TECHNICAL MANUAL
RACK CONVEYOR DISHMACHINES

SPEEDER SERIES
Speeder 64
Speeder 86-3

SUPER SERIES
Super 106-2

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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1.A INTRODUCTION

1.A.1 Purpose

The purpose of this Tech Manual is to provide installation, operation, cleaning and maintenance directions. A section is provided for replacement parts.

1.A.2 Scope

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for Insinger Rack Conveyor Dishwasher Series including the Admiral, Speeder and Super models.

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. For the name of your local Insinger Authorized Service Agency please reference the Service Network Listing in Section 1 of this manual. You can also 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.

1.A.3 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 correctly. Please call the factory or your local Insinger Sales Representative to schedule this service.

1.A.4 Definitions

Throughout this guide you will find the following terms: WARNING, CAUTION, & NOTE. When used, these terms will be outlined in a box to draw attention:

WARNING indicates potential physical danger.
CAUTION indicates potential equipment damage.
NOTE indicates helpful operating hints or tips.

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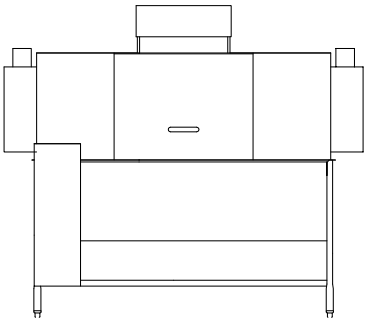
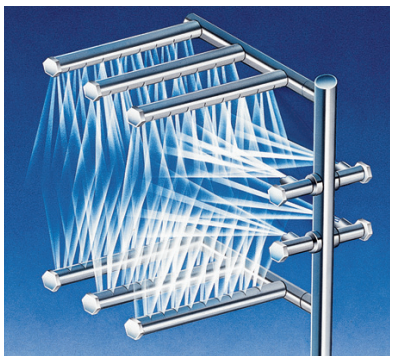
SPEEDER 64

Double Tank Rack Conveyor Dishwasher

- Automatic conveyor, rack type, double tank dishwasher with recirculating wash and rinse and fresh water final rinse.
- 0.52 gallons/rack final rinse consumption
- Capacity is 277- 20" x 20" racks per hour or 6,925 dishes per hour
- CrossFire® Wash System provides superior cleaning
- Error proof replacement with color-coded curtains





The patent-pending **CrossFire® Wash System** power sprays water horizontally, as well as, from above and below, cleaning and sanitizing the dirtiest of ware.

STANDARD FEATURES

- Patented CrossFire® Wash System
- Tank heat: 22.5 kW electric immersion heaters or steam injectors
- Capillary thermometers for wash and rinse
- In-line thermometer for final rinse
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- SureFire® Start-Up & Check-Out Service
- Inspection door
- Ventilation fan connection provision
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- Low water protection
- Detergent connection provision
- Elevated top mounted NEMA 12 control panel
- Easily-cleaned crowned hood top
- Simplified scrap screen design
- Wide insulated swing-out doors
- Door safety switch
- Standard frame drip proof motors
- Energy saver
- Override switch for deliming
- End caps/pipe plugs secured to prevent loss
- Color-coded curtains
- Timing belt conveyor drive

OPTIONS

- ☐ Stainless steel steam coil tank heat
- ☐ Steam booster
- ☐ Electric booster
- ☐ Infrared tank heat (90,000 BTU, natural gas or propane
- ☐ Single point electrical connection: motors, controls and tank heat. (Booster requires a separate connection)
- ☐ End cowls with vent and adjustable damper controls
- ☐ S/S splash guards
- ☐ Security package
- ☐ Totally enclosed motors
- ☐ Rack limit switch
- ☐ Power Loader
- ☐ Power Unloader
- ☐ Door activated drain closers
- ☐ Insulated hood and door
- ☐ Plastic 20" x 20" racks (plate or silver)

AUTOQUOTES

Speeder 64

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SPEEDER 64

Double Tank Rack Conveyor Dishwasher

Capacity Per Hour	277 racks 6925 dishes 300-600 meals
Tank Capacity	12 gals. (wash) 13 gals. (rinse) 25.5 gals. (gas wash) 26 gals. (gas rinse)
Motor Size	1 hp (wash) 1 hp (rinse) 1/15 hp (conveyor)
Electric Usage	7.5 kW wash tank 15 kW rinse tank 15 kW booster 40° rise 27 kW booster 70° rise
Gas Consumption	90,000 BTUH 88 CFH nat. gas 36 CFH propane
Steam Consumption at 20 psi min.	81 lbs./hour tank 51 lbs./hour booster 40° rise 90 lbs./hour booster 70° rise
Final Rinse Peak Flow at 20 psi min.	2.4 gallons/minute
Final Rinse Consumption at 20 psi min.	144 gallons/hour 0.52 gallons/rack
Exhaust Hood Requirement	350 CFM Load 350 CFM unload
Peak Rate Drain Flow	14 gallons/minute
Installation distance from vertical combustible service	2"
Shipping Weight	800 lbs.

Machine Electrical			
Motors, Controls, Tank Heat	Steam	Gas	Electric
240/1/60	9.7	20.2	112.8
208/3/60	10.7	11.9	73.1
240/3/60	9.8	10.9	63.9
480/3/60	4.9	5.4	31.9
380/3/50	5.9	6.6	40.0

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, bronze or S/S.

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

CONVEYORS- One S/S roller chain conveyor, with rack driving lugs every sixth link, running along the front of the machine. Eleven free spinning rollers placed along the back wall of the machine. Conveyor accommodates all standard 20" racks. Conveyor drive system includes direct drive gear motor with frictionless, trouble-free clutch system, spring-loaded and automatically re-engaging. Racks conveyed automatically through washing and rinsing systems, powered by an independent 1/15 hp drive motor.

PUMP- Centrifugal type "packless" pump with a brass petcock drains. Construction includes ceramic seal and a balanced cast impeller on a precision ground stainless steel shaft, extension or sleeve. All working parts mounted as an assembly and removable as a unit without disturbing pump housing. 1 hp motor for each wash and rinse pump: standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

CONTROLS- Top mounted NEMA 12 control enclosure, with 3.5 inch air gap between hood and enclosure, housing motor overload protection, contactors, transformers and all other dishwasher controls. All controls safe low voltage 24 VAC.

ENERGY SAVER- Rack actuated lever automatically operates the final rinse solenoid only when a rack passes, saving water and energy. The lever also activates an adjustable timer control. If no ware passes during the set time, the machine shuts down.

SPRAY SYSTEM- Spray arms made of type 304 stainless steel pipe. Spray assemblies removable without the use of tools.

WASH- Upper and lower manifolds with the patented CrossFire® Wash System. One manifold above with 3 power wash arms, each with 9 high pressure cleaning slots and one manifold below with 3 power wash arms, each with 9 high pressure cleaning slots. The slots are precision milled for water control producing a fan spray. Wash arms are fillet welded to the S/S manifold. The CrossFire® Wash System provides 4 horizontally spraying high pressure nozzles.

RINSE- Upper and lower manifolds. One manifold above with 3 power rinse arms, each with 9 high pressure rinsing slots and one manifold below with 3 power rinse arms, each with 9 high pressure rinsing slots. The slots are precision milled for water control producing a fan spray. Rinse arms are fillet welded to the S/S manifold.

FINAL RINSE- Six nozzles above and three nozzles below threaded into S/S schedule 40 pipes. Nozzle assemblies produce a fan spray reducing water consumption, maximizing heat retention.

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

Note: Exhaust requirements are for pant leg connections only. For hood type, CFM requirements vary, consult hood manufacturer for specific sizing.

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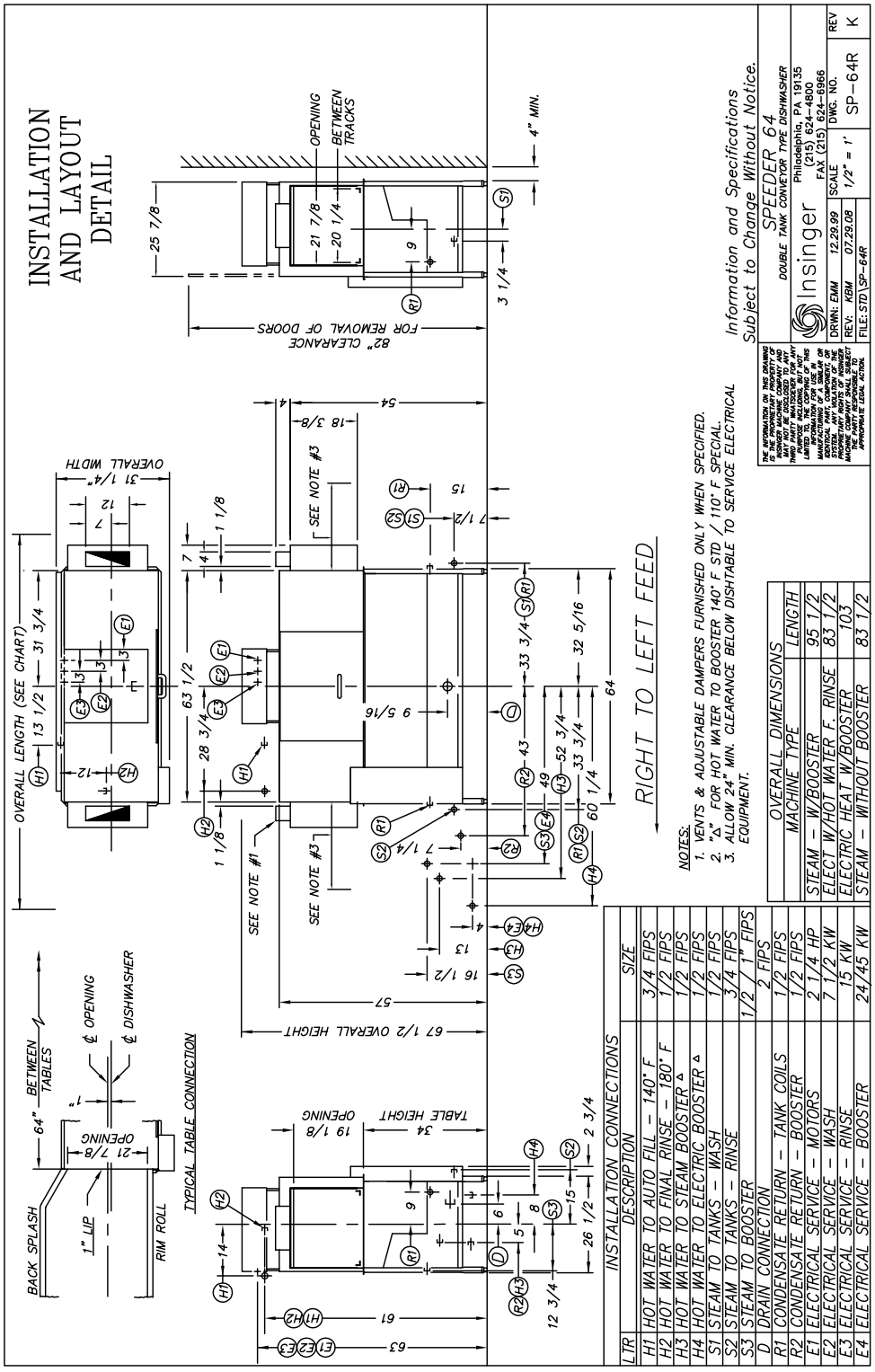
SPEEDER 64

Double Tank Rack Conveyor Dishwasher



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Contact Insinger Sales at 800-344-4802 for an Installation Drawing Specific to Your Application
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Speeder 64

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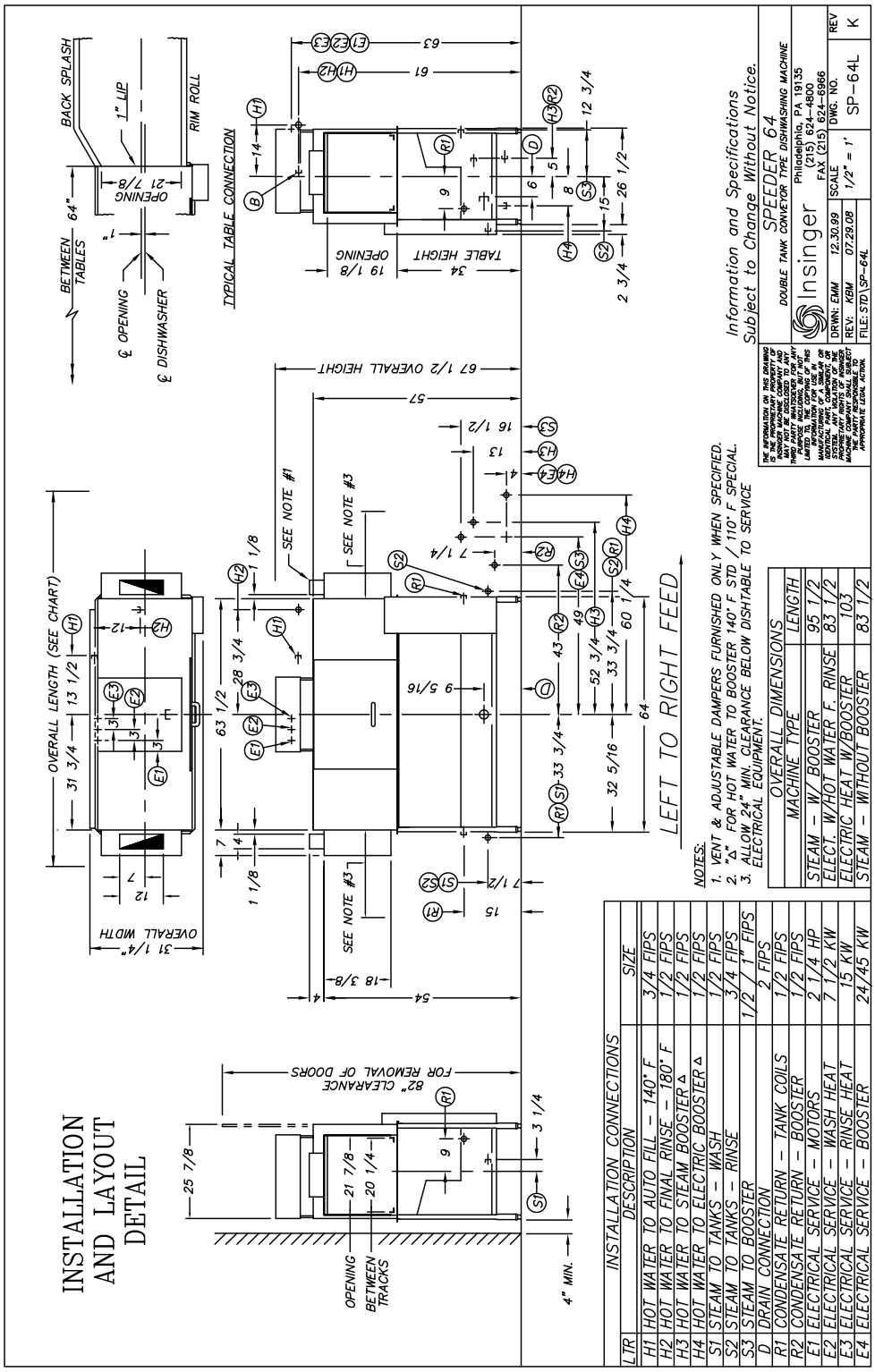
SPEEDER 64

Double Tank Rack Conveyor Dishwasher



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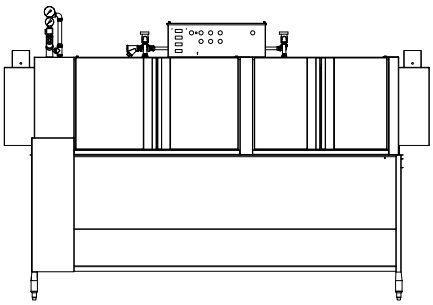
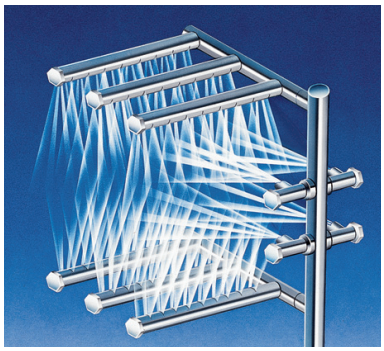
SPEEDER 86-3

Double Tank Rack Conveyor Dishwasher with Pre-wash



- Automatic conveyor, rack type, double tank dishwasher with recirculating pre-wash, wash, rinse and fresh water final rinse.
- 0.52 gallons/rack final rinse consumption
- Capacity is 277- 20" x 20" racks per hour or 6,925 dishes per hour
- CrossFire® Wash System provides superior cleaning
- Error proof replacement with color-coded curtains
- Wide insulated swing-out doors



The patent-pending **CrossFire® Wash System** power sprays water horizontally, as well as, from above and below, cleaning and sanitizing the dirtiest of ware.

STANDARD FEATURES

- Patented CrossFire® Wash System
- Tank heat: 22.5 kW electric immersion heaters or steam injectors
- Capillary thermometers for wash and rinse
- In-line thermometer for final rinse
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- SureFire® Start-Up & Check-Out Service
- Ventilation fan connection provision
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- S/S low water monitoring system
- Detergent connection provision
- Elevated top mounted NEMA 12 control panel
- Easily-cleaned crowned hood top
- Simplified scrap screen design
- Wide insulated swing-out doors
- Door safety switch
- Standard frame-mounted drip proof motors
- Energy saver
- Override switch for de-liming
- End caps/pipe plugs secured to prevent loss
- Color-coded curtains
- Timing belt conveyor drive

SPEEDER 86-3

OPTIONS

- ☐ Stainless steel steam coil tank heat
- ☐ Steam booster
- ☐ Electric booster
- ☐ Pressure reduction valve and line strainer
- ☐ Single point electrical connection: motors, controls and tank heat. (Booster requires a separate connection).
- ☐ Vent cowl collar
- ☐ Chemical sanitizer injector package for low temperature operation (Note: pump supplied by others)
- ☐ Security package
- ☐ Totally enclosed motors
- ☐ Rack limit switch
- ☐ Power Loader
- ☐ Power Unloader
- ☐ Door activated drain closers
- ☐ Insulated hood
- ☐ Plastic 20" x 20" racks (flat or peg)

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SPEEDER 86-3

Double Tank Rack Conveyor Dishwasher with Pre-Wash

Capacity Per Hour	277 racks 6925 dishes 300-600 meals
Tank Capacity	8 gals. (pre-wash) 12 gals. (wash) 13 gals. (rinse)
Motor Size	1/2 hp (pre-wash) 1 hp (wash) 1 hp (rinse) 1/15 hp (conveyor)
Electric Usage	8 kW wash tank 15 kW rinse tank 15 kW booster 40° rise 27 kW booster 70° rise
Steam Consumption at 20 psi min.	81 lbs./hour tank 51 lbs./hour booster 40° rise 90 lbs./hour booster 70° rise
Final Rinse Peak Flow at 20 psi min.	3.7 gallons/minute
Final Rinse Consumption at 20 psi min.	144 gallons/hour 0.52 gallons/rack
Exhaust Hood Requirement	350 CFM load 350 CFM unload
Peak Rate Drain Flow	23 gallons/minute
Shipping Weight	1200 lbs.

Machine Electrical		
Motors, Controls, Tank Heat	Steam	Electric
240/1/60	24.1	119.8
208/3/60	13.1	76.9
240/3/60	11.6	67.3
480/3/60	6.0	33.6
380/3/50	7.2	42.2

SPECIFICATIONS

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

DOORS- Extra wide die formed 18-8 type 304 s/s front inspection doors hinged with S/S pins. A triple ply leading edge on the door channels made of S/S with no plastic or nylon sleeves or liners used. Door stop built into frame.

CONVEYORS- One S/S roller chain conveyor, with rack driving lugs every sixth link, running along the front of the machine. Fifteen free spinning rollers placed along the back wall of the machine. Conveyor accommodates all standard 20" racks. Conveyor drive system includes direct drive gear motor with frictionless, trouble-free clutch system, spring-loaded and automatically re-engaging. Racks conveyed automatically through washing and rinsing systems, powered by an independent 1/15 hp drive motor.

SPECIFICATIONS (continued)

PUMP- Centrifugal type "packless" pump with a brass petcock drains. Construction includes ceramic seal and a balanced cast impeller on a precision ground stainless steel shaft, extension or sleeve. All working parts mounted as an assembly and removable as a unit without disturbing pump housing. 1 hp motor for each wash and rinse pump: standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

CONTROLS- Top mounted NEMA 12 control enclosure, with 3.5 inch air gap between hood and enclosure, housing motor overload protection, contactors, transformers and all other dishwasher controls. All controls safe low voltage 24 VAC.

ENERGY SAVER- Rack actuated lever automatically operates the final rinse solenoid only when a rack passes, saving water and energy. The lever also activates an adjustable timer control. If no ware passes during the set time, the machine shuts down.

SPRAY SYSTEM- Spray arms made of type 304 s/s pipe. Spray assemblies removable without the use of tools.

PRE-WASH- One manifold above and one manifold below, each with 3 high pressure cleaning nozzles.

WASH- Upper and lower manifolds with the patented CrossFire® Wash System. One manifold above with 3 power wash arms, each with 9 high pressure cleaning slots and one manifold below with 3 power wash arms, each with 9 high pressure cleaning slots. The slots are precision milled for water control producing a fan spray. Wash arms are fillet welded to the S/S manifold. The CrossFire® Wash System provides 4 horizontally spraying high pressure nozzles.

RINSE- Upper and lower manifolds. One manifold above with 3 power rinse arms, each with 9 high pressure rinsing slots and one manifold below with 3 power rinse arms, each with 9 high pressure rinsing slots. The slots are precision milled for water control producing a fan spray. Rinse arms are fillet welded to the s/s manifold.

FINAL RINSE- Six nozzles above and three nozzles below threaded into S/S schedule 40 pipes. Nozzle assemblies produce a fan spray reducing water consumption, maximizing heat retention.

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

Note: Exhaust requirements are for pant leg connections only. For hood type, CFM requirements vary, consult hood manufacturer for specific sizing.

Existing exhaust connections on previous Insinger or non-Insinger equipment may not match current model. Refer to drawings.

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

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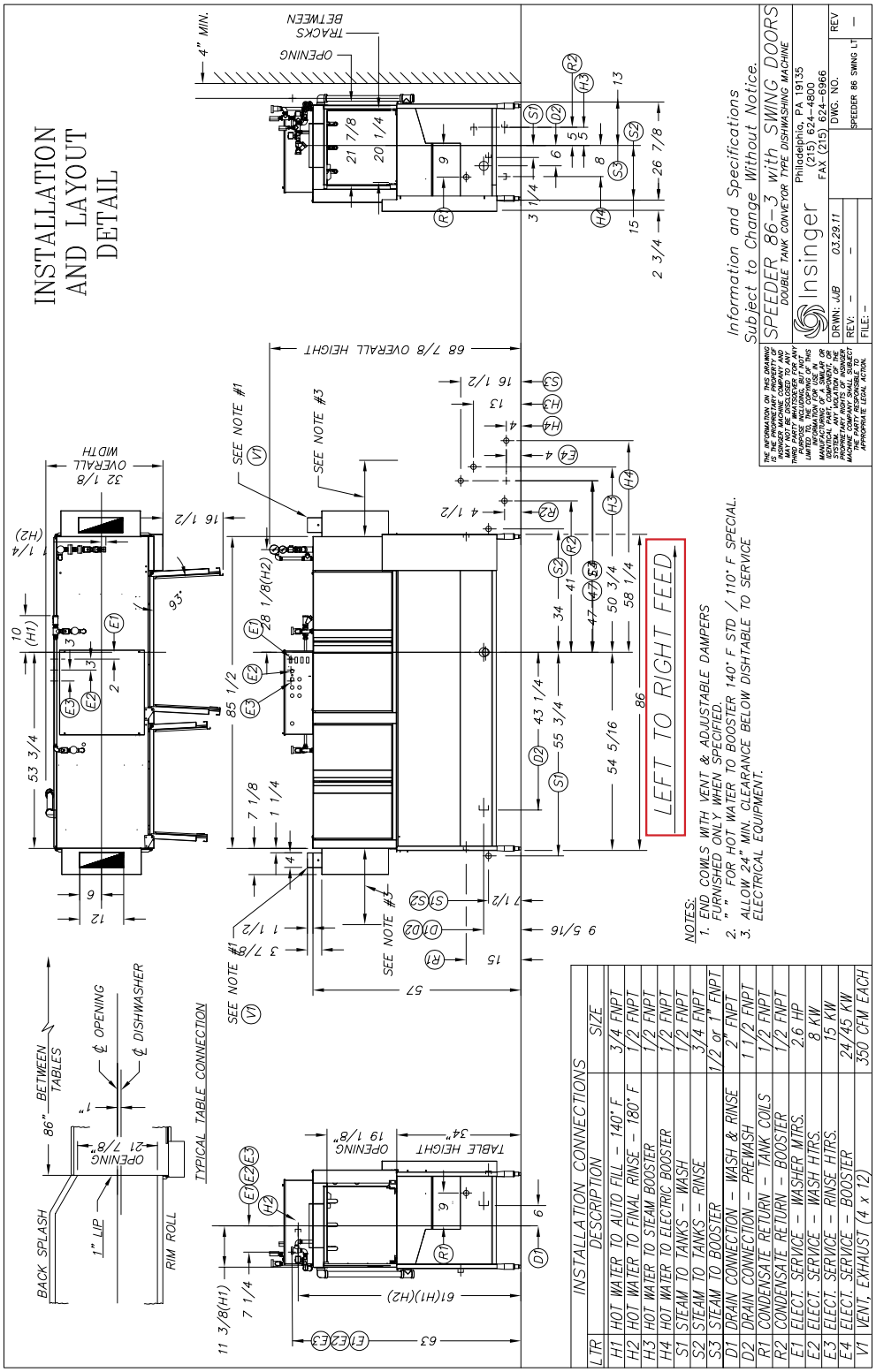
SPEEDER 86-3

Double Tank Rack Conveyor Dishwasher with Pre-wash



Contact Insinger Sales at 800-344-4802 for an Installation Drawing Specific to Your Application
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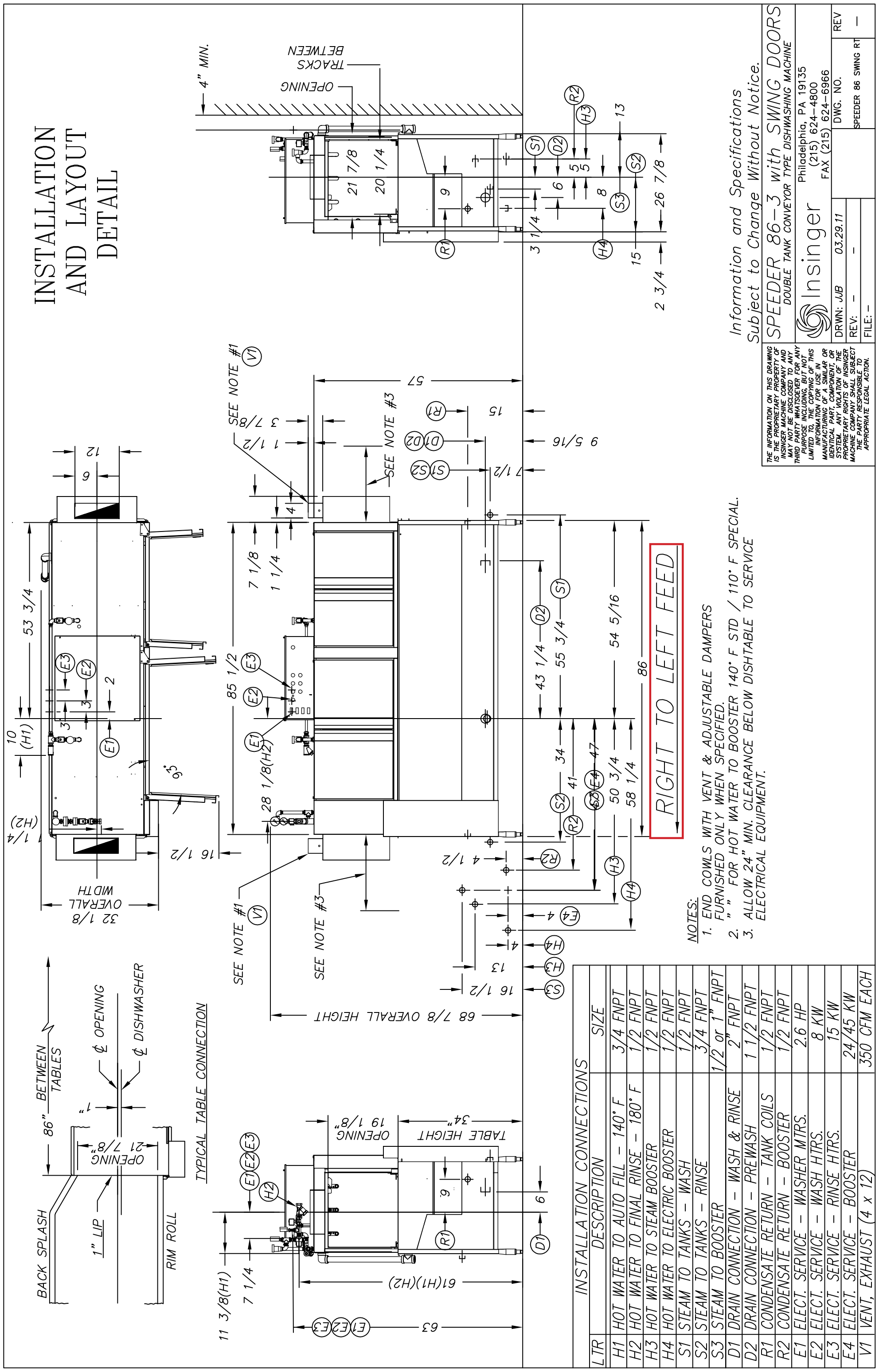
SPEEDER 86-3

Double Tank Rack Conveyor Dishwasher with Pre-wash



INSTALLATION CONNECTIONS

LTR	DESCRIPTION	SIZE
H1	HOT WATER TO AUTO FILL – 140° F	3/4 FNPT
H2	HOT WATER TO FINAL RINSE – 180° F	1/2 FNPT
H3	HOT WATER TO STEAM BOOSTER	1/2 FNPT
H4	HOT WATER TO ELECTRIC BOOSTER	1/2 FNPT
S1	STEAM TO TANKS – WASH	1/2 FNPT
S2	STEAM TO TANKS – RINSE	3/4 FNPT
S3	STEAM TO BOOSTER	1/2 or 1" FNPT
D1	DRAIN CONNECTION – WASH & RINSE	2" FNPT
D2	DRAIN CONNECTION – PREWASH	1 1/2 FNPT
R1	CONDENSATE RETURN – TANK COILS	1/2 FNPT
R2	CONDENSATE RETURN – BOOSTER	1/2 FNPT
E1	ELECT. SERVICE – WASHER MTRS.	2.6 HP
E2	ELECT. SERVICE – WASH HTRS.	8 KW
E3	ELECT. SERVICE – RINSE HTRS.	15 KW
E4	ELECT. SERVICE – BOOSTER	24/45 KW
V1	VENT, EXHAUST (4 x 12)	350 CFM EACH

NOTES:
1. END COWLS WITH VENT & ADJUSTABLE DAMPERS FURNISHED ONLY WHEN SPECIFIED.
2. " " FOR HOT WATER TO BOOSTER 140° F STD / 110° F SPECIAL.
3. ALLOW 24" MIN. CLEARANCE BELOW DISHTABLE TO SERVICE ELECTRICAL EQUIPMENT.

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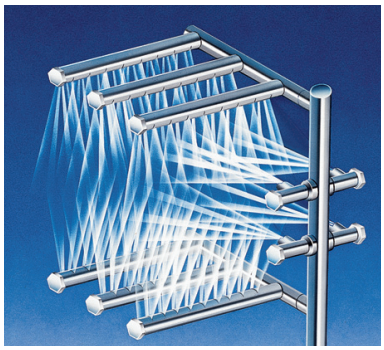
SUPER 106-2

Three Tank Rack Conveyor Dishwasher

- Automatic conveyor, rack type, three tank dishwasher with recirculating pre-wash, wash, rinse and fresh water final rinse.
- 0.72 gallons/rack final rinse consumption
- Capacity is 330- 20" x 20" racks per hour or 8,250 dishes per hour
- CrossFire® Wash System provides superior cleaning
- Error proof replacement with color-coded curtains



The patent-pending **CrossFire® Wash System** power sprays water horizontally, as well as, from above and below, cleaning and sanitizing the dirtiest of ware.

STANDARD FEATURES

- Patented CrossFire® Wash System
- Tank heat: 30 kW electric immersion heaters or steam injectors
- Capillary thermometers for wash and rinse
- In-line thermometer for final rinse
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- SureFire® Start-Up & Check-Out Service
- Inspection door
- Ventilation fan connection provision
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- Low water protection
- Detergent connection provision
- Elevated top mounted NEMA 12 control panel
- Easily-cleaned crowned hood top
- Simplified scrap screen design
- Door safety switch
- Wide insulated swing-out doors
- Standard frame drip proof motors
- Energy saver
- Override switch for de-liming
- End caps/pipe plugs secured to prevent loss
- Color-coded curtains
- Timing belt conveyor drive

OPTIONS

- ☐ Stainless steel steam coil tank heat
- ☐ Steam booster
- ☐ Electric booster
- ☐ Pressure reduction valve and line strainer
- ☐ Single point electrical connection: motors, controls and tank heat. (Booster requires a separate connection)
- ☐ End cowls with vent and adjustable damper controls
- ☐ Stainless steel splash guards
- ☐ Security package
- ☐ Totally enclosed motors
- ☐ Rack limit switch
- ☐ Power Loader
- ☐ Power Unloader
- ☐ Door activated drain closers
- ☐ Insulated hood
- ☐ Plastic 20" x 20" racks (plate or silver)

Super 106-2

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SUPER 106-2

Three Tank Rack Conveyor Dishwasher

Capacity Per Hour	330 racks 8,250 dishes 300-600 meals
Tank Capacity	14 gals. (pre-wash) 25 gals. (wash) 25 gals. (rinse)
Motor Size	1/2 hp (pre-wash) 1 1/2 hp (wash) 1 1/2 hp (rinse) 1/6 hp (conveyor)
Electric Usage	7.5 kW wash tank 22.5 kW rinse tank 27.0 kW booster 40° rise 45.0 kW booster 70° rise
Steam Consumption at 20 psi min.	108 lbs./hour tank 84 lbs./hour booster 40° rise 147 lbs./hour booster 70° rise
Final Rinse Peak Flow at 20 psi min.	3.98 gallons/minute
Final Rinse Consumption at 20 psi min.	239 gallons/hour 0.72 gallons/rack
Exhaust Hood Requirement	350 CFM Load 350 CFM unload
Peak Rate Drain Flow	23 gallons/minute
Shipping Weight	1400 lbs.

Machine Electrical		
Motors, Controls, Tank Heat	Steam	Electric
240/1/60	28.6	N/A
208/3/60	18.5	101.8
240/3/60	16.8	88.9
480/3/60	8.4	44.5
380/3/50	10.1	55.7

SPECIFICATIONS

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

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

CONVEYORS- Two S/S roller conveyor chains with rack driving lugs every sixth link, running along the front of the machine. Fifteen free spinning rollers placed along the back wall of the machine. Conveyor accommodates all standard 20" racks. Conveyor drive system includes direct drive gear motor with frictionless, trouble-free clutch system, spring-loaded and automatically re-engaging. Racks conveyed automatically through washing and rinsing systems, powered by an independent 1/6 hp drive motor.

SPECIFICATIONS (continued)

PUMP- Centrifugal type "packless" pump with a brass petcock drains. Construction includes ceramic seal and a balanced cast impeller on a precision ground stainless steel shaft, extension or sleeve. All working parts mounted as an assembly and removable as a unit without disturbing pump housing. 1 hp motor for each wash and rinse pump: standard horizontal C-face frame, drip proof, internally cooled with ball-bearing construction.

CONTROLS- Top mounted NEMA 12 control enclosure, with 3.5 inch air gap between hood and enclosure, housing motor overload protection, contactors, transformers and all other dishwasher controls. All controls safe low voltage 24 VAC.

ENERGY SAVER- Rack actuated lever automatically operates the final rinse solenoid only when a rack passes, saving water and energy. The lever also activates an adjustable timer control. If no ware passes during the set time, the machine shuts down.

SPRAY SYSTEM- Spray arms made of type 304 stainless steel pipe. Spray assemblies removable without the use of tools.

PRE-WASH- One manifold above and one manifold below, each with 3 high pressure cleaning nozzles.

WASH- Upper and lower manifolds with the patented CrossFire® Wash System. One manifold above with 3 power wash arms, each with 9 high pressure cleaning slots and one manifold below with 3 power wash arms, each with 9 high pressure cleaning slots. The slots are precision milled for water control producing a fan spray. Wash arms are fillet welded to the S/S manifold. The CrossFire® Wash System provides 4 horizontally spraying high pressure nozzles.

RINSE- Upper and lower manifolds. One manifold above with 3 power rinse arms, each with 9 high pressure rinsing slots and one manifold below with 3 power rinse arms, each with 9 high pressure rinsing slots. The slots are precision milled for water control producing a fan spray. Rinse arms are fillet welded to the S/S manifold.

FINAL RINSE- Six nozzles above and three nozzles below threaded into S/S schedule 40 pipes. Nozzle assemblies produce a fan spray reducing water consumption, maximizing heat retention.

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

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

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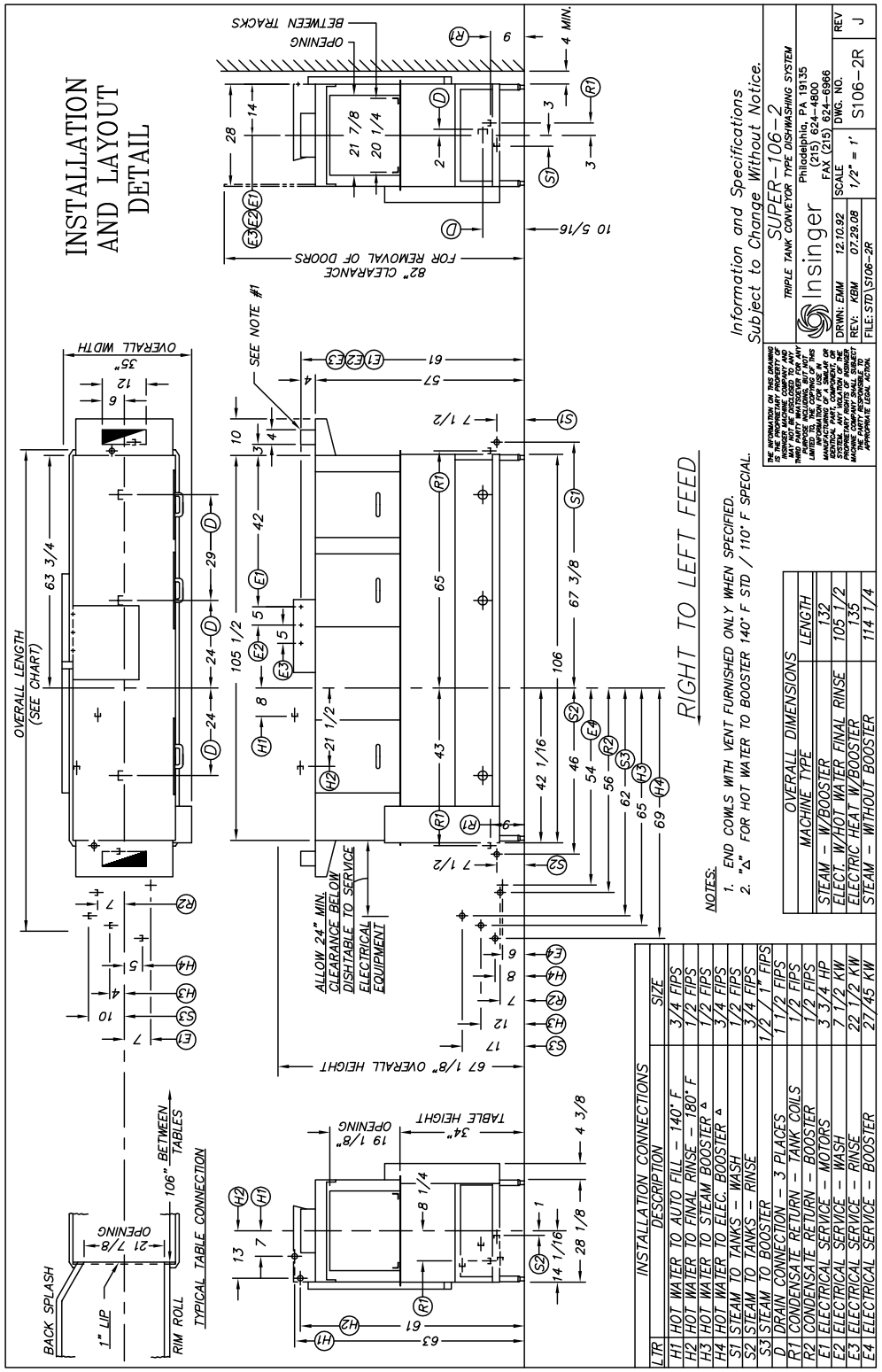
SUPER 106-2

Three Tank Rack Conveyor Dishwasher



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Contact Insinger Sales at 800-344-4802 for an Installation Drawing Specific to Your Application
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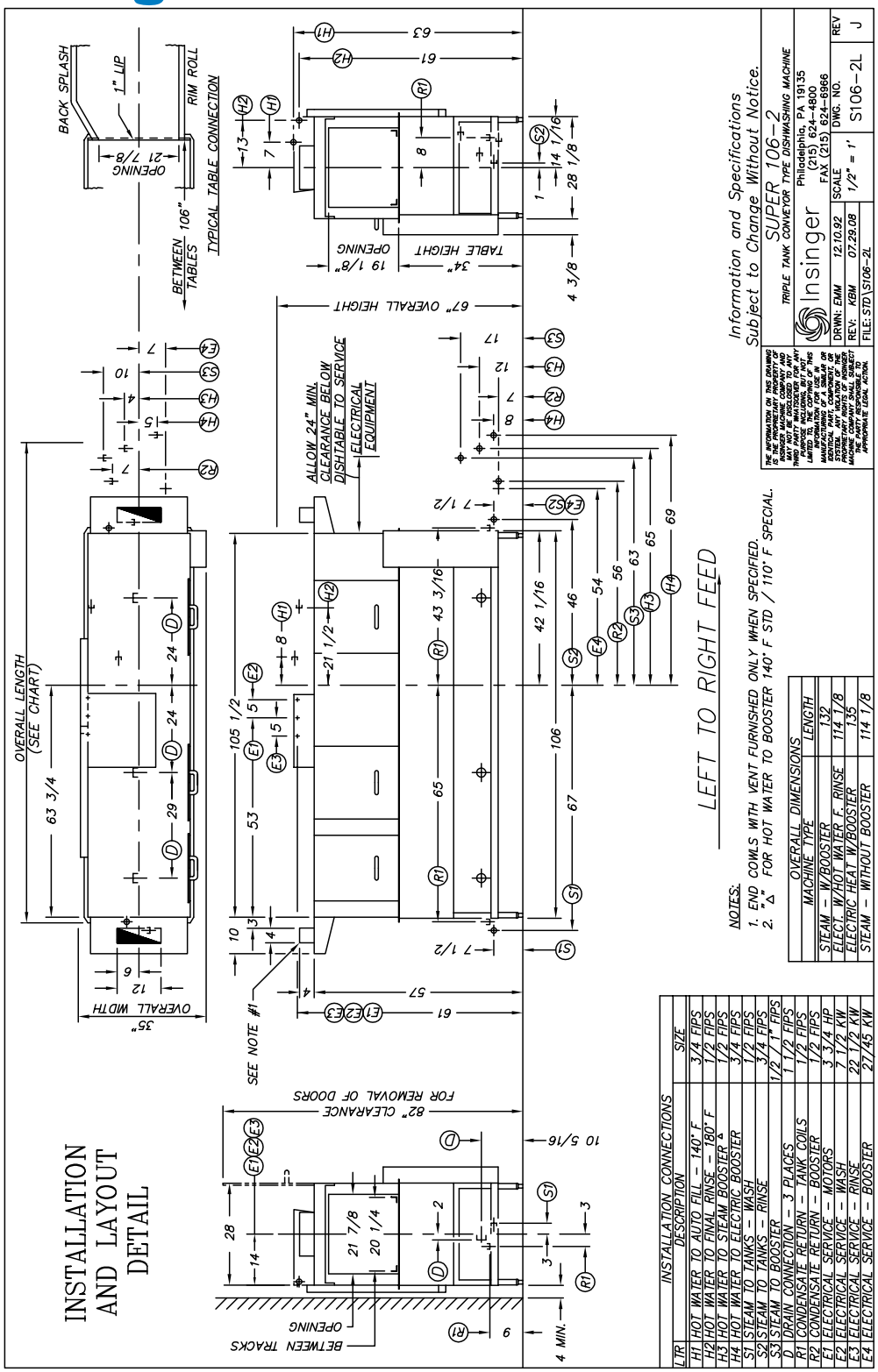
SUPER 106-2

Three Tank Rack Conveyor Dishwasher



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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 aforestated 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.

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PART 2

INSTALLATION and OPERATION INSTRUCTIONS

RACK CONVEYOR DISHMACHINES
INSTALLATION INSTRUCTIONS
Part 2, Section A

A.1 PLACEMENT

A.1.1 Carefully uncrate machine. Take caution to not damage components which may be mounted on the top or sides of the machine.

A.1.2 Set unit in place and adjust the feet to level the machine.

A.1.3 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 counter -sunk screws. The table design should provide horizontal clearance of 30" for servicing.

A.2 ELECTRICAL CONNECTIONS

A.2.1 Connect electrical lines sized for the correct voltage, current and phase of the machine. These should agree with machine requirements indicated on the nameplate and labels in control panel.

A.2.2 On machines not provided with a single-point connection there is an electrical connection required for the, 1. Pumps and control circuit, 2. Wash tank heater(s) and, 3. Rinse tank heaters (if provided).

A.2.3 If an electric booster is provided, connect power directly to the booster.

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

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

A.3 MECHANICAL CONNECTIONS

A.3.1 Connect 140° water lines for tank fills and booster as tagged and noted on the installation drawings.

A.3.2 If machine is provided with steam heat connect the steam lines and steam condensate lines as tagged and noted on installation drawings.
If machine is provided with gas heat, connect the gas lines for each tank.

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A.3 MECHANICAL CONNECTIONS, cont'd

A.3.3 Connect the drain lines.

A.3.4 If an electric booster is provided a 140° water connection is necessary. If a steam booster a 140° water connection is necessary as well as a condensate line.

> **NOTE**
> Drain lines must be as specified on installation drawings. Drain line must be properly vented and have fall of not less than ¼" to the foot of proper flow. Local plumbing codes may 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.

> **NOTE**
> All lines must be flushed prior to use to remove debris.

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

A.4 HVAC

A.4.1 Ventilation system should be sized to provide adequate ventilation per machine specs. Refer to spec sheet.

A.4.2 Stainless steel, watertight ducting should be connected to the vent cowls (optional) on each end of the machine.

A.5 Chemicals

A.5.1 Upon completed installation of the dishwasher contact a local detergent/chemical supplier for the correct chemicals for your area.

A.5.2 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.

A.5 Chemicals, cont'd

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

A.5.3 The detergent density probe should be located in a convenient place in the wash tank.

A.6 Tabling

A.6.1 Load and unload tables should be pitched towards the machine to return excess water into the machine.

> ***NOTE***
> Machines with short unload tables should utilize a rack limit switch to shut the machine down if clean racks pile-up. This will extend the life of the drive system.

A.7 Initial Start-up Adjustments

A.7.1 Tank Overfill Adjustment

A.7.1.1 Locate tank overfill timer in the control panel. See the control panel layout drawing located in Section 3, Electrical Schematic and Replacement Parts.

A.7.1.2 The overfill timer starts timing when the upper level float is actuated. Adjust the overfill timer pot. to turn the tank fill solenoid off when the water level is 1/2" below the lip of the overflow tube.

A.7.2 Conveyor Jam Adjustment

A.7.2.1 Remove the mechanism guard to gain access to the conveyor drive.

A.7.2.2. Locate the compression spring (refer to Dwg. #1397-1, Drive Mechanism Assembly). Factory set compression dimension is a nominal 3 13/16". Installations washing heavier ware may need to adjust this for more compression to keep the machine from shutting down prematurely.

A.7.2.3 Should the drive mechanism switch be activated by a conveyor jam, the "Check Conveyor" light on the control panel will illuminate and the machine will shut down.

A.7.2.4 To restart the machine, clear the jam and press the green "Start" button.

A.8.2 Final Rinse Pressure Adjustment

A.8.2.1 The final rinse pressure must be adjusted to 20PSI. This is done by adjusting the pressure regulator.

RACK CONVEYOR DISHMACHINES
OPERATION and CLEANING INSTRUCTIONS
Part 2, Section B

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

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

B.1 Operation Instructions

B.1.1 Ensure drain overflow tube is in place Close all tank drain valves. One drain is provided for each tank of the dishmachine.

B.1.2 Check for proper installation and cleanliness of all internal, removable components such as suction strainers, scrap screens, and spray manifolds.

B.1.3 Ensure all water, steam, and gas lines are open. Ensure electrical circuits are on.

B.1.4 Close machine doors.

> **Note**
> An interlock is provided to shut the machine down if the doors are open, therefore the machine will not run if doors are opened.

B.1.5 Move the power toggle switch to the "ON" position.

B.1.6 The machine will begin to fill.

B.1.7 When the tanks are full the tank heat will operate automatically.

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

B.1.8 Depress the Green button to start the conveyor.

B.1.9 The system is now ready for operation. All ware should be properly scrapped. Do not overload racks.

> ***IMPORTANT***
> *Overloading racks will impede the proper cleaning of ware and also put extra strain on the conveyor system.*

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B.1 Operation Instructions, cont'd

B.1.10 Slide the rack into the dishmachine, the conveyor will pass the rack through the various machine cycles. Upon entering the final rinse section of the machine the rack will engage the final rinse actuator allowing the 180° (140° for chemical sanitizing) water to sanitize the dishes.

B.1.11 Should a conveyor jam occur, the "Check Conveyor" light will illuminate and the machine will shutdown. To re-start the machine, clear the conveyor jam and press the green "Start" button. If the "Check Conveyor" light comes back on, contact a qualified service technician.

B.1.12 Upon completion of ware cleaning depress the Red button to stop the conveyor system.

B.1.13 Move the Power toggle switch to the "OFF" position.

B.1.14 Refer to the cleaning procedures for proper clean-up of the dishmachine.

B.1.15 Report any unusual occurrences to qualified service personnel.

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

B.2 Cleaning Procedures, Daily

B.2.1 Remove all internal removable parts including spray manifolds, scrap screens, drain overflow tubes, suction strainers and curtains.

B.2.2 Remove the end caps from the spray manifolds and clean with the brush provided. Flush the manifolds.

B.2.3 Flush scrap screens.

B.2.4 Clean drain overflow tube.

> ***IMPORTANT***
> *V-cup seal on the drain overflow tube may become gummed not allowing a proper seat of the overflow tube. This will cause the drain to leak water. Remove any build-up on the V-cup seal. When the seal becomes worn, replace.*

B.2.5 Clean suction strainers of build-up.

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

B.2.6 Clean tank level float with Scotch-Brite or equivalent.

B.2 Cleaning Procedures, Daily cont'd

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

B.2.7 Clean curtains. When curtains are beyond cleaning or torn they should be replaced.

B.2.8 Final rinse nozzles should be cleaned of matter clogging the jet spray.

B.2.9 Doors should be left open to allow drying of interior surfaces.

B.3 Cleaning Procedures, Weekly

B.3.1 An *Energy Saver, Normal/De-lime switch* is provided on the control panel. When running the machine with de-liming solution, place this switch in the *De-lime* position to allow the machine to run continuously. When not de-liming, the switch should be in *Normal*. Consult your detergent supplier for de-liming solution concentration and frequency of use.

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PART 3

MAINTENANCE and REPAIR PROCEDURES

RACK CONVEYOR DISHMACHINES
MAINTENANCE and REPAIR PROCEDURES
Part 3, Section A

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

A.1 MAINTENANCE

A.1.1 Daily - Refer to the operation and cleaning instructions provided in this manual for daily cleaning procedures.

A.1.2 Weekly

A.1.2.1 The entire machine should be wiped down using an industrial grade stainless steel cleaner.

A.1.2.2 Under the supervision of your detergent supplier the machine interior must be properly de-limed.

A.1.2.2.1 A switch is provided on the control panel to run the machine continuously. For De-liming, move the selector switch to the "De-lime" position, then operate the machine normally. When De-liming is completed, return the selector switch to "normal".

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

A.1.3 Quarterly

A.1.3.1 Remove and clean the strainer screens on water and steam lines. If the screens cannot be cleaned, replace.

A.1.3.2 Inspect condition of solenoid valve seats and diaphragms. Replace where necessary.

A.1.3.3 Inspect drain O-Rings for leakage. Replace where necessary.

A.1.3.4 Grease drive chain and sprockets.

A.1.3.5 Adjust conveyor chain tension using adjustment bolts located on exit end of machine.

A.2 MAINTENANCE PROCEDURES

A.2.1 Solenoid Valve Disassembly

A.2.1.1 Disconnect power supply to machine. Turn off Water supply.

A.2.1.2 Remove cap on top of coil. Remove coil.

A.2.1.3 Remove 4 hex bolts and lift bonnet from valve body. Note positioning of spring and plunger.

A.2.1.4 Remove main piston.

A.2.1.5 Inspect for dirt, wear or lime build-up. Clean or replace as required.

A.2.1.6 Reassemble in reverse of disassembly.

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A.2.2 Line Strainer Disassembly

A.2.2.1 Shut off water or steam supply.

A.2.2.2 Remove large hex nut on bottom of strainer body.

A.2.2.3 Remove strainer screen. Inspect and clean or replace as necessary.

A.2.2.4 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.

A.2.3 Pump Disassembly

A.2.3.1 Before disassembling pump ensure there are no obstructions in the pump intake. Remove and clean the suction strainer (inside tank).

> **NOTE**
> It is not necessary to remove the pump housing from the machine to disassemble the pump

A.2.3.2 Remove the pump motor and impeller adap or by removing the 4 hex bolts attaching them to the pump housing.

A.2.3.3 Repair or replace the pump parts as required.

A.2.3.4 Reassemble in reverse of disassembly.

A.2.4 Immersion Heater Replacement

A.2.4.1 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.

A.2.4.2 Remove the housing covering the wiring terminations. Disconnect the immersion heater wires.

A.2.4.3 Remove the immersion heater by loosening and removing the large hex nut.

A.2.4.4 Install in reverse of removal.

> **NOTE**
> Use plumbers putty as gasketing around the immersion heater to minimize leaks

A.2.5 Tank Heat Temperature Adjustment

A.2.5.1 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.

A.2.5.2 Locate the temperature control board (P/N DE9-96). Use the control panel layout drawing located in Section 3, Electrical Schematic and Replacement Parts.

A.2.5.3 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.

A.2.5.4 If the temperature does not change refer to section A.2.6, Troubleshooting Tank Temperatures.

A.2.6 Troubleshooting Tank Temperatures

A.2.6.1 Electric Heat

A.2.6.1.1 If temperature cannot be adjusted per section A.2.5 check the temperature control board (P/N DE9-96) proper operation. If the temperature control board is faulty, replace.

A.2.6.1.2 Verify tank heat contactor is working correctly. If not, replace.

A.2.6.1.3 Verify all immersion heaters are working properly and not limed. If not, replace.

A.2.6.2 Steam Heat

A.2.6.2.1 See Section A.2.6.1.1.

A.2.6.2.2 Verify steam pressure per machine specifications.

A.2.6.2.3 Verify steam trap is not clogged. IF so, replace.

A.2.6.3 Gas Heat - Infra-red Gas Burner Sequence of Operation

A.2.6.3.1 See Section A.2.6.1.1.

A.2.6.3.2 Verify gas supply.

A.2.6.3.3 Temperature control board calls for heat, a relay is energized and the draft blower starts.

A.2.6.3.4 When the blower comes up to speed, a centrifugal switch integral with the motor illuminates the gas burner-airflow light and energizes the Hot Surface Ignition (HSI) module.

A.2.6.3.4.1 The HSI institutes a purge period followed by a trial for ignition during which the ignitor element heats up. The gas valve is opened.

A.2.6.3.4.2 After ignition, the element becomes a flame sensor. The system continues to monitor flame presence.

A.2.6.3.4.3 If the flame fails during operation, the gas valve will close. The HSI module will purge the gas line then try to re-light the burner. The gas burner-flame light will be out. If the re-trial fails, the gas valve will close and the system will lock-out until the dishmachine main power toggle switch is cycled off then on.

A.2.6.3.5 When the temperature control board reached the high limit the system will shut-down as normal. The gas system lights will be off. If the temperature drops the system will re-start.

A.2.6.3.6 Burner Flame Adjustment

A.2.6.3.6.1 After a short warm-up period, the infra-red burner will glow with a uniform orange/red color. There are no individual flames. There is an air inlet shutter to adjust the flame for maximum efficiency.

A.2.6.3.6.2.1 A soft blue flame indicates excess air, bright orange indicate lack of air. A view port is provided on the burner and a window on the burner assmebly cover to view the flame. A combustion analyzer is required for correct adjustment.

A.2.7 Motor Overloads

A.2.7.1 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.

A.2.7.2 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.

A.2.8 Level System

A.2.8.1 The level control system consists of one overfill timer (P/N DE7-33) and one level float (P/N DE5-60) per tank (two level floats for electrically heated machines).

A.2.8.2 When the system is powered-up, the tank(s) will begin to fill (assuming no water is in the tanks).

A.2.8.3 Once the upper level float (for electrically heated machines) or the level float (for other tank heat) is actuated, the overfill timer begins to time-out and continues the filling process until the tank(s) is full.

NOTE

The overfill timer MUST be adjusted during initial machine start-up. Adjustment depends on water fill pressure. The water level MUST be 1/2" below the lip of the overflow tube. Adjust by increasing or decreasing the potentiometer on the level timer.

IMPORTANT

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

A.2.9 Final Rinse Actuator

A.2.9.1 The final rinse is actuated by a lever located on the rear wall of the dishwasher near the exit end. When a rack depresses it a switch is closed and a solenoid energized.

A.2.9.2 The activation of the lever also resets the Energy Saver Timer (P/N DE7-28). The timer will then start counting from 0. The timer is adjustable between 0 and 300 seconds (5 minutes).

Insinger Machine Company

BASIC SERVICE GUIDE

SYMPTOM	POSSIBLE CAUSE	Solution
1. Machine will not operate	a. No Power b. Blown fuse or tripped breaker c. Motor overloads tripped	a. Check power supply b. Replace fuse; reset breaker c. Reset overload
2. Tank will not hold water	a. Drain not closed b. Drain overflow not seated or installed c. Pump petcock opened	a. Close drain b. Reseat or install drain overflow c. Replace V-seal
3. Tank fills beyond overflow	a. Obstruction in overflow tube or drain line b. Overfill timer not set properly.	a. Remove obstruction b. Set overfill timer. See Part 3, Sec A, Para. A.2.8.
4. Water leaks around door	a. Doors not seating b. Clogged spray pipe	a. Reseat doors b. Clean spray pipe with brush provided
5. Weak or ineffective spray	a. Clogged spray pipe b. Manifolds not installed properly c. Obstruction in pump d. Pump rotation reversed e. Suction strainer clogged	a. Clean spray pipe with brush pipe b. Ensure proper placement of upper and lower pipes c. Clear obstruction through pump inspection plate d. Arrow on pump housing indicates direction, correct electrically e. Clean suction strainer

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BASIC SERVICE GUIDE

SYMPTOM	POSSIBLE CAUSE	Solution
6. Weak or ineffective final rinse spray	a. Lime deposits in spray nozzles	a. Clean or replace nozzles
	b. Low water pressure	b. Adjust to 20PSI
	c. Clogged line strainer	c. Remove line strainer and clean
	d. Closed water supply valve	d. Open ball valve
7. Water hammer	a. Excessive water line pressure	a. Install water hammer limiting device
8. Machine vibrates or is noisy	a. Pump rotation reversed	a. Arrow on pump housing indicates direction, correct electrically
	b. Pump bearings worn	b. Replace pump bearings
9. Final rinse will not shut off	a. Final rinse solenoid valve clogged	a. Disassemble valve and clean internal parts of scale or replace
	b. Diaphragm worn	b. Replace with solenoid valve repair kit
	c. Solenoid valve still powered-up	c. Check final rinse actuating circuit for proper operation

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BASIC SERVICE GUIDE

SYMPTOM	POSSIBLE CAUSE	Solution
10. Tank not filling/tank heat coming on with no water in tank	a. Level float dirty	a. Clean level float
	b. Level control system not working	b. Troubleshoot level control circuit
11. Tank temperature too low/high	a. Thermostat not adjusted	a. Adjust thermostat located in control panel
	b. Heat circuitry not working	b. Troubleshoot circuitry
	c. Electric heat, power turned off	c. Turn power on
	d. Electric heat, immersion heaters limed	d. De-lime machine
	e. Steam heat, steam turned off	e. Turn steam on
	f. Steam heat, not enough steam	f. Adjust steam pressure per machine spec's
	g. Steam heat, condensate traps clogged	g. Clean or replace condensate traps
	h. Gas heat, gas turned off	h. Turn on gas
	i. Gas heat, pilot not lit	i. Re-light pilot

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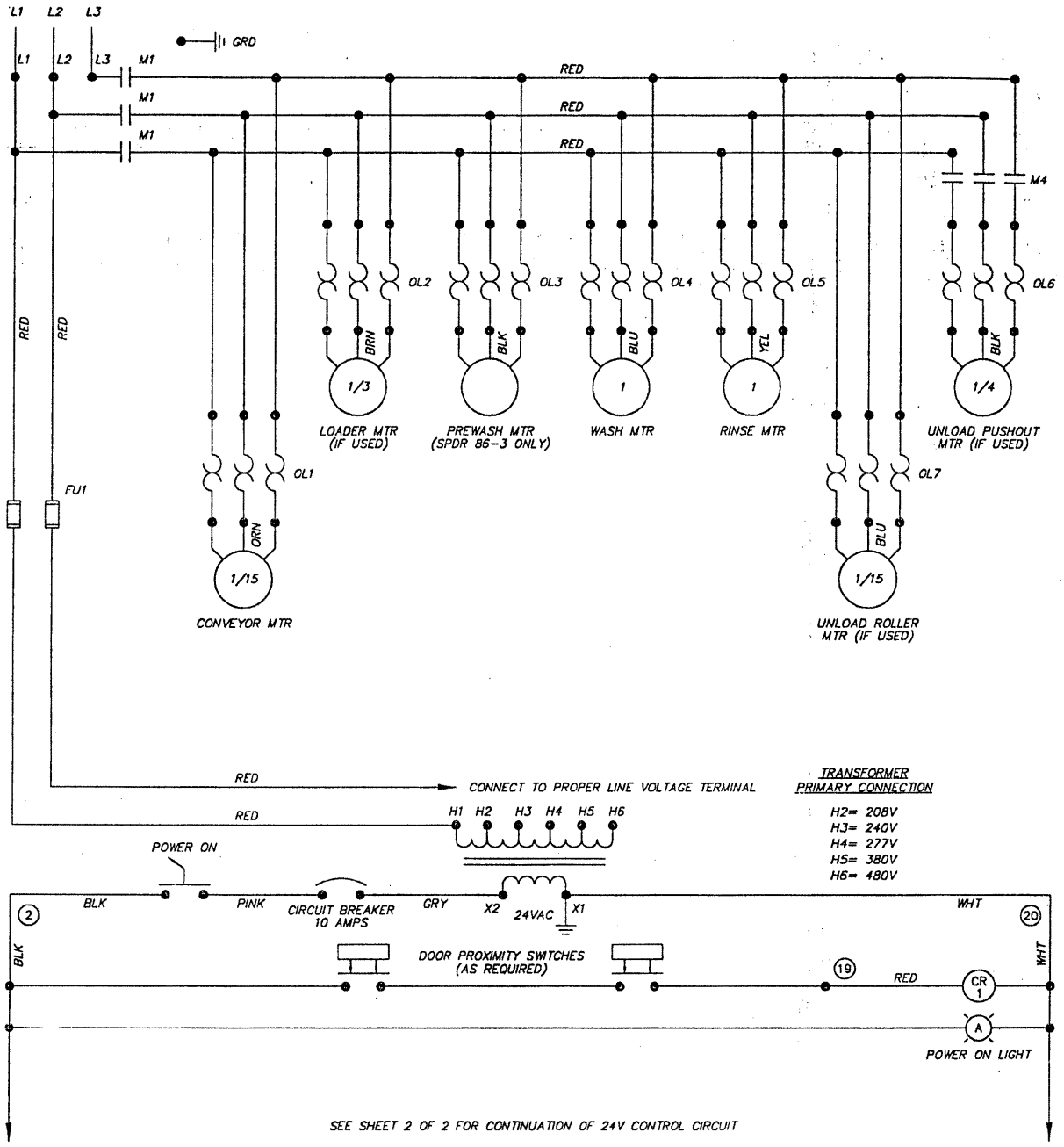
PART 4

ELECTRICAL SCHEMATICS and ELECTRICAL REPLACEMENT PARTS



			TITLE SPEEDER 64 & 86-3 STEAM HEAT	DWG. NO. W863010
J	1752	4.11.00		
REV	ECN NO	DATE	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 05.18.95
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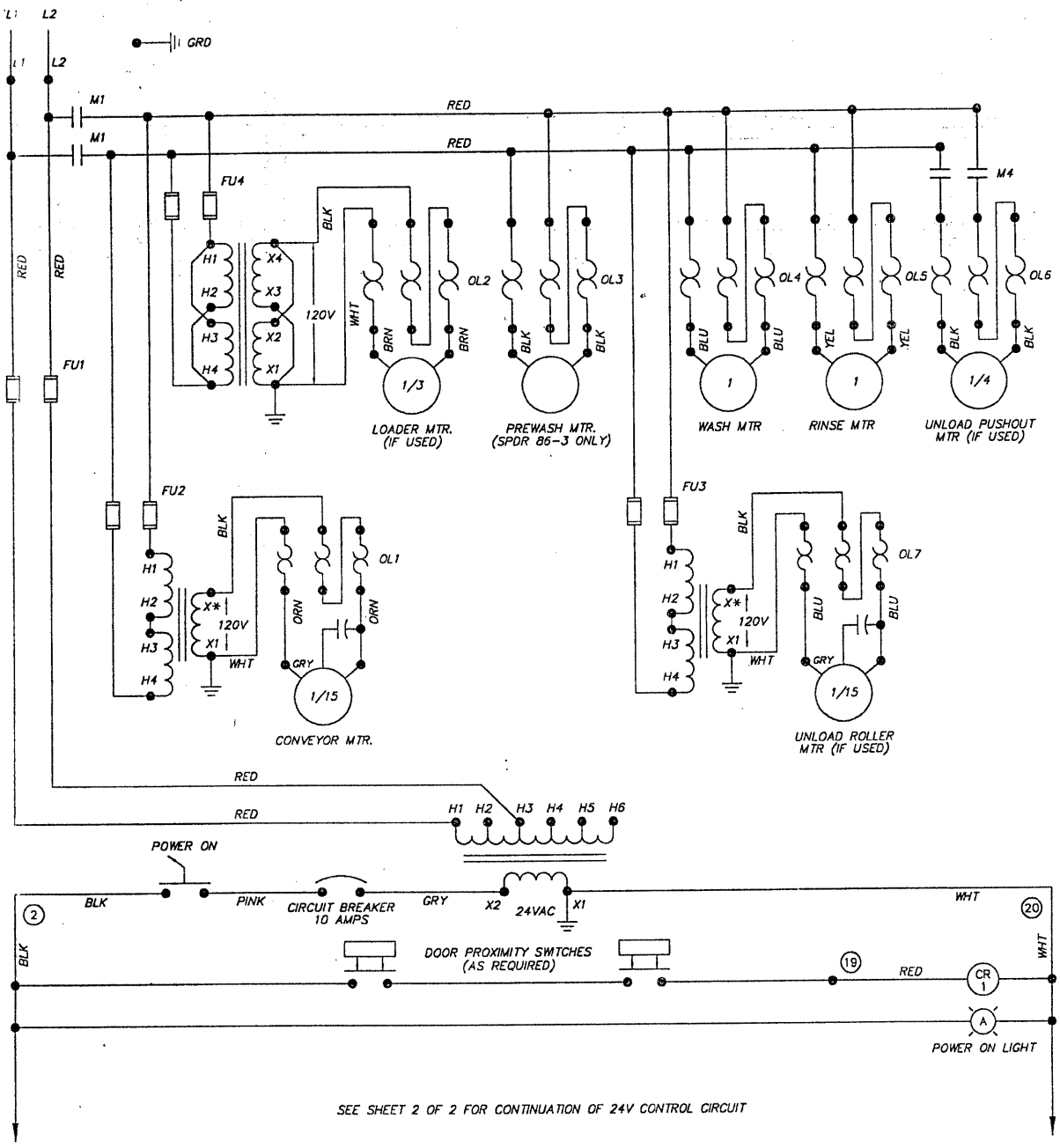


SEE SHEET 2 OF 2 FOR CONTINUATION OF 24V CONTROL CIRCUIT

CONVEYOR MOTOR TRANSFORMER CONNECTIONS				
	208 VAC	230 VAC	380 VAC	460 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
	–	–	–	H2 TO H3
X*	X3	X2	X3	X2

UNLOADER MOTOR TRANSFORMER CONNECTIONS				
	208 VAC	230 VAC	380 VAC	460 VAC
L1 TO	H1 & H3	H1 & H3	H1	H1
L2 TO	H2 & H4	H2 & H4	H4	H4
	–	–	–	H2 TO H3
X*	X4	X4	X4	X4
	X1 TO X3	X1 TO X3	–	X1 TO X3
	X2 TO X4	X2 TO X4	–	X2 TO X4

SINGLE PHASE WIRING ONLY

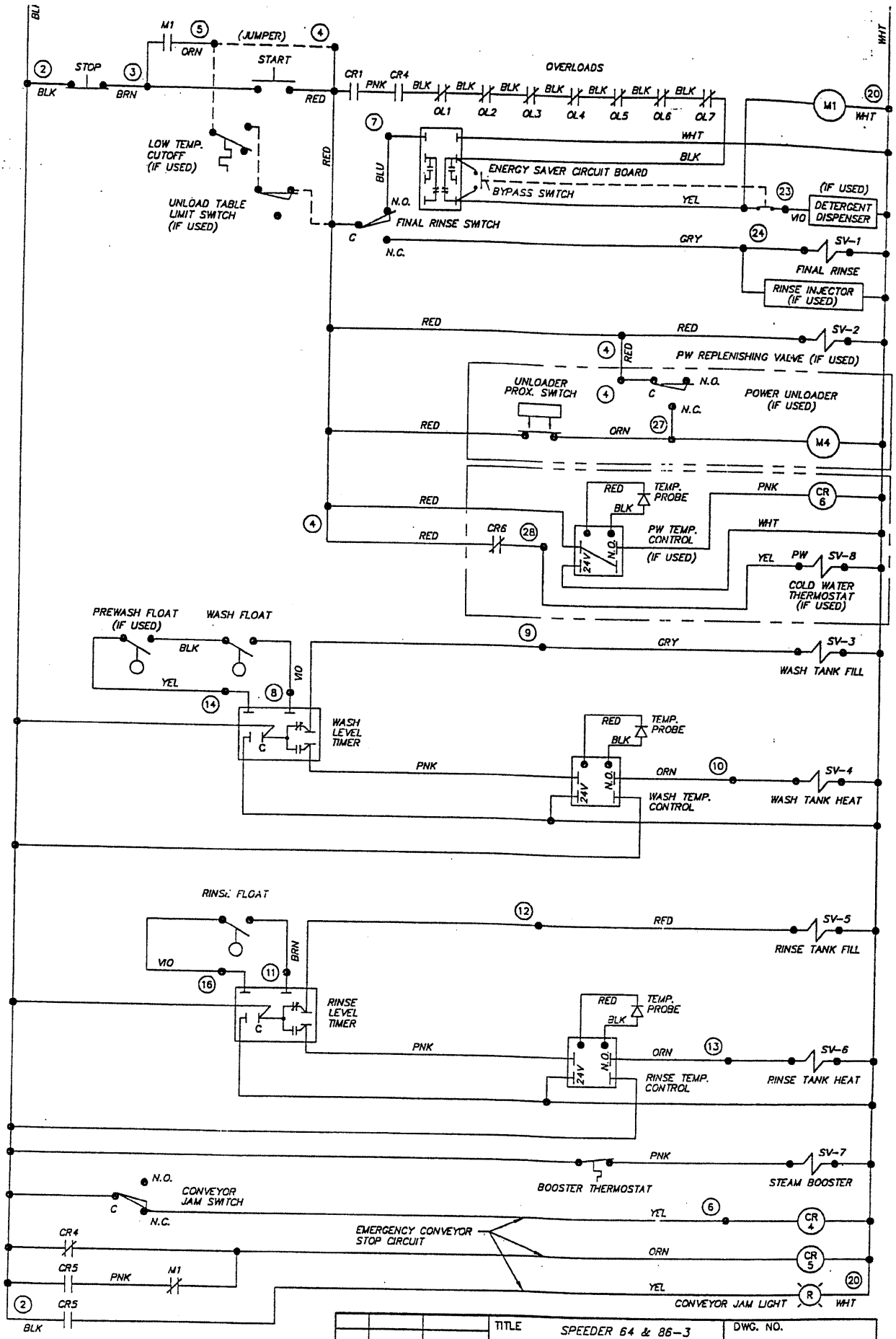
J	1752	4.11.00
REV	ECN NO	DATE
FILE: WIRE\W863010		

TITLE: SPEEDER 64 & 86-3
STEAM HEAT, SINGLE PHASE

DWG. NO. W863010

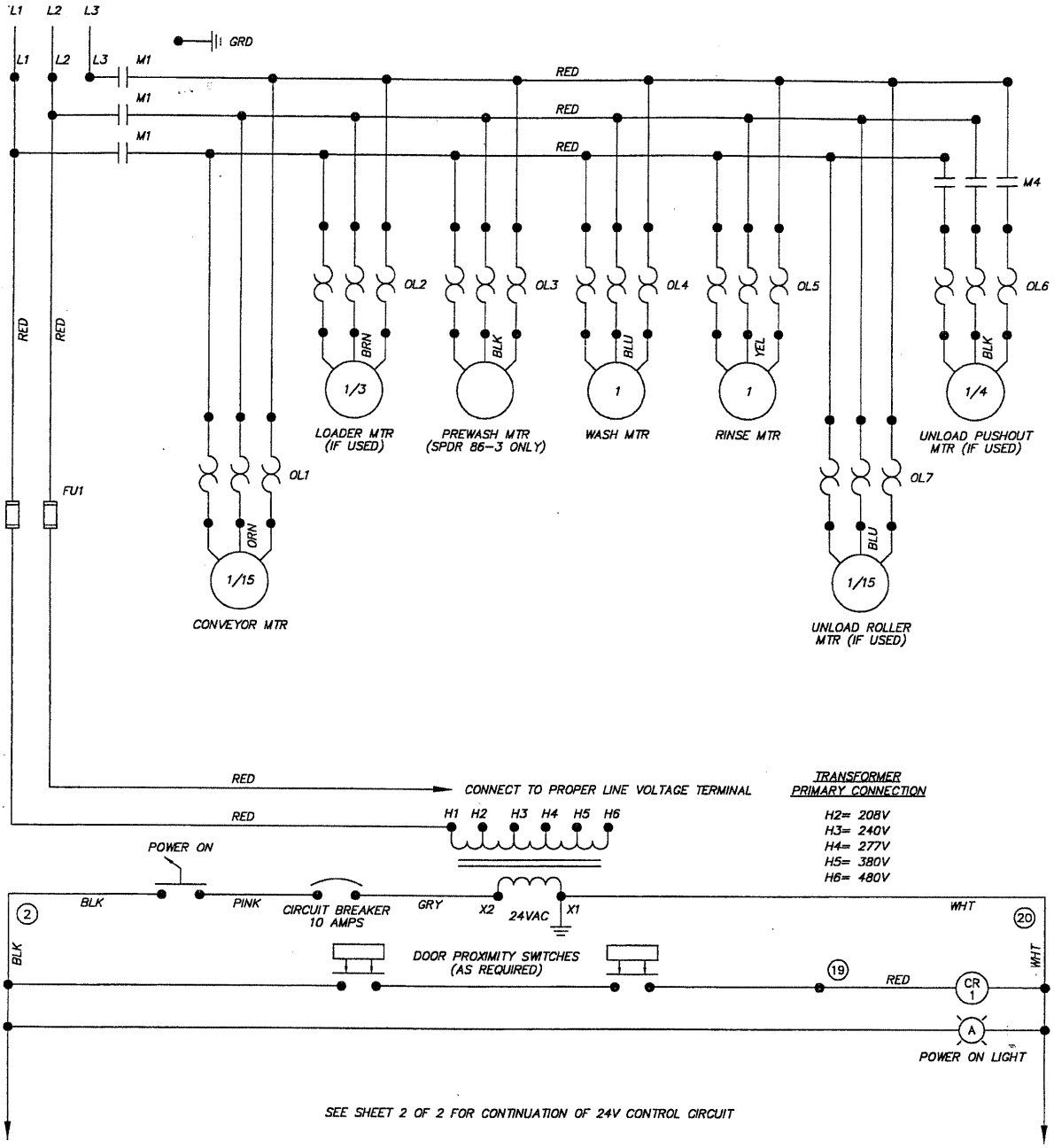
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

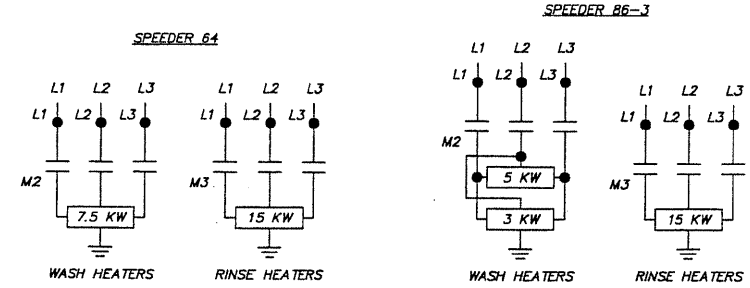
DRWN/DATE MFJ 7.31.97



			TITLE: SPEEDER 64 & 86-3 STEAM HEAT	DWG. NO. W863010
J	1752	4.11.00		
REV	ECN NO	DATE	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 05.18.95
FILE: WIRE\W863010				

SHEET 2 OF 2





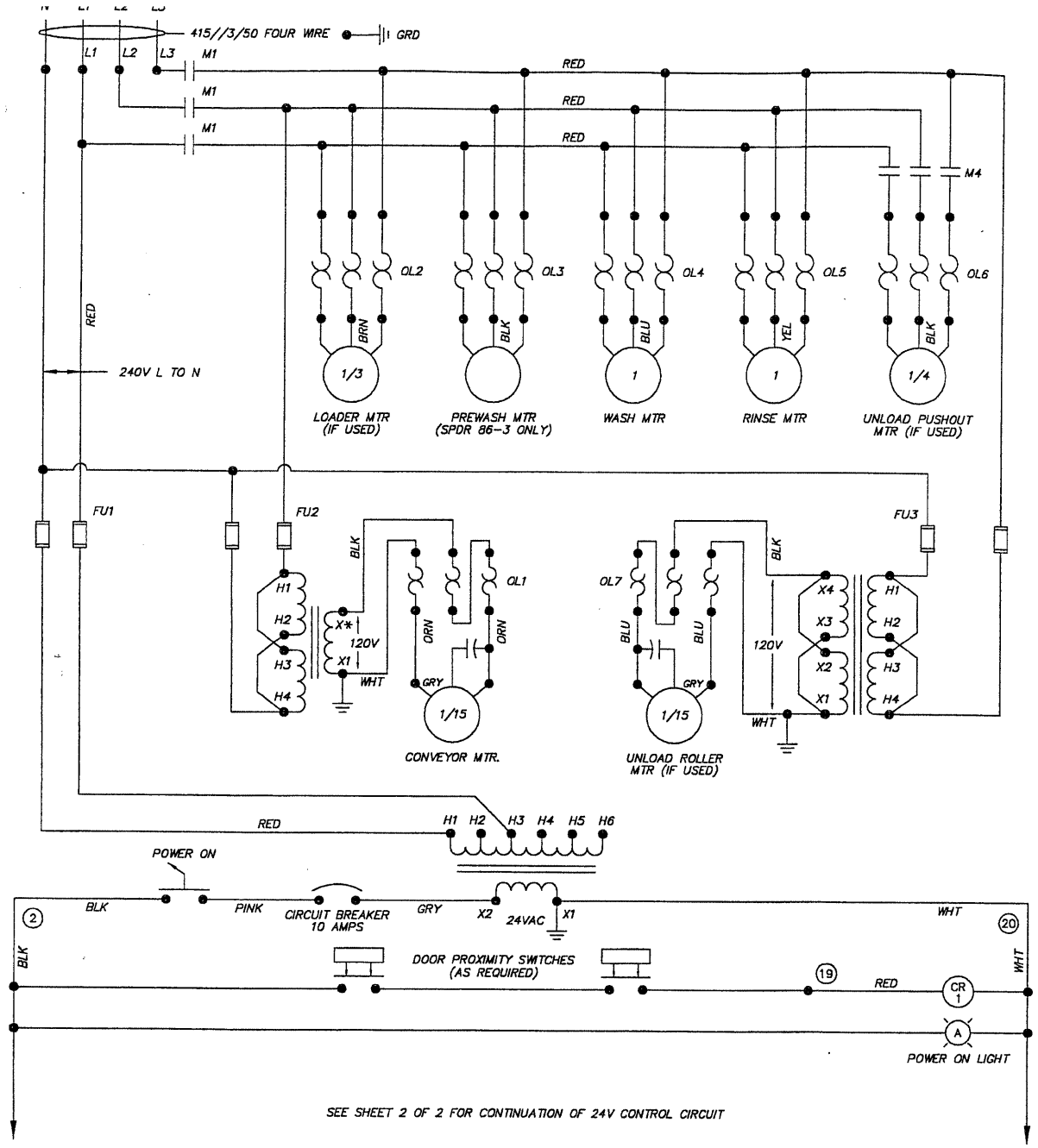
NOTE:

1. THREE SEPARATE ELECTRICAL SERVICES ARE NECESSARY:
   - 1- MOTORS/CONTROLS
   - 2- WASH IMMERSION HEATERS
   - 3- RINSE IMMERSION HEATERS

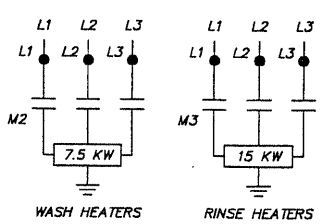
SEE SHT 1B FOR 415/3/50 WIRING

L	1988	7.7.03
REV	ECN NO	DATE
FILE: WIRE\W863020		

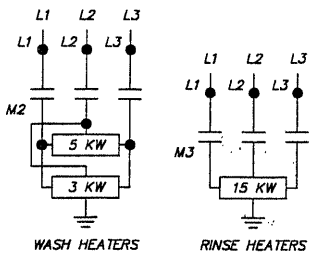
TITLE: SPEEDER 64 & 86-3 ELECTRIC HEAT		DWG. NO. W863020
Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 05.17.95

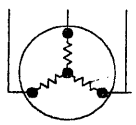


SPEEDER 64



SPEEDER 86-3





TYP HEATER WIRING 415/3/50

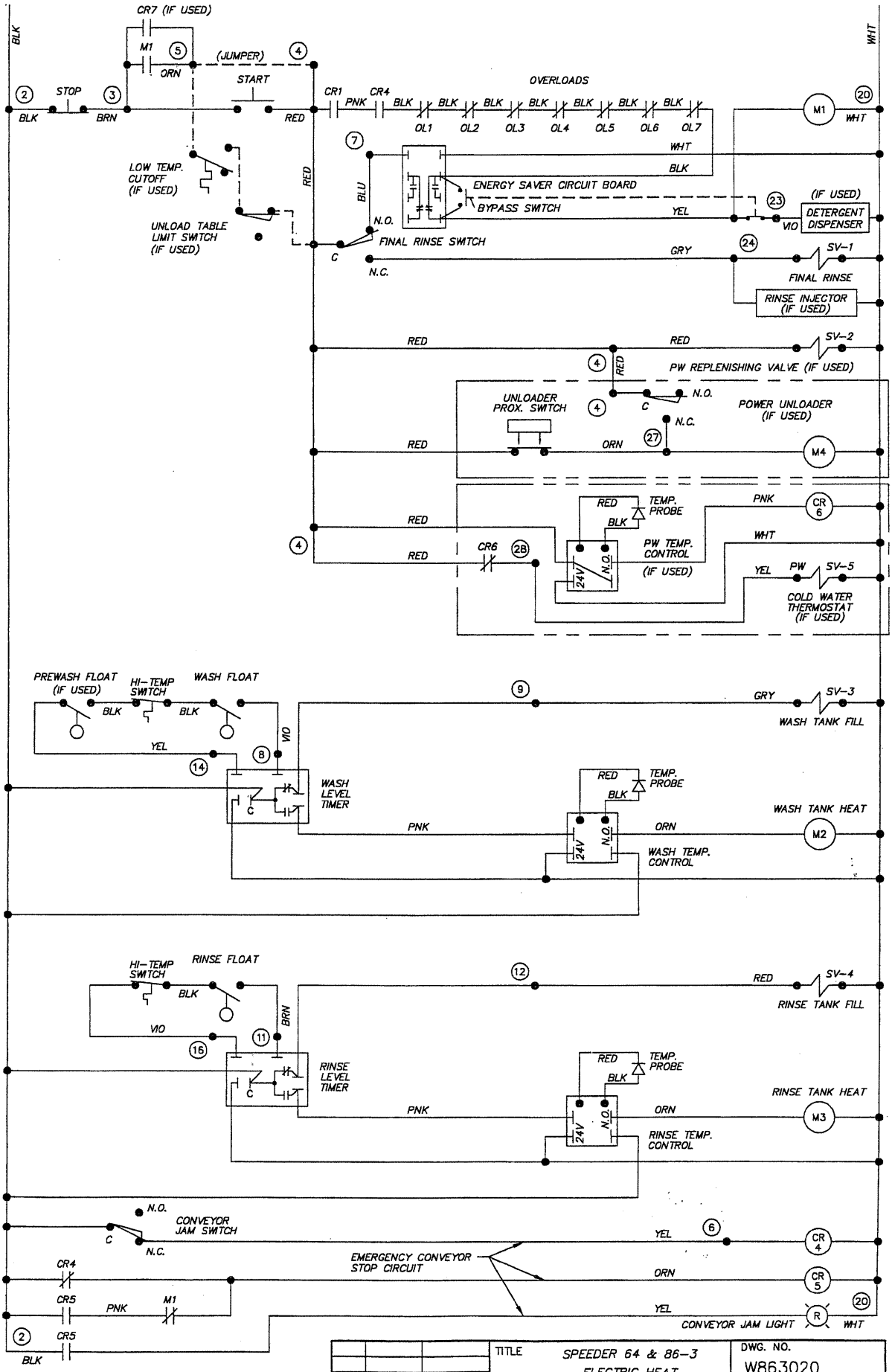
NOTE:

1. THREE SEPARATE ELECTRICAL SERVICES ARE NECESSARY:
   1- MOTORS/CONTROLS
   2- WASH IMMERSION HEATERS
   3- RINSE IMMERSION HEATERS

415/3/50 WIRING ONLY

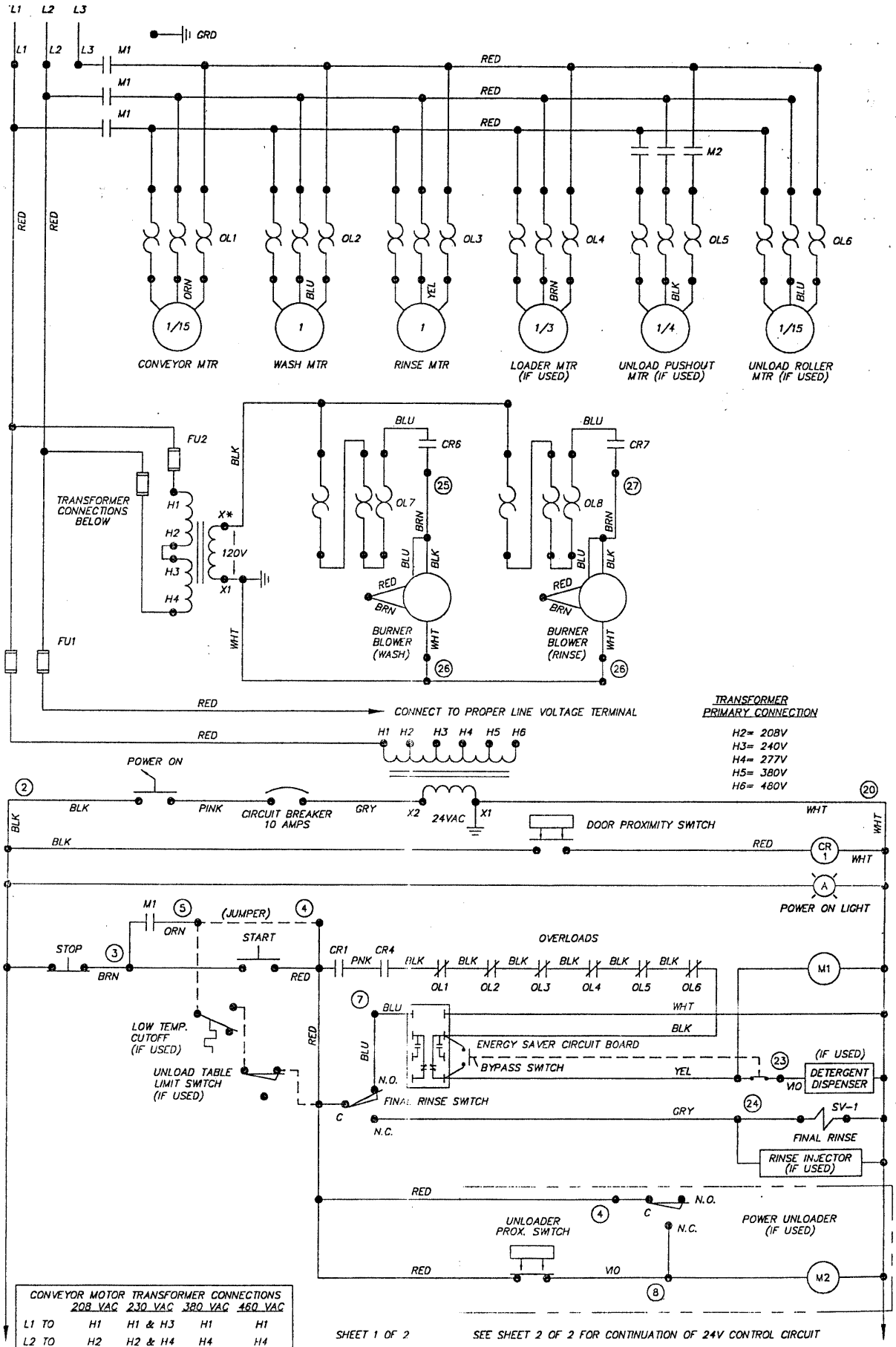
L	1988	7.7.03
REV	ECN NO	DATE
FILE: WIRE\W863020		

TITLE: SPEEDER 64 & 86-3 ELECTRIC HEAT		DWG. NO. W863020
Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 05.17.95



			TITLE	DWG. NO.
			SPEEDER 64 & 86-3 ELECTRIC HEAT	W863020
L	1988	7.7.03		
REV	ECN NO	DATE	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE RAF 05.17.95
FILE: WIRE\W863020				

SHEET 2 OF 2



CONVEYOR MOTOR TRANSFORMER CONNECTIONS				
	208 VAC	230 VAC	380 VAC	460 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
	–	–	–	H2 TO H3
X*	X3	X2	X3	X2

SHEET 1 OF 2

SEE SHEET 2 OF 2 FOR CONTINUATION OF 24V CONTROL CIRCUIT

REV	ECN NO	DATE
E	1752	4.11.00
D	1696	7.27.99
C	1583	12.1.97

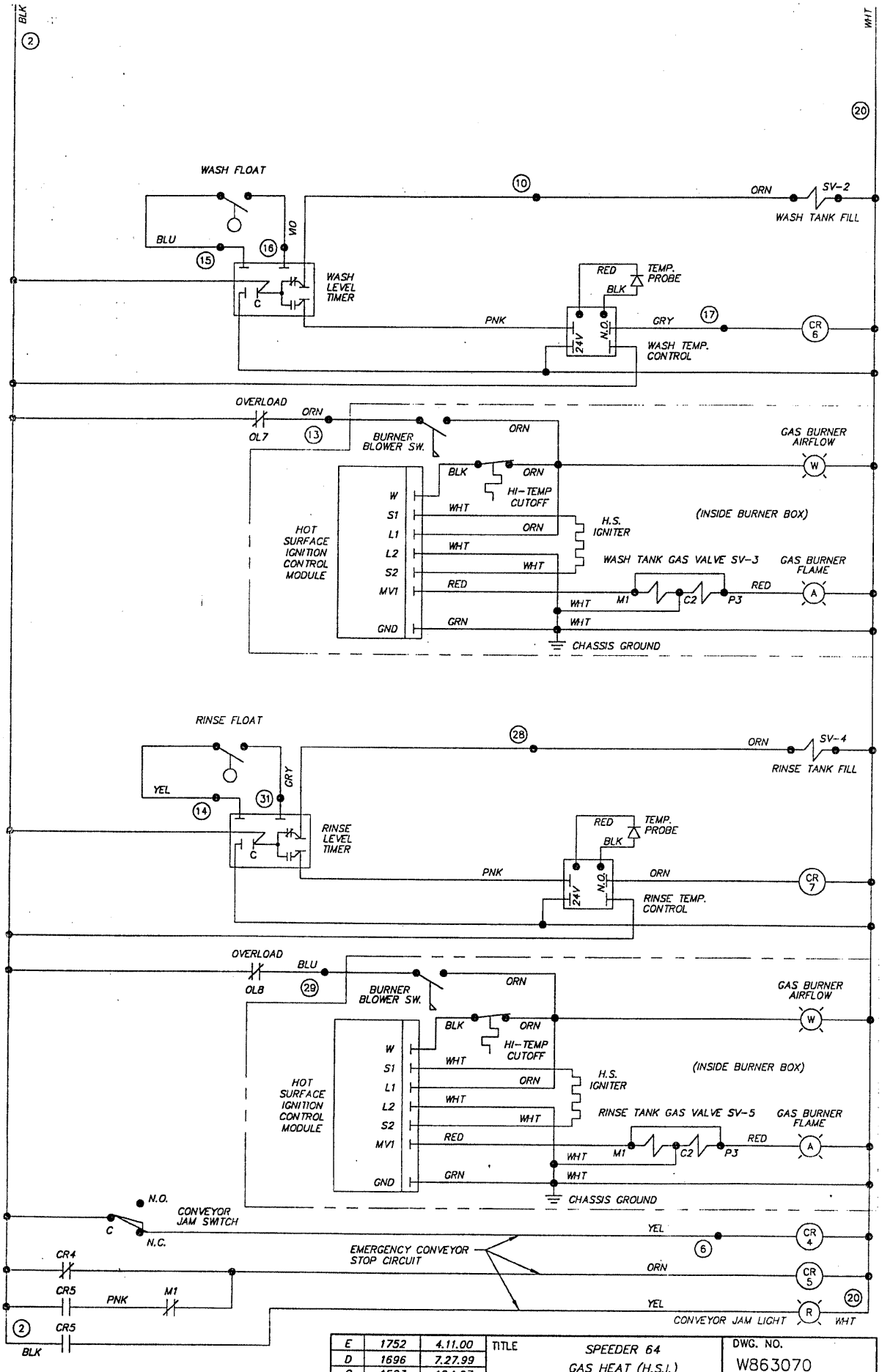
FILE: WIRE\W863070

TITLE: SPEEDER 64
GAS HEAT (H.S.I.)

DWG. NO. W863070

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

DRWN/DATE RAF 05.19.95



REV	ECN NO	DATE
E	1752	4.11.00
D	1696	7.27.99
C	1583	12.1.97
FILE: WIRE\W863070		

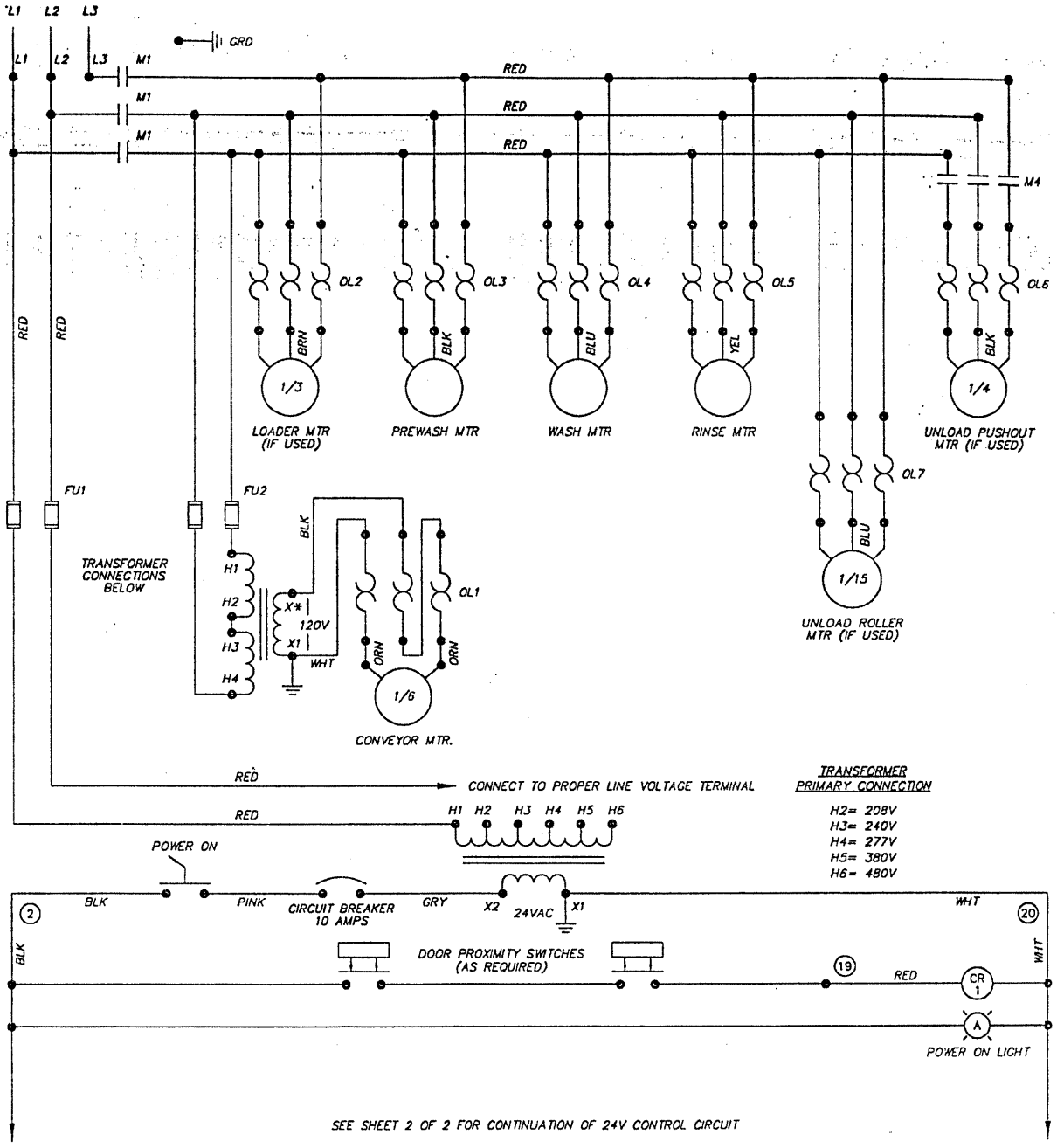
TITLE: SPEEDER 64
GAS HEAT (H.S.I.)

DWG. NO. W863070

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

DRWN/DATE: RAF 05.19.95

SHEET 2 OF 2



CONVEYOR MOTOR TRANSFORMER CONNECTIONS	208 VAC	230 VAC	380 VAC	460 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
	–	–	–	H2 TO H3
X*	X3	X2	X3	X2

REV	ECN NO	DATE

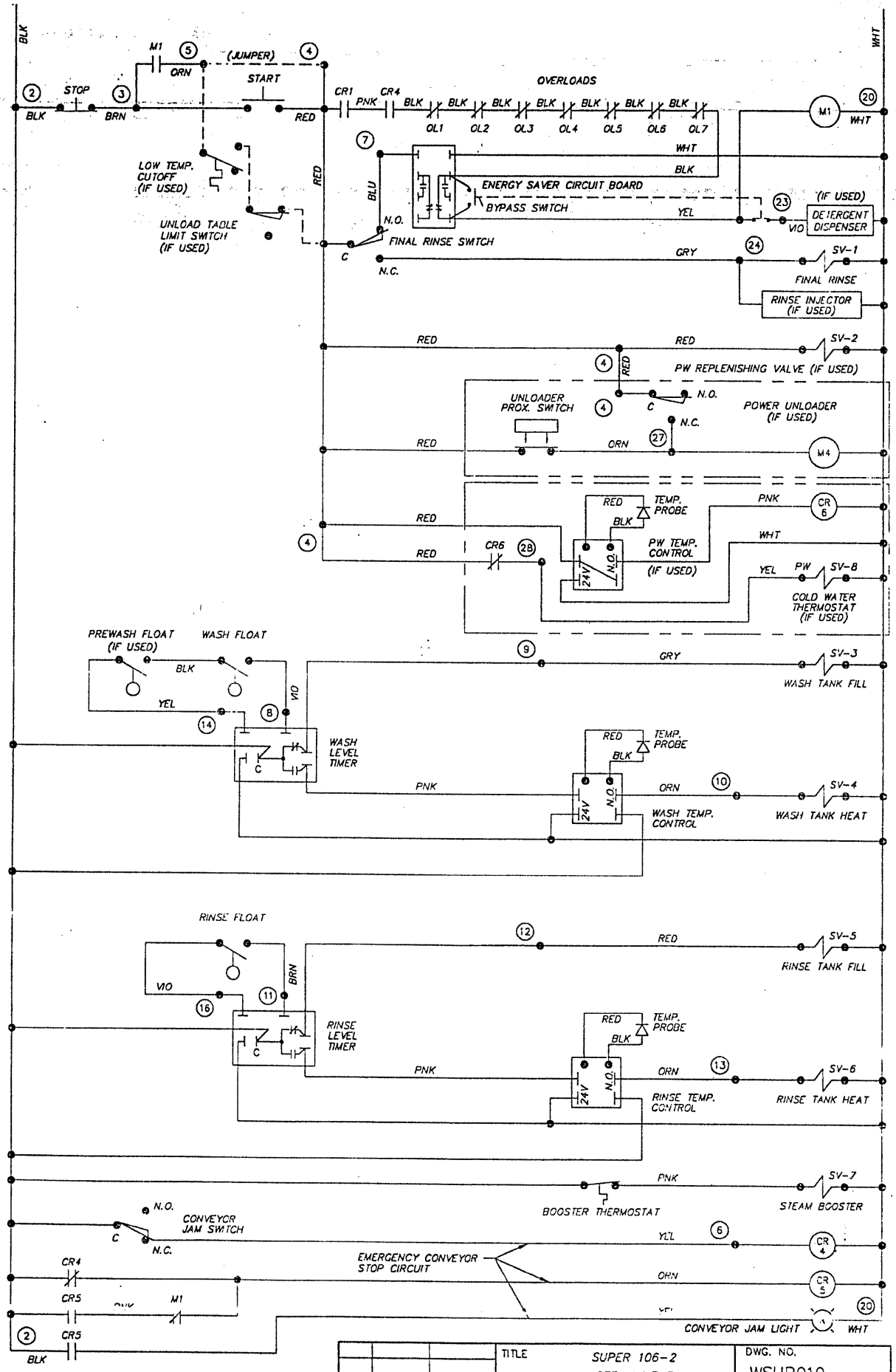
FILE: WIRE\WSUP010

TITLE: SUPER 106-2
STEAM HEAT

DWG. NO. WSUP010

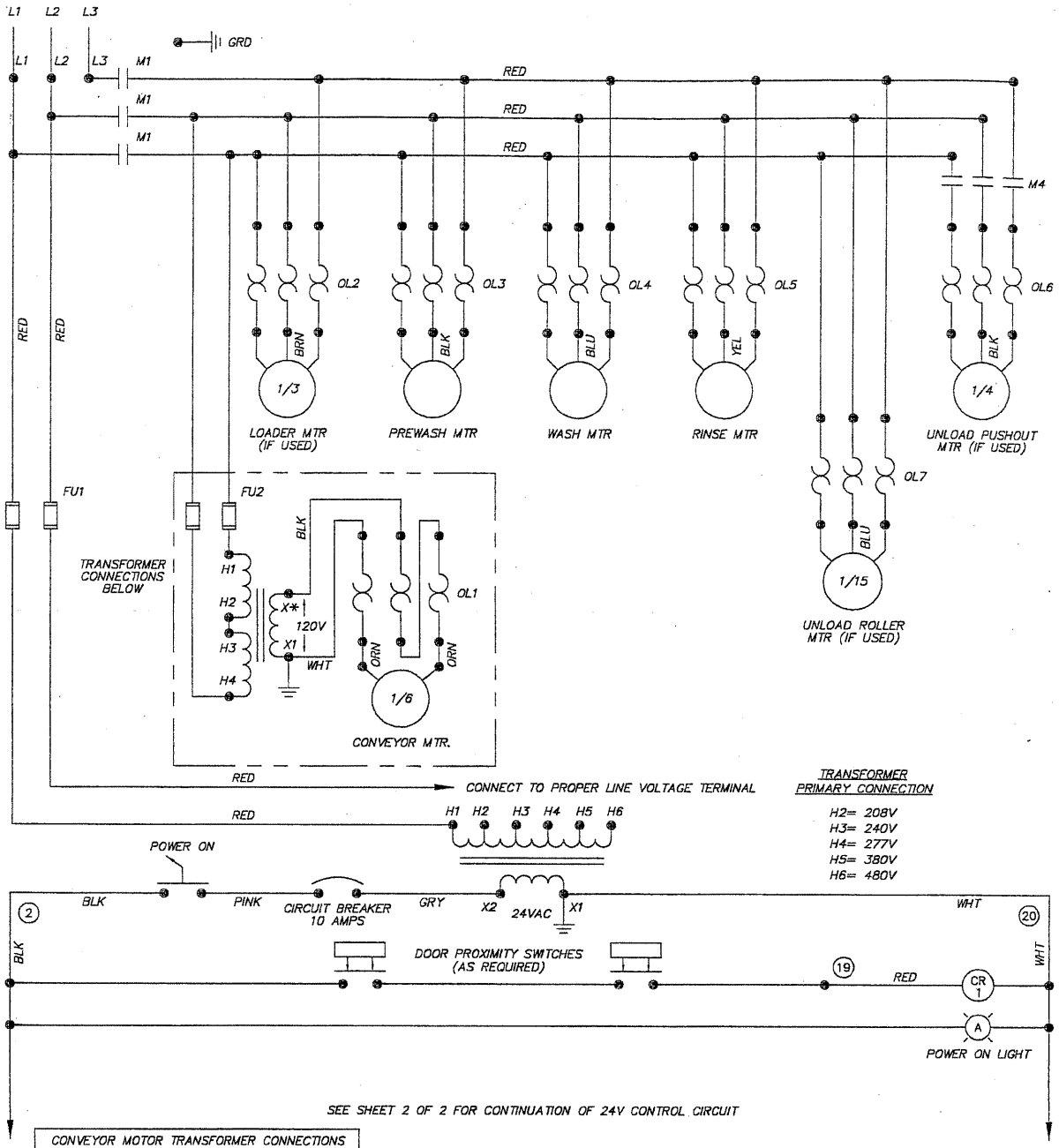
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

DRWN/DATE MFJ 4.8.00

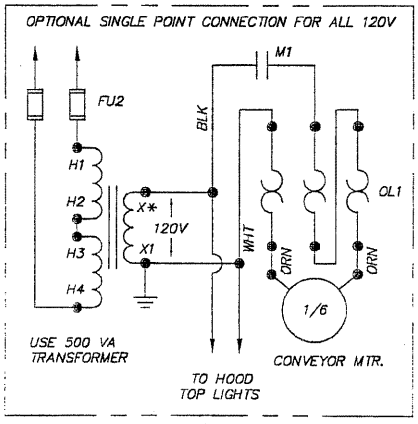


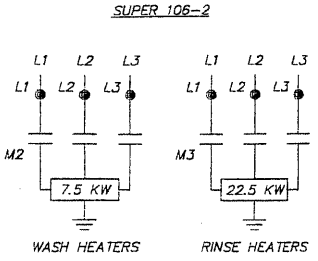
			TITLE	SUPER 106-2 STEAM HEAT	DWG. NO. WSUP010
REV	ECN NO	DATE	Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE MFJ 4.6.00
FILE: WIRE\WSUP010					

SHEET 2 OF 2



CONVEYOR MOTOR TRANSFORMER CONNECTIONS	208 VAC	230 VAC	380 VAC	460 VAC
L1 TO	H1	H1 & H3	H1	H1
L2 TO	H2	H2 & H4	H4	H4
	–	–	–	H2 TO H3
X*	X3	X2	X3	X2





NOTE:
1. THREE SEPARATE ELECTRICAL SERVICES ARE NECESSARY UNLESS SINGLE POINT CONNECTION.
   1- MOTORS/CONTROLS
   2- WASH IMMERSION HEATERS
   3- RINSE IMMERSION HEATERS

SEE SHT 1B FOR 415/3/50 WIRING

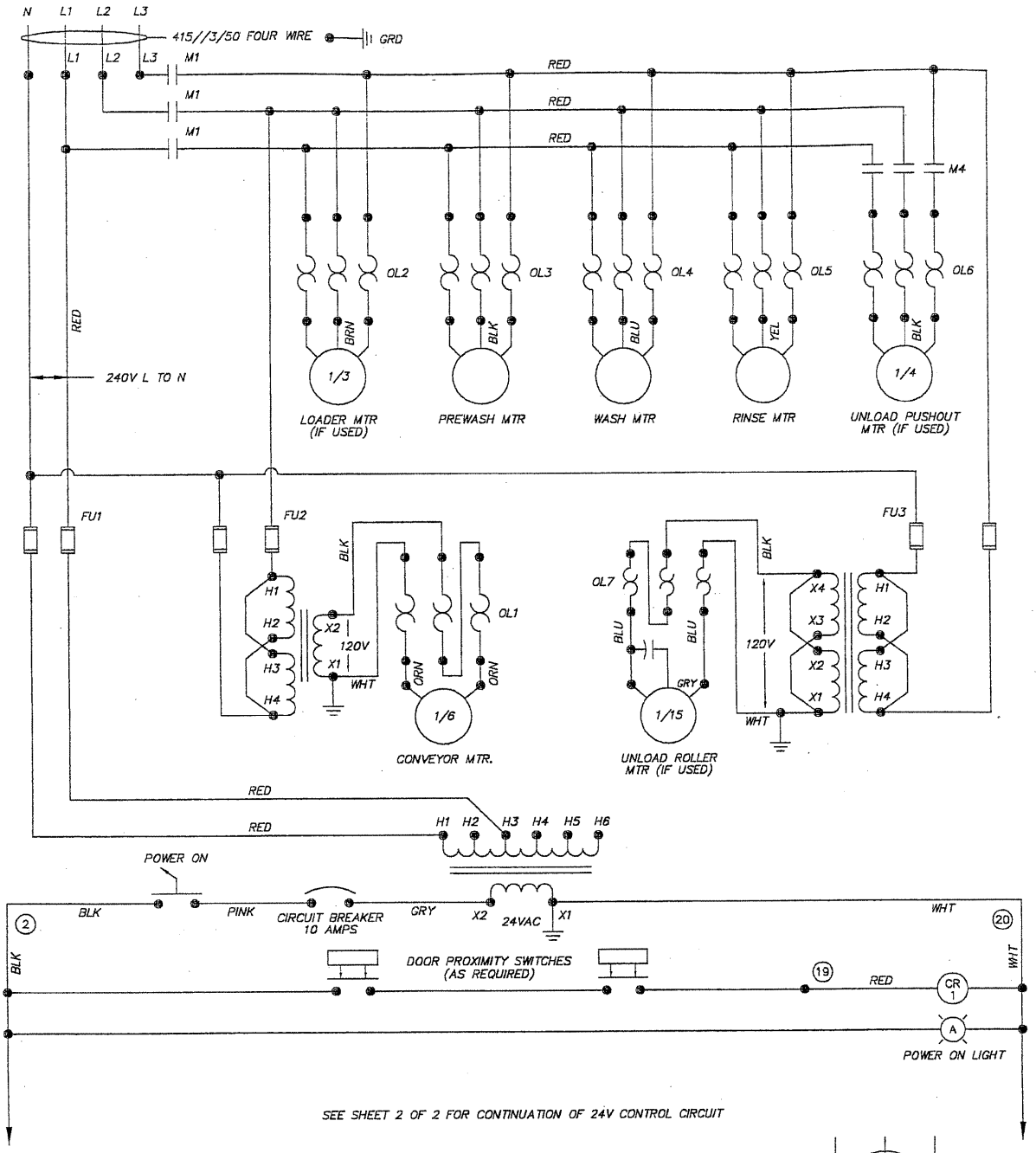
REV	ECN NO	DATE
B	1996	9.30.03
A	1988	7.7.03
FILE: WIRE\WSUP020		

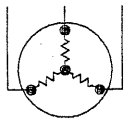
TITLE: SUPER 106-2 ELECTRIC HEAT

DWG. NO. WSUP020

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

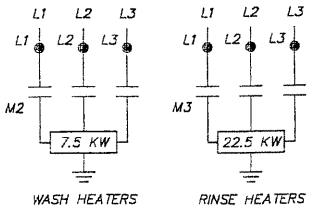
DRWN/DATE MFJ 4.6.00





TYP HEATER WIRING 415/3/50

SUPER 106-2



NOTE:

1. THREE SEPARATE ELECTRICAL SERVICES ARE NECESSARY:
   1- MOTORS/CONTROLS
   2- WASH IMMERSION HEATERS
   3- RINSE IMMERSION HEATERS

415/3/50 WIRING ONLY

REV	ECN NO	DATE
B	1996	9.30.03
A	1988	7.7.03
FILE: WIRE\WSUP020		

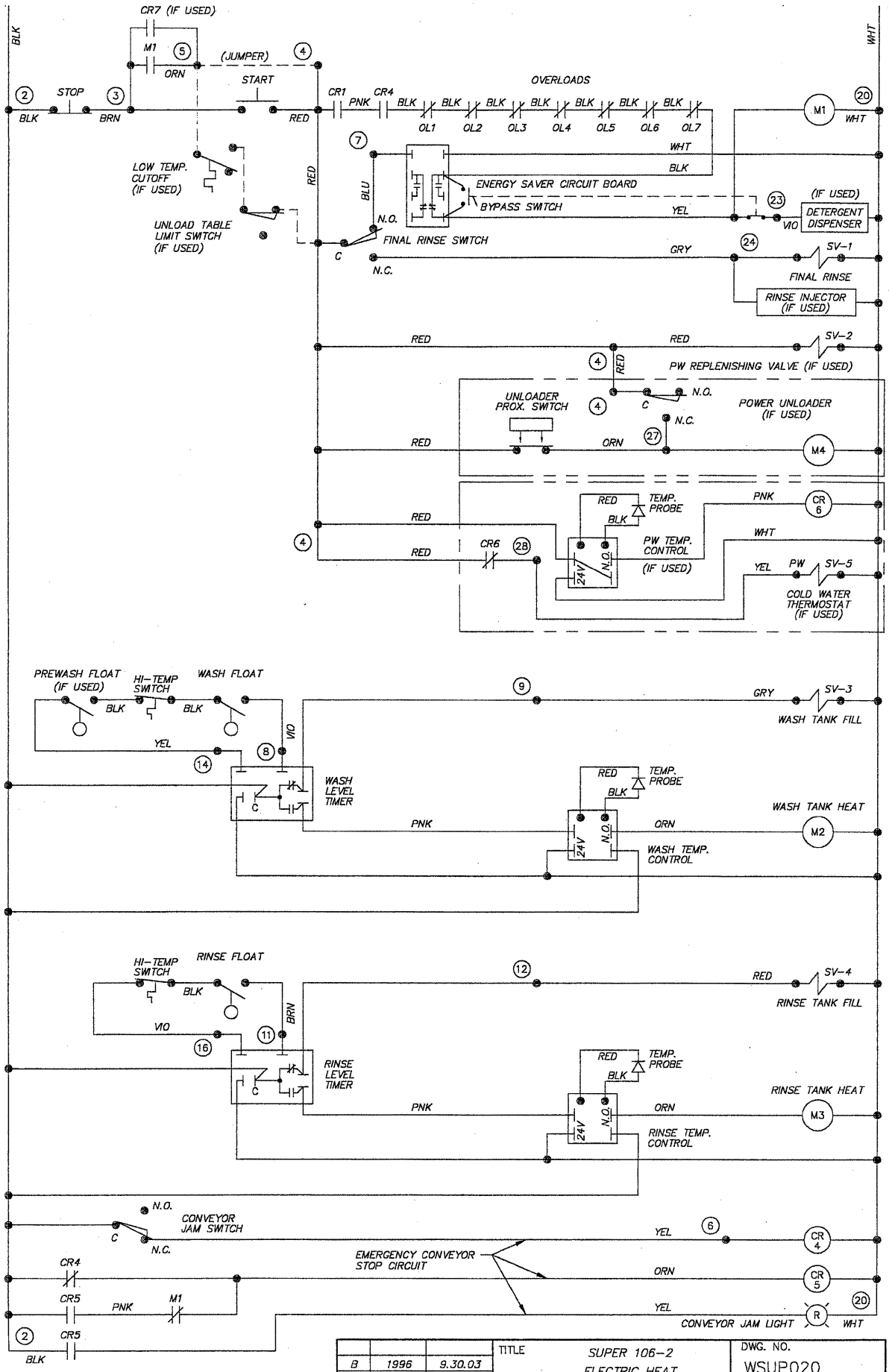
TITLE: SUPER 106-2 ELECTRIC HEAT

DWG. NO. WSUP020

Insinger

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

DRWN/DATE MFJ 4.6.00



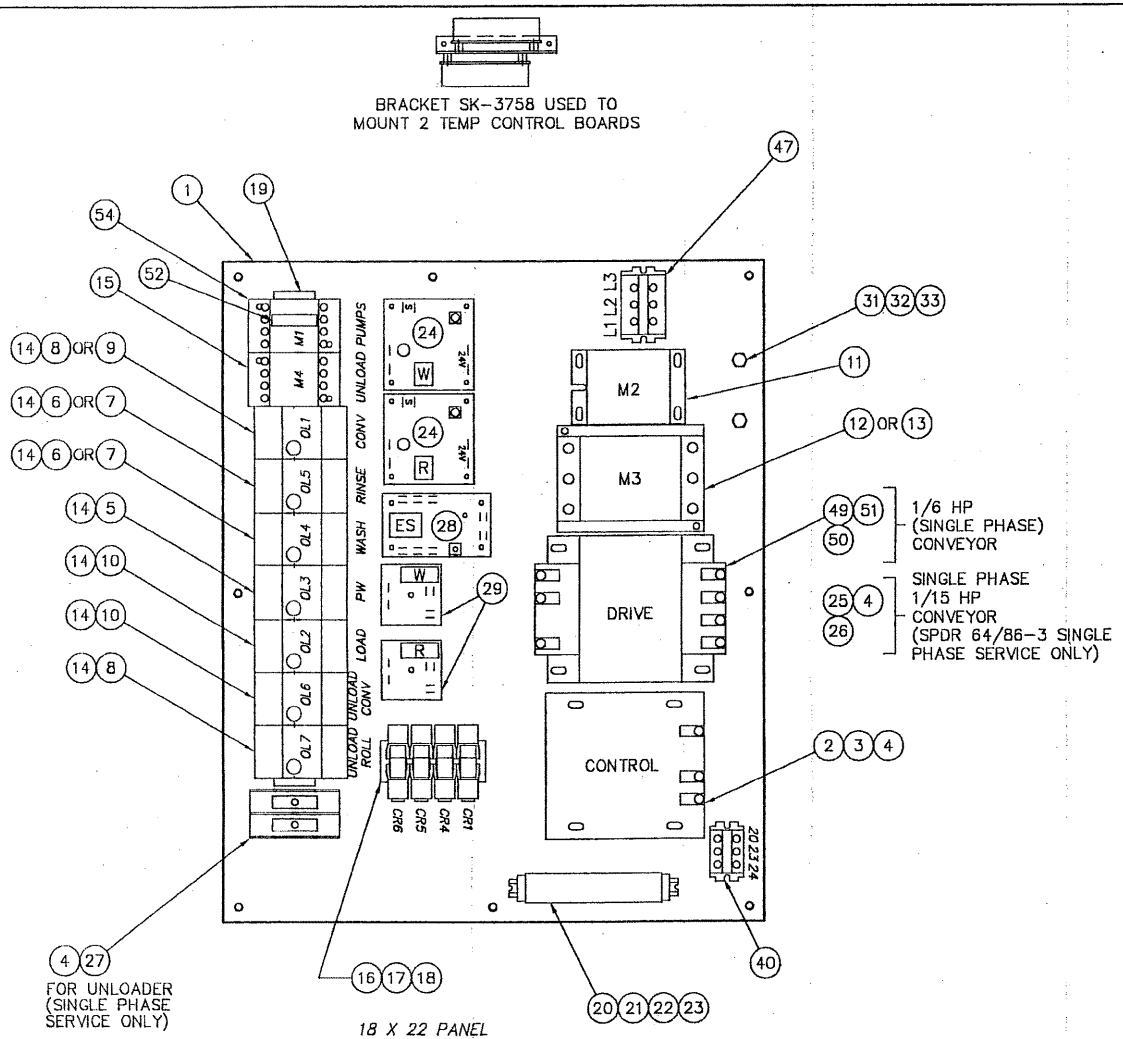
REV	ECN NO	DATE
B	1996	9.30.03
A	1988	7.7.03
FILE: WIRE\WSUP020		

TITLE: SUPER 106-2 ELECTRIC HEAT

DWG. NO.: WSUP020

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

DRWN/DATE: MFJ 4.6.00



ITEM	DESCRIPTION		PART NO.	QTY
1	COMPONENT MOUNTING PLATE		SK-3776	1
2	CONTROL TRANSFORMER (250 VA, 24 VAC)		DE6-25	1
3	FUSE BLOCK KIT (250 VA XFMR)		DE9-165	1
4	FUSE (250 VA TRANSFORMER PRIMARY)			AR
	460 V	FNQ-R-1.8	DE9-169	
	380 V	FNQ-R-2	DE9-170	
	220 - 230 V	FNQ-R-3.5	DE9-174	
	208 V	FNQ-R-4	DE9-175	
5	OVERLOAD RELAY (1/2 HP PREWASH PUMP)			1
	460/3/60	1-1.6 A	DE2-50	
	380/3/50	1-1.6 A	DE2-50	
	230/3/60	1.6-2.5 A	DE2-52	
	220/3/50	1.6-2.5 A	DE2-52	
	220/1/60	4-6 A	DE2-54	
	208/3/60	1.6-2.5 A	DE2-52	
6	OVERLOAD RELAY (1 HP WASH/RINSE PUMP)			2
	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	7-10 A	DE2-56	
	208/3/60	2.5-4 A	DE2-53	
7	OVERLOAD RELAY (1.5 HP WASH/RINSE PUMP)			2
	460/3/60	1.6-2.5 A	DE2-52	
	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	4-6 A	DE2-54	
8	OVERLOAD RELAY (1/15 HP CONV DRIVE)			AR
	460/3/60	.16-.25 A	DE2-91	
	380/3/50	.16-.25 A	DE2-91	
	230/3/60	.25-.40 A	DE2-92	
	220/3/50	.25-.40 A	DE2-92	
	208/3/60	.25-.40 A	DE2-92	
	115/1/60	.63-1 A	DE2-49	

NOTES:
[X] INDICATES USE ON SPDR 64/86-3 WITH 1/6 HP CONVEYOR ON BLOWER DRYER TABLE AND SUPER 106-2 WITH 1/6 HP CONVEYOR.

NOT SHOWN

TRANSFORMER FOR UNLOADER (SINGLE PH SERVICE ONLY)	
250 VA	DE6-26
250 VA (380 V ONLY)	DE6-21

TITLE: CONTROL PANEL LAYOUT
SPDR 64, 86-3, AND SUPER 106-2

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

DRWN/DATE: MFJ 6.1.95

REV	ECN NO	DATE
P	1986	8.1.03
N	1945	7.17.02
M	1857	2.15.01

FILE: SKETCH\SK-3142
SCALE: 1=4
DWG. NO.: SK-3142

ITEM	DESCRIPTION		PART NO.	QTY
[9]	OVERLOAD RELAY (1/6 HP CONV DRIVE)			1
	115/1/60	1.6–2.5 A	DE2–52	
10	OVERLOAD RELAY (1/4 HP UNLOADER & 1/3 HP LOADER)			AR
	460/3/60	.63–1 A	DE2–49	
	380/3/50	.63–1 A	DE2–49	
	230/3/60	1–1.6 A	DE2–50	
	220/3/50	1–1.6 A	DE2–50	
	220/1/60	2.5–4 A	DE2–53	
	208/3/60	1–1.6 A	DE2–50	
11	CONTACTOR (7.5/8.0 KW ELECT WASH TANK HEAT ONLY)			1
	ALL 3 PHASE	30 A RES	DE1–109	
	220/1/60	50 A RES	DE1–110	
12	CONTACTOR (15 KW ELECT RINSE TANK HEAT ONLY)			1
	460/3/60	30 A RES	DE1–109	
	380/3/50	30 A RES	DE1–109	
	230/3/60	50 A RES	DE1–110	
	220/3/50	50 A RES	DE1–110	
	220/1/60	SP47	DE1–94	
	208/3/60	50 A RES	DE1–110	
13	CONTACTOR (22.5 KW ELECT RINSE TANK HEAT ONLY)			1
	460/3/60	SP47	DE1–94	
	380/3/50	SP47	DE1–94	
	230/3/60	SP47	DE1–94	
	220/3/50	SP47	DE1–94	
	220/1/60	SP77	DE1–96	
	208/3/60	SP47	DE1–94	

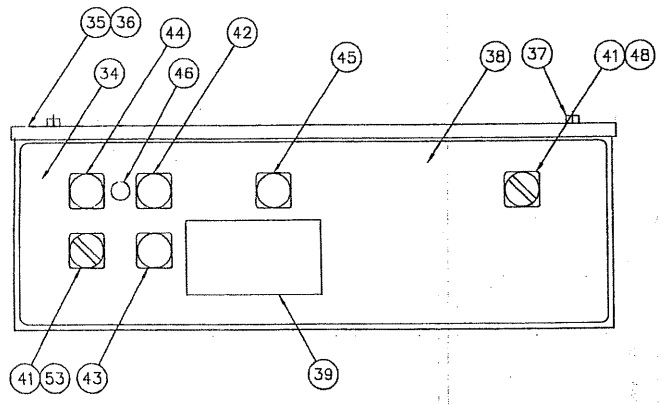
ITEM	DESCRIPTION	PART NO.	QTY
14	OVERLOAD BASE	DE2–60	AR
15	CONTACTOR (UNLDR) SP4	DE1–93	AR
16	RELAY BASE	DE2–37	AR
17	RELAY	DE2–38	AR
18	RELAY HOLD DOWN SPRING	DE3–43	AR
19	DIN RAIL (35 mm)	DE9–216	1
20	DIN RAIL (15 mm)	DE3–42	1
21	TERMINAL SECTION	DE3–39	AR
22	TERMINAL END COVER PLATE	DE3–40	1
23	TERMINAL END CLAMP	DE3–41	2
24	TEMPERATURE CONTROL BOARD	DE9–251	AR
25	DRIVE TRANSFORMER (250 VA, 120 VAC)		1
	230 & 460 V	DE6–10	
	208 & 380 V	DE6–21	
26	FUSE BLOCK KIT (250 VA XFMR)	DE9–164	1
27	FUSE BLOCK, 2 POLE (XFMR PRIMARY)	DE9–185	1
28	TIME DELAY BOARD (ENERGY SAVER)	DE7–28	1
29	TIMER (LIQUID LEVEL)	DE7–35	2
30	CAPACITOR (1/15 HP, 120 V CONV MTR)	D2888	AR
31	GROUNDING STUD	D309C–GC–4G	2
32	LOCKWASHER, 1/4"	D313C–G5	2
33	HEX NUT, 1/4–20	D312C–GC–2	2
34	CONTROL BOX	SK–3716	1

ITEM	DESCRIPTION		PART NO.	QTY
35	CONTROL BOX COVER		SK–3717	1
36	GASKET		9007–001	1
37	NUT		D312C–EF–5	4
38	DECAL		SK–3700	1
39	DATA DECAL		SK–3715	1
40	TERMINAL BLK ASSY		DE3–9	1
41	SELECTOR SWITCH ASSY		DE8–58	2
42	PUSHBUTTON ASSY, START		DE8–64	1
43	PUSHBUTTON ASSY, STOP		DE8–65	1
44	PILOT LIGHT ASSY – YELLOW		DE8–62	1
45	PILOT LIGHT ASSY – RED		DE8–61	1
46	CIRCUIT BREAKER (10A)		DE9–106	1
47	TERMINAL BLOCK ASSY		DE3–3	1
48	CONTACT BLOCK, NC		DE8–60	1
[49]	DRIVE TRANSFORMER (350 VA, 120 VAC)			1
	230 & 460 V		DE6–38	
	208 & 380 V		DE6–43	
[50]	FUSE BLOCK KIT (350 VA XFMR)			1
	208 & 380 V		DE9–165	
	230 & 460 V		DE9–164	
[51]	FUSE (350 VA TRANSFORMER PRIMARY)			2
	460 V	FNQ–R–2.25	DE9–171	
	380 V	FNQ–R–3	DE9–173	
	220 – 230 V	FNQ–R–5	DE9–176	
	208 V	FNQ–R–5	DE9–176	
52	AUXILIARY CONTACT, NC		DE1–61AE	1
53	CONTACT BLOCK, NO		DE8–59	1
54	CONTACTOR (PUMPS)			1
	ALL 3 PHASE	SP4	DE1–93	
	220/1/60	SP17	DE1–56AE	

NOT SHOWN

ELECTRIC IMMERSION HEATER (3 KW)

440–480 V, 3 PH	DE13–SC73
380 V, 3 PH	DE13–SC53
220–240 V, 3 PH	DE13–SC43
208V, 3PH	DE13–SC23



NOT SHOWN

ELECTRIC IMMERSION HEATER (5 KW)

440–480 V, 3 PH	DE13–SD73
380 V, 3 PH	DE13–SD53
220–240 V, 3 PH	DE13–SD43
208V, 3PH	DE13–SD23

ELECTRIC IMMERSION HEATER (7.5 KW)

440–480 V, 3 PH	DE13–SE73
380 V, 3 PH	DE13–SE53
220–240 V, 3 PH	DE13–SE43
208V, 3PH	DE13–SE23
TEMPERATURE PROBE	DE9–252

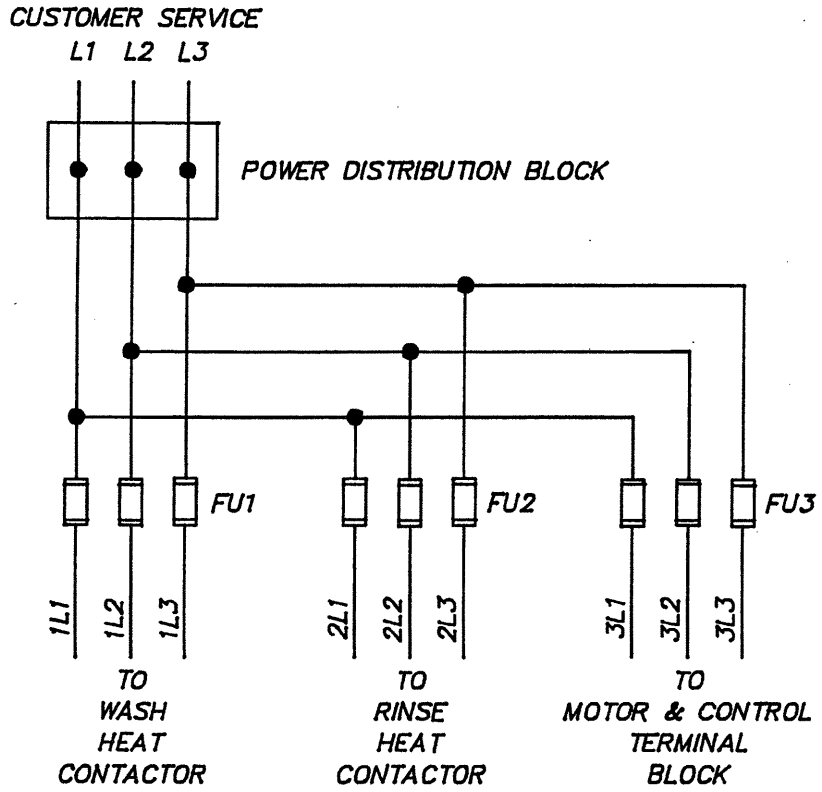
TITLE: CONTROL PANEL LAYOUT
SPDR 64, 86–3, AND SUPER 106–2

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966

DRWN/DATE: MFJ 6.1.95

REV	ECN NO	DATE
P	1986	8.1.03
N	1945	7.17.02
M	1857	2.15.01

FILE: SKETCH\SK–3142
SCALE: 1=4
DWG. NO.: SK–3142



REV	ECN NO	DATE

FILE: SKETCHA\SK-3822

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

TITLE: SINGLE POINT CONNECTION REMOTE FUSE BOX

MAT'L: –

NEXT ASSY: –

REQ'D: –

SCALE: FULL

DWG. NO.: SK-3822

USED ON: –

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

DRWN/DATE: MFJ 12.7.95

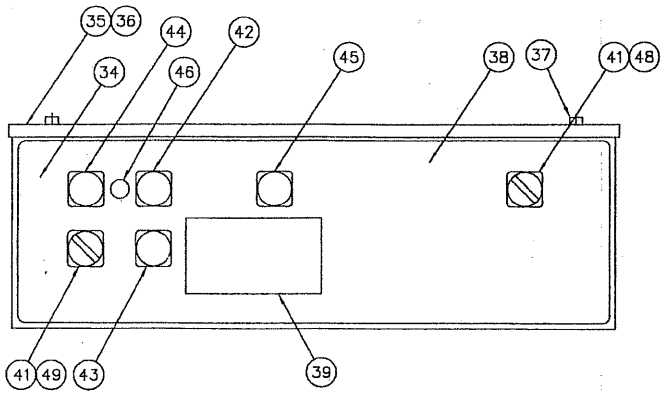
ITEM	DESCRIPTION	PART NO.	QTY
9	CONTACTOR, MOTORS SP4	DE1-93	AR
10	AUXILIARY CONTACT, NC	DE1-61AE	1
11			
12	RELAY BASE	DE3-25	2
13	RELAY	DE2-12	2
14	RELAY BASE	DE2-37	3
15	RELAY	DE2-38	3
16	RELAY HOLD DOWN SPRING	DE3-43	3
17	DIN RAIL (35 mm)	DE9-84	1
18	DIN RAIL (15 mm)	DE3-42	1
19	TERMINAL SECTION	DE3-39	AR
20	TERMINAL END COVER PLATE	DE3-40	1
21	TERMINAL END CLAMP	DE3-41	2
22	TRANSFORMER (250 VA, 120 VAC CONV)		1
	230 & 460 V	DE6-10	
	208 & 380 V	DE6-21	
23	FUSE BLOCK KIT (250 VA XFMR)	DE9-164	1
24			

ITEM	DESCRIPTION	PART NO.	QTY
25			
26	OVERLOAD BASE	DE2-60	AR
27	TEMPERATURE CONTROL BOARD	DE9-251	2
28	TIME DELAY BOARD (ENERGY SAVER)	DE7-28	1
29	TIMER (LIQUID LEVEL)	DE7-35	2
30			
31	GROUNDING STUD	D309C-GC-4G	1
32	LOCKWASHER, 1/4"	D313C-G5	1
33	HEX NUT, 1/4-20	D312C-GC-2	1
34	CONTROL BOX	SK-3716	1
35	CONTROL BOX COVER	SK-3717	1
36	GASKET	9007-001	1
37	NUT	D312C-EF-5	4
38	DECAL	SK-3700	1
39	DATA DECAL	SK-3715	1

ITEM	DESCRIPTION	PART NO.	QTY
40	TERMINAL BLK ASSY	DE3-9	1
41	SELECTOR SWITCH ASSY	DE8-58	2
42	PUSHBUTTON ASSY, START	DE8-64	1
43	PUSHBUTTON ASSY, STOP	DE8-65	1
44	PILOT LIGHT ASSY - YELLOW	DE8-62	1
45	PILOT LIGHT ASSY - RED	DE8-61	1
46	CIRCUIT BREAKER (10A)	DE9-106	1
47	TERMINAL BLOCK ASSY	DE3-3	1
48	CONTACT BLOCK, NC	DE8-60	1
49	CONTACT BLOCK, NO	DE8-59	1

NOT SHOWN

PILOT LIGHT, WHITE	DE9-108	2
PILOT LIGHT, AMBER	DE9-109	2
DECAL, GAS BURNER LIGHTS	1430-31	2
TEMPERATURE SENSOR	DE9-252	2



TITLE: SPEEDER 64
GAS HEAT CONTROL PANEL LAYOUT

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

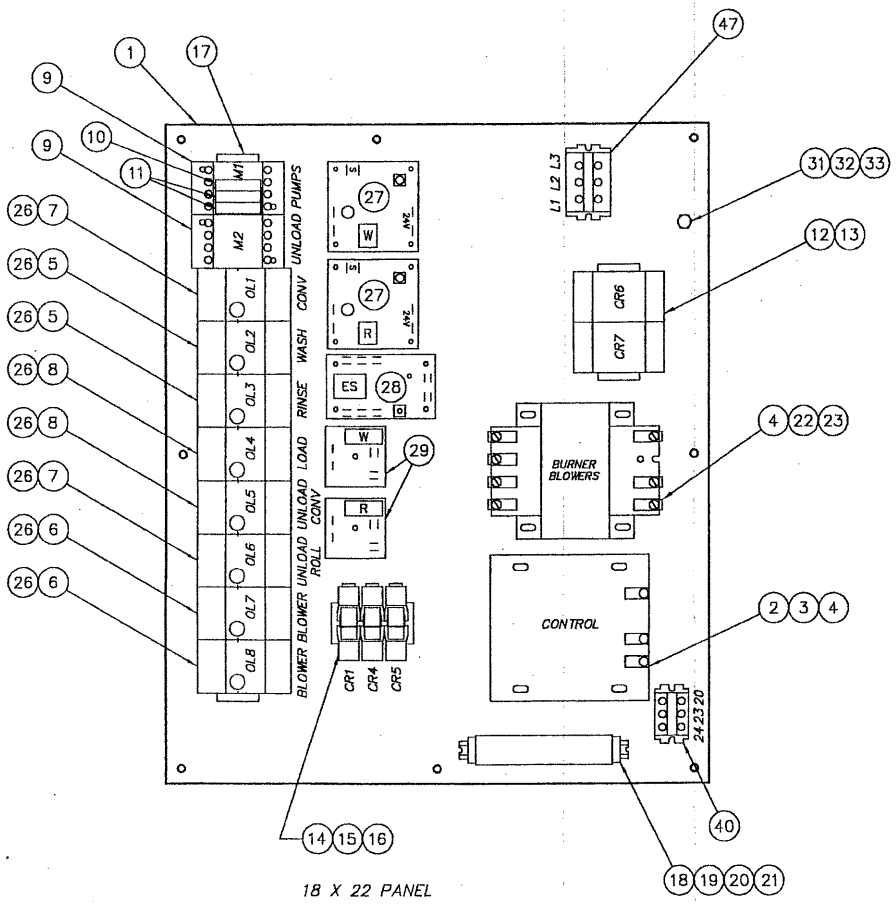
DRWN/DATE: MFJ 6.1.95

FILE: SKETCH\SK-3670

REV	ECN NO	DATE
G	1986	8.1.03
F	1857	2.15.01

SCALE: 1=4

DWG. NO.: SK-3670



18 X 22 PANEL

ITEM	DESCRIPTION		PART NO.	QTY
1	COMPONENT MOUNTING PLATE		SK-3776	1
2	CONTROL TRANSFORMER (250 VA, 24 VAC)		DE6-25	1
3	FUSE BLOCK KIT (250 VA XFMR)		DE9-165	1
4	FUSE (250 VA TRANSFORMER PRIMARY)			4
	460 V	FNQ-R-1.8	DE9-169	
	380 V	FNQ-R-2	DE9-170	
	220 - 230 V	FNQ-R-3.5	DE9-174	
	208 V	FNQ-R-4	DE9-175	
5	OVERLOAD RELAY (1 HP WASH/RINSE PUMP)			2
	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	7-10 A	DE2-56	
	208/3/60	2.5-4 A	DE2-53	
6	OVERLOAD RELAY (BURNER BLOWER)			2
	115/1/60	.63-1 A	DE2-49	
7	OVERLOAD RELAY (1/15 HP CONV DRIVE)			AR
	460/3/60	.16-.25 A	DE2-91	
	380/3/50	.16-.25 A	DE2-91	
	230/3/60	.25-.40 A	DE2-92	
	220/3/50	.25-.40 A	DE2-92	
	208/3/60	.25-.40 A	DE2-92	
	115/1/60	.63-1 A	DE2-49	
8	OVERLOAD RELAY (1/4 HP UNLOADER & 1/3 HP LOADER)			AR
	460/3/60	.63-1 A	DE2-49	
	380/3/50	.63-1 A	DE2-49	
	230/3/60	1-1.6 A	DE2-50	
	220/3/50	1-1.6 A	DE2-50	
	220/1/60	2.5-4 A	DE2-53	
	208/3/60	1-1.6 A	DE2-50	

TITLE: SPEEDER 64
GAS HEAT CONTROL PANEL LAYOUT

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

DRWN/DATE: MFJ 6.1.95

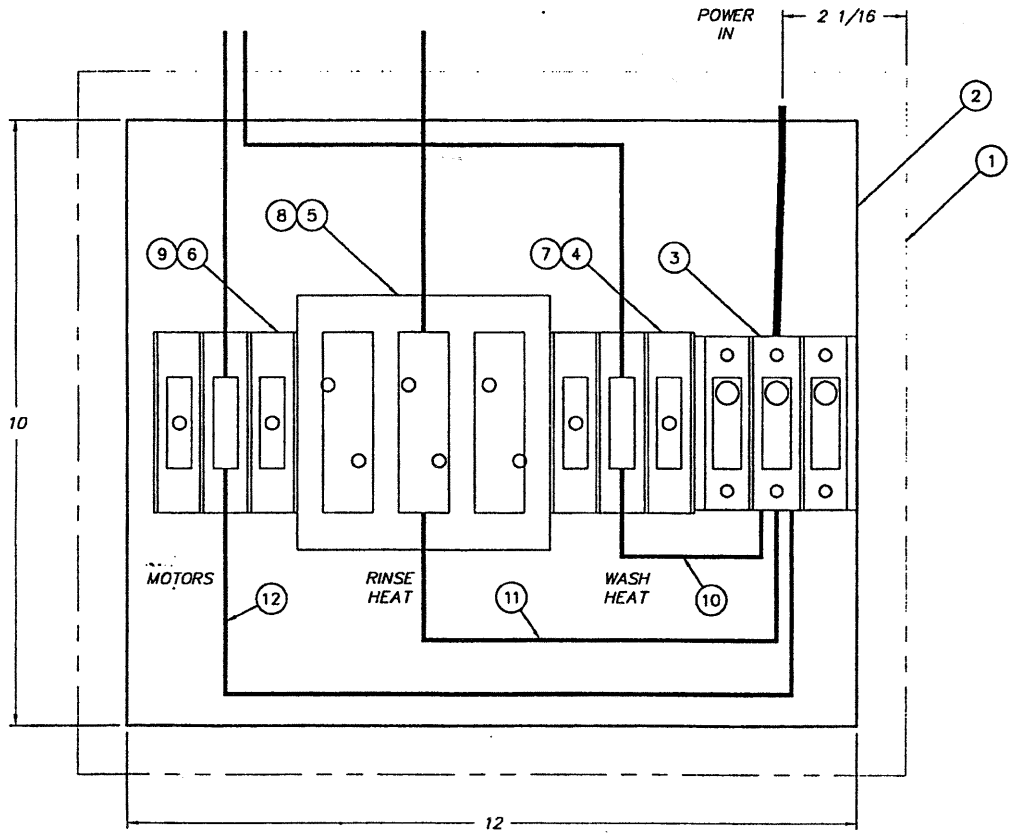
FILE: SKETCH\SK-3670

REV	ECN NO	DATE
G	1986	8.1.03
F	1857	2.15.01

SCALE: 1=4

DWG. NO.: SK-3670

ITEM	DESCRIPTION	PART NO.	QTY
12	MOTOR & CONTROL WIRES		
	460/3/60	#14 MTW	
	380/3/50	#14 MTW	
	230/3/60	#12 MTW	
	208/3/60	#12 MTW	
13	BRACKET (2" BOX ELEVATION)	SK-4153	2



ITEM	DESCRIPTION		PART NO.	QTY
1	ENCLOSURE		SK-3727	1
2	COMPONENT MOUNTING PLATE		SK-3729	1
3	POWER DISTRIBUTION BLOCK		DE3-152	1
4	FUSE BLOCK (WASH HEATERS) 30A		DE9-186	1
5	FUSE BLOCK (RINSE HEATERS)			1
	460/3/60	30A	DE9-186	
	380/3/50	30A	DE9-186	
	230/3/60	60A	DE9-187	
	208/3/60	60A	DE9-187	
6	FUSE BLOCK (MOTORS & CONTROLS) 30A		DE9-186	1
7	FUSE (WASH HEATERS)			3
	460/3/60	KTK-R-15	DE9-194	
	380/3/50	KTK-R-15	DE9-194	
	230/3/60	KTK-R-25	DE9-207	
	208/3/60	KTK-R-30	DE9-189	
8	FUSE (RINSE HEATERS)			3
	460/3/60	KTK-R-25	DE9-207	
	380/3/50	KTK-R-30	DE9-189	
	230/3/60	NON-50	DE9-206	
	208/3/60	NON-60	DE9-188	
9	FUSE (MOTORS)			3
	460/3/60	FNQ-R-10	DE9-181	
	380/3/50	FNQ-R-15	DE9-183	
	230/3/60	FNQ-R-20	DE9-184	
	208/3/60	FNQ-R-20	DE9-184	
10	WASH HEATER WIRES			
	460/3/60		#14 SiR	
	380/3/50		#14 SiR	
	230/3/60		#14 SiR	
	208/3/60		#14 SiR	
11	RINSE HEATER WIRES			
	460/3/60		#14 SiR	
	380/3/50		#12 SiR	
	230/3/60		#10 SiR	
	208/3/60		#8 SiR	

TITLE: FUSE BOX LAYOUT -SPEEDER 64 & 86-3
SINGLE POINT CONNECTION

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

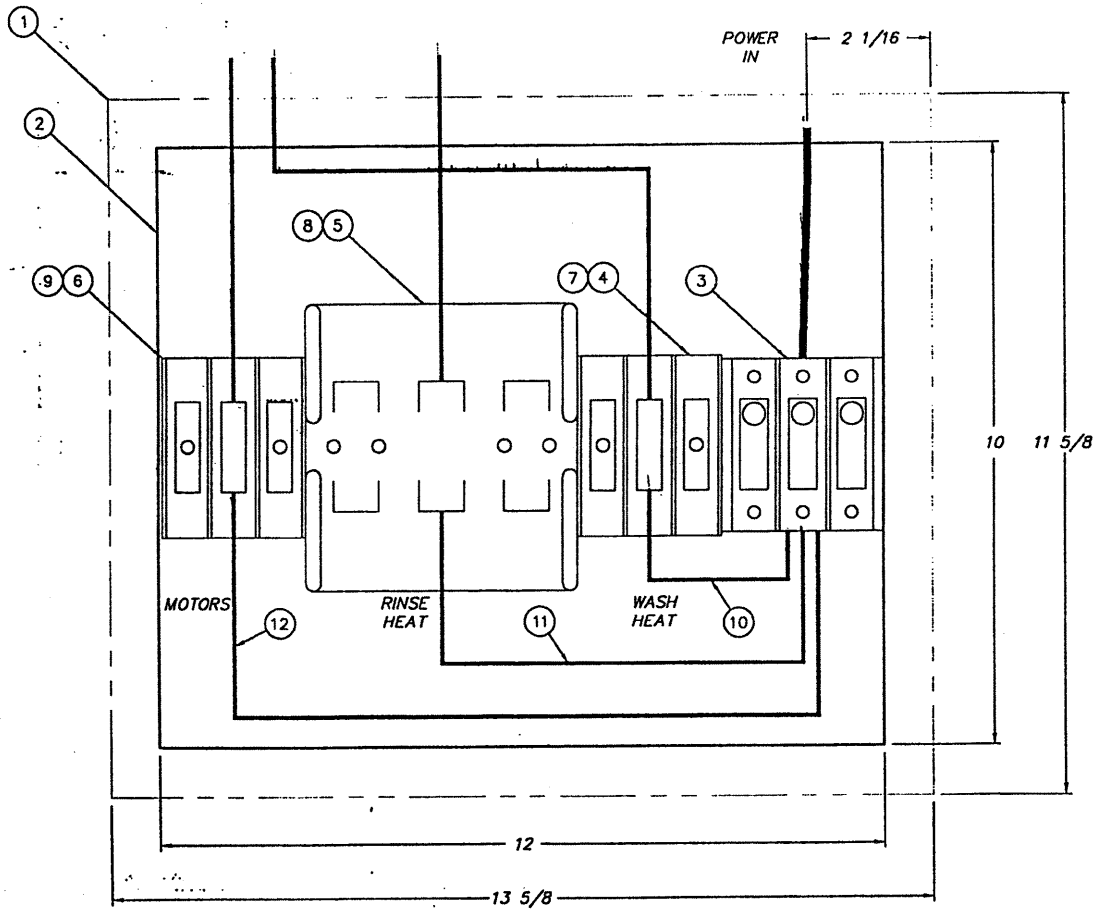
DRWN/DATE: MFJ 5.16.95

REV	ECN NO	DATE
C	1701	8.12.99
B	-	11.6.98
A	1553	5.27.97

FILE: SKETCH\SK-3721
SCALE: 1=2
DWG. NO.: SK-3721

ITEM	DESCRIPTION	PART NO.	QTY
12	MOTOR & CONTROL WIRES		
	460/3/60	#14 MTW	
	380/3/50	#14 MTW	
	230/3/60	#10 MTW	
	208/3/60	#10 MTW	
13	BRACKET (2" BOX ELEVATION)	SK-4153	2

ITEM	DESCRIPTION		PART NO.	QTY
1	ENCLOSURE		SK-3727	1
2	COMPONENT MOUNTING PLATE		SK-3729	1
3	POWER DISTRIBUTION BLOCK		DE3-152	1
4	FUSE BLOCK (WASH HEATERS) 30A		DE9-186	1
5	FUSE BLOCK (RINSE HEATERS)			1
	460/3/60	60A	DE9-212	
	380/3/50	60A	DE9-212	
	230/3/60	100A	DE9-213	
	208/3/60	100A	DE9-213	
6	FUSE BLOCK (MOTORS & CONTROLS) 30A		DE9-186	1
7	FUSE (WASH HEATERS)			3
	460/3/60	KTK-R-15	DE9-194	
	380/3/50	KTK-R-15	DE9-194	
	230/3/60	KTK-R-25	DE9-207	
	208/3/60	KTK-R-30	DE9-189	
8	FUSE (RINSE HEATERS)			3
	460/3/60	JJS-35	DE9-208	
	380/3/50	JJS-45	DE9-243	
	230/3/60	JJN-70	DE9-211	
	208/3/60	JJN-80	DE9-221	
9	FUSE (MOTORS)			3
	460/3/60	FNQ-R-15	DE9-183	
	380/3/50	FNQ-R-15	DE9-183	
	230/3/60	FNQ-R-25	DE9-220	
	208/3/60	FNQ-R-25	DE9-220	
10	WASH HEATER WIRES			
	460/3/60		#14 SiR	
	380/3/50		#12 SiR	
	230/3/60		#12 SiR	
	208/3/60		#12 SiR	
11	RINSE HEATER WIRES			
	460/3/60		#12 SiR	
	380/3/50		#10 SiR	
	230/3/60		#6 SiR	
	208/3/60		#6 SiR	



TITLE: FUSE BOX LAYOUT – SUPER 106-2
SINGLE POINT CONNECTION

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

DRWN/DATE: MFJ 2.5.96

FILE: SKETCH\SK-3841

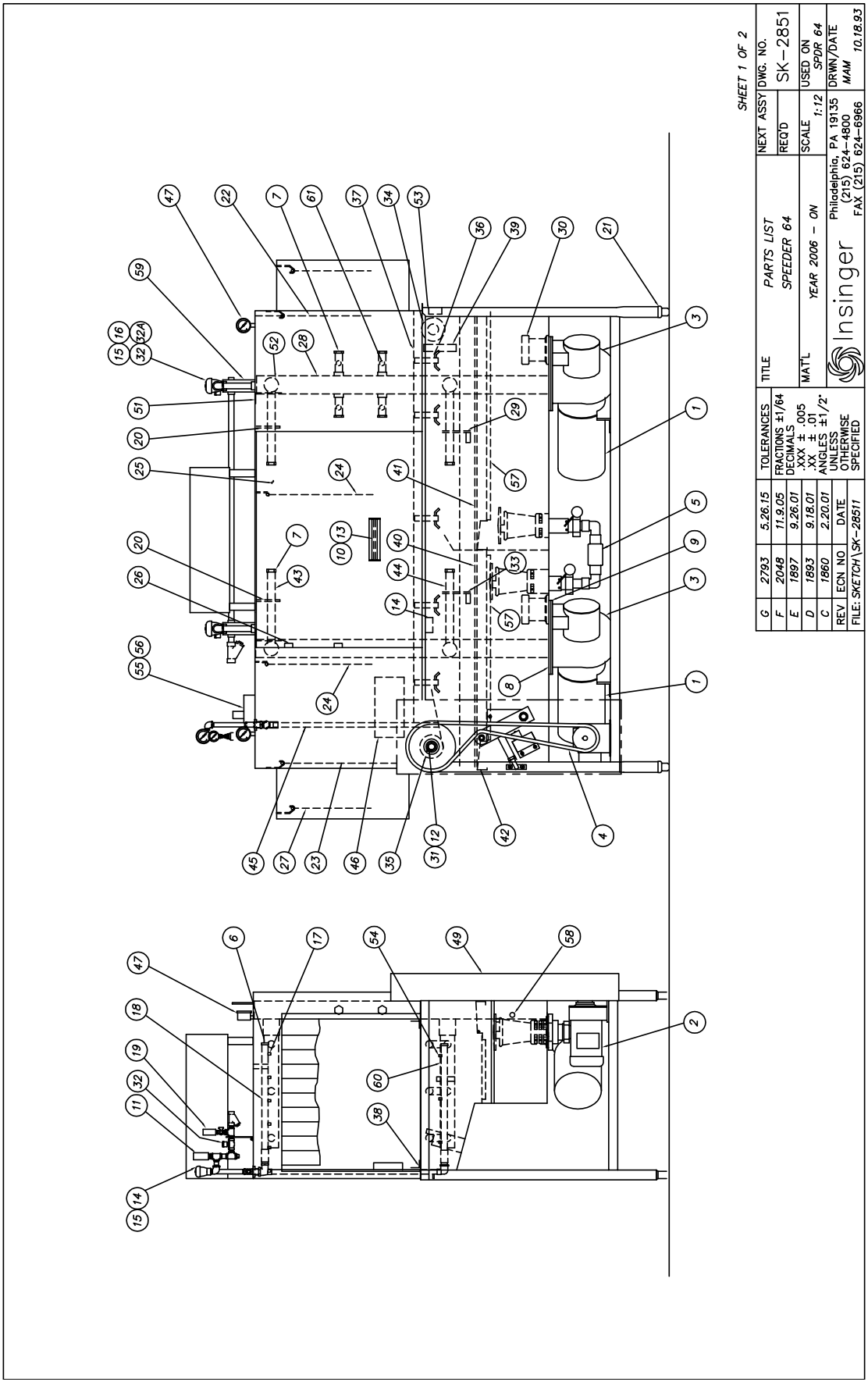
REV	ECN NO	DATE
B	1701	8.12.99
A	1553	5.29.97

SCALE: 1=2

DWG. NO.: SK-3841

Part 5

Replacement Parts


SHEET 1 OF 2
PARTS LIST
SPEEDER 64
YEAR 2006 - ON
TITLE
MATL
NEXT ASSY
REQ'D
SCALE 1:12
DWG. NO. SK-2851
USED ON SPDR 64
DRWN/DATE MAM 10.18.93
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
G 2793 5.26.15
F 2048 11.9.05
E 1897 9.26.01
D 1893 9.18.01
C 1860 2.20.01
REV ECN NO. DATE
FILE: SKETCH\SK-28511

ITEM#	PART#	DESCRIPTION	REQ.
1	**	PUMP & MOTOR, WASH & RINSE	2
2	(SEE ITEM 4)	GEAR MOTOR	1
3	SK–2456A	PUMP PARTS (SEE SEP DWG)	2
4	1530–1	TIMING BELT DRIVE ASSEMBLY (SEE SEP DWG)	1
5	1162–38	DRAIN ASSEMBLY (SEE SEP DWG)	2
6	D2–554–2	PIPE PLUG 3/4–10 SOLID	2
7	D2–554–2A	PIPE PLUG 3/4–10 W/HOLE	18
8	D514	DISCHARGE GASKET	2
9	D530	SUCTION GASKET	2
10	RC–15–21	DOOR ROD	1
11	D2495	THERMOMETER, FINAL RINSE	1
12	1162–16	CONVEYOR DRIVE SHAFT	1
13	RC–15–20	DOOR HANDLE	1
14	DE5–37	MAGNETIC DOOR SWITCH	1
15	D2241	VACUUM BREAKER 1/2	3
16	D2242A	VACUUM BREAKER REPAIR KIT 1/2	3
17	D3015	SPRAY NOZZLE, FINAL RINSE, UPPER	6
18	1472–18A	SPRAY PIPE FINAL RINSE – UPPER	1
19	SK1433	PRESSURE GAUGE	1
20	1162–90	LATCH ASSEMBLY – TOP	2
21	D2874	ADJUSTABLE FOOT	4
22	D3–527	CURTAIN – ENTER	1
23	D3–528	CURTAIN – EXIT	1
24	D3–508	CURTAIN – CENTER	2
25	1477–3	DOOR *Please state distance of outside door stiffener to bottom of door*	1
26	D2715A	DOOR LATCH	2
27	D3–550	CURTAIN – VESTIBULE	2
28	1162–17	DISCHARGE LINE ASSEMBLY (SEE SEP DWG)	1
29	1162–31	BOTTOM BRACKET – WASH	1
30	D2–541	SUCTION STRAINER	2
31	1162–110	SHAFT BEARING – FRONT & REAR	2
32	D2930	SOLENOID VALVE, 1/2"	3
32A	D2930RK	SOLENOID VALVE REPAIR KIT	3
33	1162–91	BOTTOM BRACKET – RINSE	1
34	D2857	CONV. DRIVEN SPROCKET (WHITE)	1
35	975–55	CONV. DRIVE SPROCKET (WITH KEY)	1
36	9014–003	CONVEYOR CHAIN	1
37	1162–36	FRONT TRACK	1
38	1477–12	REAR TRACK ASSEMBLY (SEE SEP DWG)	1
39	1440–10	TRACK BRACKET (FRONT)	2

** CALL FACTORY WITH SERIAL NUMBER OF MACHINE.

ITEM#	PART#	DESCRIPTION	REQ.
40	1162–62	SCRAP SCREEN SPACER – FRONT RINSE	1
41	1162–40	SCRAP SCREEN SPACER – FRONT WASH	1
42	1162–41	SCRAP SCREEN SPACER – ENDS	2
43	1162–88	MANIFOLD ASSEMBLY – UPPER WASH & RINSE	2
44	1162–89	MANIFOLD ASSEMBLY – LOWER WASH & RINSE	2
45	1169–45	FINAL RINSE – INSIDE PIPING	1
46	1169–145	FINAL RINSE – LEVER ASSEMBLY	1
47	D2390	THERMOMETER	2
48	–	–	–
49	1162–60	MECHANISM GUARD	1
50	–	–	–
51	D3–849	STOP BRACKET, UPPER MANIFOLD	2
52	D580	O–RING, MANIFOLD	4
53	1169–159	CHAIN TENSIONER ASSEMBLY (SEE SEP DWG)	1
54	D2286A	SPRAY NOZZLE FINAL RINSE – LOWER	3
55	816–58	SPRING, FINAL RINSE	1
56	D2215A	MICROSWITCH, FINAL RINSE	1
57	1162–63	SCRAP SCREEN	2
58	DE5–60	FLOAT SWITCH	4
59	957–80A	BRACKET, PIPING SUPPORT	2
60	D647	SPRAY PIPE FINAL RINSE – LOWER	1
61	D2773	SPRAY NOZZLE – CROSSFIRE	4

REV	ECN NO	DATE
G	2793	5.26.15
F	2048	11.9.05
E	1897	9.26.01
D	1893	9.18.01
C	1860	2.20.01

FILE: SKETCH\SK–28512

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

TITLE: PARTS LIST SPEEDER 64

MAT'L: YEAR 2006 – ON

NEXT ASSY: –

REQ'D: NOTED

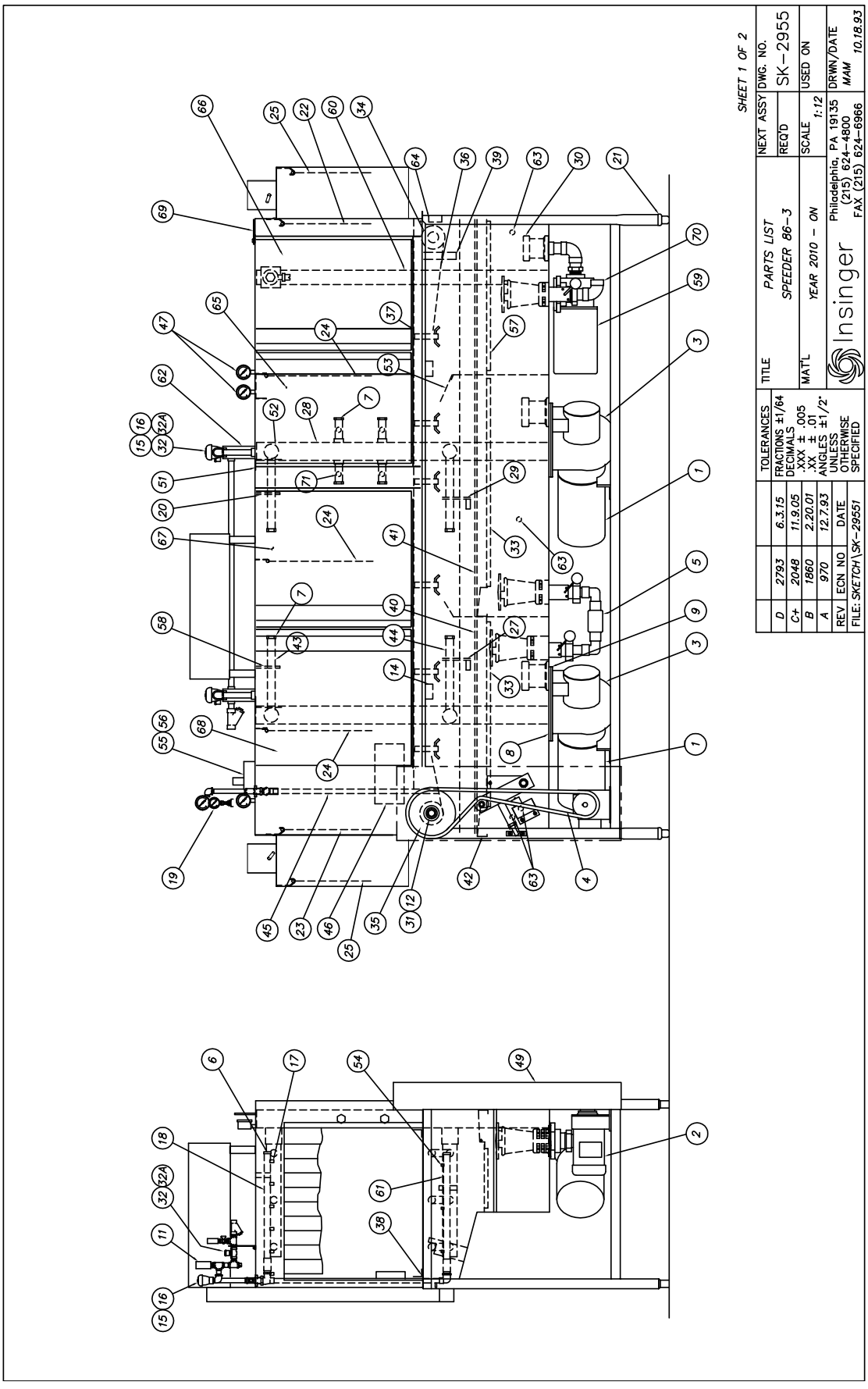
DWG. NO.: SK–2851

SCALE: FULL

USED ON: SPDR 64

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966

DRWN/DATE: MAM 10.18.93


SHEET 1 OF 2
NEXT ASSY
REQ'D
SCALE 1:12
USED ON
DWG. NO. SK-2955
TITLE
PARTS LIST
SPEEDER 86-3
MATL
YEAR 2010 - ON
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
DRWN/DATE MAM 10.18.93
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
D 2793 6.3.15
C+ 2048 11.9.05
B 1860 2.20.01
A 970 12.7.93
REV ECN NO DATE
FILE: SKETCH\SK-29551

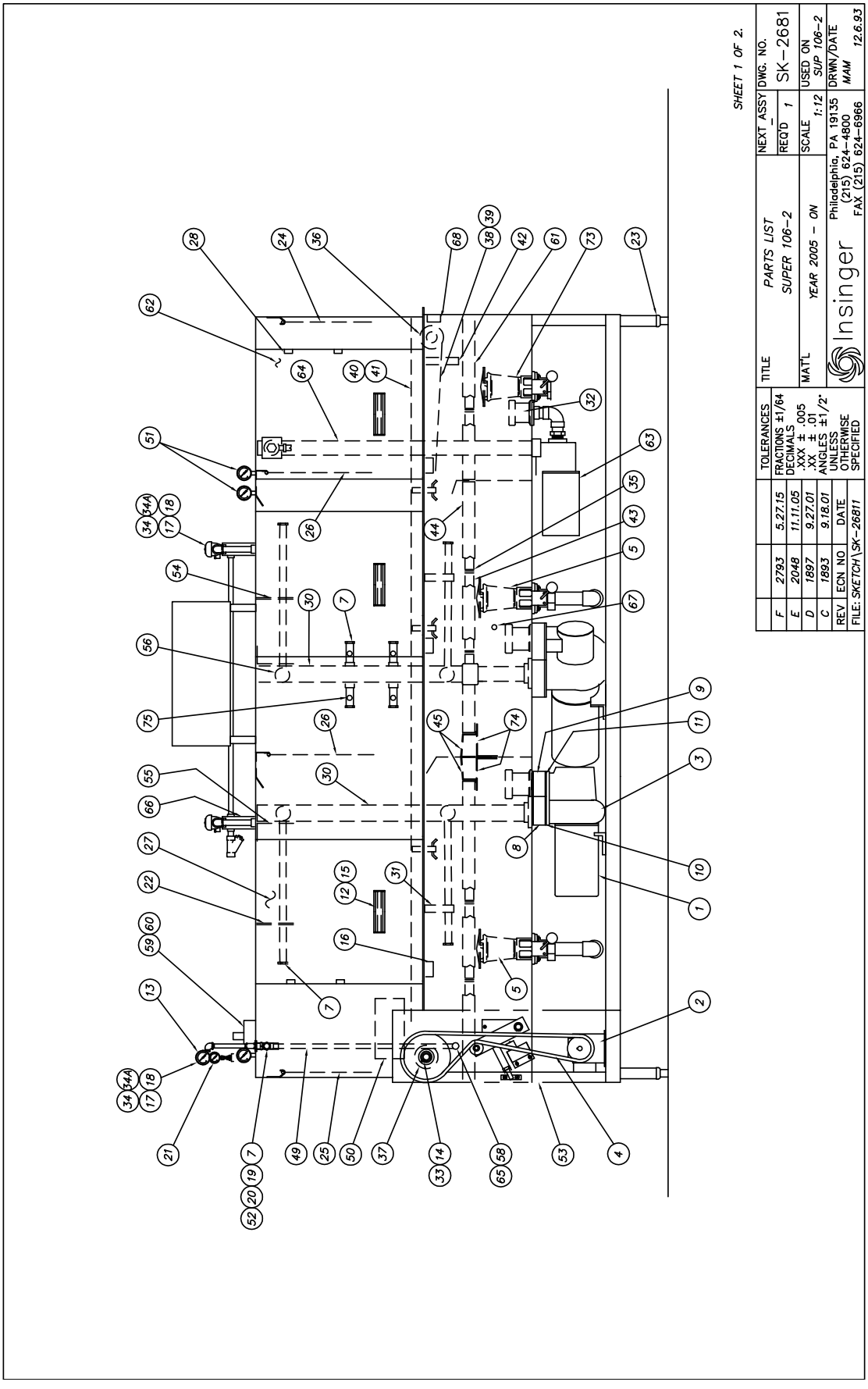
ITEM#	PART#	DESCRIPTION	REQ.
1	**	PUMP & MOTOR, WASH & RINSE	2
2	(SEE ITEM 4)	GEAR MOTOR	1
3	SK–2456A	PUMP PARTS (SEE SEP DWG)	2
4	1530–1	TIMING BELT DRIVE ASSEMBLY (SEE SEP DWG)	1
5	1182–39	DRAIN ASSEMBLY – W & R (SEE SEP DWG)	1
6	D2–554–2	PIPE PLUG 3/4–10 UNC SOLID	2
7	D2–554–2A	PIPE PLUG 3/4–10 W/HOLE	16
8	D514	DISCHARGE GASKET	2
9	D530	SUCTION GASKET	3
10	–	–	–
11	D2495	THERMOMETER, FINAL RINSE	1
12	1162–16	CONVEYOR DRIVE SHAFT	1
13	–	–	–
14	DE5–37	MAGNETIC SWITCH	2
15	D2241	VACUUM BREAKER 1/2	4
16	D2242A	VACUUM BREAKER REPAIR KIT 1/2	4
17	D3015	SPRAY NOZZLE, FINAL RINSE, UPPER	6
18	1472–18A	SPRAY PIPE FINAL RINSE – UPPER	1
19	SK1433	PRESSURE GAUGE	1
20	D2349	LATCH ASSEMBLY – WASH TOP	1
21	D2874	ADJUSTABLE FOOT	4
22	D2–523	CURTAIN – ENTER	1
23	D3–501	CURTAIN – EXIT	1
24	D3–508	CURTAIN – CENTER	3
25	D3–550	CURTAIN, ENTER & EXIT VESTIBULE	2
26	–	–	–
27	1162–91	BOTTOM RINSE BRACKET	1
28	1162–17	DISCHARGE LINE ASSEMBLY (SEE SEP DWG)	1
29	1162–31	BOTTOM WASH BRACKET	1
30	D2–541	SUCTION STRAINER	3
31	1162–110	SHAFT BEARING – FRONT & REAR	2
32	D2930	SOLENOID VALVE, 1/2"	3
32A	D2930RK	SOLENOID VALVE REPAIR KIT	3
33	1162–63	SCRAP SCREEN – W & R	2
34	D2857	DRIVEN SPROCKET	1
35	975–55	DRIVE SPROCKET (WITH KEY)	1
36	9014–006	CONVEYOR CHAIN	1
37	1182–24	FRONT TRACK	1
38	1182–91	REAR TRACK ASSEMBLY (SEE SEP DWG)	1
39	1440–10	TRACK BRACKET	3

** CALL FACTORY WITH SERIAL NUMBER OF MACHINE.

ITEM#	PART#	DESCRIPTION	REQ.
40	1162–62	SCRAP SCREEN SPACER – FRONT RINSE	1
41	1162–40	SCRAP SCREEN SPACER – FRONT WASH (R or L)	1
42	1162–41	SCRAP SCREEN SPACER – ENDS	2
43	1162–88	MANIFOLD ASSEMBLY – UPPER WASH & RINSE	2
44	1162–89	MANIFOLD ASSEMBLY – LOWER WASH & RINSE	2
45	1169–45	FINAL RINSE – INSIDE PIPING	1
46	1169–145	FINAL RINSE – LEVER ASSEMBLY	1
47	D2390	THERMOMETER	3
48	–	–	–
49	1162–60	MECHANISM GUARD	1
50	–	–	–
51	D3–849	STOP BRACKET, UPPER MANIFOLD	2
52	D580	O–RING, MANIFOLD	4
53	1182–72	TANK BAFFLE (PW/WASH DIVIDER)	1
54	D2286A	SPRAY NOZZLE FINAL RINSE – LOWER	3
55	816–58	SPRING	1
56	D2215A	MICROSWITCH, FINAL RINSE	1
57	1182–29	SCRAP SCREEN – PW	1
58	1477–27	LATCH ASSEMBLY – RINSE TOP	1
59	D2441	PUMP (PREWASH)	1
60	1460–21	DISCHARGE LINE ASSY. – PW (SEE SEP DWG)	1
61	D647	SPRAY PIPE FINAL RINSE – LOWER	1
62	957–80A	BRACKET, PIPING SUPPORT	1
63	DE5–60	FLOAT SWITCH	5
64	1169–159	CHAIN TENSIONER ASSEMBLY (SEE SEP DWG)	1
65	1567–1 LT	SWING DOOR – LH – STD	1
66	1567–2 RT	SWING DOOR – RH – STD	1
67	1567–6 RT W	SWING DOOR – RH – WIDE	1
68	1567–7 LT W	SWING DOOR – LH – WIDE	1
69	1567–111	HINGE PLATE – SWING DOOR	4
70	954–1	DRAIN ASSEMBLY – PW (SEE SEP DWG)	1
71	D2773	SPRAY NOZZLE – CROSSFIRE	4

			TOLERANCES
D	2793	6.3.15	FRACTIONS ±1/64
C+	2048	11.9.05	DECIMALS
B	1860	2.20.01	.XXX ± .005
A	970	12.7.93	.XX ± .01
REV	ECN NO	DATE	ANGLES ±1/2°
FILE: SKETCH\SK–29552			UNLESS OTHERWISE SPECIFIED

TITLE: PARTS LIST SPEEDER 86–3	NEXT ASSY: –	DWG. NO. SK–2955
	REQ'D NOTED	
MAT'L: YEAR 2010 – ON	SCALE: FULL	USED ON: SPDR 86–3
Insinger Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966		DRWN/DATE: MAM 10.18.93


SHEET 1 OF 2.
NEXT ASSY
REQ'D 1
DWG. NO. SK-2681
SCALE 1:12
USED ON SUP 106-2
DRWN/DATE MAM 12.6.93
TITLE
PARTS LIST
SUPER 106-2
YEAR 2005 - ON
MATL
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
REV ECN NO DATE
F 2793 5.27.15
E 2048 11.11.05
D 1897 9.27.01
C 1893 9.18.01
FILE: SKETCH\SK-26811

ITEM#	PART#	DESCRIPTION	REQ.
1	**	PUMP & MOTOR, WASH & RINSE	2
2	(SEE ITEM 4)	GEAR MOTOR	1
3	SK–2456A	PUMP PARTS (SEE SEP DWG)	2
4	1397–1	CHAIN DRIVE MECHANISM ASSY (SEE SEP DWG)	1
	1530–1	TIMING BELT DRIVE ASSEMBLY (SEE SEP DWG)	1
5	1437–6	DRAIN ASSEMBLY COMMON DRAIN (SEE SEP DWG)	1
6	–	–	–
7	D2–554–2A	PIPE PLUG 3/4–10 W/HOLE	18
8	D424A	DISCHARGE SHIM	2
9	D425B	SUCTION SHIM	2
10	D514	DISCHARGE GASKET	4
11	D530	SUCTION GASKET	5
12	RC–15–21	DOOR ROD	3
13	D2495	THERMOMETER, FINAL RINSE	1
14	951–40A	CONVEYOR DRIVE SHAFT	1
15	RC–15–20	DOOR HANDLE	3
16	DE5–37	MAGNETIC SWITCH	3
17	D2241	VACUUM BREAKER 1/2	3
18	D2242A	VACUUM BREAKER REPAIR KIT 1/2	3
19	D2836	SPRAY NOZZLE, FINAL RINSE, UPPER	6
20	951–165	SPRAY PIPE FINAL RINSE – UPPER	1
21	SK–1433	PRESSURE GAUGE	1
22	D2349	LATCH ASSEMBLY – SPRAY PIPE RINSE	1
23	D2874	ADJUSTABLE FOOT	4
24	D2–523	CURTAIN – ENTER	1
25	D3–501	CURTAIN – EXIT	1
26	D2–524A	CURTAIN – CENTER	4
27	D2–715	DOOR (WASH & RINSE)	2
28	D2715A	DOOR LATCH	6
29	–	–	–
30	962–6A	DISCHARGE LINE ASSY W & R (SEE SEP. DWG.)	1
31	D2–876A	SPRAY PIPE CRADLE	2
32	D2–541	SUCTION STRAINER	3
33	1162–110	SHAFT BEARING – FRONT & REAR	2
34	D2930	SOLENOID VALVE, 1/2"	3
34A	D2930RK	SOLENOID VALVE REPAIR KIT	3
35	120–6–54	SCRAP SCREEN	4
36	D2857	CONV. DRIVEN SPROCKET (WHITE)	2
37	975–55	CONV. DRIVE SPROCKET (WITH KEY)	2
38	9014–016	CONVEYOR CHAIN – REAR	1
39	9014–015	CONVEYOR CHAIN – FRONT	1
40	962–28	FRONT TRACK	1
41	962–29	REAR TRACK	1
42	D3–827A	TRACK BRACKET – WASH END	2

** CALL FACTORY WITH SERIAL NUMBER OF MACHINE

ITEM#	PART#	DESCRIPTION	REQ.
43	D2–721	SCRAP SCREEN – CENTER & PREWASH	4
44	962–5	SCRAP SCREEN SPACER – FRONT & REAR (W & R)	4
45	935–17	SCRAP SCREEN SPACER – CENTER	2
46	–	–	–
47	–	–	–
48	–	–	–
49	1169–45	FINAL RINSE – INSIDE PIPING	1
50	951–28A	FINAL RINSE – LEVER ASSEMBLY	1
51	D2390	THERMOMETER	3
52	–	–	–
53	1162–60	MECHANISM GUARD	1
54	1162–90	LATCH ASSY – SPRAY PIPE WASH	1
55	D3–849	STOP BRACKET, UPPER MANIFOLD	2
56	D580	O–RING, MANIFOLD	4
57	1450–8	TANK BAFFLE, PW – WASH DIVIDER	1
58	D2836	SPRAY NOZZLE FINAL RINSE – LOWER	3
59	816–58	SPRING	1
60	D2215A	MICROSWITCH, FINAL RINSE	1
61	959–70	SCRAP SCREEN SPACER – FRONT & REAR (PW)	2
62	D2–719	DOOR (PREWASH)	1
63	D2441	PUMP & MOTOR, PREWASH	1
	SK–2397	PUMP PARTS (SEE SEP DWG)	1
64	959–59	DISCHARGE LINE ASSY. – PW (SEE SEP DWG)	1
65	951–165	SPRAY PIPE FINAL RINSE – LOWER	1
66	957–80A	BRACKET, PIPING SUPPORT	1
67	DE5–60	FLOAT SWITCH	3
68	951–36	CONVEYOR FOLLOWER SHAFT ASS'Y (SEE SEP. DWG)	1
69	–	–	–
70	–	–	–
71	–	–	–
72	–	–	–
73	954–1	DRAIN ASSEMBLY – INDIVIDUAL DRAIN (SEE SEP DWG)	3
74	935–18	BRACKET, SCRAP SCREEN SPACER	2
75	D2773	SPRAY NOZZLE – CROSSFIRE	4

SHEET 2 OF 2

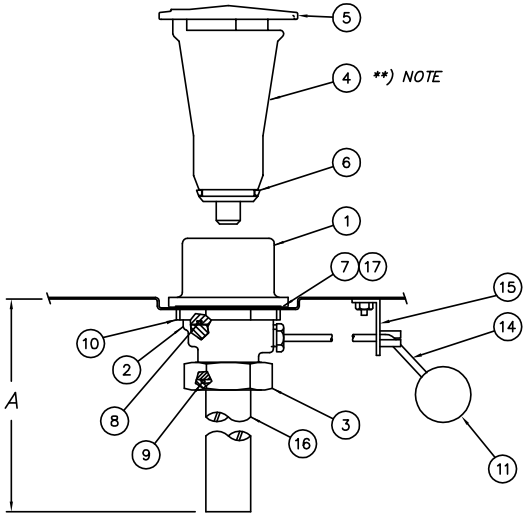
			TOLERANCES
F	2793	5.27.15	FRACTIONS ±1/64
E	2048	11.9.05	DECIMALS
D	1897	9.27.01	.XXX ± .005
C	1893	9.18.01	.XX ± .01
REV	ECN NO	DATE	ANGLES ±1/2°
FILE: SKETCH\SK–26812			UNLESS OTHERWISE SPECIFIED

TITLE	PARTS LIST SUPER 106–2	NEXT ASSY –	DWG. NO. SK–2681
		REQ'D NOTED	
MAT'L	YEAR 2005 – ON	SCALE FULL	USED ON SUP 106–2
Insinger	Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966		DRWN/DATE MAM 12.14.93

MODEL	"A" DIM.
SPEEDER 86–3	–
SPEEDER 64	–
TRAC 321	7 5/16
TRAC 321 RPW	–
MASTER	–
CLIPPER	–
CENTURY	–
DEFENDER	–
18–5	6 9/16
CA–3	8
DA–3	8
SUPER 106–2	–
ADMIRAL 44	6 9/16
SPEEDER 64 & 86 ADMIRAL 44 & 66 UNLOADER	SEE 1162–108

MODEL	ITEM # 14	ITEM # 15	ITEM # 16	LENGTH
SPEEDER 86–3	1100–79	954–8 954–8A 954–8B		
SPEEDER 64	1100–79	954–8 954–8B		
TRAC 321	970–55	954–8	D207A–B12–16	4"
TRAC 321 RPW	970–55	954–8A 954–8		
MASTER	1100–79 ***	954–8A 954–8 (2 PCS)		
CLIPPER	1100–79	954–8A 954–8 (2 PCS)		
CENTURY	1100–79	954–8A 954–8 (2 PCS)		
DEFENDER	1100–79 ***	954–8A 954–8		
18–5	1100–79A	954–8C	D207A–B12–17	4 1/4
CA–3	925–52	954–8	D207A–B12–33	8 1/4
DA–3	925–52	954–8	D207A–B12–33	8 1/4
SUPER 106–2	954–5	954–8A P.W.	D207A–B12–17	4 1/4
SUPER 106–2	954–5	954–8 WASH	D207A–B12–20	5
SUPER 106–2	954–5	954–8 RINSE	D207A–B12–22	5 1/2
ADM 44	1169–21	954–8 WASH	D207A–B12–17	4 1/4
ADM 66	1169–21	954–8 WASH	D207A–B12–17	4 1/4
ADM 66	1100–79	954–8A P.W.	D207A–B12–8	2

	ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
	1	954–50A	A	UPPER VALVE BODY	1
	2	954–50B	A	LOWER VALVE BODY	1
	3	954–50C	A	O RING NUT	1
**) NOTE	4	954–50D	A	OVERFLOW TUBE	1
	5	D–193	A	SKIMMER CAP	1
	6	D2–557	–	"U" CUP SEAL	1
	7	954–9	–	SEALING WASHER	1
	8	D2–549	–	"O" RING	1
	9	D2–550	–	"O" RING	1
	10	D–305A	–	DRAIN JAM NUT	1
	11	D2–507	–	BALL	1
	12	–	–	–	–
*) NOTE	13	D316A–H3–H1	–	90° ELL 1 1/2 C X 1 1/2 FIPS	0
	14	SEE TABLE	A	DRAIN HANDLE ASS'Y	1
	15	SEE TABLE	A	BRACKET	1
	16	SEE TABLE	–	COPPER TUBING 1 1/2 CTS	1
	17	D3–559	–	SEALANT (1.5 OZ)	1
		D3–560	–	SEALANT (11 OZ)	



MODEL	REQ'D \ MACH.
SPEEDER 86–3	3
SPEEDER 64	2
TRAC 321	1
TRAC 321 RPW	2
MASTER	3
CLIPPER	3
CENTURY	3
DEFENDER	2
18–5	1
CA–3	1
DA–3	2
SUPER 106–2	3
ADM 44	1
ADM 66	2

*) NOTE:
1. NOT REQUIRED WHEN COMMON DRAIN.
2. ITEM #13 IS NOT REQUIRED ON ANY PRODUCT EXCEPT THE MODULAR.
3. FOR MORE DETAILED INFORMATION ON THE MODULAR DRAIN ASS'Y SEE DRAWING 975–108.

**) NOTE:
FOR MODEL 18–5 USE OVERFLOW TUBE (~1" LONGER) DWG#: 1169–179D
FOR ADM 44 & 66 USE OVERFLOW TUBE (~1" LONGER) DWG#: 1169–179D

***) NOTE:
SEE #1478–35 FOR GAS HEATED MASTER/DEFENDER

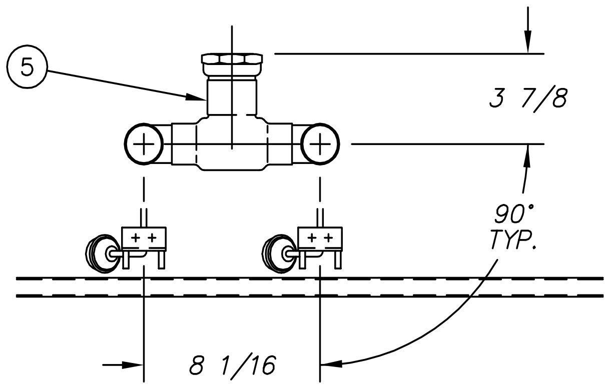
REV	ECN NO	DATE
N	2474	05.11.10
M	2165	07.29.08
L	2158	06.19.08
K	1989	07.07.03
J	1938	05.31.02

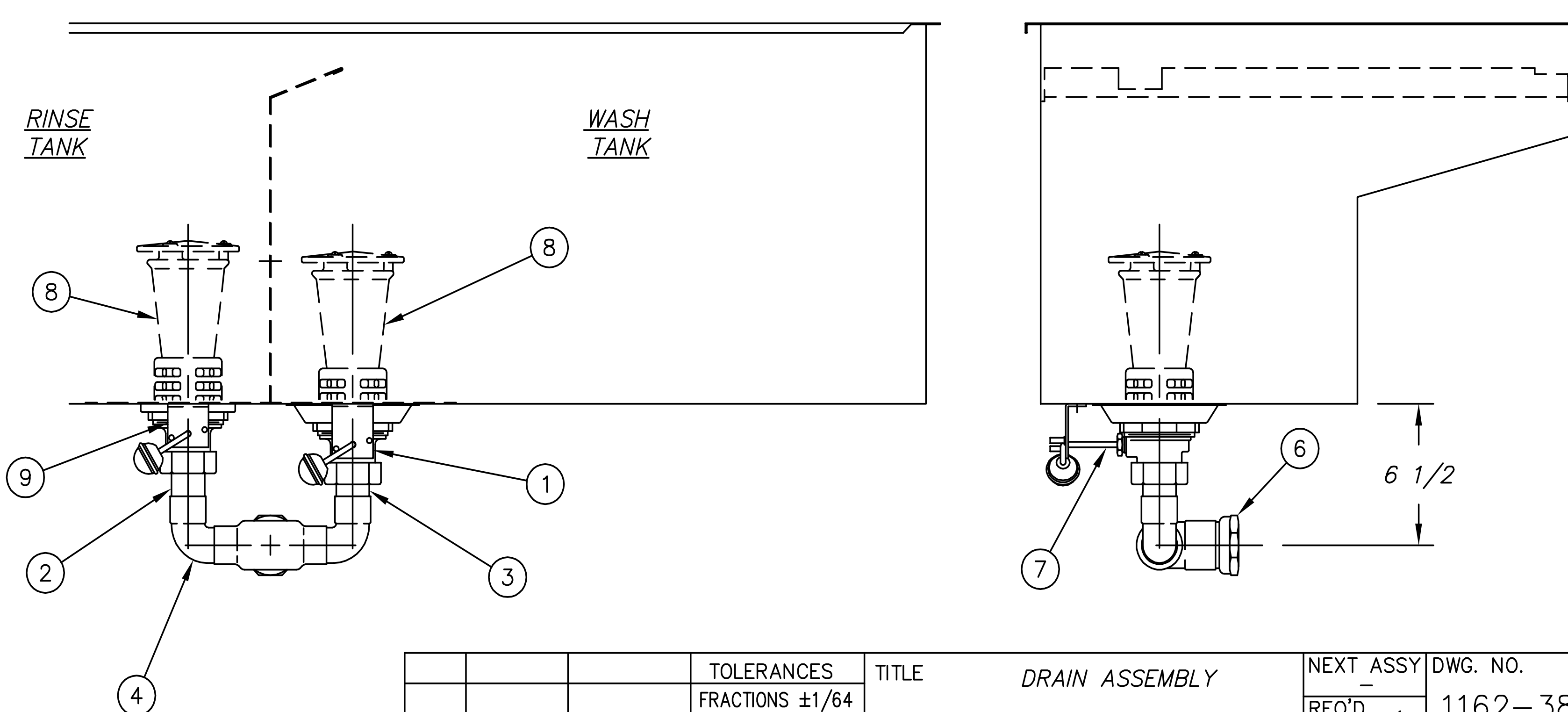
FILE: PARTS\954–1

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

TITLE	DRAIN ASSEMBLY CHART	NEXT ASSY	DWG. NO.
		REQ'D 1	954–1
MAT'L	NOTED	SCALE 1=4	USED ON SEE ABOVE
Insinger	Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966	DRWN/DATE	RAF 11.27.84

ITEM	PART NO.	DESCRIPTION	QTY
1	954-8B	BRACKET – DRAIN HANDLE	1
2	D207A-B12-14	COPPER TUBE – 1 1/2 CTS X 3 1/2" LG.	1
3	D207A-B12-12	COPPER TUBE – 1 1/2 CTS X 3" LG.	1
4	D316A-H3-H4	90° STREET ELBOW – 1 1/2 C	2
5	D320A-H3H3J3	TEE – 1 1/2 C x 2" C	1
6	D317A-J4-J1	ADAPTER – 2" FTG x 2" FIPS	1
7	1100-79	DRAIN HANDLE	2
8	954-1	DRAIN ASSEMBLY	2
9	954-8	BRACKET – DRAIN HANDLE	1





REV	ECN NO	DATE
B	1597	3.9.98
A	1268	09.22.95

FILE: PARTS\1162-38

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

TITLE: DRAIN ASSEMBLY
NEXT ASSY: –
REQ'D: 1
DWG. NO. 1162-38
MAT'L: NOTED
SCALE: 1/8
USED ON: SPEEDER 64
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
DRWN/DATE: RAF 07.31.86

ITEM	PART NO.	DESCRIPTION	QTY
1	954-1	INSINGER DRAIN ASSEMBLY	3
2			
3			
4	D348A-J3,J3,J3	DRAINAGE TEE - 2"C	1
5	D348A-H3H3J3	DRAINAGE TEE - 1 1/2C x 1 1/2C x 2"C	1
6	D320A-J3J3H3	DRAINAGE TEE - 2"C x 2"C x 1 1/2C	1
7	D347A-H3-H4	90° STREET ELBOW - 1 1/2C	2
8	D346A-J3-J3	45° ELBOW - 2"C	2
9	D317A-J1-J4	ADAPTER - 2"FTG x 2"FIPS	2
10	D328F-J2-A	PIPE PLUG - 2" FIPS	1
11	D207A-B12-11	COPPER TUBING - 1 1/2C x 2 3/4" LG.	1
12	D207A-B12-12	COPPER TUBING - 1 1/2C x 3" LG.	1
13	D207A-B12-13	COPPER TUBING - 1 1/2C x 3 1/4" LG.	1
14	D207A-B15-46	COPPER TUBING - 2"C x 11 1/2" LG.	1
15	D207A-B15-44	COPPER TUBING - 2"C x 11" LG.	1
16	D207A-B15-78	COPPER TUBING - 2"C x 19 1/2" LG.	1
17	D207A-B15-38	COPPER TUBING - 2"C x 9 1/2" LG.	1
18	954-8	BRACKET - RINSE	1
19	954-8A	BRACKET - PREWASH	1
20	954-8B	BRACKET - WASH	1
21	SK-4871	MODIFIED BUSHING 1 1/2 X 1 IPS	1
22	D3033	DRAIN TEMPERING VALVE	1
23	D316F-E1-E2	90° STREET ELBOW 3/4 IPS	1

***

* OPTIONAL DRAIN COOL DOWN

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.

R.H. MACHINE ONLY

REV	ECN NO.	DATE
E	2109	12.3.07
D	1283	06.17.95
C	1001	05.10.94
B	420	04.24.90

FILE: PARTS\1182-39

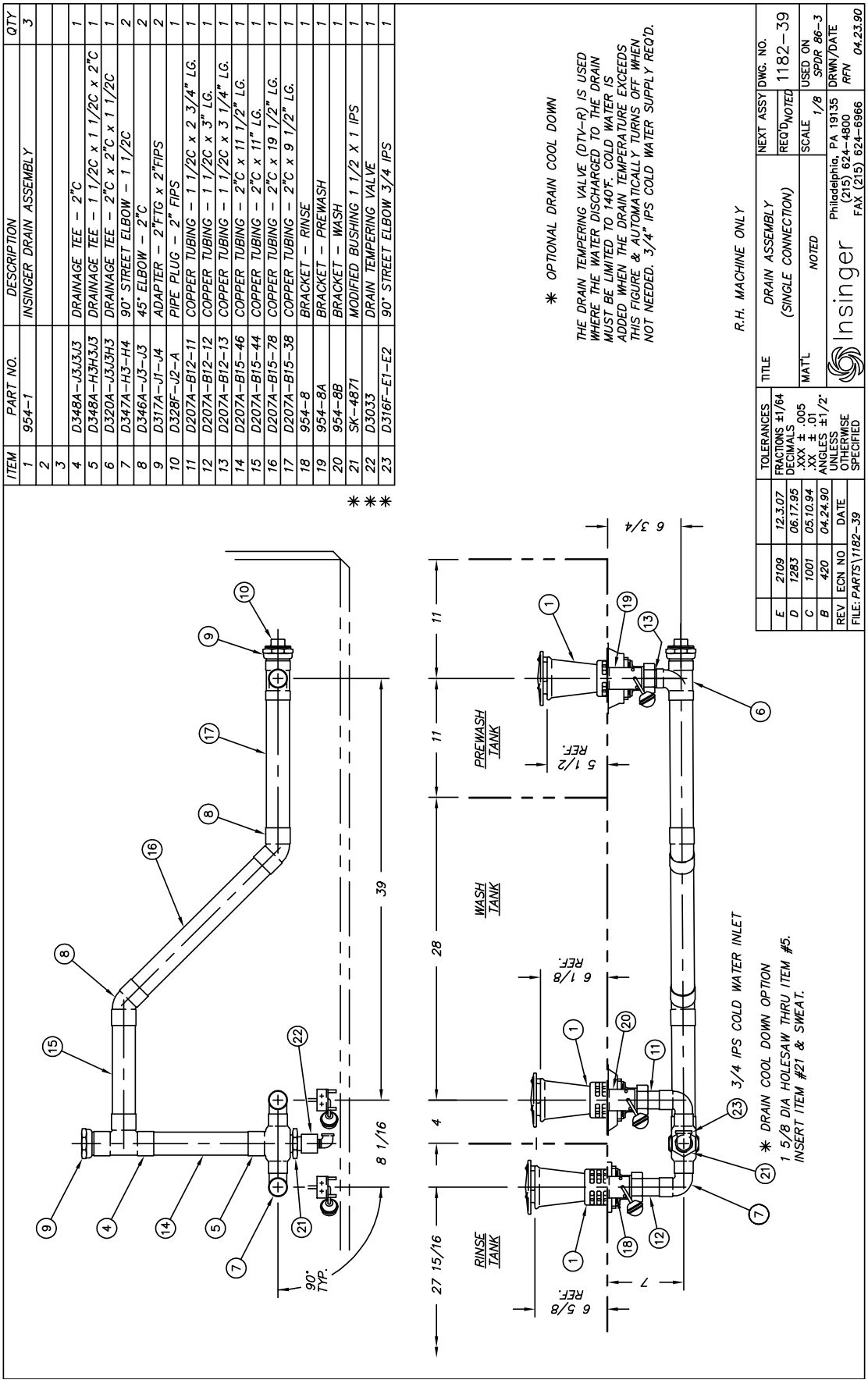
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

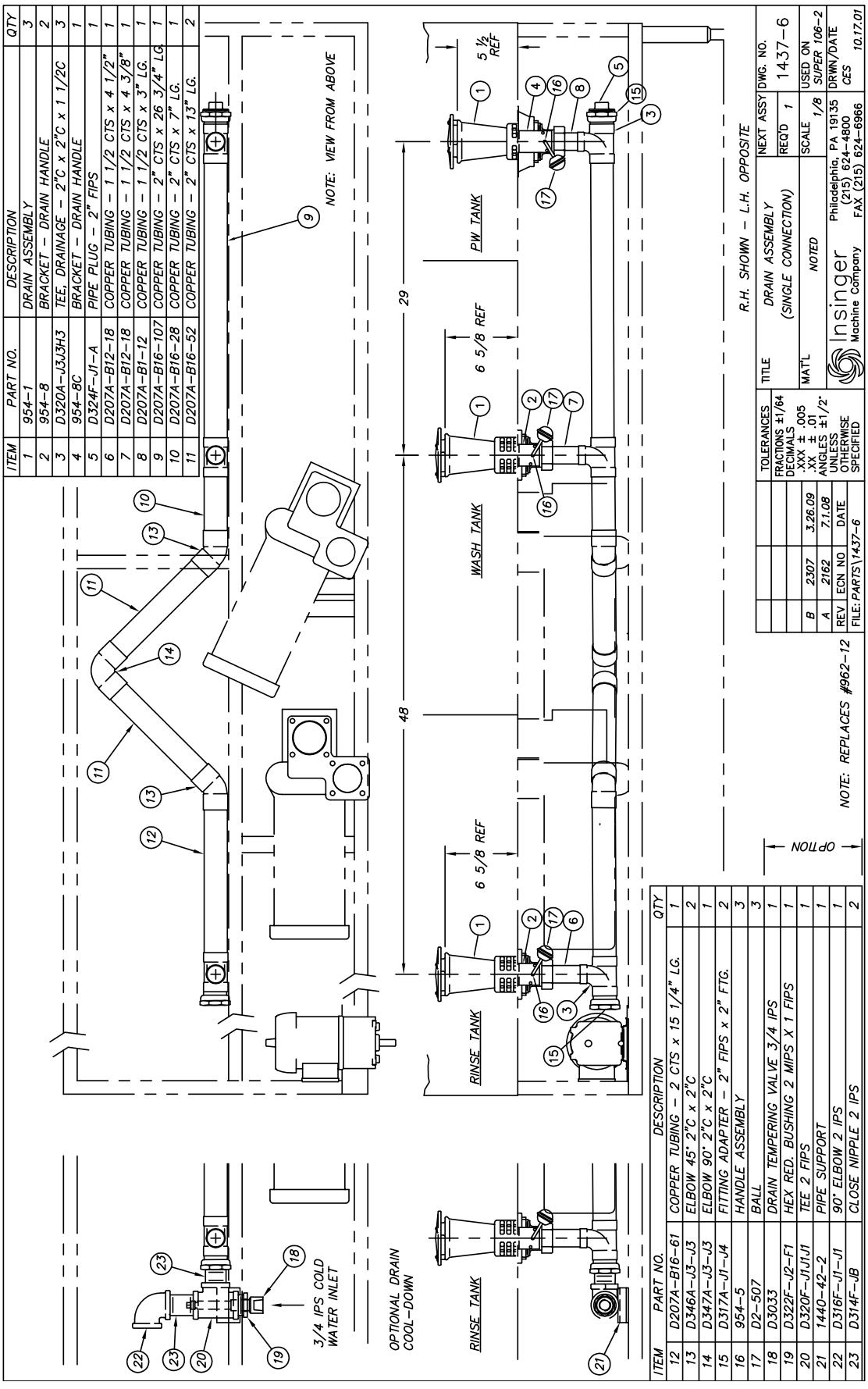
TITLE: DRAIN ASSEMBLY (SINGLE CONNECTION)

MATL: NOTED

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

NEXT ASSY: REQ'D NOTED
DWG. NO. 1182-39
SCALE 1/8
USED ON SPDR 86-3
DRWN/DATE RFN 04.23.90





ITEM	PART NO.	DESCRIPTION	QTY
1	954-1	DRAIN ASSEMBLY	3
2	954-8	BRACKET - DRAIN HANDLE	2
3	D320A-J3J3H3	TEE, DRAINAGE - 2"C x 2"C x 1 1/2C	3
4	954-8C	BRACKET - DRAIN HANDLE	1
5	D324F-J1-A	PIPE PLUG - 2" FIPS	1
6	D207A-B12-18	COPPER TUBING - 1 1/2 CTS x 4 1/2"	1
7	D207A-B12-18	COPPER TUBING - 1 1/2 CTS x 4 3/8"	1
8	D207A-B1-12	COPPER TUBING - 1 1/2 CTS x 3" LG.	1
9	D207A-B16-107	COPPER TUBING - 2" CTS x 26 3/4" LG.	1
10	D207A-B16-28	COPPER TUBING - 2" CTS x 7" LG.	1
11	D207A-B16-52	COPPER TUBING - 2" CTS x 13" LG.	2

ITEM	PART NO.	DESCRIPTION	QTY
12	D207A-B16-61	COPPER TUBING - 2 CTS x 15 1/4" LG.	1
13	D346A-J3-J3	ELBOW 45° 2"C x 2"C	2
14	D347A-J3-J3	ELBOW 90° 2"C x 2"C	1
15	D317A-J1-J4	FITTING ADAPTER - 2" FIPS x 2" FTG.	2
16	954-5	HANDLE ASSEMBLY	3
17	D2-507	BALL	3
18	D3033	DRAIN TEMPERING VALVE 3/4 IPS	1
19	D322F-J2-F1	HEX RED. BUSHING 2 MIPS X 1 FIPS	1
20	D320F-J1J1J1	TEE 2 FIPS	1
21	1440-42-2	PIPE SUPPORT	1
22	D316F-J1-J1	90° ELBOW 2 IPS	1
23	D314F-JB	CLOSE NIPPLE 2 IPS	2

REV	ECN NO	DATE
B	2307	3.26.09
A	2162	7.1.08

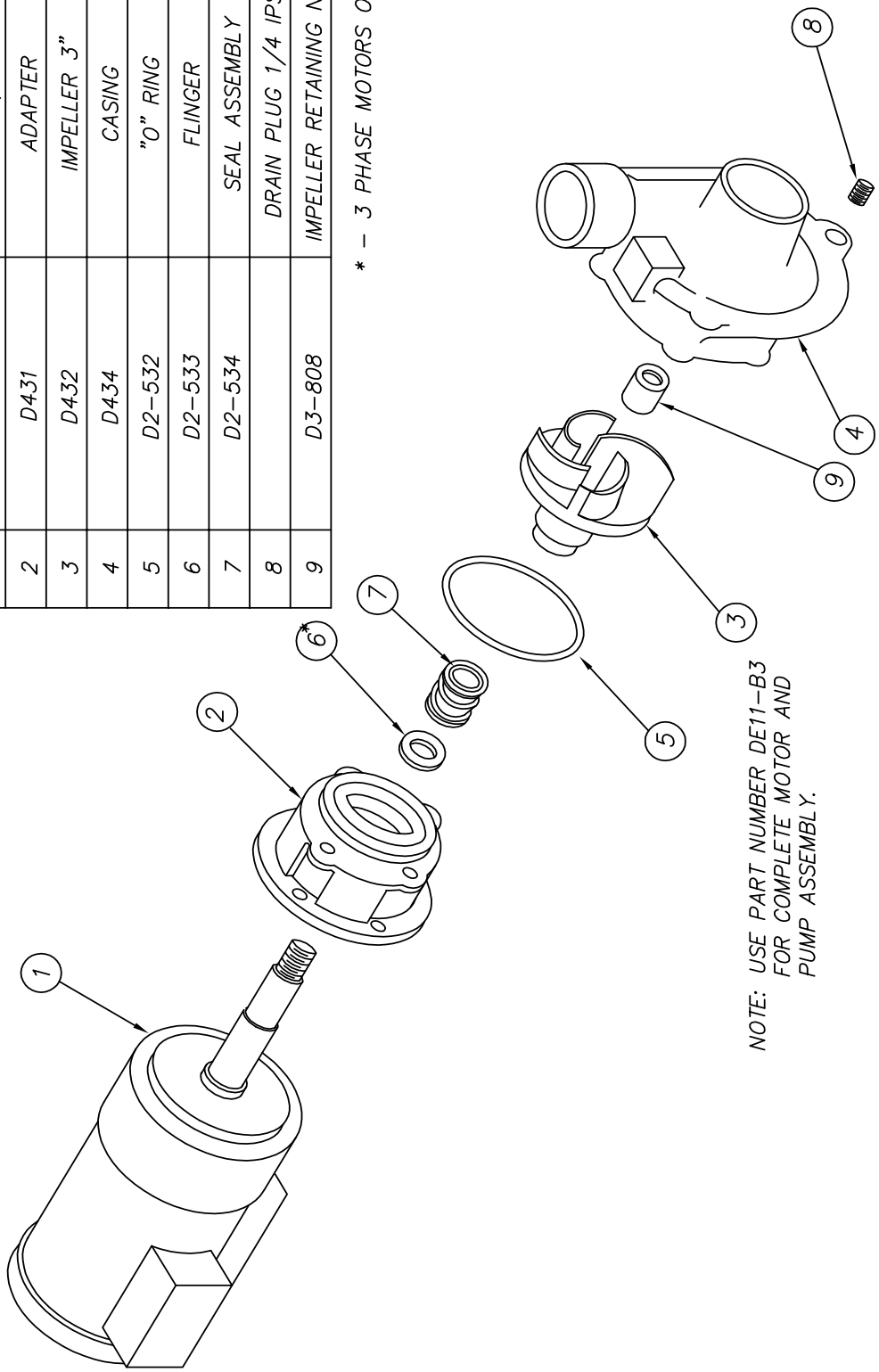
FILE: PARTS\1437-6

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

TITLE
MATL
NEXT ASSY
REQ'D 1
SCALE 1/8
DWG. NO.
USED ON
DRWN/DATE

ITEM	PART NO.	DESCRIPTION	QTY.
1		MOTOR 1/2 H.P.	1
2	D431	ADAPTER	1
3	D432	IMPELLER 3"	1
4	D434	CASING	1
5	D2-532	"O" RING	1
6	D2-533	FLINGER	1
7	D2-534	SEAL ASSEMBLY	1
8		DRAIN PLUG 1/4 IPS	1
9	D3-808	IMPELLER RETAINING NUT	1

* - 3 PHASE MOTORS ONLY

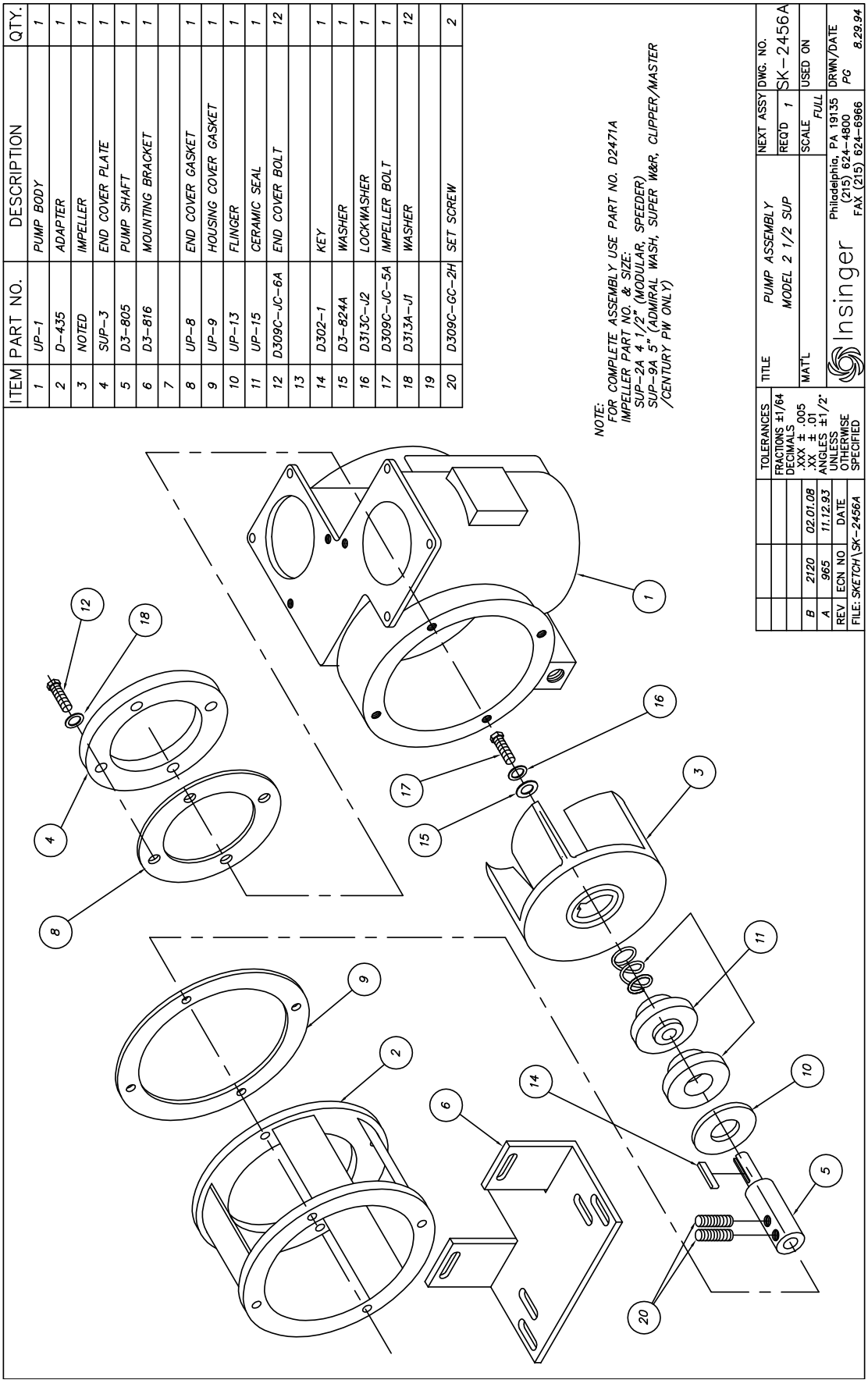


NOTE: USE PART NUMBER DE11-B3 FOR COMPLETE MOTOR AND PUMP ASSEMBLY.

			TOLERANCES	TITLE	NEXT ASSY — / DWG. NO.
			FRACTIONS ±1/64	PARTS LIST	REQ'D — / SK-2397
			DECIMALS	1/2 HP PUMP	
			.XXX ± .005		
B	1044	8.22.94	.XX ± .01	MAT'L —	SCALE — / USED ON VARIOUS
A	961	10.29.93	ANGLES ±1/2°		
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED	Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE MAM 11.11.93
FILE: SKETCHA\SK-2397					

ITEM	PART NO.	DESCRIPTION	QTY.
1	UP-1	PUMP BODY	1
2	D-435	ADAPTER	1
3	NOTED	IMPELLER	1
4	SUP-3	END COVER PLATE	1
5	D3-805	PUMP SHAFT	1
6	D3-816	MOUNTING BRACKET	1
7			
8	UP-8	END COVER GASKET	1
9	UP-9	HOUSING COVER GASKET	1
10	UP-13	FLINGER	1
11	UP-15	CERAMIC SEAL	1
12	D309C-JC-6A	END COVER BOLT	12
13			
14	D302-1	KEY	1
15	D3-824A	WASHER	1
16	D313C-J2	LOCKWASHER	1
17	D309C-JC-5A	IMPELLER BOLT	1
18	D313A-J1	WASHER	12
19			
20	D309C-GC-2H	SET SCREW	2

NOTE:
FOR COMPLETE ASSEMBLY USE PART NO. D2471A
IMPELLER PART NO. & SIZE:
SUP-2A 4 1/2" (MODULAR, SPEEDER)
SUP-9A 5" (ADMIRAL WASH, SUPER W&R, CLIPPER/MASTER /CENTURY PW ONLY)



REV	ECN NO	DATE
B	2120	02.01.08
A	965	11.12.93

FILE: SKETCH\SK-2456A

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

TITLE: PUMP ASSEMBLY
MODEL 2 1/2 SUP

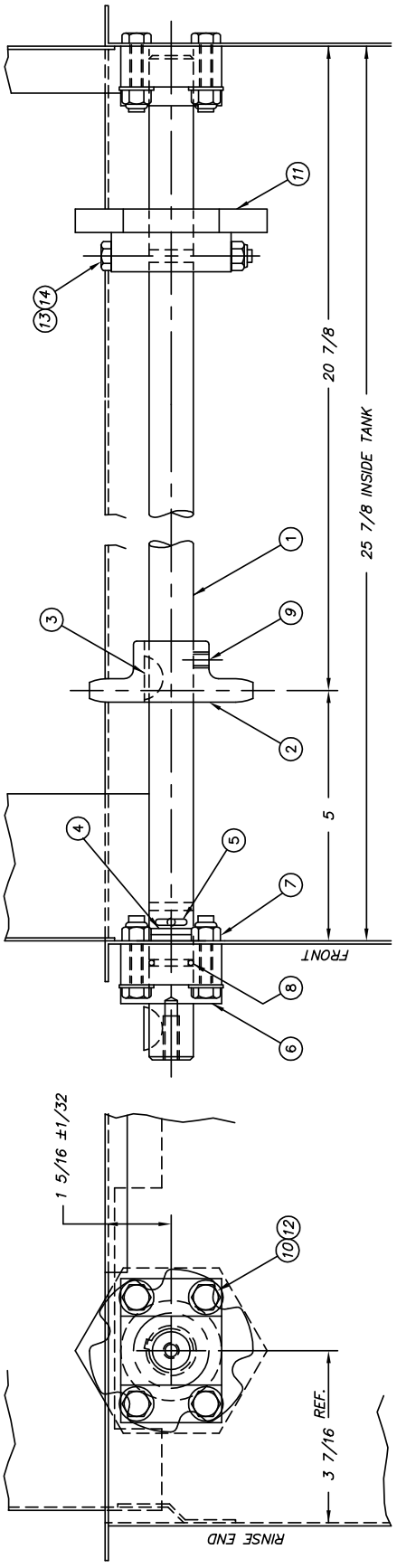
MATL

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

NEXT ASSY
REQ'D 1
SCALE FULL
USED ON

DWG. NO. SK-2456A
DRWN/DATE PG 8.29.94

ITEM	PART NO.	DESCRIPTION	QTY
1	1162-16	CONVEYOR DRIVE SHAFT (Rev F)	1
2	975-55	SPROCKET	1
3	D302-4	#11 WOODRUFF KEY S/S	2
4	D2-525	WASHER, NYLON (1 3/8 X 7/8 X 1/8)	2
5	D-311-1	COTTER PIN S/S 1/8 x 1 1/2	1
6	1162-110	BEARING BRACKET	2
7	D312C-HC-5	LOCKNUT 5/16-18	8
8	D2-585	"O" RING (01-115)	1
9	D309C-CH-3H	SET SCREW S/S 5/16-18 x 3/8	1
10	D309C-HC-7A	HEX HD SCREW S/S 5/16-18 X 1 3/8	8
11	1528-5	RACK EJECTOR PADDLE	1
12	D313C-H1	WASHER, PLAIN 5/16	8
13	D309C-GC-22A	HEX HD SCREW S/S 1/4-20 X 2 3/4	1
14	D312C-GC-5	LOCKNUT 1/4-20	1



REV	ECN NO	DATE
D	1996	9.19.03
C	1905	11.08.01
B	1783	8.3.00
A	1591	1.28.98

FILE: PARTS\1162-111

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

TITLE: CONVEYOR DRIVE SHAFT ASSEMBLY

MATL: NOTED

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

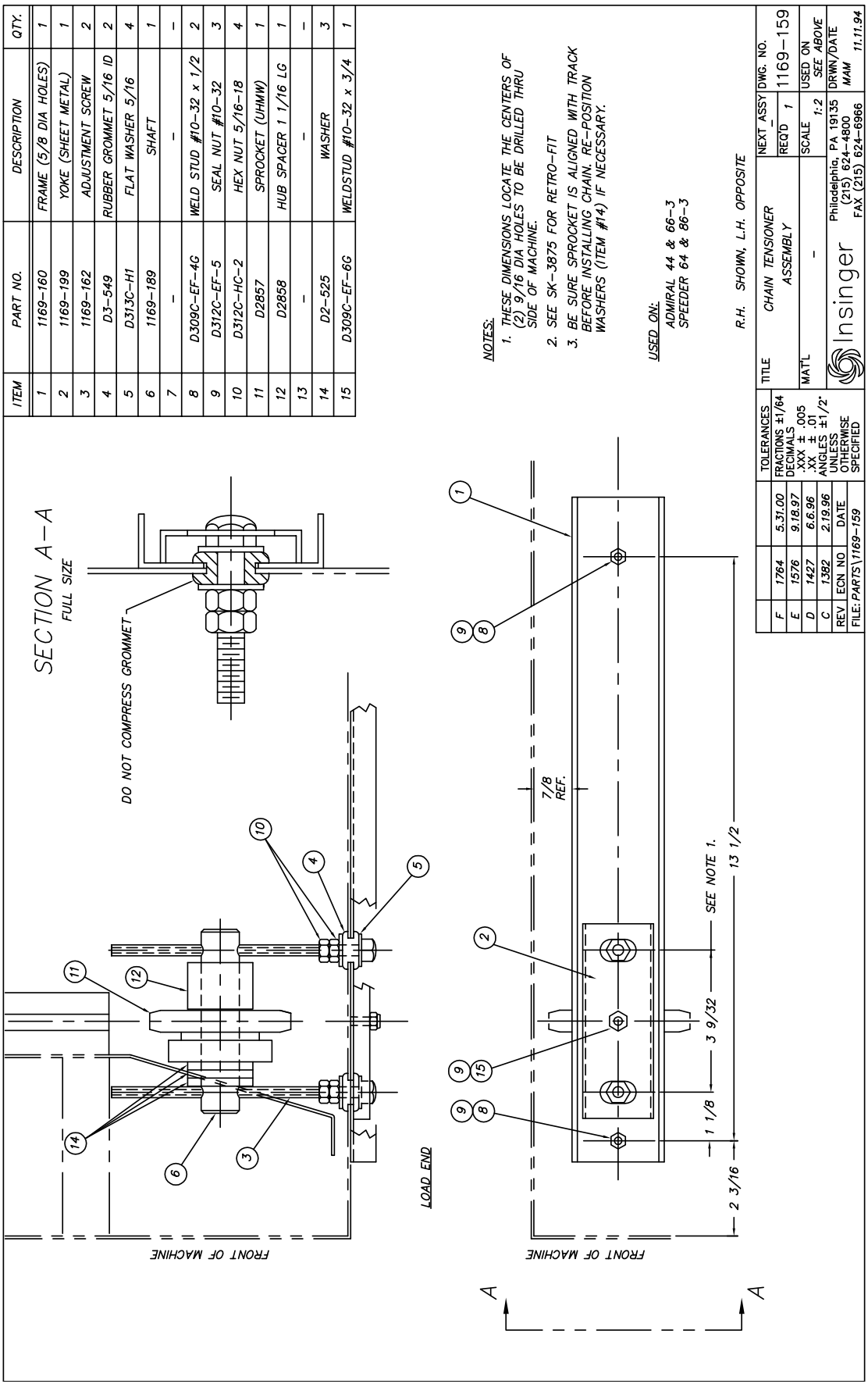
NEXT ASSY: —
REQ'D: NOTED

DWG. NO. 1162-111

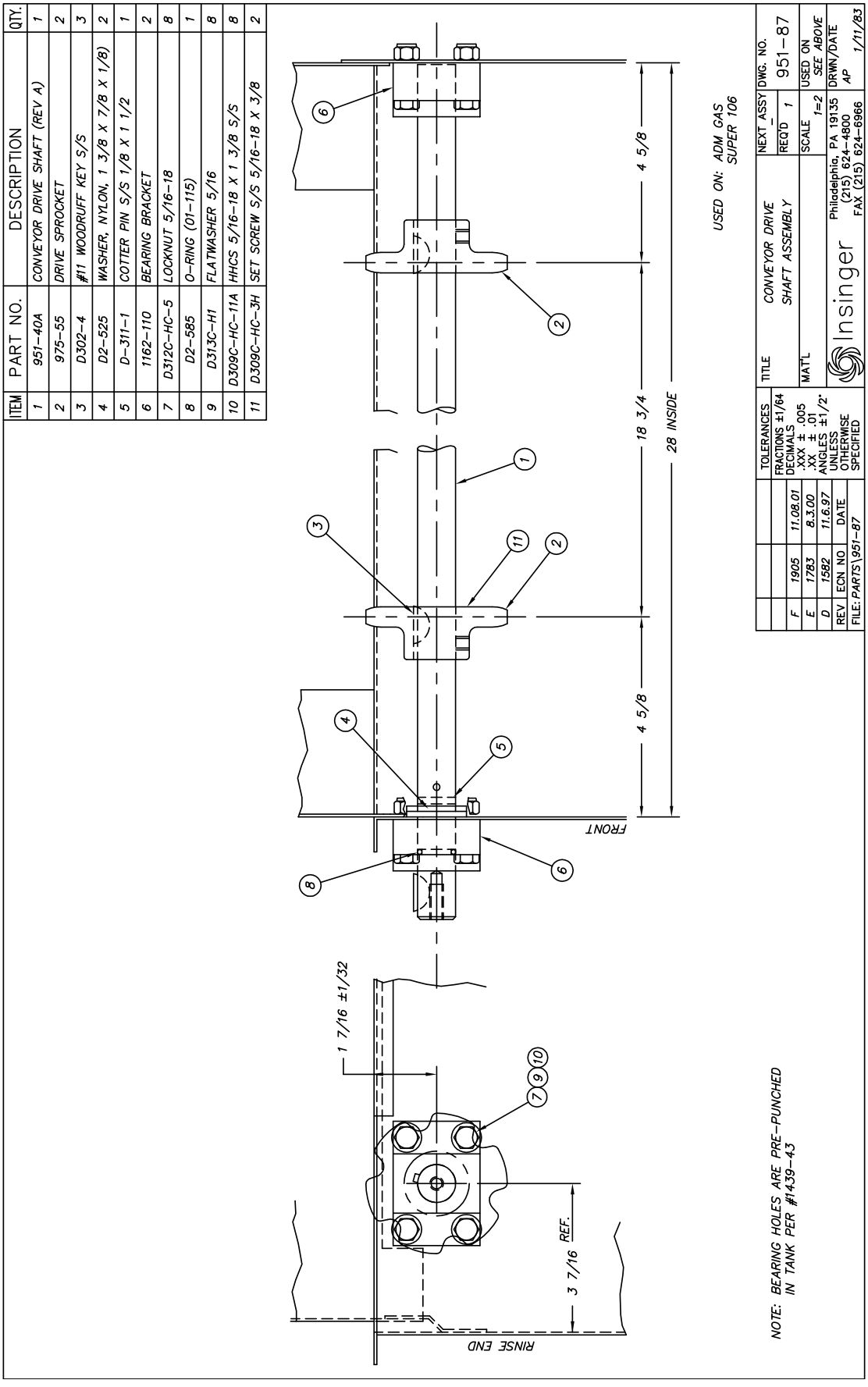
SCALE 1/2

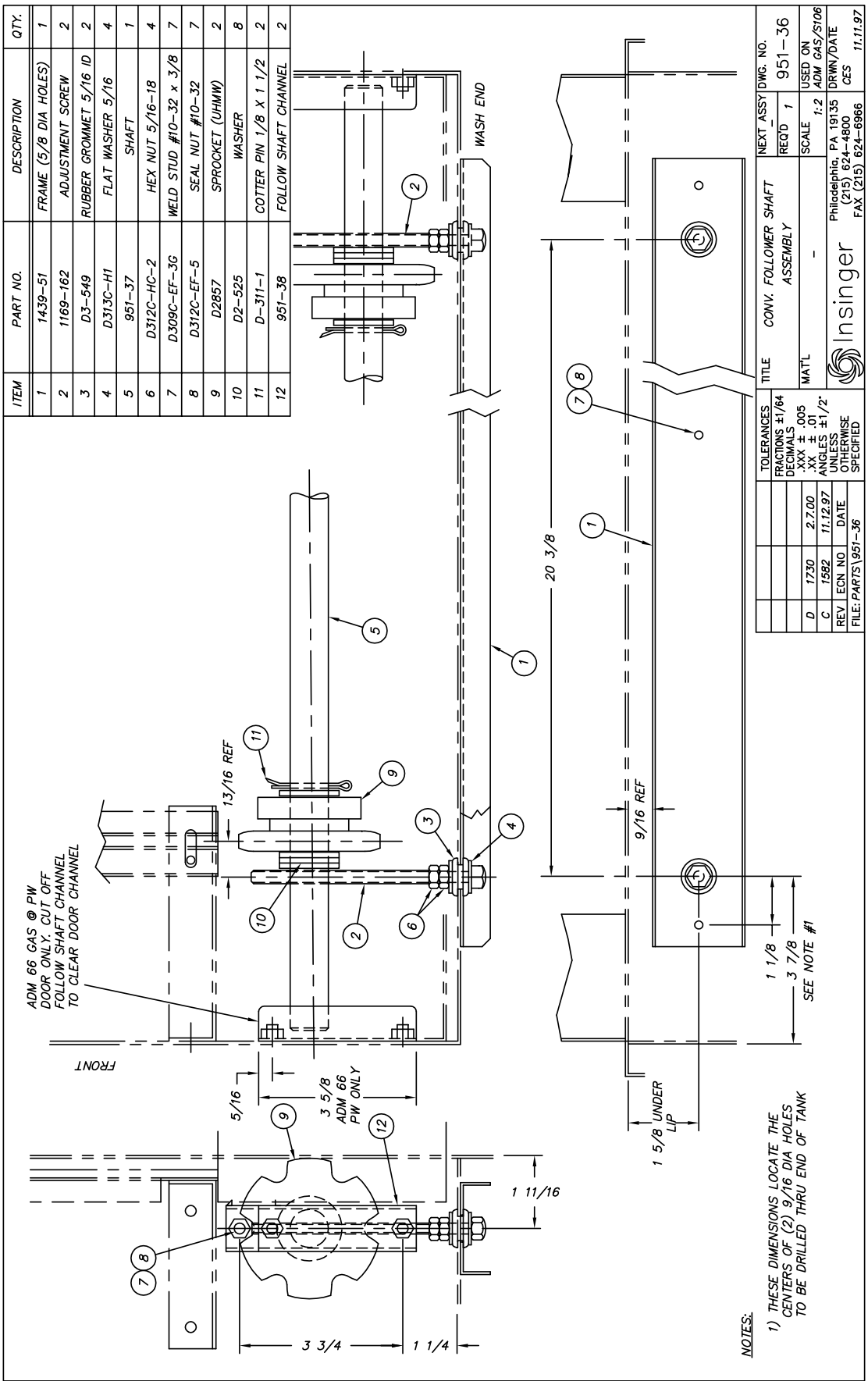
USED ON ADM/SPDR

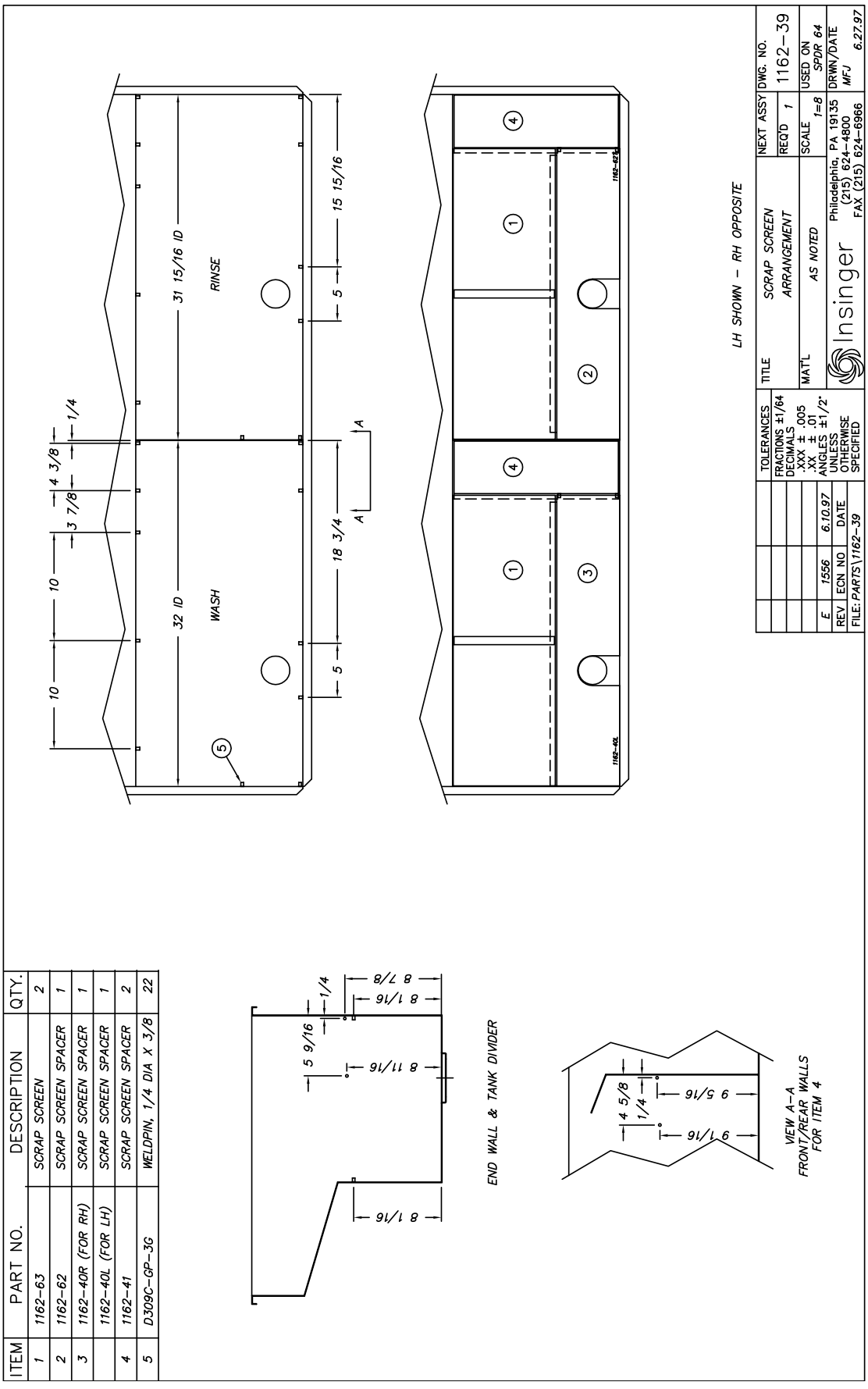
DRWN/DATE PG 8.29.97


ITEM | PART NO. | DESCRIPTION | QTY.
1 | 1169-160 | FRAME (5/8 DIA HOLES) | 1
2 | 1169-199 | YOKE (SHEET METAL) | 1
3 | 1169-162 | ADJUSTMENT SCREW | 2
4 | D3-549 | RUBBER GROMMET 5/16 ID | 2
5 | D313C-H1 | FLAT WASHER 5/16 | 4
6 | 1169-189 | SHAFT | 1
7 | - | - | -
8 | D309C-EF-4G | WELD STUD #10-32 x 1/2 | 2
9 | D312C-EF-5 | SEAL NUT #10-32 | 3
10 | D312C-HC-2 | HEX NUT 5/16-18 | 4
11 | D2857 | SPROCKET (UHMW) | 1
12 | D2858 | HUB SPACER 1 1/16 LG | 1
13 | - | - | -
14 | D2-525 | WASHER | 3
15 | D309C-EF-6G | WELDSTUD #10-32 x 3/4 | 1
NOTES:
1. THESE DIMENSIONS LOCATE THE CENTERS OF (2) 9/16 DIA HOLES TO BE DRILLED THRU SIDE OF MACHINE.
2. SEE SK-3875 FOR RETRO-FIT
3. BE SURE SPROCKET IS ALIGNED WITH TRACK BEFORE INSTALLING CHAIN. RE-POSITION WASHERS (ITEM #14) IF NECESSARY.
USED ON:
ADMIRAL 44 & 66-3
SPEEDER 64 & 86-3
R.H. SHOWN, L.H. OPPOSITE
SECTION A-A
FULL SIZE
DO NOT COMPRESS GROMMET
LOAD END
FRONT OF MACHINE
FRONT OF MACHINE
7/8 REF.
SEE NOTE 1.
13 1/2
3 9/32
1 1/8
2 3/16
A
A
F 1764 5.31.00
E 1576 9.18.97
D 1427 6.6.96
C 1382 2.19.96
REV ECN NO DATE
FILE: PARTS\1169-159
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
TITLE
CHAIN TENSIONER ASSEMBLY
MATL -
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
NEXT ASSY -
REQ'D 1
SCALE 1:2
DWG. NO. 1169-159
USED ON SEE ABOVE
DRWN/DATE MAM 11.11.94

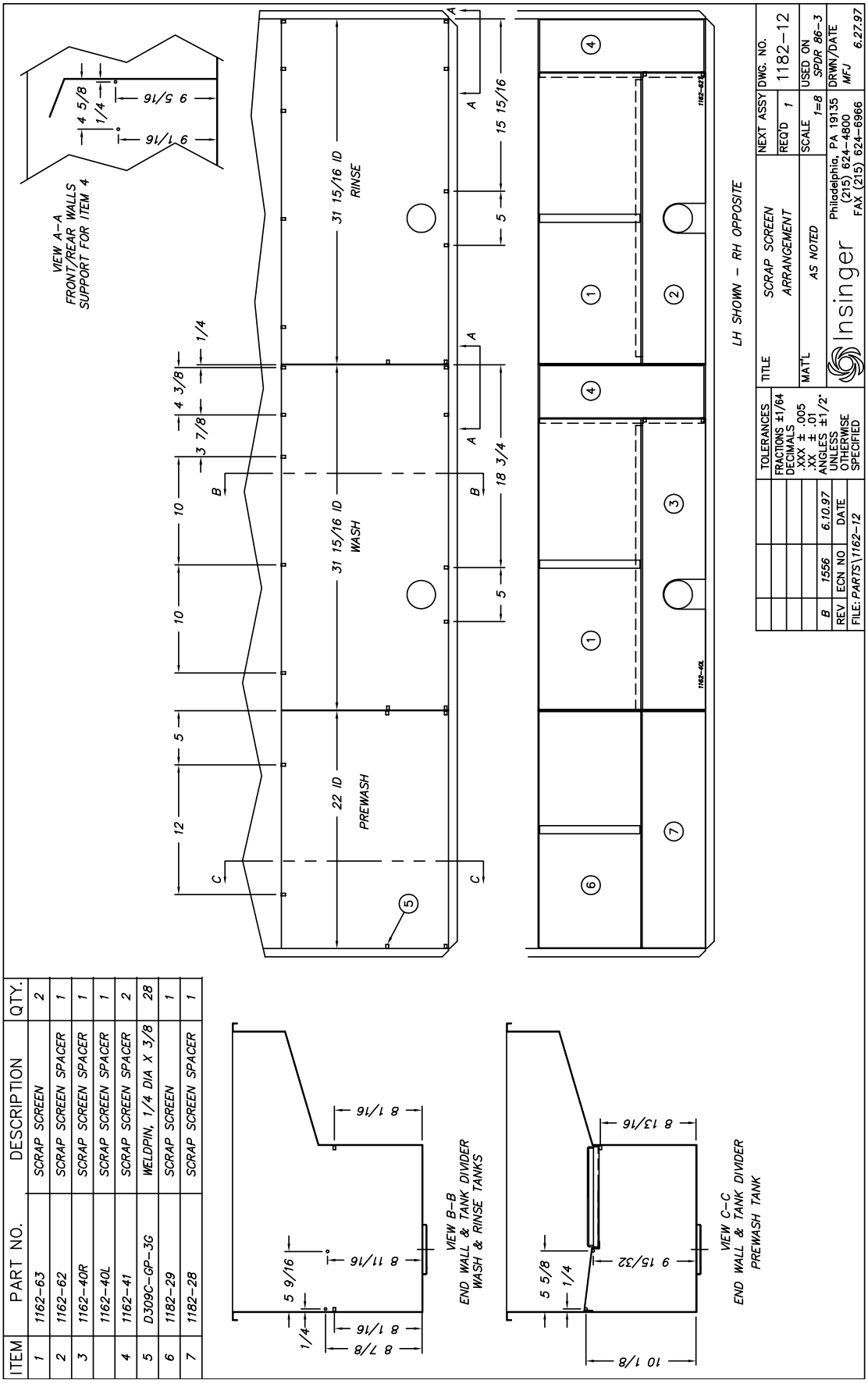
ITEM	PART NO.	DESCRIPTION	QTY.
1	951-40A	CONVEYOR DRIVE SHAFT (REV A)	1
2	975-55	DRIVE SPROCKET	2
3	D302-4	#11 WOODRUFF KEY S/S	3
4	D2-525	WASHER, NYLON, 1 3/8 X 7/8 X 1/8)	2
5	D-311-1	COTTER PIN S/S 1/8 X 1 1/2	1
6	1162-110	BEARING BRACKET	2
7	D312C-HC-5	LOCKNUT 5/16-18	8
8	D2-585	O-RING (01-115)	1
9	D313C-H1	FLATWASHER 5/16	8
10	D309C-HC-11A	HHCS 5/16-18 X 1 3/8 S/S	8
11	D309C-HC-3H	SET SCREW S/S 5/16-18 X 3/8	2




ITEM | PART NO. | DESCRIPTION | QTY.
1 | 1439-51 | FRAME (5/8 DIA HOLES) | 1
2 | 1169-162 | ADJUSTMENT SCREW | 2
3 | D3-549 | RUBBER GROMMET 5/16 ID | 2
4 | D313C-H1 | FLAT WASHER 5/16 | 4
5 | 951-37 | SHAFT | 1
6 | D312C-HC-2 | HEX NUT 5/16-18 | 4
7 | D309C-EF-3G | WELD STUD #10-32 x 3/8 | 7
8 | D312C-EF-5 | SEAL NUT #10-32 | 7
9 | D2857 | SPROCKET (UHMW) | 2
10 | D2-525 | WASHER | 8
11 | D-311-1 | COTTER PIN 1/8 X 1 1/2 | 2
12 | 951-38 | FOLLOW SHAFT CHANNEL | 2
WASH END
20 3/8
9/16 REF
13/16 REF
ADM 66 GAS @ PW
DOOR ONLY: CUT OFF
FOLLOW SHAFT CHANNEL
TO CLEAR DOOR CHANNEL
FRONT
5/16
3 5/8
ADM 66
PW ONLY
1 11/16
3 3/4
1 1/4
1 5/8 UNDER LIP
1 1/8
3 7/8
SEE NOTE #1
NOTES:
1) THESE DIMENSIONS LOCATE THE CENTERS OF (2) 9/16 DIA HOLES TO BE DRILLED THRU END OF TANK
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
REV | ECN NO | DATE
D | 1730 | 2.7.00
C | 1582 | 11.12.97
FILE: PARTS\951-36
TITLE
CONV. FOLLOWER SHAFT ASSEMBLY
MATL
-
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
NEXT ASSY
REQ'D 1
SCALE 1:2
DWG. NO. 951-36
USED ON ADM GAS/S106
DRWN/DATE CES 11.11.97



ITEM	PART NO.	DESCRIPTION	QTY.
1	1162-63	SCRAP SCREEN	2
2	1162-62	SCRAP SCREEN SPACER	1
3	1162-40R (FOR RH)	SCRAP SCREEN SPACER	1
	1162-40L (FOR LH)	SCRAP SCREEN SPACER	1
4	1162-41	SCRAP SCREEN SPACER	2
5	D309C-GP-3G	WELDPIN, 1/4 DIA X 3/8	22



ITEM	PART NO.	DESCRIPTION	QTY.
1	1162–63	SCRAP SCREEN	2
2	1162–62	SCRAP SCREEN SPACER	1
3	1162–40R	SCRAP SCREEN SPACER	1
	1162–40L	SCRAP SCREEN SPACER	1
4	1162–41	SCRAP SCREEN SPACER	2
5	D309C–GP–3G	WELDPIN, 1/4 DIA X 3/8	28
6	1182–29	SCRAP SCREEN	1
7	1182–28	SCRAP SCREEN SPACER	1

REV	ECN NO	DATE
B	1556	6.10.97

FILE: PARTS\1162–12

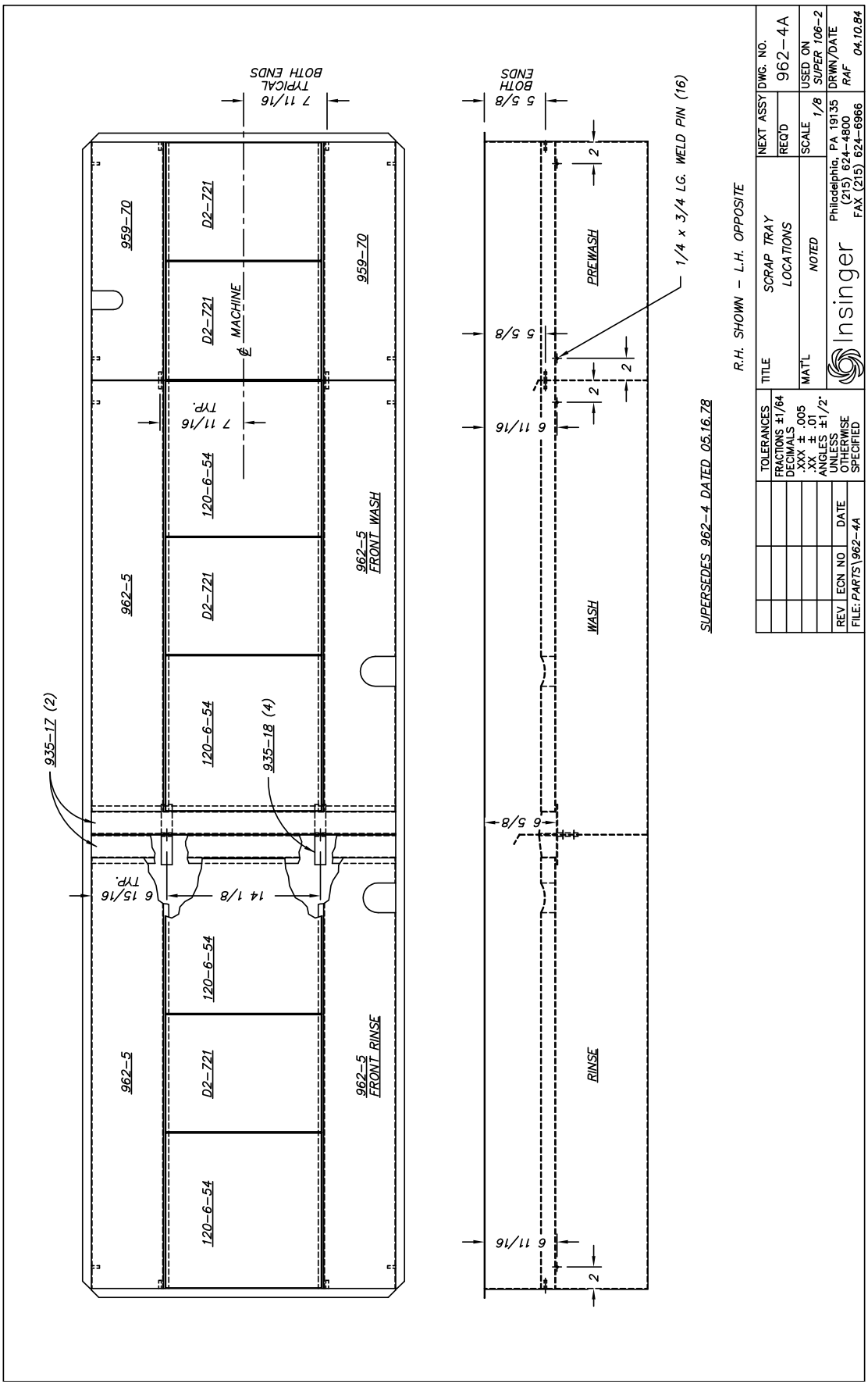
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

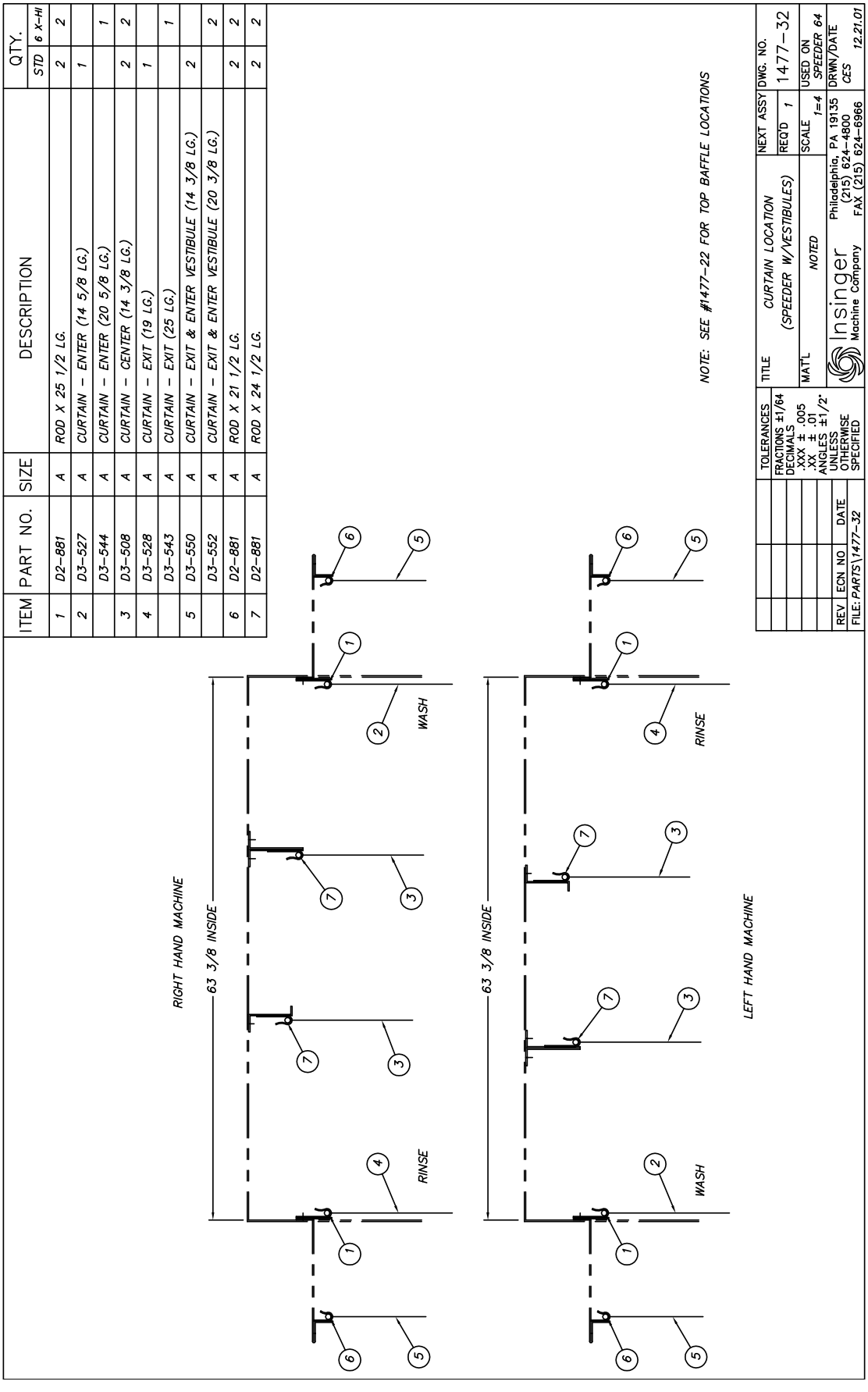
TITLE: SCRAP SCREEN ARRANGEMENT

MAT'L: AS NOTED

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966

NEXT ASSY
REQ'D 1
SCALE 1=8
DWG. NO. 1182–12
USED ON SPDR 86–3
DRWN/DATE MFJ 6.27.97


7 11/16 TYPICAL BOTH ENDS
5 5/8 BOTH ENDS
959-70
D2-721
MACHINE
962-5
120-6-54
962-5 FRONT WASH
935-17 (2)
935-18 (4)
6 15/16 TYP.
14 1/8
962-5 FRONT RINSE
PREWASH
WASH
RINSE
1/4 x 3/4 LG. WELD PIN (16)
6 11/16
2
SUPERSEDES 962-4 DATED 05.16.78
R.H. SHOWN - L.H. OPPOSITE
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
REV ECN NO DATE
FILE: PARTS\962-4A
TITLE
SCRAP TRAY LOCATIONS
MATL
NOTED
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
NEXT ASSY
REQ'D
SCALE 1/8
DWG. NO. 962-4A
USED ON SUPER 106-2
DRWN/DATE RAF 04.10.84



ITEM	PART NO.	SIZE	DESCRIPTION	QTY. STD	QTY. 6 X-HI
1	D2-881	A	ROD X 25 1/2 LG.	2	2
2	D3-527	A	CURTAIN - ENTER (14 5/8 LG.)	1	
	D3-544	A	CURTAIN - ENTER (20 5/8 LG.)		1
3	D3-508	A	CURTAIN - CENTER (14 3/8 LG.)	2	2
4	D3-528	A	CURTAIN - EXIT (19 LG.)	1	
	D3-543	A	CURTAIN - EXIT (25 LG.)		1
5	D3-550	A	CURTAIN - EXIT & ENTER VESTIBULE (14 3/8 LG.)	2	
	D3-552	A	CURTAIN - EXIT & ENTER VESTIBULE (20 3/8 LG.)		2
6	D2-881	A	ROD X 21 1/2 LG.	2	2
7	D2-881	A	ROD X 24 1/2 LG.	2	2

NOTE: SEE #1477-22 FOR TOP BAFFLE LOCATIONS

RIGHT HAND MACHINE

63 3/8 INSIDE

WASH

RINSE

LEFT HAND MACHINE

63 3/8 INSIDE

RINSE

WASH

REV	ECN NO.	DATE
FILE: PARTS\1477-32		

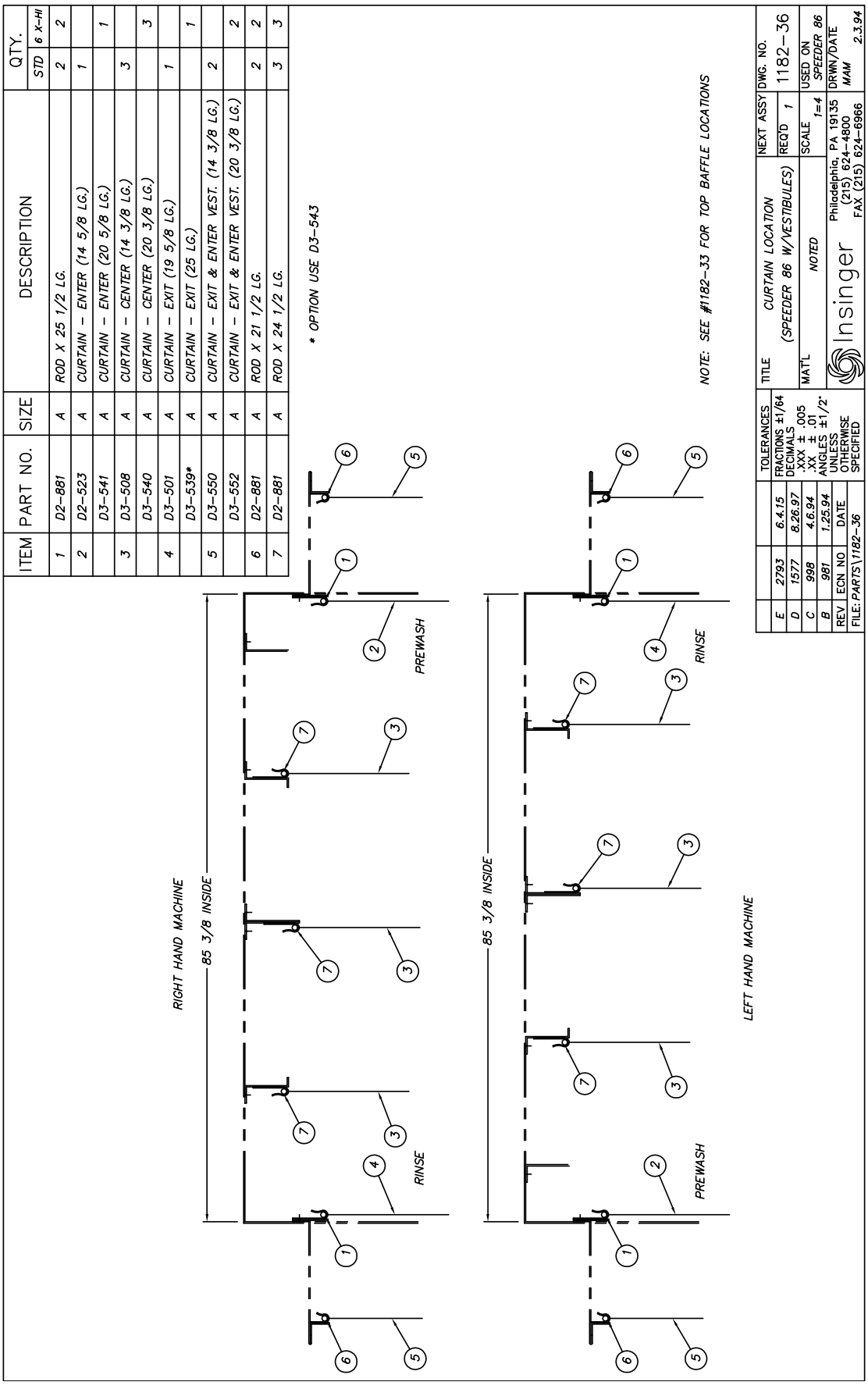
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

TITLE: CURTAIN LOCATION (SPEEDER W/VESTIBULES)

MATL: NOTED

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

NEXT ASSY
REQ'D 1
SCALE 1=4
DWG. NO. 1477-32
USED ON SPEEDER 64
DRWN/DATE CES 12.21.01



ITEM	PART NO.	SIZE	DESCRIPTION	QTY. STD	QTY. 6 X-HI
1	D2-881	A	ROD X 25 1/2 LG.	2	2
2	D2-523	A	CURTAIN - ENTER (14 5/8 LG.)	1	
	D3-541	A	CURTAIN - ENTER (20 5/8 LG.)		1
3	D3-508	A	CURTAIN - CENTER (14 3/8 LG.)	3	
	D3-540	A	CURTAIN - CENTER (20 3/8 LG.)		3
4	D3-501	A	CURTAIN - EXIT (19 5/8 LG.)	1	
	D3-539*	A	CURTAIN - EXIT (25 LG.)		1
5	D3-550	A	CURTAIN - EXIT & ENTER VEST. (14 3/8 LG.)	2	
	D3-552	A	CURTAIN - EXIT & ENTER VEST. (20 3/8 LG.)		2
6	D2-881	A	ROD X 21 1/2 LG.	2	2
7	D2-881	A	ROD X 24 1/2 LG.	3	3

* OPTION USE D3-543

NOTE: SEE #1182-33 FOR TOP BAFFLE LOCATIONS

RIGHT HAND MACHINE

85 3/8 INSIDE

PREWASH

RINSE

LEFT HAND MACHINE

85 3/8 INSIDE

RINSE

PREWASH

REV	ECN NO.	DATE
E	2793	6.4.15
D	1577	8.26.97
C	998	4.6.94
B	981	1.25.94

FILE: PARTS\1182-36

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

TITLE
CURTAIN LOCATION
(SPEEDER 86 W/VESTIBULES)

MATL
NOTED

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

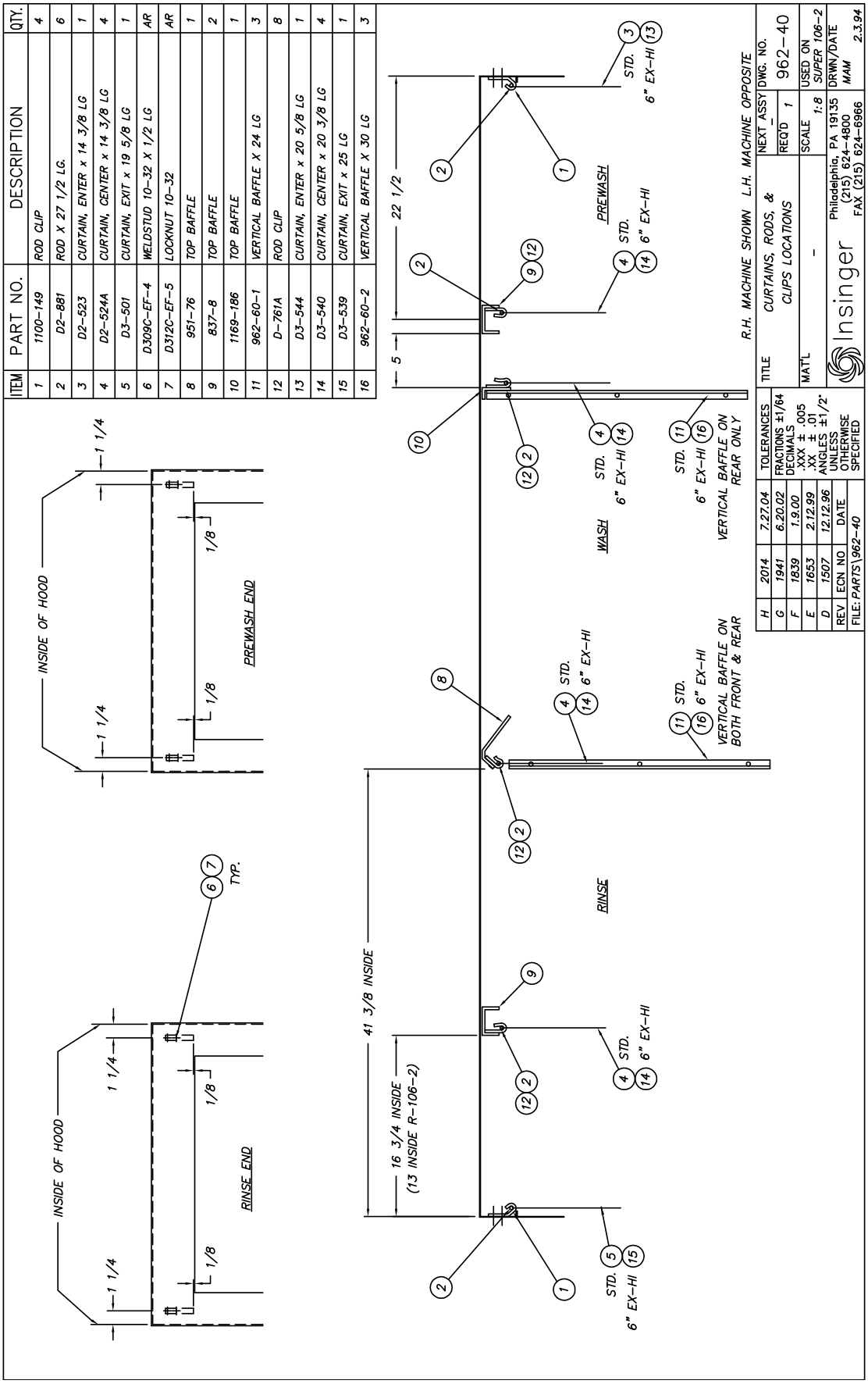
NEXT ASSY
REQ'D 1

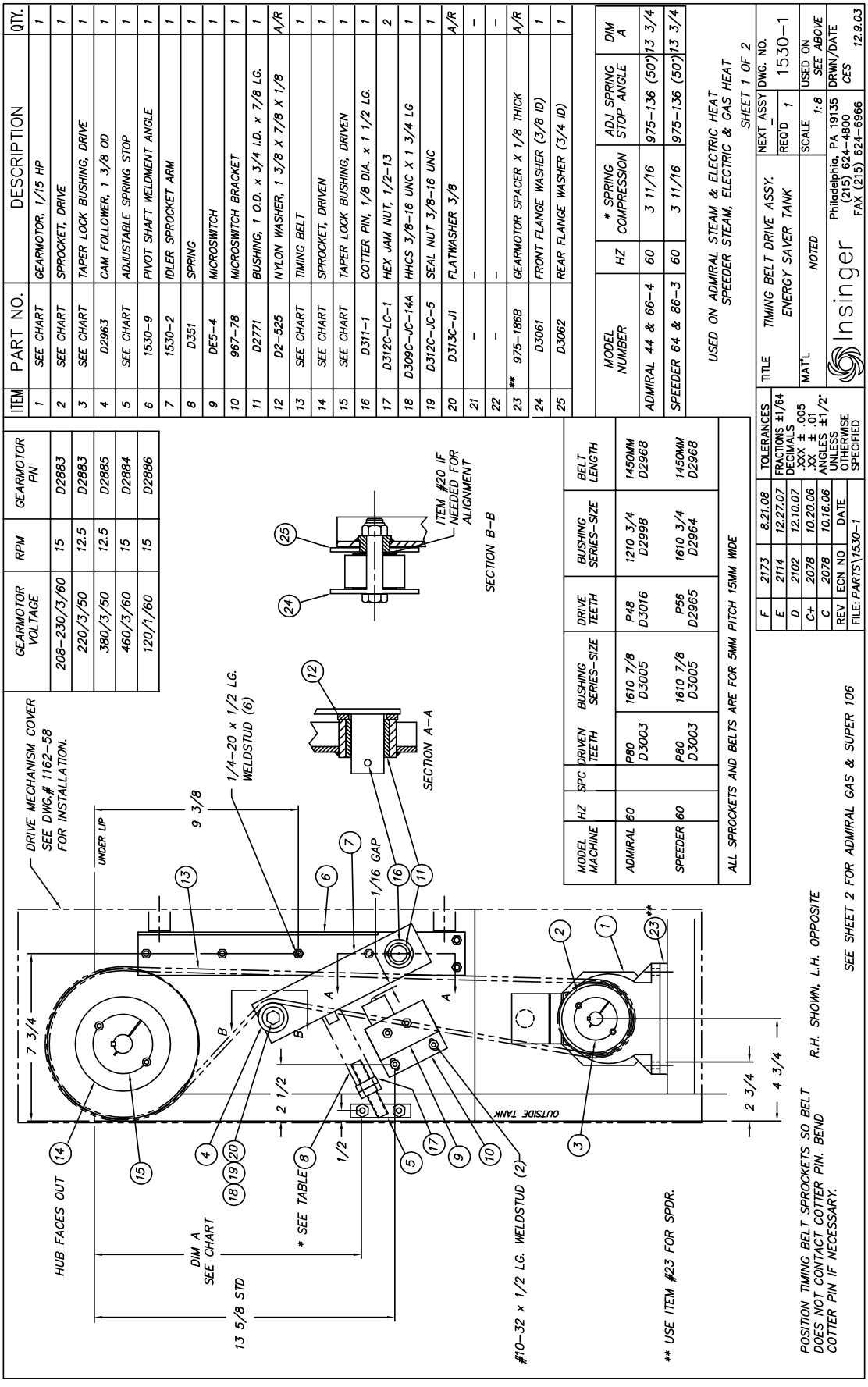
SCALE 1=4

DWG. NO. 1182-36

USED ON SPEEDER 86

DRWN/DATE MAM 2.3.94


ITEM | PART NO. | DESCRIPTION | QTY.
1 | 1100-149 | ROD CLIP | 4
2 | D2-881 | ROD X 27 1/2 LG. | 6
3 | D2-523 | CURTAIN, ENTER x 14 3/8 LG | 1
4 | D2-524A | CURTAIN, CENTER x 14 3/8 LG | 4
5 | D3-501 | CURTAIN, EXIT x 19 5/8 LG | 1
6 | D309C-EF-4 | WELDSTUD 10-32 X 1/2 LG | AR
7 | D312C-EF-5 | LOCKNUT 10-32 | AR
8 | 951-76 | TOP BAFFLE | 1
9 | 837-8 | TOP BAFFLE | 2
10 | 1169-186 | TOP BAFFLE | 1
11 | 962-60-1 | VERTICAL BAFFLE X 24 LG | 3
12 | D-761A | ROD CLIP | 8
13 | D3-544 | CURTAIN, ENTER x 20 5/8 LG | 1
14 | D3-540 | CURTAIN, CENTER x 20 3/8 LG | 4
15 | D3-539 | CURTAIN, EXIT x 25 LG | 1
16 | 962-60-2 | VERTICAL BAFFLE X 30 LG | 3
R.H. MACHINE SHOWN L.H. MACHINE OPPOSITE
CURTAINS, RODS, & CLIPS LOCATIONS
TITLE
NEXT ASSY
REQ'D 1
DWG. NO. 962-40
SCALE 1:8
USED ON SUPER 106-2
MATL -
DRWN/DATE MAM 2.3.94
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
H 2014 7.27.04
G 1941 6.20.02
F 1839 1.9.00
E 1653 2.12.99
D 1507 12.12.96
REV ECN NO. DATE
FILE: PARTS\962-40
INSIDE OF HOOD
1 1/4
1/8
PREWASH END
RINSE END
TYP.
41 3/8 INSIDE
16 3/4 INSIDE
(13 INSIDE R-106-2)
22 1/2
5
PREWASH
WASH
RINSE
STD.
6" EX-HI
VERTICAL BAFFLE ON BOTH FRONT & REAR
VERTICAL BAFFLE ON REAR ONLY



GEARMOTOR VOLTAGE	RPM	GEARMOTOR PN
208-230/3/60	15	D2883
220/3/50	12.5	D2883
380/3/50	12.5	D2885
460/3/60	15	D2884
120/1/60	15	D2886

MODEL MACHINE	HZ	SPC	DRIVEN TEETH	BUSHING SERIES-SIZE	DRIVE TEETH	BUSHING SERIES-SIZE	BELT LENGTH
ADMIRAL	60		P80 D3003	1610 7/8 D3005	P48 D3016	1210 3/4 D2998	1450MM D2968
SPEEDER	60		P80 D3003	1610 7/8 D3005	P56 D2965	1610 3/4 D2964	1450MM D2968

ALL SPROCKETS AND BELTS ARE FOR 5MM PITCH 15MM WIDE

ITEM	PART NO.	DESCRIPTION	QTY.
1	SEE CHART	GEARMOTOR, 1/15 HP	1
2	SEE CHART	SPROCKET, DRIVE	1
3	SEE CHART	TAPER LOCK BUSHING, DRIVE	1
4	D2963	CAM FOLLOWER, 1 3/8 OD	1
5	SEE CHART	ADJUSTABLE SPRING STOP	1
6	1530-9	PIVOT SHAFT WELDMENT ANGLE	1
7	1530-2	IDLER SPROCKET ARM	1
8	D351	SPRING	1
9	DE5-4	MICROSWITCH	1
10	967-78	MICROSWITCH BRACKET	1
11	D2771	BUSHING, 1 O.D. x 3/4 I.D. x 7/8 LG.	1
12	D2-525	NYLON WASHER, 1 3/8 X 7/8 X 1/8	A/R
13	SEE CHART	TIMING BELT	1
14	SEE CHART	SPROCKET, DRIVEN	1
15	SEE CHART	TAPER LOCK BUSHING, DRIVEN	1
16	D311-1	COTTER PIN, 1/8 DIA. x 1 1/2 LG.	1
17	D312C-LC-1	HEX JAM NUT, 1/2-13	2
18	D309C-JC-14A	HHCS 3/8-16 UNC X 1 3/4 LG	1
19	D312C-JC-5	SEAL NUT 3/8-16 UNC	1
20	D313C-J1	FLATWASHER 3/8	A/R
21	-	-	-
22	-	-	-
23 **	975-186B	GEARMOTOR SPACER X 1/8 THICK	A/R
24	D3061	FRONT FLANGE WASHER (3/8 ID)	1
25	D3062	REAR FLANGE WASHER (3/4 ID)	1

MODEL NUMBER	HZ	* SPRING COMPRESSION	ADJ SPRING STOP ANGLE	DIM A
ADMIRAL 44 & 66-4	60	3 11/16	975-136 (50°)	13 3/4
SPEEDER 64 & 86-3	60	3 11/16	975-136 (50°)	13 3/4

USED ON ADMIRAL STEAM & ELECTRIC HEAT
SPEEDER STEAM, ELECTRIC & GAS HEAT
SHEET 1 OF 2

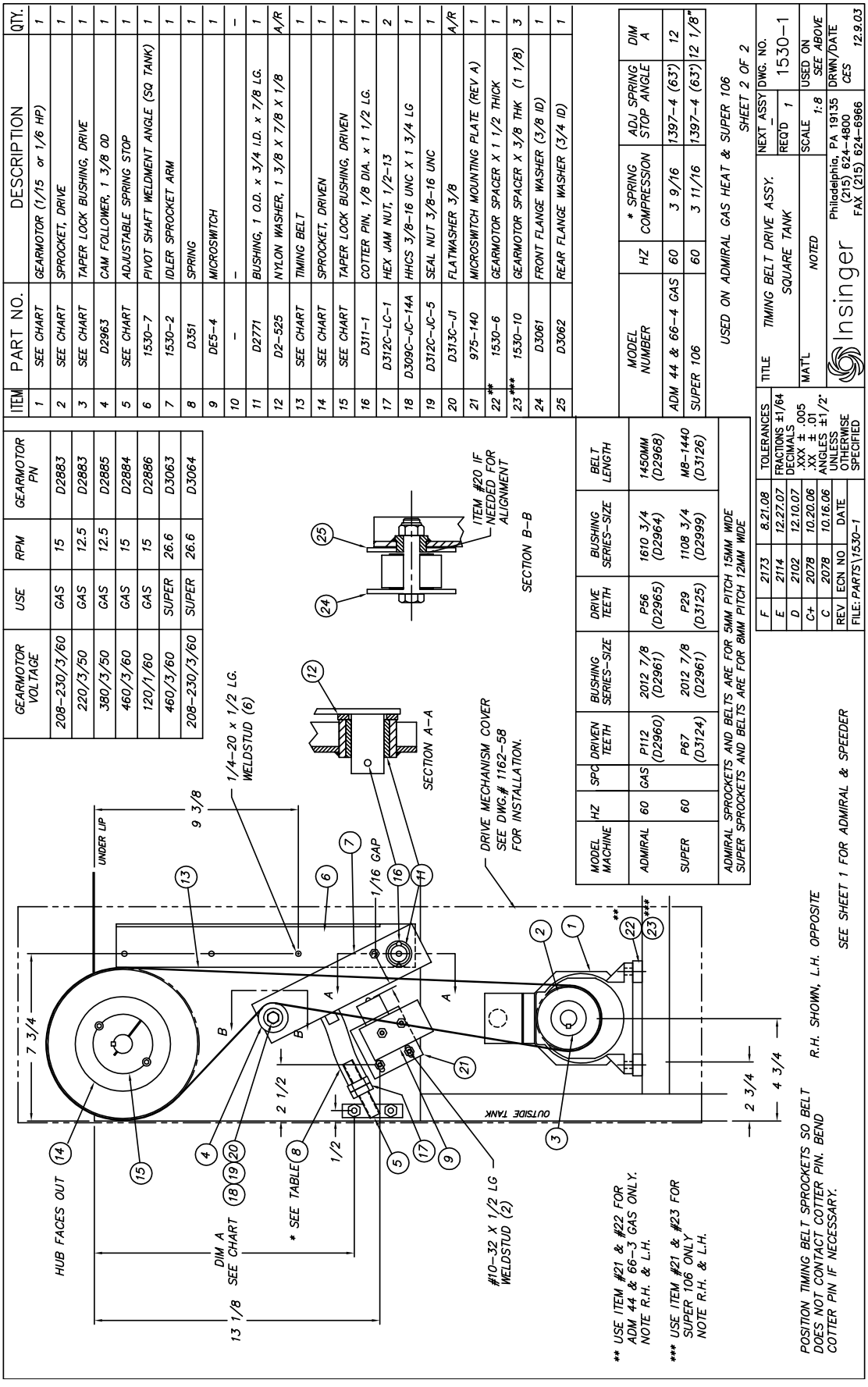
REV	ECN NO	DATE
F	2173	8.21.08
E	2114	12.27.07
D	2102	12.10.07
C+	2078	10.20.06
C	2078	10.16.06

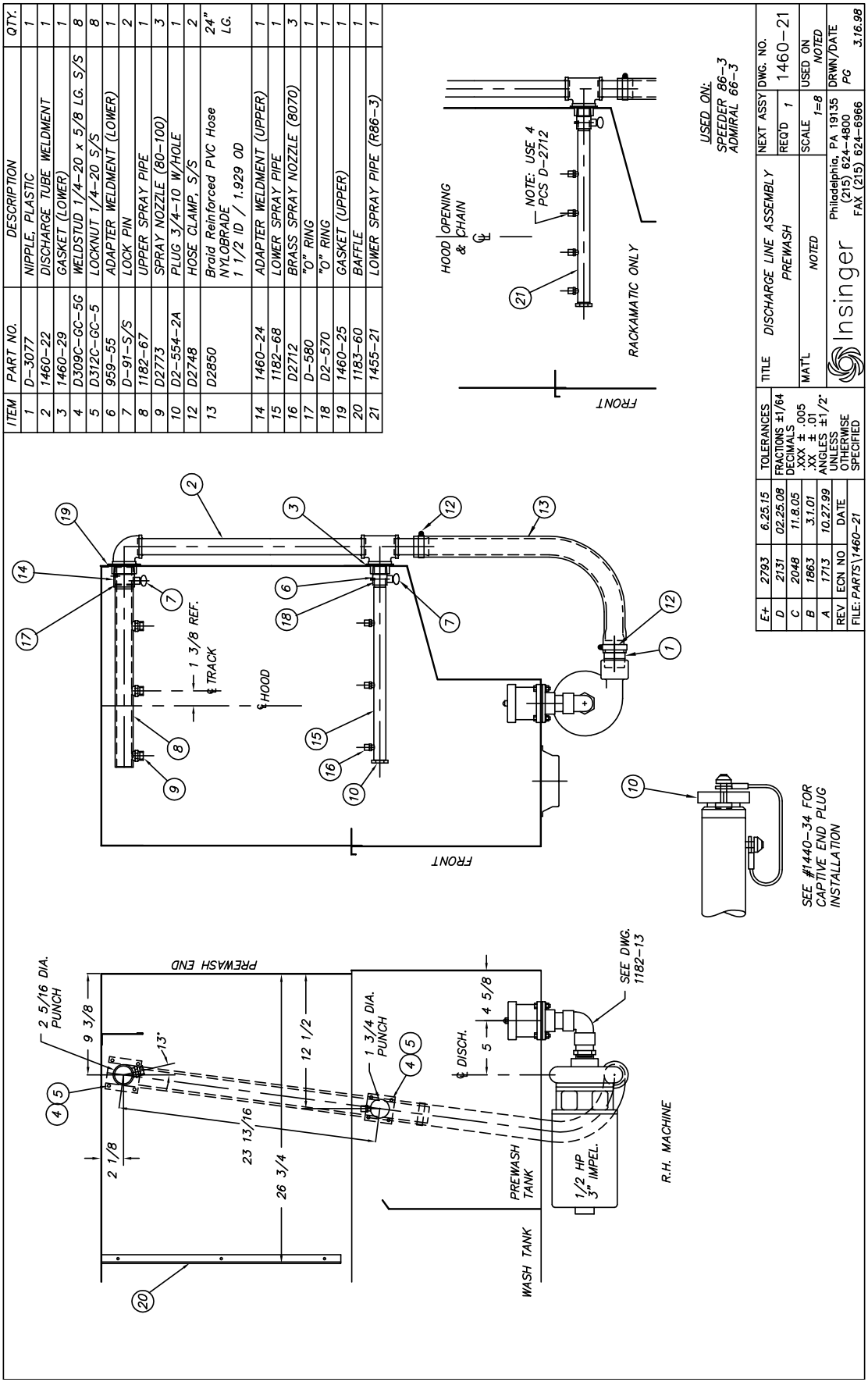
FILE: PARTS\1530-1

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

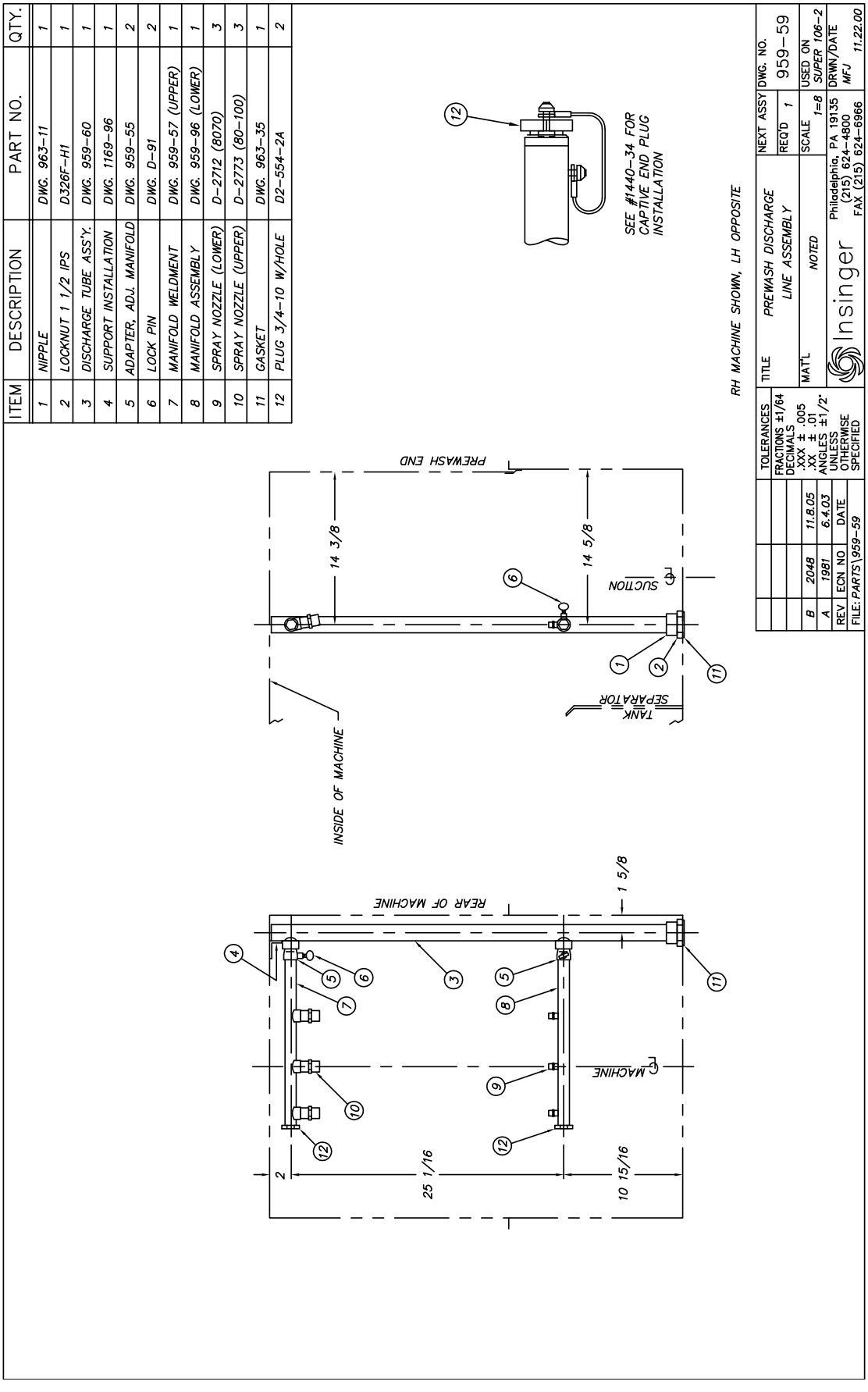
TITLE: TIMING BELT DRIVE ASSY. ENERGY SAVER TANK
MATL: NOTED
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

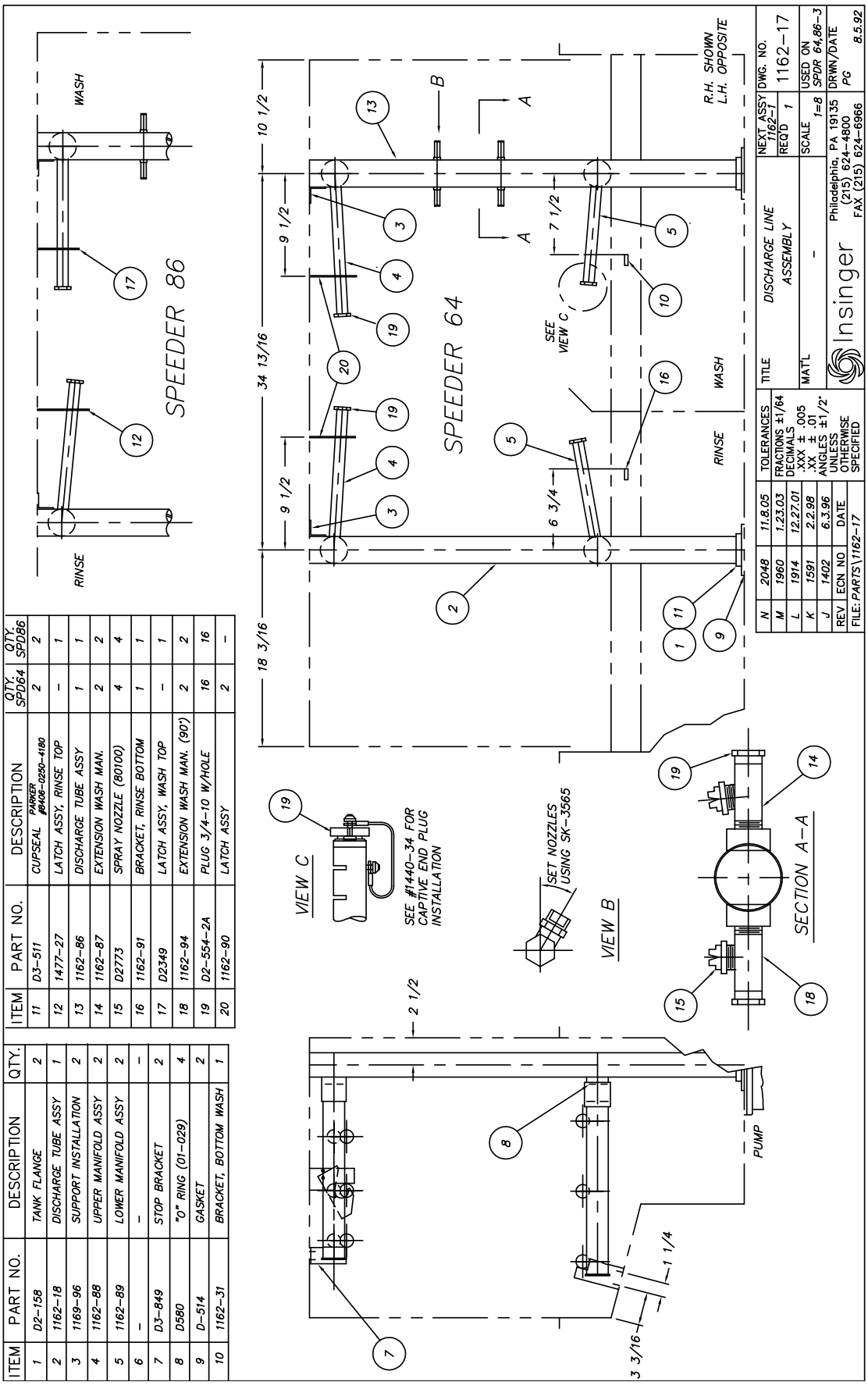
NEXT ASSY: _
REQ'D: 1
SCALE: 1:8
DWG. NO.: 1530-1
USED ON: SEE ABOVE
DRWN/DATE: CES 12.9.03


ITEM | PART NO. | DESCRIPTION | QTY.
1 | SEE CHART | GEARMOTOR (1/15 or 1/6 HP) | 1
2 | SEE CHART | SPROCKET, DRIVE | 1
3 | SEE CHART | TAPER LOCK BUSHING, DRIVE | 1
4 | D2963 | CAM FOLLOWER, 1 3/8 OD | 1
5 | SEE CHART | ADJUSTABLE SPRING STOP | 1
6 | 1530-7 | PIVOT SHAFT WELDMENT ANGLE (SQ TANK) | 1
7 | 1530-2 | IDLER SPROCKET ARM | 1
8 | D351 | SPRING | 1
9 | DE5-4 | MICROSWITCH | 1
10 | - | - | -
11 | D2771 | BUSHING, 1 O.D. x 3/4 I.D. x 7/8 LG. | 1
12 | D2-525 | NYLON WASHER, 1 3/8 X 7/8 X 1/8 | A/R
13 | SEE CHART | TIMING BELT | 1
14 | SEE CHART | SPROCKET, DRIVEN | 1
15 | SEE CHART | TAPER LOCK BUSHING, DRIVEN | 1
16 | D311-1 | COTTER PIN, 1/8 DIA. x 1 1/2 LG. | 1
17 | D312C-LC-1 | HEX JAM NUT, 1/2-13 | 2
18 | D309C-JC-14A | HHCS 3/8-16 UNC X 1 3/4 LG | 1
19 | D312C-JC-5 | SEAL NUT 3/8-16 UNC | 1
20 | D313C-J1 | FLATWASHER 3/8 | A/R
21 | 975-140 | MICROSWITCH MOUNTING PLATE (REV A) | 1
22 ** | 1530-6 | GEARMOTOR SPACER X 1 1/2 THICK | 1
23 *** | 1530-10 | GEARMOTOR SPACER X 3/8 THK (1 1/8) | 3
24 | D3061 | FRONT FLANGE WASHER (3/8 ID) | 1
25 | D3062 | REAR FLANGE WASHER (3/4 ID) | 1
GEARMOTOR VOLTAGE | USE | RPM | GEARMOTOR PN
208-230/3/60 | GAS | 15 | D2883
220/3/50 | GAS | 12.5 | D2883
380/3/50 | GAS | 12.5 | D2885
460/3/60 | GAS | 15 | D2884
120/1/60 | GAS | 15 | D2886
460/3/60 | SUPER | 26.6 | D3063
208-230/3/60 | SUPER | 26.6 | D3064
MODEL NUMBER | HZ | * SPRING COMPRESSION | ADJ SPRING STOP ANGLE | DIM A
ADM 44 & 66-4 GAS | 60 | 3 9/16 | 1397-4 (63') | 12
SUPER 106 | 60 | 3 11/16 | 1397-4 (63') | 12 1/8*
USED ON ADMIRAL GAS HEAT & SUPER 106
SHEET 2 OF 2
MODEL MACHINE | HZ | SPC | DRIVEN TEETH | BUSHING SERIES-SIZE | DRIVE TEETH | BUSHING SERIES-SIZE | BELT LENGTH
ADMIRAL | 60 | GAS | P112 (D2960) | 2012 7/8 (D2961) | P56 (D2965) | 1610 3/4 (D2964) | 1450MM (D2968)
SUPER | 60 | | P67 (D3124) | 2012 7/8 (D2961) | P29 (D3125) | 1108 3/4 (D2999) | M8-1440 (D3126)
ADMIRAL SPROCKETS AND BELTS ARE FOR 5MM PITCH 15MM WIDE
SUPER SPROCKETS AND BELTS ARE FOR 8MM PITCH 12MM WIDE
F 2173 8.21.08
E 2114 12.27.07
D 2102 12.10.07
C+ 2078 10.20.06
C 2078 10.16.06
REV ECN NO DATE
FILE: PARTS\1530-1
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
TITLE TIMING BELT DRIVE ASSY. SQUARE TANK
MATL NOTED
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
NEXT ASSY _
REQ'D 1
SCALE 1:8
DWG. NO. 1530-1
USED ON SEE ABOVE
DRWN/DATE CES 12.9.03
SECTION A-A
SECTION B-B
ITEM #20 IF NEEDED FOR ALIGNMENT
1/4-20 x 1/2 LG. WELDSTUD (6)
DRIVE MECHANISM COVER SEE DWG.# 1162-58 FOR INSTALLATION.
UNDER LIP
9 3/8
7 3/4
1/16 GAP
HUB FACES OUT
DIM A SEE CHART
13 1/8
* SEE TABLE
2 1/2
1/2
#10-32 X 1/2 LG WELDSTUD (2)
OUTSIDE TANK
2 3/4
4 3/4
R.H. SHOWN, L.H. OPPOSITE
SEE SHEET 1 FOR ADMIRAL & SPEEDER
POSITION TIMING BELT SPROCKETS SO BELT DOES NOT CONTACT COTTER PIN. BEND COTTER PIN IF NECESSARY.
** USE ITEM #21 & #22 FOR ADM 44 & 66-3 GAS ONLY. NOTE R.H. & L.H.
*** USE ITEM #21 & #23 FOR SUPER 106 ONLY NOTE R.H. & L.H.


ITEM | PART NO. | DESCRIPTION | QTY.
1 | D-3077 | NIPPLE, PLASTIC | 1
2 | 1460-22 | DISCHARGE TUBE WELDMENT | 1
3 | 1460-29 | GASKET (LOWER) | 1
4 | D309C-GC-5G | WELDSTUD 1/4-20 x 5/8 LG. S/S | 8
5 | D312C-GC-5 | LOCKNUT 1/4-20 S/S | 8
6 | 959-55 | ADAPTER WELDMENT (LOWER) | 1
7 | D-91-S/S | LOCK PIN | 2
8 | 1182-67 | UPPER SPRAY PIPE | 1
9 | D2773 | SPRAY NOZZLE (80-100) | 3
10 | D2-554-2A | PLUG 3/4-10 W/HOLE | 1
12 | D2748 | HOSE CLAMP, S/S | 2
13 | D2850 | Braid Reinforced PVC Hose NYLOBRADE 1 1/2 ID / 1.929 OD | 24" LG.
14 | 1460-24 | ADAPTER WELDMENT (UPPER) | 1
15 | 1182-68 | LOWER SPRAY PIPE | 1
16 | D2712 | BRASS SPRAY NOZZLE (8070) | 3
17 | D-580 | "O" RING | 1
18 | D2-570 | "O" RING | 1
19 | 1460-25 | GASKET (UPPER) | 1
20 | 1183-60 | BAFFLE | 1
21 | 1455-21 | LOWER SPRAY PIPE (R86-3) | 1
HOOD OPENING & CHAIN
NOTE: USE 4 PCS D-2712
RACKAMATIC ONLY
FRONT
USED ON:
SPEEDER 86-3
ADMIRAL 68-3
1 3/8 REF.
TRACK
HOOD
FRONT
SEE #1440-34 FOR CAPTIVE END PLUG INSTALLATION
PREWASH END
2 5/16 DIA. PUNCH
9 3/8
13°
12 1/2
1 3/4 DIA. PUNCH
DISCH.
4 5/8
5
SEE DWG. 1182-13
2 1/8
23 13/16
26 3/4
PREWASH TANK
1/2 HP 3" IMPEL.
R.H. MACHINE
WASH TANK
E+ | 2793 | 6.25.15
D | 2131 | 02.25.08
C | 2048 | 11.8.05
B | 1863 | 3.1.01
A | 1713 | 10.27.99
REV | ECN NO | DATE
FILE: PARTS\1460-21
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
TITLE DISCHARGE LINE ASSEMBLY PREWASH
MATL NOTED
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966
NEXT ASSY
REQ'D 1
SCALE 1=8
DWG. NO. 1460-21
USED ON NOTED
DRWN/DATE PG 3.16.98

ITEM	DESCRIPTION	PART NO.	QTY.
1	NIPPLE	DWG. 963-11	1
2	LOCKNUT 1 1/2 IPS	D326F-H1	1
3	DISCHARGE TUBE ASS'Y.	DWG. 959-60	1
4	SUPPORT INSTALLATION	DWG. 1169-96	1
5	ADAPTER, ADJ. MANIFOLD	DWG. 959-55	2
6	LOCK PIN	DWG. D-91	2
7	MANIFOLD WELDMENT	DWG. 959-57 (UPPER)	1
8	MANIFOLD ASSEMBLY	DWG. 959-96 (LOWER)	1
9	SPRAY NOZZLE (LOWER)	D-2712 (8070)	3
10	SPRAY NOZZLE (UPPER)	D-2773 (80-100)	3
11	GASKET	DWG. 963-35	1
12	PLUG 3/4-10 W/HOLE	D2-554-2A	2





ITEM	PART NO.	DESCRIPTION	QTY.
1	D2-158	TANK FLANGE	2
2	1162-18	DISCHARGE TUBE ASSY	1
3	1169-96	SUPPORT INSTALLATION	2
4	1162-88	UPPER MANIFOLD ASSY	2
5	1162-89	LOWER MANIFOLD ASSY	2
6	–	–	–
7	D3-849	STOP BRACKET	2
8	D580	"O" RING (01-029)	4
9	D-514	GASKET	2
10	1162-31	BRACKET, BOTTOM WASH	1

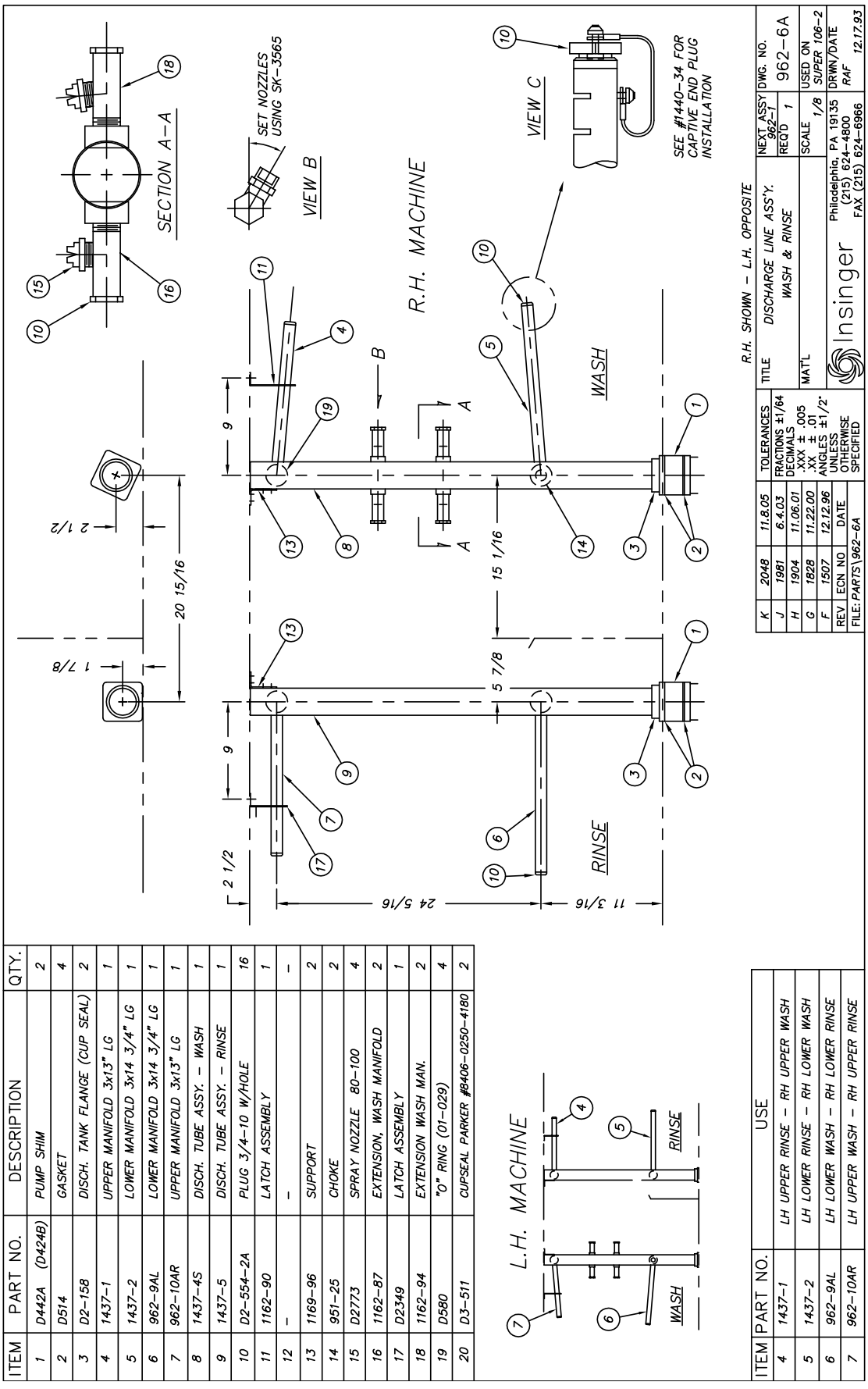
ITEM	PART NO.	DESCRIPTION	QTY. SPD64	QTY. SPD86
11	D3-511	CUPSEAL PARKER #2408-0250-4180	2	2
12	1477-27	LATCH ASSY, RINSE TOP	–	1
13	1162-86	DISCHARGE TUBE ASSY	1	1
14	1162-87	EXTENSION WASH MAN.	2	2
15	D2773	SPRAY NOZZLE (80100)	4	4
16	1162-91	BRACKET, RINSE BOTTOM	1	1
17	D2349	LATCH ASSY, WASH TOP	–	1
18	1162-94	EXTENSION WASH MAN. (90°)	2	2
19	D2-554-2A	PLUG 3/4-10 W/HOLE	16	16
20	1162-90	LATCH ASSY	2	–

REV	ECN NO	DATE
N	2048	11.8.05
M	1960	1.23.03
L	1914	12.27.01
K	1591	2.2.98
J	1402	6.3.96

FILE: PARTS\1162-17

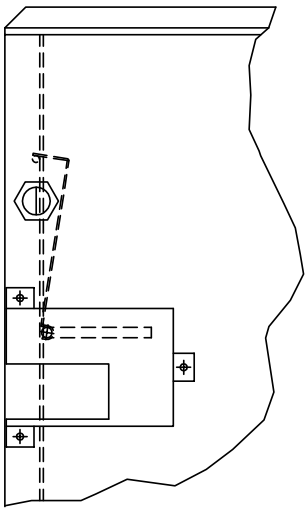
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

TITLE
MATL –
NEXT ASSY 1162-1
REQ'D 1
SCALE 1=8

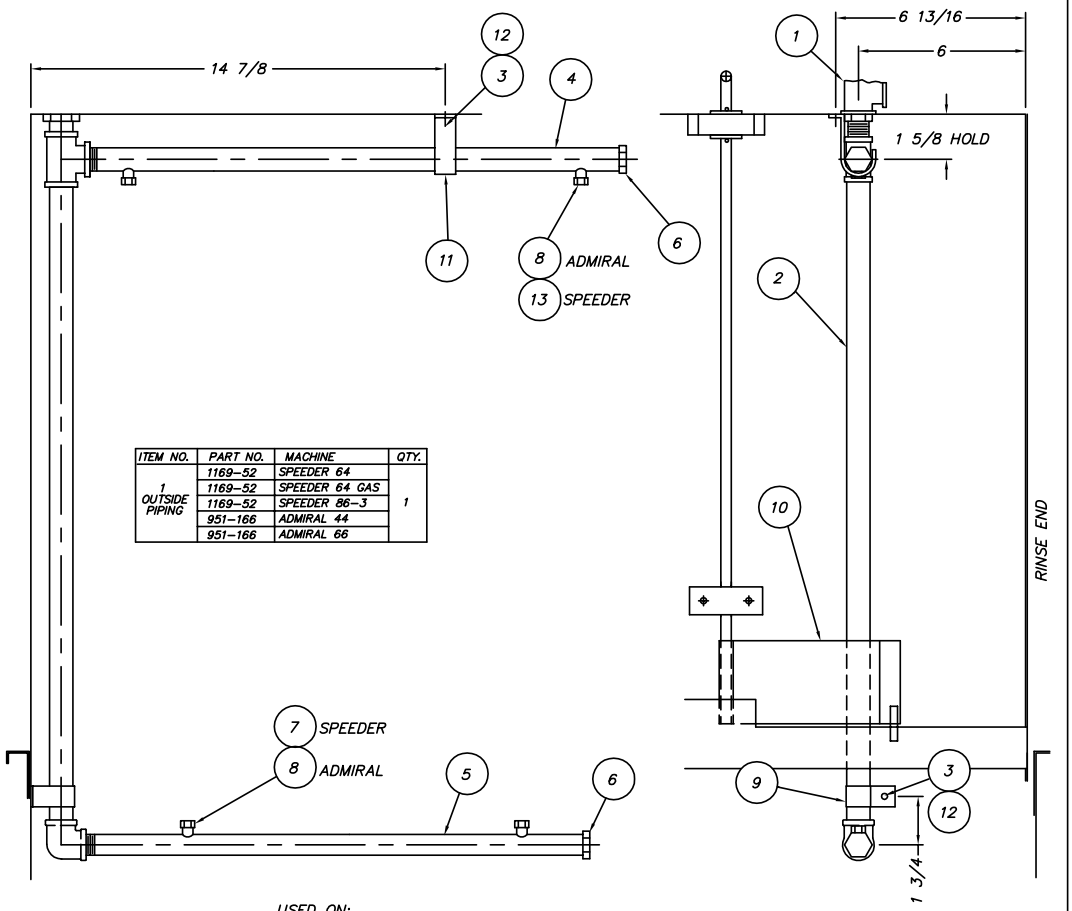


ITEM	PART NO.	DESCRIPTION	QTY.
1	D442A (D424B)	PUMP SHIM	2
2	D514	GASKET	4
3	D2–158	DISCH. TANK FLANGE (CUP SEAL)	2
4	1437–1	UPPER MANIFOLD 3x13" LG	1
5	1437–2	LOWER MANIFOLD 3x14 3/4" LG	1
6	962–9AL	LOWER MANIFOLD 3x14 3/4" LG	1
7	962–10AR	UPPER MANIFOLD 3x13" LG	1
8	1437–4S	DISCH. TUBE ASSY. – WASH	1
9	1437–5	DISCH. TUBE ASSY. – RINSE	1
10	D2–554–2A	PLUG 3/4–10 W/HOLE	16
11	1162–90	LATCH ASSEMBLY	1
12	–	–	–
13	1169–96	SUPPORT	2
14	951–25	CHOKE	2
15	D2773	SPRAY NOZZLE 80–100	4
16	1162–87	EXTENSION, WASH MANIFOLD	2
17	D2349	LATCH ASSEMBLY	1
18	1162–94	EXTENSION WASH MAN.	2
19	D580	"O" RING (01–029)	4
20	D3–511	CUPSEAL PARKER #8406–0250–4180	2

ITEM	PART NO.	USE
4	1437–1	LH UPPER RINSE – RH UPPER WASH
5	1437–2	LH LOWER RINSE – RH LOWER WASH
6	962–9AL	LH LOWER WASH – RH LOWER RINSE
7	962–10AR	LH UPPER WASH – RH UPPER RINSE



			–1
ITEM	PART NO.	DESCRIPTION	QTY.
1	SEE TABULATION	PIPING ASSY (OUTSIDE)	*
2	1169–45	PIPING ASSY (INSIDE)	1
3	D309C–EF–3G	WELDSTUD 10–32 x 3/8	2
4	1472–18A	SPRAY PIPE, 4 NOZZLES	1
5	D–647	SPRAY PIPE, 3 NOZZLES	1
6	D2–554–2	PLUG 3/4–10 UNC	2
7	D2286A (SPEEDER)	SPRAY NOZZLE 8006	3
8	D2770 (ADMIRAL)	SPRAY NOZZLE 1/8HH–3 CONE	7
9	D2–789	CLAMP	1
10	1169–145	LEVER ASSY	1
11	D3–821	BRACKET	1
12	D312C–EF–5	LOCKNUT	2
13	D3015 (SPEEDER)	SPRAY NOZZLE 5005	4



ITEM NO.	PART NO.	MACHINE	QTY.
1 OUTSIDE PIPING	1169–52	SPEEDER 64	1
	1169–52	SPEEDER 64 GAS	
	1169–52	SPEEDER 86–3	
	951–166	ADMIRAL 44	
	951–166	ADMIRAL 66	

USED ON:
ADM 44 & 66
SPDR 64
SPDR 64 GAS
SPDR 86–3

NOTES:
1. SEE 1439–57 FOR ADM 44 & 66 GAS

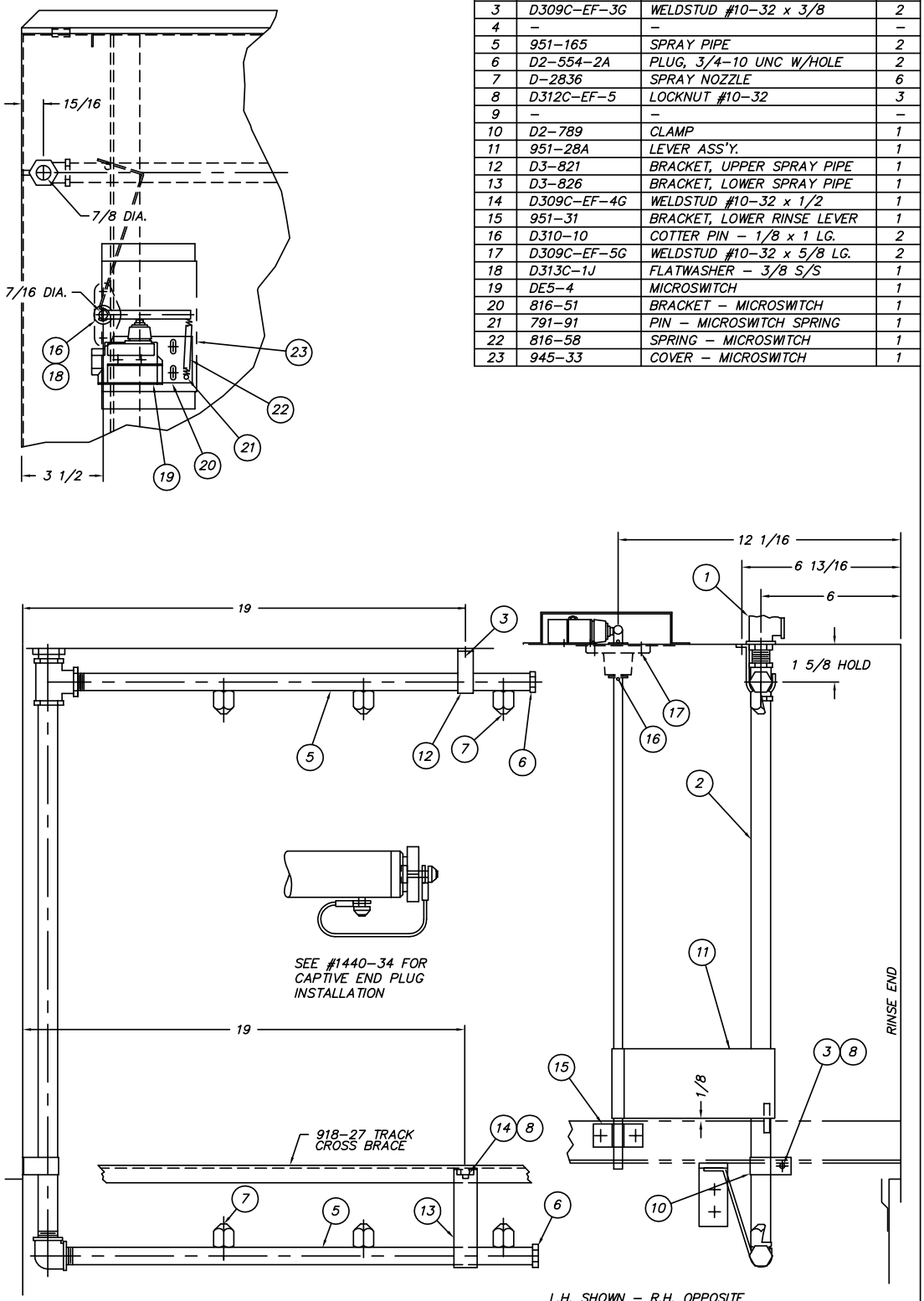
L.H. SHOWN – R.H. OPPOSITE

			TOLERANCES
R	2071	8.1.06	FRACTIONS ±1/64
Q	2048	11.16.05	DECIMALS
P	1970	2.27.03	.XXX ± .005
N	1655	2.10.99	.XX ± .01
REV	ECN NO	DATE	ANGLES ±1/2°
FILE: PARTS\1169–29			UNLESS OTHERWISE SPECIFIED

TITLE	FINAL RINSE ASSEMBLY	NEXT ASSY _ / REQ'D 1	DWG. NO. 1169–29
MAT'L	–	SCALE 1:4	USED ON SEE ABOVE
Insinger Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966			DRWN/DATE MAM 12.14.94

1169–29

ITEM	PART NO.	DESCRIPTION	QTY
1	951–166	PIPING ASS'Y. (OUTSIDE)	1
2	1169–45	PIPING ASS'Y. (INSIDE)	1
3	D309C–EF–3G	WELDSTUD #10–32 x 3/8	2
4	–	–	–
5	951–165	SPRAY PIPE	2
6	D2–554–2A	PLUG, 3/4–10 UNC W/HOLE	2
7	D–2836	SPRAY NOZZLE	6
8	D312C–EF–5	LOCKNUT #10–32	3
9	–	–	–
10	D2–789	CLAMP	1
11	951–28A	LEVER ASS'Y.	1
12	D3–821	BRACKET, UPPER SPRAY PIPE	1
13	D3–826	BRACKET, LOWER SPRAY PIPE	1
14	D309C–EF–4G	WELDSTUD #10–32 x 1/2	1
15	951–31	BRACKET, LOWER RINSE LEVER	1
16	D310–10	COTTER PIN – 1/8 x 1 LG.	2
17	D309C–EF–5G	WELDSTUD #10–32 x 5/8 LG.	2
18	D313C–1J	FLATWASHER – 3/8 S/S	1
19	DE5–4	MICROSWITCH	1
20	816–51	BRACKET – MICROSWITCH	1
21	791–91	PIN – MICROSWITCH SPRING	1
22	816–58	SPRING – MICROSWITCH	1
23	945–33	COVER – MICROSWITCH	1



REV	ECN NO	DATE
K	2048	11.16.05
J	1655	2.10.99
H	1507	12.12.96
G	1438	7.26.96
F	1383	2.20.96

FILE: PARTS\951–81C

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

TITLE: FINAL RINSE ASSEMBLY (SQUARE TANKS)

NEXT ASSY | DWG. NO. 951–81C

REQ'D 1

MAT'L

SCALE 1/4

USED ON SUPER 106–2

Insinger Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966

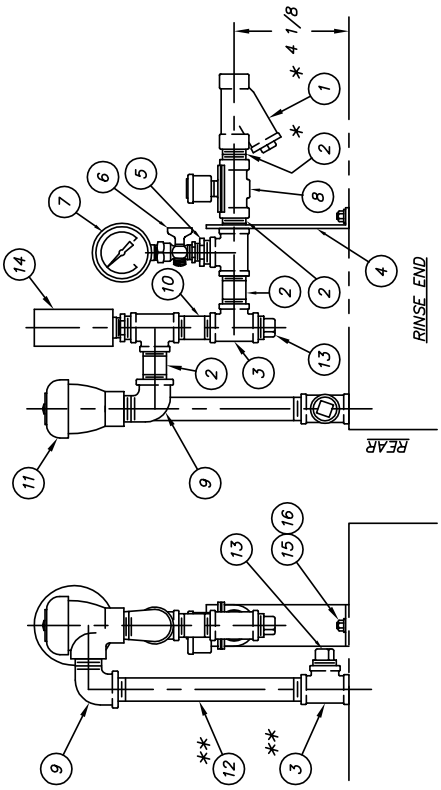
DRWN/DATE MAM 12.14.94

951–81C

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2483A	"Y" STRAINER 1/2 IPS	1
2	D314F-DC-00	CLOSE NIPPLE 1/2 IPS	4
3	D320F-D1D1D1	TEE 1/2 IPS	4
4	951-179	BRACKET - PIPING SUPPORT	1
5	D322F-D2-B1	HEX REDUCER 1/2 MIPS X 1/4 FIPS	2
6	D2497	PETCOCK 1/4 IPS	1
7	SK-1433	PRESSURE GAUGE 1/4 IPS	1
8	D2930	SOLENOID VALVE 1/2 IPS	1
9	D316F-D1-D2	90° STREET ELBOW 1/2 IPS	2
10	D314F-DS-16	NIPPLE 1/2 IPS x 2" LG.	1
11	D2241	VACUUM BREAKER 1/2 IPS	1
12	D314F-DS-56	NIPPLE 1/2 IPS x 7" LG.	1
13	D328F-D2A	PIPE PLUG 1/2 IPS	2
14	D2495	TEMPERATURE GAUGE 1/4 IPS	1
15	D309C-FE-3G	WELDSTUD #10-32 x 3/8" LG.	2
16	D312C-FE-5	LOCKNUT #10-32	2

NOTES:
- * NOT REQUIRED WHEN A BOOSTER IS SPECIFIED.
OMIT SOLENOID WHEN USING LOW PRESSURE BUILT-IN BOOSTER PER #1440-131
** FOR CHEMICAL SANITIZER, SEE #1169-44 OR REPLACE ITEMS MARKED ** WITH S/S

R.H. SHOWN - L.H. OPPOSITE



REV	ECN NO	DATE
C	2649	12.20.12
B	1981	6.2.03
A	1600	4.2.98

FILE: PARTS\951-166

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

TITLE: PIPING ASSEMBLY FINAL RINSE (OUTSIDE)

MATL: NOTED

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

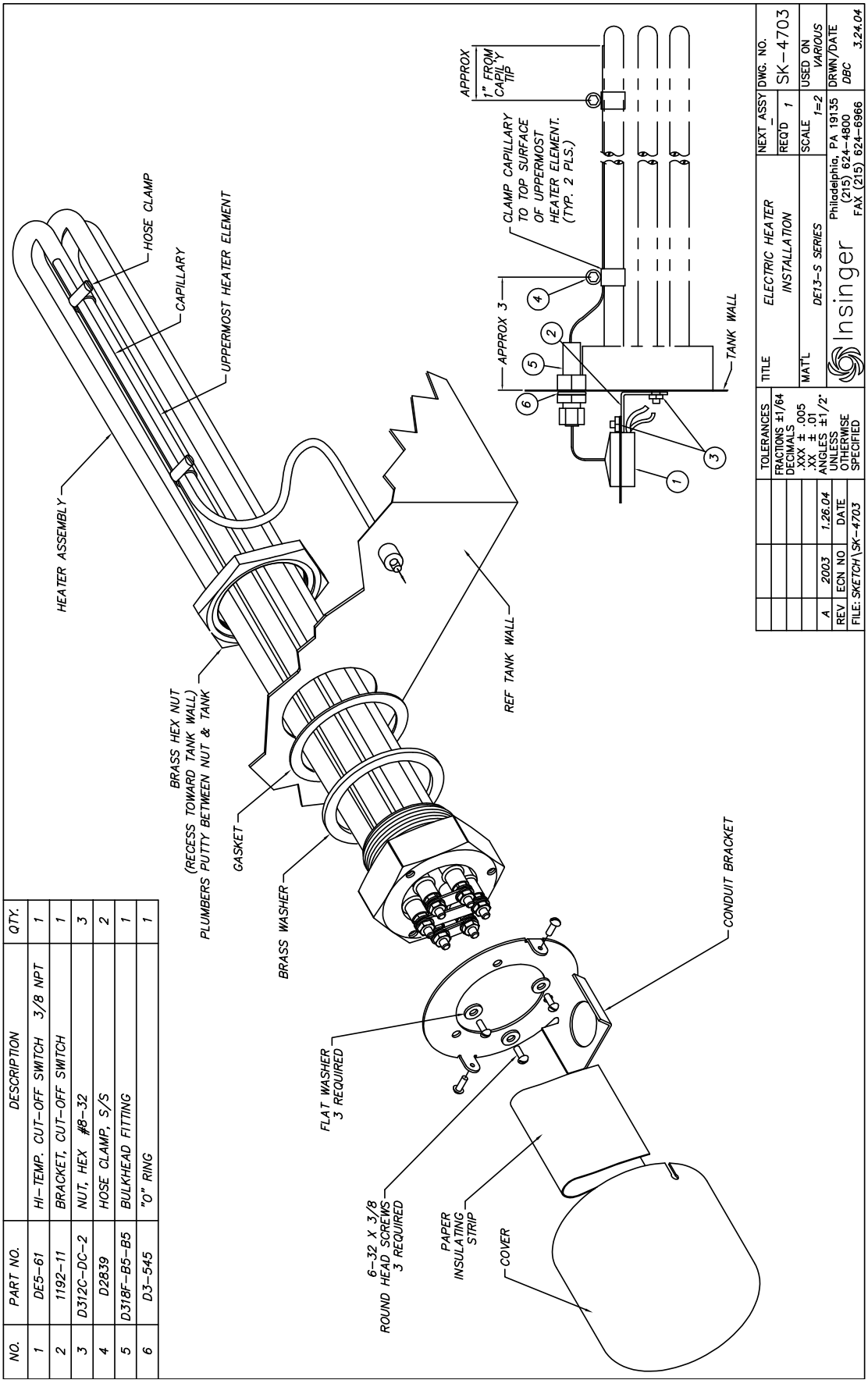
NEXT ASSY
REQ'D 1

SCALE 1=4

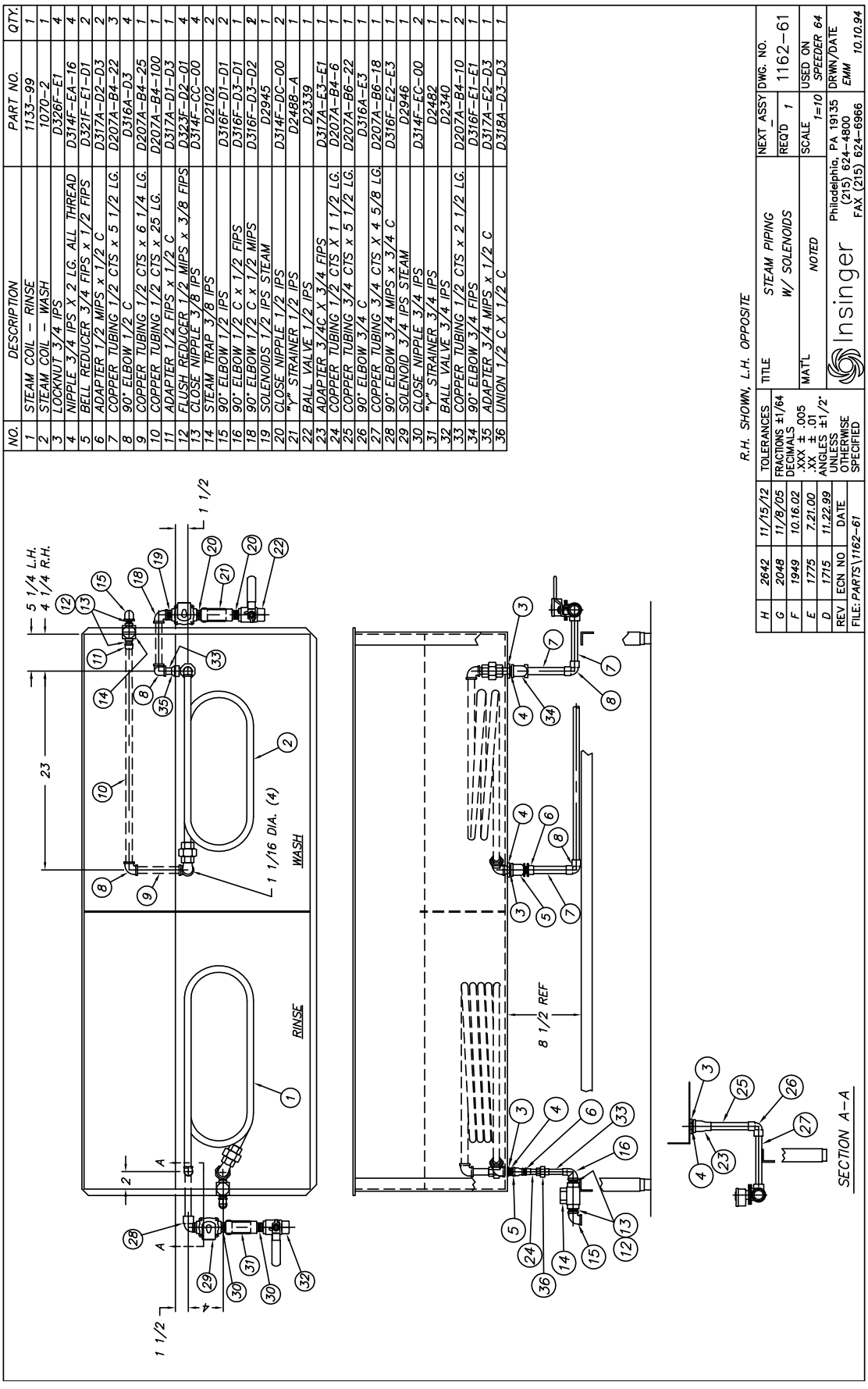
DWG. NO. 951-166

USED ON ADMIRAL 44/66

DRWN/DATE PG 12.13.96



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



NO.	DESCRIPTION	PART NO.	QTY.
1	STEAM COIL – RINSE	1133–99	1
2	STEAM COIL – WASH	1070–2	1
3	LOCKNUT 3/4 IPS	D326F–E1	4
4	NIPPLE 3/4 IPS X 2 LG. ALL THREAD	D314F–EA–16	4
5	BELL REDUCER 3/4 FIPS x 1/2 FIPS	D321F–E1–D1	2
6	ADAPTER 1/2 MIPS x 1/2 C	D317A–D2–D3	2
7	COPPER TUBING 1/2 CTS x 5 1/2 LG.	D207A–B4–22	3
8	90° ELBOW 1/2 C	D316A–D3	4
9	COPPER TUBING 1/2 CTS x 6 1/4 LG.	D207A–B4–25	1
10	COPPER TUBING 1/2 CTS x 25 LG.	D207A–B4–100	1
11	ADAPTER 1/2 FIPS x 1/2 C	D317A–D1–D3	1
12	FLUSH REDUCER 1/2 MIPS x 3/8 FIPS	D323F–D2–01	4
13	CLOSE NIPPLE 3/8 IPS	D314F–CC–00	4
14	STEAM TRAP 3/8 IPS	D2102	2
15	90° ELBOW 1/2 IPS	D316F–D1–D1	2
16	90° ELBOW 1/2 C x 1/2 FIPS	D316F–D3–D1	1
18	90° ELBOW 1/2 C x 1/2 MIPS	D316F–D3–D2	2
19	SOLENOIDS 1/2 IPS STEAM	D2945	1
20	CLOSE NIPPLE 1/2 IPS	D314F–DC–00	2
21	"Y" STRAINER 1/2 IPS	D2488–A	1
22	BALL VALVE 1/2 IPS	D2339	1
23	ADAPTER 3/4C X 3/4 FIPS	D317A–E3–E1	1
24	COPPER TUBING 1/2 CTS X 1 1/2 LG.	D207A–B4–6	1
25	COPPER TUBING 3/4 CTS x 5 1/2 LG.	D207A–B6–22	1
26	90° ELBOW 3/4 C	D316A–E3	1
27	COPPER TUBING 3/4 CTS X 4 5/8 LG.	D207A–B6–18	1
28	90° ELBOW 3/4 MIPS x 3/4 C	D316F–E2–E3	1
29	SOLENOID 3/4 IPS STEAM	D2946	1
30	CLOSE NIPPLE 3/4 IPS	D314F–EC–00	2
31	"Y" STRAINER 3/4 IPS	D2482	1
32	BALL VALVE 3/4 IPS	D2340	1
33	COPPER TUBING 1/2 CTS x 2 1/2 LG.	D207A–B4–10	2
34	90° ELBOW 3/4 FIPS	D316F–E1–E1	1
35	ADAPTER 3/4 MIPS x 1/2 C	D317A–E2–D3	1
36	UNION 1/2 C X 1/2 C	D318A–D3–D3	1

R.H. SHOWN, L.H. OPPOSITE

REV	ECN NO	DATE
H	2642	11/15/12
G	2048	11/8/05
F	1949	10.16.02
E	1775	7.21.00
D	1715	11.22.99

FILE: PARTS\1162–61

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

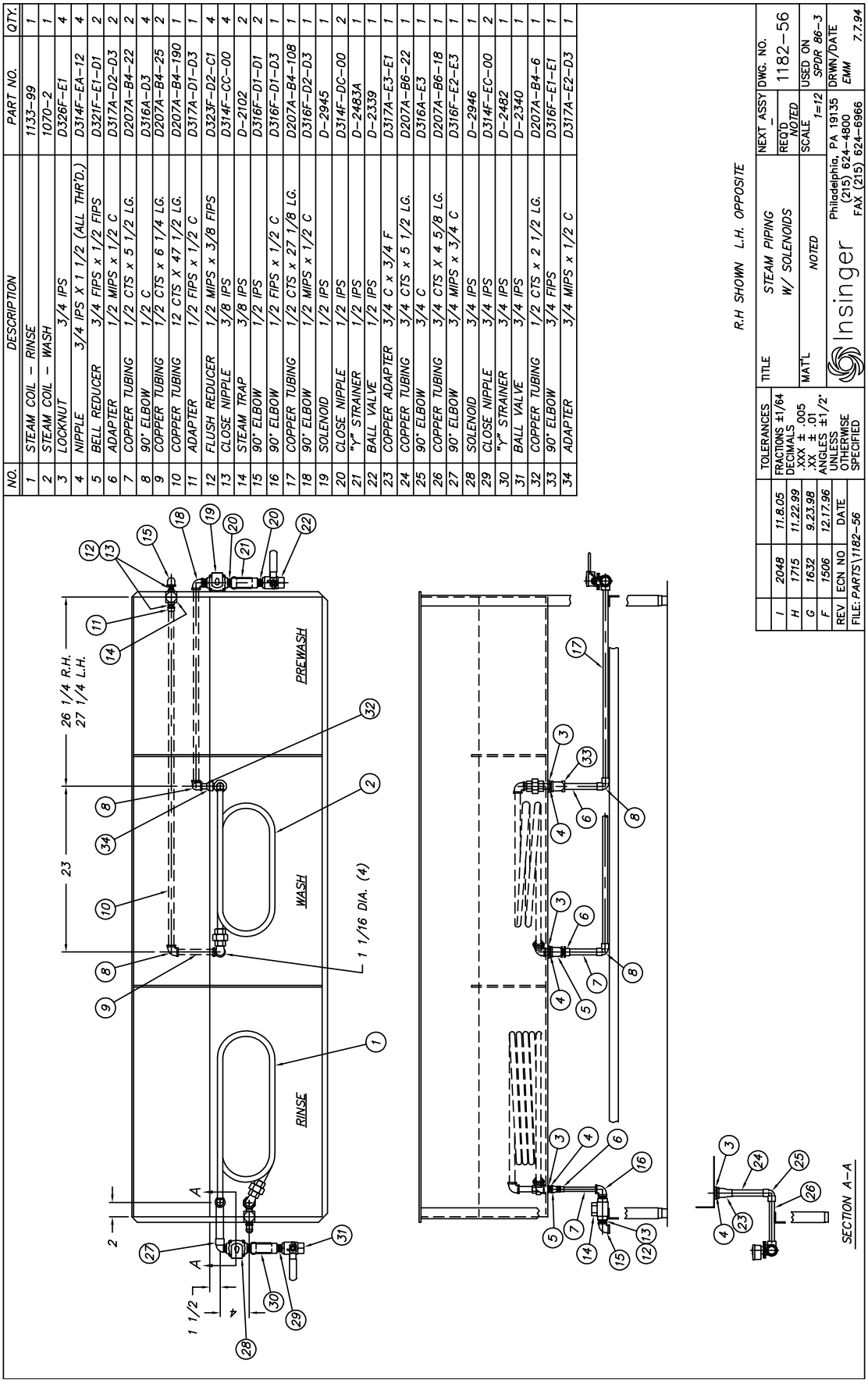
TITLE: STEAM PIPING W/ SOLENOIDS

MATL: NOTED

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966

NEXT ASSY: –
REQ'D: 1
SCALE: 1=10
DWG. NO.: 1162–61
USED ON: SPEEDER 64
DRWN/DATE: EMM 10.10.94

NO.	DESCRIPTION	PART NO.	QTY.
1	STEAM COIL – RINSE	1133–99	1
2	STEAM COIL – WASH	1070–2	1
3	LOCKNUT 3/4 IPS	D326F–E1	4
4	NIPPLE 3/4 IPS X 1 1/2 (ALL THR'D.)	D314F–EA–12	4
5	BELL REDUCER 3/4 FIPS x 1/2 FIPS	D321F–E1–D1	2
6	ADAPTER 1/2 MIPS x 1/2 C	D317A–D2–D3	2
7	COPPER TUBING 1/2 CTS x 5 1/2 LG.	D207A–B4–22	2
8	90° ELBOW 1/2 C	D316A–D3	4
9	COPPER TUBING 1/2 CTS x 6 1/4 LG.	D207A–B4–25	2
10	COPPER TUBING 12 CTS X 47 1/2 LG.	D207A–B4–190	1
11	ADAPTER 1/2 FIPS x 1/2 C	D317A–D1–D3	1
12	FLUSH REDUCER 1/2 MIPS x 3/8 FIPS	D323F–D2–C1	4
13	CLOSE NIPPLE 3/8 IPS	D314F–CC–00	4
14	STEAM TRAP 3/8 IPS	D–2102	2
15	90° ELBOW 1/2 IPS	D316F–D1–D1	2
16	90° ELBOW 1/2 FIPS x 1/2 C	D316F–D1–D3	1
17	COPPER TUBING 1/2 CTS x 27 1/8 LG.	D207A–B4–108	1
18	90° ELBOW 1/2 MIPS x 1/2 C	D316F–D2–D3	1
19	SOLENOID 1/2 IPS	D–2945	1
20	CLOSE NIPPLE 1/2 IPS	D314F–DC–00	2
21	"Y" STRAINER 1/2 IPS	D–2483A	1
22	BALL VALVE 1/2 IPS	D–2339	1
23	COPPER ADAPTER 3/4 C x 3/4 F	D317A–E3–E1	1
24	COPPER TUBING 3/4 CTS x 5 1/2 LG.	D207A–B6–22	1
25	90° ELBOW 3/4 C	D316A–E3	1
26	COPPER TUBING 3/4 CTS X 4 5/8 LG.	D207A–B6–18	1
27	90° ELBOW 3/4 MIPS x 3/4 C	D316F–E2–E3	1
28	SOLENOID 3/4 IPS	D–2946	1
29	CLOSE NIPPLE 3/4 IPS	D314F–EC–00	2
30	"Y" STRAINER 3/4 IPS	D–2482	1
31	BALL VALVE 3/4 IPS	D–2340	1
32	COPPER TUBING 1/2 CTS x 2 1/2 LG.	D207A–B4–6	1
33	90° ELBOW 3/4 FIPS	D316F–E1–E1	1
34	ADAPTER 3/4 MIPS x 1/2 C	D317A–E2–D3	1



REV	ECN NO	DATE
1	2048	11.8.05
H	1715	11.22.99
G	1632	9.23.98
F	1506	12.17.96

FILE: PARTS\1182–56

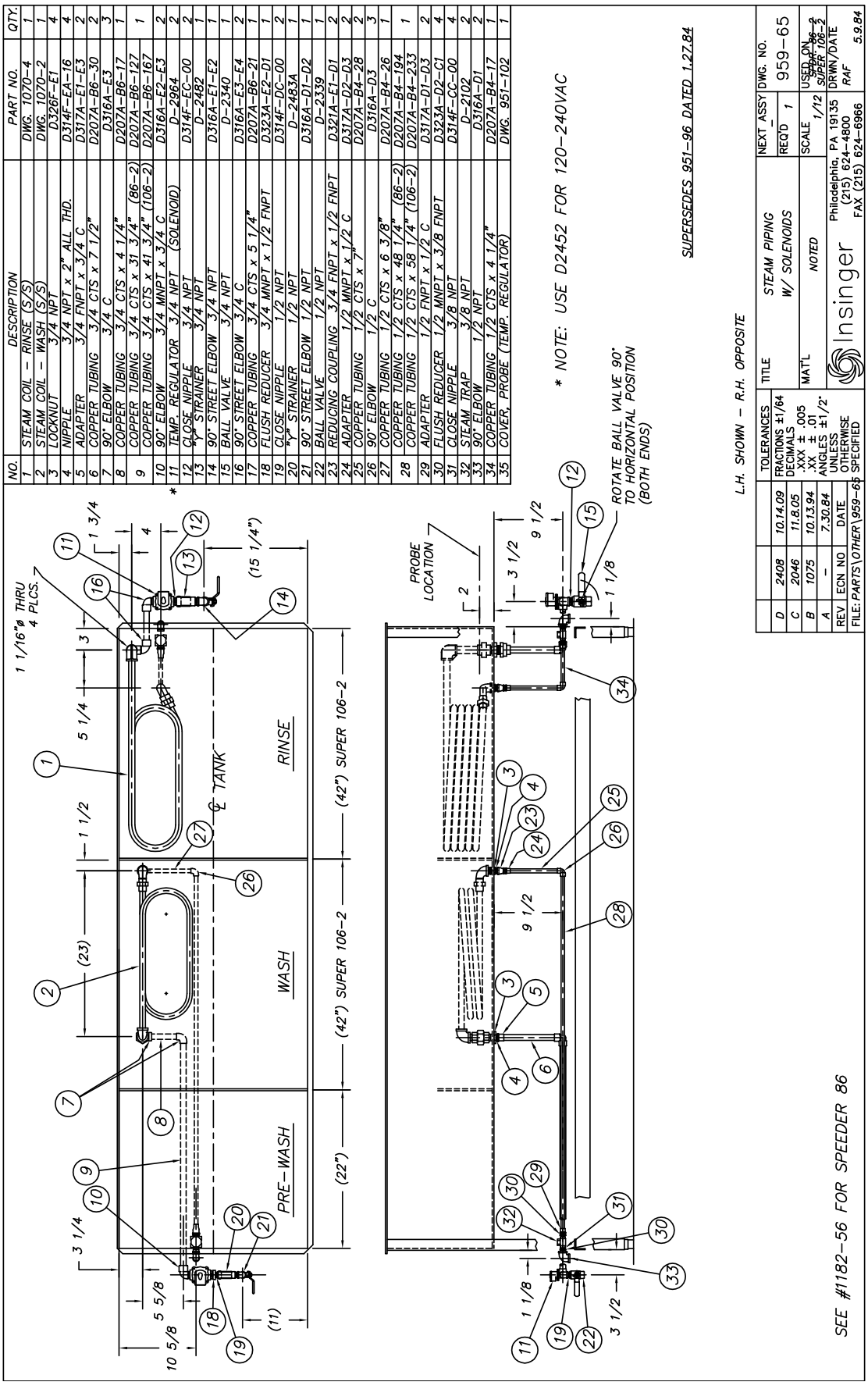
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

TITLE: STEAM PIPING W/ SOLENOIDS

MATL: NOTED

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966

NEXT ASSY: –
REQ'D: NOTED
SCALE: 1=12
USED ON: SPDR 86–3
DWG. NO.: 1182–56
DRWN/DATE: EMM 7.7.94

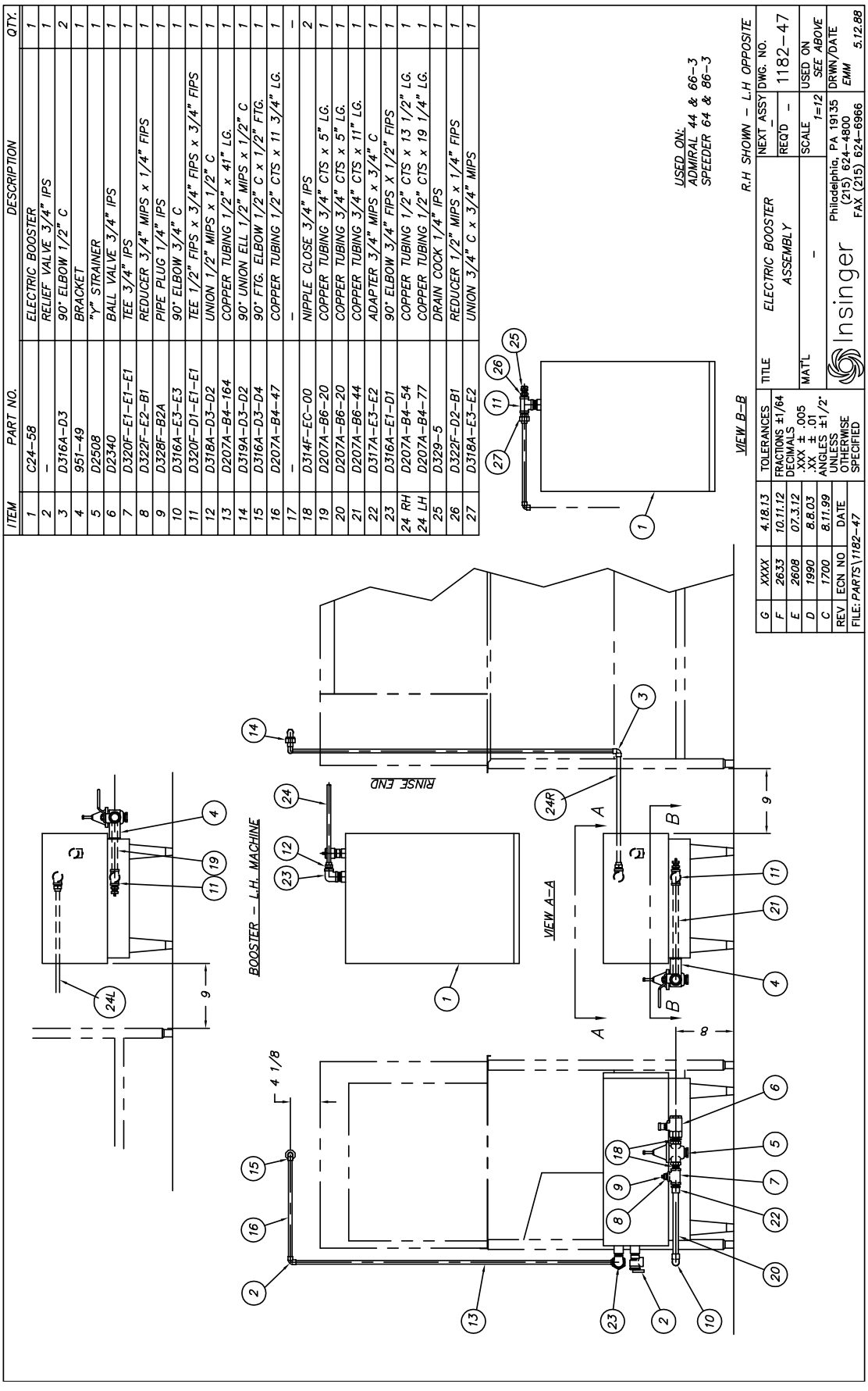


NO.	DESCRIPTION	PART NO.	QTY.
1	STEAM COIL - RINSE (S/S)	DWG. 1070-4	1
2	STEAM COIL - WASH (S/S)	DWG. 1070-2	1
3	LOCKNUT 3/4 NPT	D326F-E1	4
4	NIPPLE 3/4 NPT x 2" ALL THD.	D314F-EA-16	4
5	ADAPTER 3/4 FNPT x 3/4 C	D317A-E1-E3	2
6	COPPER TUBING 3/4 CTS x 7 1/2"	D207A-B6-30	2
7	90° ELBOW 3/4 C	D316A-E3	3
8	COPPER TUBING 3/4 CTS x 4 1/4"	D207A-B6-17	1
9	COPPER TUBING 3/4 CTS x 31 3/4" (86-2) / COPPER TUBING 3/4 CTS x 41 3/4" (106-2)	D207A-B6-127 / D207A-B6-167	1
10	90° ELBOW 3/4 MNPT x 3/4 C	D316A-E2-E3	2
11	TEMP. REGULATOR 3/4 NPT (SOLENOID)	D-2964	2
12	CLOSE NIPPLE 3/4 NPT	D314F-EC-00	2
13	Y STRAINER 3/4 NPT	D-2482	1
14	90° STREET ELBOW 3/4 NPT	D316A-E1-E2	1
15	BALL VALVE 3/4 NPT	D-2340	1
16	90° STREET ELBOW 3/4 C	D316A-E3-E4	2
17	COPPER TUBING 3/4 CTS x 5 1/4"	D207A-B6-21	1
18	FLUSH REDUCER 3/4 MNPT x 1/2 FNPT	D323A-E2-D1	1
19	CLOSE NIPPLE 1/2 NPT	D314F-DC-00	2
20	"Y" STRAINER 1/2 NPT	D-2483A	1
21	90° STREET ELBOW 1/2 NPT	D316A-D1-D2	1
22	BALL VALVE 1/2 NPT	D-2339	1
23	REDUCING COUPLING 3/4 FNPT x 1/2 FNPT	D321A-E1-D1	2
24	ADAPTER 1/2 MNPT x 1/2 C	D317A-D2-D3	2
25	COPPER TUBING 1/2 CTS x 7"	D207A-B4-28	2
26	90° ELBOW 1/2 C	D316A-D3	3
27	COPPER TUBING 1/2 CTS x 6 3/8"	D207A-B4-26	1
28	COPPER TUBING 1/2 CTS x 48 1/4" (86-2) / COPPER TUBING 1/2 CTS x 58 1/4" (106-2)	D207A-B4-194 / D207A-B4-233	1
29	ADAPTER 1/2 FNPT x 1/2 C	D317A-D1-D3	2
30	FLUSH REDUCER 1/2 MNPT x 3/8 FNPT	D323A-D2-C1	4
31	CLOSE NIPPLE 3/8 NPT	D314F-CC-00	4
32	STEAM TRAP 3/8 NPT	D-2102	2
33	90° ELBOW 1/2 NPT	D316A-D1	2
34	COPPER TUBING 1/2 CTS x 4 1/4"	D207A-B4-17	1
35	COVER, PROBE (TEMP. REGULATOR)	DWG. 951-102	1

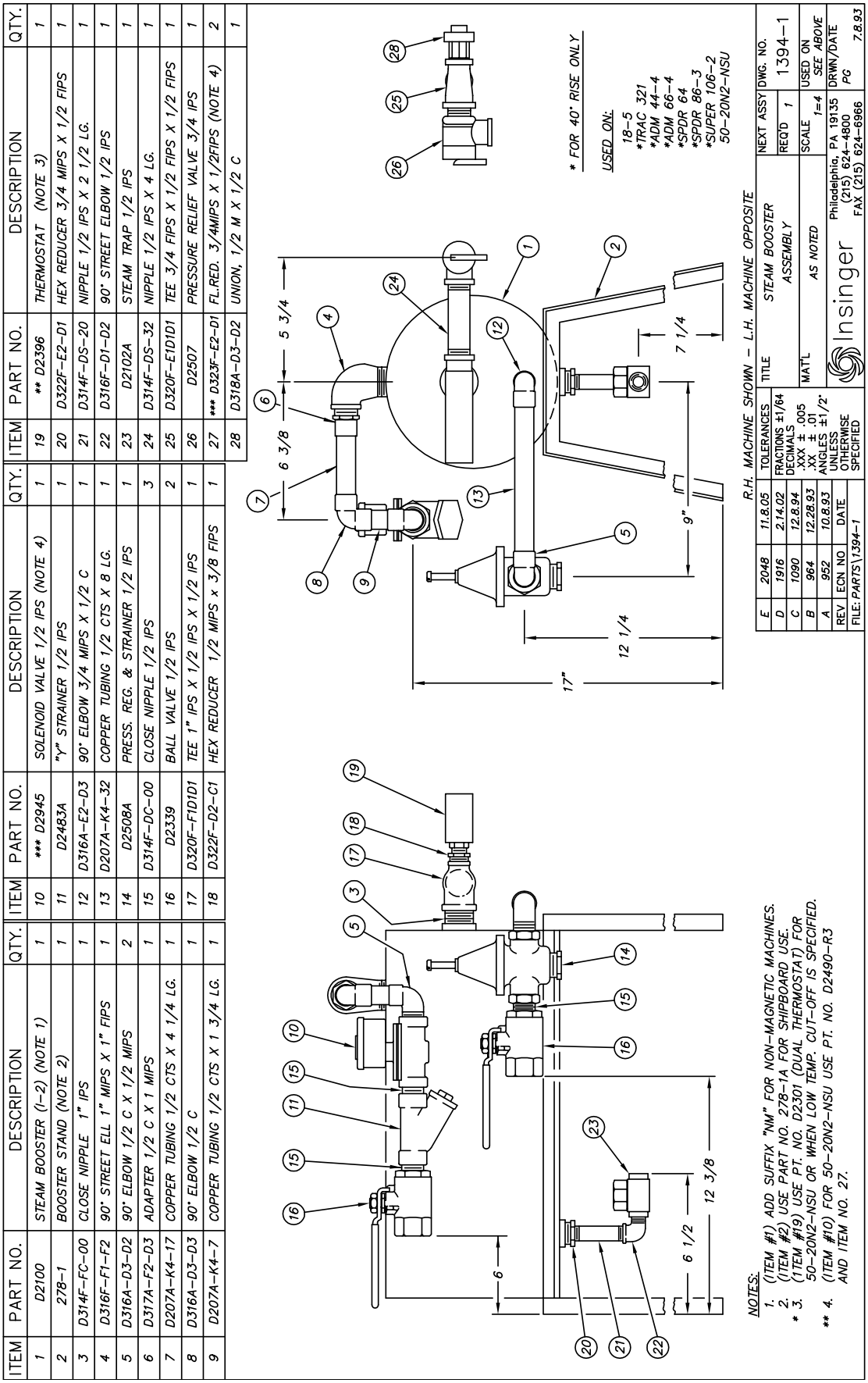
REV	ECN NO	DATE
D	2408	10.14.09
C	2046	11.8.05
B	1075	10.13.94
A	-	7.30.84

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

MATL


ITEM | PART NO. | DESCRIPTION | QTY.
1 | C24-58 | ELECTRIC BOOSTER | 1
2 | – | RELIEF VALVE 3/4" IPS | 1
3 | D316A-D3 | 90° ELBOW 1/2" C | 2
4 | 951-49 | BRACKET | 1
5 | D2508 | "Y" STRAINER | 1
6 | D2340 | BALL VALVE 3/4" IPS | 1
7 | D320F-E1-E1-E1 | TEE 3/4" IPS | 1
8 | D322F-E2-B1 | REDUCER 3/4" MIPS x 1/4" FIPS | 1
9 | D328F-B2A | PIPE PLUG 1/4" IPS | 1
10 | D316A-E3-E3 | 90° ELBOW 3/4" C | 1
11 | D320F-D1-E1-E1 | TEE 1/2" FIPS x 3/4" FIPS x 3/4" FIPS | 1
12 | D318A-D3-D2 | UNION 1/2" MIPS x 1/2" C | 1
13 | D207A-B4-164 | COPPER TUBING 1/2" x 41" LG. | 1
14 | D319A-D3-D2 | 90° UNION ELL 1/2" MIPS x 1/2" C | 1
15 | D316A-D3-D4 | 90° FTG. ELBOW 1/2" C x 1/2" FTG. | 1
16 | D207A-B4-47 | COPPER TUBING 1/2" CTS x 11 3/4" LG. | 1
17 | – | – | –
18 | D314F-EC-00 | NIPPLE CLOSE 3/4" IPS | 2
19 | D207A-B6-20 | COPPER TUBING 3/4" CTS x 5" LG. | 1
20 | D207A-B6-20 | COPPER TUBING 3/4" CTS x 5" LG. | 1
21 | D207A-B6-44 | COPPER TUBING 3/4" CTS x 11" LG. | 1
22 | D317A-E3-E2 | ADAPTER 3/4" MIPS x 3/4" C | 1
23 | D316A-E1-D1 | 90° ELBOW 3/4" FIPS X 1/2" FIPS | 1
24 RH | D207A-B4-54 | COPPER TUBING 1/2" CTS x 13 1/2" LG. | 1
24 LH | D207A-B4-77 | COPPER TUBING 1/2" CTS x 19 1/4" LG. | 1
25 | D329-5 | DRAIN COCK 1/4" IPS | 1
26 | D322F-D2-B1 | REDUCER 1/2" MIPS x 1/4" FIPS | 1
27 | D318A-E3-E2 | UNION 3/4" C x 3/4" MIPS | 1
USED ON:
ADMIRAL 44 & 66-3
SPEEDER 64 & 86-3
R.H SHOWN – L.H OPPOSITE
VIEW B-B
BOOSTER – L.H. MACHINE
RINSE END
VIEW A-A
4 1/8
9
8
G XXXX 4.18.13
F 2633 10.11.12
E 2608 07.3.12
D 1990 8.8.03
C 1700 8.11.99
REV ECN NO DATE
FILE: PARTS\1182-47
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED
TITLE
ELECTRIC BOOSTER ASSEMBLY
MATL –
NEXT ASSY –
REQ'D –
SCALE 1=12
DWG. NO. 1182-47
USED ON SEE ABOVE
DRWN/DATE EMM 5.12.88
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2100	STEAM BOOSTER (1–2) (NOTE 1)	1
2	278–1	BOOSTER STAND (NOTE 2)	1
3	D314F–FC–00	CLOSE NIPPLE 1" IPS	1
4	D316F–F1–F2	90° STREET ELL 1" MIPS X 1" FIPS	1
5	D316A–D3–D2	90° ELBOW 1/2 C X 1/2 MIPS	2
6	D317A–F2–D3	ADAPTER 1/2 C X 1 MIPS	1
7	D207A–K4–17	COPPER TUBING 1/2 CTS X 4 1/4 LG.	1
8	D316A–D3–D3	90° ELBOW 1/2 C	1
9	D207A–K4–7	COPPER TUBING 1/2 CTS X 1 3/4 LG.	1
10	*** D2945	SOLENOID VALVE 1/2 IPS (NOTE 4)	1
11	D2483A	"Y" STRAINER 1/2 IPS	1
12	D316A–E2–D3	90° ELBOW 3/4 MIPS X 1/2 C	1
13	D207A–K4–32	COPPER TUBING 1/2 CTS X 8 LG.	1
14	D2508A	PRESS. REG. & STRAINER 1/2 IPS	1
15	D314F–DC–00	CLOSE NIPPLE 1/2 IPS	3
16	D2339	BALL VALVE 1/2 IPS	2
17	D320F–F1D1D1	TEE 1" IPS X 1/2 IPS X 1/2 IPS	1
18	D322F–D2–C1	HEX REDUCER 1/2 MIPS x 3/8 FIPS	1
19	** D2396	THERMOSTAT (NOTE 3)	1
20	D322F–E2–D1	HEX REDUCER 3/4 MIPS X 1/2 FIPS	1
21	D314F–DS–20	NIPPLE 1/2 IPS X 2 1/2 LG.	1
22	D316F–D1–D2	90° STREET ELBOW 1/2 IPS	1
23	D2102A	STEAM TRAP 1/2 IPS	1
24	D314F–DS–32	NIPPLE 1/2 IPS X 4 LG.	1
25	D320F–E1D1D1	TEE 3/4 FIPS X 1/2 FIPS X 1/2 FIPS	1
26	D2507	PRESSURE RELIEF VALVE 3/4 IPS	1
27	*** D323F–E2–D1	FL.RED. 3/4MIPS X 1/2FIPS (NOTE 4)	2
28	D318A–D3–D2	UNION, 1/2 M X 1/2 C	1



NOTES:
1. (ITEM #1) ADD SUFFIX "NM" FOR NON–MAGNETIC MACHINES.
2. (ITEM #2) USE PART NO. 278–1A FOR SHIPBOARD USE.
* 3. (ITEM #19) USE PT. NO. D2301 (DUAL THERMOSTAT) FOR 50–20N2–NSU OR WHEN LOW TEMP. CUT–OFF IS SPECIFIED.
** 4. (ITEM #10) FOR 50–20N2–NSU USE PT. NO. D2490–R3 AND ITEM NO. 27.

REV	ECN NO.	DATE
E	2048	11.8.05
D	1916	2.14.02
C	1090	12.8.94
B	964	12.28.93
A	952	10.8.93

FILE: PARTS\1394–1

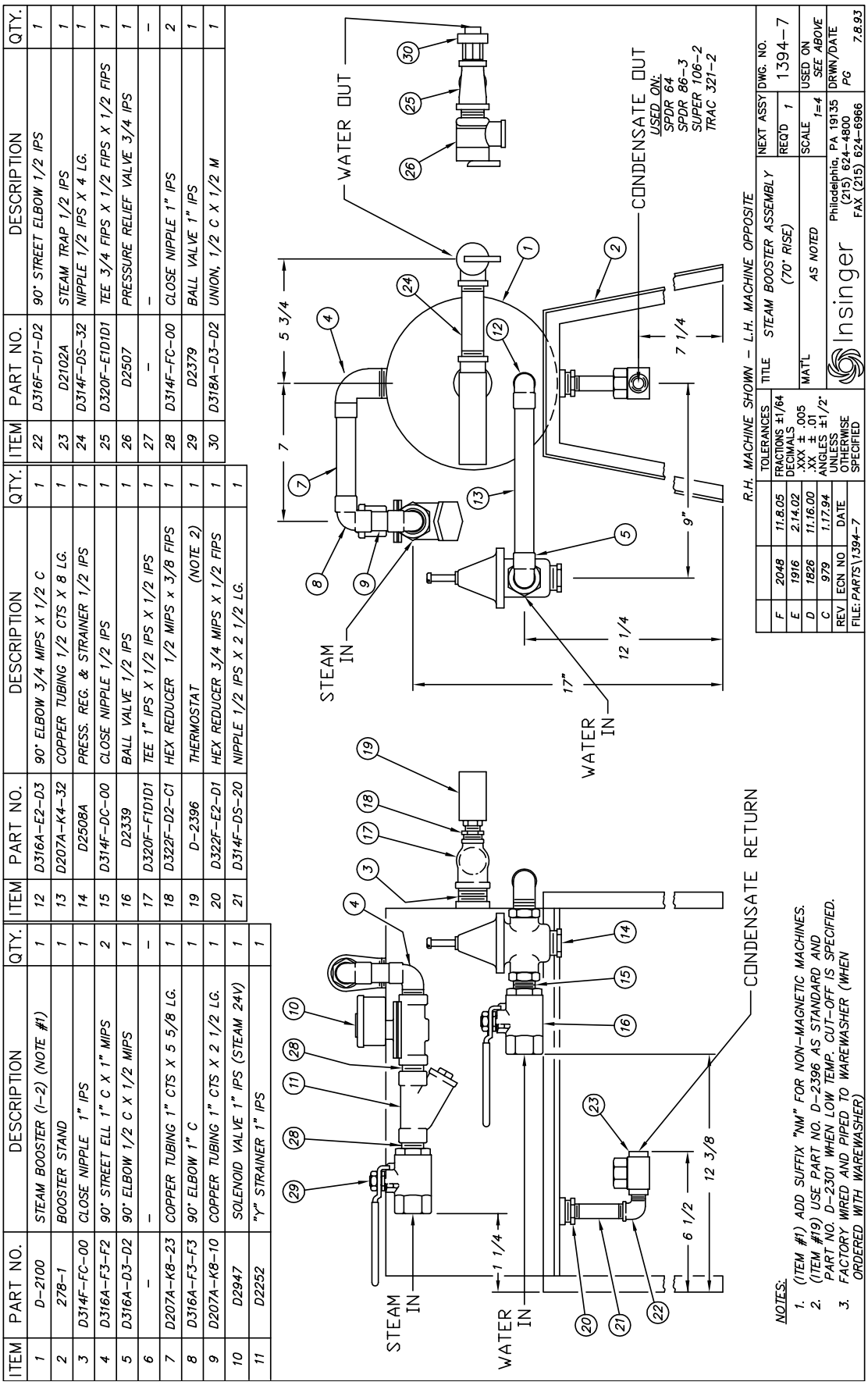
TOLERANCES: FRACTIONS ±1/64, DECIMALS .XXX ± .005, .XX ± .01, ANGLES ±1/2°, UNLESS OTHERWISE SPECIFIED

TITLE: STEAM BOOSTER ASSEMBLY

MATL: AS NOTED

Insinger Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966

NEXT ASSY | DWG. NO. 1394–1
REQ'D 1
SCALE 1=4 | USED ON SEE ABOVE
DRWN/DATE PG 7.8.93



ITEM	PART NO.	DESCRIPTION	QTY.
1	D-2100	STEAM BOOSTER (1-2) (NOTE #1)	1
2	278-1	BOOSTER STAND	1
3	D314F-FC-00	CLOSE NIPPLE 1" IPS	1
4	D316A-F3-F2	90° STREET ELL 1" C X 1" MIPS	2
5	D316A-D3-02	90° ELBOW 1/2 C X 1/2 MIPS	1
6	–	–	–
7	D207A-K8-23	COPPER TUBING 1" CTS X 5 5/8 LG.	1
8	D316A-F3-F3	90° ELBOW 1" C	1
9	D207A-K8-10	COPPER TUBING 1" CTS X 2 1/2 LG.	1
10	D2947	SOLENOID VALVE 1" IPS (STEAM 24V)	1
11	D2252	"Y" STRAINER 1" IPS	1
12	D316A-E2-D3	90° ELBOW 3/4 MIPS X 1/2 C	1
13	D207A-K4-32	COPPER TUBING 1/2 CTS X 8 LG.	1
14	D2508A	PRESS. REG. & STRAINER 1/2 IPS	1
15	D314F-DC-00	CLOSE NIPPLE 1/2 IPS	1
16	D2339	BALL VALVE 1/2 IPS	1
17	D320F-F1D1D1	TEE 1" IPS X 1/2 IPS X 1/2 IPS	1
18	D322F-D2-C1	HEX REDUCER 1/2 MIPS x 3/8 FIPS	1
19	D-2396	THERMOSTAT (NOTE 2)	1
20	D322F-E2-D1	HEX REDUCER 3/4 MIPS X 1/2 FIPS	1
21	D314F-DS-20	NIPPLE 1/2 IPS X 2 1/2 LG.	1
22	D316F-D1-D2	90° STREET ELBOW 1/2 IPS	1
23	D2102A	STEAM TRAP 1/2 IPS	1
24	D314F-DS-32	NIPPLE 1/2 IPS X 4 LG.	1
25	D320F-E1D1D1	TEE 3/4 FIPS X 1/2 FIPS X 1/2 FIPS	1
26	D2507	PRESSURE RELIEF VALVE 3/4 IPS	1
27	–	–	–
28	D314F-FC-00	CLOSE NIPPLE 1" IPS	2
29	D2379	BALL VALVE 1" IPS	1
30	D318A-D3-D2	UNION, 1/2 C X 1/2 M	1

REV	ECN NO	DATE
F	2048	11.8.05
E	1916	2.14.02
D	1826	11.16.00
C	979	1.17.94

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

TITLE
MATL

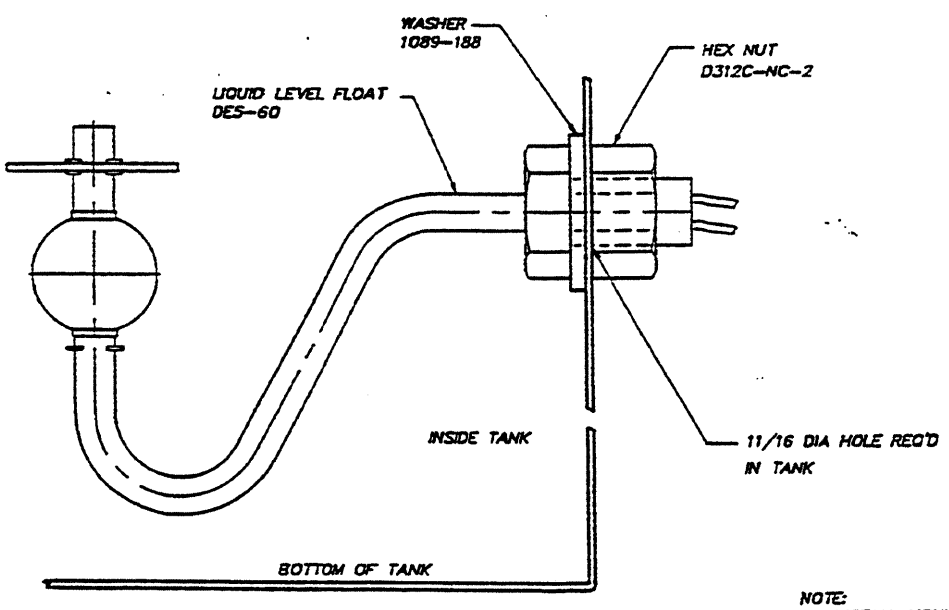
NEXT ASSY
REQ'D 1
SCALE 1=4

NOTES:
1. (ITEM #1) ADD SUFFIX "NM" FOR NON-MAGNETIC MACHINES.
2. (ITEM #19) USE PART NO. D-2396 AS STANDARD AND PART NO. D-2301 WHEN LOW TEMP. CUT-OFF IS SPECIFIED.
3. FACTORY WIRED AND PIPED TO WAREWASHER (WHEN ORDERED WITH WAREWASHER)

In order to insure the proper operation of your INSINGER dishwasher, it is necessary that the LIQUID LEVEL FLOAT be wiped free of any residue and/or moisture at each cleaning. This should be done, preferably, after each use of the machine, or, at a minimum, once each day.

The LIQUID LEVEL FLOAT is located below the scrap screens in those tanks which contain water heating devices (coils, steam injectors, or electric immersion heaters) and pump inlet strainers. They are usually located, in rackless and rack conveyor style machines, on the inside tank wall, at approximately water level, opposite and parallel to the inspection doors. In the door, stationary rack, type machines, the LIQUID LEVEL FLOAT may be found beneath the scrap screen.

Below is a depiction of the LIQUID LEVEL FLOAT and the surfaces which must be wiped clean.



NOTE:
INSTALL LIQUID LEVEL FLOAT
IN POSITION SHOWN.

			TOLERANCES	TITLE	LIQUID LEVEL FLOAT	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64		TYPICAL INSTALLATION	REQ'D	1089-189
			DECIMALS .XXX ± .005 .XX ± .01	MATL	AS NOTED	SCALE FULL	USED ON ALL MODELS
A	883	5.20.93	ANGLES ±1/2°	Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE PC 7.2.92
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED				
FILE: PARTS\1089-189							

Insinger
Machine Company

THE FOLLOWING PAGES PERTAIN TO
PARTS FOR GAS HEATED MACHINES

INFRA-RED GAS HEAT WITH HOT SURFACE IGNITION

This dishwasher is heated by a high efficiency infra-red burner using natural gas or propane (L.P. gas). A fully electronic Hot Surface Ignition (H.S.I.) system with internal flame sensor and purge timer is used - no manual pilot. The thru-tank immersion heat tube and insulated multiple pass exhaust manifold optimizes heat transfer to the wash tank. The wash temperature board thermostat controls burner operation, with low water and high temperature cut-out switches as back-up. Indicator lights for blower on and burner on are mounted on the front of the burner box.

SERVICE CHECKS (SEE SK-3695-1 SEQUENCE OF OPERATIONS)

Symptom	Cause/Cure
1) Dead.	A) No 24 Volt Input. B) Check system wiring. C) Check thermostat, transformer, high temp limit switch, circuit breaker, etc.
2) Hot surface element heats up, but zero voltage at valve during trial-for-ignition.	A) Check wiring between valve and module. B) Check power to valve.
3) Hot surface element heats. 24 Volts to valve. Flame established, but does not stay on.	A) Check ground in system 24 Volt supply. B) Hot surface element improperly located. C) Check all wiring connections. D) Burner out of adjustment.
4) Hot surface element heats. 24 Volts to valve. System fails to ignite.	A) Gas supply off. B) Check gas valve. C) Burner out of adjustment (orifice plugged). D) Hot surface element incorrectly located.
5) Hot surface element does not heat, but unit cycles.	A) Check for broken or cracked hot surface element.

(SEE GENERAL ARRANGEMENT DWG. FOR COMPONENT LOCATIONS)

Draft Booster Blower & Fan Switch -

The fan switch is located at the rear of the fan motor. Contacts are normally open - closing on motor rotation. The motor and switch should be replaced as a complete unit (D2784).

High Temperature Cut Off -

Contacts are normally closed - opening at 200°F. Manual reset by pushing black pin in the center of the switch after the temperature drops below 200°F. This can be done without removing the burner box cover through a hole above the indicator lights.

Hot Surface Ignition Module -

24 VAC, 30 second prepurge, 4 second heat-up time, 4 second trial for ignition. Loss of flame will result in one re-try for ignition. This unit cannot be repaired - it must be replaced. Flame current .75 micro amp minimum.

Gas Valve -

This valve is equipped with a redundant solenoid valve that controls gas flow to the pilot and main burners, a relay operated main valve that controls gas flow to the main burner, a pressure regulator to maintain a constant outlet pressure, and a two-position gas cock knob for manual gas shut-off. Both redundant and main valves open together due to the jumper wire installed between terminals M-1 and P-3.

The gas outlet pressure is stamped on a metal nameplate inside the burner box. This should be checked using a manometer at the pressure tap on the outlet of the valve. Remove 1/8" pipe plug with an allen wrench (not brass hex fitting) to install test fitting.

The gas supply to the valve can be checked using a manometer at the pressure tap on the inlet of the valve. Shut off gas downstream before removing 1/8" pipe plug to install test fitting.

Hot Surface Element (Ignitor) -

This consists of a silicon carbide heater blade cemented into a ceramic holder with a metal mounting plate mechanically attached. The ceramic extends 3/4" past the mounting plate into the burner. The wide surface of the blade must face the burner surface.

To check operation, shut off gas supply. The glow of

the ignitor during the heat-up and trial-for-ignition

Hot Surface Element (Ignitor) continued -

periods can be seen through the viewport (look up from ground level). If no glow can be seen, a cracked blade or bad blade to wire joint is possible. Disconnect wire leads and measure resistance at room temperature (1 to 6 ohms).

Main Orifice -

This is installed inside a special holder fitting at the 3/8" NPT boss on the burner elbow. The orifice diameter is stamped on a metal nameplate inside the burner box and on the orifice itself.

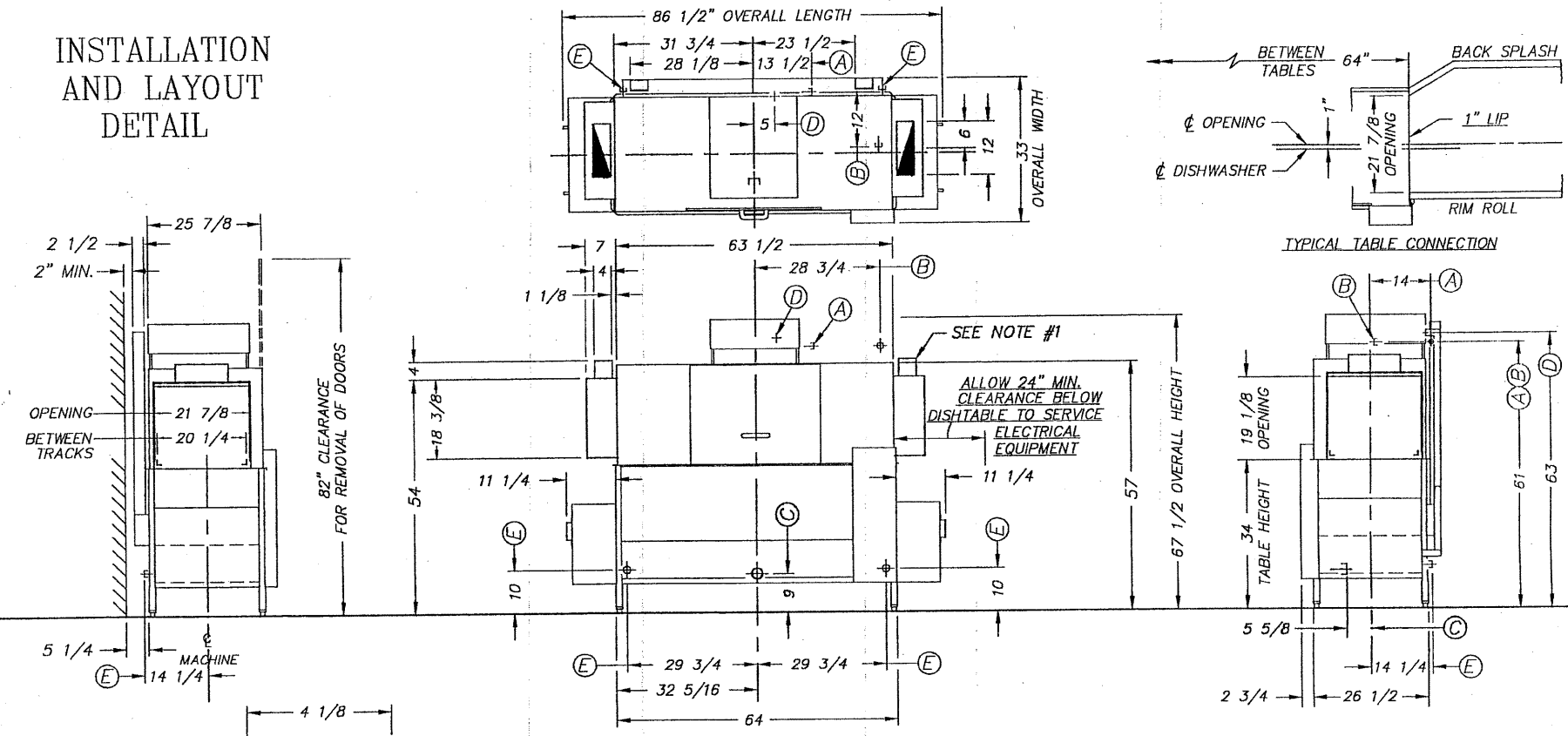
Infra-Red Burner -

This consists of a ceramic cylinder attached to a steel elbow. Burner operation can be monitored through the viewport and the window in the burner box cover. Upon starting, a blue flame is visible changing to a dull orange glow over the complete burner surface after warm-up. Continued operation with a blue flame indicates burner out of adjustment. Proper adjustment of the air shutter should be made using a combustion analyzer.

Excess Air - burner may be difficult or impossible to light; will not generate sufficient heat.

Insufficient Air - burner may produce hazardous levels of carbon monoxide gas.

INSTALLATION AND LAYOUT DETAIL



INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL – 140° F	3/4 FIPS
B	HOT WATER TO FINAL RINSE – 180° F	1/2 FIPS
C	DRAIN CONNECTION	2 FIPS
D	ELECTRICAL CONNECTION – MOTORS	2 1/8 HP
E	GAS CONNECTIONS (100,000 BTUH TOTAL)	1/2 MIPS

NOTES:

1. DO NOT INSTALL MACHINE CLOSER THAN 2" TO A VERTICAL COMBUSTIBLE SURFACE.
2. (2) 4" x 12" VENTS WITH ADJUSTABLE DAMPERS FURNISHED WHEN SPECIFIED.
3. THIS MACHINE SHOULD BE INSTALLED UNDER AN EXHAUST HOOD UNLESS OTHERWISE SPECIFIED BY LOCAL CODE.
4. THE EXHAUST STACK SHOULD NOT BE DIRECTLY CONNECTED TO ANY UNPOWERED EXHAUST DUCT WITHOUT USING A DOWNDRAFT DIVERTER.

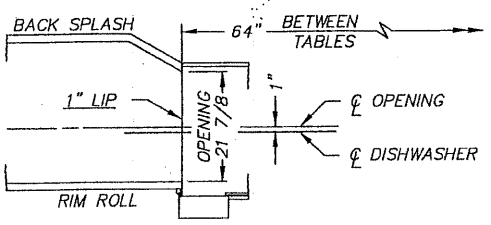
SPEEDER 64 GAS

DOUBLE TANK CONVEYOR TYPE DISHWASHING MACHINE

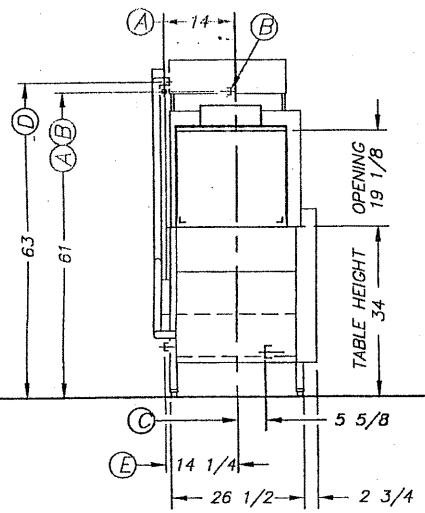
Insinger
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

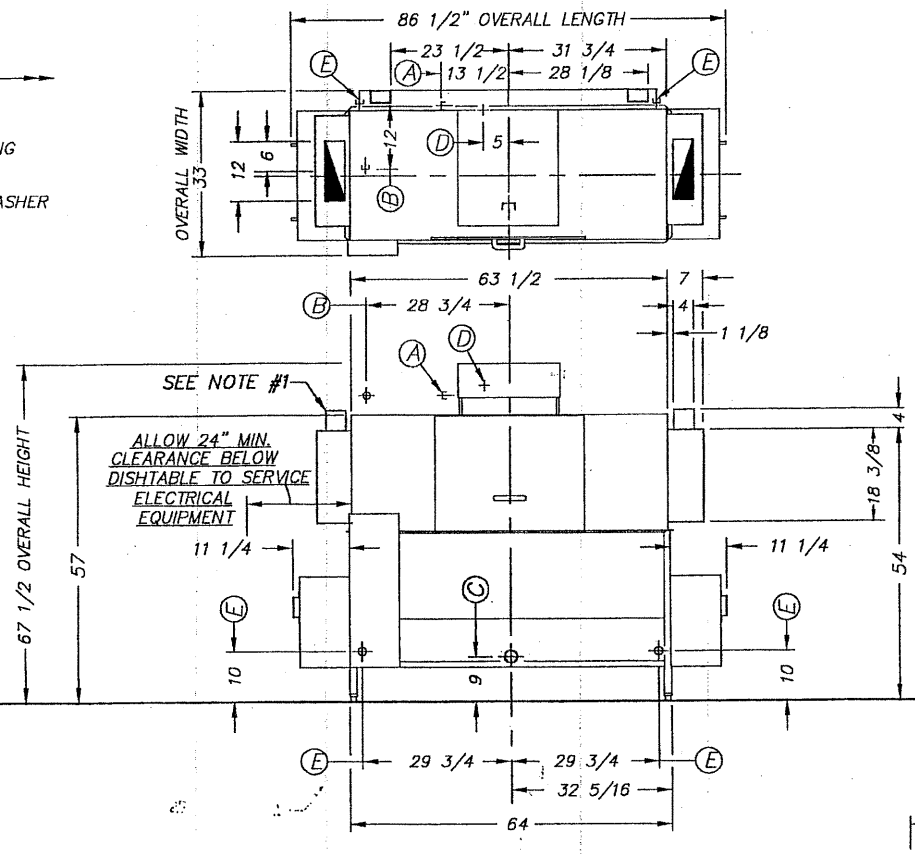
DRWN: EMM 12.29.94	SCALE	DWG. NO.	REV
REV: CES 12.26.01	1/2" = 1'	SP-64GL	D
FILE: STD/SP-64GL			

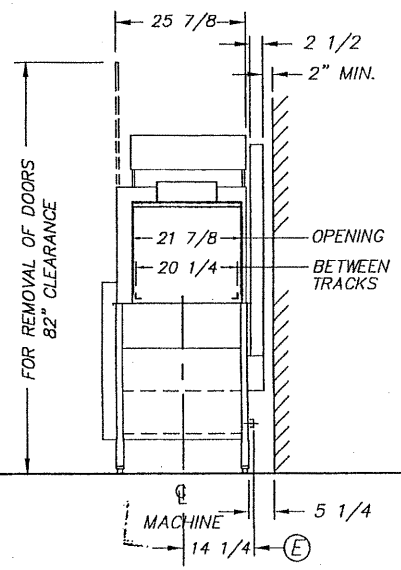
INSTALLATION AND LAYOUT DETAIL

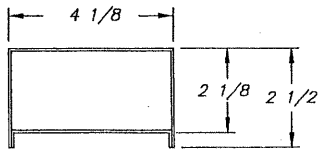


TYPICAL TABLE CONNECTION









VIEW A
SCALE: 1=8

RIGHT TO LEFT FEED

NOTES:
1. DO NOT INSTALL MACHINE CLOSER THAN 2" TO A VERTICAL COMBUSTIBLE SURFACE.
2. (2) 4" x 12" VENTS WITH ADJUSTABLE DAMPERS FURNISHED WHEN SPECIFIED.
3. THIS MACHINE SHOULD BE INSTALLED UNDER AN EXHAUST HOOD UNLESS OTHERWISE SPECIFIED BY LOCAL CODE.
4. THE EXHAUST STACK SHOULD NOT BE DIRECTLY CONNECTED TO ANY UNPOWERED EXHAUST DUCT WITHOUT USING A DOWNDRAFT DIVERTER.

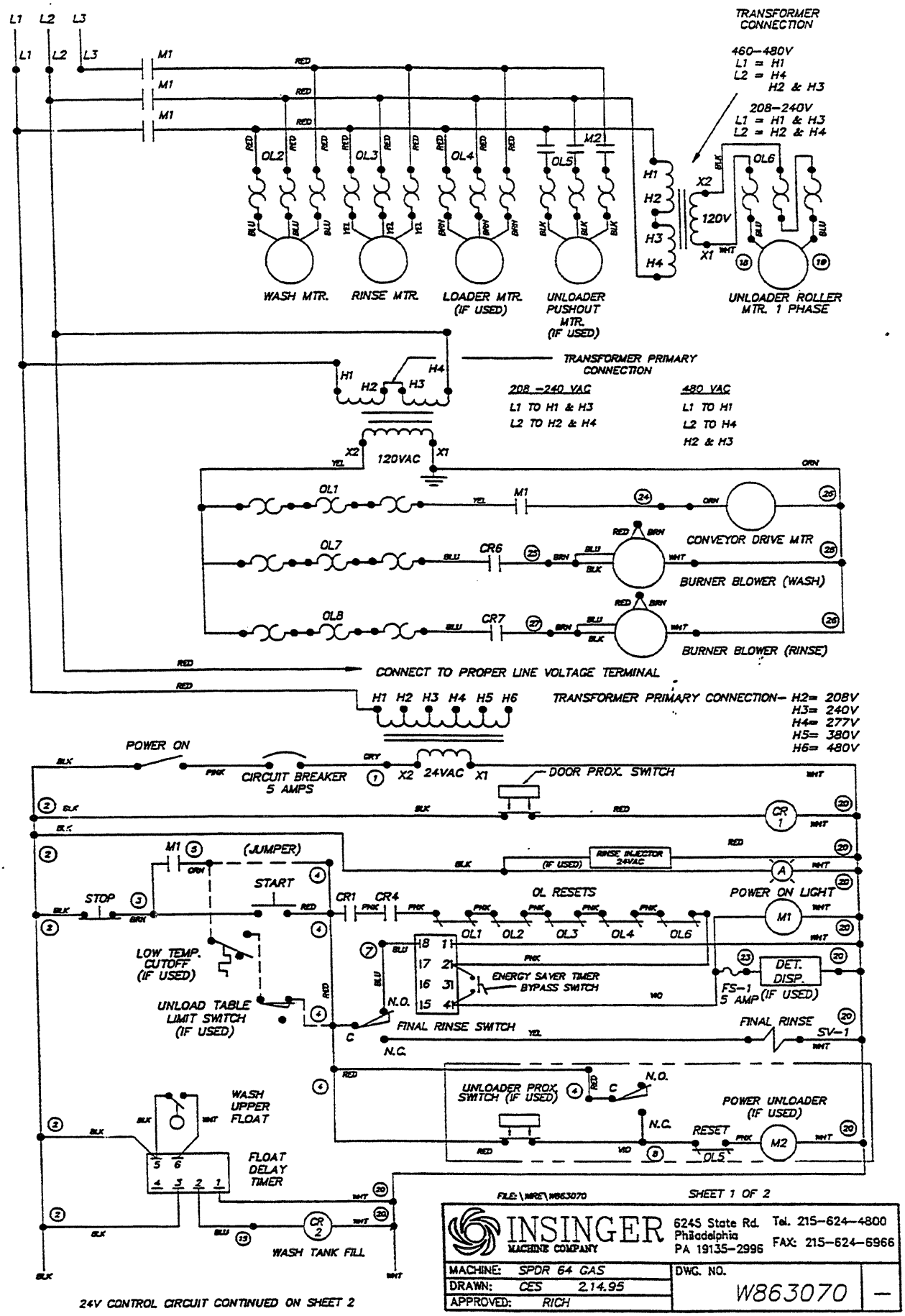
INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL – 140° F	3/4 FIPS
B	HOT WATER TO FINAL RINSE – 180° F	1/2 FIPS
C	DRAIN CONNECTION	2 FIPS
D	ELECTRICAL SERVICE – MOTORS	2 1/8 HP
E	GAS CONNECTIONS (100,000 BTUH TOTAL)	1/2 MIPS

SPEEDER 64 GAS

DOUBLE TANK CONVEYOR TYPE DISHWASHING MACHINE

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

DRWN: EMM 3.16.95	SCALE	DWG. NO.	REV
REV: CES 12.26.01	1/2" = 1'	SP-64GR	D
FILE: STD/SP-64GR			

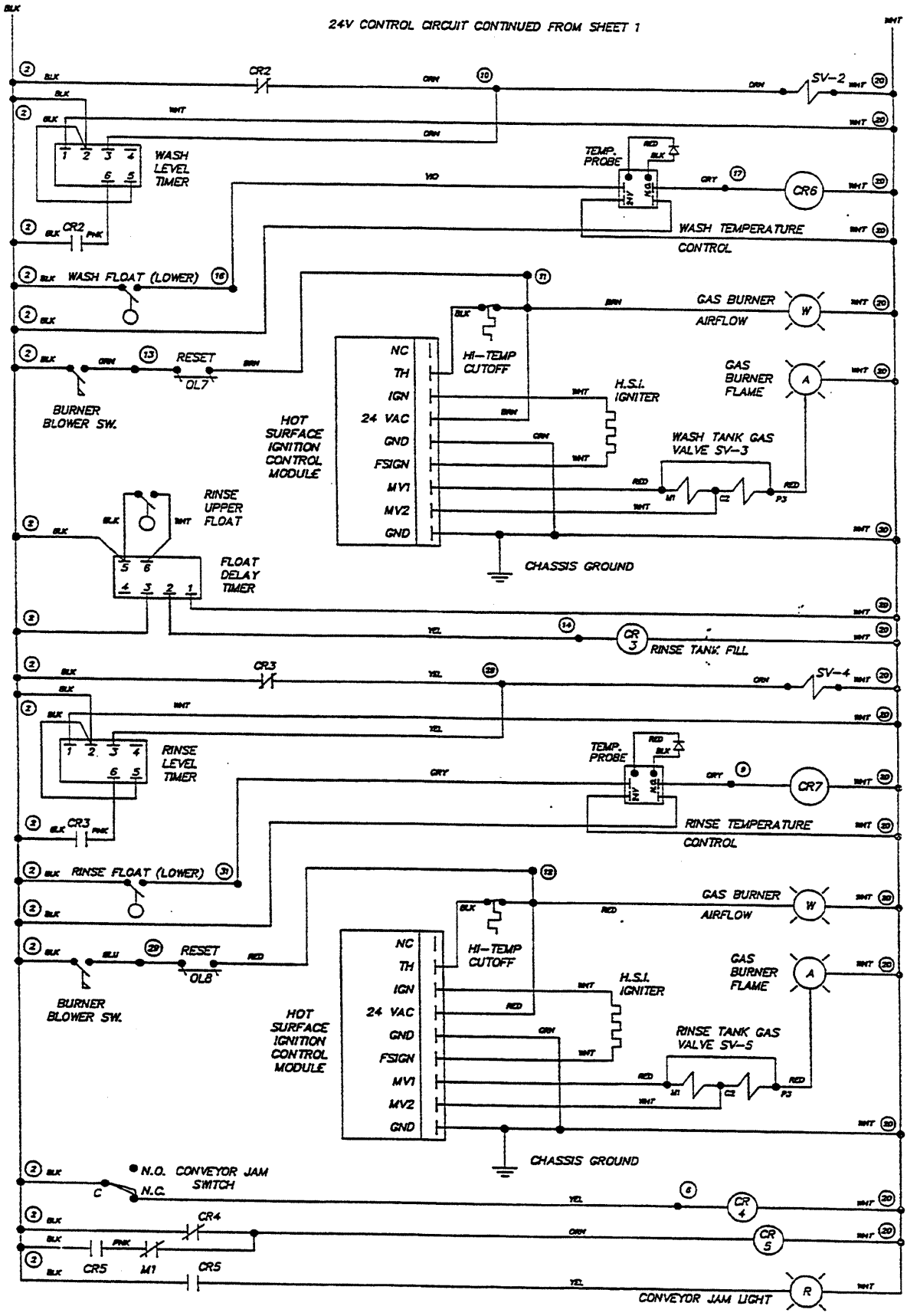


FILE: \WRE\W863070

SHEET 1 OF 2

INSINGER MACHINE COMPANY
6245 State Rd.
Philadelphia
PA 19135–2996
Tel. 215–624–4800
FAX: 215–624–6966

MACHINE: SPDR 64 GAS	DWG. NO. W863070 —
DRAWN: CES 2.14.95	
APPROVED: RICH	

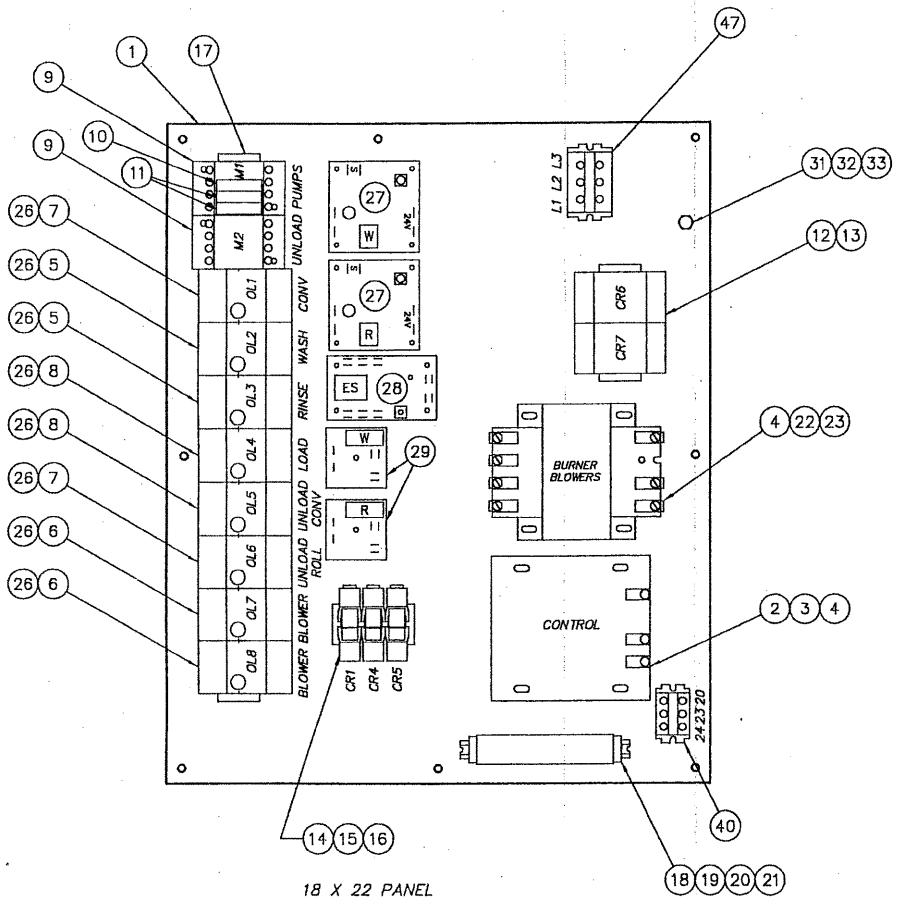


SHEET 2 OF 2

INSINGER MACHINE COMPANY
6245 State Rd. Philadelphia PA 19135-2996
Tel. 215-624-4800 FAX: 215-624-6966

MACHINE: SPDR 64 GAS	DWG. NO. W863070 —
DRAWN: CES 2.14.95	
APPROVED: RICH	

FILE: \WRE\W863070



ITEM	DESCRIPTION		PART NO.	QTY
1	COMPONENT MOUNTING PLATE		SK-3776	1
2	CONTROL TRANSFORMER (250 VA, 24 VAC)		DE6-25	1
3	FUSE BLOCK KIT (250 VA XFMR)		DE9-165	1
4	FUSE (250 VA TRANSFORMER PRIMARY)			4
	460 V	FNQ-R-1.8	DE9-169	
	380 V	FNQ-R-2	DE9-170	
	220 - 230 V	FNQ-R-3.5	DE9-174	
	208 V	FNQ-R-4	DE9-175	
5	OVERLOAD RELAY (1 HP WASH/RINSE PUMP)			2
	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	7-10 A	DE2-56	
	208/3/60	2.5-4 A	DE2-53	
6	OVERLOAD RELAY (BURNER BLOWER)			2
	115/1/60	.63-1 A	DE2-49	
7	OVERLOAD RELAY (1/15 HP CONV DRIVE)			AR
	460/3/60	.16-.25 A	DE2-91	
	380/3/50	.16-.25 A	DE2-91	
	230/3/60	.25-.40 A	DE2-92	
	220/3/50	.25-.40 A	DE2-92	
	208/3/60	.25-.40 A	DE2-92	
	115/1/60	.63-1 A	DE2-49	
8	OVERLOAD RELAY (1/4 HP UNLOADER & 1/3 HP LOADER)			AR
	460/3/60	.63-1 A	DE2-49	
	380/3/50	.63-1 A	DE2-49	
	230/3/60	1-1.6 A	DE2-50	
	220/3/50	1-1.6 A	DE2-50	
	220/1/60	2.5-4 A	DE2-53	
	208/3/60	1-1.6 A	DE2-50	

TITLE	SPEEDER 64 GAS HEAT CONTROL PANEL LAYOUT			
Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE MFJ 6.1.95	
			FILE: SKETCH\SK-3670	
G	1986	8.1.03	SCALE 1=4	DWG. NO. SK-3670
F	1857	2.15.01		
REV	ECN NO	DATE		

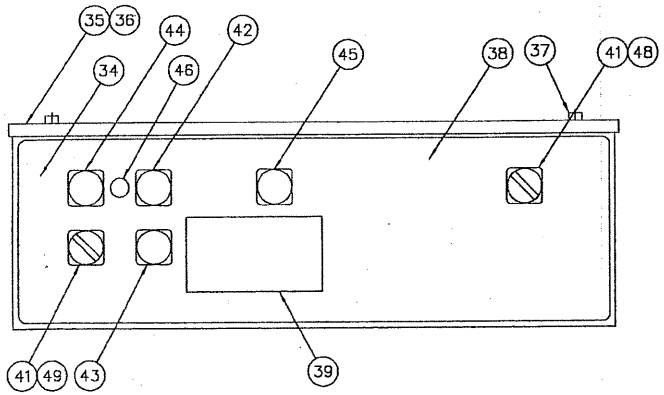
ITEM	DESCRIPTION	PART NO.	QTY
9	CONTACTOR, MOTORS SP4	DE1-93	AR
10	AUXILIARY CONTACT, NC	DE1-61AE	1
11			
12	RELAY BASE	DE3-25	2
13	RELAY	DE2-12	2
14	RELAY BASE	DE2-37	3
15	RELAY	DE2-38	3
16	RELAY HOLD DOWN SPRING	DE3-43	3
17	DIN RAIL (35 mm)	DE9-84	1
18	DIN RAIL (15 mm)	DE3-42	1
19	TERMINAL SECTION	DE3-39	AR
20	TERMINAL END COVER PLATE	DE3-40	1
21	TERMINAL END CLAMP	DE3-41	2
22	TRANSFORMER (250 VA, 120 VAC CONV)		1
	230 & 460 V	DE6-10	
	208 & 380 V	DE6-21	
23	FUSE BLOCK KIT (250 VA XFMR)	DE9-164	1
24			

ITEM	DESCRIPTION	PART NO.	QTY
25			
26	OVERLOAD BASE	DE2-60	AR
27	TEMPERATURE CONTROL BOARD	DE9-251	2
28	TIME DELAY BOARD (ENERGY SAVER)	DE7-28	1
29	TIMER (LIQUID LEVEL)	DE7-35	2
30			
31	GROUNDING STUD	D309C-GC-4G	1
32	LOCKWASHER, 1/4"	D313C-G5	1
33	HEX NUT, 1/4-20	D312C-GC-2	1
34	CONTROL BOX	SK-3716	1
35	CONTROL BOX COVER	SK-3717	1
36	GASKET	9007-001	1
37	NUT	D312C-EF-5	4
38	DECAL	SK-3700	1
39	DATA DECAL	SK-3715	1

ITEM	DESCRIPTION	PART NO.	QTY
40	TERMINAL BLK ASSY	DE3-9	1
41	SELECTOR SWITCH ASSY	DE8-58	2
42	PUSHBUTTON ASSY, START	DE8-64	1
43	PUSHBUTTON ASSY, STOP	DE8-65	1
44	PILOT LIGHT ASSY - YELLOW	DE8-62	1
45	PILOT LIGHT ASSY - RED	DE8-61	1
46	CIRCUIT BREAKER (10A)	DE9-106	1
47	TERMINAL BLOCK ASSY	DE3-3	1
48	CONTACT BLOCK, NC	DE8-60	1
49	CONTACT BLOCK, NO	DE8-59	1

NOT SHOWN

PILOT LIGHT, WHITE	DE9-108	2
PILOT LIGHT, AMBER	DE9-109	2
DECAL, GAS BURNER LIGHTS	1430-31	2
TEMPERATURE SENSOR	DE9-252	2



TITLE: SPEEDER 64
GAS HEAT CONTROL PANEL LAYOUT

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

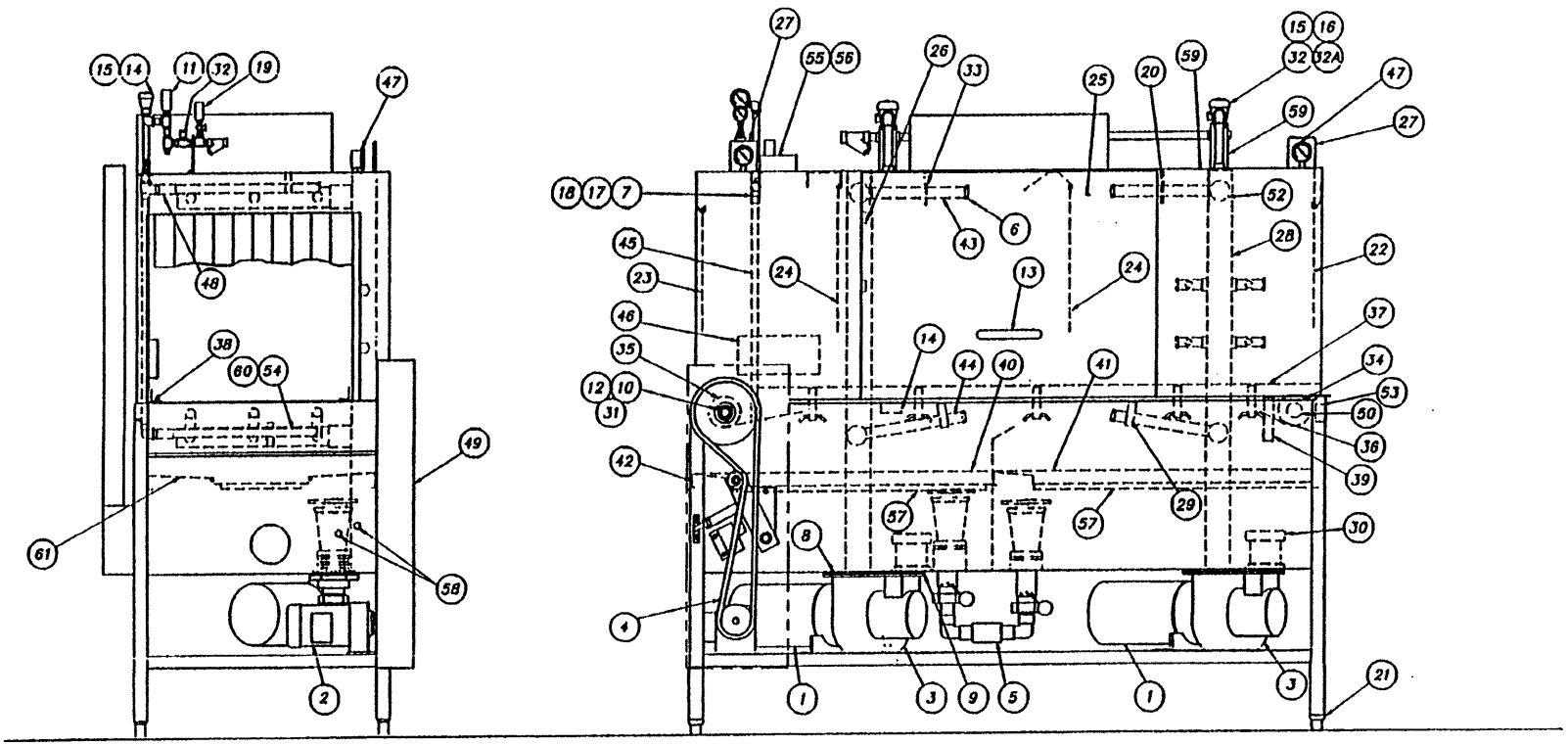
DRWN/DATE: MFJ 6.1.95

FILE: SKETCH\SK-3670

REV	ECN NO	DATE
G	1986	8.1.03
F	1857	2.15.01

SCALE: 1=4

DWG. NO.: SK-3670



SHEET 1 OF 2

			TOLERANCES	TITLE PARTS LIST	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	SPEEDER 64 GAS	REQ'D	SK-3668
			DECIMALS .XXX ± .005 .XX ± .01	MATL	SCALE 1:12	USED ON SPDR 64 GAS
			ANGLES ±1/2°	Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE CES 12.8.94
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED			
FILE: SKETCH\SK-J6681						

ITEM#	PART#	DESCRIPTION	REQ.
1	**	PUMP & MOTOR, WASH & RINSE	2
2	D2762	GEAR MOTOR	1
3	D2471	PUMP	2
4	1397-1	DRIVE MECHANISM ASSEMBLY (SEE PARTS LIST)	1
5	1430-27	DRAIN ASSEMBLY (SEE PARTS LIST)	2
6	D2-554-J	PIPE PLUG 7/8-9UNC-2A	16
7	D2-554-2	PIPE PLUG 3/4-10UNC-2A	1
8	D514	DISCHARGE GASKET	2
9	D530	SUCTION GASKET	3
10	D586-1	BUSHING CONVEYOR DRIVE	4
11	D2495	THERMOMETER, FINAL RINSE	1
12	1162-16	CONVEYOR DRIVE SHAFT	1
13	D2099	DOOR HANDLE	1
14	DE5-37	MAGNETIC SWITCH	1
15	D2241	VACUUM BREAKER 1/2	3
16	D2242	VACUUM BREAKER REPAIR KIT 1/2	3
17	D2698	SPRAY NOZZLE	6
18	1169-174	SPRAY PIPE FINAL RINSE - UPPER	1
19	SK-1433	PRESSURE GAUGE	1
20	D2-879	LATCH ASSEMBLY - WASH	1
21	D2430	ADJUSTABLE FOOT	4
22	D3-523	CURTAIN - ENTER	1
23	D3-501 rev. A	CURTAIN - EXIT	1
24	D3-508	CURTAIN - CENTER	2
25	1162-9	DOOR	1
26	D2715-R	DOOR LATCH, RIGHT	2
	D2715-L	DOOR LATCH, LEFT	2
27	D2-754A	THERMOMETER GUARD, SINGLE	2
28	1162-17	DISCHARGE LINE ASSEMBLY (SEE PARTS LIST)	1
29	1430-28	SPRAY PIPE CRADLE ASSY (SEE PARTS LIST)	2
30	D2-541	SUCTION STRAINER	2
31	D2-104	SHAFT BEARING - FRONT & REAR	2
32	D2606	SOLENOID VALVE, 1/2"	3
32A	D2641	SOLENOID VALVE REPAIR KIT	3
33	1162-90	LATCH ASSEMBLY - RINSE	1
34	512-206A	DRIVEN SPROCKET	1
35	512-207A	DRIVE SPROCKET	1
36	9014-003	CONVEYOR CHAIN	1
37	1162-36	FRONT TRACK	1
38	1162-52	REAR TRACK ASSEMBLY (SEE PARTS LIST)	1
39	1183-9	TRACK BRACKET	2

ITEM#	PART#	DESCRIPTION	REQ.
40	1430-9	SCRAP SCREEN SPACER - FRONT RINSE	1
41	1430-8	SCRAP SCREEN SPACER - FRONT WASH	1
42	1430-6	SCRAP SCREEN SPACER - ENDS	2
43	1162-88	MANIFOLD ASSEMBLY - UPPER WASH & RINSE	2
44	1162-89	MANIFOLD ASSEMBLY - LOWER WASH & RINSE	2
45	1169-45	FINAL RINSE - INSIDE PIPING	1
46	1162-44	FINAL RINSE - LEVER ASSEMBLY	1
47	D2390	THERMOMETER	1
48	D3-803	ADAPTOR	2
49	1162-60	MECHANISM GUARD	1
50	1169-165	CONVEYOR FOLLOWER SHAFT	1
51	D3-849	STOP BRACKET, UPPER MANIFOLD	2
52	D2-564	O-RING, MANIFOLD	4
53	1169-159	CHAIN TENSIONER ASSEMBLY (SEE PARTS LIST)	1
54	D2286	SPRAY NOZZLE FINAL RINSE - LOWER	3
55	816-58	SPRING	1
56	DE5-4	SWITCH, FINAL RINSE	1
57	1162-63	SCRAP SCREEN	2
58	DE5-60	FLOAT SWITCH	4
59	828-52	BRACKET, PIPING SUPPORT	1
60	D647	SPRAY PIPE FINAL RINSE - LOWER	1
61	1430-7	SCRAP SCREEN SPACER - BACK	2

REV	ECN NO	DATE

FILE: SKETCH\SK-J6682

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

TITLE: PARTS LIST
SPEEDER 64 GAS

MATL: NOTED

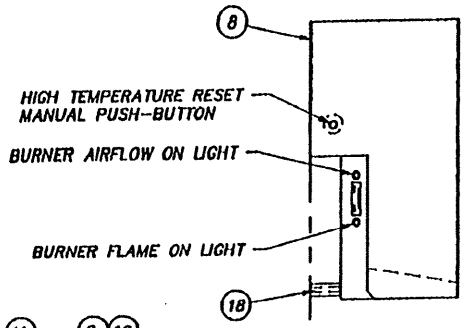
NEXT ASSY: -
REQ'D: NOTED
SCALE: FULL
USED ON: SPDR 64 GAS

DWG. NO. SK-3668

ORWN/DATE: CES 12.8.94

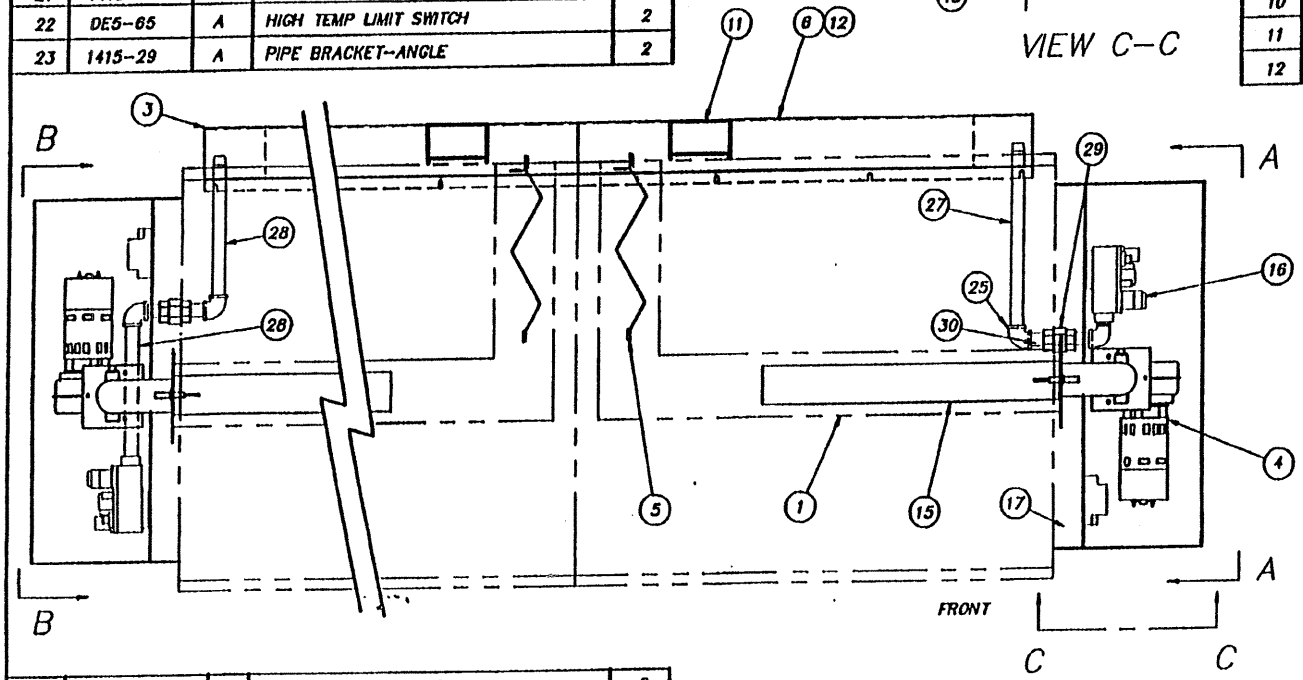
Insinger Machine Company
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6966

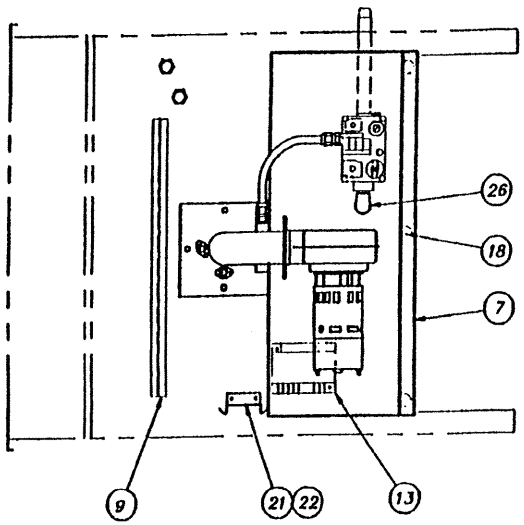
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
13	D2827	A	HOT SURFACE IGNITION MODULE	2
14	D2789	--	FLEX S/S GAS LINE	2
15	D2790	A	INFRA-RED BURNER	2
16	D2815	A	H.S.I. IGNITER	2
17	1430-14	A	MOUNTING ANGLE	2
18	1430-15	A	SPACER	6
19	D317F-D2-D6	--	MALE CONN 45° FLARE-1/2 T X 1/2 MPT	2
20	D2786	--	GAS VALVE	2
21	1415-33	A	HIGH TEMP LIMIT SWITCH MTG BRKT	2
22	DE5-65	A	HIGH TEMP LIMIT SWITCH	2
23	1415-29	A	PIPE BRACKET-ANGLE	2



VIEW C-C

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1430-4	B	TANK W/BURNER PIPE	1
2	1425-18	A	MAIN ORIFICE 60,000 BTUH (NAT OR LP)	2
3	1430-22R	B	DOUBLE PASS FLUE WELDM'T R.H.	1
4	1425-11	A	MODIFIED DRAFT BOOSTER BLOWER	2
5	1425-12	B	TURBULATOR	2
6	1430-22L	B	DOUBLE PASS FLUE WELDM'T L.H.	1
7	1430-13	B	BOTTOM-BURNER COVER	2
8	1430-19	A	BURNER COVER WELDM'T	2
9	1430-12	A	COVER ATTACHMENT STRIP	2
10	1425-22	A	AIR SHUTTER ASSY	2
11	1415-9	B	FLUE STACK WELDM'T	2
12	1430-23	B	INSULATION PANELS	1





24	1415-30	A	PIPE BRACKET-PLATE	2
25	D316B-D1-D1	--	90° ELBOW 1/2 IPS--BLACK	3
26	D316B-D1-D2	--	90° STREET ELBOW 1/2 IPS--BLACK	1
27	D314B-DS--96	--	NIPPLE 1/2 IPS X 12 LG--BLACK	1
28	D314B-DS--72	--	NIPPLE 1/2 IPS X 9 LG--BLACK	2
29	D318B-D1	--	UNION 1/2 FIPS-BLACK	2
30	D314B-DS-12	--	NIPPLE 1/2 IPS X 1 1/2 LG-BLACK	4

SHEET 1 OF 3

REV	ECN NO	DATE

FILE: PARTS\1430-1

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

TITLE: INFRA-RED BURNER GENERAL ARRANGEMENT

NEXT ASSY: --
REQ'D: 1
DWG. NO.: 1430-1

MATL: SEE ABOVE

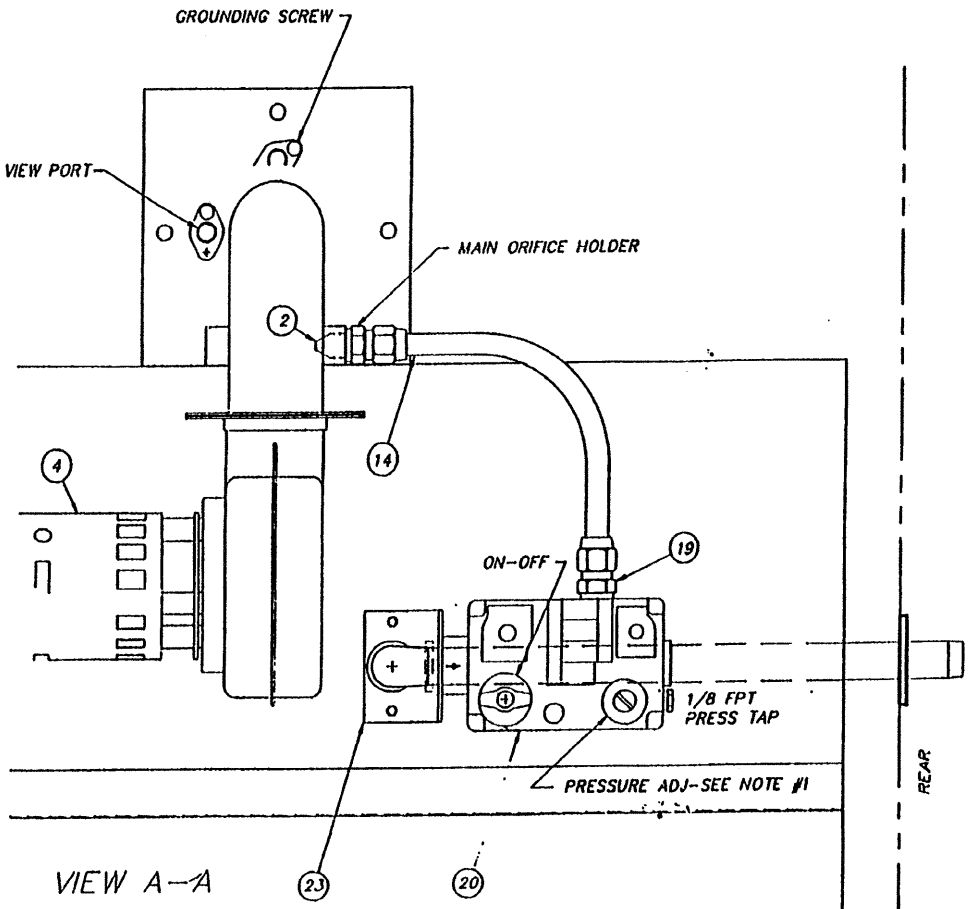
SCALE: 1=8

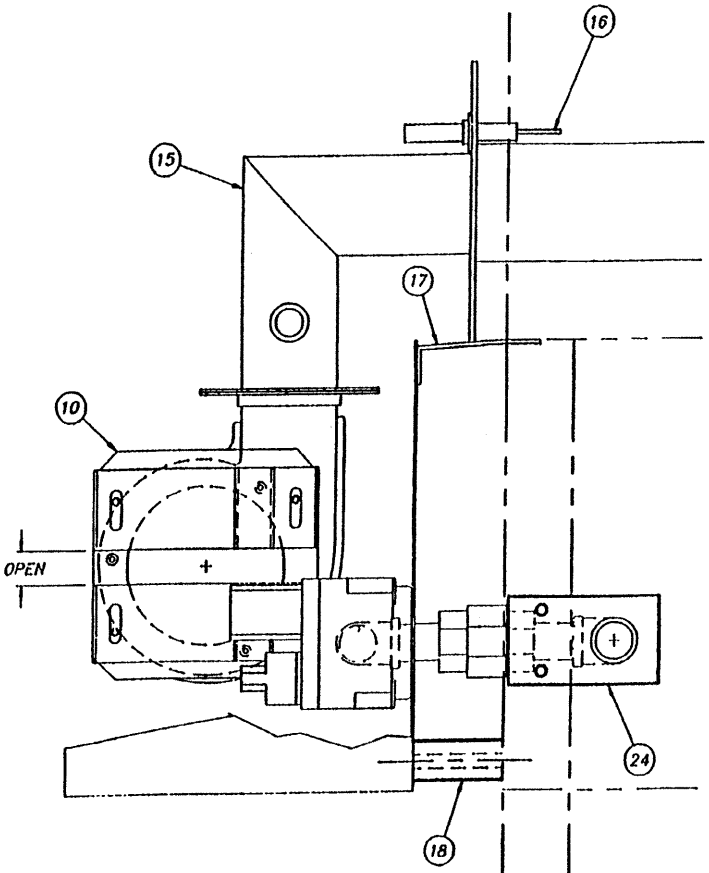
USED ON: SPD 64 GAS

DRWN/DATE: CES 2.10.95

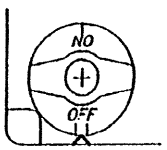
Insinger Machine Company
Philadelphia, PA 19135
(215) 624-4800
FAX (215) 624-6866

NOTE: 1) FOR PROPANE (L.P. GAS), REMOVE CAP & INSTALL CONVERSION KIT D2793 (SPRING + LABELS), ADJUST TO 11" WC & REPLACE CAP
2) USE MAIN ORIFICE SIZED FOR PROPANE

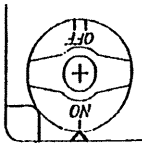




GAS VALVE OFF POSITION



GAS VALVE ON POSITION



SHEET 2 OF 3

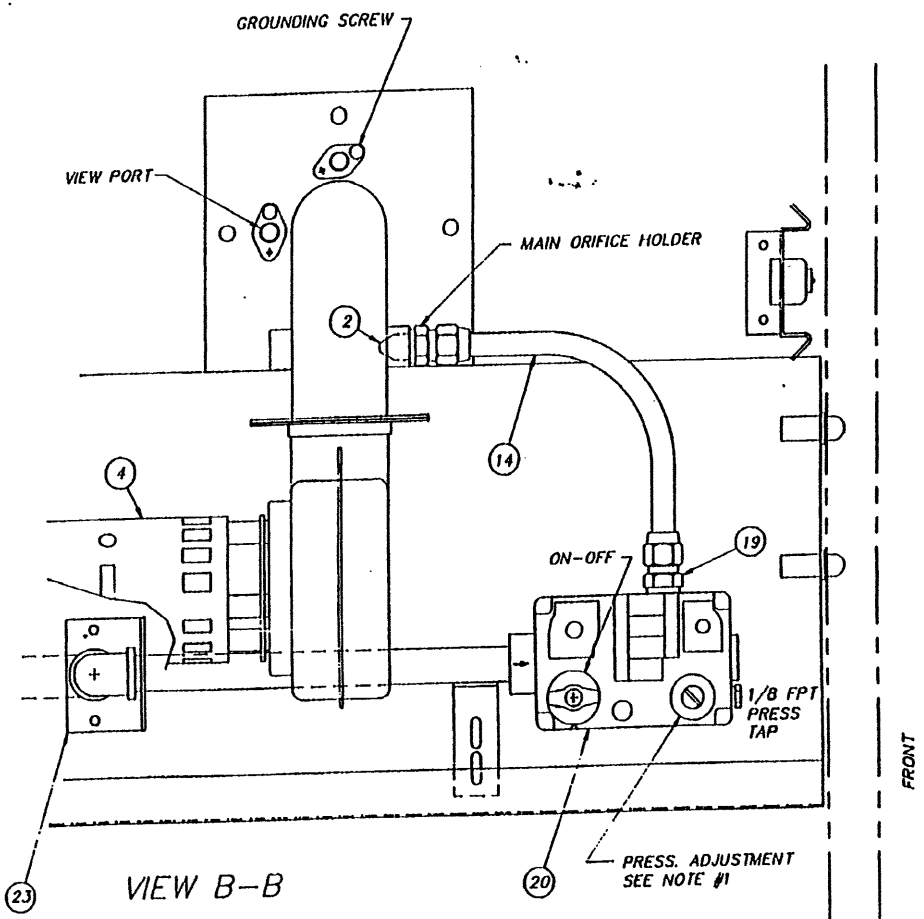
REV	ECN NO	DATE

FILE: PARTS\1430-1 3X

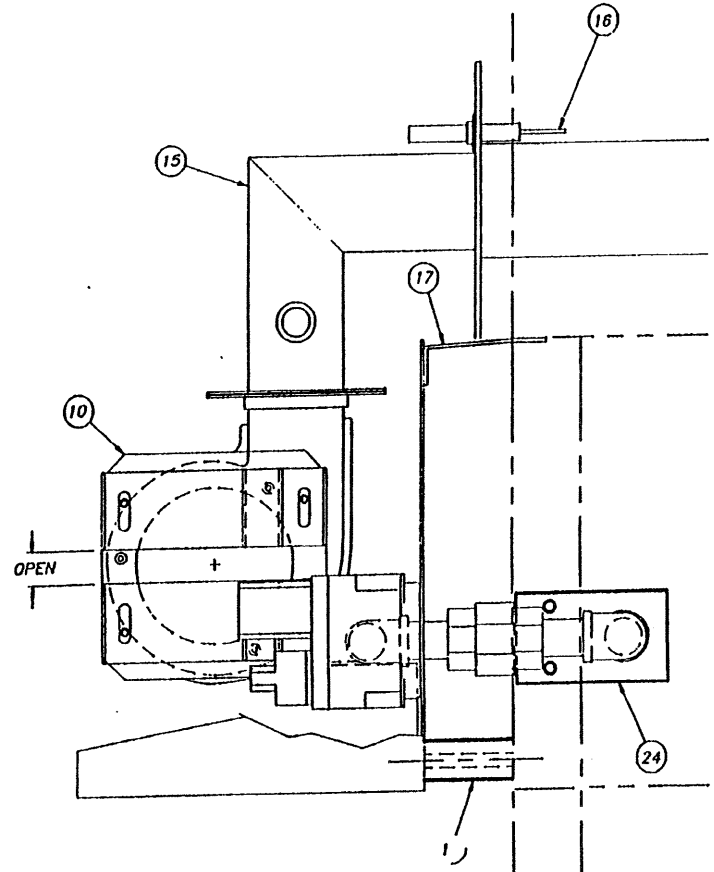
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2'
UNLESS OTHERWISE SPECIFIED

TITLE	INFRA-RED BURNER GENERAL ARRANGEMENT	NEXT ASSY	DWG. NO. 1430-1
MAT'L	-	REQ'D 1	
		SCALE 1=8	USED ON SPDR 64 GAS
Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6866	DRWN/DATE CES	2.10.95

NOTE: 1) FOR PROPANE (L.PL. GAS), REMOVE CAP & INSTALL CONVERSION KIT D2793 (SPRING + LABELS), ADJUST TO 11" WC & REPLACE CAP
2) USE MAIN ORIFICE SIZED FOR PROPANE

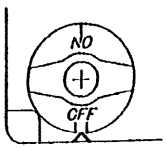


VIEW B-B

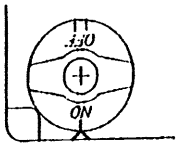


SHEET 3 OF 3

GAS VALVE OFF POSITION



GAS VALVE ON POSITION



REV	ECN NO	DATE

FILE: PARTS\1430-1 Jx

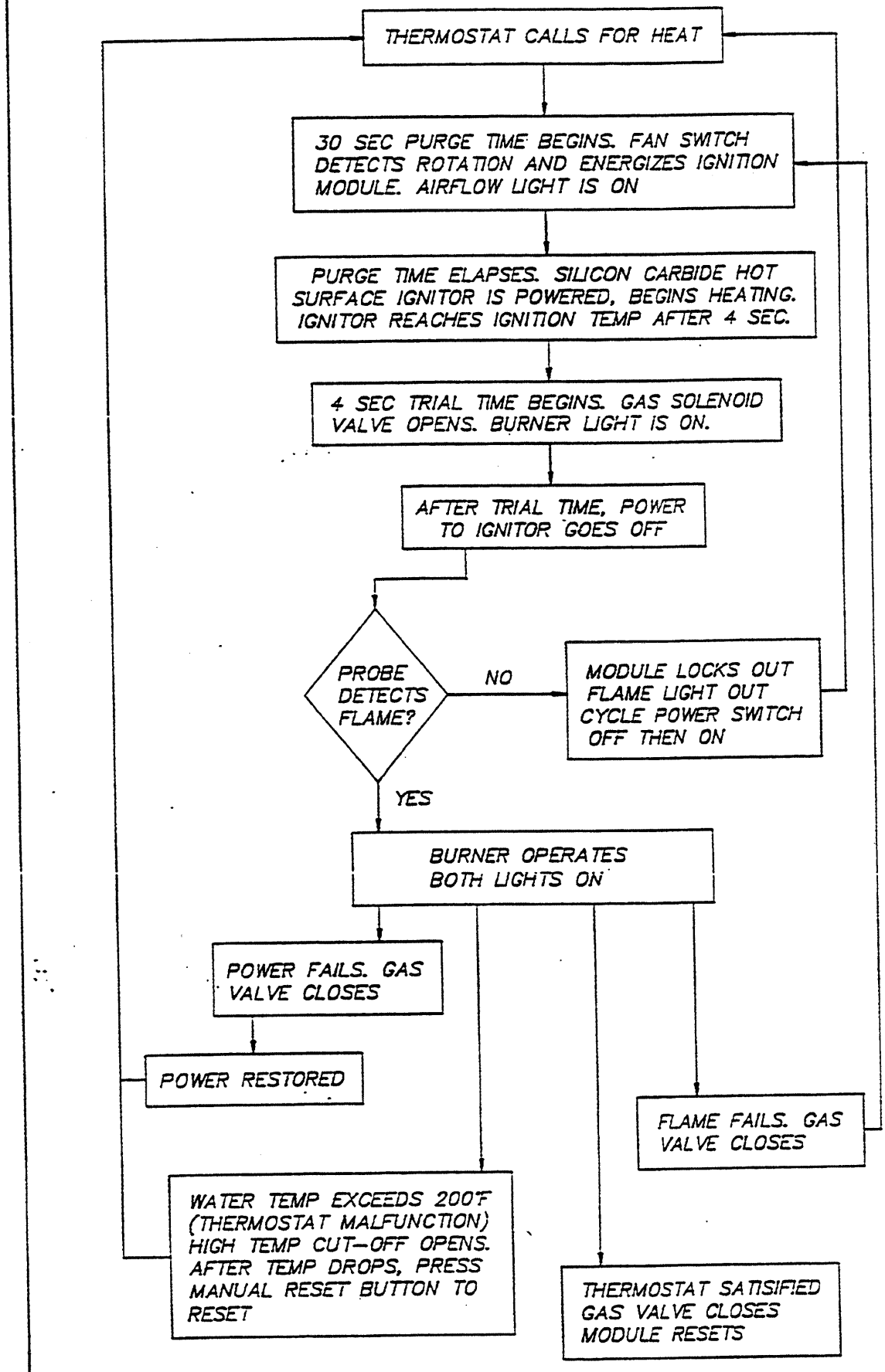
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

TITLE: INFRA-RED BURNER GENERAL ARRANGEMENT

MAT'L: -

NEXT ASSY: -
REQ'D: 1
SCALE: 1=8
DWG. NO.: 1430-1
USED ON: SPDR 64 GAS
DRWN/DATE: CES 2.10.95

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



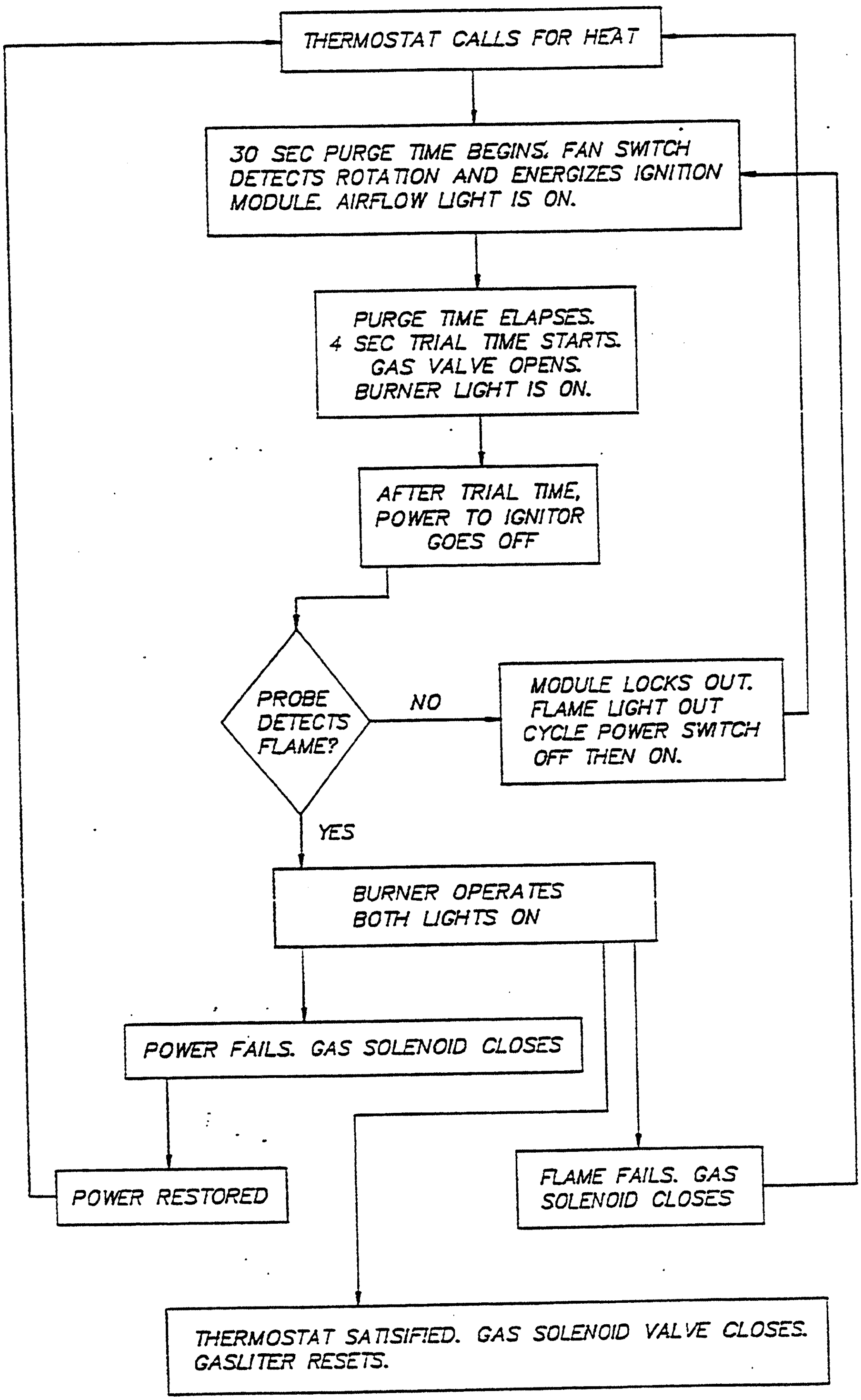
NEXT ASSY	–	DWG. NO.	SK3695-1
REQ'D	–	USED ON	ADM GAS
SCALE	FULL	DRWN/DATE	CES 30.95
MATL	–	TITLE	SEQUENCE OF OPERATIONS HOT SURFACE IGNITION

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

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

REV	ECN NO	DATE

FILE: SKETCHA\SK-3695



TITLE	SEQUENCE OF OPERATIONS DIRECT SPARK IGNITION
NEXT ASSY	—
REQ'D	1
DWG. NO.	SK3695–2
SCALE	FULL
USED ON	ADM GAS
MAT'L.	—
DRWN/DATE	CES 10.24.94

Insinger Machine Company
Philadel[illegible], PA 19135
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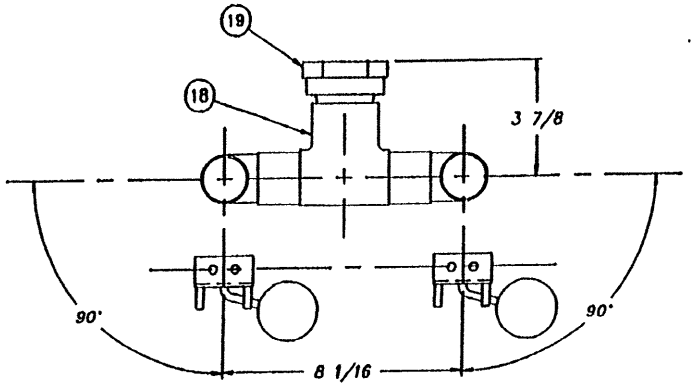
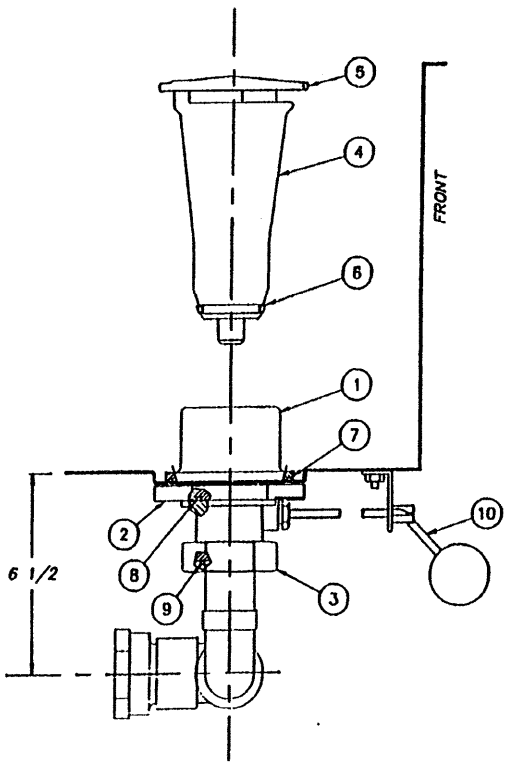
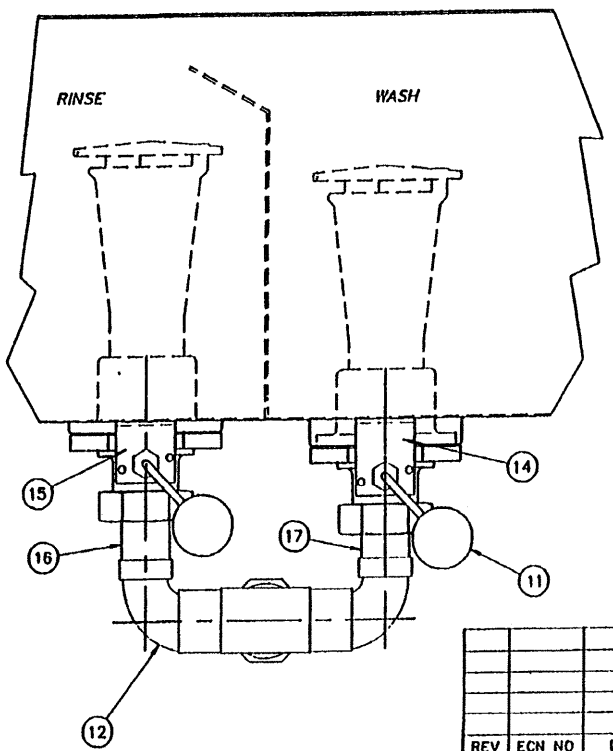
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

REV	ECN NO	DATE

FILE: SKETCHA\SK-3695







ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	954-50A	A	UPPER BODY	1 EA
2	954-50B	A	LOWER BODY	1 EA
3	954-50C	A	NUT	1 EA
4	1169-179D	B	OVERFLOW TUBE 1 INCH LONGER	1 EA
5	D-193	A	SKIMMER CAP	1 EA
6	D2-557	A	"U" CUP SEAL	1 EA
7	D2-548	A	"O" RING	1 EA
8	D2-549	A	"O" RING	1 EA
9	D2-550	A	"O" RING	1 EA
10	1100-79	A	DRAIN HANDLE	1 EA
11	D2-507	–	BALL	1 EA
12	DJ16A-H3-H4	–	90° STREET ELBOW 1 1/2C	1 EA
13	–	–	–	–
14	954-8B	A	BRACKET-DRAIN HANDLE-WASH	1
15	954-8	A	BRACKET-DRAIN HANDLE-RINSE	1
16	D207A-B12-10	–	COPPER TUBE-1 1/2CTS X 2 1/2 LG	1
17	D207A-B12-8	–	COPPER TUBE-1 1/2CTS X 2 LG	1
18	DJ20A-HJHJJ3	–	TEE 1 1/2C X 1 1/2C X 2C	1
19	DJ17A-J4-J1	–	ADAPTER 2 FTG. X 2 FIPS	1

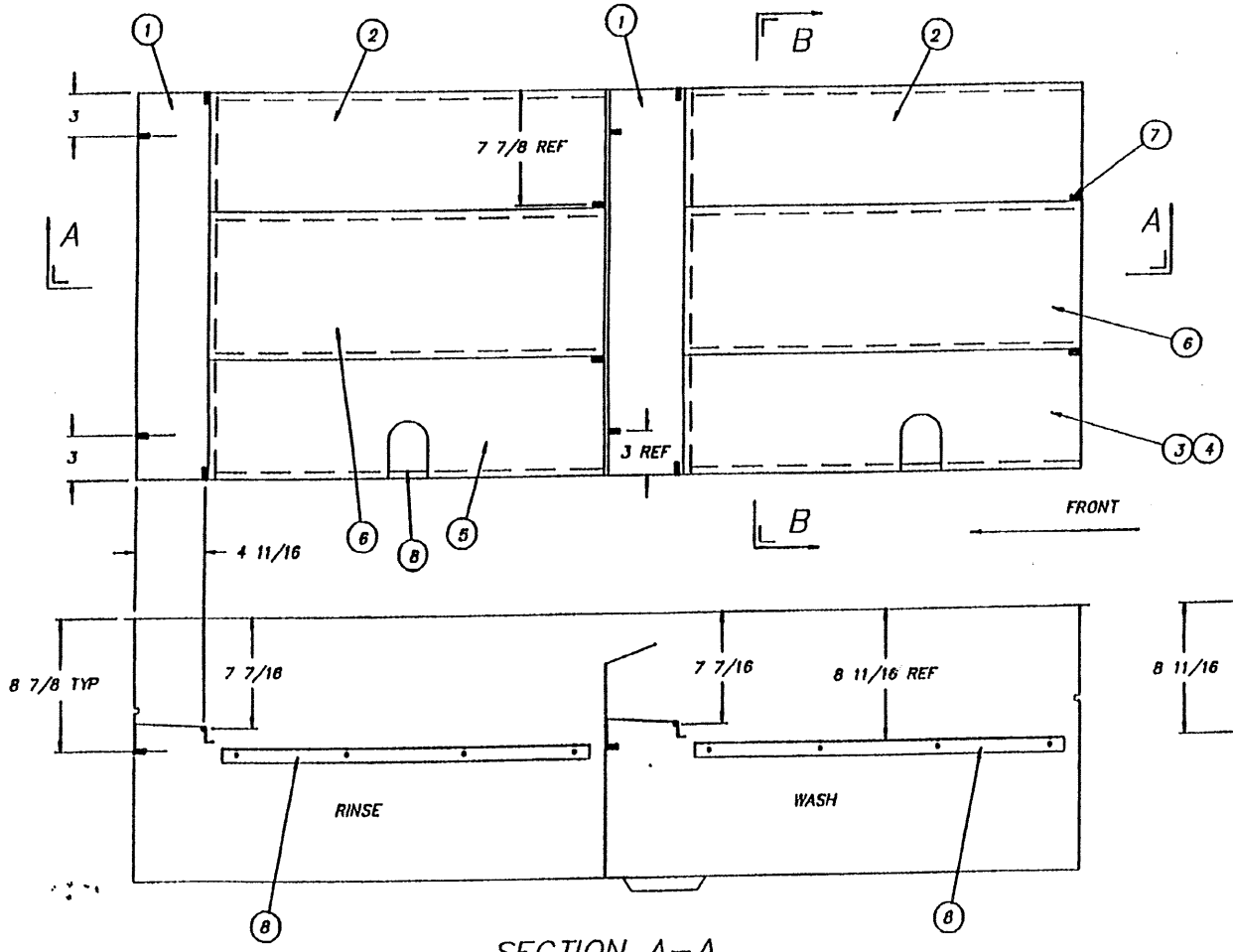
L.H. SHOWN – R.H. OPPOSITE

REV	ECN NO	DATE

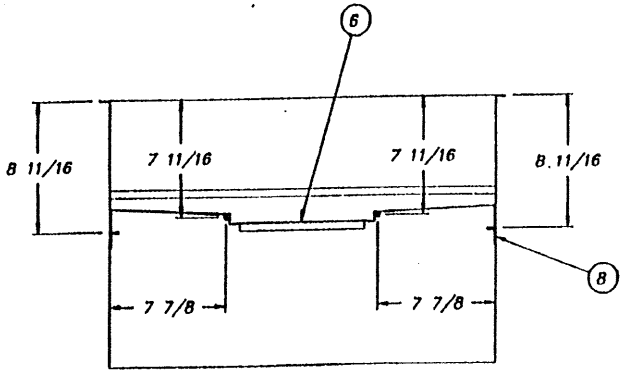
FILE: PARTS\1430-27

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

TITLE	DRAIN ASSEMBLY	NEXT ASSY –	DWG. NO. 1430-27
		REQ'D 1	
MAT'L	NOTED	SCALE 1=4	USED ON SPDR 64 GAS
Insinger Machine Company	Phila., PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE CES	12.12.94



SECTION A–A



SECTION B–B

ITEM	PART NO.	DESCRIPTION	QTY.	QTY.
1	1430–6	SCRAP SPACER–END	2	2
2	1430–7	SCRAP SPACER–BACK	2	2
3	1430–8R	SCRAP SPACER–WASH W/SLOT RH	–	1
4	1430–8L	SCRAP SPACER–WASH W/SLOT LH	1	–
5	1430–9	SCRAP SPACER–RINSE W/SLOT	1	1
6	1162–63	SCRAP SCREEN	2	2
7	D309C–PG–6G	1/4 DIA X 3/4 LG WELDPIN	12	12
8	1162–42	SCRAP SPACER SUPPORT X 25"	4	4
			L.H.	R.H.

R.H. SHOWN – L.H. OPPOSITE

REV	ECN NO	DATE

FILE: PARTS\1430–5

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

TITLE SCRAP SCREEN ARRANGEMENT

NEXT ASSY
REQ'D 1

DWG. NO. 1430–5

MATL NOTED

SCALE 1=8

USED ON SPDR 64 GAS

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DRWN/DATE CES 11.21.94