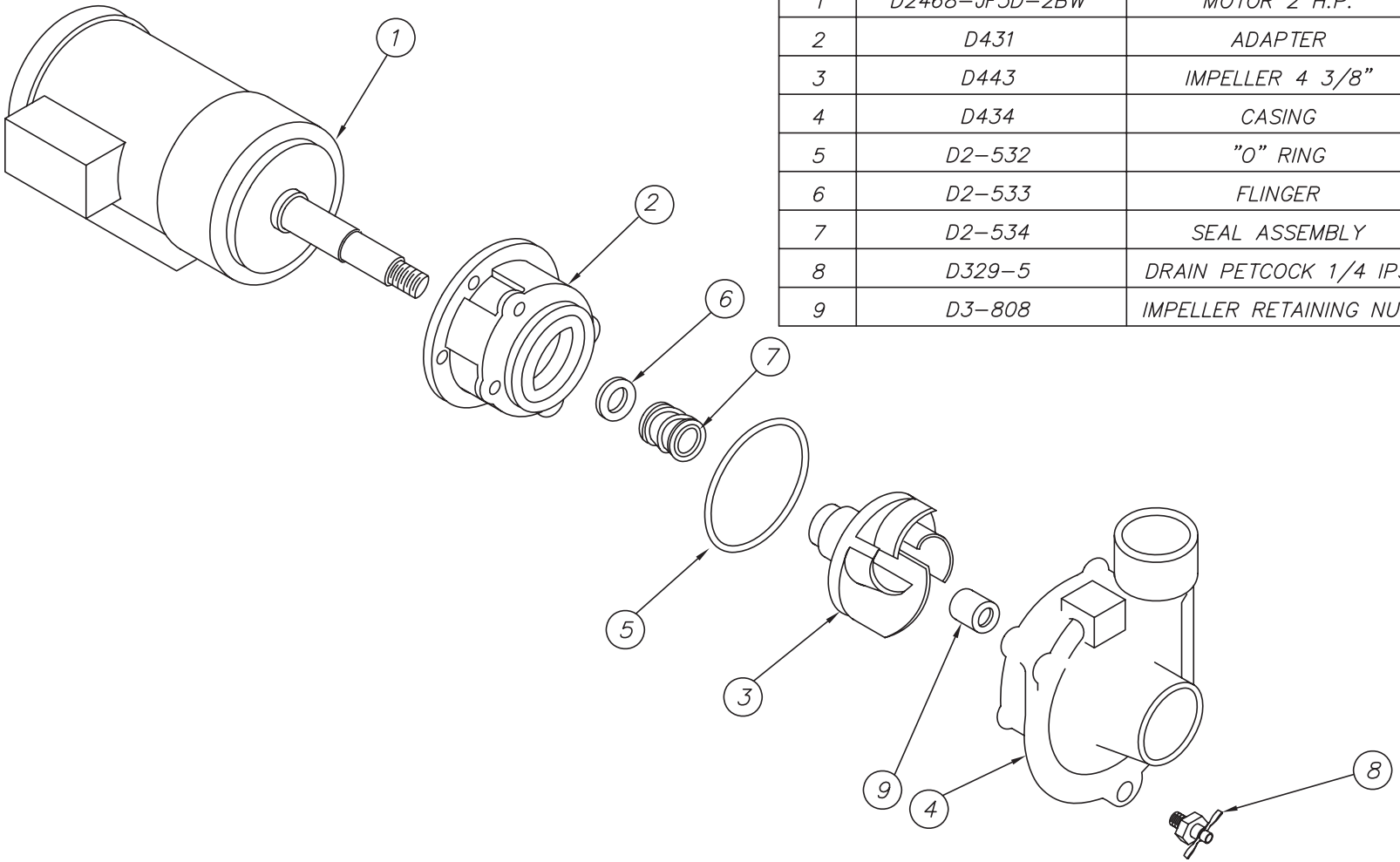
			TOLERANCES	TITLE	ELECTRIC HEATER	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	INSTALLATION		REQ'D 1	SK-4703
			DECIMALS	DE13-S SERIES		SCALE	USED ON
			.XXX ± .005			1=2	VARIOUS
			.XX ± .01				DRWN/DATE
			ANGLES ±1/2°				DBC
			UNLESS OTHERWISE SPECIFIED				3.24.04
A	2003	1.26.04			Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		
REV	ECN NO.	DATE	FILE: SKETCH\SK-4703				




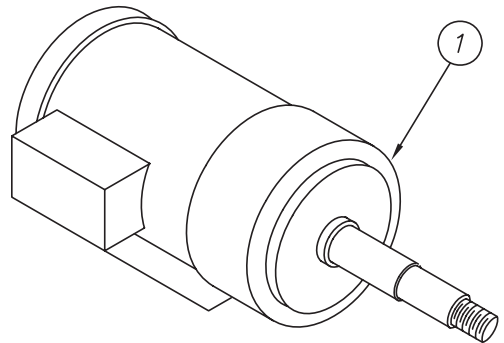
SOLENOID VALVE
FINAL RINSE
6-17

SKETCHA\SK-4692

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2468-JF3D-2BW	MOTOR 2 H.P.	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



			TOLERANCES	TITLE	PARTS LIST	NEXT ASSY	DRW. NO.
			FRACTIONS ±1/64		2 HP PUMP	REQ'D -	SK-2923
			DECIMALS	MAT'L	-	SCALE -	USED ON
B	----	4.10.06	.XXX ± .005				VARIOUS
A	966	10.29.93	.XX ± .01				
REV	ECN NO	DATE	ANGLES ±1/2°	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE MAM 11.11.93	
FILE: SKETCHA\SK-2923			UNLESS OTHERWISE SPECIFIED				



ITEM	PART NO.	DESCRIPTION	QTY.
1		MOTOR 1 H.P.	1
2	D431	ADAPTER	1
3	D436	IMPELLER 3 7/8"	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

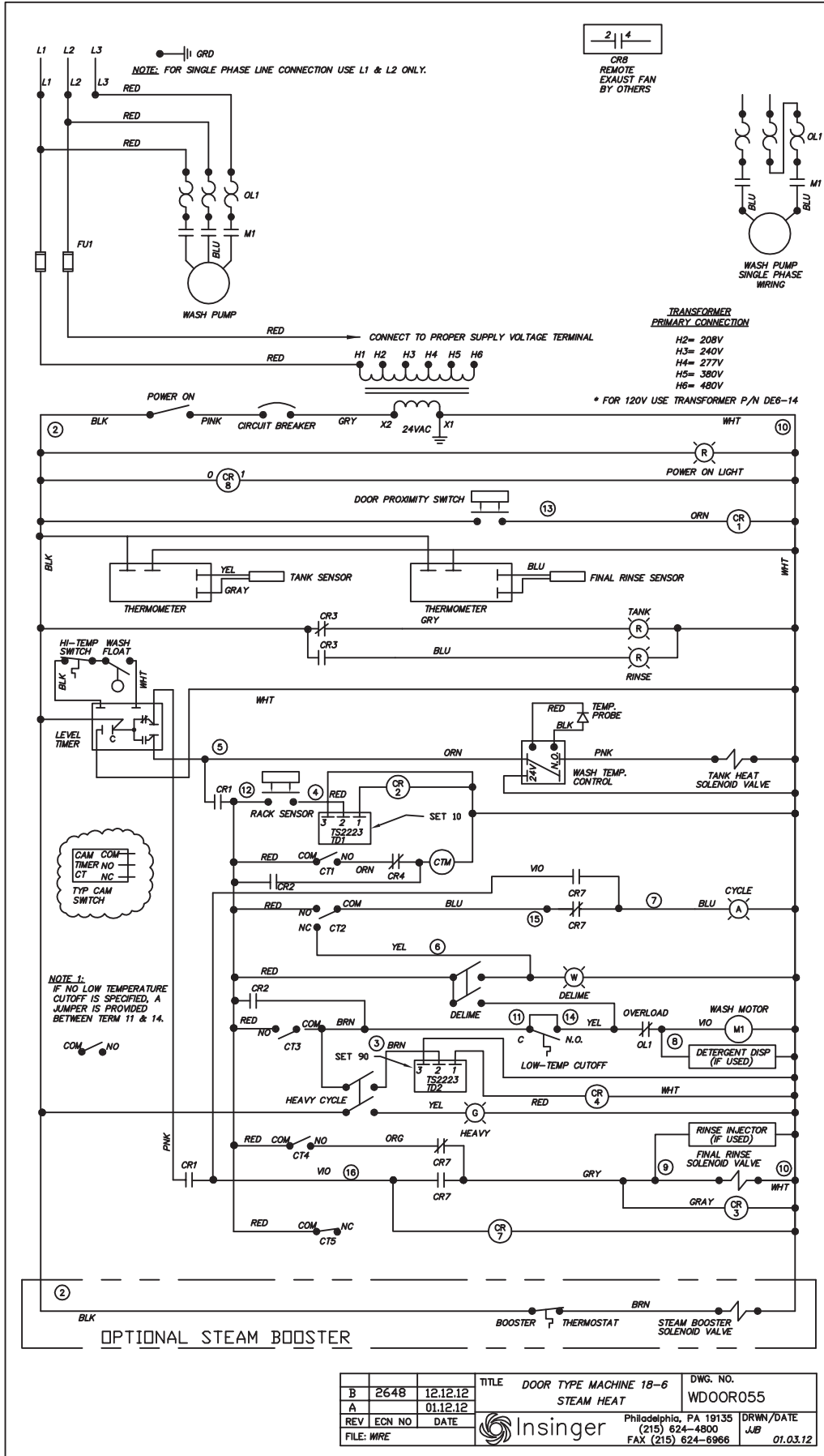
NOTE: COMPLETE PUMP & MOTOR:
 PART NO. D2465-1 - SINGLE PHASE
 D2465-3 - THREE PHASE

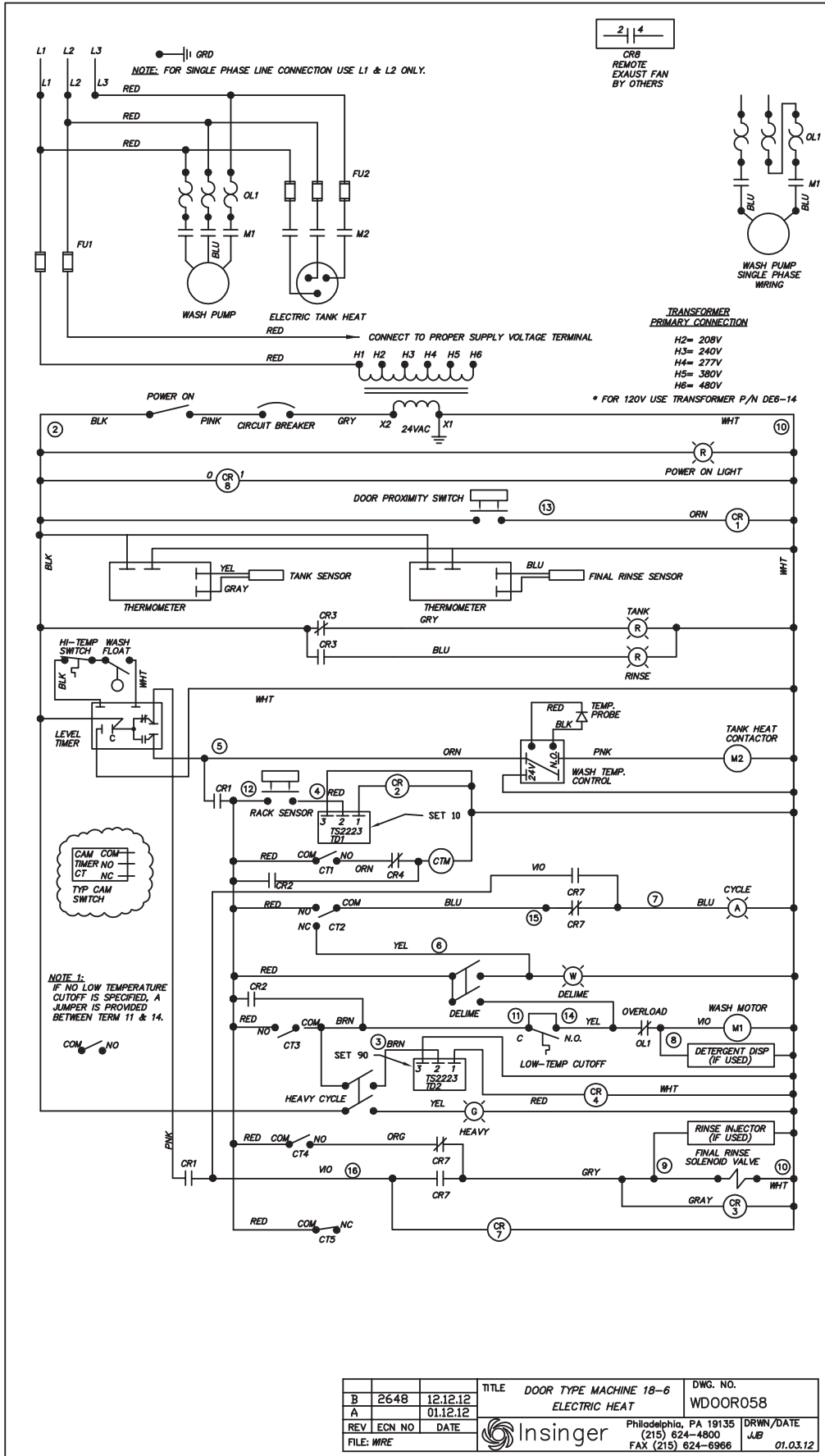
			TOLERANCES	TITLE	PARTS LIST	NEXT ASSY	DRW. NO.
			FRACTIONS ±1/64		1 HP PUMP	REQ'D -	SK-2462
			DECIMALS			SCALE -	USED ON
C	2007	3.25.04	.XXX ± .005	MAT'L	-		VARIOUS
B	1761	5.5.00	.XX ± .01	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966			DRWN/DATE
A	1005	4.26.94	ANGLES ±1/2°				MAM
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED				
FILE: SKETCHA\SK-2462							

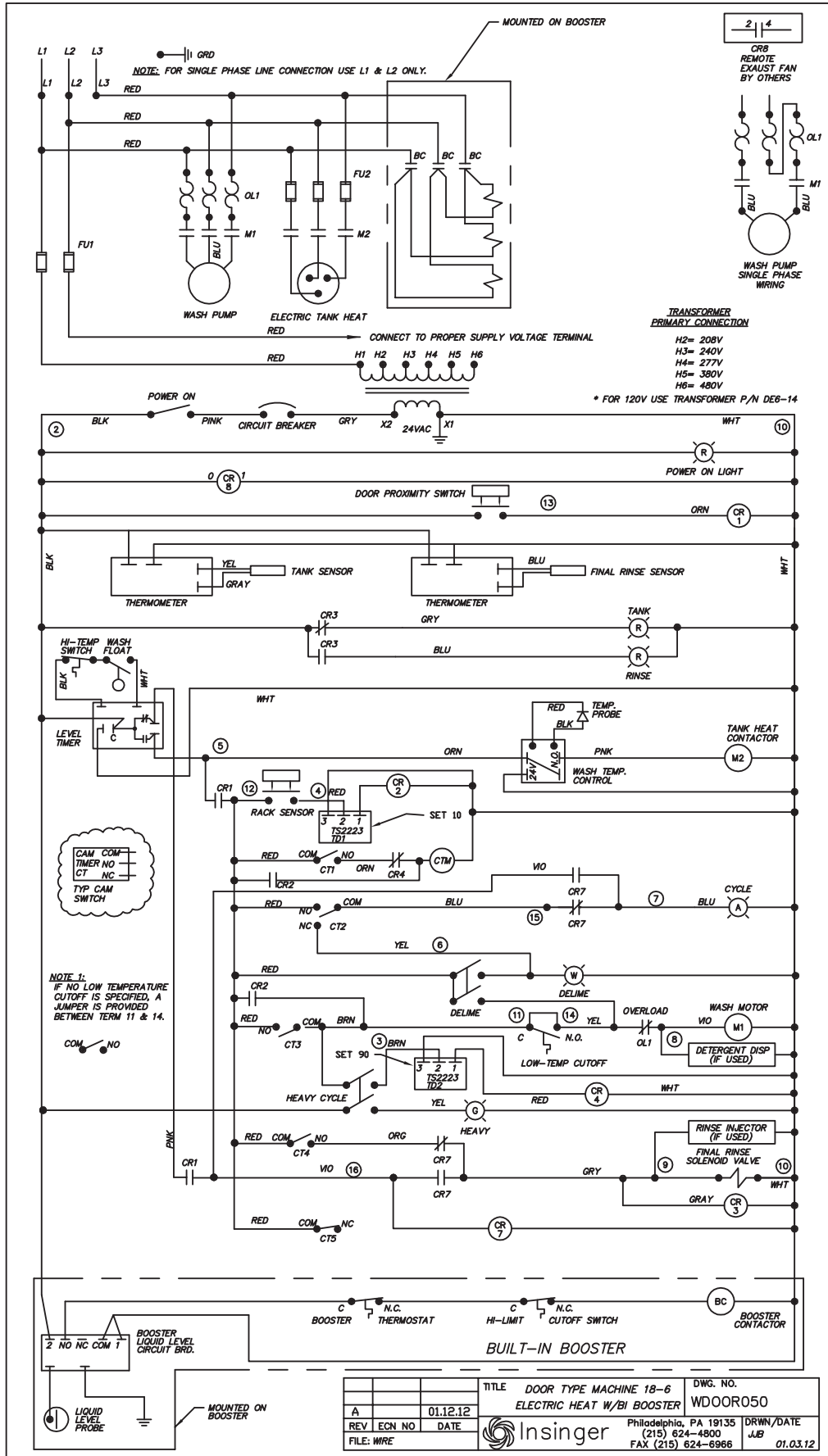


Insinger®

PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS









Insinger®

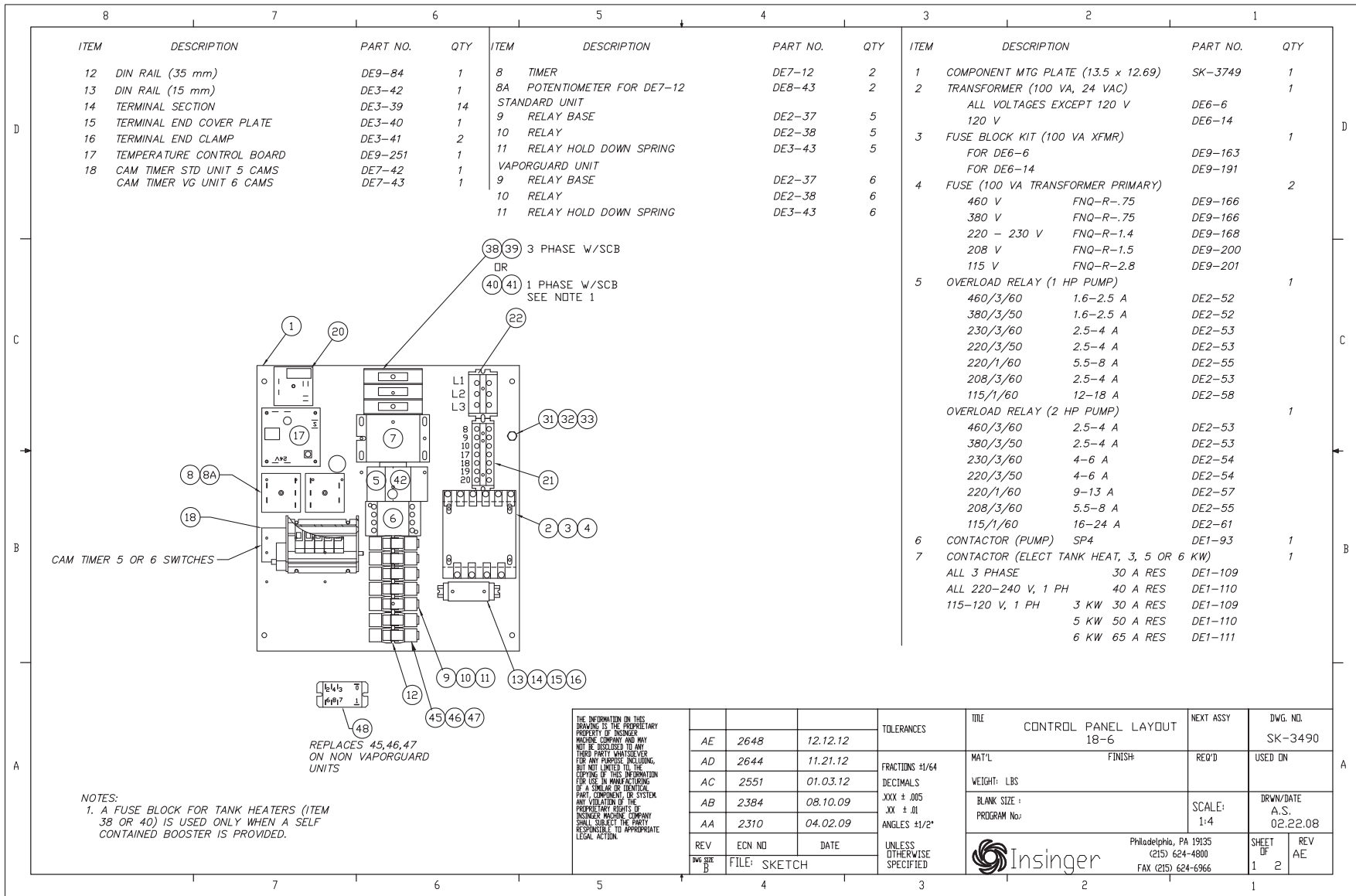
PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

DoorTypeTM2013

27

www.insingermachine.com

800-344-4802



ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY
12	DIN RAIL (35 mm)	DE9-84	1	8	TIMER	DE7-12	2	1	COMPONENT MTG PLATE (13.5 x 12.69)	SK-3749	1
13	DIN RAIL (15 mm)	DE3-42	1	8A	POTENTIOMETER FOR DE7-12	DE8-43	2	2	TRANSFORMER (100 VA, 24 VAC)		1
14	TERMINAL SECTION	DE3-39	14		STANDARD UNIT				ALL VOLTAGES EXCEPT 120 V	DE6-6	
15	TERMINAL END COVER PLATE	DE3-40	1	9	RELAY BASE	DE2-37	5		120 V	DE6-14	
16	TERMINAL END CLAMP	DE3-41	2	10	RELAY	DE2-38	5	3	FUSE BLOCK KIT (100 VA XFMR)		1
17	TEMPERATURE CONTROL BOARD	DE9-251	1	11	RELAY HOLD DOWN SPRING	DE3-43	5		FOR DE6-6	DE9-163	
18	CAM TIMER STD UNIT 5 CAMS	DE7-42	1		VAPORGUARD UNIT				FOR DE6-14	DE9-191	
	CAM TIMER VG UNIT 6 CAMS	DE7-43	1	9	RELAY BASE	DE2-37	6	4	FUSE (100 VA TRANSFORMER PRIMARY)		2
				10	RELAY	DE2-38	6		460 V FNQ-R-.75	DE9-166	
				11	RELAY HOLD DOWN SPRING	DE3-43	6		380 V FNQ-R-.75	DE9-166	
									220 - 230 V FNQ-R-1.4	DE9-168	
									208 V FNQ-R-1.5	DE9-200	
									115 V FNQ-R-2.8	DE9-201	

5	OVERLOAD RELAY (1 HP PUMP)		1								
	460/3/60	1.6-2.5 A								DE2-52	
	380/3/50	1.6-2.5 A								DE2-52	
	230/3/60	2.5-4 A								DE2-53	
	220/3/50	2.5-4 A								DE2-53	
	220/1/60	5.5-8 A								DE2-55	
	208/3/60	2.5-4 A								DE2-53	
	115/1/60	12-18 A								DE2-58	
	OVERLOAD RELAY (2 HP PUMP)		1								
	460/3/60	2.5-4 A								DE2-53	
	380/3/50	2.5-4 A								DE2-53	
	230/3/60	4-6 A								DE2-54	
	220/3/50	4-6 A								DE2-54	
	220/1/60	9-13 A								DE2-57	
	208/3/60	5.5-8 A								DE2-55	
	115/1/60	16-24 A								DE2-61	
6	CONTACTOR (PUMP)	SP4	1							DE1-93	
7	CONTACTOR (ELECT TANK HEAT, 3, 5 OR 6 KW)		1								
	ALL 3 PHASE	30 A RES								DE1-109	
	ALL 220-240 V, 1 PH	40 A RES								DE1-110	
	115-120 V, 1 PH	3 KW 30 A RES								DE1-109	
		5 KW 50 A RES								DE1-110	
		6 KW 65 A RES								DE1-111	

NOTES:
 1. A FUSE BLOCK FOR TANK HEATERS (ITEM 38 OR 40) IS USED ONLY WHEN A SELF CONTAINED BOOSTER IS PROVIDED.

REPLACES 45,46,47 ON NON VAPORGUARD UNITS

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REV	ECN NO	DATE
AE	2648	12.12.12
AD	2644	11.21.12
AC	2551	01.03.12
AB	2384	08.10.09
AA	2310	04.02.09

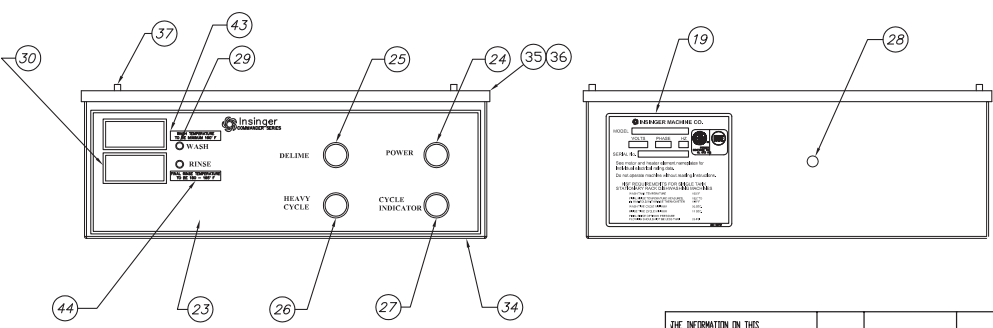
UNLESS OTHERWISE SPECIFIED

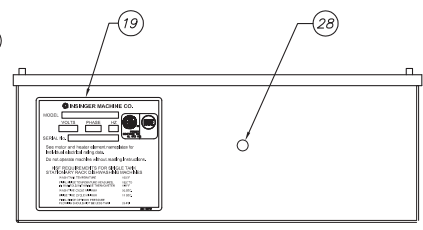
FILE: SKETCH

TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
FRACTIONS 1/164	CONTROL PANEL LAYOUT 18-6		SK-3490
DECIMALS	MAT'L FINISH	REQ'D	USED ON
XXX ± .005			
XX ± .01			
ANGLES 1/2°			
	SCALE: 1:4	DRWN/DATE	A.S. 02.22.08
	Philadelphia, PA 19135	SHEET	REV
	(215) 624-4800	OF	AE
	FAX (215) 624-6966	1 2	




ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY
19	DATA DECAL	SK-4973	1	31	GROUNDING STUD, 1/4-20	D309C-GC-4G	1	40	FUSE BLOCK, 2 POLE (W/ 1 PH SCB)	DE9-185	1
20	TIMER (LIQUID LEVEL)	DE7-35	1	32	LOCKWASHER, 1/4	D313C-G5	1	41	FUSE (W/ 1 PH SCB)	DE9-207	2
21	TERMINAL BLOCK END	DE3-9B	1	33	HEX NUT, 1/4-20	D312C-GC-2	1		240 V KTK-R-25	DE9-207	
	STANDARD UNITS			34	CONTROL BOX 16"	1089-223	1	42	OVERLOAD BASE	DE2-60	1
	TERMINAL BLOCK SECTION	DE3-9A	3	35	CONTROL BOX COVER 16"	1089-193P	1	43	LABEL, WASH TEMPERATURE	SK-4975	1
	VAPORGUARD UNITS							44	LABEL, FINAL RINSE TEMPERATURE	SK-4976	1
	TERMINAL BLOCK SECTION	DE3-9A	7	36	GASKET	9007-001	1		VAPORGUARD UNITS		
22	TERMINAL BLOCK ASSY		1	37	NUT	D312C-EF-5	4	45	RELAY BASE 5A	DE2-95	1
	208-460 V, 3 PHASE	DE3-3		38	FUSE BLOCK, 3 POLE (W/ 3 PH SCB)	DE9-186	1	46	RELAY 5A	DE2-96	1
	240 SINGLE PHASE	DE3-3		39	FUSE (W/ 3 PH SCB)		3	47	RELAY HOLD DOWN SPRING FOR DE2-95	DE3-164	1
	240 SINGLE PHASE W/SCB	DE3-154			460 V	KTK-R-10	DE9-193		NON VAPOR GUARD UNITS		
	EXTRA HIGH W/SCB	DE3-152			380 V	KTK-R-10	DE9-193	48	RELAY REMOTE EXHAUST FAN BY OTHERS	DE9-284	1
	VAPORGUARD UNITS	DE3-152			230 V	KTK-R-15	DE9-194				
23	DECAL- COMMANDER SERIES FRT CNT BOX	SK-4974	1		208V	KTK-R-20	DE9-195				
24	SWITCH WITH LIGHT RED, (POWER ON)	DE5-84	1								
25	SWITCH WITH LIGHT WHITE, (DELIME)	DE5-85	1								
26	SWITCH WITH LIGHT GREEN (HEAVY CYCLE)	DE5-83	1								
27	PILOT LIGHT (AMBER)	DE5-86	1								
28	CIRCUIT BREAKER (5A)	DE9-43	1								
29	INDICATOR LIGHTS RED	DE9-294	2								
30	DIGITAL THERMOSTAT DISPLAY	DE9-295	2								

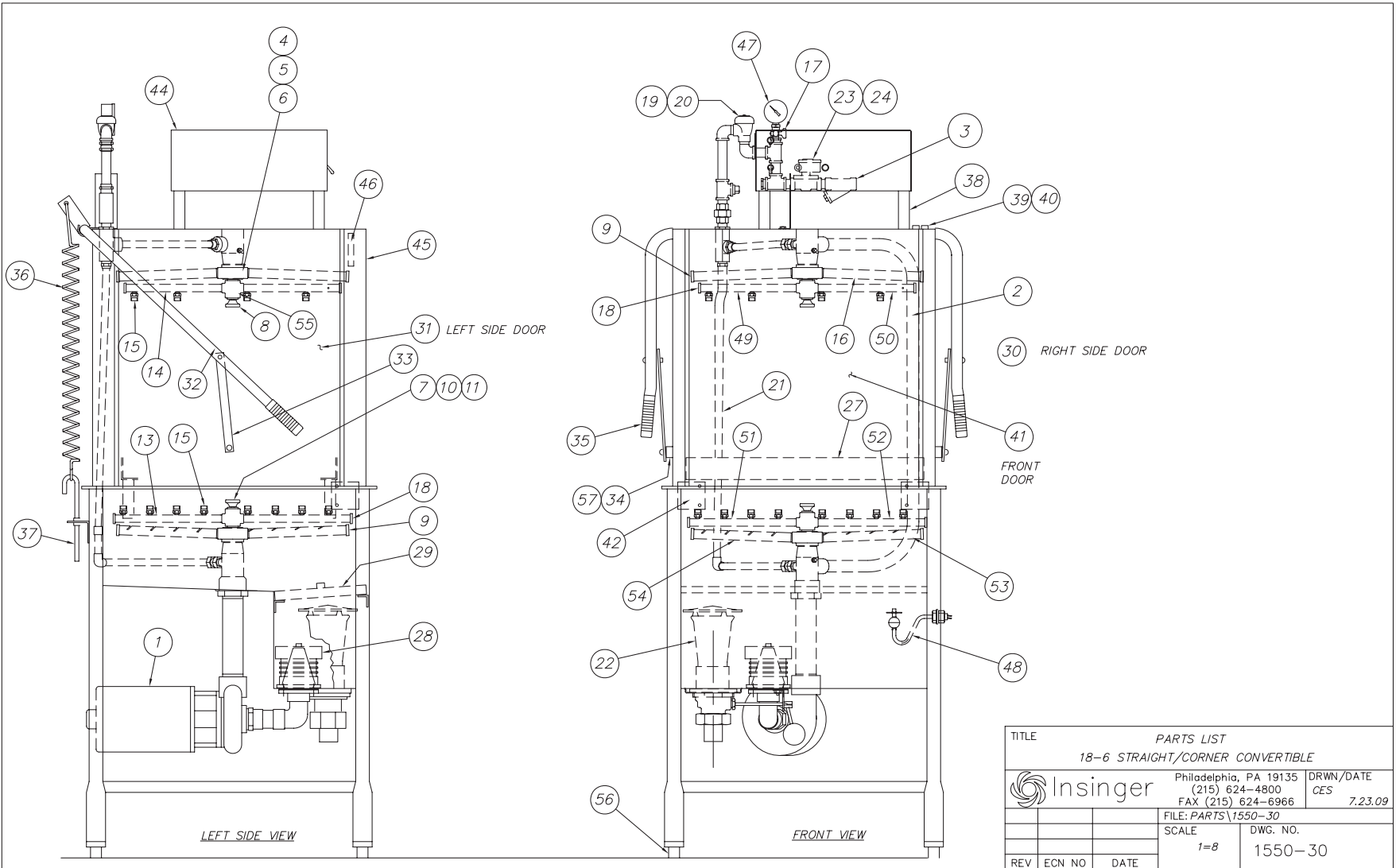




	208V/1PH	208V/3PH	240V/1PH	240V/3PH	380V/3PH	480V/3PH
18-6 QTY	1	1	1	1	1	1
KW	5	5	5	5	5	5
PART#	DE13-SD23	DE13-SD23	DE13-SD43	DE13-SD43	DE13-SD53	DE13-SD73
18-6C QTY	1	1	1	1	1	1
KW	5	5	5	5	5	5
PART#	DE13-SD23	DE13-SD23	DE13-SD43	DE13-SD43	DE13-SD53	DE13-SD73
18-6H QTY	1	1	1	1	1	1
KW	5	5	5	5	5	5
PART#	DE13-SD23	DE13-SD23	DE13-SD43	DE13-SD43	DE13-SD53	DE13-SD73
18-6HC QTY	1	1	1	1	1	1
KW	5	5	5	5	5	5
PART#	DE13-SD23	DE13-SD23	DE13-SD43	DE13-SD43	DE13-SD53	DE13-SD73

REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
AE	2648	12.12.12	FRACTIONS 1/64	CONTROL PANEL LAYOUT		SK-3490
AD	2644	11.21.12	DECIMALS	18-6	REQ'D	USED ON
AC	2551	01.03.12	XXX ± .005	FINISH		
AB	2384	08.10.09	.XX ± .01	PROGRAM No:	SCALE:	DRWN/DATE
AA	2310	04.02.09	ANGLES 1/2"		1:4	A.S.
			UNLESS OTHERWISE SPECIFIED			02.22.08
DWG SIZE	FILE:	SKETCH			Philadelphia, PA 19135 (215) 624-4800	SHEET OF
B					FAX (215) 624-6966	2 2 AE

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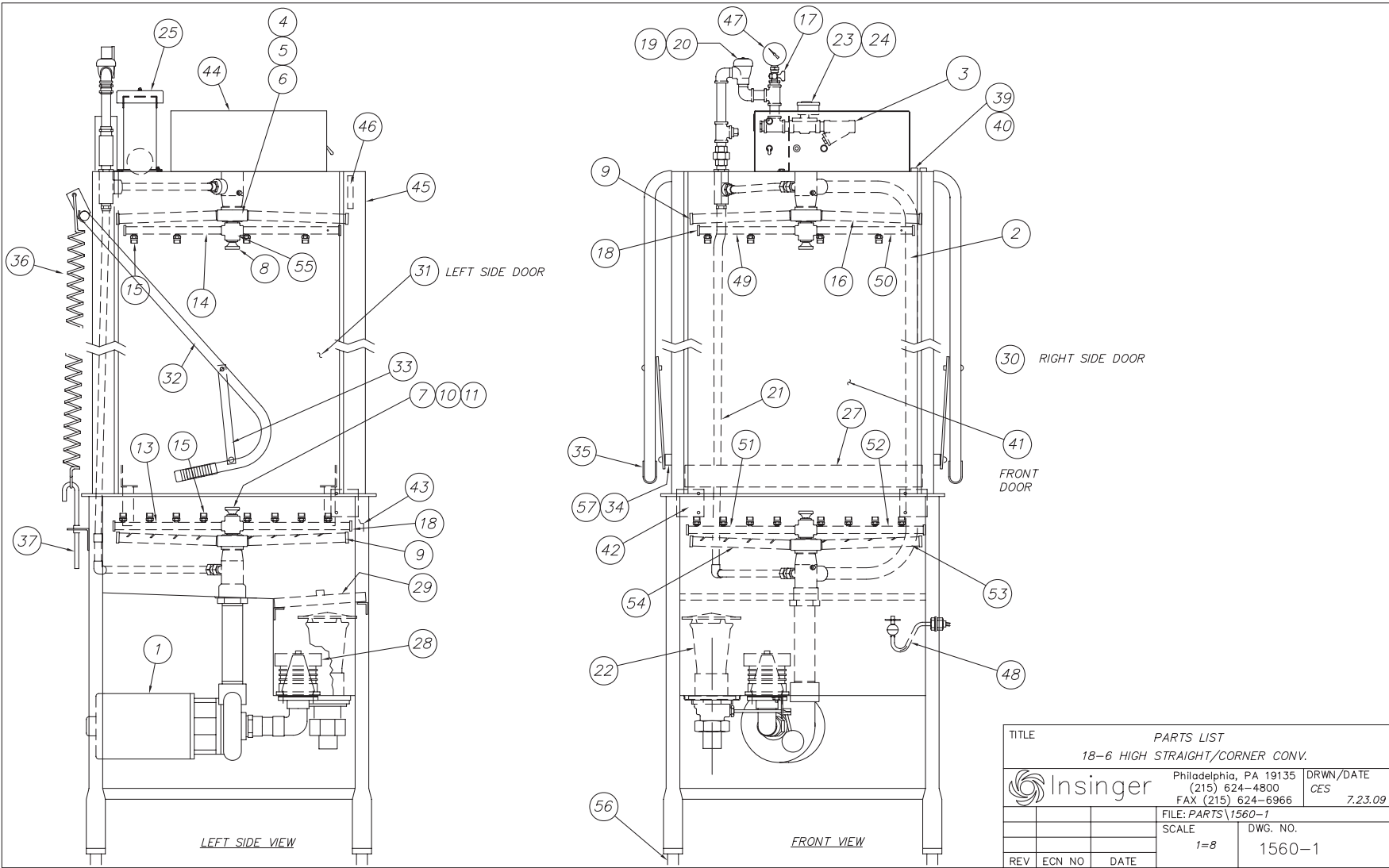
ITEM	MACHINE	PART No.	DESCRIPTION	REQ.
1	18-6, CS-6	1089-19	PUMP & MOTOR ASS'Y (1 H.P. - SPECIFY VOLTAGE)	1
2		1551-23	DOOR WEAR STRIPS	6
3		D2483A	"Y" STRAINER, 1/2 (OMIT W/BUILT-IN BOOSTER)	1
4		1084-76	SPRAY HUB - WASH	2
5		D2-563	O-RING	2
6		952-27	BUSHING, PLASTIC (WASH ARM HUB)	2
7		1089-178	BUSHING, PLASTIC (RINSE ARM HUB)	1
8		1463-29	SUPPORT ASS'Y UPPER HUB	1
9		D2-554-2A	PLUG, 3/4-10 UNC-2A (WASH ARM)	4
10		D2-584	LOCKING SCREW	1
11		1084-22	HUB-LOWER RINSE ARM	1
12				
13		1434-9	LOWER SPRAY PIPE ASS'Y. - RINSE	1
14		1434-8	UPPER SPRAY PIPE ASS'Y. - RINSE	1
15		D3035	SPRAY NOZZLE - UPPER & LOWER RINSE ARM	12
16		1434-5	UPPER WASH PIPE	2
17		D2497	PETCOCK	1
18		D2-554-1A	PLUG, 9/16-12 UNC-2A (RINSE ARM)	4
19		D2241A	VACUUM BREAKER, 1/2	1
20		D2914RK	VACUUM BREAKER REPAIR KIT	1
21		1551-31	FINAL RINSE ASSEMBLY (W/ PARTS LIST)	1
22		SK-3028	DRAIN ASSEMBLY (W/PARTS LIST)	1
23		D2606	SOLENOID VALVE, 1/2 (OMIT W/BUILT-IN BOOSTER)	1
24		D2641	SOLENOID VALVE REPAIR KIT	1
25				1
26				1
27		1550-28	TRACK ASS'Y	1
28		D2-541	SUCTION STRAINER	1
29		1550-22	SCRAP SCREEN	2
30		1550-15R	DOOR - RIGHT SIDE	1
31		1550-15L	DOOR - LEFT SIDE	1
32		1084-25	DOOR ARM	1
33		1084-38	LINK, ARM-DOOR	2
34		957-26	SPACER, DOOR LINK	2
35		D2245	GRIP - DOOR HANDLE	2
36		SK-2294A-001	SPRING	2
37		957-27	SPRING EXTENSION - LOWER	2
38		1440-7	POST - CONTROL BOX	4
39		DE5-37	SWITCH, MAGNETIC	1
40		DE5-37A	MAGNET	1
41		1550-17	DOOR - FRONT	1
42		1550-16	DOOR CONNECTOR	2
43				
44		SK-3490	CONTROL BOX ASS'Y	1
45		1550-6R or L	CORNER POST COVER (specify left or right)	2
46		1551-9	RETAINER BAR - CORNER POST COVER	2
47		SK-1433	PRESSURE GAUGE	1
48		DE5-60	LIQUID LEVEL FLOAT ASSEMBLY	1
49		1434-7A	UPPER RINSE PIPE	1
50		1434-7B	UPPER RINSE PIPE	1
51		1434-7C	LOWER RINSE PIPE	1
52		1434-7D	LOWER RINSE PIPE	1
53		1089-23A	LOWER WASH PIPE	1
54		1089-23B	LOWER WASH PIPE	1
55		1463-25	RINSE HUB UPPER	1 EA
56		D2874	BULLET FOOT	4
57		D3099	DOOR PIVOT NUT 3/8-16 THIN SEALNUT	2

TOLERANCES: FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	TITLE 18-6 STRAIGHT/CORNER CONV.	PARTS LIST -	NEXT ASSY DWG. NO. 1550-30	SHT 2 OF 2
REV. ECH. NO. DATE FILE: PARTS\1350-30	SCALE 1=8	DRWN/DATE CES 7.23.09	USED ON 18-6	



Insinger®

**PART 4 ELECTRICAL SCHEMATICS
& REPLACEMENT PARTS**



TITLE		PARTS LIST	
		18-6 HIGH STRAIGHT/CORNER CONV.	
Philadelphia, PA 19135		DRWN/DATE	
(215) 624-4800		CES	
FAX (215) 624-6966		7.23.09	
FILE: PARTS\1560-1			
SCALE		DWG. NO.	
1=8		1560-1	
REV	ECN NO	DATE	

ITEM	MACHINE	PART No.	DESCRIPTION	REQ.
1	18-6H, 18-6HC	1089-19	PUMP & MOTOR ASS'Y (2 H.P. - SPECIFY VOLTAGE)	1
2		1172-97	DOOR WEAR STRIPS	6
3		D2483A	"Y" STRAINER, 1/2 (OMIT W/BUILT-IN BOOSTER)	1
4		1084-76	SPRAY HUB - WASH	2
5		D2-563	O-RING	2
6		952-27	BUSHING, PLASTIC (WASH ARM HUB)	2
7		1089-178	BUSHING, PLASTIC (RINSE ARM HUB)	1
8		1463-29	SUPPORT ASS'Y UPPER HUB	1
9		D2-554-2A	PLUG, 3/4-10 UNC-2A (WASH ARM)	4
10		D2-584	LOCKING SCREW	1
11		1084-22	HUB-LOWER RINSE ARM	1
12				
13		1434-9	LOWER SPRAY PIPE ASS'Y. - RINSE	1
14		1434-8	UPPER SPRAY PIPE ASS'Y. - RINSE	1
15		D3035	SPRAY NOZZLE - UPPER & LOWER RINSE ARM	12
16		1434-5	UPPER WASH PIPE	2
17		D2497	PETCOCK	1
18		D2-554-1A	PLUG, 9/16-12 UNC-2A (RINSE ARM)	4
19		D2241A	VACUUM BREAKER, 1/2	1
20		D2914RK	VACUUM BREAKER REPAIR KIT	1
21		1551-31	FINAL RINSE ASSEMBLY (W/ PARTS LIST)	1
22		SK-3028	DRAIN ASSEMBLY (W/PARTS LIST)	1
23		D2606	SOLENOID VALVE, 1/2 (OMIT W/BUILT-IN BOOSTER)	1
24		D2641	SOLENOID VALVE REPAIR KIT	1
25		1560-25	HOOD TOP VENT ASSEMBLY	1
26				1
27		1550-28	TRACK ASS'Y	1
28		D2-541	SUCTION STRAINER	1
29		1550-22	SCRAP SCREEN	2
30		1560-15R	DOOR - RIGHT SIDE	1
31		1560-15L	DOOR - LEFT SIDE	1
32		1560-24	DOOR ARM	1
33		1463-8	LINK, ARM-DOOR	2
34		1463-7	SPACER, DOOR LINK	2
35		D2245	GRIP - DOOR HANDLE	2
36		SK-2294A-001	SPRING (3 DOOR - STRAIGHT)	3
			SPRING (2 DOOR - CORNER)	2
37		957-27	SPRING EXTENSION - LOWER (3 DOOR - STRAIGHT)	3
			SPRING EXTENSION - LOWER (2 DOOR - CORNER)	2
38				
39		DE5-37	SWITCH, MAGNETIC	1
40		DE5-37A	MAGNET	1
41		1560-17	DOOR - FRONT	1
42		1550-16	DOOR CONNECTOR	2
43		1560-18	DOOR GUTTER	2
44		SK-3490	CONTROL BOX ASS'Y	1
45		1560-6R or L	CORNER POST COVER (specify left or right)	2
46		1551-9	RETAINER BAR - CORNER POST COVER	2
47		SK-1433	PRESSURE GAUGE	1
48		DE5-60	LIQUID LEVEL FLOAT ASSEMBLY	1
49		1434-7A	UPPER RINSE PIPE	1
50		1434-7B	UPPER RINSE PIPE	1
51		1434-7C	LOWER RINSE PIPE	1
52		1434-7D	LOWER RINSE PIPE	1
53		1089-23A	LOWER WASH PIPE	1
54		1089-23B	LOWER WASH PIPE	1
55		1463-25	RINSE HUB UPPER	1 EA
56		D2874	BULLET FOOT	4
57		D3099	DOOR PIVOT NUT 3/8-16 THIN SEALNUT	2

REV. ECN NO. DATE
 FILE:PARTS\1560-1
 TOLERANCES
 FRACTIONS ±1/64
 DECIMALS .XXX ±.005
 ANGLES ±1/2°
 OTHERWISE SPECIFIED
 TITLE
 18-6 HIGH STRAIGHT/CORNER
 PARTS LIST
 MATL
 SCALE
 1-8
 USED ON
 18-6H
 DRWN/DATE
 CCS
 7.23.09
 Insinger
 Philadelphia, PA 19135
 (215) 624-4800
 FAX (215) 624-8966

SHT 2
OF 2



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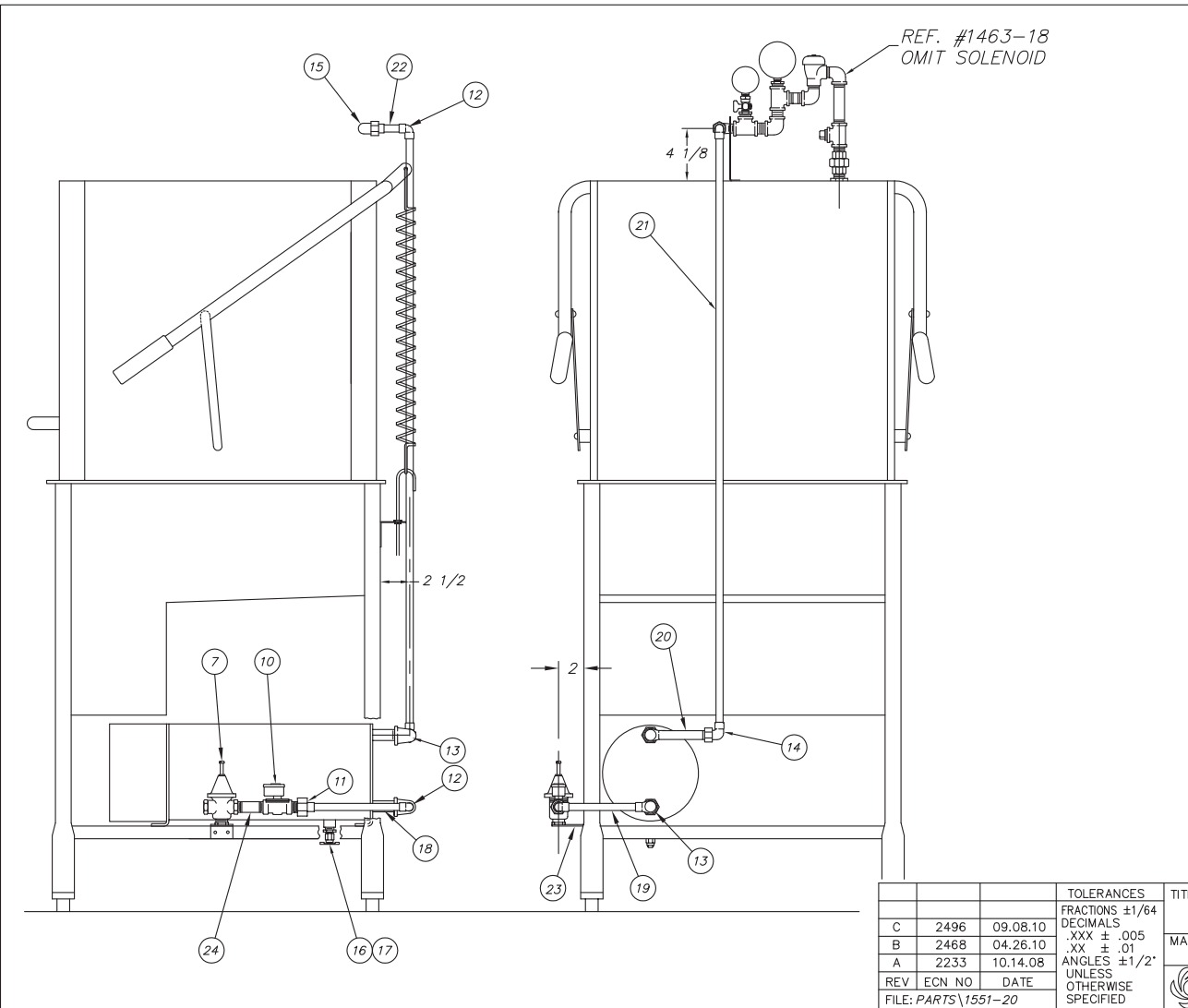
PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

ITEM	PART NO.	DESCRIPTION	QTY.
1	D3110	HATCO SCB 208/240 3PH	1
	D3111	HATCO SCB 380 - 3PH	
	D3112	HATCO SCB 480 - 3PH	
	D3113	HATCO SCB 208/240 1PH	
7	D2508A	PRESS. REG. & STRAINER 1/2 IPS	1
10	D2930	SOLENOID VALVE 1/2 IPS	1
11	D318A-D3-D2	ST. UNION 1/2 MIPS x 1/2 C	1
12	D316A-D3-D3	90° ELL. 1/2 C	3
13	D316A-D3-E1	90° ST. ELL. 3/4 FIPS x 1/2 C	2
14	D319A-D3-D3	90° UNION ELL. 1/2 C	1
15	D319A-D3-D2	90° UNION ELL. 1/2 MIPS x 1/2 C	1
16	D322F-E2-B1	HEX RED. 3/4 MIPS x 1/4 FIPS	1
17	D329-5	DRAIN VALVE 1/4 IPS	1
18	D207A-B4-19	COPPER TUBING 1/2 CTS X 4 3/4" LG	1
19	D207A-B4-23	COPPER TUBING 1/2 CTS X 5 3/4" LG	1
20	D207A-B4-27	COPPER TUBING 1/2 CTS X 6 3/4" LG	1
	D207A-B4-188	COPPER TUBING 1/2 CTS X 47 LG	1
21	D207A-B4-244	COPPER TUBING 1/2 CTS X 61 LG (X-HI)	1
22	D207A-B4-8	COPPER TUBING 1/2 CTS X 2 LG	1
23	925-49	FINAL RINSE PIPING BRACKET	1
24	D314F-DS-16	1/2 IPS NIPPLE x 2" LG.	1

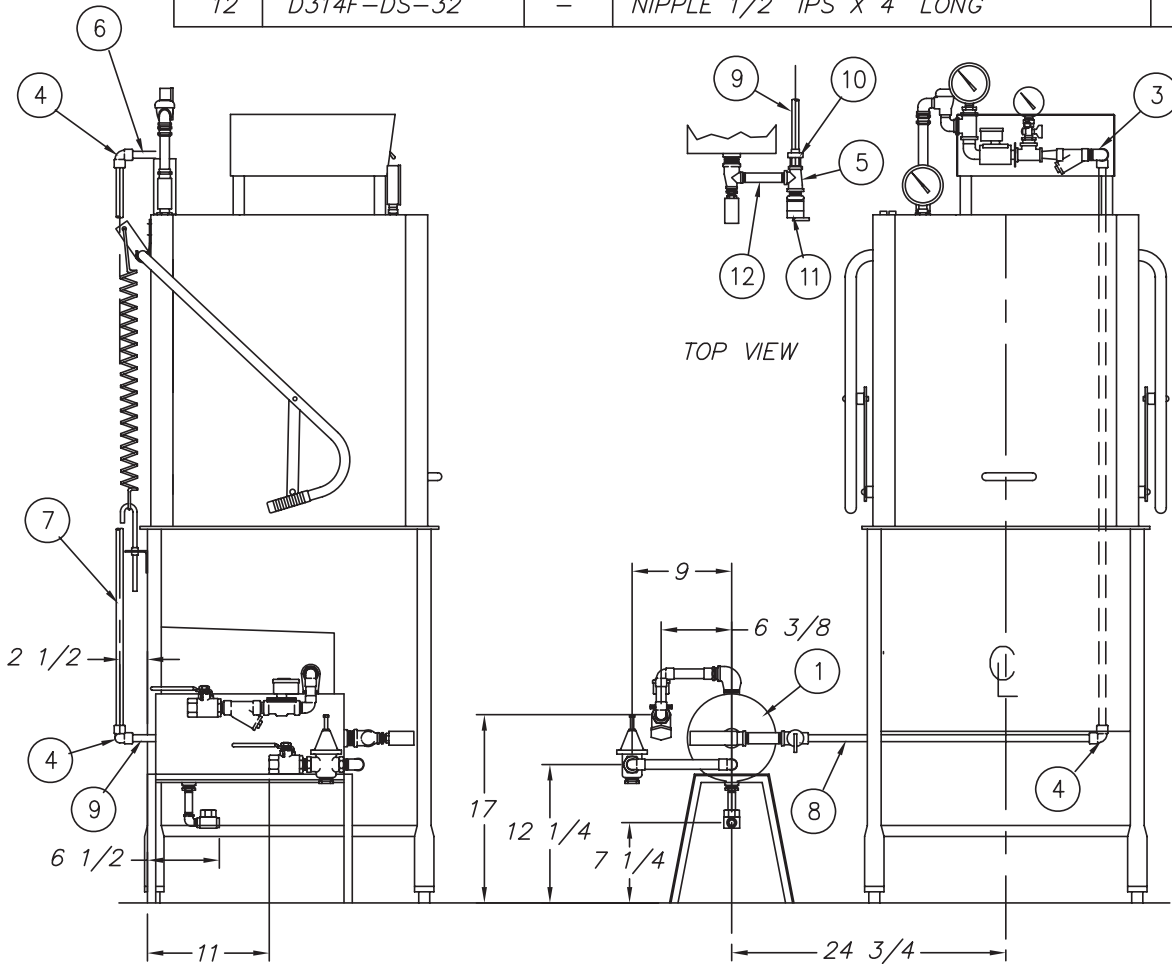
SERVICE NOTE

IF A HATCO LOW PRESSURE BOOSTER IS REPLACING A HUBBELL OR INSINGER HIGH PRESSURE BOOSTER, THE 1/2 IPS SOLENOID VALVE MUST BE REMOVED FROM THE TOP OF THE MACHINE & INSTALLED ON THE INLET TO THE BOOSTER AS SHOWN ON DWG SK-4880.

C 2496 09.08.10		TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ±.005 .XX ±.01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	TITLE	LOW PRESSURE HATCO 70° RISE SCB INSTALL	NEXT ASSY	DWG. NO.	
B 2468 04.26.10			MAT'L	-	REQ'D	1	1551-20
A 2233 10.14.08			SCALE	-	1=8	USED ON	18-5
REV	ECN NO	DATE	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE	CES	
FILE: PARTS\1551-20						1.9.08	

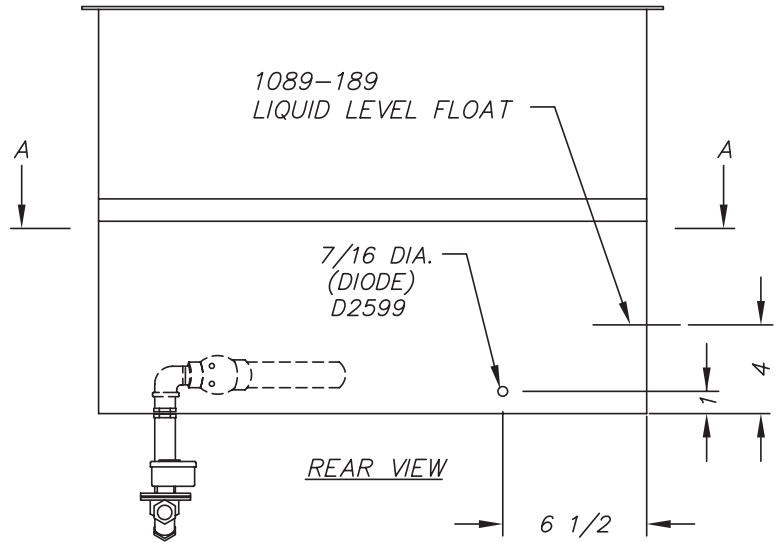
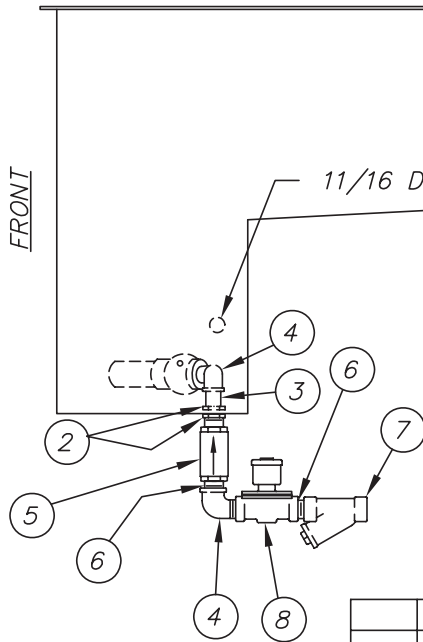
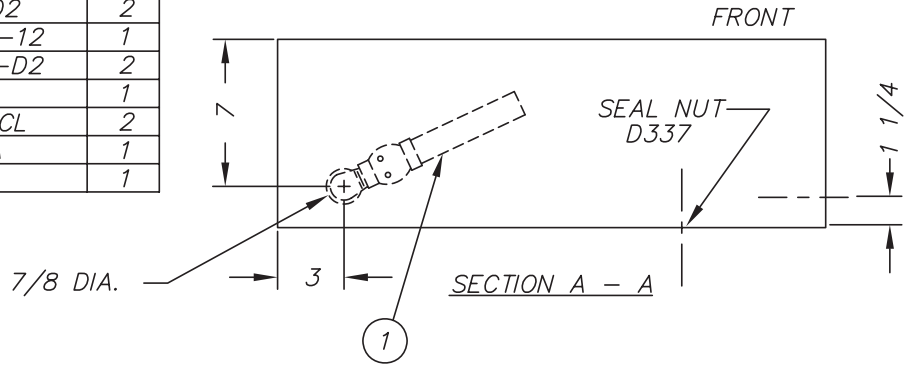


ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1394-1	B	BOOSTER ASSEMBLY	1
2	D319A-D3-D3	-	90° UNION ELBOW 1/2" C	1
3	D319A-D3-D2	-	90° UNION ELBOW 1/2" C X 1/2" MIPS	1
4	D316A-D3-D3	-	90° ELBOW 1/2" C	3
5	D317A-D3-D2	-	ADAPTER 1/2" C X 1/2" MIPS	1
6	D207A-K4-12	-	COPPER TUBING 1/2" CTS X 3" LONG	1
7	D207A-K4-172	-	COPPER TUBING 1/2" CTS X 43" LONG	1
8	D207A-K4-86	-	COPPER TUBING 1/2" CTS X 21 1/2" LG	1
9	D207A-K4-72	-	COPPER TUBING 1/2" CTS X 18" LONG	1
10	D320FE1D1E1	-	TEE 3/4 FIPS X 1/2 FIPS X 3/4 FIPS	1
11	D2507	-	PRESSURE RELIEF VALVE 3/4 MIPS	1
12	D314F-DS-32	-	NIPPLE 1/2" IPS X 4" LONG	1



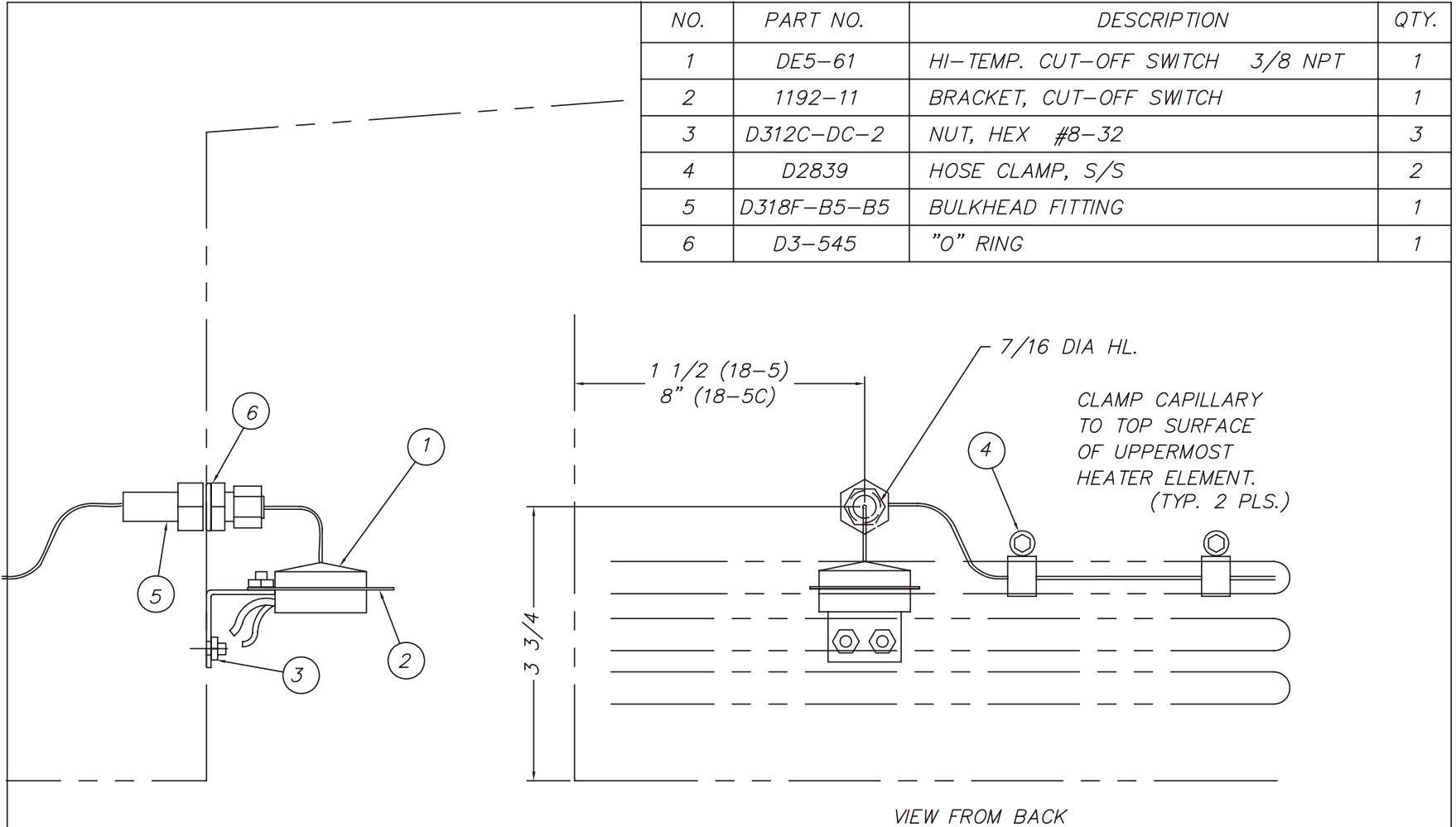
			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	SIDE MOUNT STEAM BOOSTER	REQ'D 1	1089-179
			DECIMALS	TO FINAL RINSE PIPING ASS'Y		
B	1916	2.22.02	.XXX ± .005		SCALE	USED ON 18-5
A	1761	6.19.00	.XX ± .01	MAT'L	1/16	50-20N2-NSU
REV	ECN NO	DATE	ANGLES ±1/2°	NOTED		DRWN/DATE
			UNLESS OTHERWISE SPECIFIED			RFN
					Philadelphia, PA 19135	6-5-90
					(215) 624-4800	
					FAX (215) 624-6966	

NO.	DESCRIPTION	PART NO.	QTY.
1	STEAM INJECTOR	D942	1
2	LOCKNUT 1/2 IPS	D326F-D2	2
3	NIPPLE 1/2 IPS x 1 1/2" LG.	D314F-DA-12	1
4	90° STREET ELL 1/2 MIPS x 1/2 FIPS	D314F-D1-D2	2
5	CHECK VALVE 1/2 IPS	D2453	1
6	CLOSE NIPPLE 1/2 IPS	D314A-DCL	2
7	"Y" STRAINER 1/2 IPS	D2483A	1
8	SOLENOID 1/2 IPS	D2594	1



TOLERANCES		
		FRACTIONS ±1/64
		DECIMALS
		.XXX ± .005
		.XX ± .01
		ANGLES ±1/2°
		UNLESS OTHERWISE SPECIFIED
E	1583	12.1.97
REV	ECN NO	DATE
FILE: PARTS\1089-81		

TITLE	STEAM INJECTOR, DIODE & LIQUID LEVEL FLOAT LOCATIONS	NEXT ASSY REQ'D	-	DWG. NO.	1089-81
MAT'L	-	SCALE	1=8	USED ON	18-5, 18-5C
Insinger		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE MAM 7.24.92	



NO.	PART NO.	DESCRIPTION	QTY.
1	DE5-61	HI-TEMP. CUT-OFF SWITCH 3/8 NPT	1
2	1192-11	BRACKET, CUT-OFF SWITCH	1
3	D312C-DC-2	NUT, HEX #8-32	3
4	D2839	HOSE CLAMP, S/S	2
5	D318F-B5-B5	BULKHEAD FITTING	1
6	D3-545	"O" RING	1

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	HI-TEMP CUTOFF		1433-3
			DECIMALS	SWITCH INSTALLATION	REQ'D 1	
			.XXX ± .005	MAT'L	SCALE	USED ON
			.XX ± .01	-	1:2	18-5/18-5C
			ANGLES ±1/2°	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE	
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED		CES	
FILE: PARTS\1433-3						11.14.03

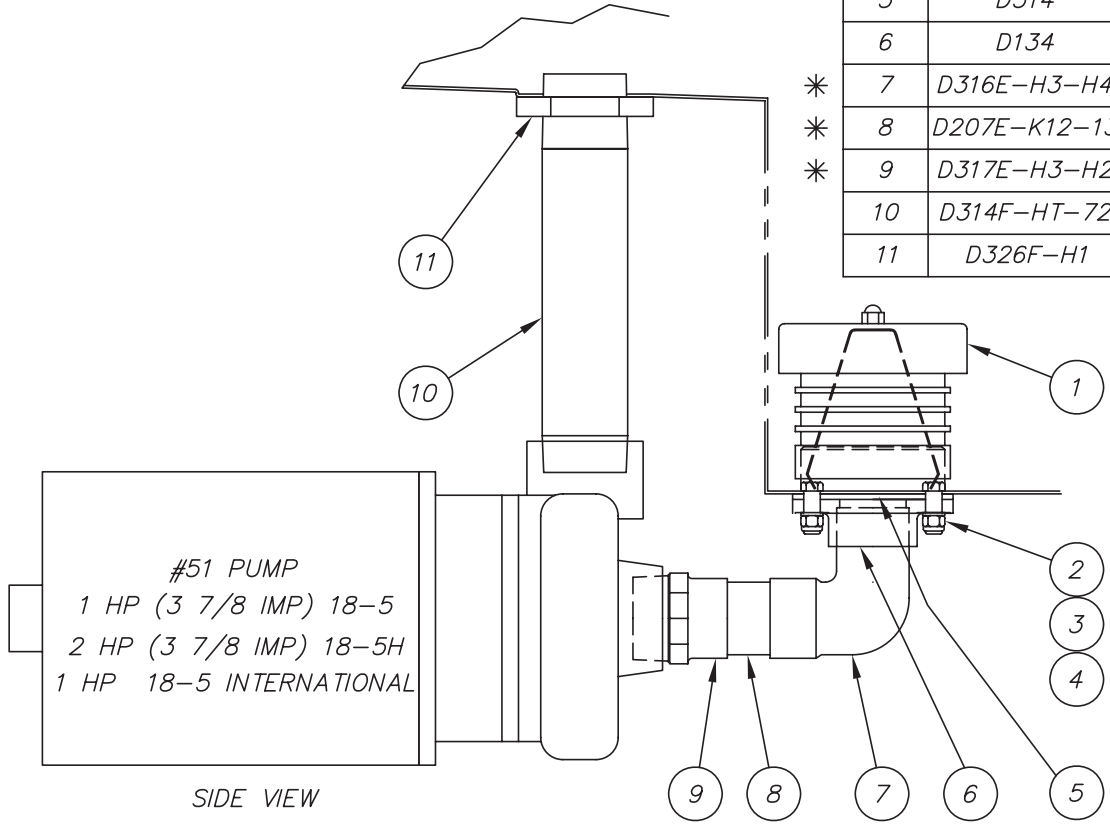


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PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

* ELECTROLESS NICKEL PLATE REQUIRED

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2-541	SUCTION STRAINER	1
2	D309C-JC-9A	HEX HD. S/S SCREW 3/8-16 x 1 1/8"	4
3	D313A-J1	COPPER WASHER 3/8	4
4	D312C-JC-5	LOCKNUT 3/8-16	4
5	D514	GASKET, PUMP FLANGE	1
6	D134	PUMP FLANGE	1
* 7	D316E-H3-H4	ELBOW 90° 1 1/2"C X 1 1/2 C FTG	1
* 8	D207E-K12-13	1 1/2 CU TUBE X 3 1/4 LG	1
* 9	D317E-H3-H2	ADAPTER 1 1/2"C X 1 1/2"M	1
10	D314F-HT-72	NIPPLE 1 1/2 IPS x 9" LG. LOE	1
11	D326F-H1	LOCKNUT 1 1/2 IPS	1



#51 PUMP
 1 HP (3 7/8 IMP) 18-5
 2 HP (3 7/8 IMP) 18-5H
 1 HP 18-5 INTERNATIONAL

SIDE VIEW

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	PUMP, MOTOR, & SUCTION ASSY	REQ'D	1089-19
			DECIMALS		1	
F	1972	3.12.03	.XXX ± .005	MAT'L	SCALE	USED ON
E	1634	10.9.98	.XX ± .01		1=4	185, CS-5
D	1458	8.30.96	ANGLES ±1/2°	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED			RFN
FILE: PARTS\1089-19						

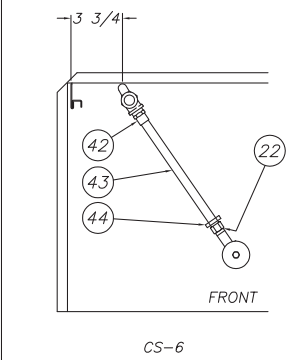
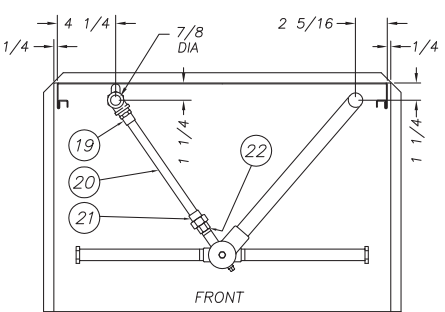


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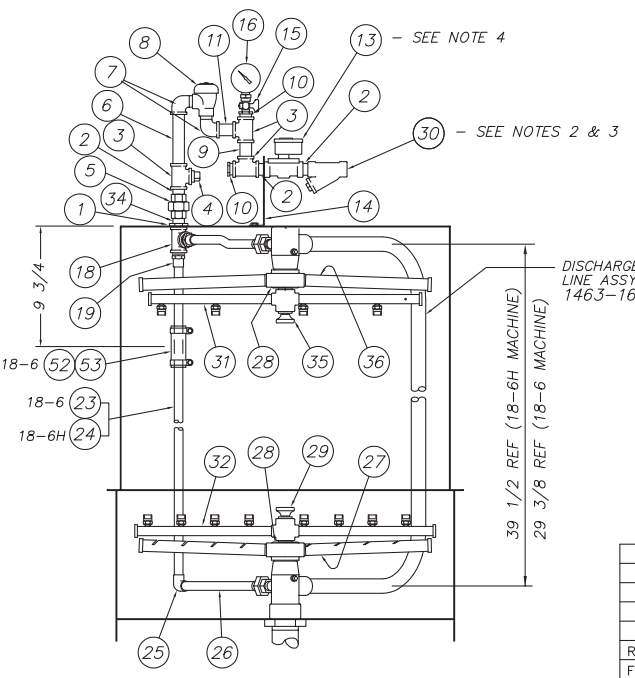
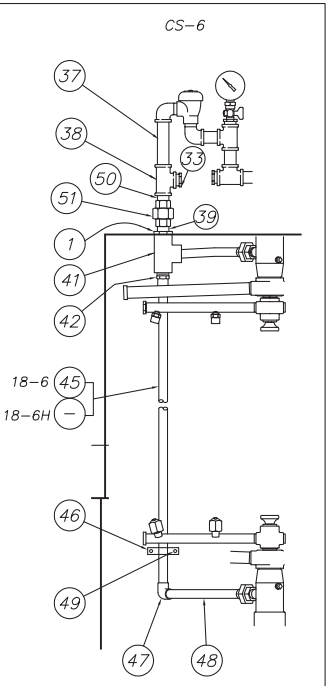
PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

NO.	DESCRIPTION	PART NO.	QTY.
1	LOCKNUT, HEX	D326F-D1	1
2	NIPPLE, CLOSE	D314F-DG-00	4
3	TEE	D320F-D1D1D1	3
4	PLUG, PIPE	D328F-D2A	1
5	UNION, STRAIGHT	D318F-D1-D1	1
6	NIPPLE, PIPE	D314F-D5-36	1
7	ELBOW, 90° STREET	D316F-D1-D2	2
8	BREAKER, VACUUM	D2914	1
9	NIPPLE, PIPE	D314F-D5-16	1
10	REDUCER, HEX	D322F-D2-B1	2
11	NIPPLE, PIPE	D314F-D5-14	1
12	NOT USED	----	--
13	VALVE, SOLENOID (WATER)	D2606	1
14	BRACKET, PIPING SUPPORT	951-79	1
15	PETCOCK	D2497	1
16	GAUGE, PRESSURE	5K-1433	1
18	TEE	D320J-D1D1D1 *	1
19	ADAPTER	1/2 C x 1/2 MIPS *	2
20	TUBING, S/S	1/2 CTS x 9" LG.	1
21	UNION	1/2 FIPS x 1/2 C *	2
22	REDUCER, FLUSH	1/2 MIPS x 3/8 FIPS *	2
23	FOR 18-S: TUBING, S/S	1/2 CTS x 28" Lg.	1
24	FOR 18-SH: TUBING, S/S	1/2 CTS x 38 1/4" Lg.	1
25	ELBOW, 90°	1/2 C *	1
26	TUBING, S/S	1/2 CTS x 10 3/4" LG.	1
27	LOWER WASH PIPE ASSY	1089-25	1
28	O-RING	D2-563	2
29	SCREW, LOCKING	D2-584	1
30	STRAINER, "Y"	1/2 IPS (SEE NOTES 2 & 3)	1
31	UPPER RINSE SPRAY PIPE ASSY	1434-B	1
32	LOWER RINSE SPRAY PIPE ASSY	1434-9	1
33	REDUCER, HEX	1/2 MIPS x 1/8 FIPS	1
34	NIPPLE, PIPE	1/2 IPS x 1 1/2" LG. ALL THREAD	1
35	SUPPORT ASS'Y UPPER HUB	1463-29	1
36	UPPER WASH PIPE ASSY	1434-6	1
37	PIPE NIPPLE S/S	1/2 IPS X 4" LG	1
38	TEE S/S	1/2 IPS	1
39	PIPE NIPPLE S/S	1/2 IPS X 1 1/2" LG ALL THREAD	1
40	---	---	--
41	TEE, CPVC	1/2 IPS	1
42	ADAPTER, CPVC	1/2 CPVC X 1/2 MIPS	2
43	TUBING, CPVC	1/2 CPVC X 8 1/4" LG	1
44	ADAPTER	1/2 CPVC X 1/2 FIPS *	2
45	TUBING, CPVC	1/2 CPVC X 22 1/2" LG	1
46	CLAMP, CPVC	1/2 C	1
47	90° ELBOW, CPVC	1/2 CPVC	1
48	TUBING, CPVC	1/2 CPVC X 10 1/2" LG	1
49	WELD STUD	D309C-EC-3C	2
50	NIPPLE, CLOSE S/S	1/2 IPS	1
51	UNION, STRAIGHT S/S	1/2 IPS	1
52	5/8" ID HOSE X 3" LG	D3219	1
53	HOSE CLAMP ALL S/S SIZE #10	D2876	2

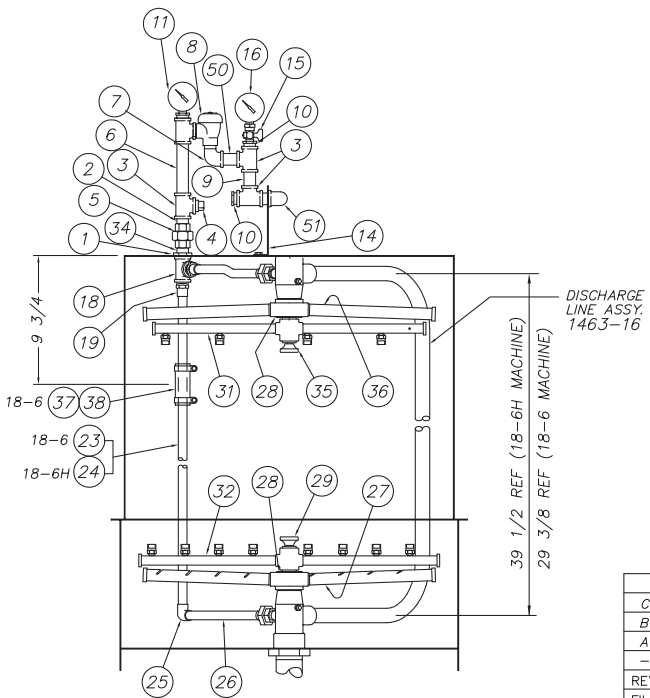
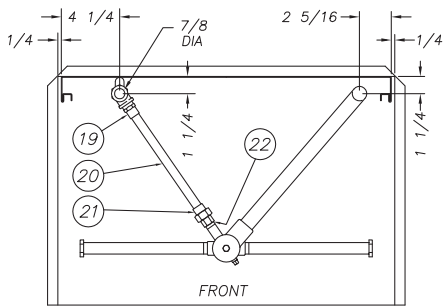
TOLERANCES		TITLE	FINAL RINSE ASS'Y 18-6	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		ALL EXCEPT S.C.B. (BOOSTER)		REQ'D	1551-31
DECIMALS		MAT'L	Ininger	SCALE	USED ON
.XXX ± .005					
.XX ± .01		Philadelpha, PA 19135		DRWN/DATE	
ANGLES ±1/2°		(215) 624-4800		DBC	
UNLESS OTHERWISE SPECIFIED		FAX (215) 624-6966		6.04.09	
REV	ECN NO	DATE			
A	2366	07.09.09			
FILE: PARTS \1551-31					



NOTES:
 1. "*" INDICATES ELECTROLESS NICKEL PLATED.
 2. ITEM #30 IS NOT REQUIRED WHEN A BOOSTER IS SPECIFIED, REPLACE WITH 90° UNION ELBOW 1/2 MIPS x 1/2 COPPER
 3. ITEM #30 IS NOT REQUIRED WHEN USING A SELF-CONTAINED BOOSTER.
 4. ITEM #13 NOT LOCATED WHERE SHOWN WHEN USING HATCO SELF-CONTAINED BOOSTER. SEE DWG #1551-32



NO.	DESCRIPTION	PART NO.	QTY.
1	LOCKNUT, HEX 1/2 IPS	D326F-D1	1
2	NIPPLE, CLOSE 1/2 IPS	D314F-DC-00	2
3	TEE 1/2 IPS	D320F-D1D1D1	4
4	PLUG, PIPE 1/2 IPS	D328F-D2A	1
5	UNION, STRAIGHT 1/2 IPS	D318F-D1-D1	1
6	NIPPLE, PIPE 1/2 IPS x 4 1/2" LG.	D314F-DS-36	1
7	ELBOW, 90° STREET 1/2 IPS	D316F-D1-D2	1
8	BREAKER, VACUUM 1/2 IPS	D2914	1
9	NIPPLE, PIPE 1/2 IPS x 2" LG.	D314F-DS-16	1
10	REDUCER, HEX 1/2 MIPS x 1/4 FIPS	D322F-D2-B1	3
11	GAUGE, TEMPERATURE 1/4 IPS	D2495	1
12	NOT USED	----	--
13	NOT USED	----	--
14	BRACKET, PIPING SUPPORT	951-79	1
15	PETCOCK 1/4 IPS	D2497	1
16	GAUGE, PRESSURE 1/4 IPS	5K-1433	1
18	TEE 1/2 IPS *	D320J-D1D1D1	1
19	ADAPTER 1/2 C x 1/2 MIPS *	D317E-D3-D2	2
20	TUBING, S/S 1/2 CTS x 9" LG.	D207C-B4-36	1
21	UNION 1/2 FIPS x 1/2 C *	D318E-D3-D1	2
22	REDUCER, FLUSH 1/2 MIPS x 3/8 FIPS *	D323J-D2-C1	2
23	FOR 18-S: TUBING, S/S 1/2 CTS x 28" Lg.	D207C-B4-112	1
24	FOR 18-SH: TUBING, S/S 1/2 CTS x 38 1/4" Lg.	D207C-B4-153	1
25	ELBOW, 90° 1/2 C *	D316E-D3-D3	1
26	TUBING, S/S 1/2 CTS x 9 3/4" LG.	D207C-B4-39	1
27	LOWER WASH PIPE ASSY	1089-25	1
28	O-RING	D2-563	2
29	SCREW, LOCKING	D2-584	1
30	NOT USED	----	--
31	UPPER RINSE SPRAY PIPE ASSY	1434-8	1
32	LOWER RINSE SPRAY PIPE ASSY	1434-9	1
33	NOT USED	----	--
34	NIPPLE, PIPE 1/2 IPS x 1 1/2" LG. ALL THREAD	D314F-DA-12	1
35	SUPPORT ASS'Y UPPER HUB	1463-29	1
36	UPPER WASH PIPE ASSY	1434-6	1
37	5/8" ID HOSE x 3" LG	D3219	1
38	HOSE CLAMP ALL S/S SIZE #10	D2876	2
39	NOT USED	----	--
40	NOT USED	----	--
41	NOT USED	----	--
42	NOT USED	----	--
43	NOT USED	----	--
44	NOT USED	----	--
45	NOT USED	----	--
46	NOT USED	----	--
47	NOT USED	----	--
48	NOT USED	----	--
49	NOT USED	----	--
50	NOT USED	----	--
51	NOT USED	----	--



NOTES:
1. " * " INDICATES ELECTROLESS NICKEL PLATED.

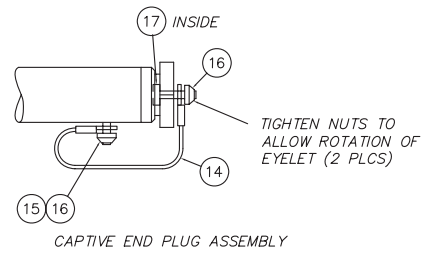
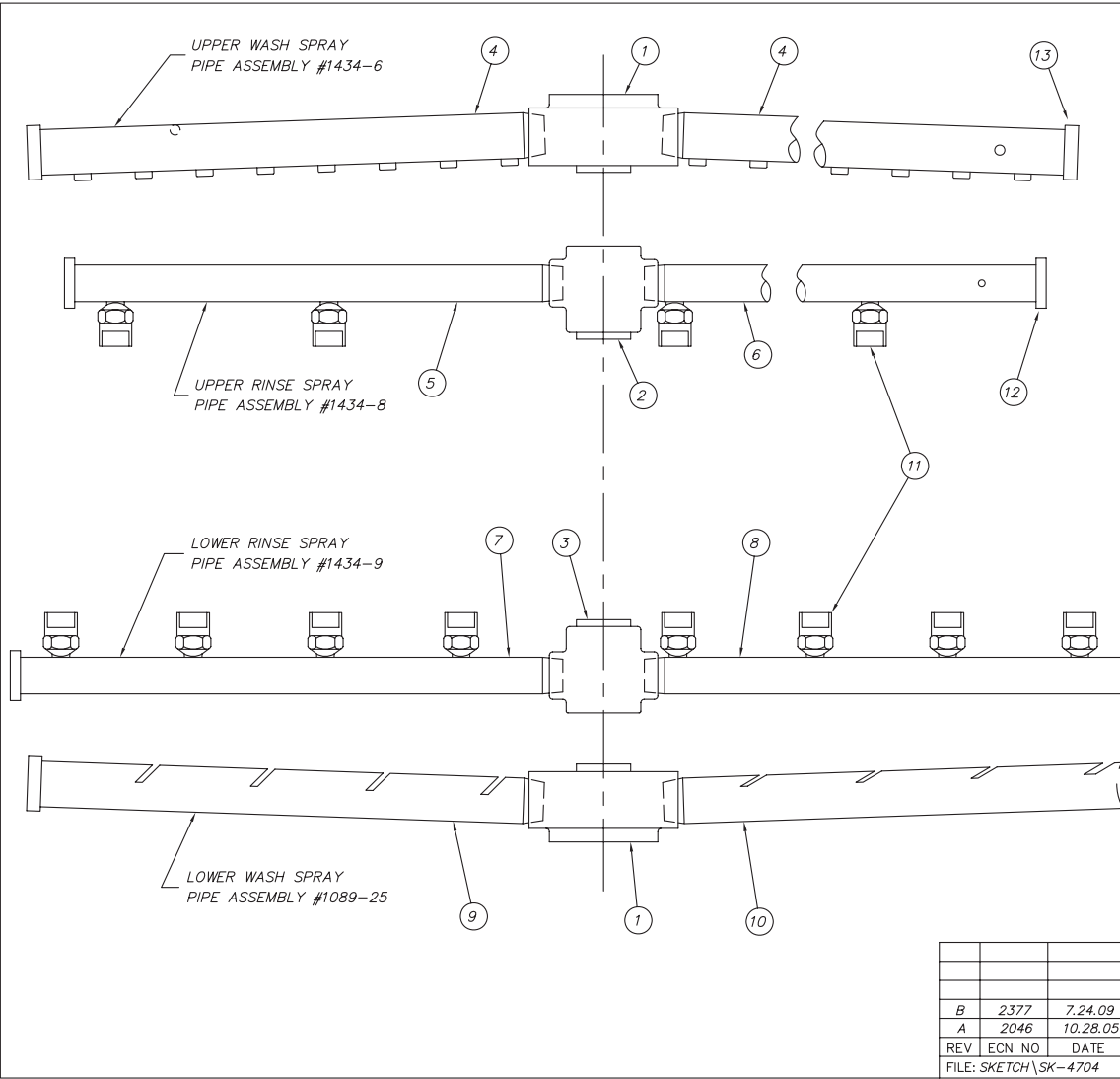
			TOLERANCES	TITLE	FINAL RINSE ASS'Y	NEXT ASSY	DWG. NO.
C	25.37	6.29.11	FRACTIONS ±1/64	18-6 (W/ SELF CONTAINED BOOSTER)		REQ'D	1551-32
B	XXX	05.20.11	DECIMALS				
A	2386	08.19.09	.XXX ± .005				
-	2370	07.20.09	.XX ± .01				
REV	ECN NO	DATE	ANGLES ±1/2°				
FILE: PARTS\1551-32			UNLESS OTHERWISE SPECIFIED	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		SCALE	USED ON
						1=8	18-6
							DRWN/DATE
							A.D.S
							07.20.09



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PART 4 ELECTRICAL SCHEMATICS & REPLACEMENT PARTS

ITEM	PART NO.	DESCRIPTION	QTY.
1	1084-76	WASH HUB	2
2	1463-25	UPPER RINSE HUB	1
3	1084-22	LOWER RINSE HUB ASSEMBLY	1
4	1434-5	UPPER WASH PIPE	2
5	1434-7A	UPPER RINSE PIPE	1
6	1434-7B	UPPER RINSE PIPE	1
7	1434-7C	LOWER RINSE PIPE	1
8	1434-7D	LOWERR RINSE PIPE	1
9	1089-23A	LOWER WASH PIPE	1
10	1089-23B	LOWER WASH PIPE	1
11	D3035	NOZZLE	12
12	D2-554-A1	PLUG - 9/16-12 UNC-2A (W/HOLE)	4
13	D2-554-A2	PLUG - 3/4-10 UNC-2A (W/HOLE)	4
14	SK-4753-1	WIRE ROPE SUB ASSY X 3 1/2" LG	8
15	D309-CC-2G	WELD STUD, S/S, #6-32 X 1/4	8
16	D312C-CC-5	SEAL NUT, #6-32	16
17	D309C-CC-4Q	PAN HD SCREW, #6-32 X 1/2	8

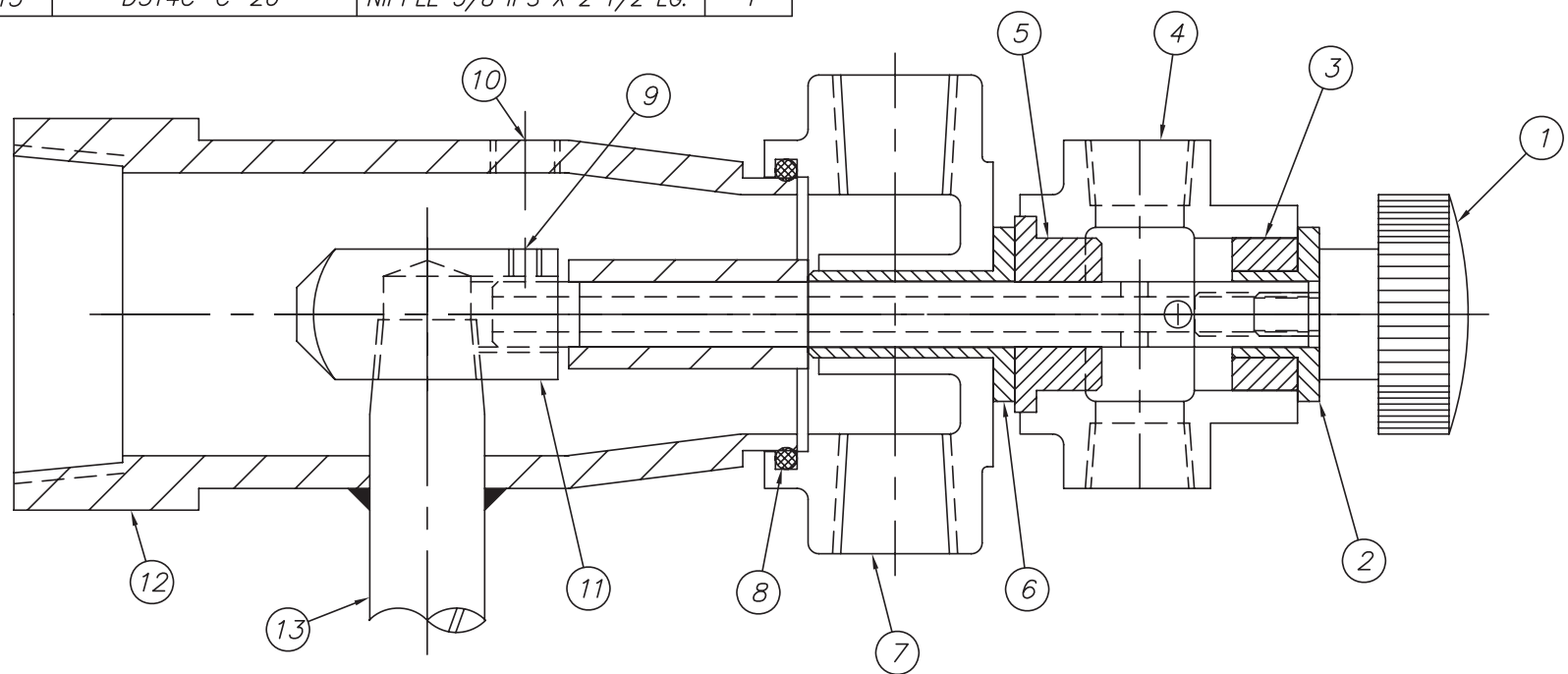


TOLERANCES		TITLE	SPRAY PIPE INSTALLATION ASSEMBLIES	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		MATL	NOTED	REQ'D	SK-4704
DECIMALS				SCALE	USED ON
.XXX ± .005				1=2	18-5
.XX ± .01				DRWN/DATE	DBC
ANGLES ±1/2°				3.24.04	
UNLESS OTHERWISE SPECIFIED					
REV	ECN NO	DATE			
B	2377	7.24.09			
A	2046	10.28.05			
FILE: SKETCH\SK-4704					


Philadelphia, PA 19135
 (215) 624-4800
 FAX (215) 624-6966

ITEM	PART NO.	DESCRIPTION	QTY.
7	1084-76	WASH HUB	1
8	D2-563	"0" RING 1 3/4 OD X 3/32 W	1
9	D309C-EF-2H	#10-32 X 1/4" SETSCREW	1
10	D328A-A2	PIPE PLUG 1/8 IPS	1
11	1084-34	SHAFT ASSEMBLY	1
12	1089-16	DISCHARGE TEE - LOWER	1
13	D314C-C-20	NIPPLE 3/8 IPS X 2 1/2 LG.	1

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2-584A	KNOB - LOWER	1
* 2	1089-178	INSERT BUSHING - RINSE HUB	1
* 3	1089-177	BUSHING - RINSE HUB	1
* 4	372-52	HUB MACHINING	1
* 5	1084-35	BUSHING - RINSE HUB	1
6	952-27	BUSHING - WASH HUB	1

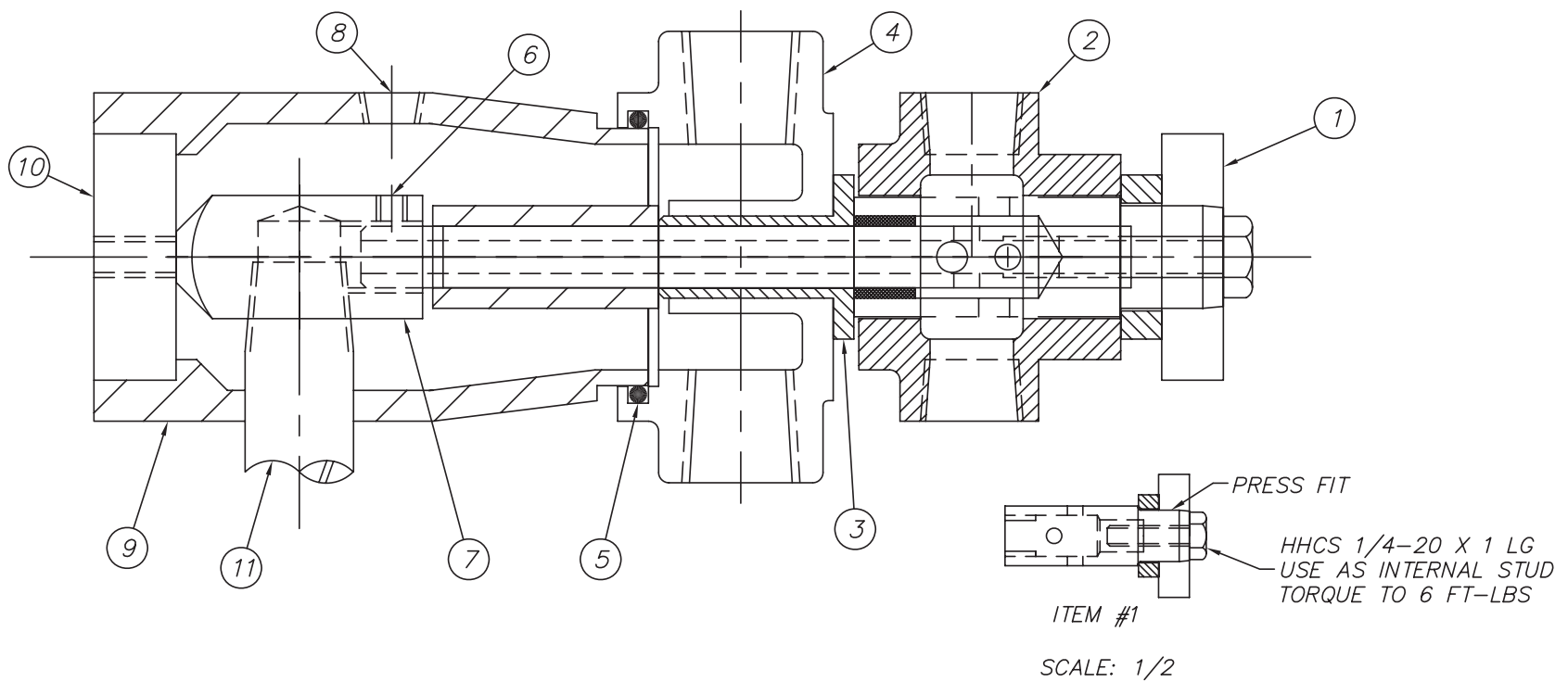


* LOWER RINSE HUB ASSEMBLY
#1084-22 CONSISTS OF:
(1) #372-52 HUB MACHINING
(1) #1084-35 BUSHING
(1) #1089-177 BUSHING
(1) #1089-178 BUSHING

			TOLERANCES	TITLE	18-4 & 18-5	NEXT ASSY	DRW. NO.
			FRACTIONS ±1/64	LOWER MANIFOLD ASSY		REQ'D -	SK-4705
			DECIMALS	MAT'L	-	SCALE	USED ON
			.XXX ± .005			1=1	18-4 & 18-5
			.XX ± .01				DRWN/DATE
			ANGLES ±1/2°				DBC
			UNLESS OTHERWISE SPECIFIED				3.24.04
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966				
FILE: SKETCHA\SK-4703							


ITEM	PART NO.	DESCRIPTION	QTY.
7	1084-34	SHAFT ASSEMBLY	1
8	D328A-A2	PIPE PLUG, 1/8 IPS	1
9	1089-15C	DISCHARGE TEE - UPPER	1
10	1089-28	PLUG (PRESS FIT)	1
11	D314C-C-20	NIPPLE 3/8 IPS X 2 1/2 LG.	1

ITEM	PART NO.	DESCRIPTION	QTY.
* 1	1463-29	SUPPORT ASSY - UPPER HUB	1
2	1463-25	RINSE HUB - UPPER	1
3	952-27	BUSHING - WASH HUB	1
4	1084-76	WASH HUB	1
5	D2-563	"O" RING, 1 3/4 OD X 3/32 W	1
6	D309C-EF-2H	#10-32 X 1/4" SETSCREW	1

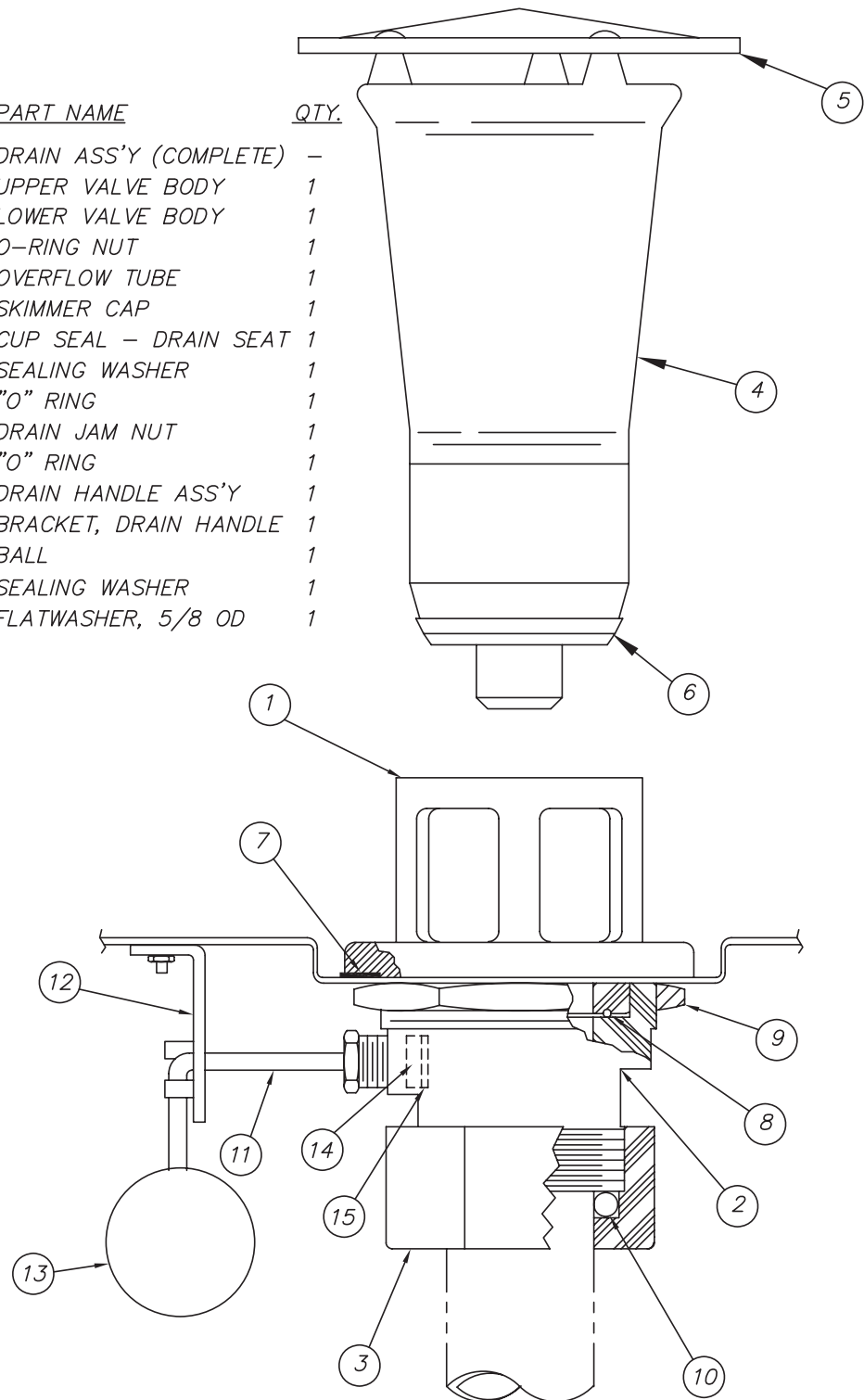


* ITEM #1 SUB-ASSEMBLY
CONSISTS OF:
#1463-26 BEARING BOSS
#1463-27 THRUST COLLAR
#1463-28 KNURLED KNOB
D309C-GC-8A 1/4-20 X 1 LG
HHCS

TOLERANCES		
		FRACTIONS ±1/64
		DECIMALS
		.XXX ± .005
		.XX ± .01
		ANGLES ±1/2°
		UNLESS OTHERWISE SPECIFIED
A	2007	3.25.04
REV	ECN NO	DATE
FILE: SKETCHA\SK-4073		

TITLE	UPPER MANIFOLD ASSEMBLY NEW STYLE 18-5	NEXT ASSY 1463-18	DWG. NO. SK-4073
MAT'L	NOTED	REQ'D 1	USED ON 18-5
 Insinger Machine Company Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		SCALE FULL	DRWN/DATE CES 11.18.98

<u>ITEM</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>
	954-50	DRAIN ASS'Y (COMPLETE)	-
1	954-50A	UPPER VALVE BODY	1
2	954-50B	LOWER VALVE BODY	1
3	954-50C	O-RING NUT	1
4	1169-179D	OVERFLOW TUBE	1
5	D193	SKIMMER CAP	1
6	D2-557	CUP SEAL - DRAIN SEAT	1
7	954-9	SEALING WASHER	1
8	D2-549	"O" RING	1
9	D305A	DRAIN JAM NUT	1
10	D2-550	"O" RING	1
11	970-55	DRAIN HANDLE ASS'Y	1
12	954-8	BRACKET, DRAIN HANDLE	1
13	D2-507	BALL	1
14	954-7	SEALING WASHER	1
15	D3006	FLATWASHER, 5/8 OD	1



SK-3028

- △ ECN# 2377 7.24.09
- △ ECN# 1989 7.7.03
- △ ECN# 1761 5.5.00
- △ ECN# 1512 12.20.96

FILE: SKETCHA\SK-3028

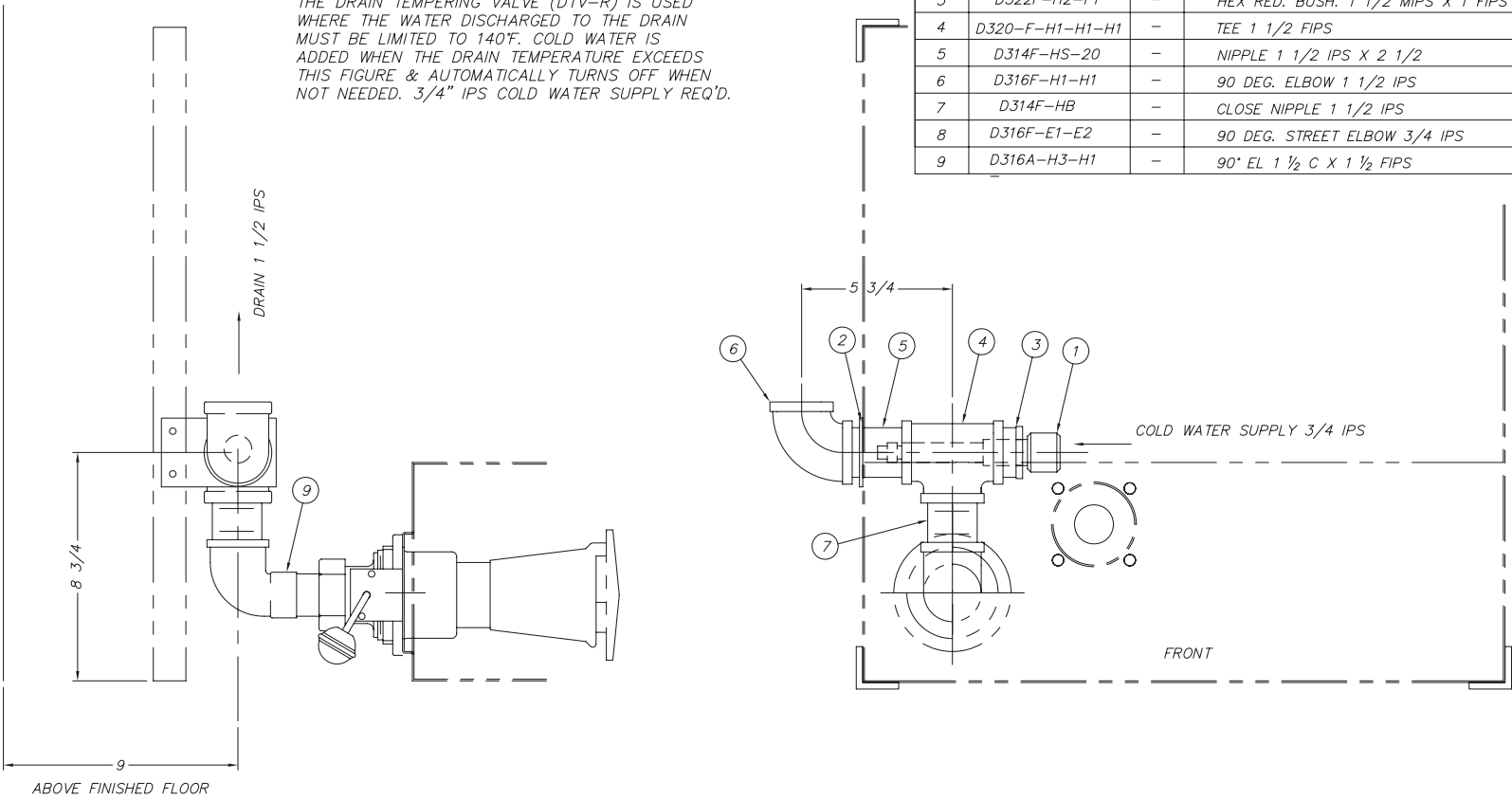
MAM 2.11.93




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(215) 624-4800
FAX (215) 624-6966

ITEM	PART NO.	SIZE	DESCRIPTION	QTY
1	D3033	-	DRAIN TEMPERING VALVE 3/4	1
2	1433-10	A	PIPE SUPPORT	1
3	D322F-H2-F1	-	HEX RED. BUSH. 1 1/2 MIPS X 1 FIPS	1
4	D320-F-H1-H1-H1	-	TEE 1 1/2 FIPS	1
5	D314F-HS-20	-	NIPPLE 1 1/2 IPS X 2 1/2	1
6	D316F-H1-H1	-	90 DEG. ELBOW 1 1/2 IPS	1
7	D314F-HB	-	CLOSE NIPPLE 1 1/2 IPS	1
8	D316F-E1-E2	-	90 DEG. STREET ELBOW 3/4 IPS	1
9	D316A-H3-H1	-	90° EL 1 1/2 C X 1 1/2 FIPS	1

THE DRAIN TEMPERING VALVE (DTV-R) IS USED WHERE THE WATER DISCHARGED TO THE DRAIN MUST BE LIMITED TO 140°F. COLD WATER IS ADDED WHEN THE DRAIN TEMPERATURE EXCEEDS THIS FIGURE & AUTOMATICALLY TURNS OFF WHEN NOT NEEDED. 3/4" IPS COLD WATER SUPPLY REQ'D.



CONNECTIONS CAN BE RELOCATED BY ADDING, DELETING OR ROTATING ELBOWS

TOLERANCES			TITLE	NEXT ASSY	DWG. NO.
		FRACTIONS ±1/64	DRAIN COOL DOWN CONNECTIONS	REQ'D	1433-9
		DECIMALS		1	
		.XXX ± .005	MAT'L	SCALE	USED ON
		XX ± .01		1=4	18-6
		ANGLES ±1/2°	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE	
		UNLESS OTHERWISE SPECIFIED		CES	3.4.09
REV	ECN NO	DATE			
A	2377	7.27.09			
FILE: PARTS\1433-9					

CONVERT 18-6 STRAIGHT TO CORNER

DOOR CONVERSION

All 3 doors open on a straight machine; only the front & right hand doors are used on a corner. The front is defined as facing the center door with the springs on the back. Remove the door connector bracket between the left & front doors. Fill the holes with the screws, flat washers & nuts. Disconnect the link between the left door stud and the handle and remove it. Back off the tension on the springs on the back of the machine. Test the operation of the doors. It may be necessary to remove the springs and turn the mounting angle upside down. Use 2 people, a 1/2 diameter rod and extreme care if disconnecting and reattaching springs. Be sure the door magnet is on an operating door.

TRACK CONVERSION

Current Track Assembly #1550-28 rev A: remove item #3 Track Fence from its position on the front track & insert the studs into the holes on the left hand cross track (at the non-opening door). The angle must face toward the inside of the machine. The rack will be sliding over the surface of this angle.

Early Track Assembly #1550-28 rev 0: remove #1550-14-2 vertical and discard. Install #1550-14-3 cross track - closed end on the left (at the non-opening door). Install #1550-14-5 cross track - open end on the right (at the opening door). Track arrangement should now match the view on the left of the drawing 'CORNER SET-UP'. If any parts are missing, contact parts@insingermachine.com or call 215-624-4800.

LEFT/RIGHT CONFIGURATION

See Installation Drawing 18-6C. Note how the machine is positioned in a left hand corner. It is rotated 90 degrees clockwise for installation into a right hand corner. This constitutes the conversion procedure.



Thank you for purchasing this quality Insinger product.

On 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.

A Service Network Listing is provided on our web site, www.insingermachine.com or call Insinger at 800-344-4802 for your local authorized servicer.

For proper activation of the Insinger Limited Warranty a SureFire™ Start-Up & Check-Out Service should be completed on your machine. Refer to the Introduction section in this manual for an explanation of Insinger SureFire™ Start-Up & 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 by phone, fax or the internet or for answers to question concerning installation, operation, or service contact our Technical Services Department:

TECHNICAL SERVICE CONTACTS	
Toll-Free	800-344-4802
Fax	215-624-6966
e-mail	service@insingermachine.com
Web site	www.insingermachine.com

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Part 3 Operating Instructions	5
Part 4 Maintenance and Repair	6
Part 5 Electrical Schematics & Replacement Parts	7-16


 Project _____ CSI - 11400 _____
 Item _____ Approval _____
 Quantity _____ Date _____


COMMANDER 18-6VG

Automatic Single Tank Door Type Dishwasher

DESIGN

- Automatic door type, single tank dishwasher with timed wash and rinse cycle
- 0.8 Gallons/rack
- Capacity is 40- 20" x 20" racks per hour or 1000 dishes per hour
- Fully automatic operation
- RackAware™ Automatic Rack Sensing System* only runs a cycle when a rack is present
- VaporGuard™ Condensate Removal System*
- Selectable 2 minute extended wash cycle
- Field convertible straight through to corner
- Single Digital Temperature indicator for wash and rinse temperature

STANDARD FEATURES

- SureFire® Start-Up & Check-Out Service
- Non-proprietary commercially available pump motor and parts
- "Easy Clean" front-mounted wash tank
- Single scrap screen design
- Tank heat: 5 Kw electric immersion heater or steam tank coils
- Top-mounted NEMA 12 control panel
- Single point electrical connection: motor, controls, heater and built-in booster
- Door safety switch
- Low water protection
- Override switch for delimiting or extended wash cycle on front control panel
- Easy-glide doors
- Detergent connection provision
- Manifold cleanout brush
- S/S frame, legs and feet
- S/S front panel
- End caps/pipe plugs secured to prevent loss



RackAware™ Automatic Rack Sensing System* only runs a cycle when a rack is present

OPTIONS

- Pressure reduction valve and line strainer
- Stainless steel steam coil tank heat
- Steam booster
- Built-in electric booster
- Remote electric booster
- Totally enclosed motor
- Door activated drain closer
- Plastic 20" x 20" racks (plate or silver)
- Drain quench system



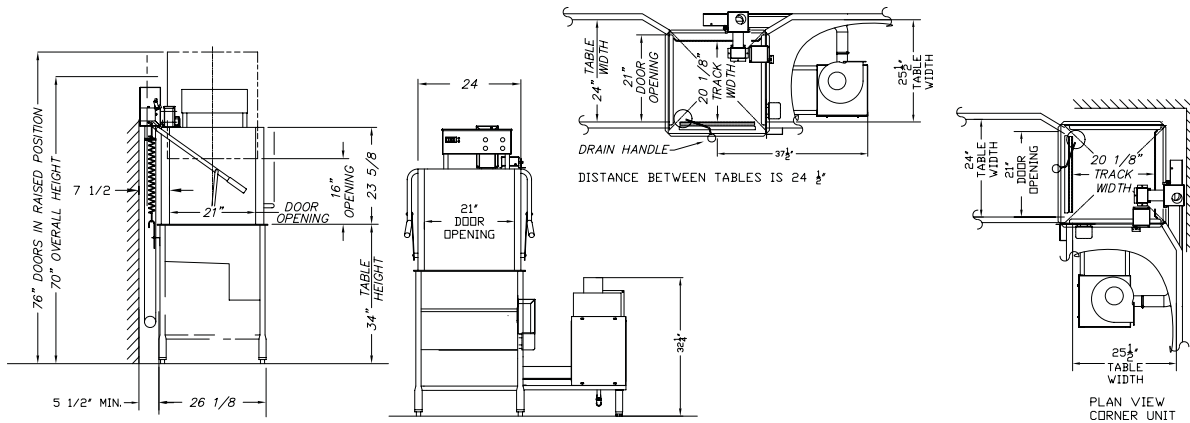
*Patent Pending

6245 State Road • Philadelphia, PA 19135 • PH: 800-344-4802 • FX: 215-624-6966 • www.insingermachine.com



COMMANDER 18-6VG

Automatic Single Tank Door Type Dishwasher



Note: For all rough in connections see installation and layout detail drawing.

Capacity Per Hour	40 racks 1000 dishes 50-100 meals		
Tank Capacity	6.4 gallons		
Motor Size	1 hp (wash)		
Electric Usage	3.8 Kw 208v		
	5.0 Kw 240v 3.1 Kw 380v 5.0 Kw 480v		
Steam Consumption at 20 psi min.	11 lbs./hour tank		
	22 lbs./hour booster 40° rise 43 lbs./hour booster 70° rise		
Final Rinse Peak Flow at 20 psi min.	4.3 gallons/minute		
Final Rinse Consumption at 20 psi min.	32 gallons/hour 0.8 gallons/rack		
Peak Rate Drain Flow	9 gallons/minute		
Shipping Weight	400 lbs.		
Current Draw Amps	Steam	Electric w/o booster	Electric w/ built-in booster
	208/1/60	11.1	29.4
208/3/60	6.9	17.4	45.5
240/1/60	9.7	30.5	86.8
240/3/60	5.8	17.8	50.3
380/3/50	3.9	8.6	29.2
480/3/60	3.1	9.1	25.3

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 or bronze.

DOORS- Three (both sides and front) simultaneously opening doors. Operating doors have fingertip control, balanced by externally mounted springs. (Corner installations have two simultaneously opening doors at right angles.) All doors have easy-glide strips. Extra large die formed type 304 S/S doors ride in all S/S channels. A triple ply leading edge on the door channels made of S/S.

PUMP- Centrifugal type "packless" pump with a brass petcock drain. 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. One 1 HP motor, standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

CONTROLS- Top mounted control cabinet, NEMA 12 rated, housing motor controls and overload protection, transformer, contactors and all dishwasher integral controls. Integrated rack sensing system.

SPRAY SYSTEM- Wash and rinse spray systems made of type 304 stainless steel pipe threaded into cast hub assemblies. Upper and lower wash and rinse spray assemblies are removable without the use of tools.

WASH- 2 power spinning wash arms above and 2 power spinning wash arms below. On top, each wash arm is designed with 8 nozzles (16 total). On the bottom, each wash arm is designed with 4 slots (8 total). The slots are precision milled for water control and produce a fan spray.

FINAL RINSE- 2 power spinning rinse arms above and 2 power spinning wash arms below. On top, each rinse arm is designed with 2 nozzles (4 total). On the bottom, each rinse arm is designed with 4 nozzles (8 total). The nozzles 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.

Note: Due to product improvement we reserve the right to change information and specifications without notice.

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**COMMANDER 18-6VG DOOR TYPE
DISHWASHER****INTRODUCTION****Purpose**

The purpose of this technical manual addendum is to provide installation, operation, cleaning and maintenance directions.

A section is provided for replacement parts.

Scope

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the Insinger VG-1 VaporGuard™.

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 parts sections are intended for qualified service and/or maintenance technicians. Replacement parts may be ordered directly from our factory or from your local Insinger Authorized Service Agency.

You can speak to the Insinger Technical Services Department, 800/344-4802, or e-mail us at service@insingermachine.com. When calling for warranty information or replacement parts please provide the model and serial number of your Insinger Equipment. These important numbers should be noted in this manual on the spaces provided on the opening page.

INSTALLATION AND CONNECTION

The VaporGuard™ system is a factory installed option and is shipped attached to the warewasher.

Refer to Warewasher installation instructions.

Check Electrical Connections

Warewasher to VaporGuard™ Inlet [damper](#) solenoid

Warewasher to VaporGuard™ Bypass [damper](#) solenoid

Warewasher to VaporGuard™ Blower motor

Note these connections are 208/240VAC.

Setting Up and Alignment:

The machine must be completely level when installed.

Adjust the machine's feet to compensate for any unevenness of the floor.

Check and retighten connections of exhaust hose/duct to bypass [damper](#) and to VaporGuard™

Check exhaust hose/duct to ensure that it does not extend below the VaporGuard™ box inlet at any point along its path. Adjust as required.

Connection to the Drain:

The unit is equipped with a 1/2" PVC drain connection and is normally connected to the same drain that the warewasher is connected to. The drain must be connected to a drain capable of handling an additional 1.0 gal/min flow. A proper air gap must be supplied between the unit and the building drain connections. Failure to provide air gap will result in improper or inconsistent draining of unit and potential overflow condition.

OPERATING INSTRUCTIONS**OPERATING INSTRUCTIONS for VaporGuard™**

Always refer to the Warewasher's operation instruction for performance of the Warewasher.

These instructions only pertain to the VaporGuard™

START-UP AND CHECK

Before proceeding with the start up verify the following:

Open the front panel to the VaporGuard™ and verify that any packaging materials and tie downs have been removed. Confirm that the water removal panels are laying flat.

SEQUENCE of OPERATION**1. NORMAL OPERATION of WAREWASHER**

- a. Follow steps in the Warewasher manual.
- b. Warewasher tank doors locked closed
- c. Intake **damper** closed to the warewasher
- d. Bypass **damper** closed to the warewasher, open to room air
- e. VaporGuard™ fan ON

2. END of WAREWASHER NORMAL OPERATION.**3. START OF VaporGuard™ CYCLE.**

- a. Warewasher tank doors locked closed
- b. Intake **damper** open to the warewasher
- c. Bypass **damper** open to the warewasher, closed to room air
- d. VaporGuard™ fan ON
- e. Warewasher cycle light ON

4. END of VaporGuard™ CYCLE

- a. Warewasher tank doors unlocked.
- b. Intake **damper** closed to the warewasher
- c. Bypass **damper** closed to the warewasher, open to room air
- d. VaporGuard™ fan OFF
- e. Warewasher cycle light OFF

5. Doors can be opened and rack unloaded.

TROUBLESHOOTING

Faults where it is not necessary to call Insinger. You can rectify minor faults yourself following the steps described in the table below.

If you are unable to rectify the fault, contact Insinger service (1-800-344-4802.)

Do not open any panels or expose any parts of the machine if tools are necessary to do so.

Risk of electric shock.

Work on the electrical equipment should only be performed by service personnel.

First disconnect the washer from the main power.

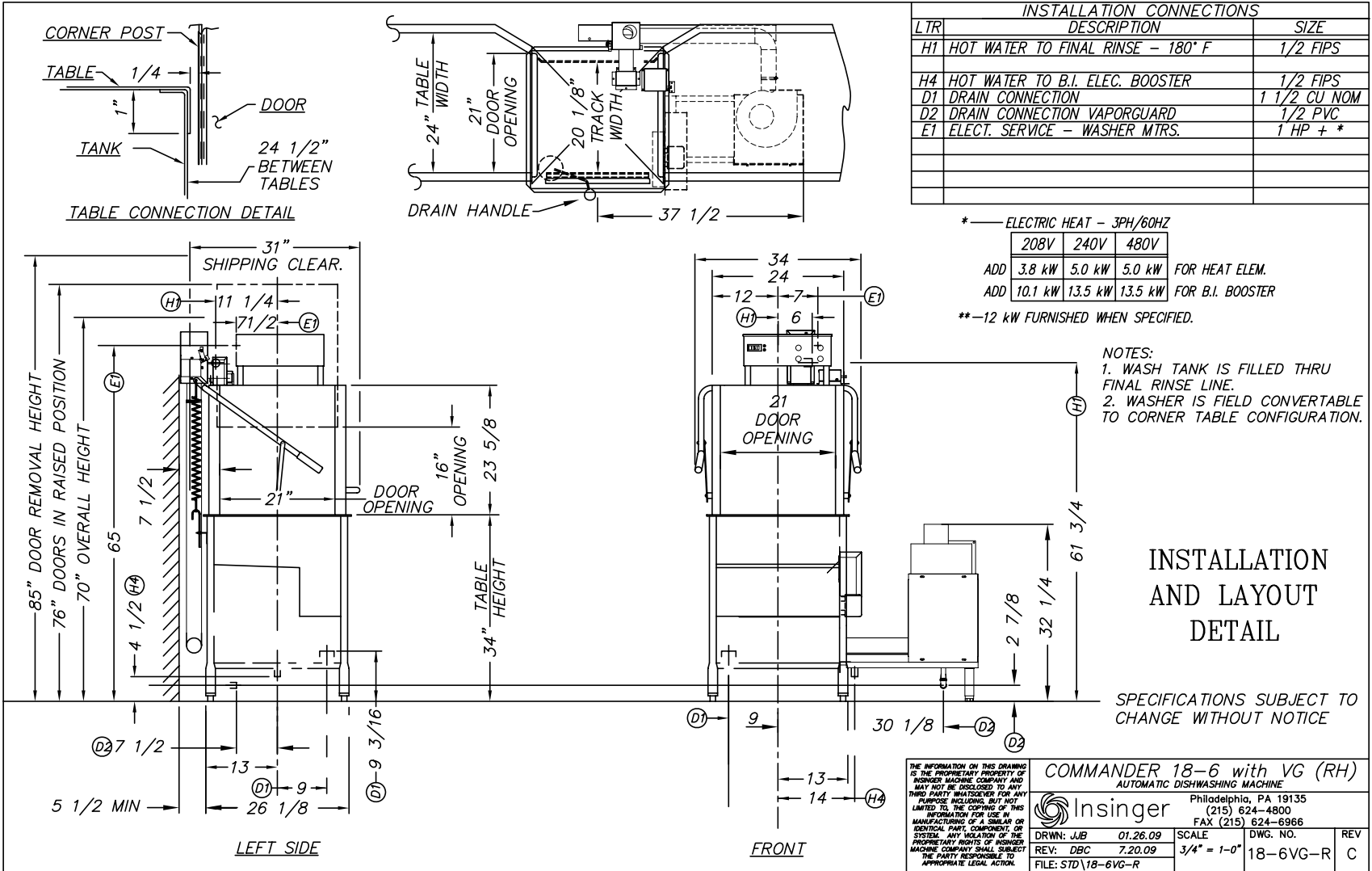
Do not switch the washer on again until the cause of the fault has been identified.

TROUBLESHOOTING		
Problem	Cause	Remedy
Blower not running	No power Motor failed	Check power source Replace motor and blower assy
Intake damper not opening	No power Check damper linkage Check for binding Solenoid not function	Check power source Replace or adjust linkage if bent Lightly lubricate binding point Replace solenoid
Bypass damper not opening	No power Check damper linkage Check for binding Solenoid not function	Check power source Replace or adjust linkage if bent Lightly lubricate binding point Replace solenoid
Water coming out of box corners	Drain line clogged	Unclog drain



Insinger®

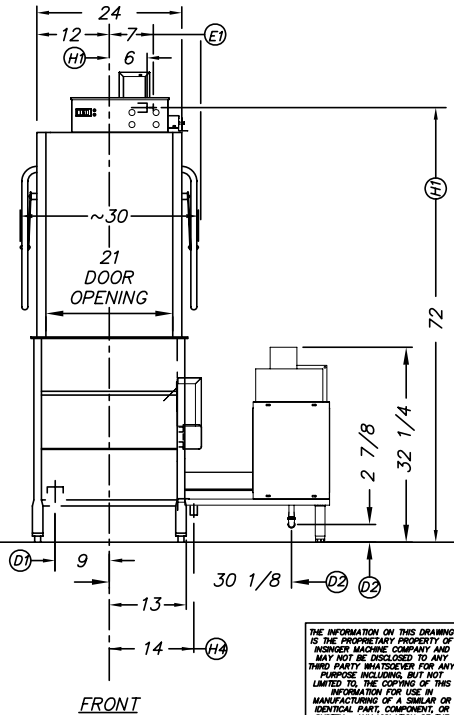
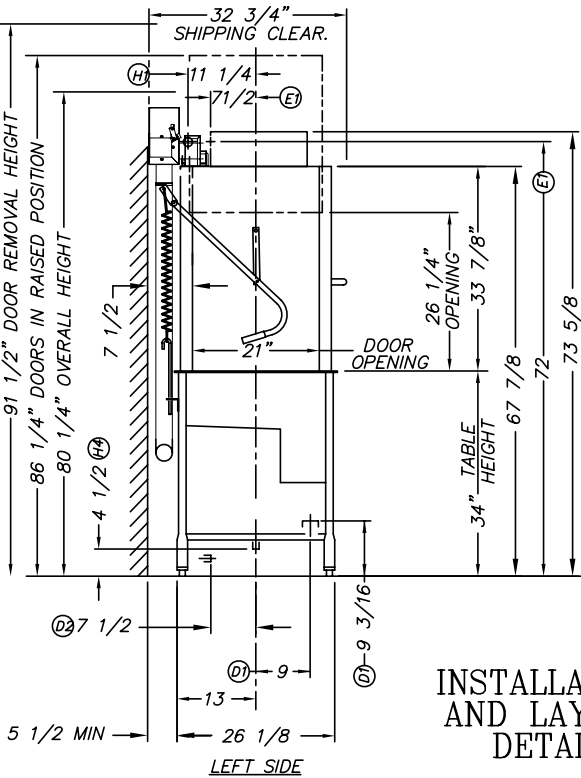
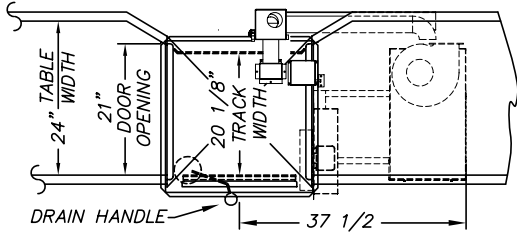
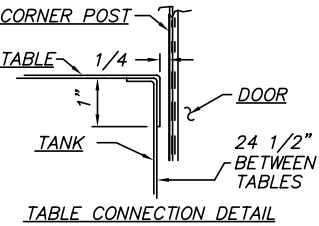
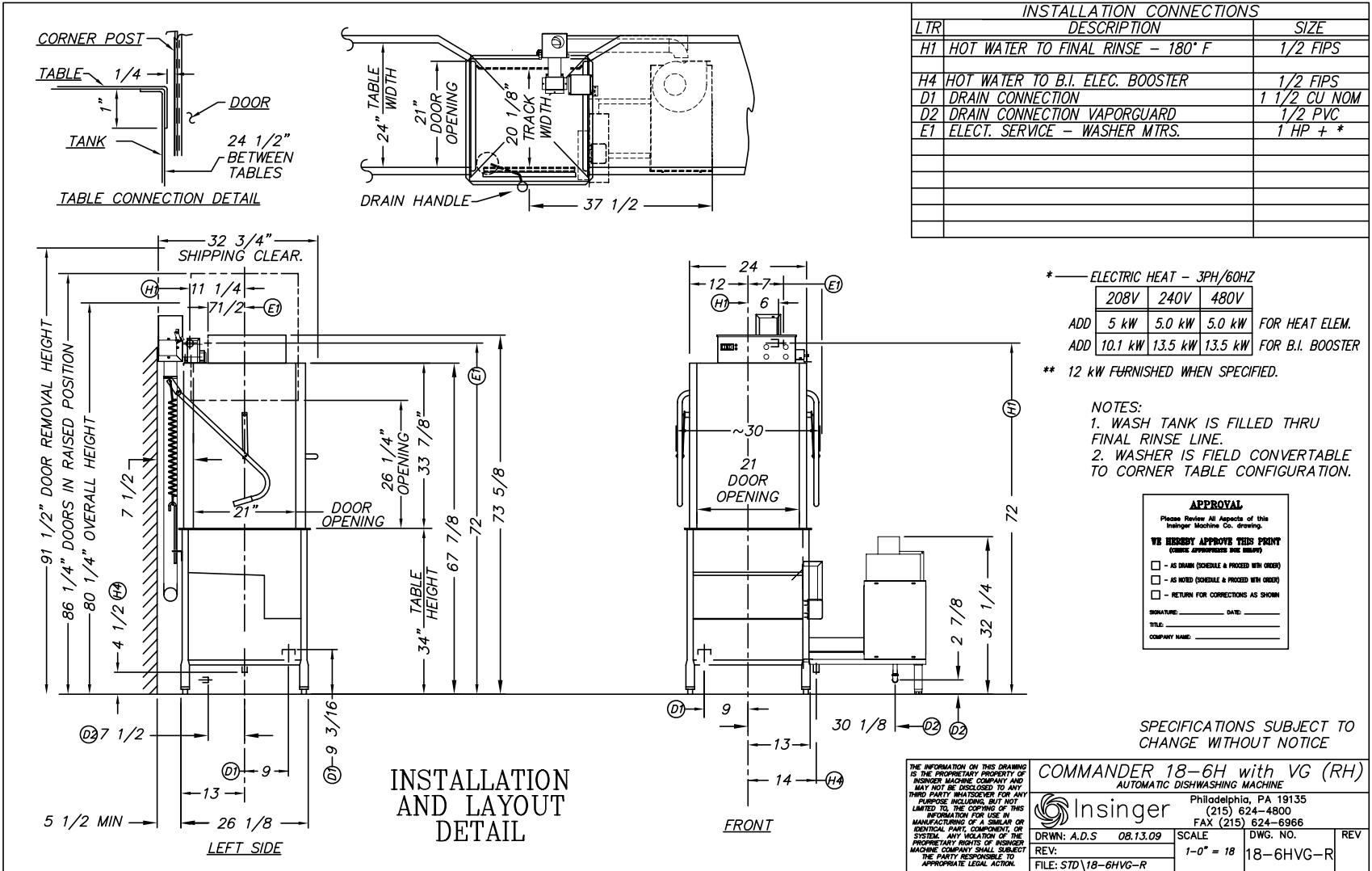
PART 5 ELECTRICAL SCHEMATICS & REPLACEMENT





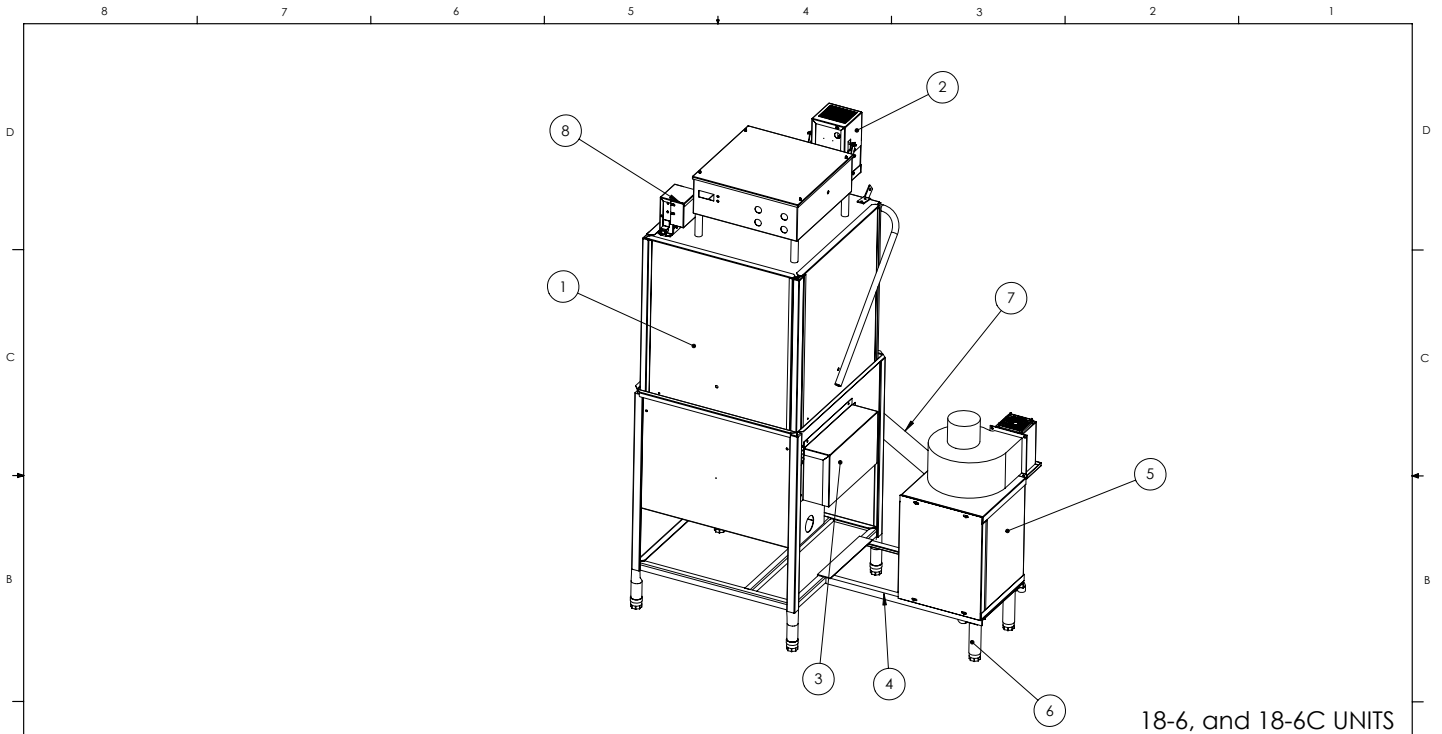
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PART 5 ELECTRICAL SCHEMATICS & REPLACEMENT



INSTALLATION AND LAYOUT DETAIL


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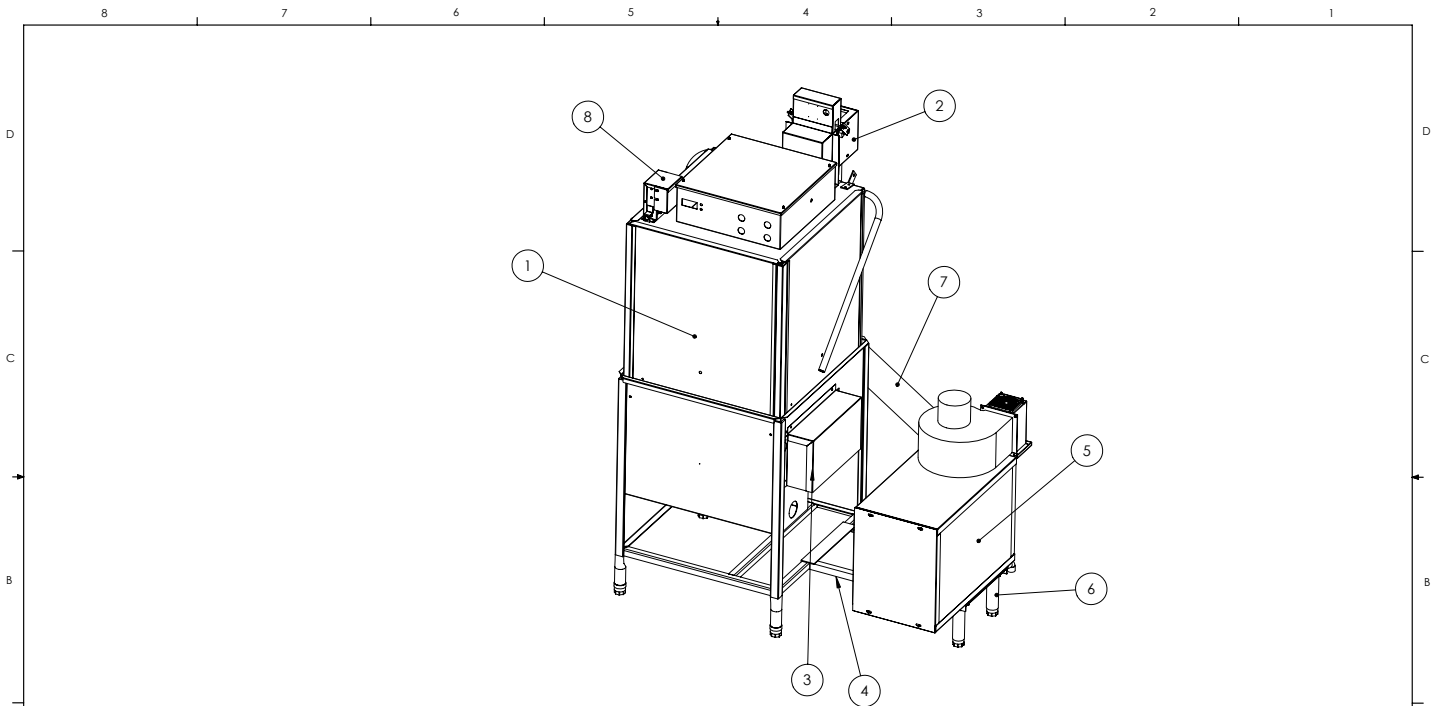


18-6, and 18-6C UNITS

8	1564-75	DOOR LOCK ASSY	1
7	9002 VG	2 1/2" FLEX HOSE	1
6	D3078	ADJUSTABLE LEG	2
5	1564-33	VG EXTRACTOR ASSY	1
4	1564-28	VG FRAME WELD	1
3	1564-2	TANK DAMPER ASSY	1
2	1564-12	HOOD DAMPER ASSY	1
1	18-6 TOP LEVEL	18-6 UNIT	1
ITEM NO.	PART NO.	DESCRIPTION	QTY.

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REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
001						18-6VG REVA
			FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2°	MATT'L - FINISH: - WEIGHT: 225.41 LBS BLANK SIZE: PROGRAM No.:	REQ'D - SCALE: 1:12	USED ON - DRWN/DATE -
			UNLESS OTHERWISE SPECIFIED	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		
						SHEET OF 1 1 REV -




18-6H and 18-6HC UNITS

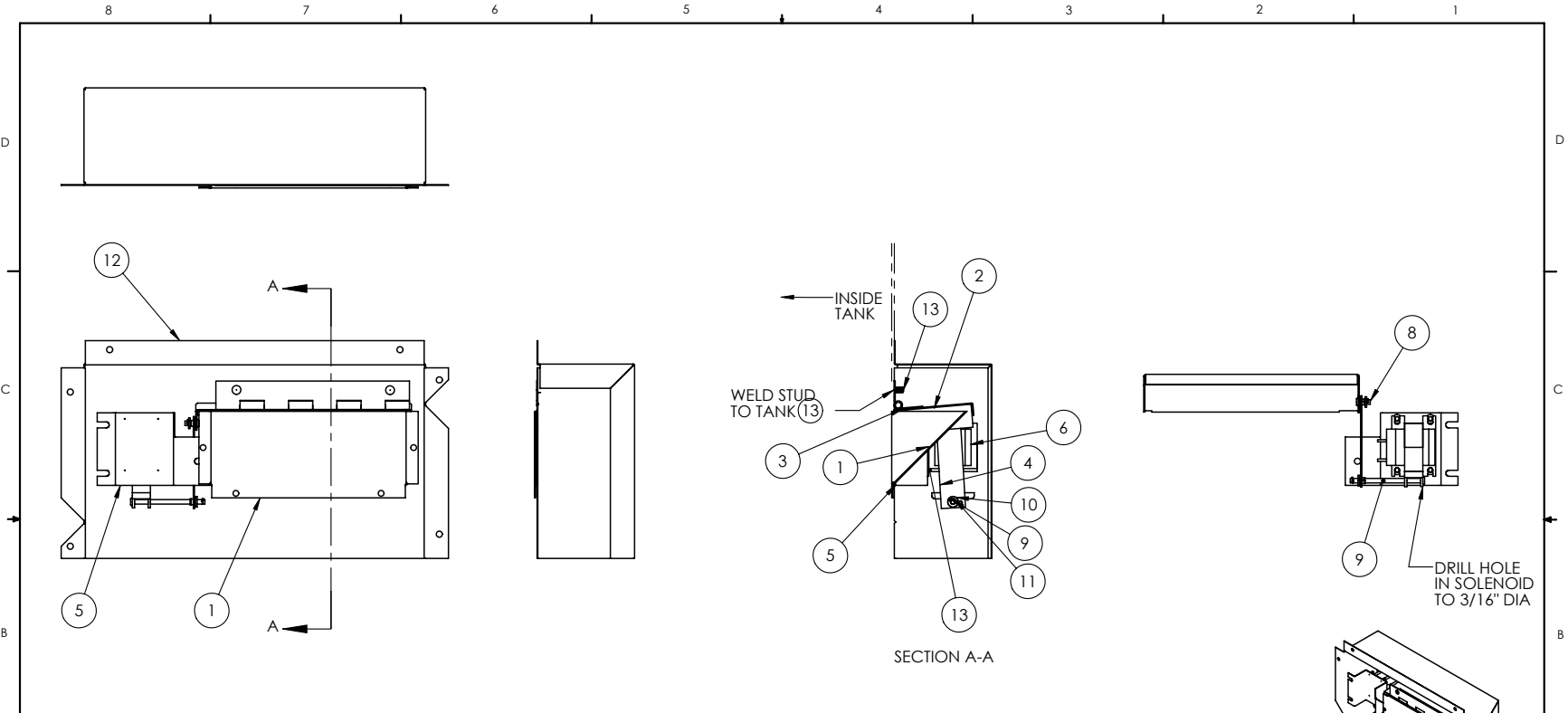
8	1564-75	DOOR LOCK ASSY	1
7	1564-89	4" FLEX HOSE	1
6	D3078	ADJUSTABLE LEG	2
5	1564-80	VG LG EXTRACTOR ASSY	1
4	1564-28	VG FRAME WELD	1
3	1564-2	TANK DAMPER ASSY	1
2	1564-56	BYPASS DAMPER ASSEMBLY	1
1	18-6H TOP LEVEL	18-6H	1
ITEM NO.	PART NO.	DESCRIPTION	QTY.

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REV	ECN NO	DATE
001	B	FILE: -

TOLERANCES
 FRACTIONS ±1/64
 DECIMALS
 .XXX ± .005
 .XX ± .01
 ANGLES ±1/2°
 UNLESS OTHERWISE SPECIFIED

TITLE	VAPORGUARD 18-6H	NEXT ASSY	DWG. NO.
MAT'L	FINISH: -	REQ'D	18-6HVG REV: -
WEIGHT: 244.60 LBS	PROGRAM No.:	SCALE:	DRWN/DATE
		1:12	JJB 11.02.09
 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		SHEET	REV
		OF	
		1	1



18-6, 18-6C, 18-6H AND 18-6HC

ISOMETRIC VIEW
SCALE 1:8

ITEM NO.	PART NO.	DESCRIPTION	Default 1/QTY.
13	D309C-EF-3G	WELD STUD 10-32X3/8 SS	6
12	1564-9	TANK DAMPER WELD	1
11	D3150	HAIRPIN 3/16	2
10	D313C-E1	#10 STD WASHER	2
9	D3149	PIN 3/16 X 3	1
8	D3148	PIN, CLEVIS 3/16 X 1/2	1
7	D3147	THRUST BEARING 3/16 BORE	2
6	D3155	SOLENOID 1 INCH TRAVEL 240V	1
5	1564-6	TANK DAMPER SOLENOID MOUNT	1
4	1564-8	TANK DAMPER LINKAGE	1
3	1564-5	TANK DAMPER HINGE	1
2	1564-4	TANK DAMPER TOP	1
1	1564-3	TANK DAMPER BODY	1

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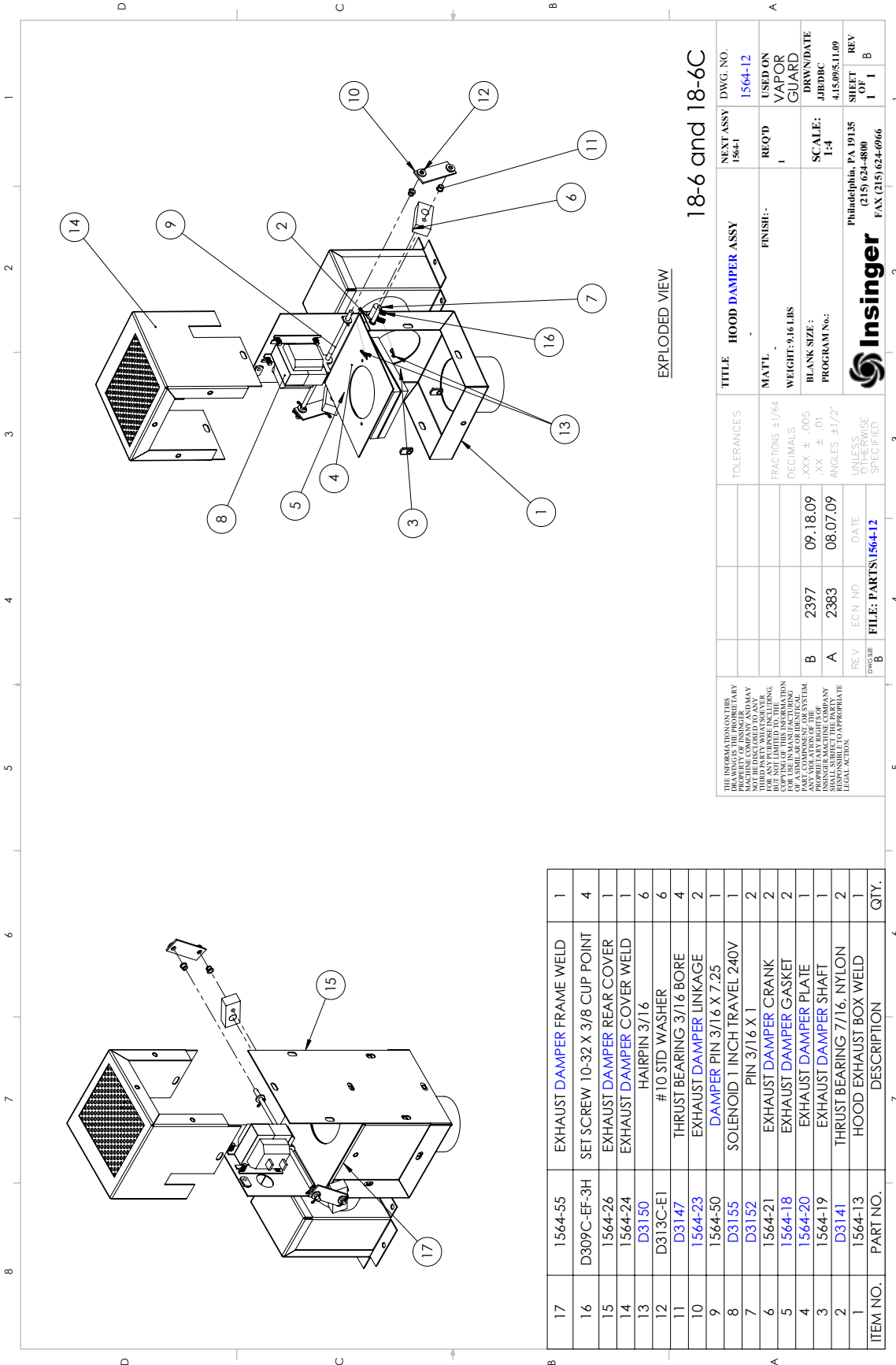
REV	ECN NO	DATE
B	2397	09.18.09
A	2383	08.07.09


TOLERANCES
FRACTIONS ±1/64
DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2°

TITLE	NEXT ASSY	DWG. NO.
TANK DAMPER ASSY COMMANDER	1564-1	1564-2
MAT'L WEIGHT: 6.55 LBS	REQ'D 1	USED ON VAPOR GUARD
FINISH: -	SCALE: 1:4	DRWN/DATE JJB/DBC 3.17.09/5.12.09

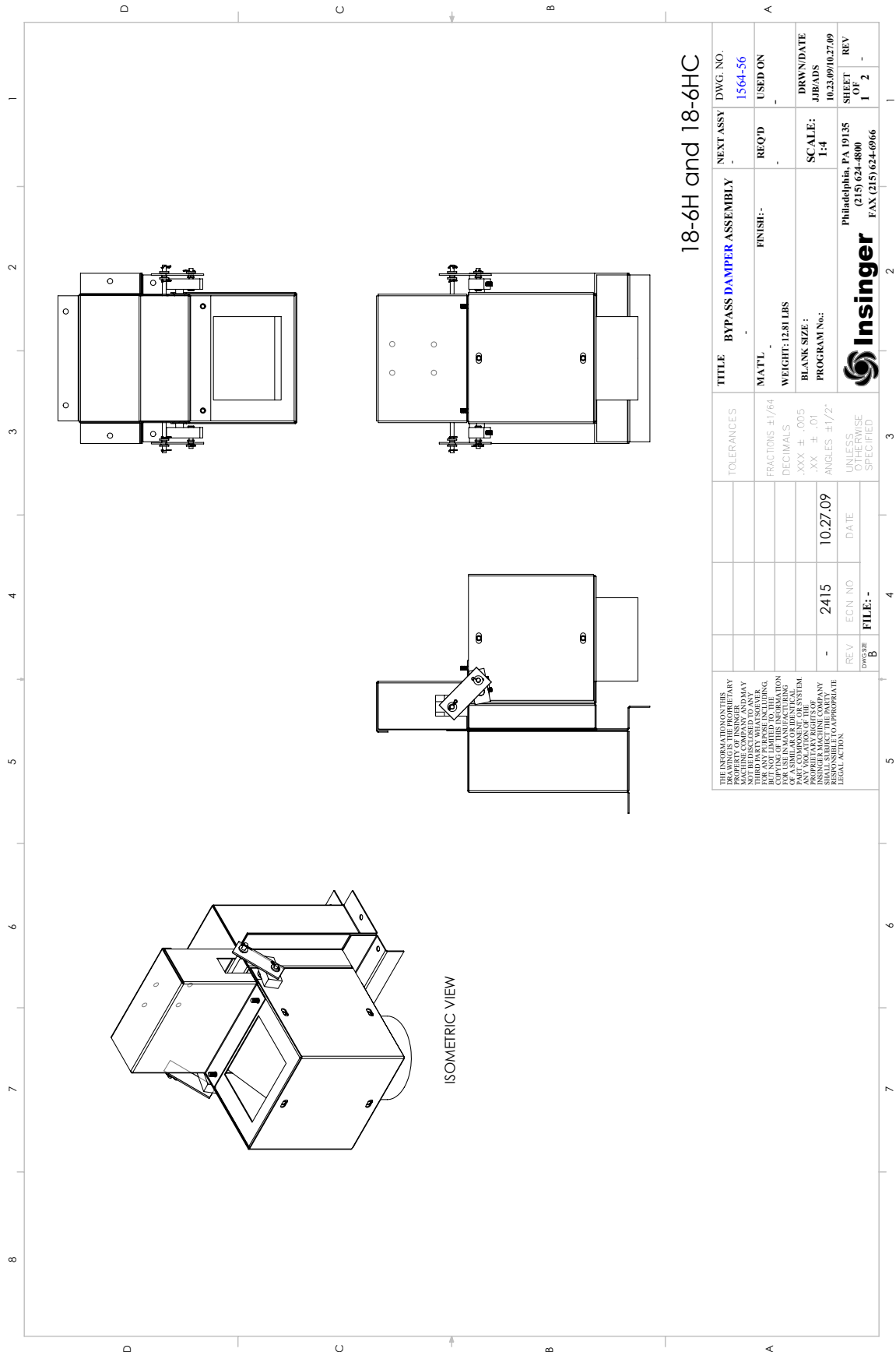
UNLESS OTHERWISE SPECIFIED	Philadelphia, PA 19135	SHEET	REV
	(215) 624-4800	OF 1	B
	FAX (215) 624-6966		

FILE: PARTS\1564-2

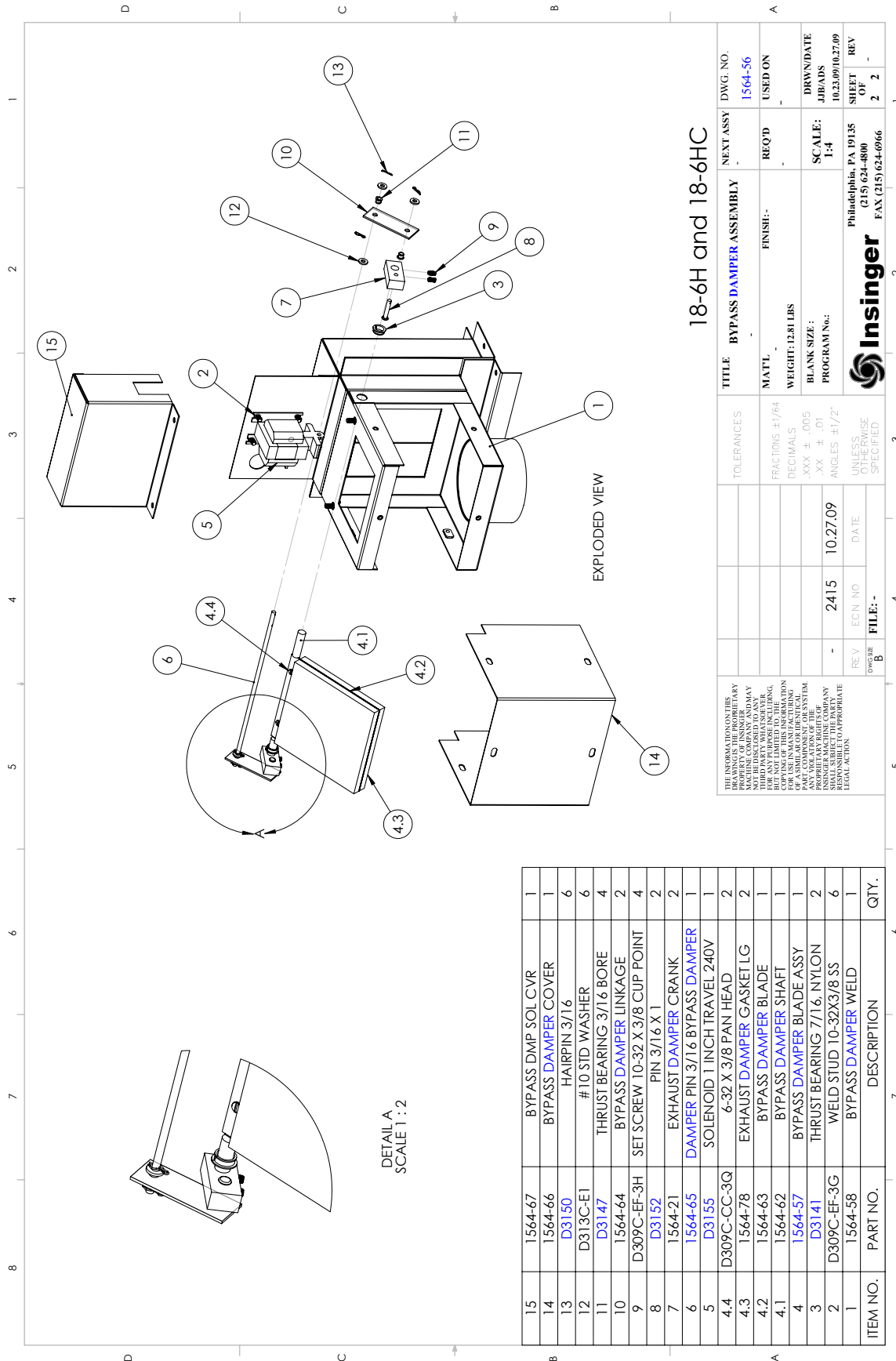

EXPLODED VIEW
18-6 and 18-6C

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REV B DATE 09.18.09 ECN NO 2397 FILE: PARTS 1564-12	REV A DATE 08.07.09 ECN NO 2383	PHILADELPHIA, PA 19135 (215) 624-8000 FAX (215) 624-6966			

ITEM NO.	PART NO.	DESCRIPTION	QTY.
17	1564-55	EXHAUST DAMPER FRAME WELD	1
16	D309C-EF-3H	SET SCREW 10-32 X 3/8 CUP POINT	4
15	1564-26	EXHAUST DAMPER REAR COVER	1
14	1564-24	EXHAUST DAMPER COVER WELD	1
13	D3150	HAIRPIN 3/16	6
12	D313C-E1	# 10 STD WASHER	6
11	D3147	THRUST BEARING 3/16 BORE	4
10	1564-23	EXHAUST DAMPER LINKAGE	2
9	1564-50	DAMPER PIN 3/16 X 7.25	1
8	D3152	SOLENOID 1 INCH TRAVEL 240V PIN 3/16 X 1	2
6	1564-21	EXHAUST DAMPER CRANK	2
5	1564-18	EXHAUST DAMPER GASKET	2
4	1564-20	EXHAUST DAMPER PLATE	1
3	1564-19	EXHAUST DAMPER SHAFT	1
2	D3141	THRUST BEARING 7/16, NYLON	2
1	1564-13	HOOD EXHAUST BOX WELD	1

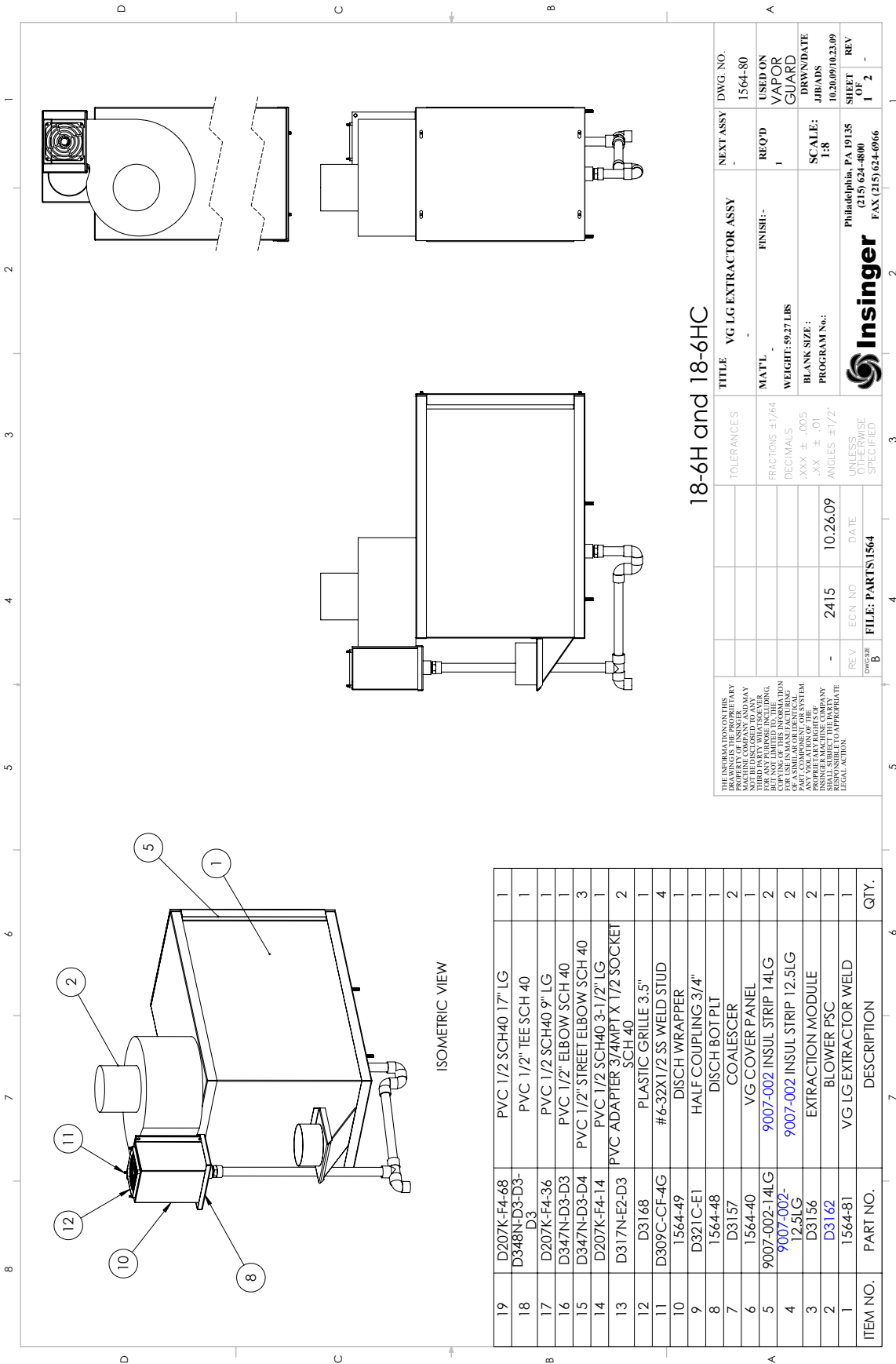

18-6H and 18-6HC

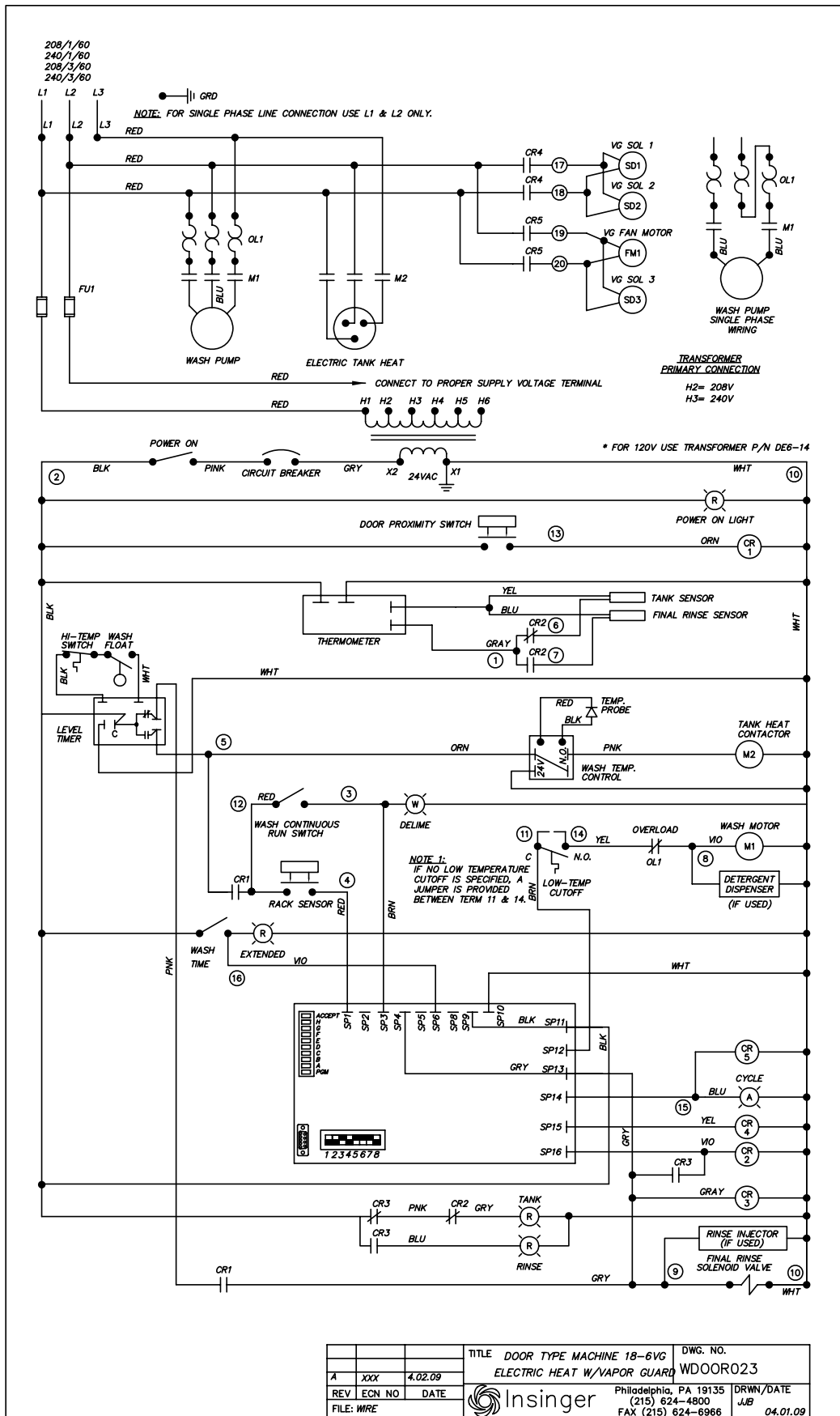
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	-	2415	10.27.09	Insinger Philadelphia, PA 19135 (215) 624-8000 FAX (215) 624-6966	
	<small>FILE: -</small>		TITLE: BYPASS DAMPER ASSEMBLY		NEXT ASSY:
	WEIGHT: 1281 LBS		FINISH:	REQ'D	DWG. NO. 1564-56
SCALE: 1-4		PROGRAM No.:	USED ON	DRW/DATE	JTB/ADS
ANGLES ±1/2°		DECIMALS: .XXX ± .005	TOLERANCES	SHEET OF	REV
FRACTIONS ±1/64		.XX ± .01	MAT'L	1	2


18-6H and 18-6HC

TITLE BYPASS DAMPER ASSEMBLY FINISH: - WEIGHT: 12.81 LBS BLANK SIZE: - PROGRAM No.: - SCALE: 1:4 DRW/DATE 10.23.09/10.27.09 JTB/ADS - REV - SHEET 2 OF 2		DWG. NO. 1564-56 USED ON - RECD - REQUIREMENTS - SCALE: 1:4 DRW/DATE 10.23.09/10.27.09 JTB/ADS - REV - SHEET 2 OF 2
TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED		PHILADELPHIA, PA 19135 (215) 624-8000 Insinger FAX (215) 624-6966
REV - ECN NO 2415 DATE 10.27.09 FILE: - SIZE B		Philadelphia, PA 19135 (215) 624-8000 Insinger FAX (215) 624-6966

ITEM NO.	PART NO.	DESCRIPTION	QTY.
15	1564-67	BYPASS DMP SOL CVR	1
14	1564-66	BYPASS DAMPER COVER	1
13	D3150	HAIRPIN 3/16	6
12	D313C-E1	# 10 STD WASHER	6
11	D3147	THRUST BEARING 3/16 BORE	4
10	1564-64	BYPASS DAMPER LINKAGE	2
9	D309C-EF-3H	SET SCREW 10-32 X 3/8 CUP POINT	4
8	D3152	PIN 3/16 X 1	2
7	1564-21	EXHAUST DAMPER CRANK	2
6	1564-65	DAMPER PIN 3/16 BYPASS DAMPER	1
5	D3155	SOLENOID 1 INCH TRAVEL 240V	1
4.4	D309C-CC-3Q	6-32 X 3/8 PAN HEAD	2
4.3	1564-78	EXHAUST DAMPER GASKET LG	2
4.2	1564-63	BYPASS DAMPER BLADE	1
4.1	1564-62	BYPASS DAMPER SHAFT	1
4	1564-57	BYPASS DAMPER BLADE ASSY	1
3	D3141	THRUST BEARING 7/16 NYLON	2
2	D309C-EF-3G	WELD STUD 10-32X3/8 SS	6
1	1564-58	BYPASS DAMPER WELD	1







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

800-344-4802
Fax 215-624-6966