



TECHNICAL MANUAL

Installation, Operation and Maintenance Instructions

CENTURY & DEFENDER

Flight Type Dishwashers

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 please record the Model and Serial Number of this unit:

Model: _____

Serial Number: _____

When referring to this equipment please have these numbers 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 within this manual. Check this list for your local authorized servicer.

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

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

To register your machine for warranty by phone, fax, or the internet or for answers to questions concerning installation, operation, or service contact our Technical Services Department:

Toll-Free	800.344.4802
Fax	215.624.6966
Email	service@insingermachine.com
World-Wide Web	http://www.insingermachine.com

Thank you.
Insinger Machine Company

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FLIGHT TYPE DISHMACHINES
Century 14 & Defender Series
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FLIGHT TYPE DISHMACHINES
Century 14 & Defender Series
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PART 5 - REPLACEMENT PARTS, CONT'D

Model: Defender series

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- * Baffle & Scrap Screen Assembly's
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- * Auto Tank Fill Assembly
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- * Liquid Level Float Typical Installation
- * Steam Piping (injectors & coils)
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CENTURY 14 & DEFENDER SERIES
TECH MANUAL INTRODUCTION
Part I, Section A

A. INTRODUCTION

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.

A.2 Scope

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the Century 14 and Defender Series dishwashers. The installation instructions are intended for qualified equipment installers. The operation and cleaning instructions are intended for the daily users of the equipment. The maintenance and parts sections are intended for qualified service and/or maintenance technicians.

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

A.3 Start-Up Program

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

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.



PART 1
TECHNICAL INFORMATION

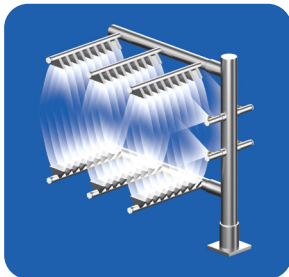


ESSENTIAL SERIES

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

CENTURY Three Tank Rackless Conveyor Dishwasher

- Automatic conveyor, flight type three tank dishwasher with recirculating prewash, wash and rinse; and fresh water final rinse.
- 228 gallons/hour final rinse consumption
- Capacity is 8,725 dishes per hour
- Conveyor speed of 7 feet per minute
- CrossFire® Wash System provides superior cleaning
- Error proof replacement with color-coded curtains
- Designed for left or right hand conveyor travel, as specified



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

STANDARD FEATURES

- CrossFire® Wash System
- SureFire® Start-Up & Check-Out Service
- Tank heat: 50.0 kW electric immersion heaters or steam injectors
- Capillary thermometers for pre-wash, wash, rinse and final rinse
- Final rinse pressure gauge
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- Inspection and clean-out doors
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- Low water protection
- Detergent connection provision
- Top mounted NEMA 12 control panel
- Simplified scrap screen design
- Door safety switch
- Standard frame drip proof motors
- Polypropylene belt with removable rack sections
- Conveyor reversing switch
- Conveyor switch for de-liming
- Interior work lights
- Override switch for de-liming
- End caps/pipe plugs secured to prevent loss
- Color-coded curtains

OPTIONS

- Stainless steel steam coil tank heat
- Steam booster
- Electric booster
- Pressure reduction valve and line strainer
- Single point electrical connection: motors, controls and heaters.
- S/S panels on all sides
- Security package
- Totally enclosed motors
- Insulated hood and door
- Stainless steel belt with removable rack sections





CENTURY Three Tank Rackless Conveyor Dishwasher

Capacity Per Hour	8736 dishes 600-1300 meals
Tank Capacity	13 gals. (pre-wash) 25 gals. (wash) 26 gals. (rinse)
Motor Size	1/2 hp (pre-wash) 2 hp (wash) 2 hp (rinse) 1/2 hp (conveyor)
Electric Usage	20.0 kW wash tank 30.0 kW rinse tank *24.0 kW booster 40° rise *45.0 kW booster 70° rise
Steam Consumption at 20 psi min.	182 lbs./hour tank 81 lbs./hour booster 40° rise 142 lbs./hour booster 70° rise
Final Rinse Peak Flow at 20 psi min.	3.8 gallons/minute
Final Rinse Consumption at 20 psi min.	228 gallons/hour
Exhaust Hood Requirement	500 CFM Load 1000 CFM unload
Peak Rate Drain Flow	23 gallons/minute
Shipping Weight	2500 lbs.

Machine Electrical		
Motors, Controls Tank Heat	Steam	Electric
208/3/60	21.0	160.0
240/3/60	19.0	139.6
480/3/60	9.5	69.5
380/3/50	11.5	87.5

Contact Insinger Sales at 800-344-4802 for an installation drawing specific to your application. This drawing is available on the Insinger website at www.insingermachine.com

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

SPECIFICATIONS

CONSTRUCTION- Hood and tank all welded seamless construction using 16 gauge 18-8 type 304 S/S. S/S frame, legs and feet. All internal castings are non-corrosive 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- Removable polypropylene or S/S rack section on S/S belt with polyethylene rollers. Conveyor drive system includes large speed reducer with cut gears operating in oil bath and frictionless, trouble-free overload release system. Conveyor transports dishware automatically through all washing and rinsing systems and is driven by an independent 1/2 hp motor. A trip bar at the end of the unload section stops the conveyor if any ware reaches the bar. A reversing switch is provided to assist in removing jams in the belt.

PUMPS- 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. Two 2 hp motors wash and rinse and 1/2 hp pre-wash, all standard horizontal C-face frame, drip-proof, internally cooled with ball-bearing construction.

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

ENERGY SAVER- Electric photo eye automatically operates the final rinse solenoid only when ware passes, saving water and energy. The photo eye 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- Upper and lower manifolds. One manifold above with 3 power pre-wash nozzles, one manifold below with 3 power pre-wash nozzles.

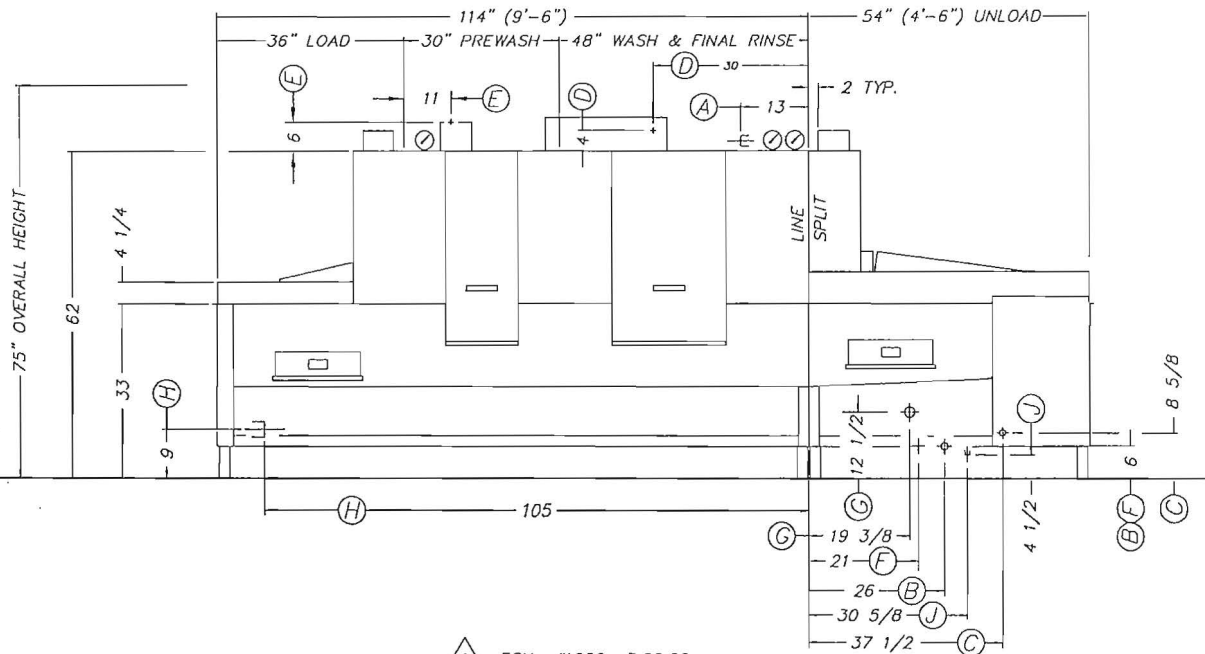
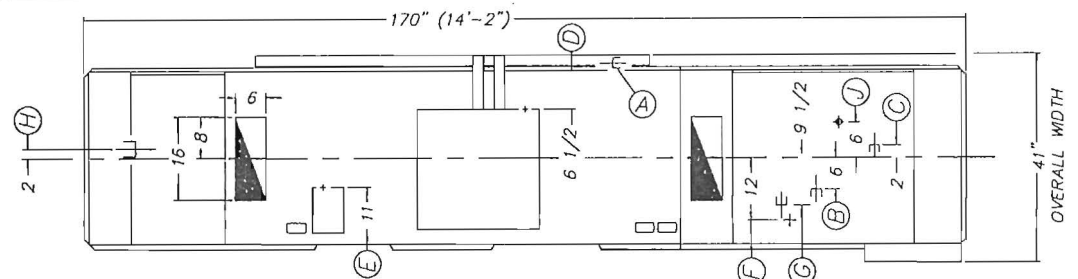
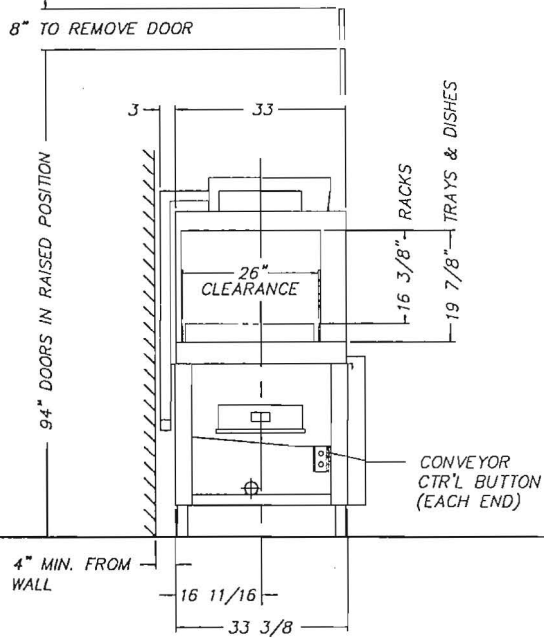
WASH- Upper and lower manifolds with the patented CrossFire® Wash System. Each manifold has 3 upper and 4 lower power wash arms designed with pressure action cleansing slots. The slots are precision milled for water control producing a fan spray. Wash arms are fillet welded to the S/S manifold. The CrossFire system provides 2 horizontally spraying high pressure nozzles.

RINSE- Upper and lower manifolds. Each manifold has 3 upper and 4 lower power rinse arms designed with pressure action fan spray reducing water consumption, maximizing heat retention.

FINAL RINSE- Eight nozzle assemblies above and four 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.

INSTALLATION AND LAYOUT DETAIL



FILE: STD/DEF14L

LTR	INSTALLATION CONNECTIONS DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL-140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER * ●	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER ●	3/4 FIPS
D	ELECTRICAL CONNECTION - COMMON	40 KW & 5 1/2 HP
E	ELECTRICAL CONNECTION - LIGHTS	120 V
F	ELECTRICAL CONNECTION - BOOSTER *	27/45 KW
G	STEAM TO BOOSTER AND TANKS	1 1/2 FIPS
H	DRAIN CONNECTION - COMMON	2" FIPS
J	CONDENSATE RETURN - COMMON	3/4 FIPS

NOTES:

1. "●" HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL
2. (2) 6" X 16" VENTS WITH ADJUSTABLE DAMPERS

LEFT TO RIGHT FEED →

△ ECN #1669 3.26.99

DEFENDER 14

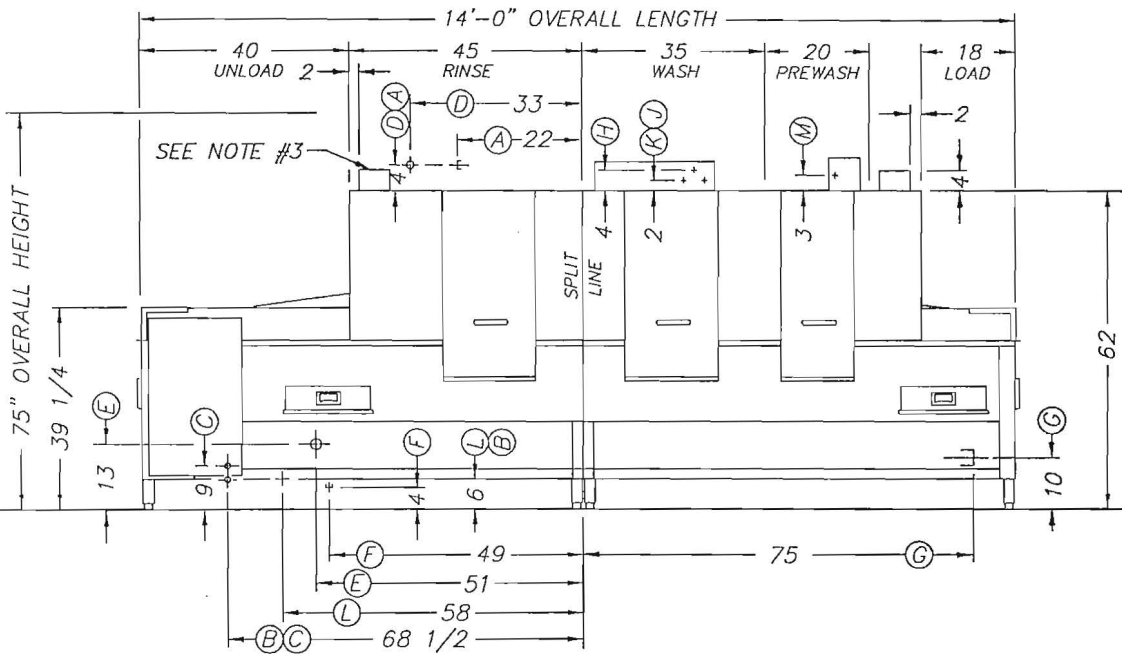
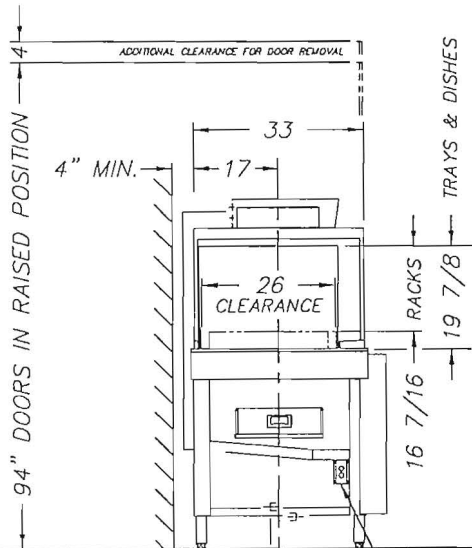
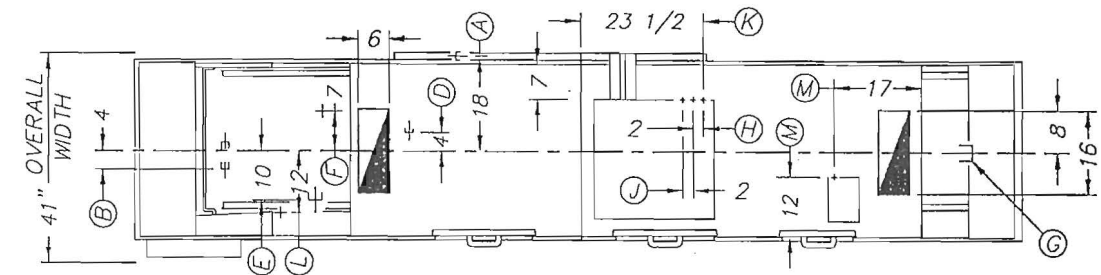
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE

INSINGER
MACHINE COMPANY

6245 State Rd. Tel. 215-624-4800
Philadelphia Fax: 215-624-6966
PA 19135-2996

SCALE: 1/2" = 1'-0"	DWG. NO.
DRAWN: EMM 3.4.97	DEFENDER A
APPROVED: EBA 3.4.97	

INSTALLATION AND LAYOUT DETAIL



INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL - 140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER *•	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER •	3/4 FIPS
D	HOT WATER TO FINAL RINSE - 180° F	3/4 FIPS
E	STEAM TO BOOSTER AND TANKS	2 FIPS
F	CONDENSATE RETURN - COMMON	3/4 FIPS
G	DRAIN CONNECTION - COMMON	2 FIPS
H	ELECT. SERVICE - WASH HTRS.*	20 KW
J	ELECT. SERVICE - RINSE HTRS.*	30 KW
K	ELECT. SERVICE - WASHER MTRS.	5 HP
L	ELECT. SERVICE - BOOSTER*	24/45 KW
M	ELECT. SERVICE - LIGHTS	120V

NOTES:

- * * * = FOR ELECTRICALLY HEATED MACHINES ONLY.
- * • = HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL.
- (2) 6" x 16" VENTS WITH ADJUSTABLE DAMPERS.

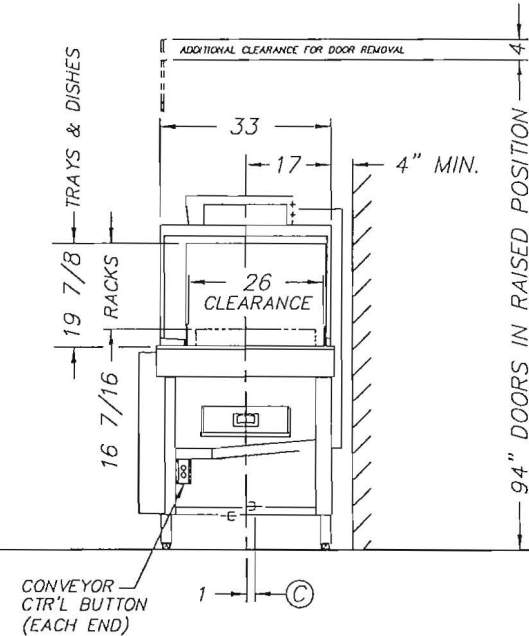
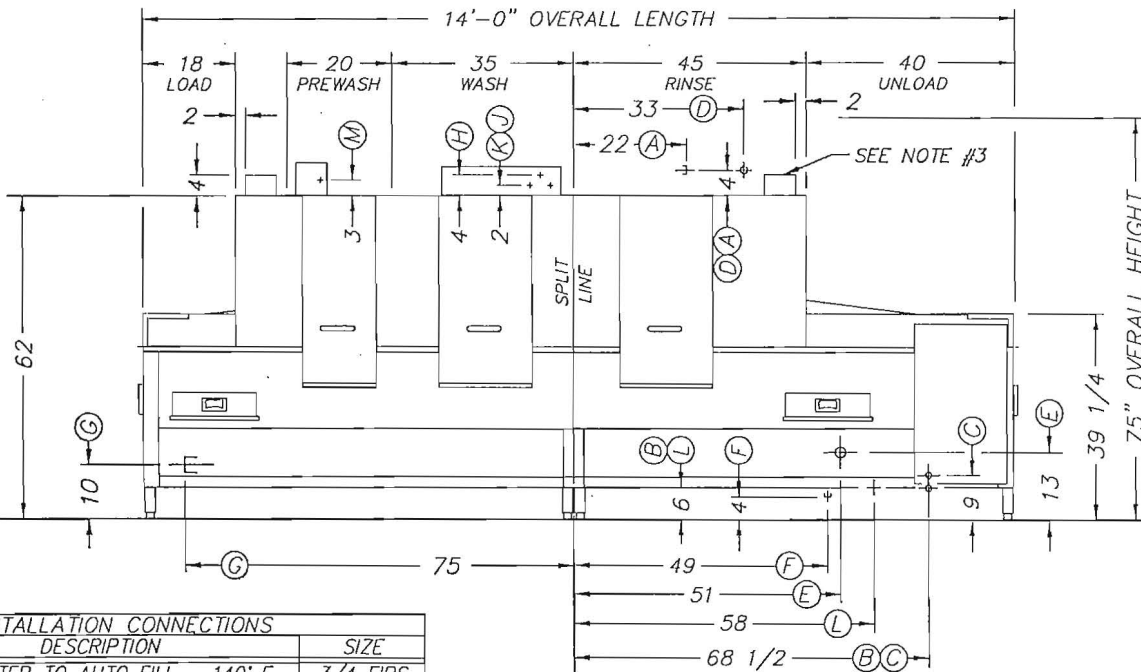
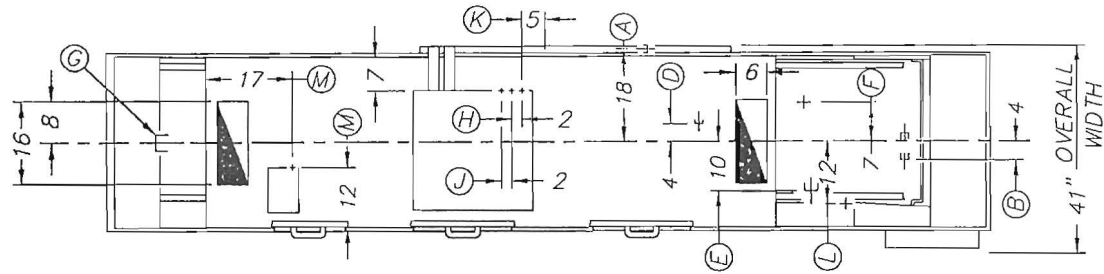
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CENTURY 14
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE

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

DRWN: MAM	7.28.93	SCALE	DWG. NO.	REV
REV: EMM	10.27.00	1/2" = 1'	CENT-RH	J
FIL F: STD/CFNT-RH				

INSTALLATION AND LAYOUT DETAIL



LEFT TO RIGHT FEED

LTR	INSTALLATION CONNECTIONS DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL - 140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER * •	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER •	3/4 FIPS
D	HOT WATER TO FINAL RINSE - 180° F	3/4 FIPS
E	STEAM TO BOOSTER AND TANKS	2 FIPS
F	CONDENSATE RETURN - COMMON	3/4 FIPS
G	DRAIN CONNECTIONS	2 FIPS
H	ELECT. SERVICE - WASH HTRS. *	20 KW
J	ELECT. SERVICE - RINSE HTRS. *	30 KW
K	ELECT. SERVICE - WASHER MTRS.	5 HP
L	ELECT. SERVICE - BOOSTER *	24/45 KW
M	ELECT. SERVICE - LIGHTS	120V

NOTES:

- * * * = FOR ELECTRICALLY HEATED MACHINES ONLY.
- * • * HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL.
- (2) 6" x 16" VENTS WITH ADJUSTABLE DAMPERS.

CENTURY 14
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE

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

DRWN: MAM 7.28.93	SCALE: 1/2" = 1'	DWG. NO. CENT-LH	REV. J
REV: EMM 10.27.00			
FILE: STD/CENT-LH			

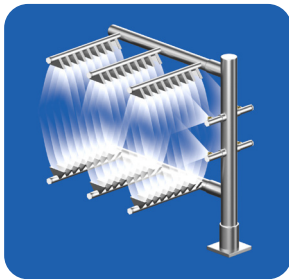


ESSENTIAL SERIES

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

DEFENDER Double Tank Rackless Conveyor Dishwasher

- Automatic conveyor, flight type two tank dishwasher with recirculating prewash and wash zones; and fresh water final rinse.
- 306 gallons hour final rinse consumption
- Capacity is 8,861 dishes per hour
- Conveyor speed of 7.1 feet per minute
- CrossFire® Wash System provides superior cleaning
- Error proof replacement with color-coded curtains
- Designed for left or right hand conveyor travel, as specified



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

STANDARD FEATURES

- CrossFire® Wash System
- SureFire® Start-Up & Check-Out Service
- Tank heat: 40.0 kW electric immersion heaters or steam injectors
- Capillary thermometers for pre-wash, wash, rinse and final rinse
- Final rinse pressure gauge
- Vacuum breaker on all incoming water lines
- Manifold clean-out brush
- Inspection and clean-out doors
- S/S frame, legs and feet
- S/S front enclosure panel
- Automatic tank fill
- Low water protection
- Detergent connection provision
- Top mounted NEMA 12 control panel
- Simplified scrap screen design
- Door safety switch
- Standard frame drip proof motors
- Single point electrical connection: motors, controls and heaters
- Polypropylene belt with removable rack sections
- Conveyor reversing switch
- Conveyor switch for de-liming
- Interior work lights
- Override switch for de-liming
- End caps/pipe plugs secured to prevent loss
- Color-coded curtains

OPTIONS

- Stainless steel steam coil tank heat
- Steam booster
- Electric booster
- Pressure reduction valve and line strainer
- Single point electrical connection: motors, controls and heaters
- S/S panels on all sides
- Security package
- Totally enclosed motors
- Insulated hood and door
- Stainless steel belt with removable rack sections





DEFENDER

Double Tank Rackless Conveyor Dishwasher

Capacity Per Hour	8861 dishes 600-1000 meals
Tank Capacity	20 gals. (pre-wash) 39 gals. (wash)
Motor Size	2 hp (pre-wash) 3 hp (wash) 1/2 hp (conveyor)
Electric Usage	40.0 kW wash tank *36.0 kW booster 40° rise *54.0 kW booster 70° rise
Steam Consumption at 20 psi min.	145 lbs./hour tank 109 lbs./hour booster 40° rise 190 lbs./hour booster 70° rise
Final Rinse Peak Flow at 20 psi min.	5.1 gallons/minute
Final Rinse Consumption at 20 psi min.	306 gallons/hour
Exhaust Hood Requirement	500 CFM Load 1000 CFM unload
Peak Rate Drain Flow	15 gallons/minute
Shipping Weight	2500 lbs.

Machine Electrical		
Motors, Controls Tank Heat	Steam	Electric
208/3/60	21.5	137.5
240/3/60	19.5	120.0
480/3/60	9.7	60.0
380/3/50	11.8	72.6

*Booster requires separate electrical connection

Contact Insinger Sales at 800-344-4802 for an installation drawing specific to your application. This drawing is available on the Insinger website at www.insingermachine.com

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

SPECIFICATIONS

CONSTRUCTION- Hood and tank all welded seamless construction using 16 gauge 18-8 type 304 S/S. S/S frame, legs and feet. All internal castings are non-corrosive 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- Removable polypropylene or S/S rack section on S/S belt with polyethylene rollers. Conveyor drive system includes large speed reducer with cut gears operating in oil bath and frictionless, trouble-free overload release system. Conveyor transports dishware automatically through all washing and rinsing systems and is driven by an independent 1/2 hp motor. A trip bar at the end of the unload section stops the conveyor if any ware reaches the bar. A reversing switch is provided to assist in removing jams in the belt.

PUMPS- 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. Two 2 hp motors wash and rinse and 1/2 hp pre-wash, all standard horizontal C-face frame, drip-proof, internally cooled with ball-bearing construction.

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

ENERGY SAVER- Electric photo eye automatically operates the final rinse solenoid only when ware passes, saving water and energy. The photo eye 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- Upper and lower manifolds. One manifold above with 3 power pre-wash nozzles, one manifold below with 3 power pre-wash nozzles.

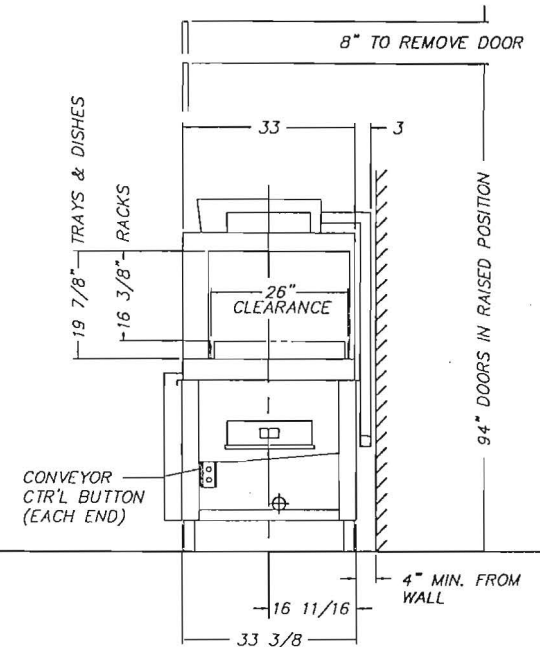
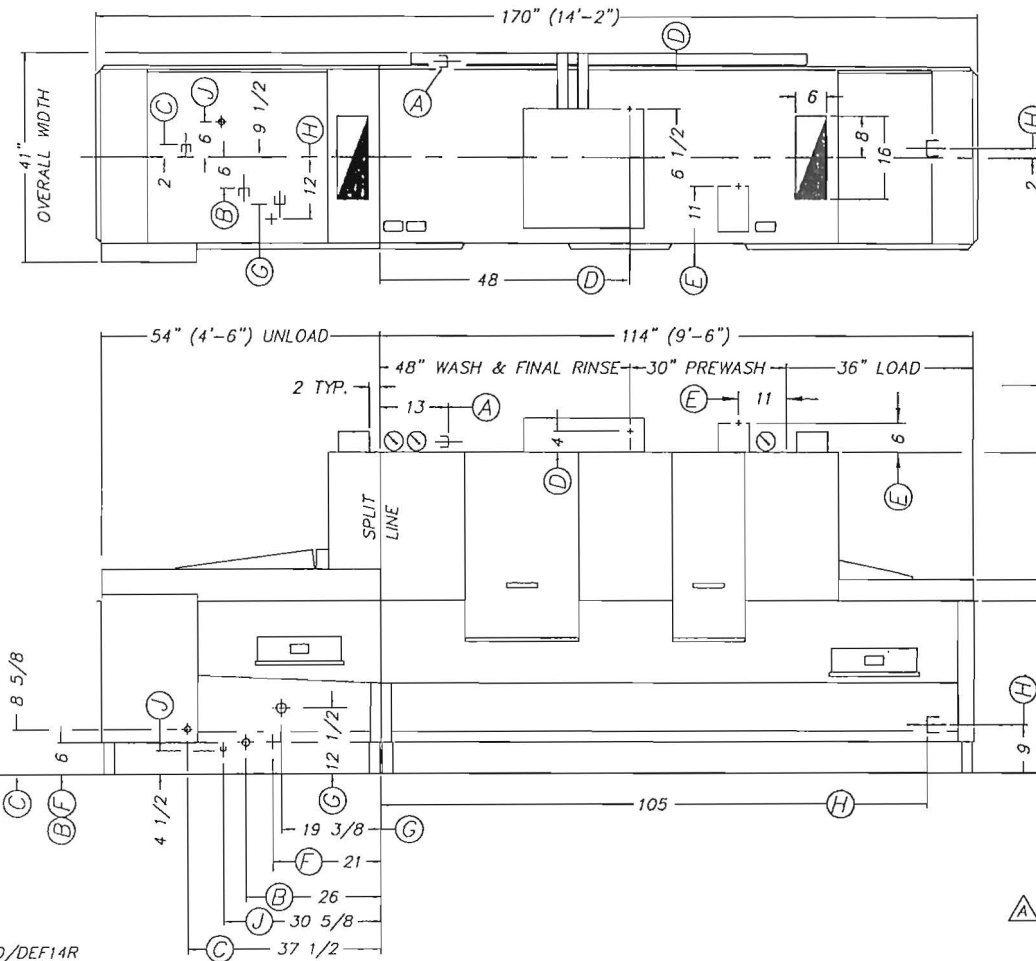
WASH- Upper and lower manifolds with the patented CrossFire® Wash System. Each manifold has 3 upper and 4 lower power wash arms designed with pressure action cleansing slots. The slots are precision milled for water control producing a fan spray. Wash arms are fillet welded to the S/S manifold. The CrossFire system provides 2 horizontally spraying high pressure nozzles.

RINSE- Upper and lower manifolds. Each manifold has 3 upper and 4 lower power rinse arms designed with pressure action fan spray reducing water consumption, maximizing heat retention.

FINAL RINSE- Eight nozzle assemblies above and four 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.

INSTALLATION AND LAYOUT DETAIL



▲ ECN #1669 3.26.99


FILE: STD/DEF14R

INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL-140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER *	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER •	3/4 FIPS
D	ELECTRICAL CONNECTION - COMMON	40 KW & 5 1/2 HP
E	ELECTRICAL CONNECTION - LIGHTS	120 V
F	ELECTRICAL CONNECTION - BOOSTER *	27/45 KW
G	STEAM TO BOOSTER AND TANKS	1 1/2 FIPS
H	DRAIN CONNECTION - COMMON	2" FIPS
J	CONDENSATE RETURN - COMMON	3/4 FIPS

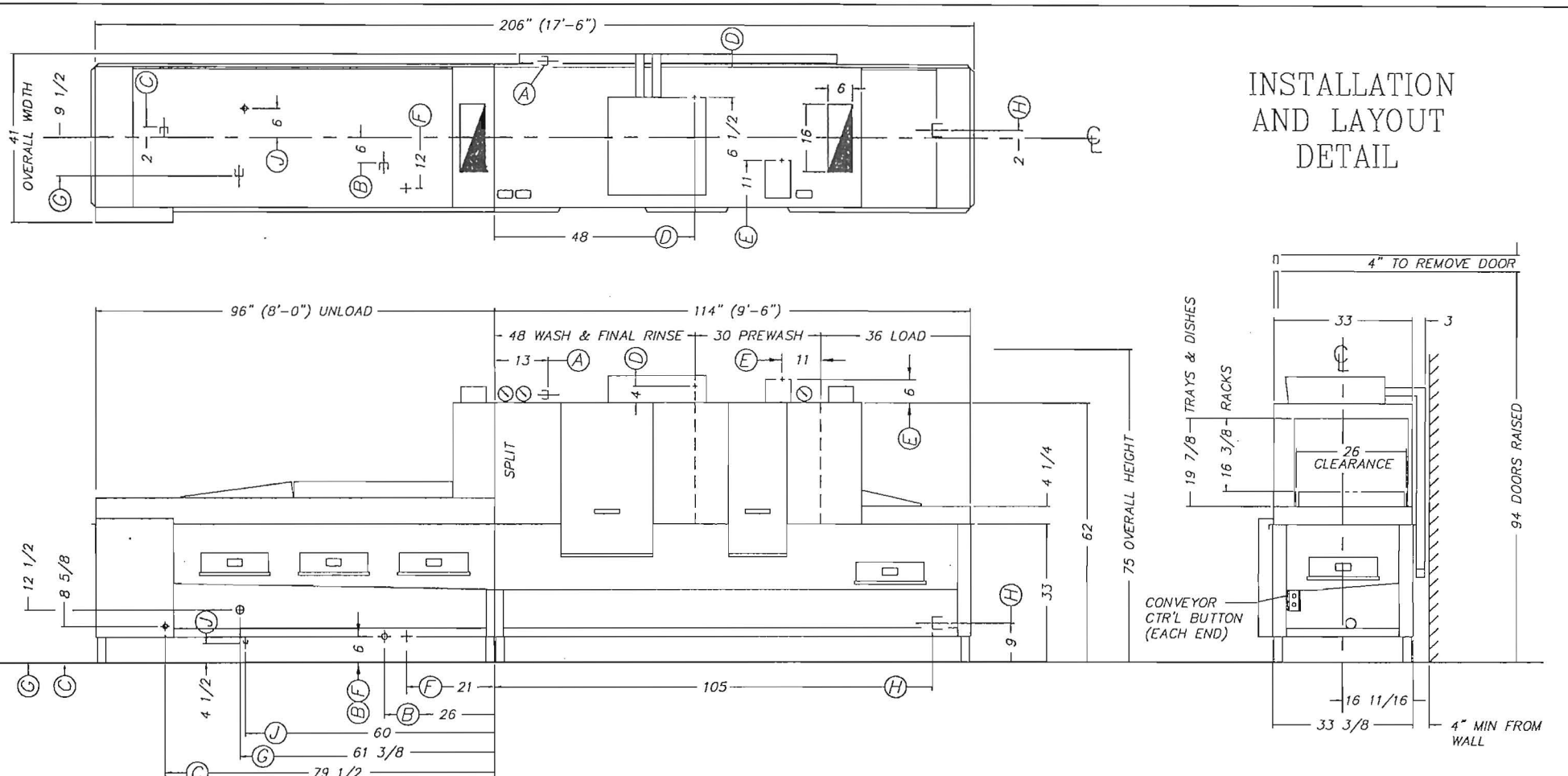
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NOTES:

1. "•" HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL
2. (2) 6" X 16" VENTS WITH ADJUSTABLE DAMPERS

DEFENDER 14		
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE		
 INSINGER MACHINE COMPANY	6245 State Rd. Tel. 215-624-4800 Philadelphia PA 19135-2996 FAX: 215-624-6966	
	SCALE: 1/2" = 1'-0"	DWG. NO.
DRAWN: EMM 3.4.97	DEFENDER A	
APPROVED: EBA 3.4.97		

INSTALLATION AND LAYOUT DETAIL




INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL-140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER * ●	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER ●	3/4 FIPS
D	ELECTRICAL CONNECTION - COMMON	40 KW & 5 1/2 HP
E	ELECTRICAL CONNECTION - LIGHTS	120 V
F	ELECTRICAL CONNECTION - BOOSTER *	27/45 KW
G	STEAM TO BOOSTER AND TANKS	1 1/2 FIPS
H	DRAIN CONNECTION - COMMON	2" FIPS
J	CONDENSATE RETURN - COMMON	3/4 FIPS

RIGHT TO LEFT FEED

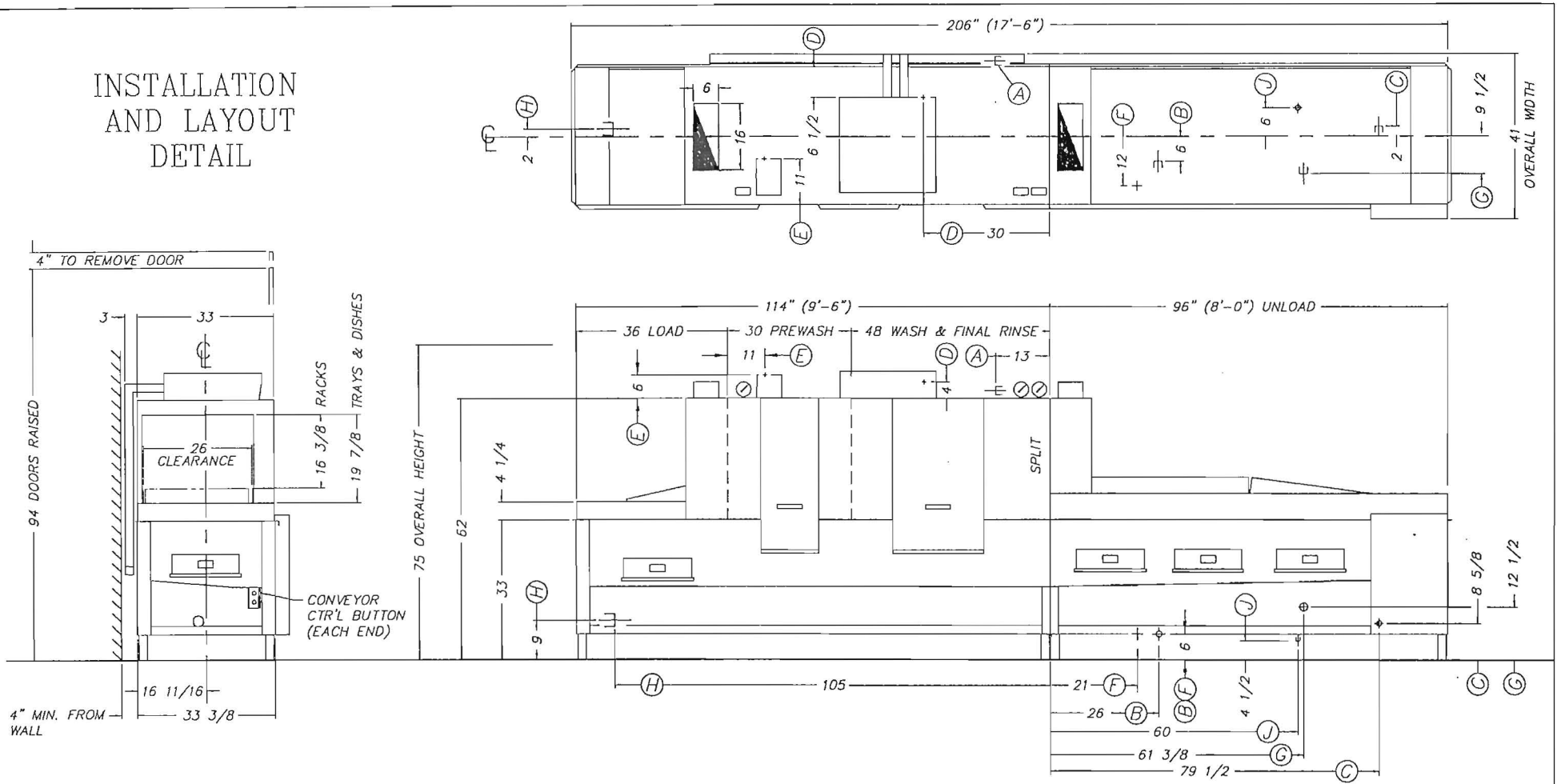
- NOTES:
- "●" HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL
 - (2) 6" X 16" VENTS WITH ADJUSTABLE DAMPERS

DEFENDER 17
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE


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

DRWN: MFJ	6.24.96	SCALE	DWG. NO.	REV
REV: EMM	1.31.01	1/2" = 1'	DEF17R	C
FILE: STD/DEF17R				

INSTALLATION AND LAYOUT DETAIL



INSTALLATION CONNECTIONS		
LTR	DESCRIPTION	SIZE
A	HOT WATER TO AUTO FILL-140° F	3/4 FIPS
B	HOT WATER TO ELECTRIC BOOSTER * ●	3/4 FIPS
C	HOT WATER TO STEAM BOOSTER ●	3/4 FIPS
D	ELECTRICAL CONNECTION - COMMON	40 KW & 5 1/2 HP
E	ELECTRICAL CONNECTION - LIGHTS	120 V
F	ELECTRICAL CONNECTION - BOOSTER *	27/45 KW
G	STEAM TO BOOSTER AND TANKS	1 1/2 FIPS
H	DRAIN CONNECTION - COMMON	2" FIPS
J	CONDENSATE RETURN - COMMON	3/4 FIPS

- NOTES:
- * ● HOT WATER TO BOOSTER 140° F STD/ 110° F SPECIAL
 - (2) 6" X 16" VENTS WITH ADJUSTABLE DAMPERS

DEFENDER 17
AUTOMATIC CONTINUOUS CONVEYOR TYPE DISHWASHING MACHINE

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

Insinger

DRWN: MFJ	6.24.96	SCALE	DWG. NO.	REV
REV: EMM	1.31.01	1/2" = 1'	DEF17L	C
FILE: STD/DEF17L				



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, installed, and operated in accordance with the printed instructions accompanying it, that said Insinger product shall be free of defects in material and workmanship, for a period of one (1) year (12 months) after the date of installation or fifteen (15) months from the date of shipment from Insinger, whichever occurs first, provided the Surefire™ Start-up & Checkout is completed by an Insinger Authorized Service Agency. If the Surefire™ Start-up & Checkout service is not completed, the warranty will expire after one year from the date of shipment from the factory. The Surefire™ Start-up & Checkout service is included in the purchase price of your Insinger dishwasher. Insinger reserves the right to not have this service done. Insinger will not assume any responsibility of extra costs for installation in any areas where there are jurisdictional problems with local trades or unions.

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

This limited warranty shall be limited to the repair of parts which prove defective under normal use and service within the warranty period set forth above, and which on examination shall indicate, to Insinger's satisfaction, that the parts are defective. Insinger will repair the defective part/parts. All warranty work must be done during normal working hours, by either an Insinger Appointed Service Agency or an agency receiving prior authorization from Insinger. Defective parts become the property of Insinger. Parts replaced within the warranty period carry a warranty only until the end of the original limited warranty period. Replacement parts not supplied by Insinger will relieve Insinger of all future liability and responsibility.

This limited warranty does not cover: lighting of gas pilots or burners, cleaning of gas lines, replacement of fuses or resetting of overload breakers, adjustment of thermostats, adjustment of clutches, opening or closing of utility supply valves or switching of electrical supply, cleaning of valves, strainers, screens, nozzles, or spray pipes, performance of regular maintenance and cleaning as outlined in the TECH MANUAL, damages resulting from water conditions, accidents, alterations, improper



INSINGER LIMITED WARRANTY

Page 2

use, abuse, misapplication, tampering, improper installation or failure to follow maintenance and operation procedures, fire, flood, acts of God or improper maintenance or service, or for improper operation or failure to follow normal operating instructions (as set out in the TECH MANUAL) or failure as a result of the aforestated.

Examples of the aforementioned, but without limitations, are: damage to exterior or interior finish as a result of the above, use with utility service other than that designated on the rating plate, improper connection to utility service, inadequate or excessive water pressure, corrosion from chemicals dispensed in excess of recommended concentrations, failure of electrical components due to connection of chemical dispensing equipment installed by others, leaks or damage resulting from such leaks as made by installer including those at machine table connections or by connections of chemical dispensing equipment installed by others, failure to comply with local building codes, damage caused by labor dispute.

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.

THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO INSINGER PRODUCTS AND IS EXPRESSLY IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY OTHER OBLIGATION ON THE PART OF INSINGER. THE REMEDY CONTAINED IN THIS WARRANTY IS THE SOLE REMEDY FOR ANY DEFECT FOUND TO EXIST IN AN INSINGER PRODUCT AND ALL OTHER DAMAGES ARE EXCLUDED, INCLUDING ANY LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGE.

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

THIS LIMITED WARRANTY SUPERSEDES ALL OTHER EXPRESS WARRANTIES, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OR LIMITED WARRANTIES AS OF JANUARY 1, 1993.



PART 2
INSTALLATION and OPERATION
INSTRUCTIONS



**CENTURY 14 & DEFENDER SERIES
INSTALLATION INSTRUCTIONS
Part 2, Section A**

A.1 PLACEMENT

- A.1.1 Carefully uncrate machine.
- A.1.2 Bolt the two sections together.

Note

Use silicone caulking in addition to the gasketing material provided between the sections. This will minimize the possibility of leaks.

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.2.1.1 There is an electrical connection required for the:
 1. Pumps and control circuit, 2. Wash tank heaters (electric heat only) and, 3. Rinse tank heaters (electric heat only - Century 14 only).
 - A.2.1.2 Machines provided with a single-point connection require one electrical connection in the control panel for all functions excluding the booster (not available on all models).

Caution

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

Fuse Sizing Chart

Model	208VAC/3Ø	230VAC/3Ø	380VAC/3Ø	460VAC/3Ø
Century 14				
Motor Circuit	25A	20A	15A	10A
Wash Heaters	70A	60A	40A	30A
Rinse Heaters	110A	90A	60A	45A
Defender				
Motor Circuit	25A	25A	15A	15A
Motor Circuit w/ BD (steam)	30A	30A	20A	15A
Wash Heaters	140A	120A	80A	60A
BD (electric)	90A	80A	50A	40A



CENTURY 14 & DEFENDER SERIES
INSTALLATION INSTRUCTIONS
Part 2, Section A

Caution

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

- A.2.1.3 Electrical termination points are also required between each of the sections in the termination box located on the frame in the rear of the machine near where the sections meet.

A.3 MECHANICAL CONNECTIONS

- A.3.1 Connect 140DEGF and 180DEGF to pipestrings as tagged on the machines and noted on the installation drawing.
- 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.
- A.3.3 Connect the drain lines.

Caution

Drain lines must be as specified on installation drawings. Drain line should be properly vented and should have fall of not less than $\frac{1}{4}$ " to the foot of proper flow. Some area plumbing codes require drains to flow into an open gap with an opening twice the diameter of the pipe. Check with your local plumbing codes for the type of drain connection required.

Caution

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

Caution

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



CENTURY 14 & DEFENDER SERIES
INSTALLATION INSTRUCTIONS
Part 2, Section A

A.3.4 Adjust the compression spring located on the conveyor overload shutoff mechanism. This can be found on the unload end of the machine under the mechanism guard. There is a sticker marked with the factory test setting of the spring. Adjust to this point then run the conveyor full of ware. If the machine does not shut down the adjustment is set. If it does shut down adjust the spring tighter until the machine runs continuously.

A.4 HVAC

A.4.1 Ventilation system must 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 on each end of the machine or an overhead venting system should be installed.

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.

Caution

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

A.5.3 The detergent density probe should be installed in the hole provided & labelled in the wash tank.

A.5.4 A switch on the control panel labelled "Energy Saver" is provided for de-liming the machine. When placed in the OFF position, this switch will defeat the machines energy saver function, allowing it to run continuously for de-liming. voltage side.



**CENTURY 14 & DEFENDER SERIES
OPERATION INSTRUCTIONS
Part 2, Section B**

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

By following the operation procedure 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, removeable components such as suction strainers, scrap screens, and spray manifolds.
- B.1.3 Ensure all water, and steam lines are open. Ensure electrical circuits are on.
- B.1.4 Close machine doors.

Warning

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

- B.1.5 Move the power toggle switch to the "ON" position.
- B.1.6 The machine will automatically 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, level float(s) located in each tank MUST be cleaned daily

- B.1.8 Depress the Green button on the control panel to operate the pumps.
- B.1.9 Located at the load and unload end of the machine is a start/stop station for operating the conveyor system. Depress the green button to start the conveyor.

Caution

An emergency stop bar is located at the end of the conveyor to shut the machine down. This will minimize ware breakage if the conveyor is not unloaded.

CENTURY 14 & DEFENDER SERIES
OPERATION INSTRUCTIONS
Part 2, Section B

B.1.10 A light labelled "Check Conveyor Belt" is provided on the control panel. When this light illuminates the machine will automatically shut down. Check the conveyor belt for jamming or ware caught in the belt.

Caution

Should the light illuminate after an initial check for jams, DO NOT continue to operate the machine. Immediately contact a qualified service technician. Refer to the Conveyor Overload Shutoff Mechanism Adjustment section in the Maintenance Section of this manual.

B.1.11 The system is now ready for operation. All ware should be properly scrapped.

B.1.12 Place dirty ware on the conveyor belt. The ware will pass through the various machine cycles. The final rinse is automatically started when ware passes the photo-eye located at the entrance of the machine.

Note

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

B.1.13 Upon completion of ware cleaning depress the Red button located on the control panel to stop the pumps.

B.1.14 Depress the red button located at the stop/start station on either end of the machine to stop the conveyor.

B.1.15 Move the Power toggle switch to the "OFF" position.

Caution

Move the power toggle switch to the OFF position before draining the machine.

B.1.16 Refer to the cleaning procedures for proper clean-up of the dishmachine.

B.1.17 Report any unusual occurrences to qualified service personnel.



CENTURY 14 & DEFENDER SERIES
OPERATION INSTRUCTIONS
Part 2, Section B

B.2 Operation Instructions for Optional Electric Blower Dryer

- B.2.1 Move the power toggle switch to the "ON" position. The amber light will illuminate.
- B.2.2 Depress the green button on the Electric Blower Dryer control panel to start the blower and heaters.

Caution

The green start button must be depressed for approximately 10 seconds.

- B.2.3 Depress the red button on the Electric Blower Dryer control panel to stop the blower and heaters.
- B.2.4 Move the power toggle switch to the "OFF" position to shut the Electric Blower Dryer down.



**CENTURY 14 & DEFENDER SERIES
OPERATION INSTRUCTIONS
Part 2, Section B**

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

B.3 Cleaning Procedures, Daily

- B.3.1 Remove all internal removeable parts including spray manifolds, scrap screens, drain overflow tubes, suction strainers and curtains.
- B.3.2 Remove the end caps from the spray manifolds and clean with the brush provided. Flush the manifolds.
- B.3.3 Flush scrap screens.
- B.3.4 Clean drain overflow tube.

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

- B.3.5 Clean suction strainers of build-up.

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

- B.3.6 Clean tank level float(s).

Caution
Level floats must be cleaned daily. Build-up of scale or grease will cause faulty operation of the tank fill & heat system.

- B.3.7 Clean curtains. When curtains are beyond cleaning or torn they should be replaced.
- B.3.8 Final rinse nozzles should be cleaned of matter clogging the jet spray.
- B.3.9 Clean the photo-eye lenses with a damp, soft cloth.
- B.3.10 Doors should be left open to allow drying of interior surfaces.



PART 3
**MAINTENANCE and REPAIR
PROCEDURES**

CENTURY 14 & DEFENDER SERIES
Maintenance & 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.

Caution

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 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.

CENTURY 14 & DEFENDER SERIES

Maintenance & Repair Procedures

Part 3, Section A

- 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).
 - A.2.3.2 IT IS NOT NECESSARY TO REMOVE THE PUMP HOUSING FROM THE MACHINE TO DISASSEMBLE THE PUMP.
 - A.2.3.3 Remove the pump motor and impeller adaptor by removing the 4 hex bolts attaching them to the pump housing.
 - A.2.3.4 Repair or replace the pump parts as required.
 - A.2.3.5 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 immersion heater.
--

- 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.



CENTURY 14 & DEFENDER SERIES
Maintenance & Repair Procedures
Part 3, Section A

- 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.2.7 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 level timer (P/N DE7-31) and one level float (P/N D35-60) per tank.
 - A.2.8.2 The system will not allow the tank heat to energize without water in the tank.
 - A.2.8.3 Should the tank heat energize without water in the tank troubleshoot the system to find the problem.

CENTURY 14 & DEFENDER SERIES
Maintenance & Repair Procedures
Part 3, Section A

Caution

Dirty level floats may 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 the photo-eye emitter and receiver located at the entrance to the machine.
- A.2.9.2 When the beam is broken by a plate, etc., the final rinse timer is energized turning on the final rinse solenoid and allowing the water to flow. After one minute the timer will de-energize turning the solenoid off.
- A.2.9.3 The energy saver timer (P/N DE7-28) is reset to 0 at the same time the final rinse timer is energized. The energy saver timer is adjustable between 0-300SEC.

A.2.10 Conveyor Belt Adjustment

- A.2.10.1 The conveyor belt tension is adjustable by locating two adjustment bolts on the load side of the machine. The bolts can be moved in and out of the conveyor follower shaft therefore adjusting the belt tension.

A.2.11 Conveyor Overload Shut-off Mechanism (P/N 1100-289) Adjustment

- A.2.11.1 A clutchless overload is used to shut the machine completely down should a jam occur in the conveyor system. The jam may be caused by ware being caught, bent tracks or misalignment of the conveyor belt.
- A.2.11.2 Tension is held on the ATC Arm (P/N 1100-287) by a spring (P/N D-351). The ATC Arm keeps the switch (P/N D-2215A) engaged.
 - A.2.11.2.1 Should a jam occur the spring gives disengaging the ATC Arm from the switch. The "Check Conveyor Belt" light will illuminate and the machine will completely shut-down. Refer to the wiring diagram for the electrical controls.



CENTURY 14 & DEFENDER SERIES
Maintenance & Repair Procedures
Part 3, Section A

- A.2.11.3 Adjust the conveyor tension by loosening the adjusting nut and locknut.
- A.2.11.4 Turn the adjusting-nut to either compress or expand the spring. Compressing the spring will raise the required force to shut-down the machine, expanding the spring will lower the force.
- A.2.11.5 Maintain the adjustment by tightening the locknut to the adjustment nut.



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 d. Overflow v-seal dirt/worn	a. Close drain b. Reseat or install drain overflow c. Close pump petcock d. Clean/replace v-seal
3. Tank fills beyond overflow	a. Obstruction in overflow tube or drain line	a. Remove obstruction
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

BASIC SERVICE GUIDE

SYMPTOM	POSSIBLE CAUSE	Solution
6. Weak or ineffective final rinse spray	<ul style="list-style-type: none"> a. Lime deposits in spray nozzles b. Low water pressure c. Clogged line strainer d. Closed water supply valve 	<ul style="list-style-type: none"> a. Clean or replace nozzles b. Adjust to 20PSI c. Remove line strainer and clean d. Open ball valve
7. Water hammer	<ul style="list-style-type: none"> a. Excessive water line pressure 	<ul style="list-style-type: none"> a. Install water hammer valve
8. Machine vibrates or is noisy	<ul style="list-style-type: none"> a. Pump rotation reversed 	<ul style="list-style-type: none"> a. Arrow on pump housing indicates direction, correct electrically
9. Final rinse will not shut off	<ul style="list-style-type: none"> a. Final rinse solenoid valve clogged b. Diaphragm worn c. Solenoid valve still powered-up 	<ul style="list-style-type: none"> a. Disassemble valve and clean internal parts of scale or replace b. Replace with solenoid valve repair kit c. Check final rinse actuating circuit for proper operation

BASIC SERVICE GUIDE

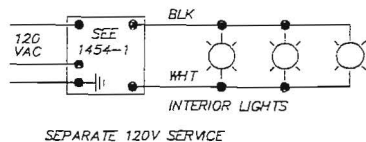
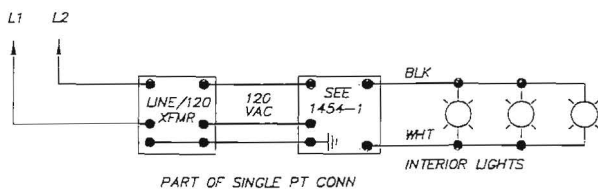
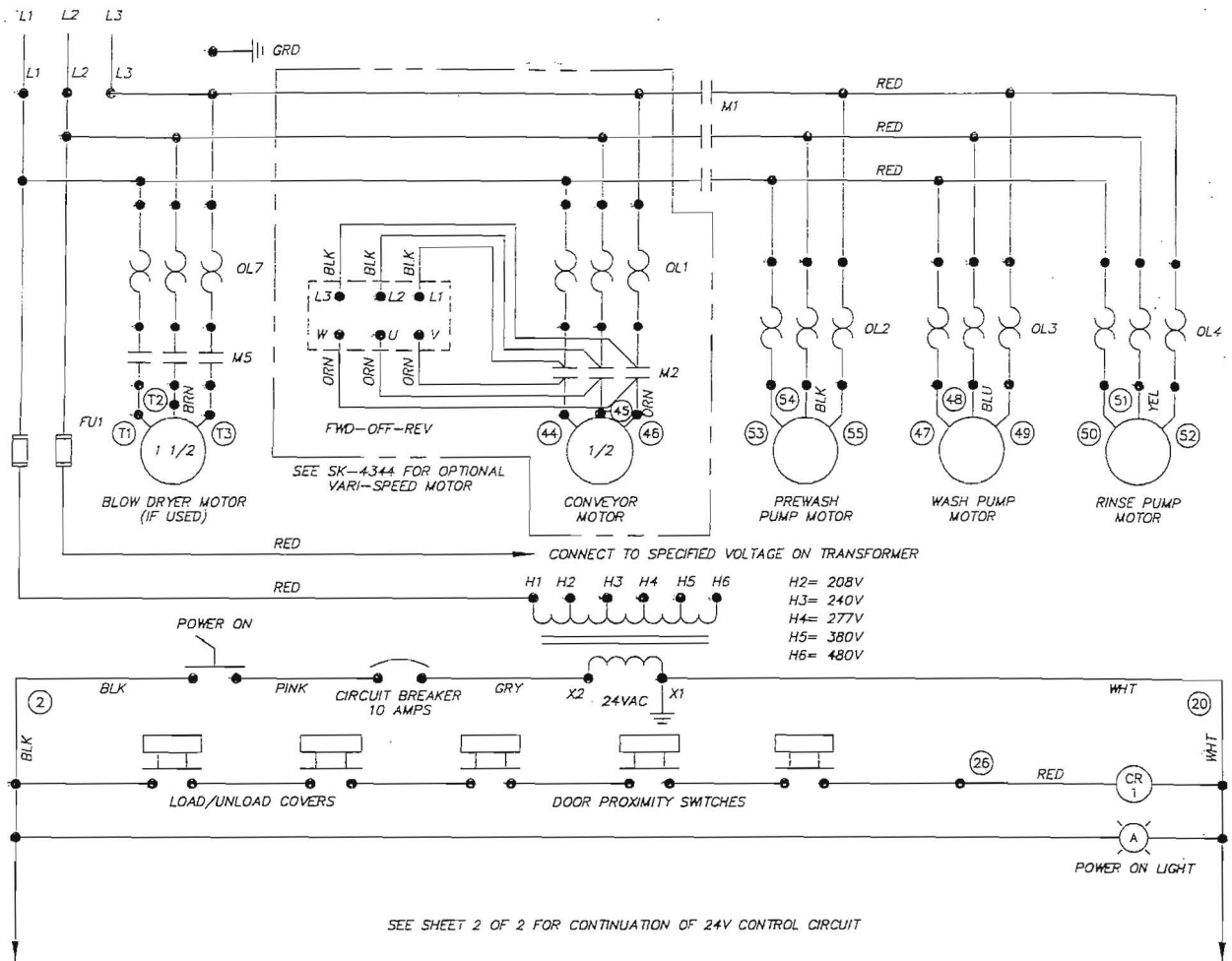
SYMPTOM	POSSIBLE CAUSE	Solution
10. Tank not filling/tank heat coming on with no water in tank	<ul style="list-style-type: none"> a. Level float dirty b. Level control system not working 	<ul style="list-style-type: none"> a. Clean level float b. Troubleshoot level control circuit
11. Tank temperature too low/high	<ul style="list-style-type: none"> a. Thermostat not adjusted b. Heat circuitry not working c. Electric heat - power turned off d. Electric heat - immersion heaters limed e. Steam heat - steam turned off f. Steam heat - not enough steam g. Steam heat - condensate traps clogged h. Gas heat - gas turned off i. Gas heat - pilot not lit (if provided) 	<ul style="list-style-type: none"> a. Adjust thermostat b. Troubleshoot circuitry c. check circuit breakers d. De-lime machine e. Turn steam on f. Adjust steam pressure per machine spec's g. Clean or replace condensate traps h. Turn on gas i. Re-light pilot



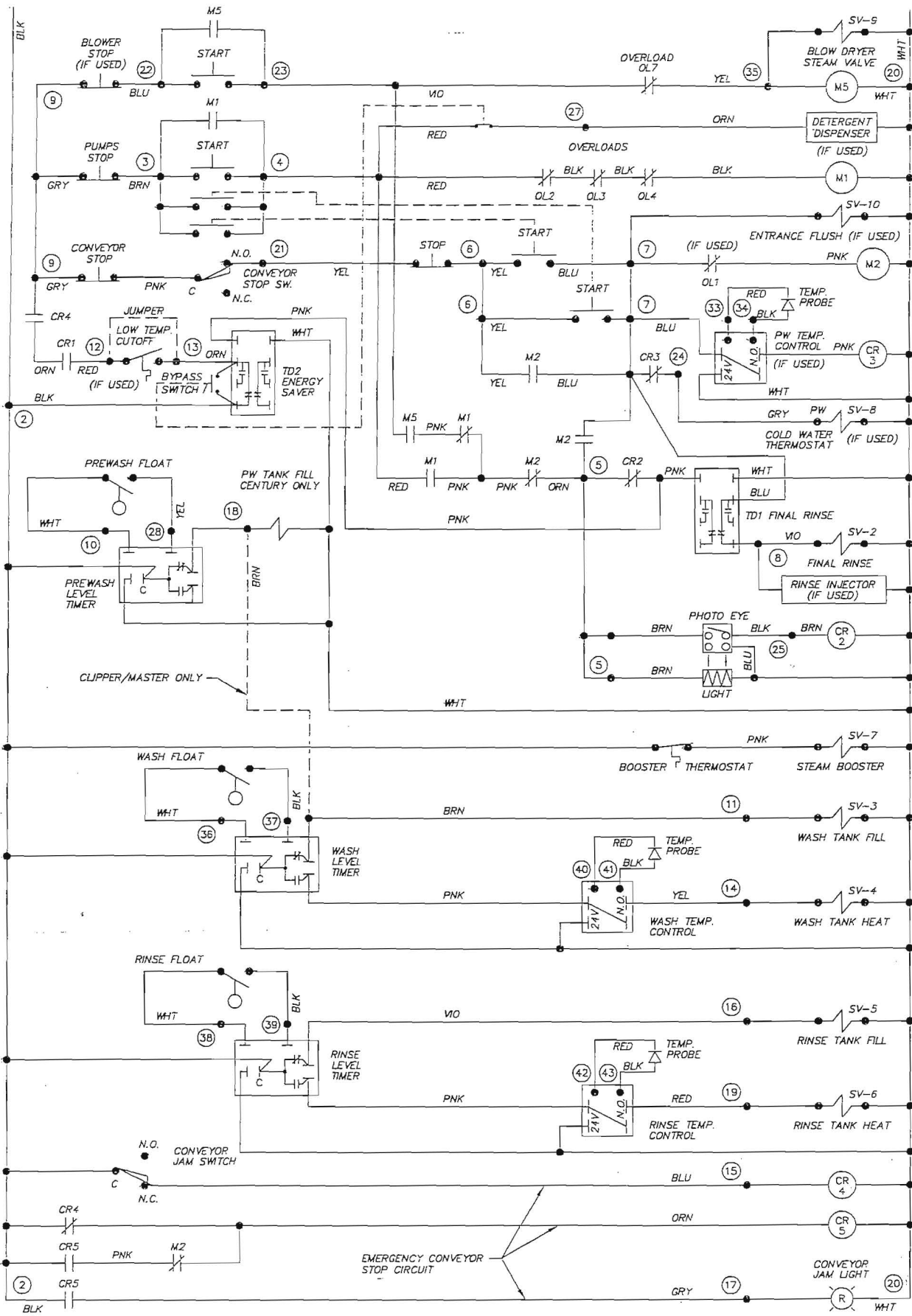
PART 4

**ELECTRICAL SCHEMATICS and
ELECTRICAL REPLACEMENT PARTS**

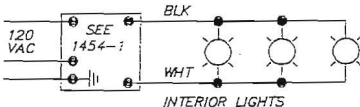
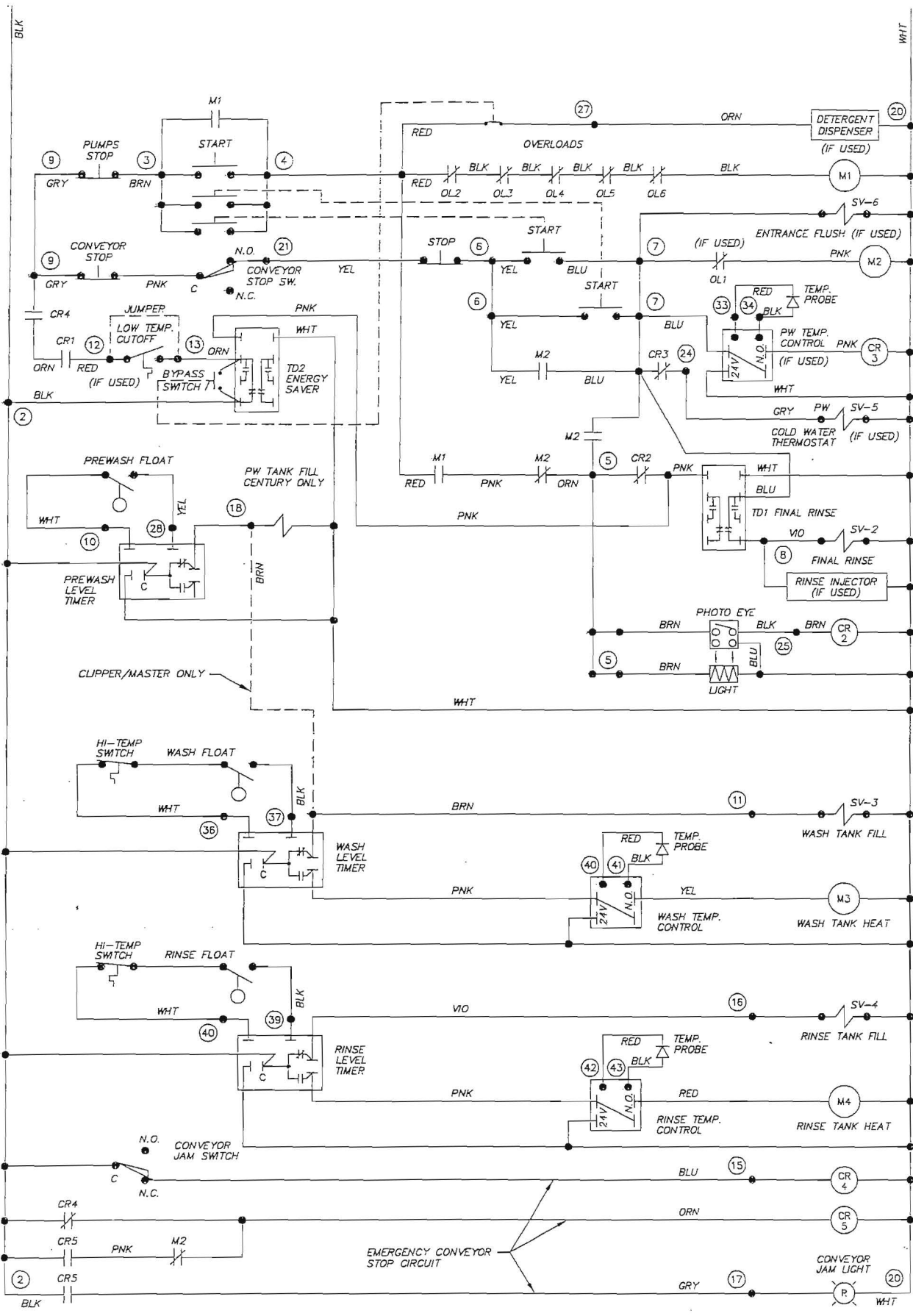
FOR CENTURY 14



T	1927	3.25.02	TITLE	CLIPPER/MASTER/CENTURY STEAM HEAT	DWG. NO.	WFLT010
S	1907	11.16.01	REV	ECN NO DATE	DRWN/DATE	RAF
FILE: WRE\WFLT010					Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	

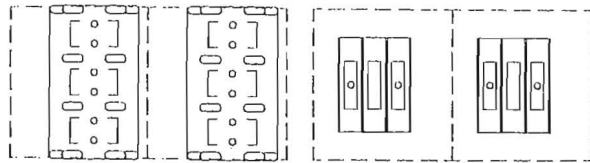


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S	1907	11.16.01				
REV	ECN NO.	DATE	Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE	RAF 05.01.95
FILE:	WIRE	WFLT010				

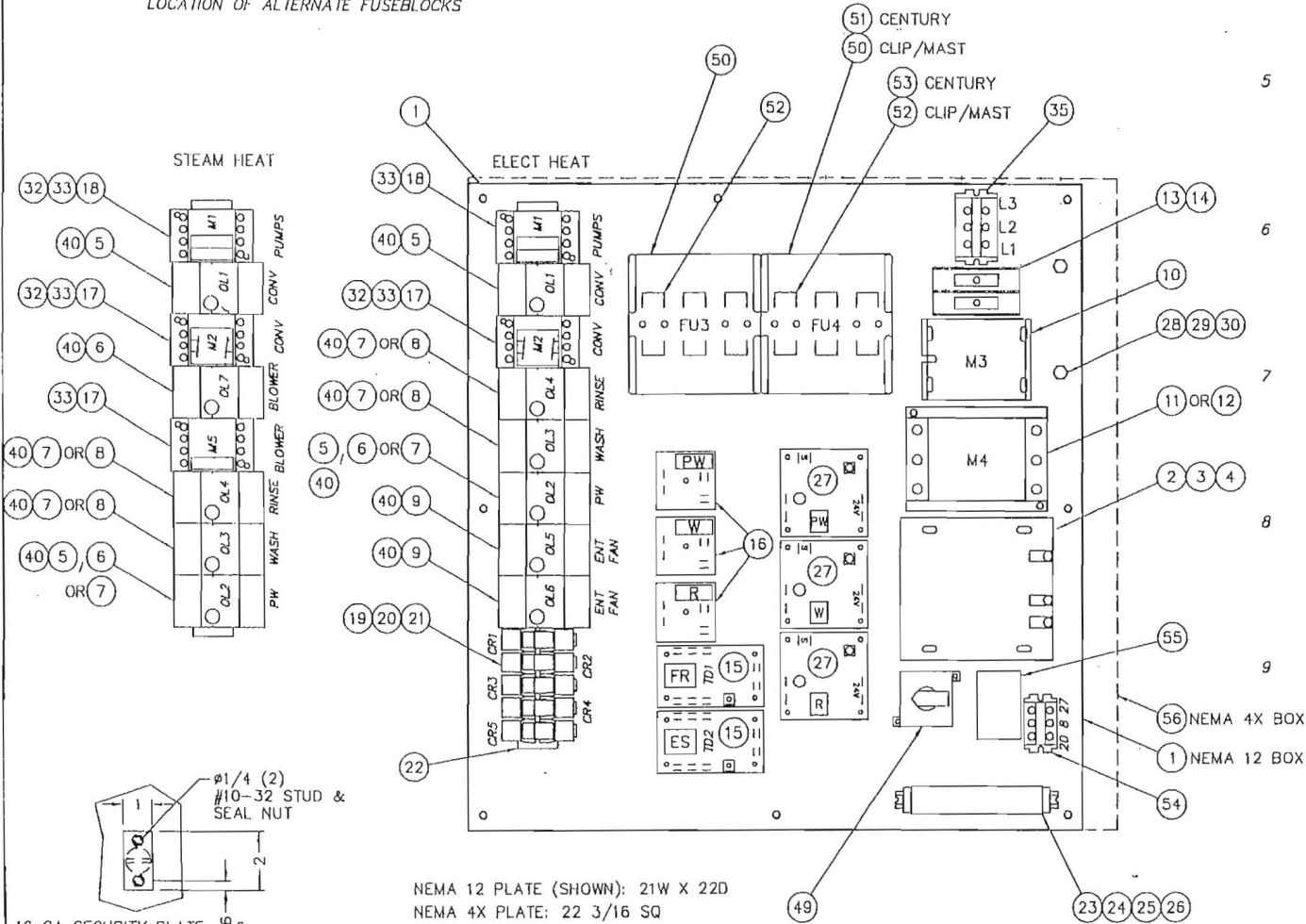


SHEET 2 OF 2

U	1927	3.25.02	TITLE	CLIPPER/MASTER/CENTURY ELECTRIC HEAT	DWG. NO.	WFLTO20
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S	1661	3.11.99				
REV	ECN NO	DATE				
FILE: WIRE\WFLTO20				Philadelphia, PA 19135	DRWN/DATE	
				(215) 624-4800	RAF	05.06.95
				FAX (215) 624-6966		



LOCATION OF ALTERNATE FUSEBLOCKS



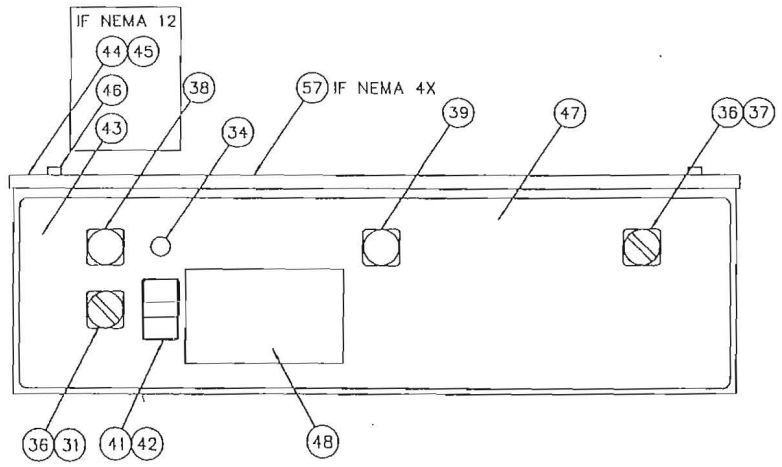
NEMA 12 PLATE (SHOWN): 21W X 22D
NEMA 4X PLATE: 22 3/16 SQ

ITEM	DESCRIPTION	PART NO.	QTY
1	COMPONENT MTG PLATE (NEMA 12 BOX)	1282-30	1
2	TRANSFORMER (250 VA, 24 VAC)	DE6-25	1
3	FUSE BLOCK KIT (250 VA XFMR)	DE9-165	1
4	FUSE (250 VA TRANSFORMER PRIMARY)		2
	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 CENTURY PRE-WASH PUMP, ALL 1/2 HP CONV DRIVES)		AR
	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	
	208/3/60 1.6-2.5 A	DE2-52	
6	OVERLOAD RELAY (1-1/2 HP CLIPPER PREWASH PUMP AND 1-1/2 HP STEAM DRYER MOTOR)		AR
	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	
	208/3/60 4-6 A	DE2-54	
7	OVERLOAD RELAY (2 HP CENTURY & CLIPPER WASH/RINSE AND 2 HP MASTER PW PUMPS)		AR
	460/3/60 2.5-4 A	DE2-53	
	380/3/50 2.5-4 A	DE2-53	
	230/3/60 5.5-8 A	DE2-55	
	208/3/60 5.5-8 A	DE2-55	
8	OVERLOAD RELAY (3 HP MASTER WASH & RINSE PUMPS)		2
	460/3/60 4-6 A	DE2-54	
	380/3/50 4-6 A	DE2-54	
	230/3/60 7-10 A	DE2-56	
	208/3/60 7-10 A	DE2-56	
9	OVERLOAD RELAY (1/5 HP HEAT FAN)		2
	120/1/60 2.5-4	DE2-53	

SHEET 1 OF 2

TITLE		CLIPPER/MASTER/CENTURY CONTROL PANEL LAYOUT	
		Philadelphia, PA 19135	DRWN/DATE
		(215) 624-4800	MFJ
		FAX (215) 624-6966	05.20.95
		FILE: SKETCH\SK-3623	
J	1945	7.17.02	SCALE
H	1857	2.15.01	1/4
REV	ECN NO	DATE	DWG. NO.
			SK-3623

ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY
10	CONTACTOR (20 KW ELECT WASH TANK HEAT ONLY)		1	18	CONTACTOR (PUMPS)		1	39	PILOT LIGHT ASSY - RED	DE8-52	1
	460/3/60 30 A RES	DE1-109			CENTURY	SP4 DE1-93		40	OVERLOAD BASE	DE2-60	AR
	380/3/50 50 A RES	DE1-110			CLIP & MAST (380 - 460 V)	SP17 DE1-56AE		41	PUSHBUTTON ASSY, START-STOP	DE5-32SQ	1
	230/3/60 65 A RES	DE1-111			CLIP & MAST (208 - 230 V)	SP27 DE1-55AE		42	CONTACT BLK, NO/NC	DE5-46SQ	1
	208/3/60 65 A RES	DE1-111		19	RELAY BASE	DE2-37	AR	43	CONTROL BOX, NEMA 12	1442-32	1
11	CONTACTOR (30 KW ELECT RINSE TANK HEAT ONLY)		1	20	RELAY	DE2-38	AR	44	CONTROL BOX COVER, NEMA 12	1442-32	1
	460/3/60 50 A RES	DE1-110		21	RELAY HOLD DOWN SPRING	DE3-43	AR	45	GASKET, NEMA 12 BOX	9007-001	1
	380/3/50 65 A RES	DE1-111		22	DIN RAIL (35 mm)	DE9-216	1	46	NUT, NEMA 12 BOX	D312C-EF-5	4
	230/3/60 SP-47	DE1-94		23	DIN RAIL (15 mm)	DE3-42	1	47	DECAL	SK-3799	1
	208/3/60 SP-57	DE1-95		24	TERMINAL SECTION	DE3-39	AR	48	DATA DECAL	SK-3715	1
12	CONTACTOR (40 KW ELECT RINSE TANK HEAT ONLY)		1	25	TERMINAL END COVER PLATE	DE3-40	1	49	SWITCH (FWD - OFF - REV)	DE8-56	1
	460/3/60 65 A RES	DE1-111		26	TERMINAL END CLAMP	DE3-41	2	50	FUSEBLOCK		AR
	380/3/50 SP-47	DE1-94		27	TEMPERATURE CONTROL BOARD	DE9-251	AR		460 V	DE9-186	
	230/3/60 SP-77	DE1-96		28	GROUNDING STUD	D309C-GC-4G	2		380 & 230 V	DE9-212	
	208/3/60 SP-77	DE1-96		29	LOCKWASHER, 1/4"	D313C-G5	2		208 V	DE9-213	
13	FUSE BLOCK, 2 POLE (XFMR PRIMARY)	DE9-185	1	30	HEX NUT, 1/4-20	D312C-GC-2	2	51	FUSEBLOCK (CENTURY ONLY)		1
14	FUSE (1000 VA TRANSFORMER PRIMARY)		2	31	CONTACT BLOCK, NC	DE5-42AE	1		460, 380, & 230 V	DE9-186	
	460 V FNQ-R-4	DE9-175		32	AUX CONTACT NC	DE1-61AE	AR		208 V	DE9-212	
	380 V FNQ-R-5	DE9-176		33	AUX CONTACT NO	DE1-62AE	AR	52	FUSE		AR
	230 V FNQ-R-7.5	DE9-178		34	CIRCUIT BREAKER (10A)	DE9-106	1		460 V	КТК-R-30	DE9-189
	208 V FNQ-R-8	DE9-179		35	TERMINAL BLOCK ASSY	DE3-3	1		380 V	JJS-40	DE9-209
15	TIMER (ENERGY SAVER & FINAL RINSE)	DE7-28	2	36	SELECTOR SWITCH ASSY	DE8-54	2		230 V	JJS-60	DE9-210
16	TIMER (LIQUID LEVEL)	DE7-35	AR	37	CONTACT BLOCK, NO	DE5-41AE	1		208 V	JJN-70	DE9-211
17	CONTACTOR (CONV & DRYER BLOWER) SP4	DE1-93	AR	38	PILOT LIGHT ASSY - YELLOW	DE8-53	1	53	FUSE (CENTURY ONLY)		3
									460 V	КТК-R-15	DE9-194
									380 V	КТК-R-20	DE9-195
									230 V	КТК-R-30	DE9-189
									208 V	JJS-35	DE9-208
								54	TERMINAL BLOCK ASSY	DE3-9	1
								55	CAUTION LABEL	SK-3451	1
								56	COMPONENT MTG PLATE, NEMA 4X BOX	SK-4446	1
								57	CONTROL BOX (24 X 24 X 8), NEMA 4X	DE9-249	1



NOT SHOWN
 ELECTRIC IMMERSION HEATER (10 KW)
 440-480 V, 3 PH DE13-SF73
 380 V, 3 PH DE13-SF53
 220-240 V, 3 PH DE13-SF43
 208V, 3PH DE13-SF23
 TRANSFORMER (DRY) FOR HEAT FANS
 1000 VA DE6-37
 1000 VA (208 & 380 V ONLY) DE6-32
 REMOTE START/STOP PUSHBUTTON STA DE5-43AE AR
 TEMPERATURE SENSOR DE9-252 AR

54	TERMINAL BLOCK ASSY	DE3-9	1
55	CAUTION LABEL	SK-3451	1
56	COMPONENT MTG PLATE, NEMA 4X BOX	SK-4446	1
57	CONTROL BOX (24 X 24 X 8), NEMA 4X	DE9-249	1

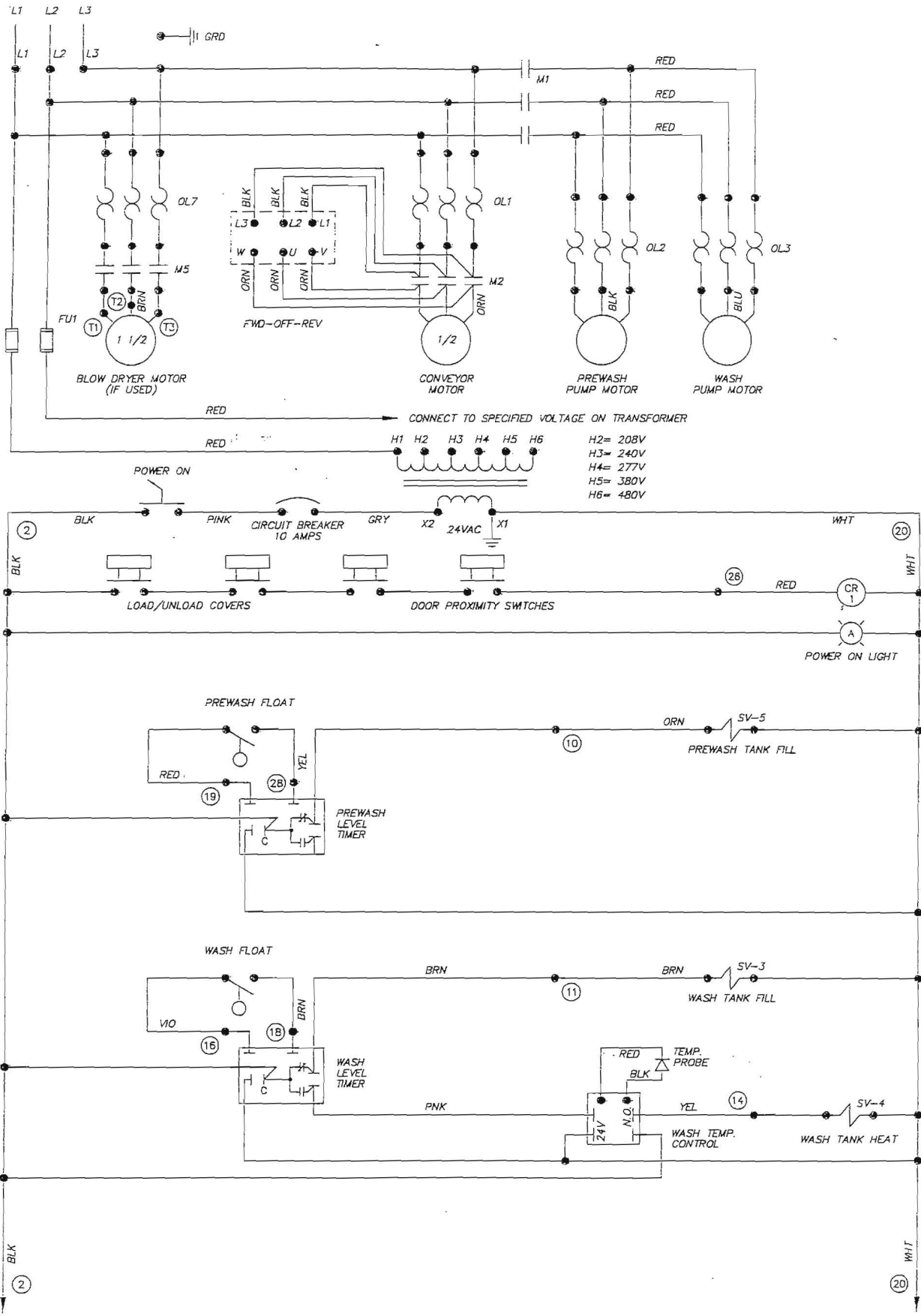
SHEET 2 OF 2

TITLE		CLIPPER/MASTER/CENTURY CONTROL PANEL LAYOUT	
		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE MFJ 05.20.95
FILE: SKETCH\SK-3623		SCALE	DWG. NO.
J	1945	7.17.02	1/4
H	1857	2.15.01	
REV	ECN NO	DATE	SK-3623



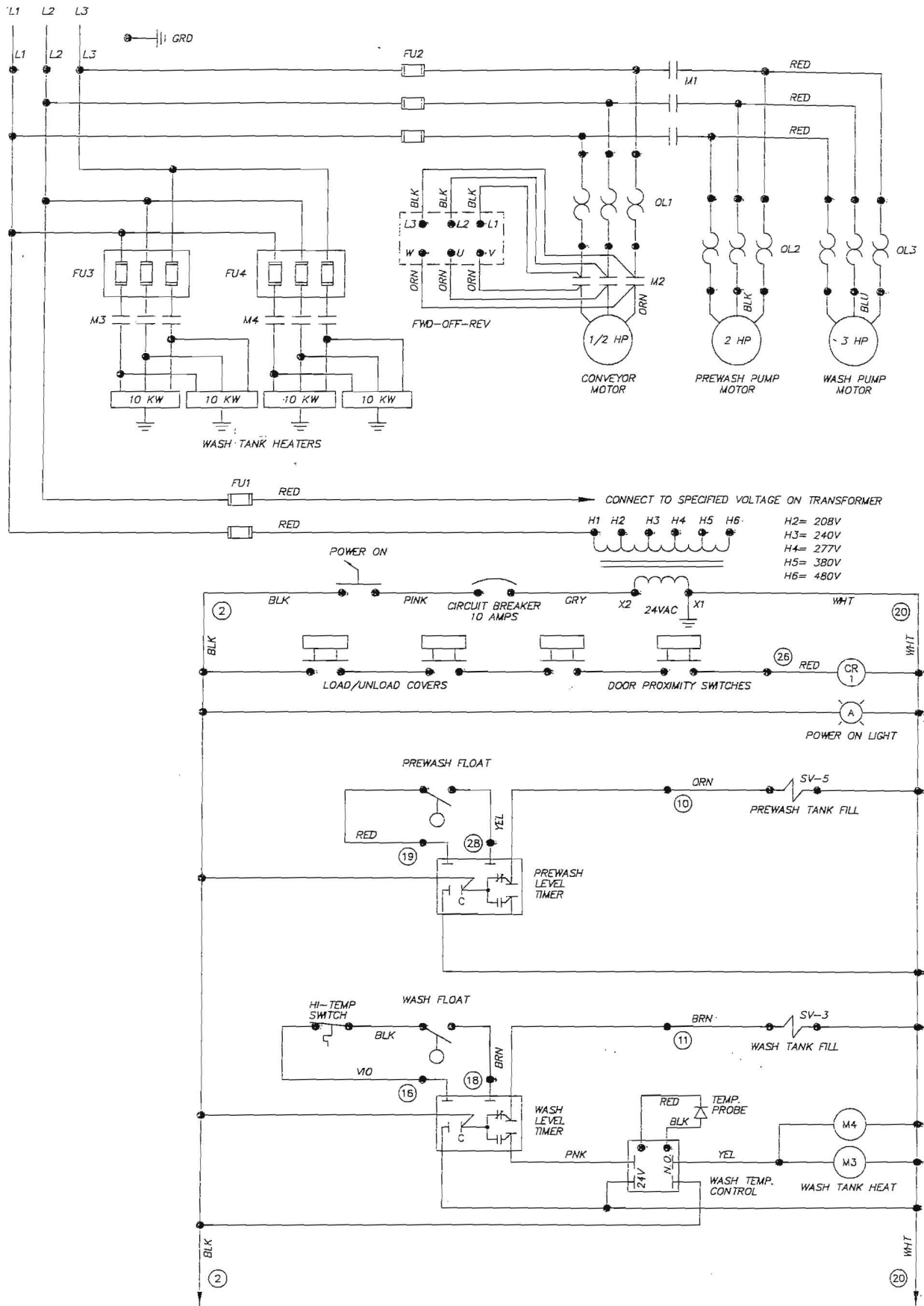
PART 4

**ELECTRICAL SCHEMATICS and
ELECTRICAL REPLACEMENT PARTS
FOR DEFENDER SERIES**



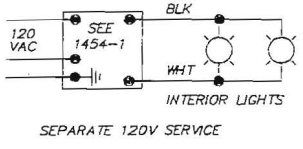
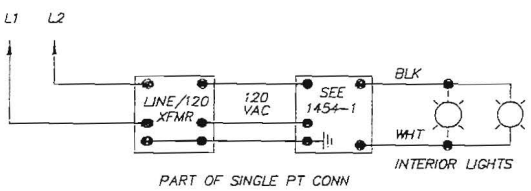
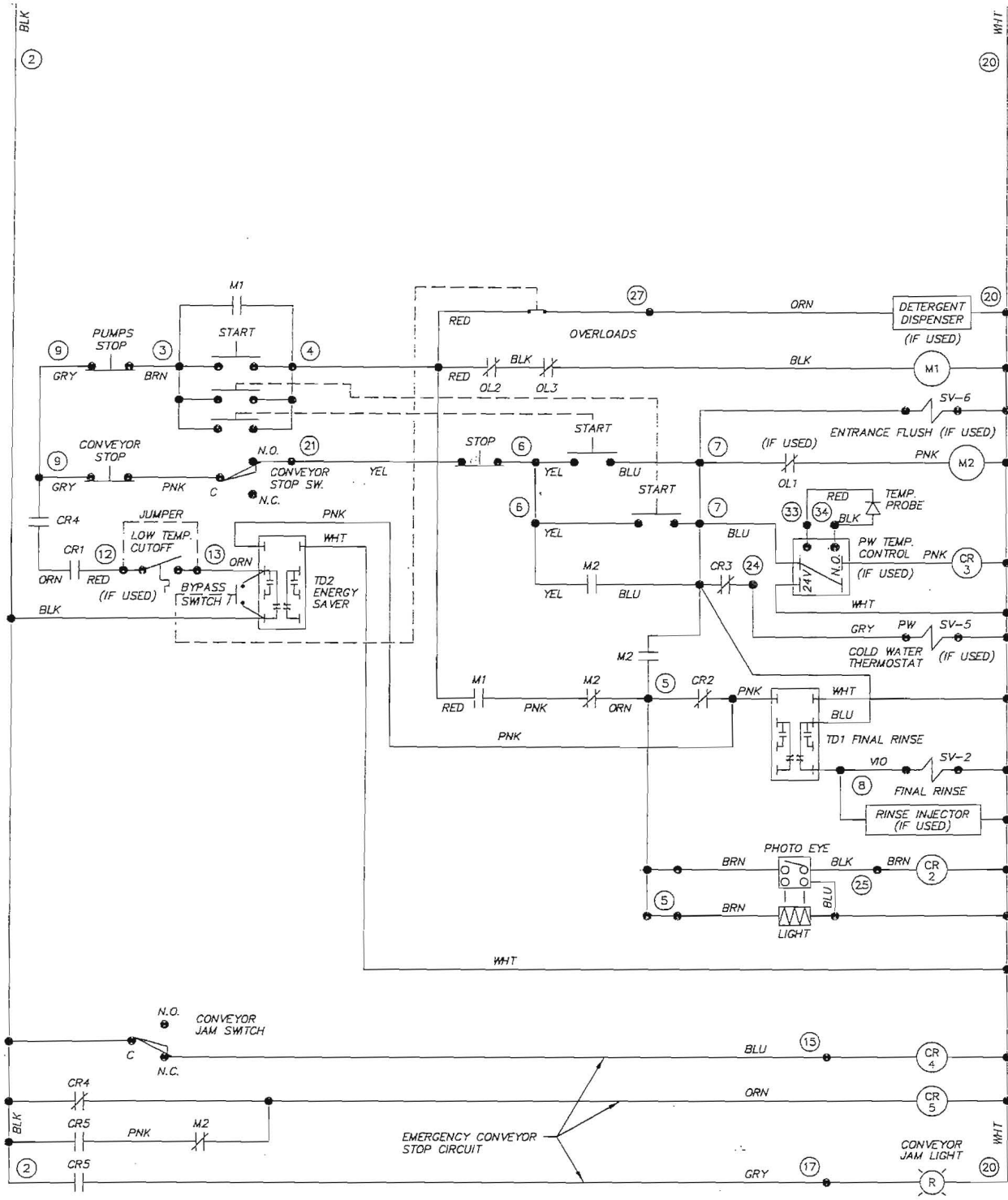
SEE SHEET 2 OF 2 FOR CONTINUATION OF 24V CONTROL CIRCUIT

D	1927	3.25.02	TITLE	DEFENDER	DWG. NO.
C	1907	11.16.01		STEAM HEAT	WDEF010
B	1583	12.1.97			
REV	ECN NO	DATE			Philadelphia, PA 19135 (215) 624-4800
FILE: WRE\WDEF010					DRWN/DATE MFJ 12.23.99

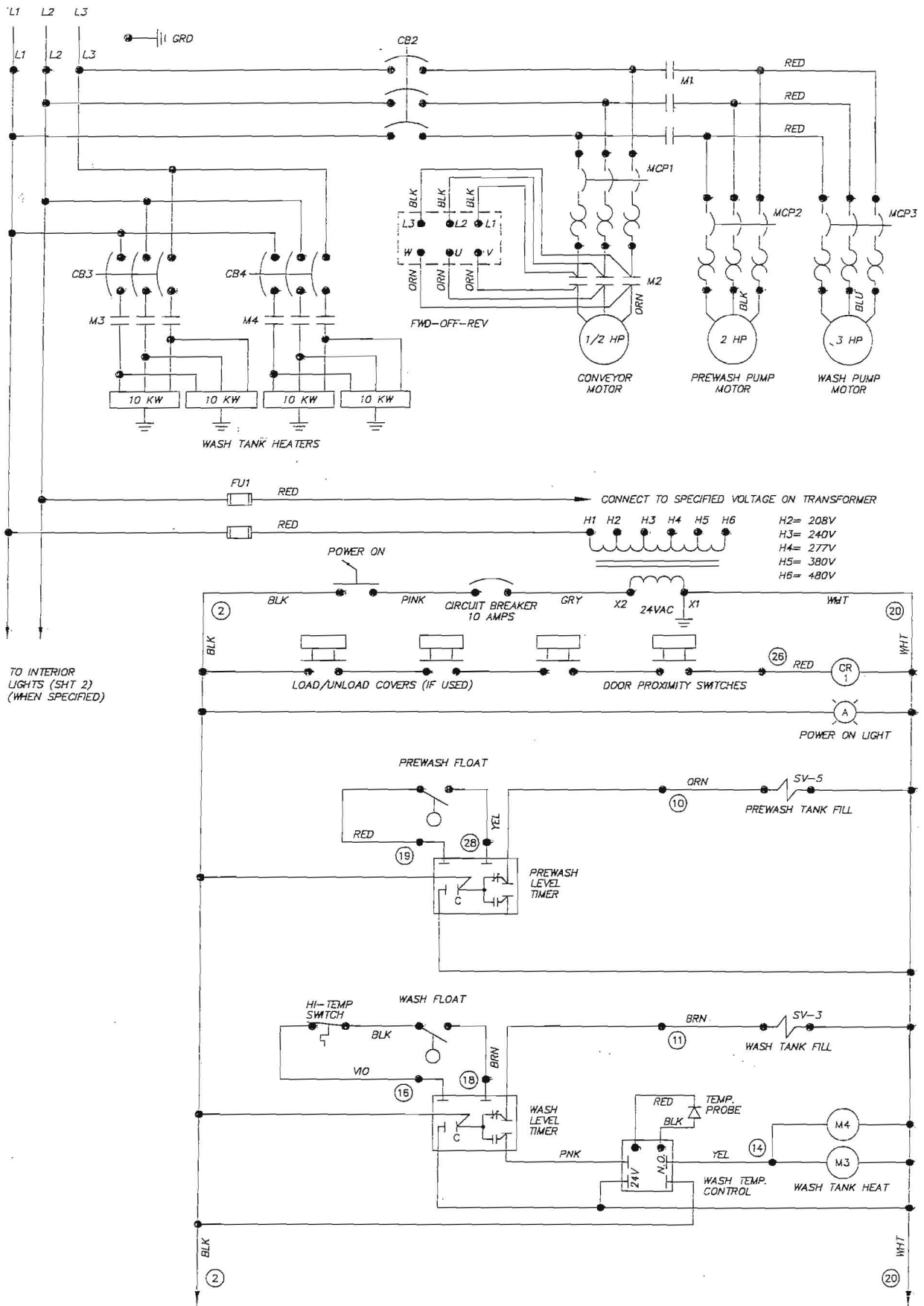


SEE SHEET 2 OF 2 FOR CONTINUATION OF 24V CONTROL CIRCUIT

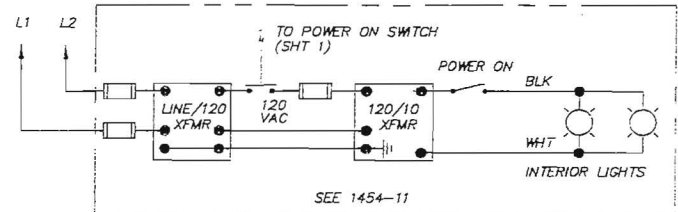
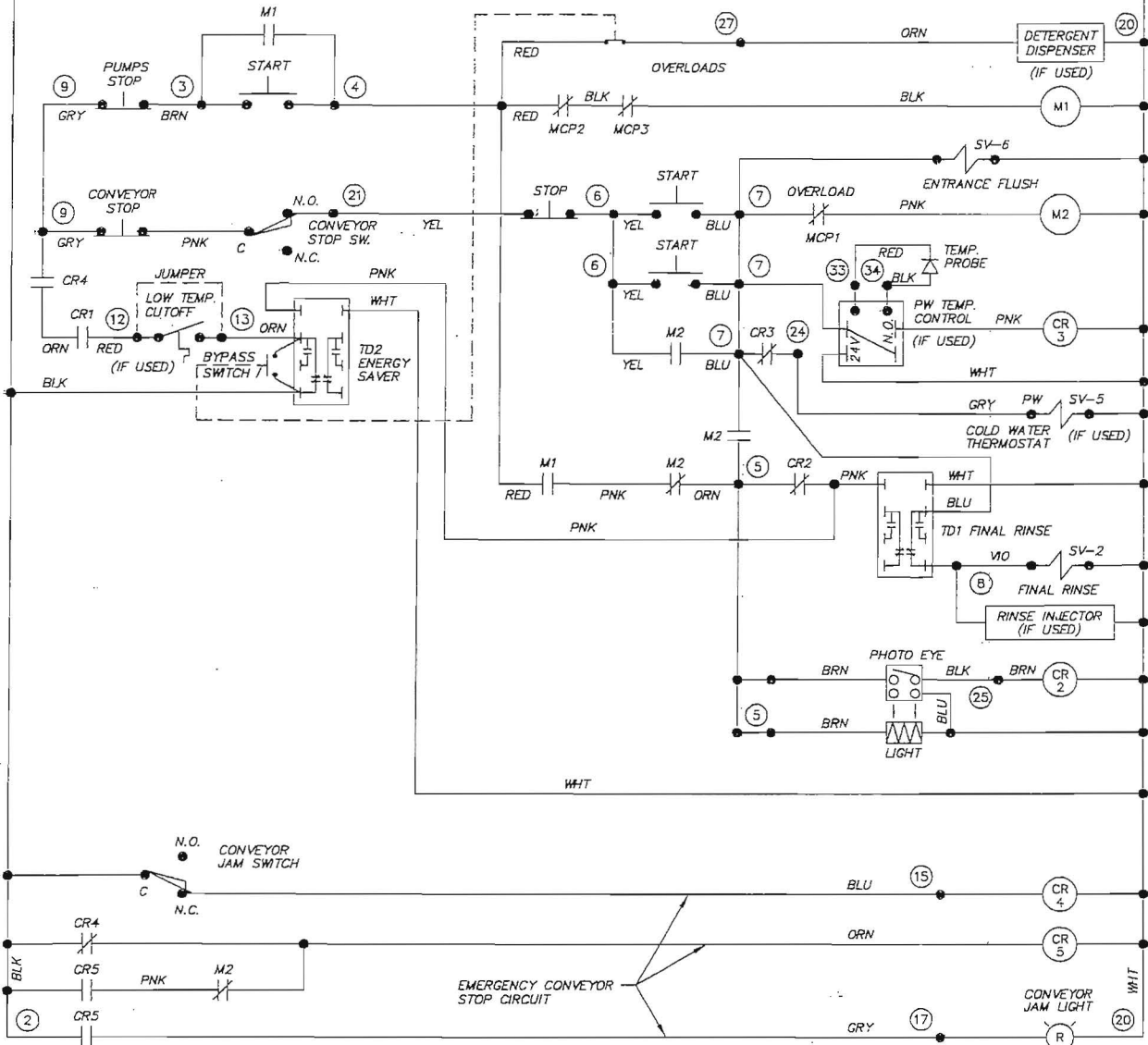
C	1927	3.25.02	TITLE	DEFENDER	DWG. NO.
B	1583	12.1.97		ELECTRIC HEAT	WDEF020
A	1549	5.20.97			
REV	ECN NO	DATE	Insinger		Philadelphia, PA 19135
					(215) 624-4800
					DWGN/DATE
					MFJ
					FAX (215) 624-6966
					9.10.96



C	1927	3.25.02	TITLE	DEFENDER ELECTRIC HEAT	DWG. NO.	WDEF020
B	1583	12.1.97	REV	ECN NO	DATE	DRWN/DATE
A	1549	5.20.97	FILE: WIRE\WDEF020	insinger		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966
						MFJ 9.10.96



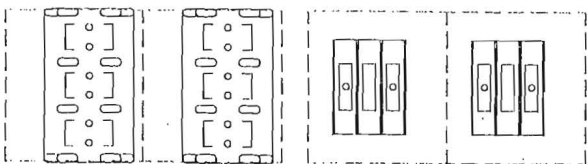
			TITLE	DEFENDER	DWG. NO.
			ELECTRIC HEAT (CIRCUIT BRKRS)		WDEF021
REV	ECN NO	DATE	Insinger		Philadelphia, PA 19135
FILE: WRE\WDEF021			Machine Company		DRWN/DATE
					MJF 8.18.99
					FAX (215) 624-6966



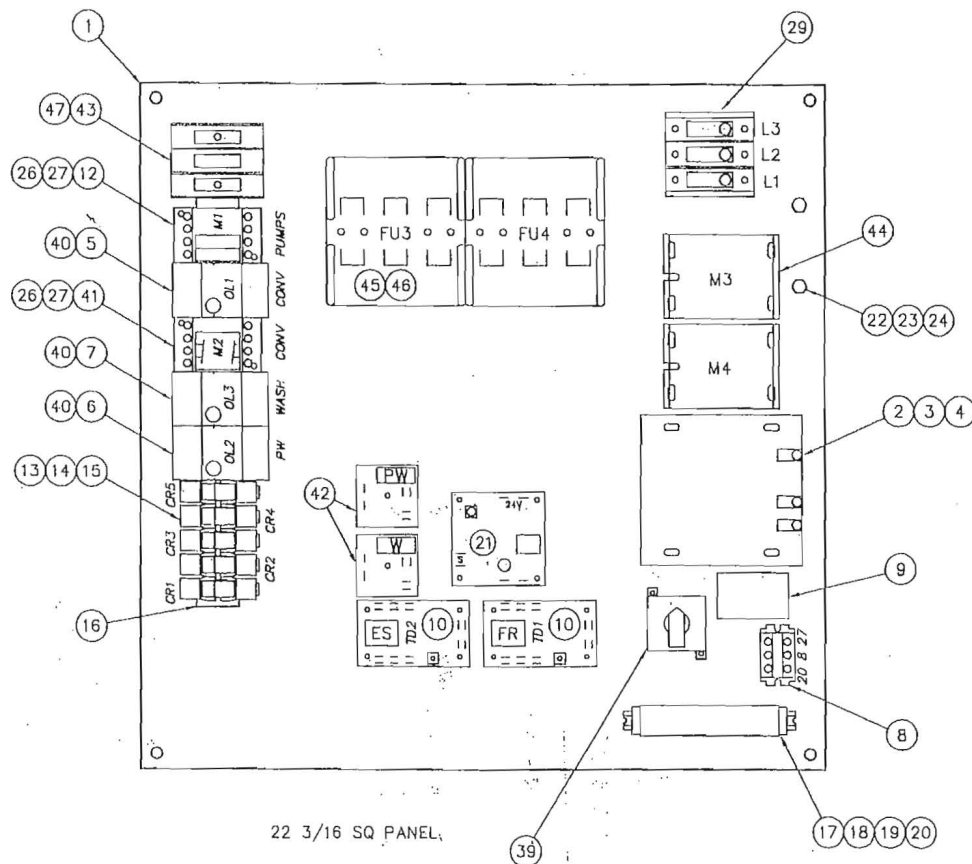
			TITLE	DEFENDER	DWG. NO.	WDEF021
			ELECTRIC HEAT (CIRCUIT BRKRS)			
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE	MFJ 8.18.99
FILE: WRE\WDEF021						



PART 5
REPLACEMENT PARTS
FOR CENTURY 14



230V 380V 460V
LOCATION OF ALTERNATE FUSEBLOCKS



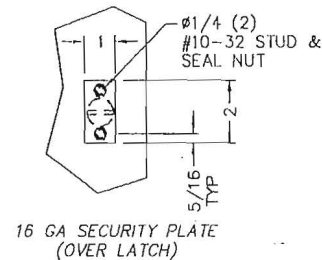
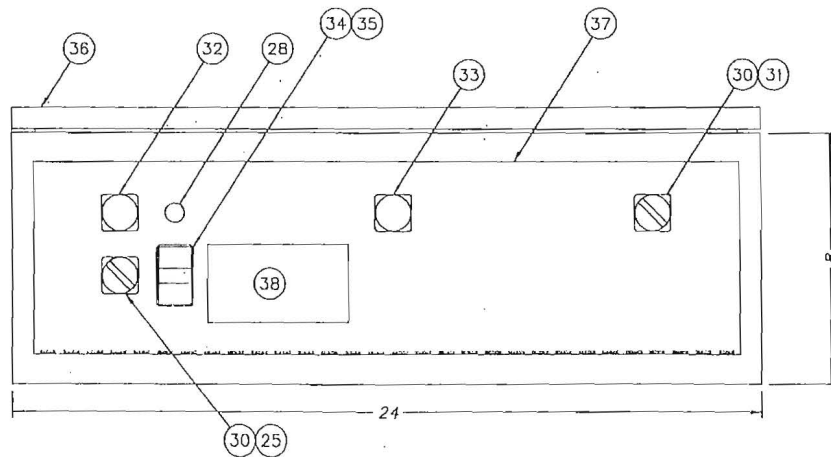
22 3/16 SQ PANEL

ITEM	DESCRIPTION	PART NO.	QTY
1	COMPONENT MOUNTING PLATE (22.18 SQ)	SK-4351	1
2	TRANSFORMER (250 VA, 24 VAC)	DE6-25	1
3	FUSE BLOCK KIT (250 VA XFMR)	DE9-165	1
4	FUSE (250 VA TRANSFORMER PRIMARY)		2
	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 CONV DRIVE)		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	
	208/3/60 1.6-2.5 A	DE2-52	
6	OVERLOAD RELAY (2 HP PW PUMP)		1
	460/3/60 2.5-4 A	DE2-53	
	380/3/50 2.5-4 A	DE2-53	
	230/3/60 5.5-8 A	DE2-55	
	208/3/60 5.5-8 A	DE2-55	
7	OVERLOAD RELAY (3 HP WASH PUMP)		1
	460/3/60 4-6 A	DE2-54	
	380/3/50 4-6 A	DE2-54	
	230/3/60 7-10 A	DE2-56	
	208/3/60 7-10 A	DE2-56	
8	TERMINAL BLOCK ASSY	DE3-9	1
9	CAUTION LABEL	SK-3451	1
10	TIMER (ENERGY SAVER & FINAL RINSE)	DE7-28	2
11			
12	CONTACTOR (PUMPS)		1
	380 - 460 V SP4	DE1-93	
	208 - 230 V SP17	DE1-56AE	
13	RELAY BASE	DE2-37	AR
14	RELAY	DE2-38	AR
15	RELAY HOLD DOWN SPRING	DE3-43	AR

SHEET 1 OF 2

TITLE		DEFENDER	
ELECT HEAT, NEMA 4X CONTROL PANEL			
		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE MFJ 2.5.97
FILE: SKETCH\SK-3963			
G	1945	7.17.02	SCALE DWG. NO.
F	1857	2.15.01	1/4 SK-3963
REV	ECN NO	DATE	

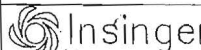
ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY
16	DIN RAIL (35 mm)	DE9-216	1	33	PILOT LIGHT ASSY - RED	DE8-52	1	44	CONTACTOR (40 KW ELECT WASH TANK HEAT ONLY)		2
17	DIN RAIL (15 mm)	DE3-42	1	34	PUSHBUTTON ASSY, START-STOP	DE5-32SQ	1		460/3/60 30 A RES	DE1-109	
18	TERMINAL SECTION	DE3-39	AR	35	CONTACT BLK, NO/NC	DE5-46SQ	1		380/3/50 50 A RES	DE1-110	
19	TERMINAL END COVER PLATE	DE3-40	1	36	CONTROL BOX, 24 X 24 X 8	DE9-249	1		230/3/60 65 A RES	DE1-111	
20	TERMINAL END CLAMP	DE3-41	2	37	DECAL	SK-3799	1		208/3/60 65 A RES	DE1-111	
21	TEMPERATURE CONTROL BOARD	DE9-251	AR	38	DATA DECAL	SK-3715	1	45	FUSEBLOCK		2
22	GROUNDING STUD	D309C-GC-4G	2	39	SWITCH (FWD - OFF - REV)	DE8-56	1		460 V	DE9-186	
23	LOCKWASHER, 1/4"	D313C-G5	2	40	OVERLOAD BASE	DE2-60	3		380 & 230 V	DE9-212	
24	HEX NUT, 1/4-20	D312C-GC-2	2	41	CONTACTOR (CONVEYOR)	DE1-93	1		208 V	DE9-213	
25	CONTACT BLOCK, NC	DE5-42AE	1	42	TIMER (LIQUID LEVEL)	DE7-35	2	46	FUSE		6
26	AUX CONTACT NC	DE1-61AE	AR	43	FUSE (MTR CIRCUIT)		3		460 V	KTK-R-30	DE9-189
27	AUX CONTACT NO	DE1-62AE	AR		460 V	FNQ-R-15	DE9-183		380 V	JJS-40	DE9-209
28	CIRCUIT BREAKER (10A)	DE9-106	1		380 V	FNQ-R-15	DE9-183		230 V	JJS-60	DE9-210
29	POWER DIST BLOCK	DE3-152	1		230 V	FNQ-R-25	DE9-220		208 V	JUN-70	DE9-211
30	SELECTOR SWITCH ASSY	DE8-54	2		208 V	FNQ-R-30	DE9-227	47	FUSEBLOCK (3 POLE MTR CIRCUIT)	DE9-186	1
31	CONTACT BLOCK, NO	DE5-41AE	1								
32	PILOT LIGHT ASSY - YELLOW	DE8-53	1								

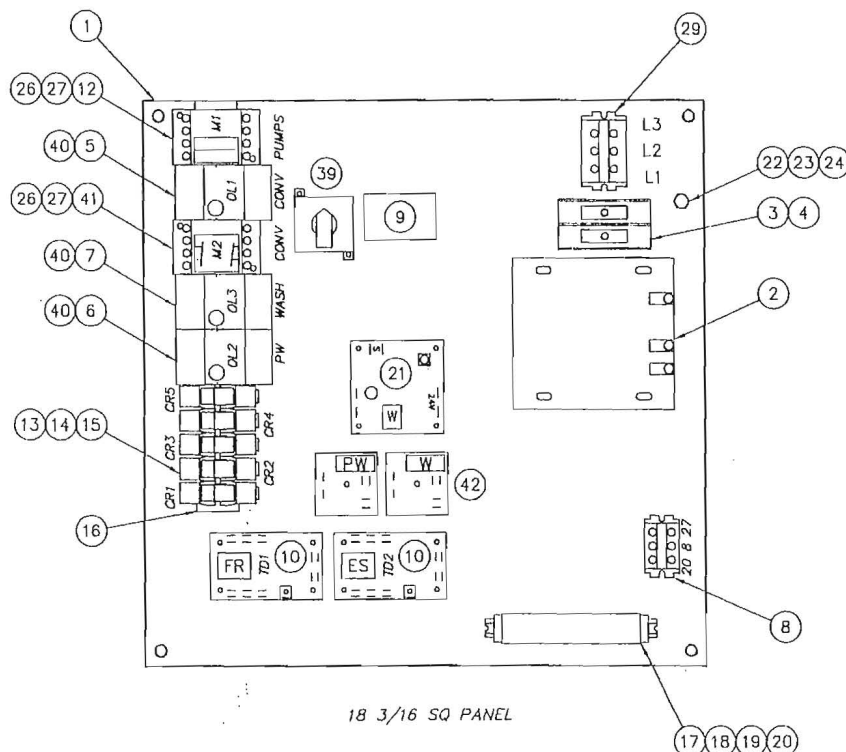


NOT SHOWN

ELECTRIC IMMERSION HEATER (10 KW)		4
440-480 V, 3 PH	DE13-SF73	
380 V, 3 PH	DE13-SF53	
220-240 V, 3 PH	DE13-SF43	
208V, 3PH	DE13-SF23	
TEMPERATURE SENSOR	DE9-252	AR

SHEET 2 OF 2

TITLE		DEFENDER	
ELECT HEAT, NEMA 4X CONTROL PANEL			
		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE MFJ 2.5.97
FILE: SKETCH\SK-3963		SCALE	DWG. NO.
G	1945	7.17.02	1/4
F	1857	2.15.01	
REV	ECN NO	DATE	SK-3963

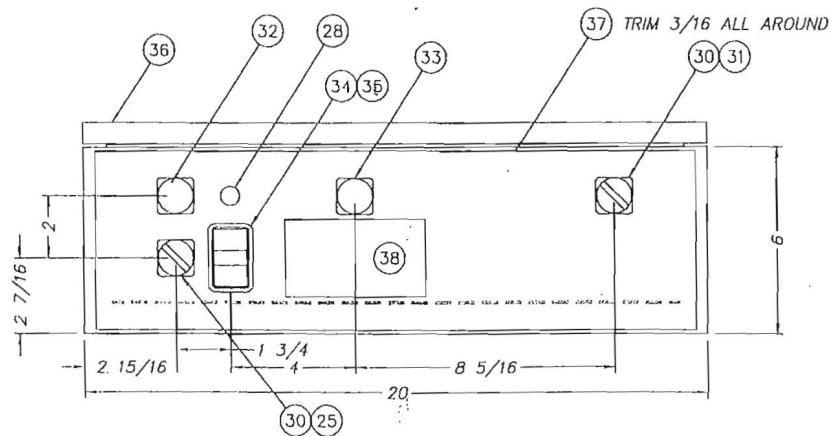


ITEM	DESCRIPTION	PART NO.	QTY
1	COMPONENT MOUNTING PLATE	SK-4354	1
2	TRANSFORMER (250 VA, 24 VAC)	DE6-25	1
3	FUSE BLOCK, 2 POLE (250 VA XFMR)	DE9-185	1
4	FUSE (250 VA TRANSFORMER PRIMARY)		2
	460 V FNQ-R-1.8	DE9-169	
	380 V FNQ-R-2	DE9-170	
	220 - 230 V FNQ-R-3.5	DE9-174	
	208 V FNQ-R-4	DE9-175	
5	OVERLOAD RELAY (1/2 HP CONV DRIVE)		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	
	208/3/60 1.6-2.5 A	DE2-52	
6	OVERLOAD RELAY (2 HP PW PUMP)		1
	460/3/60 2.5-4 A	DE2-53	
	380/3/50 2.5-4 A	DE2-53	
	230/3/60 5.5-8 A	DE2-55	
	208/3/60 5.5-8 A	DE2-55	
7	OVERLOAD RELAY (3 HP WASH PUMP)		1
	460/3/60 4-6 A	DE2-54	
	380/3/50 4-6 A	DE2-54	
	230/3/60 7-10 A	DE2-56	
	208/3/60 7-10 A	DE2-56	
8	TERMINAL BLOCK ASSY	DE3-9	1
9	CAUTION LABEL	SK-3451	1
10	TIMER (ENERGY SAVER & FINAL RINSE)	DE7-28	2
11			
12	CONTACTOR (PUMPS)		1
	380 - 460 V SP4	DE1-93	
	208 - 230 V SP17	DE1-56AE	
13	RELAY BASE	DE2-37	AR
14	RELAY	DE2-38	AR
15	RELAY HOLD DOWN SPRING	DE3-43	AR

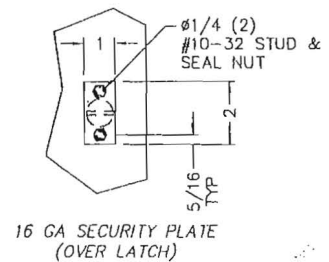
SHEET 1 OF 2

TITLE		DEFENDER	
STEAM HEAT, NEMA 4X CONTROL PANEL			
Philadelphia, PA 19135		DRWN/DATE	
(215) 624-4800		MFJ	
FAX (215) 624-6966		12.23.96	
F	1945	7.17.02	FILE: SKETCH\SK-3954
E	1857	2.15.01	SCALE
D	1728	1.7.00	DWG. NO.
REV	ECN NO	DATE	1/4 SK-3954

ITEM	DESCRIPTION	PART NO.	QTY	ITEM	DESCRIPTION	PART NO.	QTY
16	DIN RAIL (35 mm)	DE9-216	1	33	PILOT LIGHT ASSY - RED	DE8-52	1
17	DIN RAIL (15 mm)	DE3-42	1	34	PUSHBUTTON ASSY, START-STOP	DE5-32SQ	1
18	TERMINAL SECTION	DE3-39	AR	35	CONTACT BLK, NO/NC	DE5-46SQ	1
19	TERMINAL END COVER PLATE	DE3-40	1	36	CONTROL BOX, 20 X 20 X 6	DE9-245	1
20	TERMINAL END CLAMP	DE3-41	2	37	DECAL	SK-3700	1
21	TEMPERATURE CONTROL BOARD	DE9-251	1	38	DATA DECAL	SK-3715	1
22	GROUNDING STUD	D309C-GC-4G	1	39	SWITCH (FWD - OFF - REV)	DE8-56	1
23	LOCKWASHER, 1/4"	D313C-G5	1	40	OVERLOAD BASE	DE2-60	3
24	HEX NUT, 1/4-20	D312C-GC-2	1	41	CONTACTOR (CONVEYOR)	SP4 DE1-93	1
25	CONTACT BLOCK, NC	DE5-42AE	1	42	TIMER (LIQUID LEVEL)	DE7-35	2
26	AUX CONTACT NC	DE1-61AE	AR				
27	AUX CONTACT NO	DE1-62AE	AR				
28	CIRCUIT BREAKER (10A)	DE9-106	1				
29	TERMINAL BLOCK	DE3-3	1				
30	SELECTOR SWITCH ASSY	DE8-54	2				
31	CONTACT BLOCK, NO	DE5-41AE	1				
32	PILOT LIGHT ASSY - YELLOW	DE8-53	1				

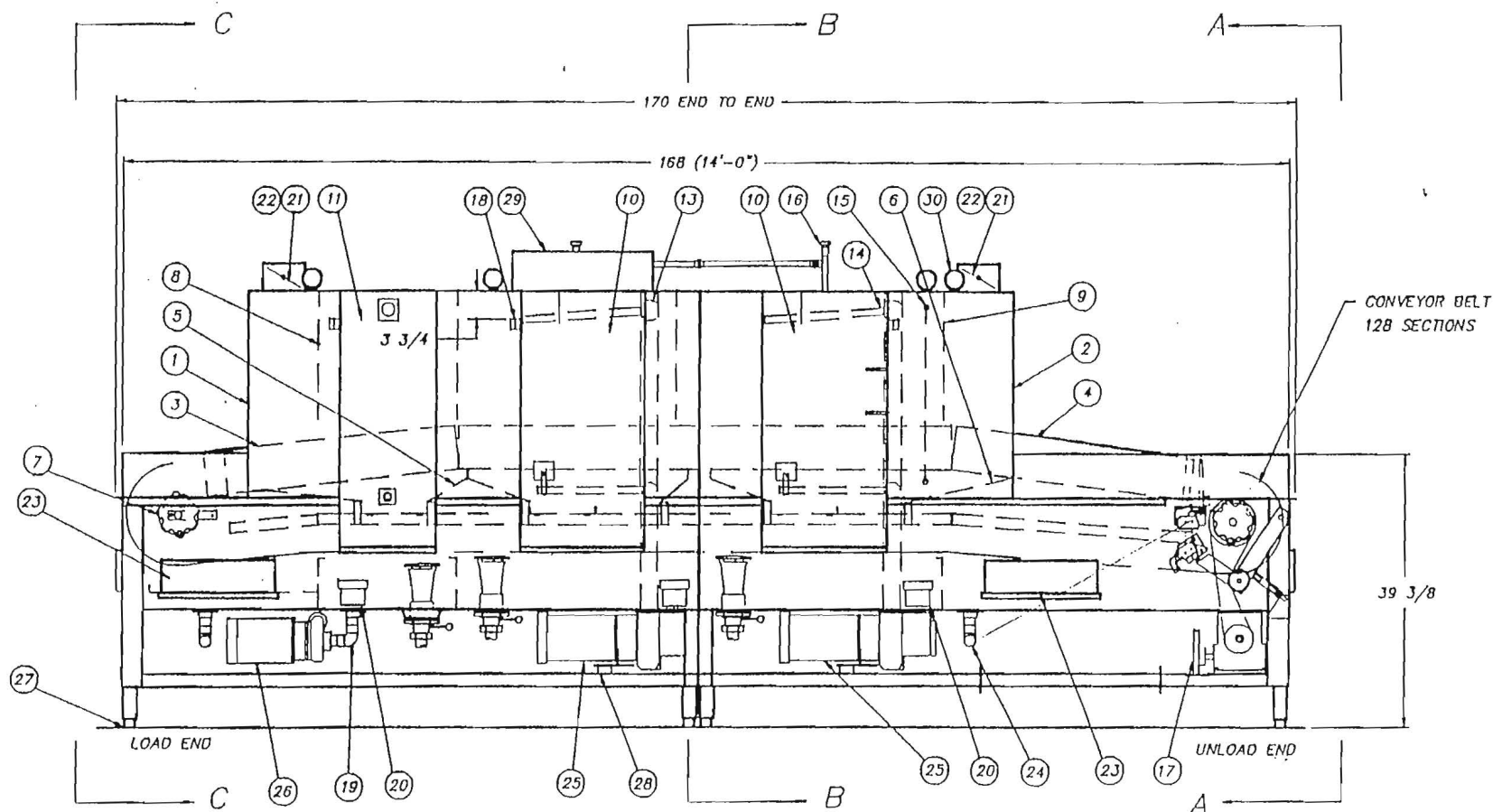


NOT SHOWN:
TEMPERATURE SENSOR DE9-252 AR



SHEET 2 OF 2

TITLE		DEFENDER		STEAM HEAT, NEMA 4X CONTROL PANEL	
Insinger		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE MFJ 12.23.96	
F	1945	7.17.02	FILE: SKETCH\SK-3954		
E	1857	2.15.01	SCALE	DWG. NO.	
D	1728	1.7.00	1/4	SK--3954	
REV	ECN NO	DATE			



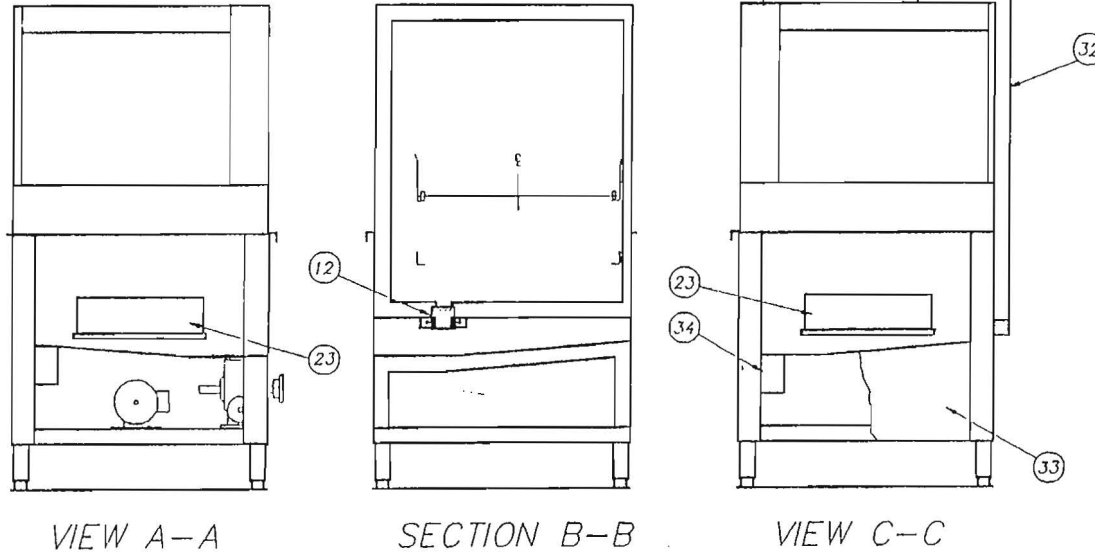
OPTION	DWG. NO.	SIZE
ELECTRIC HEATER LOCATIONS	1390-75	B
STEAM PIPING-WASH & RINSE TANKS	1390-74	B
STEAM PIPING-INJECTORS	1390-96	B
CLOSE-OFF PANELS	1390-81	B

SHEET 2 OF 3

TOLERANCES			TITLE	NEXT ASSY	DWG. NO.
			CENTURY 14 RPW-W	REQ'D 1	1390-1
			L.H. MACHINE	SCALE	USED ON
			MAT'L	1=16	
			NOTED		
A	961	11.3.93	Insinger Machine Company	Philadelphia, PA 19135	DRW/DATE
REV	ECN NO	DATE		(215) 624-4800	PG
FILE: PARTS\1390-1				FAX (215) 624-6968	4.10.93

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
J0	1390-76	B	ACCESSORY LOCATIONS	1
J1	1390-77	B	LABEL LOCATION	1
J2	D3-727	A	ELECTRICAL CHANNEL	1
J3	1390-81	B	CLOSE-OFF PANELS	1
J4	1390-95	B	START/STOP STATION	1

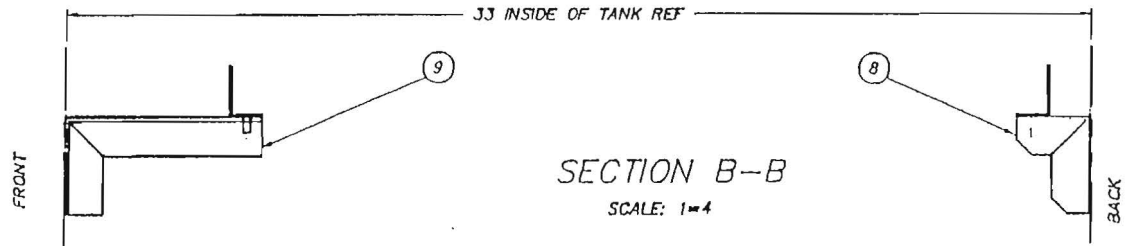
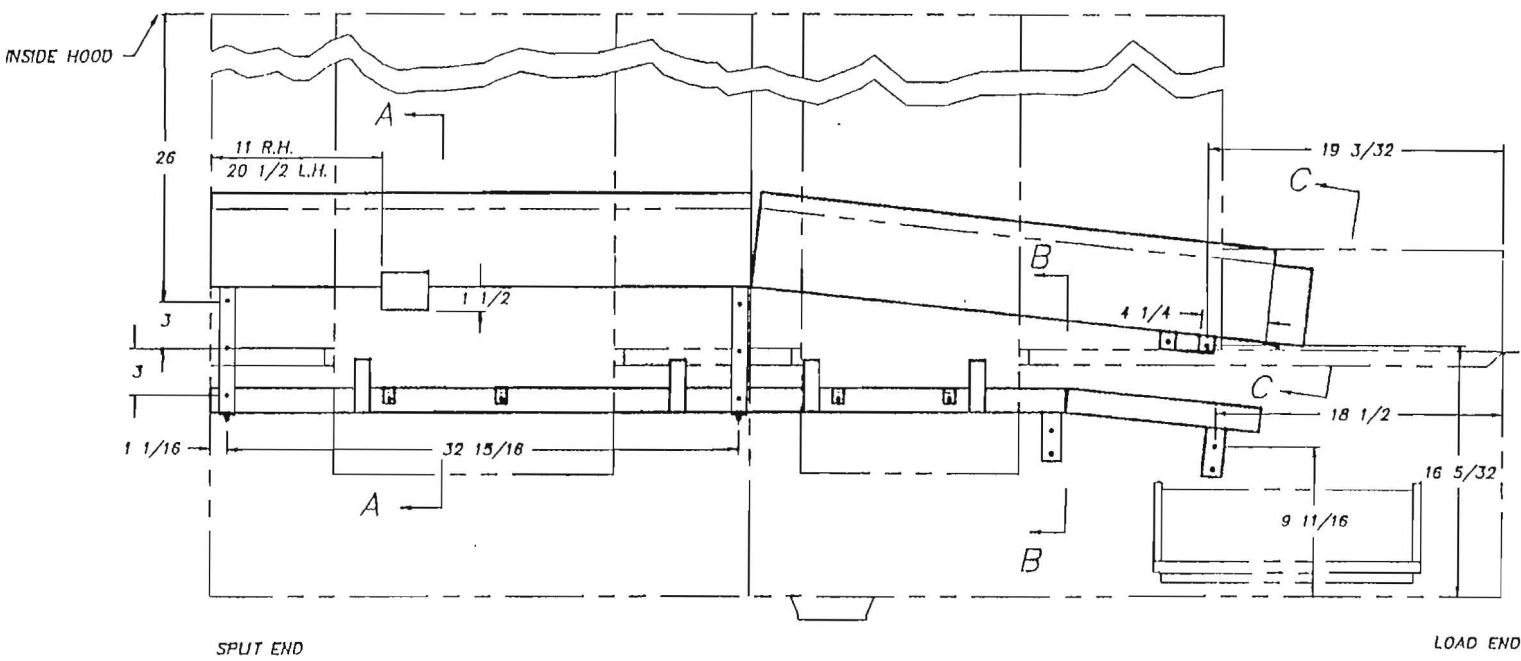
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-2	B	SHELL ASSEMBLY, LOAD SECTION	1
2	1390-3	B	SHELL ASSEMBLY, UNLOAD SECTION	1
3	1390-4	B	TRACK INSTALLATION, LOAD SECTION	1
4	1390-5	B	TRACK INSTALLATION, UNLOAD SECTION	1
5	1390-6	B	BAFFLES & SCRAP SCREENS, LOAD SECTION	1
6	1390-7	B	BAFFLES & SCRAP SCREENS, UNLOAD SECTION	1
7	1390-8	B	DRIVEN SHAFT ASSEMBLY	1
8	1390-9	B	CURTAIN & BAFFLE INSTALL. LOAD SECTION	1
9	1390-10	B	CURTAIN & BAFFLE INSTALL. UNLOAD SECTION	1
10	1390-31	A	DOOR 19"	2
11	1390-32	A	DOOR 15"	1
12	1390-49	B	WEIR PLATE INSTALL.	1
13	1390-56	B	DISCHARGE LINE ASSY. LOAD SECTION	1
14	1390-57	B	DISCHARGE LINE ASSY UNLOAD SECTION	1
15	1390-68	B	FINAL RINSE ASSEMBLY	1
16	1390-71	B	AUTO TANK FILL ASSEMBLY	1
17	1390-72	B	CONVEYOR DRIVE ASSEMBLY	1
18	D2715	A	DOOR LATCH	3
19	1182-13	A	SUCTION LINE, PREWASH	1
20	1100-76	A	PUMP SUCTION ASSEMBLY	2
21	D2-728	A	VENT DAMPER BLADE	2
22	D2-831	A	DAMPER ASSEMBLY	2
23	1100-94	A	TANK DOOR	4
24	1390-73	B	DRAIN ASSEMBLY	1
25	3075-K23	-	PUMP WASH, RINSE	2
26	3018-K188	-	PUMP PREWASH	1
27	D2587	A	ADJUSTABLE FOOT ASSY	8
28	D3-815	A	PUMP SPACER	4
29	1282-01	B	CONTROL BOX	1



BELT = 128 SECTIONS

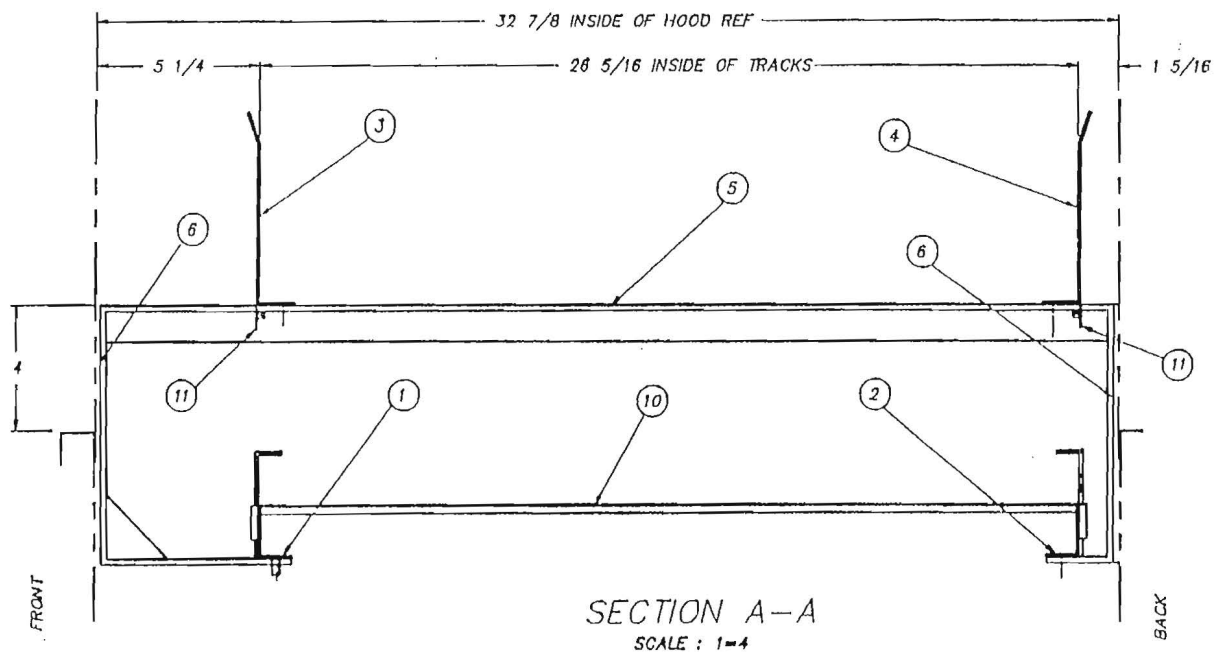
SHEET 3 OF 3

			TOLERANCES	TITLE	CENTURY 14 RPW-W	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	R.H.MACHINE		REQ'D	1390-1
			DECIMALS	NOTED		SCALE	USED ON
			.XXX ± .005			1=16	
			.XX ± .01				
			ANGLES ±1/2°				
			UNLESS OTHERWISE SPECIFIED				
REV	ECN NO	DATE	Insinger Machine Company		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		DRWN/DATE PC 4.18.93
FILE: PARTS \1390-1							

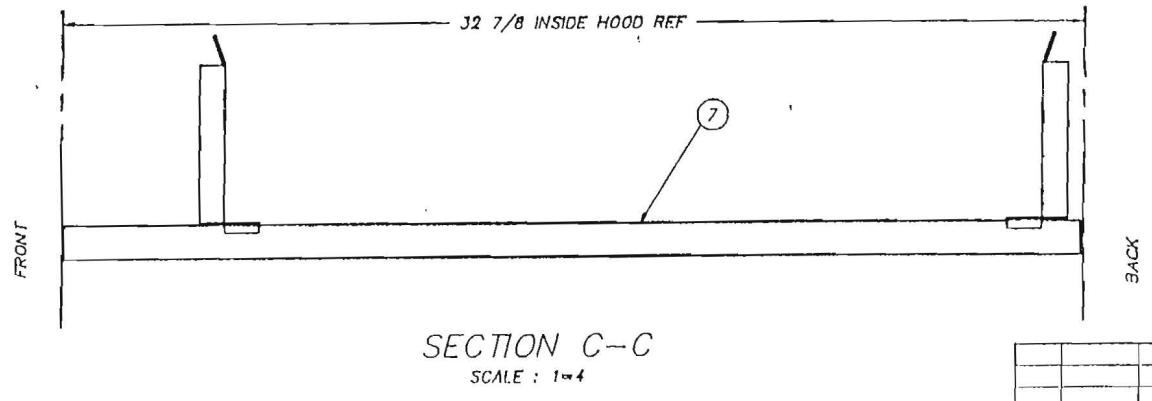


R.H. MACH. SHOWN L.H. MACH OPPOSITE SHEET 1 OF 2

		TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
		FRACTIONS ±1/64	TRACK INSTALLATION	1320-1	1390-4
		DECIMALS	LOAD SECTION	REQD 1	
		.XXX ± .005	MAPL	SCALE	USED ON
		.XX ± .01	NOTED	1=8	CENTURY
		ANGLES ±1/2°			
		UNLESS			
		OTHERWISE			
		SPECIFIED			
REV	ECN NO	DATE	Insinger		DRWN/DATE
			Philadelphia, PA 19135		PC
			(215) 624-4800		J.25.93
			FAX (215) 624-8888		
FILE: PARTS\1390-4			Machine Company		



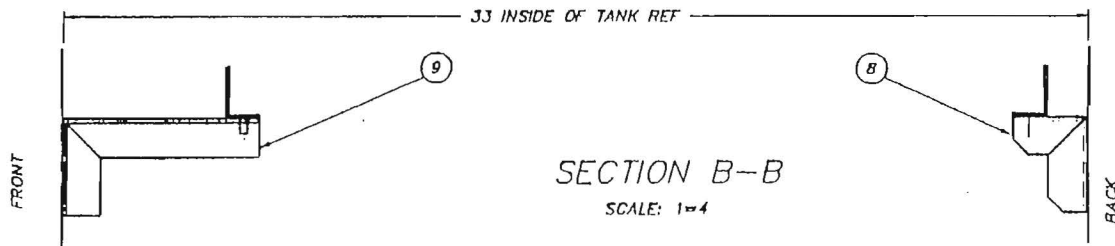
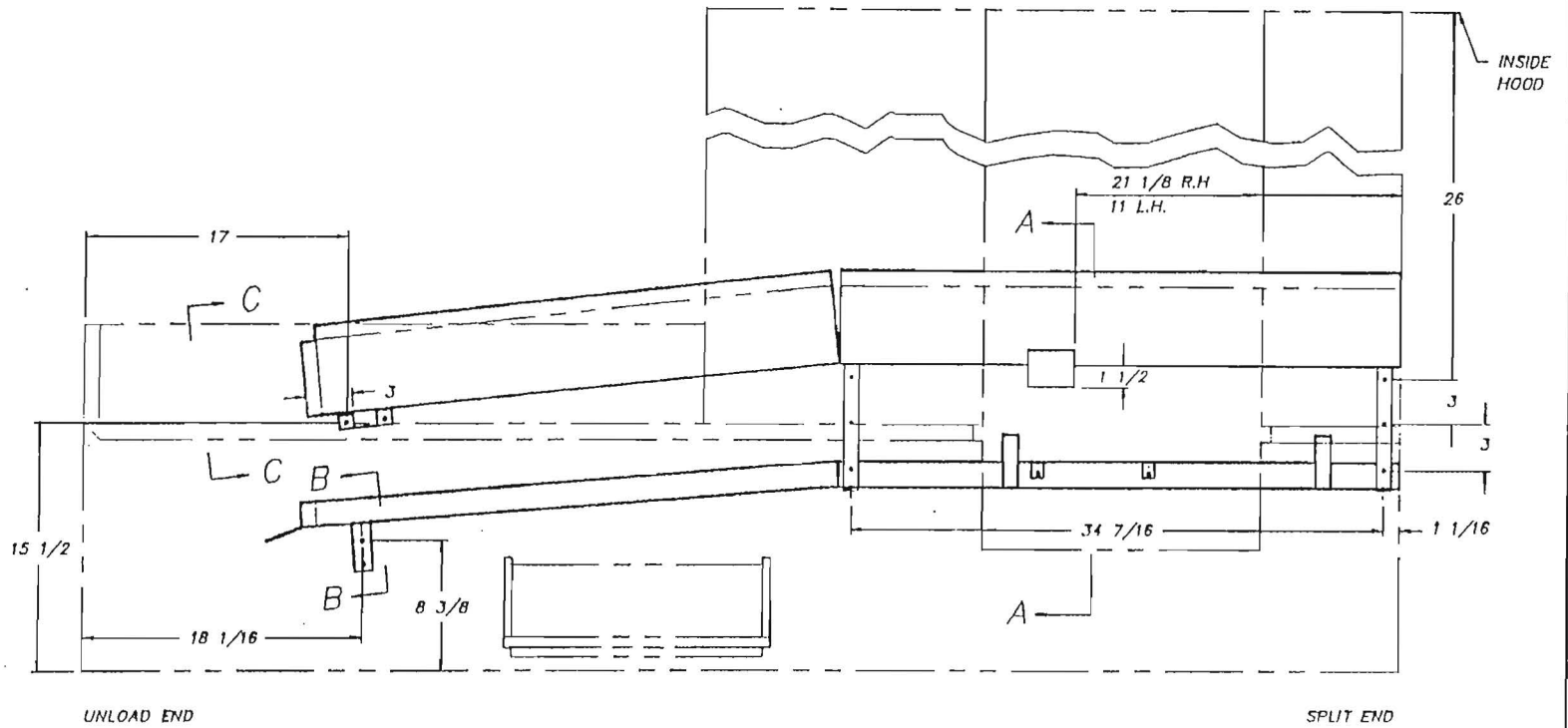
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-39	B	TRACK LOWER-FRONT	1
2	1390-39	B	TRACK LOWER-BACK	1
3	1390-38	B	TRACK UPPER-FRONT	1
4	1390-36	B	TRACK UPPER-BACK	1
5	1100-50	B	TRACK SUPPORT	2
6	1100-50A	A	SHIM	4
7	1100-55	B	TRACK SUPPORT UPPER	1
8	1100-152	A	TRACK SUPPORT LOWER REAR	2
9	1100-56	A	TRACK SUPPORT LOWER FRONT	2
10	1100-58	A	SUPPORT BAR INSTALLATION	4
11	1390-70	A	CRADLE SUPPORT	2



R.H. MACH. SHOWN L.H. MACH. OPPOSITE SHEET 2 OF 2

REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	OWG. NO.
			FRACTIONS ±1/64	TRACK INSTALLATION	1390-1	1390-4
			DECIMALS	LOAD SECTION	REQ'D 1	
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	NOTED	1=8	CENTURY
			ANGLES ±1/2'			
			UNLESS OTHERWISE SPECIFIED			DRWN/DATE
						PG
						3.25.93

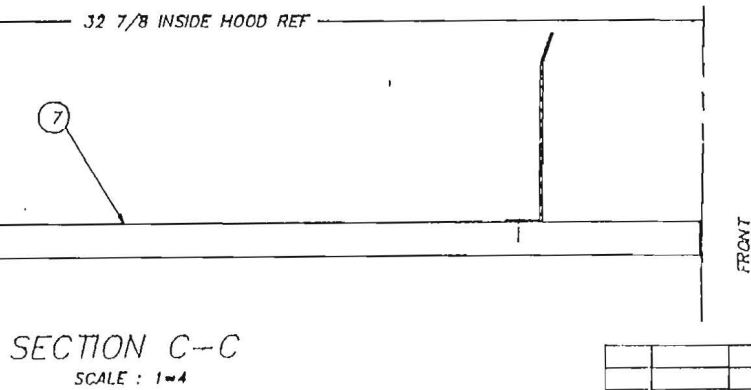
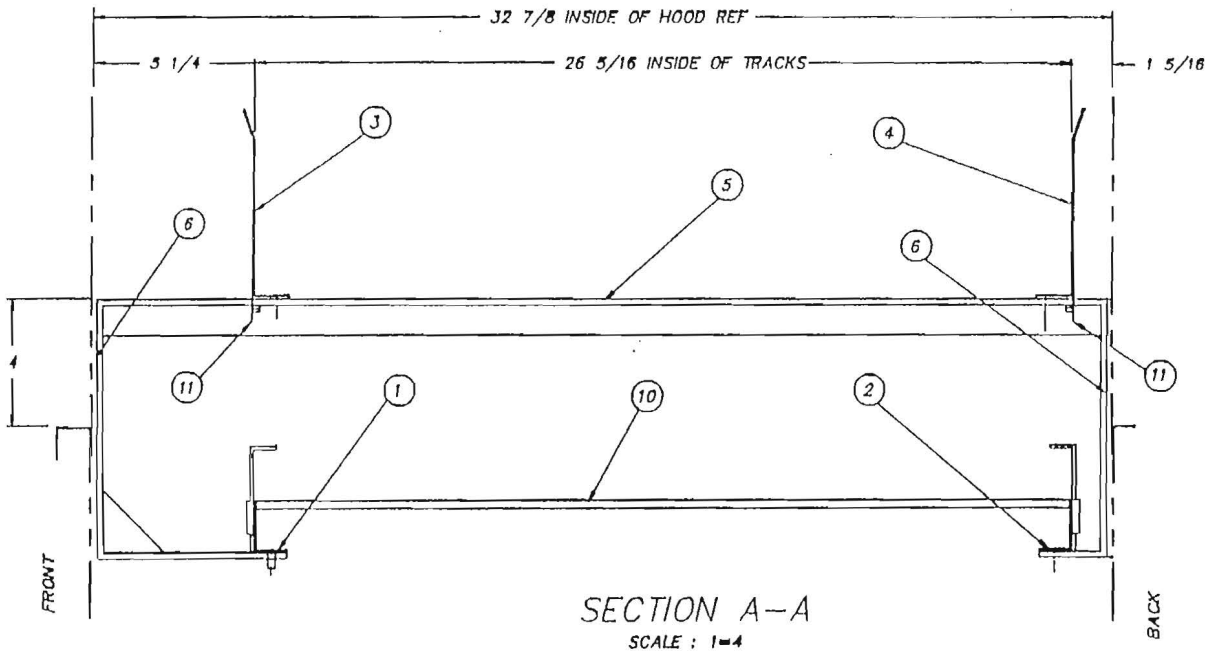
Insinger Machine Company
 Philadelphia, PA 19135
 (215) 624-4800
 FAX (215) 624-6866



R.H. MACH. SHOWN L.H. MACH. OPPOSITE

SHEET 1 OF 2

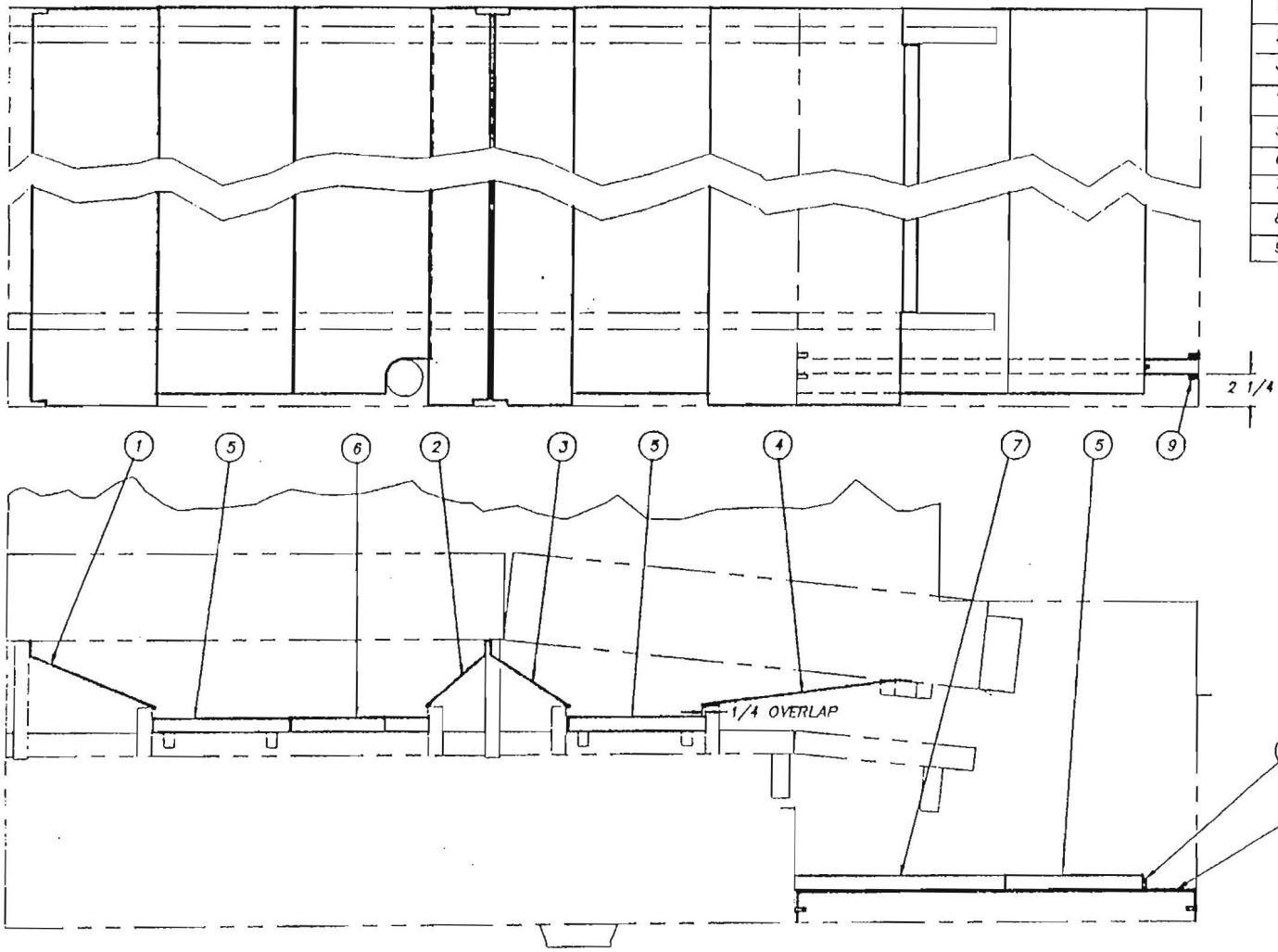
			TOLERANCES		TITLE		NEXT ASSY		DWC. NO.	
			FRACTIONS ±1/64		TRACK INSTALLATION		1390-1		1390-5	
			DECIMALS		UNLOAD SECTION		RECD 1			
			.XXX ± .005		MATL		SCALE		USED ON	
			.XX ± .01		AS NOTED		1=8		CENTURY	
			ANGLES ±1/2°		OTHERWISE SPECIFIED		INSINGER		PHILADELPHIA, PA 19135	
REV			ECN NO		DATE		Machine Company		(215) 624-4800	
FILE: PARTS\1390-5							FAX (215) 624-6988		DIRTY/DATE	
									PG	
									3.25.93	



ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-40	B	TRACK LOWER-FRONT	1
2	1390-40	B	TRACK LOWER-BACK	1
3	1390-37	B	TRACK UPPER-FRONT	1
4	1390-37	A, B	TRACK UPPER-BACK	1
5	1100-50	B	TRACK SUPPORT	2
6	1100-50A	A	SHIM	4
7	1100-55	B	TRACK SUPPORT UPPER	1
8	1100-152	A	TRACK SUPPORT LOWER REAR	1
9	1100-56	A	TRACK SUPPORT LOWER FRONT	1
10	1100-58	A	SUPPORT BAR INSTALLATION	2
11	1390-70	A	CRADLE SUPPORT	2

SHEET 2 OF 2

REV			ECN NO	DATE	TOLERANCES	TITLE	HEX ASSY	DWG. NO.
FILE: PARTS\1390-5					FRACTIONS ±1/64	TRACK INSTALLATION	1390-1	1390-5
					DECIMALS	UNLOAD SECTION	REQ'D 1	
					.XXX ± .005	MATL	SCALE	USED ON
					.XX ± .01	NOTED	1=8	CENTURY
					ANGLES ±1/2°			DRWN/DATE
					UNLESS OTHERWISE SPECIFIED	Insinger Machine Company	Philadelphia, PA 19135	PG
						(215) 624-4800		J.28.03
						FAX (215) 624-8866		

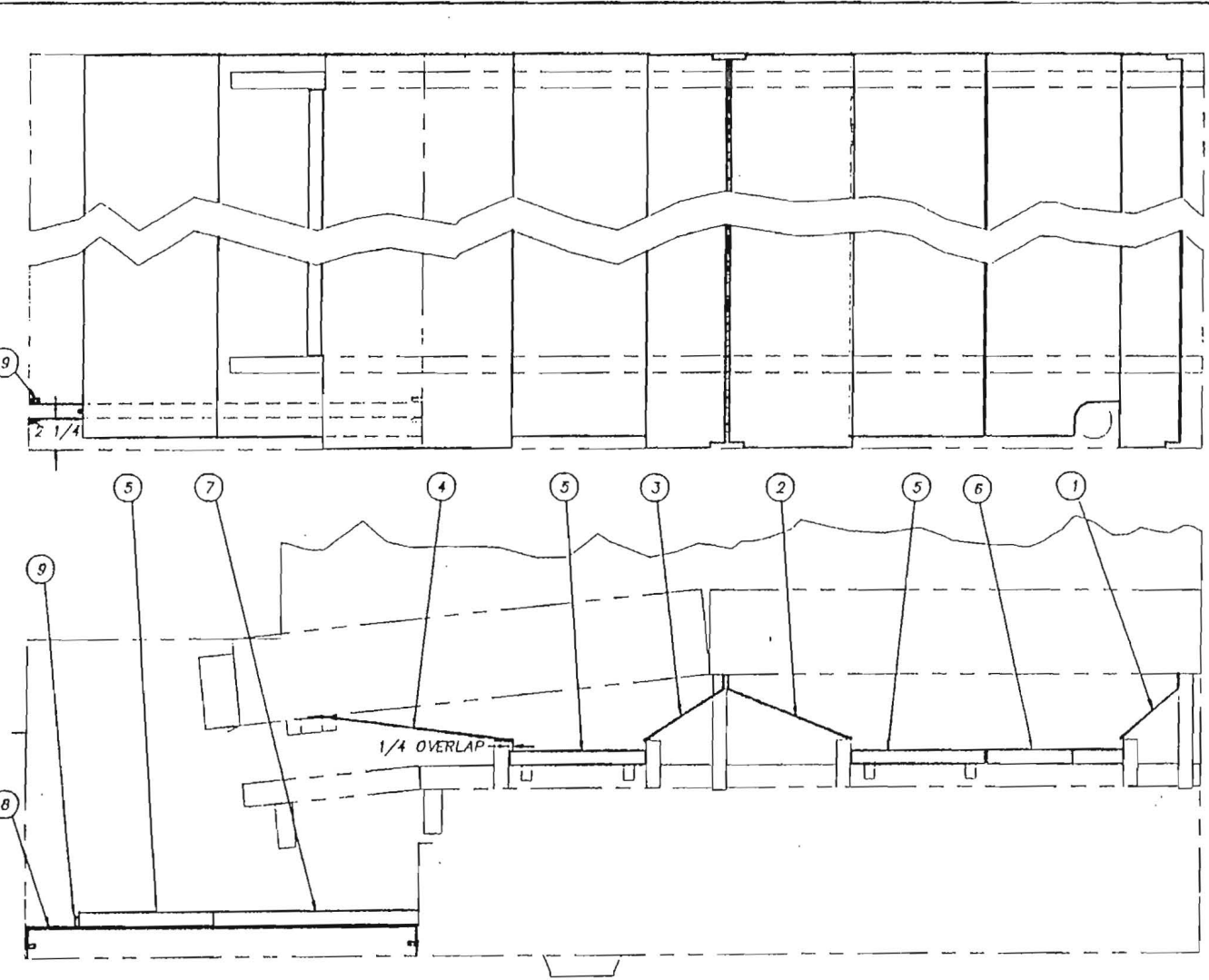


ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-42	A	BAFFLE	1
2	1390-43	A	BAFFLE	1
3	1390-44	A	BAFFLE	1
4	1390-45	A	BAFFLE	1
5	1100-61	A	SCRAP SCREEN	3
6	1390-46	B	SCRAP SCREEN	1
7	1100-37	A	SCRAP SCREEN	1
8	1390-47	A	SUPPORT RAIL	1
9	0309C-GP-6G	-	WELDSTUD 1/4 X 3/4 LG.	5

R.H. MACHINE SHOWN SHEET 1 OF 2

REV		ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
				FRACTIONS ±1/64	BAFFLES & SCRAP SCREEN	1390-1	1390-6
				DECIMALS	LOAD SECTION	REQD 1	
				.XXX ± .005	NOTED	SCALE	USED ON
				.XX ± .01		1=8	CENTURY
				ANGLES ±1/2°			DRW1/DATE
				UNLESS OTHERWISE SPECIFIED			PC
FILE: PARTS\1390-6					Insinger Machine Company	Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8966	JJO.93

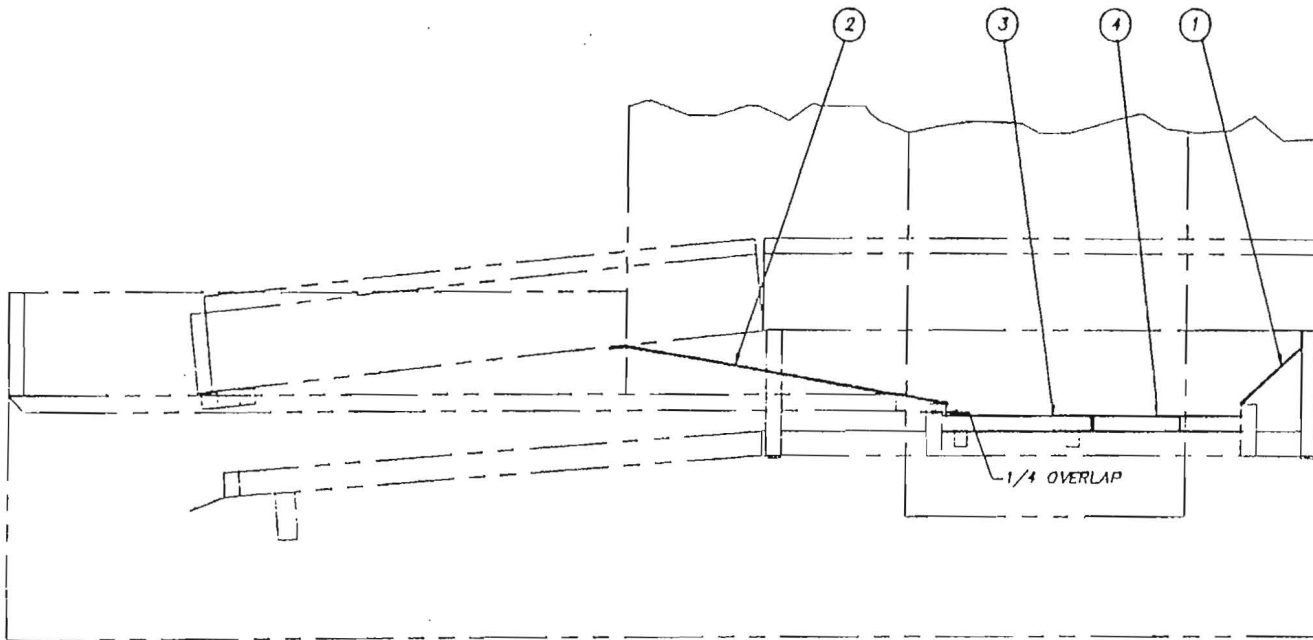
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-43	A	BAFFLE	1
2	1390-42	A	BAFFLE	1
3	1390-44	A	BAFFLE	1
4	1390-45	A	BAFFLE	1
5	1100-61	A	SCRAP SCREEN	3
6	1390-46	B	SCRAP SCREEN	1
7	1100-37	A	SCRAP SCREEN	1
8	1390-47	A	SUPPORT RAIL	1
9	D309C-GP-6G	-	WELDSTUD 1/4 X 3/4 LG.	5



L.H. MACHINE SHOWN SHEET 2 OF 2


			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	BAFFLES & SCRAP SCREEN	1390-1	1390-6
			DECIMALS	LOAD SECTION	REV D 1	
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	NOTED	1=8	CENTURY
			ANGLES ±1/2°			DRYR/DATE
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED	Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8966	PG
FILE: PARTS\1390-6						JJO.03

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-43	A	BAFFLE	1
2	1390-48	A	BAFFLE	1
3	1100-61	A	SCRAP SCREEN	1
4	1390-46	B	SCRAP SCREEN	1

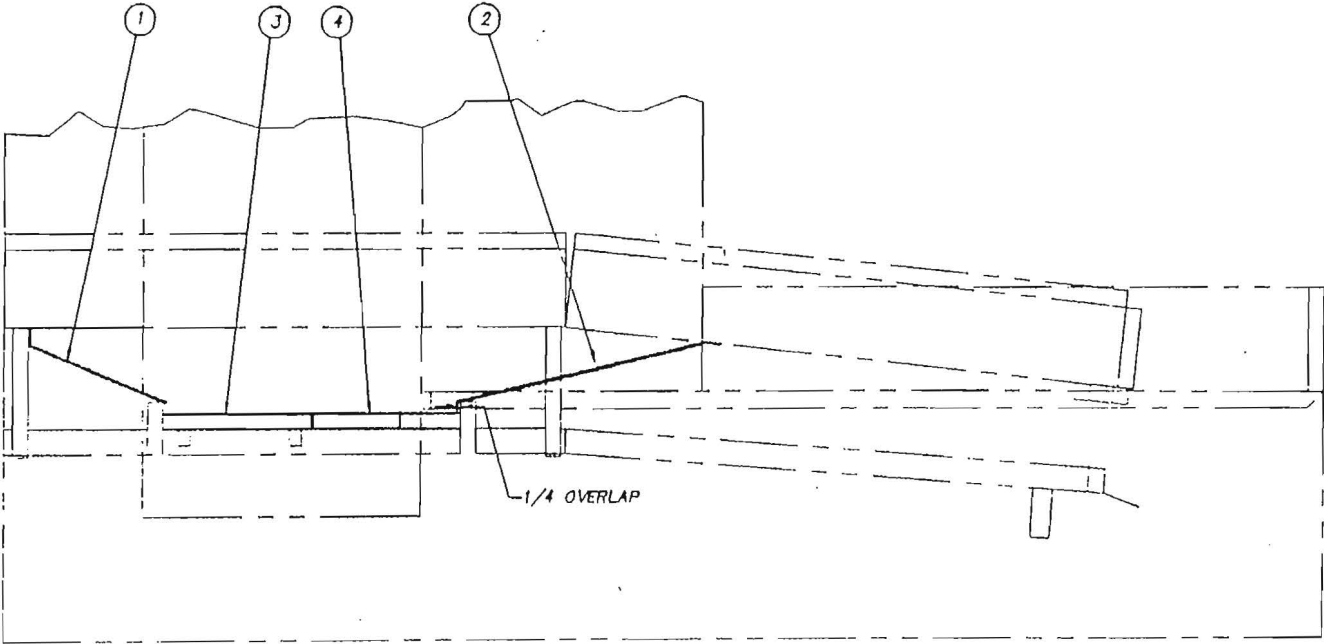


R.H. MACHINE SHOWN

SHEET 1 OF 2


			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	BAFFLES & SCRAP SCREEN	1390-1	1390-7
			DECIMALS	UNLOAD SECTION	REQ'D 1	
			.XXX ± .005			
			.XX ± .01	MATL	SCALE	USED ON
			ANGLES ±1/2°	NOTED	1=B	CENTURY
			UNLESS OTHERWISE SPECIFIED			
REV	ECN NO	DATE			Philadelphia, PA 19135	DRAWN/DATE
				Machine Company	(215) 624-4800	PG
					FAX (215) 624-6886	JJO.93
FILE: PARTS\1390-7						

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-42	A	BAFFLE	1
2	1390-79	A	BAFFLE	1
3	1100-61	A	SCRAP SCREEN	1
4	1390-46	B	SCRAP SCREEN	1

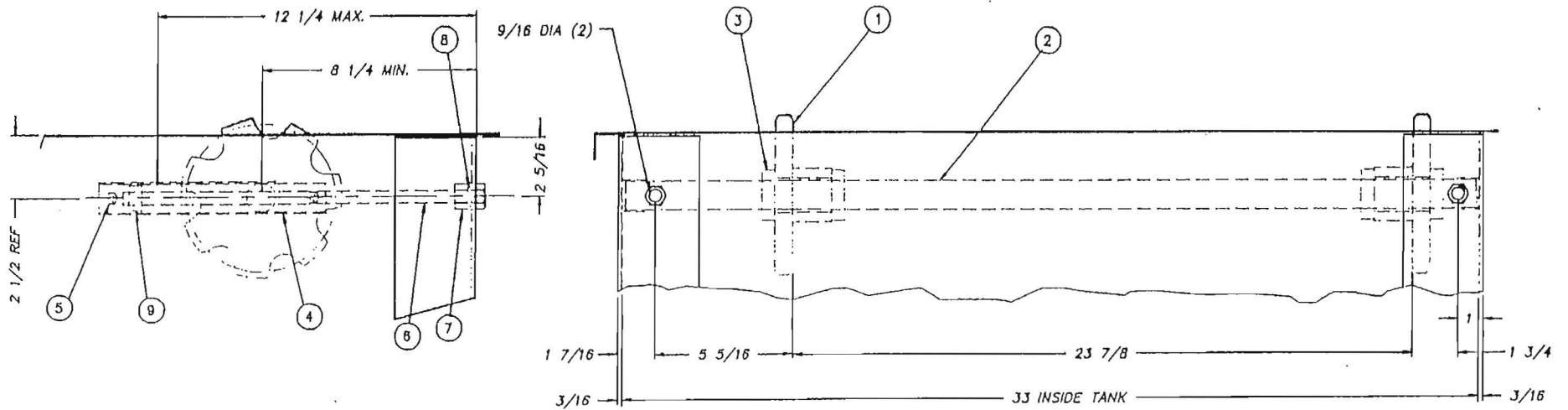


L.H. MACHINE SHOWN

SHEET 2 OF 2

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	BAFFLES & SCRAP SCREEN	1390-1	1390-7
			DECIMALS	UNLOAD SECTION	REV'D 1	
			.XXX ± .005	MAT'L	SCALE	USED ON
			.XX ± .01	NOTED	1=8	CENTURY
			ANGLES ±1/2°			
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED	 Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8888	DRWN/DATE PG J.J0.93
FILE: PARTS\1390-7						

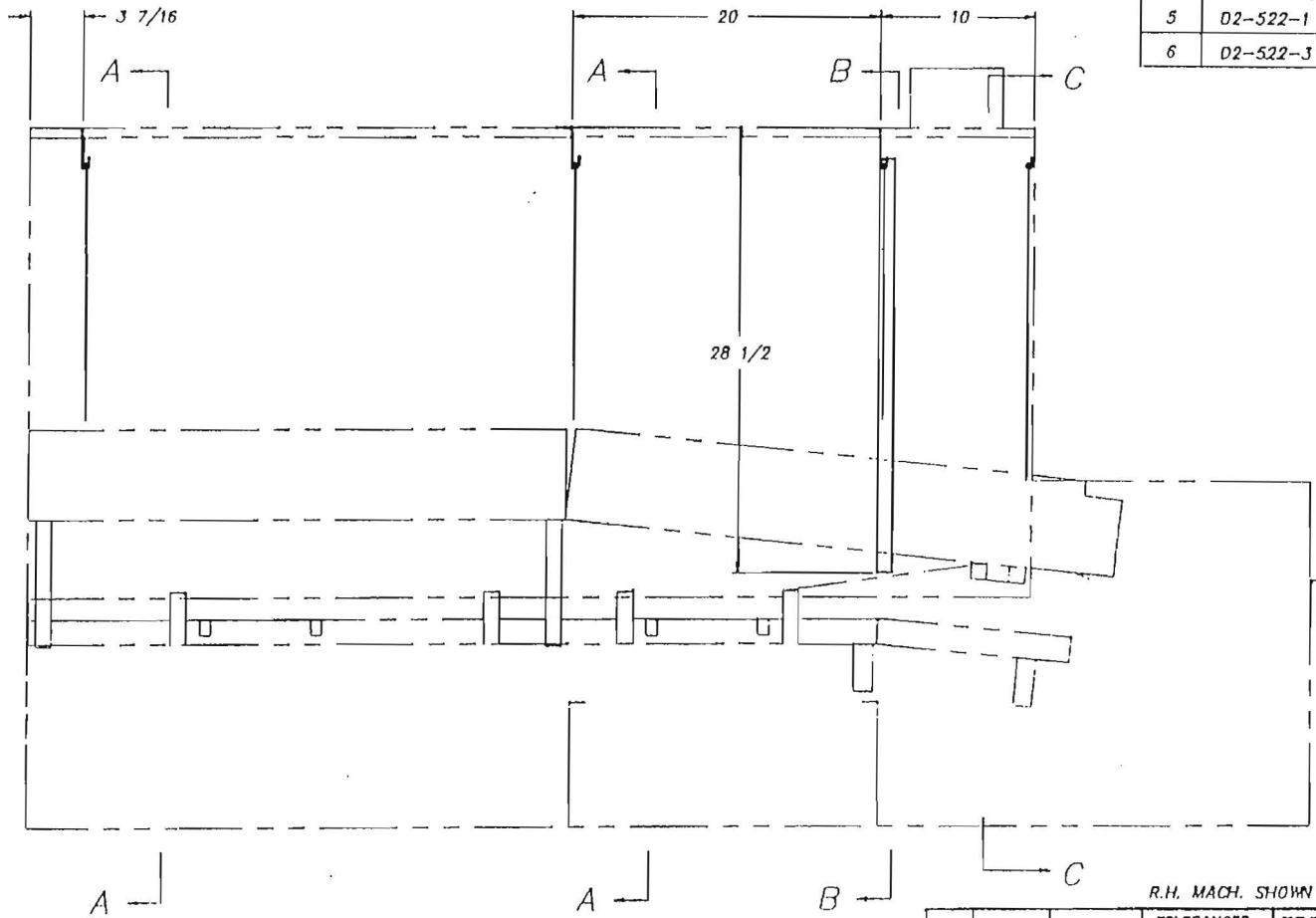
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	D2-138	A	SPROCKET- BELT	2
2	1100-146	A	SHAFT - DRIVEN	1
3	D2-848	A	COLLAR	4
4	1390-50	A	CHANNEL	2
5	D312C-GC-2	-	HEX NUT S/S 1/4-20	4
6	1390-51	A	ADJUSTING SCREW	2
7	D2-839	A	COLLAR	2
8	D-585	-	"D" RING (01-014)	2
9	D312C-LC-2	-	HEX NUT S/S 1/2-13	2



R.H. SHOWN - L.H. OPPOSITE

REV	ECN NO	DATE	TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	TITLE DRIVEN SHAFT ASSEMBLY	NEXT ASSY 1390-1 REQD 1	DWG. NO. 1390-8
FILE: PARTS\1390-8				MATL NOTED	SCALE 1=4	USED ON CENTURY
				Insinger Machine Company	Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-6988	DRWN/DATE PC J.JI.93

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1J90-53-1	A	TOP BAFFLE	1
2	1J90-54	A	TOP BAFFLE	2
J	1J90-52	A	SIDE BAFFLE	1
4	0-761B	A	CURTAIN ROD CLIP	8
5	D2-522-1	A	SPLASH GUARD CURTAIN	J
6	D2-522-3	A	SPLASH GUARD CURTAIN	1



R.H. MACH. SHOWN L.H. MACH. OPPOSITE

SHEET 1 OF 2

TOLERANCES			TITLE		NEXT ASSY	DWG. NO.
			CURTAIN & BAFFLE INSTALL		1J90-1	
			LOAD SECTION		REQD 1	1390-9
			NOTED		SCALE	USED ON
					1=8	CENTURY
					DRWN/DATE	
					PG	
						4.1.83

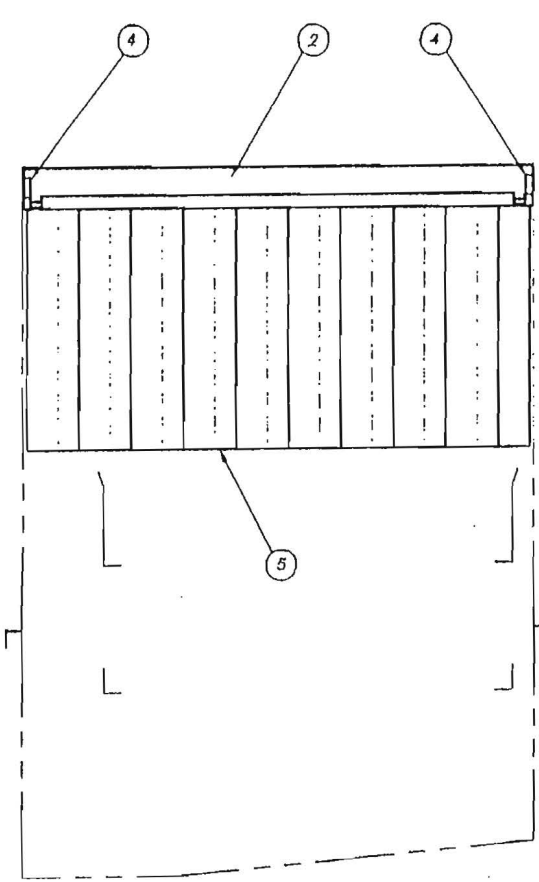
Insinger
Machine Company

Philadelphia, PA 19135
(215) 824-4800
FAX (215) 624-6866

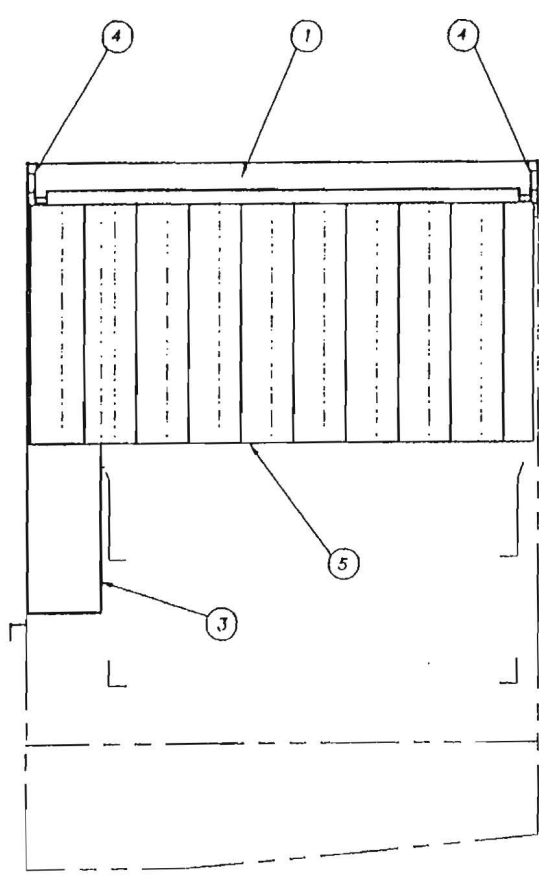
REV	ECN NO	DATE
A	1004	4.25.84

FILE: PARTS \ 1J90-9

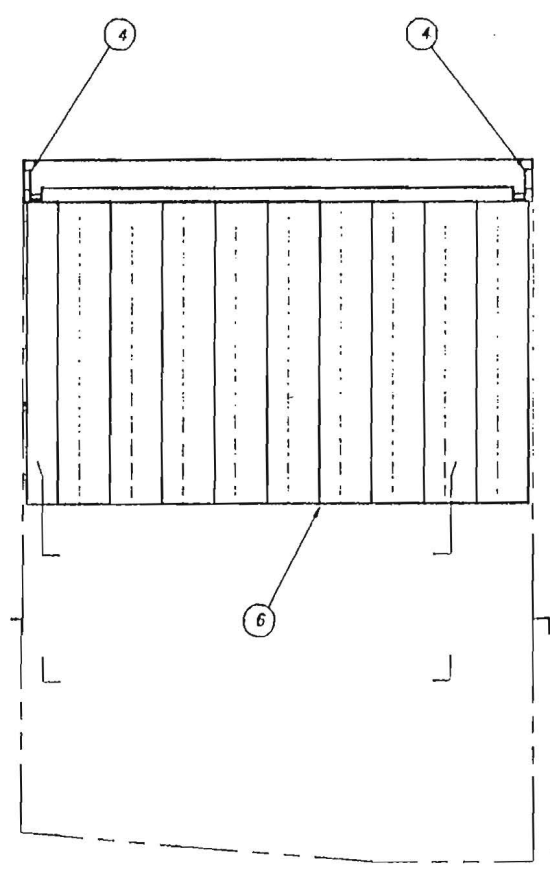
UNLESS OTHERWISE SPECIFIED



SECTION A-A



SECTION B-B

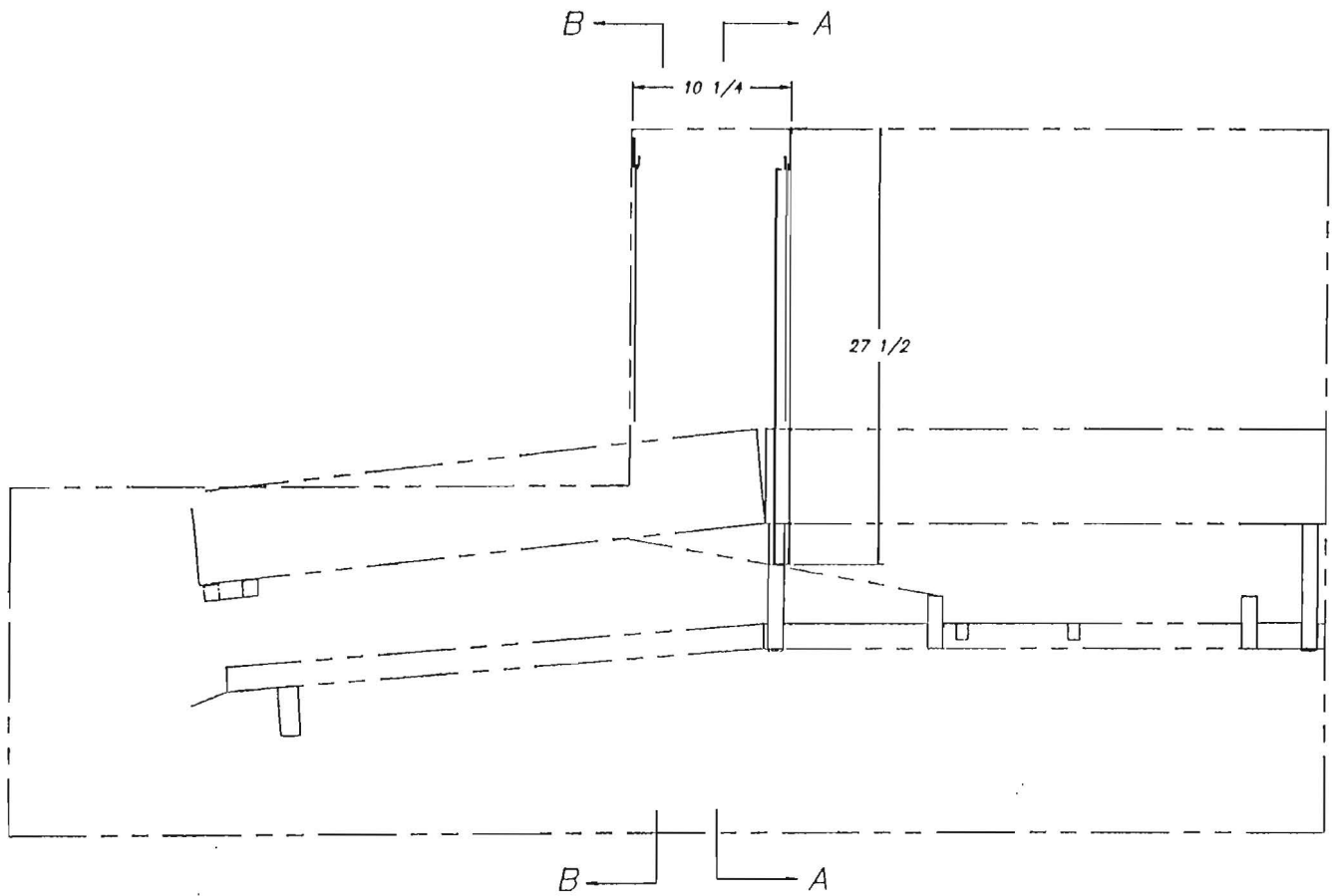


SECTION C-C

R.H. MACH. SHOWN L.H. MACH. OPPOSITE

SHEET 2 OF 2

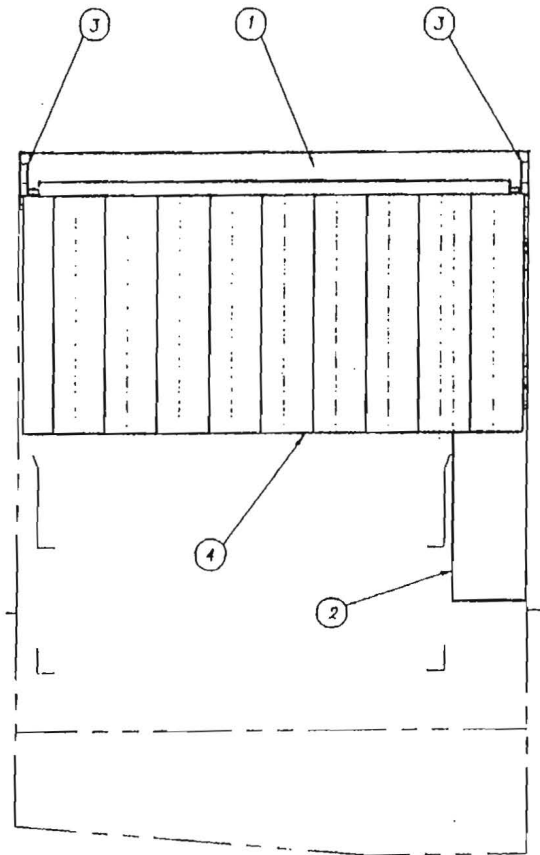
			TOLERANCES		TITLE CURTAIN & BAFFLE INSTALL		NEXT ASSY DWG. NO.	
			FRACTIONS ±1/8"		LOAD SECTION		1390-1	
			DECIMALS				REQ'D 1	
			.XXX ± .005		MATERIAL		SCALE	
			.XX ± .01		NOTED		1=8	
			ANGLES ±1/2°				USED ON CENTURY	
			UNLESS OTHERWISE SPECIFIED		INSINGER		DRWN/DATE	
REV			ECN NO		Machine Company		PC	
A			1004		Philadelphia, PA 19135		4.1.83	
			4.25.84		(215) 624-4800			
			DATE		FAX (215) 624-6866			
FILE: PARTS \ 1390-R								



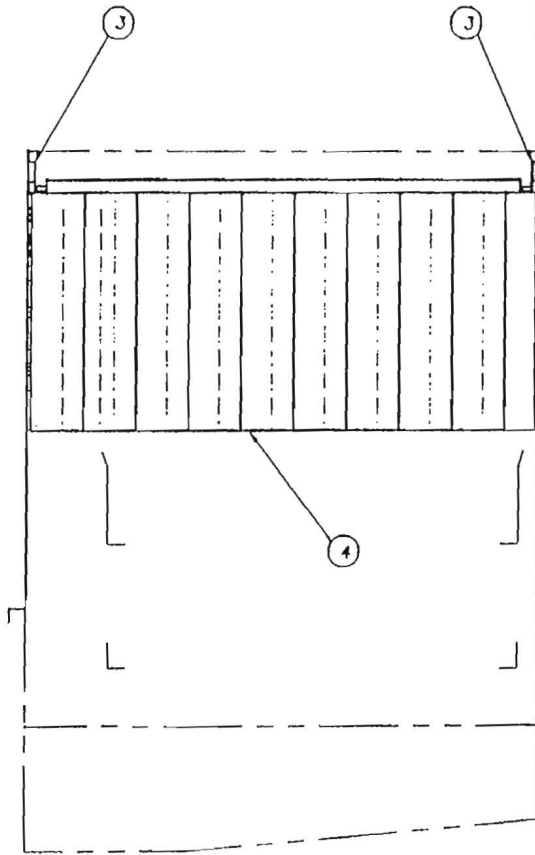
R.H. MACH. SHOWN L.H. MACH. OPPOSITE

SHEET 1 OF 2

			TOLERANCES	TITLE CURTAIN & BAFFLE INSTALLATION	NEXT ASSY	DWG. No.
			FRACTIONS ±1/64	UNLOAD SECTION	1390-1	1390-10
			DECIMALS		REQ'D 1	
			.XXX ± .005	MAT'L	SCALE	USED ON
			.XX ± .01	AS NOTED	1=8	CENTURY
			ANGLES ±1/2°			
			UNLESS			DRWN/DATE
			OTHERWISE			PC
			SPECIFIED			4.2.93
REV	ECN NO	DATE		Insinger	Philadelphia, PA 19135	
A	1004	4.25.94		Machine Company	(215) 824-4800	
FILE: PARTS\1390-10					FAX (215) 824-8866	



SECTION A-A



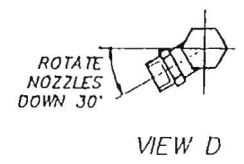
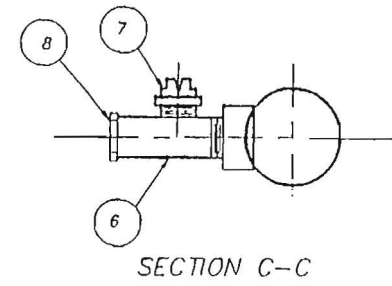
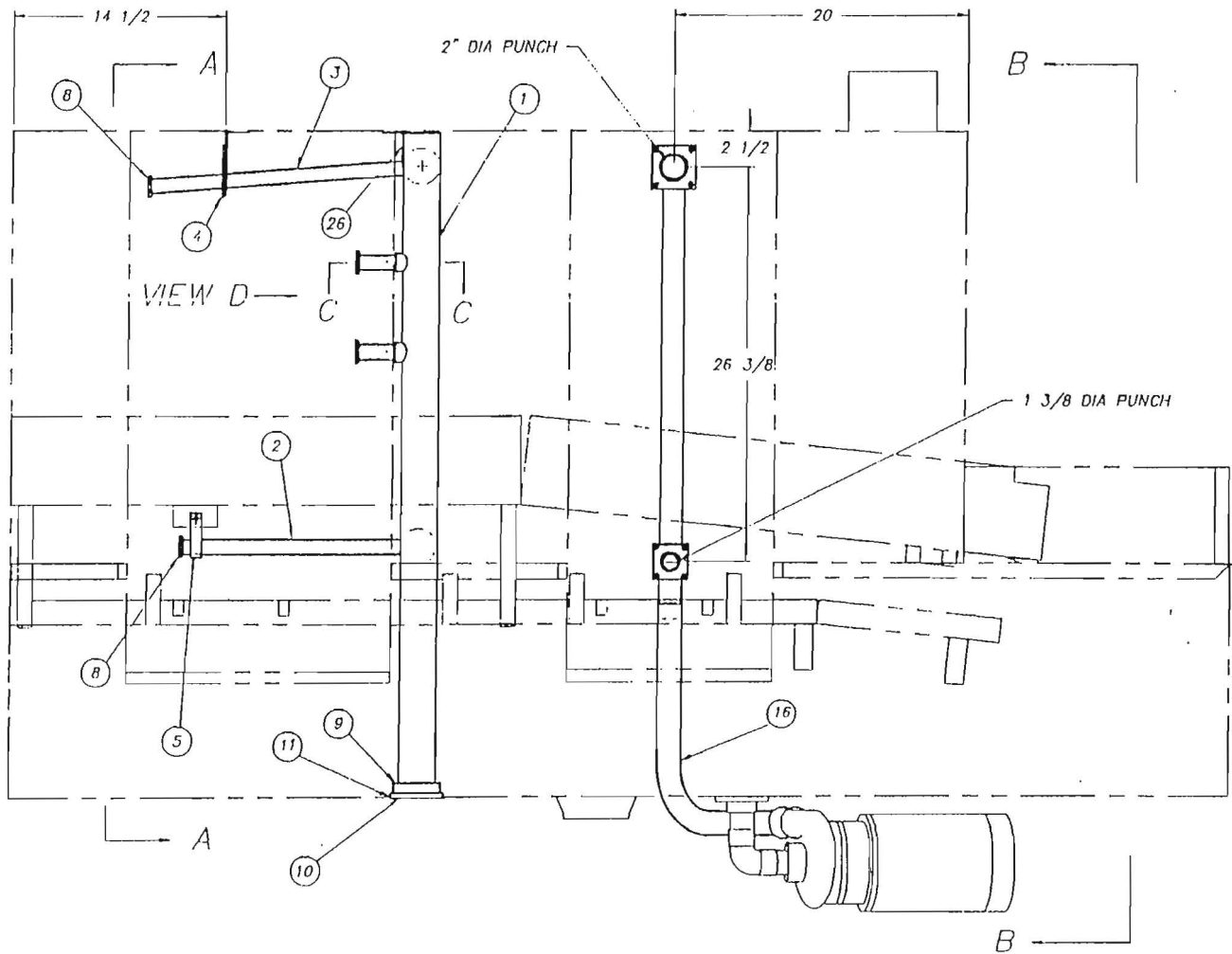
SECTION B-B

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-53-2	A	TOP BAFFLE	1
2	1390-55	A	SIDE BAFFLE	1
3	D-761B	A	CURTAIN ROD CLIP	4
4	D2-522-1	A	SPLASH GUARD CURTAIN	2

R.H. MACH. SHOWN L.H. MACH. OPPOSITE

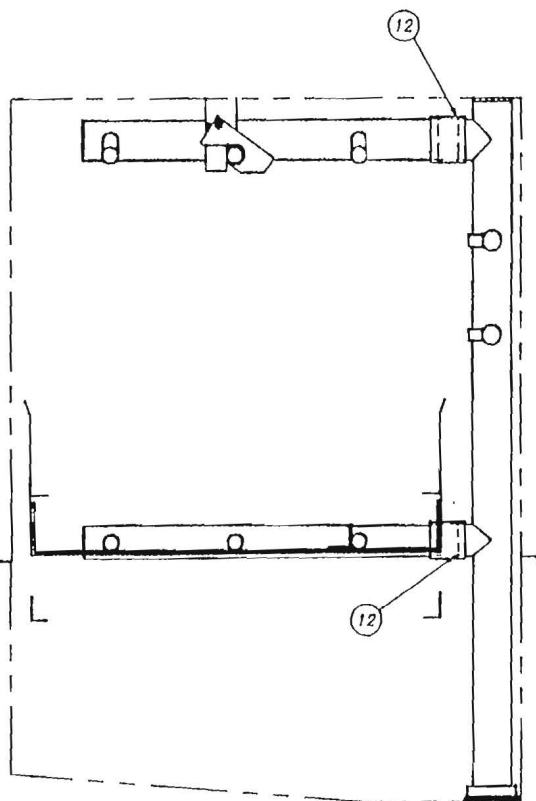
SHEET 2 OF 2

			TOLERANCES	TITLE CURTAIN & BAFFLE INSTALLATION UNLOAD SECTION	NEXT ASSY 1390-1	DWG. NO. 1390-10
			FRACTIONS ±1/64	MATL AS NOTED	RECD 1	USED ON CENTURY
			DECIMALS .XXX ± .005		SCALE 1=8	DRWN/DATE PG 4.2.93
			.XX ± .01			
			ANGLES ±1/2°			
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED	Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8866	
A	1004	4.25.94				
FILE: PARTS\1390-10						

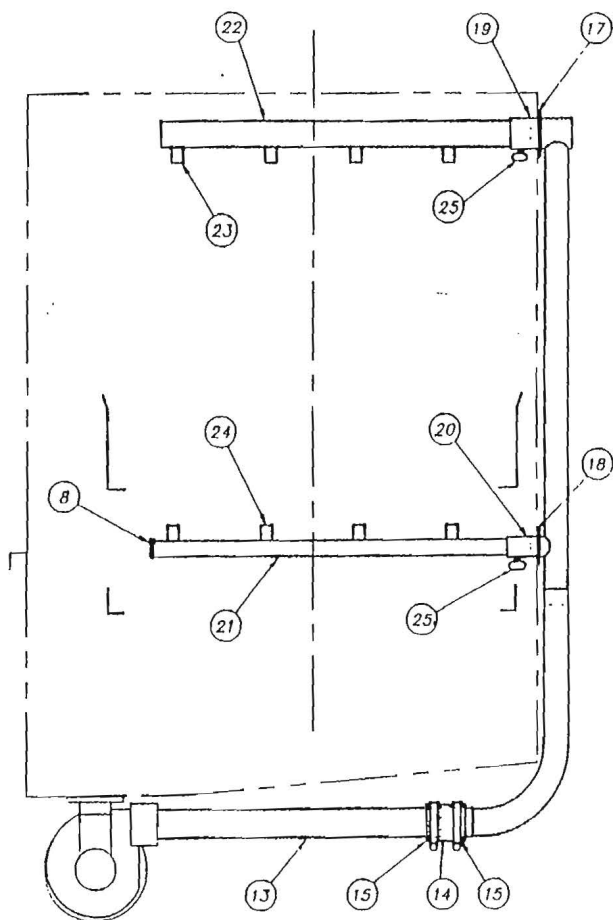


R.H. MACHINE SHOWN SHEET 1 OF 4

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DISCHARGE LINE ASSEMBLY	1390-1	1390-56
			DECIMALS	LOAD SECTION	REQ'D	
B	100	4.27.94	.XXX ± .005	MAT'L	SCALE	USED ON
A	990	3.23.94	.XX ± .01	NOTED	1=B	CENTURY
REV	ECN NO	DATE	ANGLES ±1/2°			DRW/DATE
			UNLESS OTHERWISE SPECIFIED			PC
FILE: PARTS\1390-56			Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6866		DRW/DATE 4.5.93	



SECTION A-A



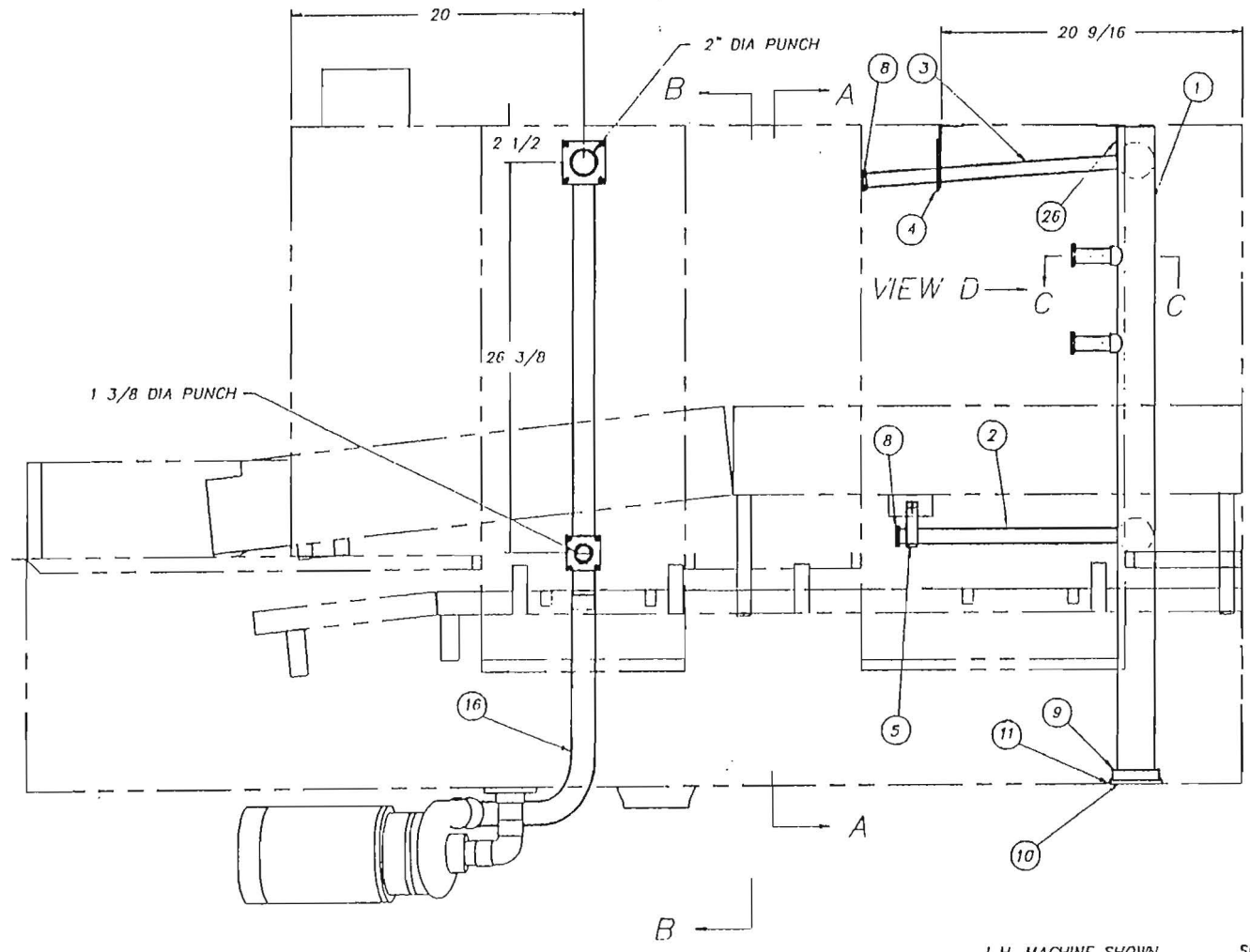
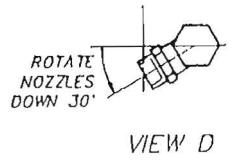
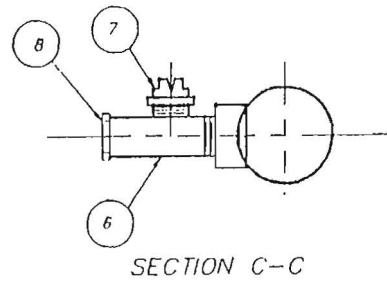
SECTION B-B

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-58	B	DISCHARGE TUBE-WASH	1
2	1390-33	B	MANIFOLD ASSEMBLY-LOWER	1
3	1390-34	B	MANIFOLD ASSEMBLY-UPPER	1
4	1372-17	A	LATCH ASSEMBLY-SPRAY PIPE	1
5	1390-59	A	CRADLE-SPRAY PIPE	1
6	1162-94	A	EXTENSION MANIFOLD	2
7	D2773	-	SPRAY NOZZLE	2
8	D2-554-J	A	PLUG 7/8-9 UNC-2A	9
9	D2-158	A	TANK FLANGE	1
10	D-514	A	GASKET	1
11	DJ-511	-	CUPSEAL, PARKER #8406-0250-4180	1
12	D2-564	-	"O" RING (O1-OJ2)	2
13	1390-63	A	NIPPLE	1
14	D2749	-	HOSE CLEAR FVC, 1 3/4 I.D. X 2 1/4 O.D. X 2 1/2 LG.	1
15	D2748	-	HOSE CLAMPS	2
16	1390-60	B	DISCHARGE TUBE WELDMENT	1
17	1182-70	A	GASKET-UPPER	1
18	1182-71	A	GASKET-LOWER	1
19	D580	-	"O" RING	1
20	D2-570	-	"O" RING	1
21	1390-64	B	LOWER SPRAY PIPE	1
22	1390-65	B	UPPER SPRAY PIPE	1
23	D2272	-	SPRAY NOZZLE	4
24	D2712	-	SPRAY NOZZLE	4
25	D-91	A	THUMBSCREW	2
26	1169-96	A	SUPPORT INSTALLATION	1

R.H. MACHINE SHOWN

SHEET 2 OF 4

TOLERANCES		TITLE DISCHARGE LINE ASSEMBLY		NEXT ASSY. DWG. NO.	
FRACTIONS ±1/64		LOAD SECTION		1390-1	
DECIMALS		MATERIAL NOTED		REV'D 1 1390-56	
B	10004 4.27.94	SCALE 1=8		USED ON CENTURY	
A	990 J.23.94	INSINGER Machine Company		PHILADELPHIA, PA 19135 (215) 624-4800	
REV	ECN NO DATE	FAX (215) 624-6966		DRWN/DATE PG 4.5.93	
FILE: PARTS \ 1390-56		UNLESS OTHERWISE SPECIFIED			

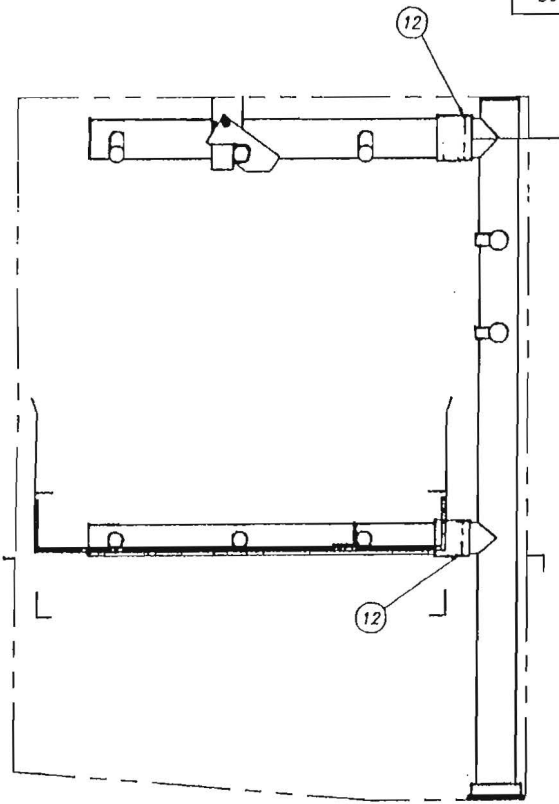


L.H. MACHINE SHOWN SHEET 3 OF 4

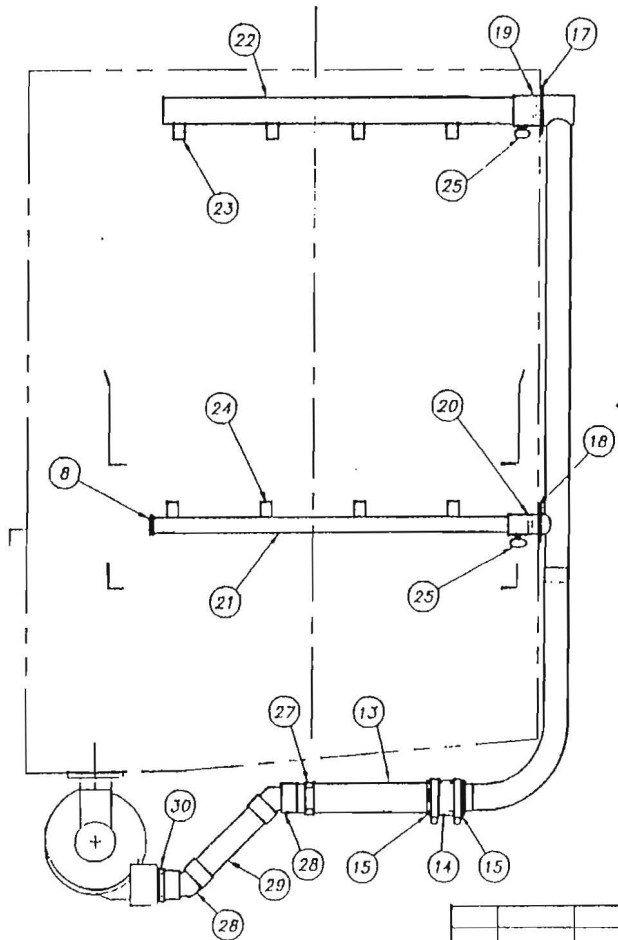
			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DISCHARGE LINE ASSEMBLY	1390-1	1390-56
			DECIMALS	LOAD SECTION	REV'D 1	
B	10014	4.27.94	.XXX ± .005	MATL	SCALE	USED ON:
A	990	3.23.94	.XX ± .01	NOTED	1-B	CENTURY
REV	ECN NO	DATE	ANGLES ±1/2°			DRWN/DATE
			UNLESS OTHERWISE SPECIFIED			PG
FILE: PARTS\1390-56				Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6986	4.5.93

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
27	DJ17A-HJ-H1	-	ADAPTER 1 1/2C X 1 1/2 FIPS	1
28	DJ15A-HJ-HJ	-	ELL 45° 1 1/2C	2
29	D207A-B12-26	-	COPPER TUBING 1 1/2 X 6 1/2 LG	1
30	DJ17A-HJ-H2	-	ADAPTER 1 1/2C X 1 1/2 MIPS	1

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-58	B	DISCHARGE TUBE-WASH	1
2	1390-33	B	MANIFOLD ASSEMBLY-LOWER	1
3	1390-34	B	MANIFOLD ASSEMBLY-UPPER	1
4	1372-17	A	LATCH ASSEMBLY-SPRAY PIPE	1
5	1390-59	A	CRADLE-SPRAY PIPE	1
6	1162-94	A	EXTENSION MANIFOLD	2
7	D2773	-	SPRAY NOZZLE	2
8	D2-554-J	A	PLUG 7/8-9 UNC-2A	9
9	D2-158	A	TANK FLANGE	1
10	D-514	A	GASKET	1
11	DJ-511	-	CUPSEAL, PARKER #B406-0250-4180	1
12	D2-564	-	"O" RING (O1-032)	2
13	1390-78	A	NIPPLE	1
14	D2749	-	HOSE CLEAR FVG, 1 3/4 I.D. X 2 1/4 O.D. X 2 1/2 LG.	1
15	D2748	-	HOSE CLAMPS	2
16	1390-60	B	DISCHARGE TUBE WELDMENT	1
17	1182-70	A	GASKET-UPPER	1
18	1182-71	A	GASKET-LOWER	1
19	D580	-	"O" RING	1
20	D2-570	-	"O" RING	1
21	1390-64	B	LOWER SPRAY PIPE	1
22	1390-65	B	UPPER SPRAY PIPE	1
23	D2272	-	SPRAY NOZZLE	4
24	D2712	-	SPRAY NOZZLE	4
25	D-91	A	THUMBSCREW	2
26	1169-96	A	SUPPORT INSTALLATION	1




SECTION A-A

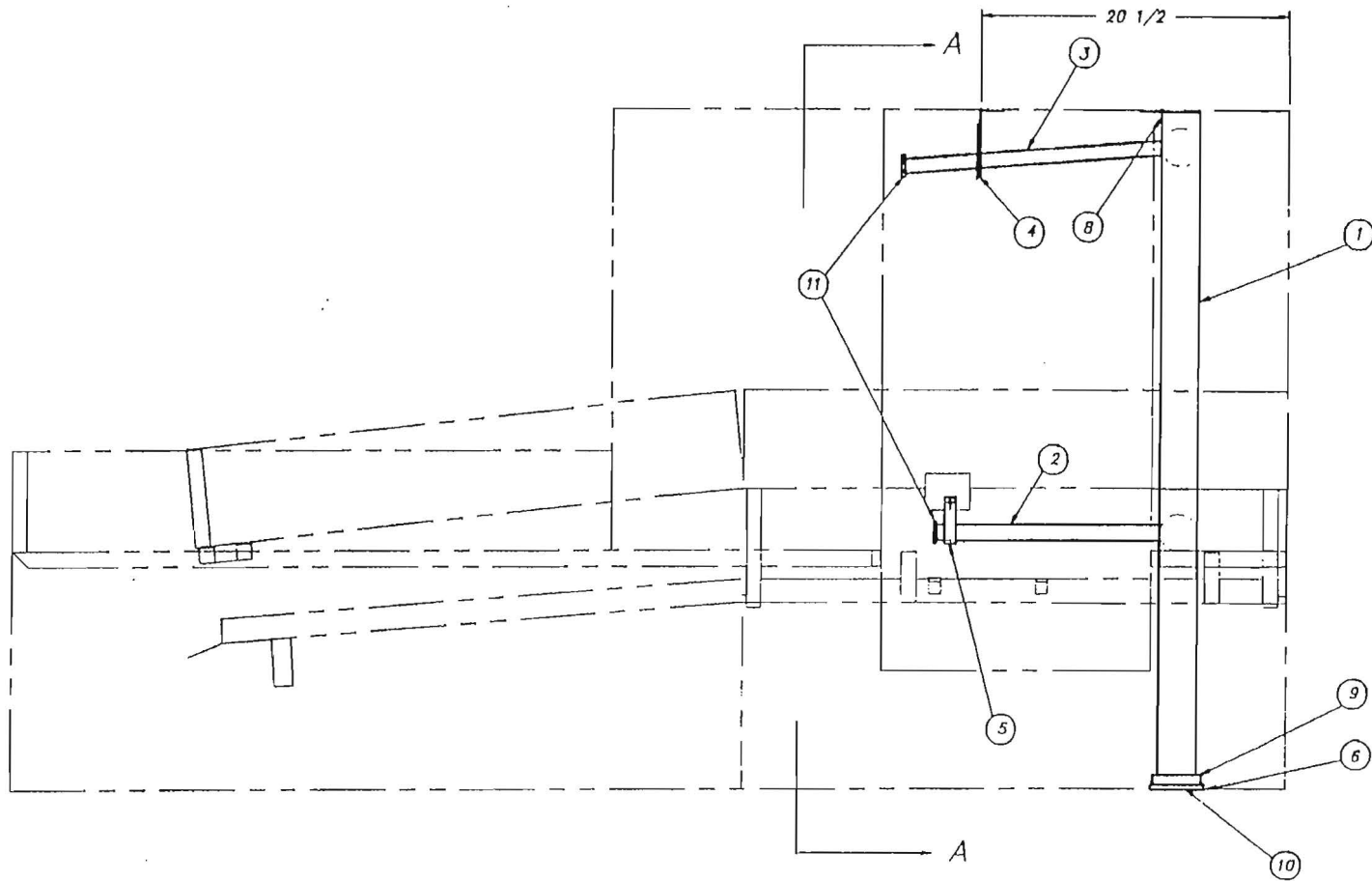


SECTION B-B

L.H. MACHINE SHOWN

SHEET 4 OF 4

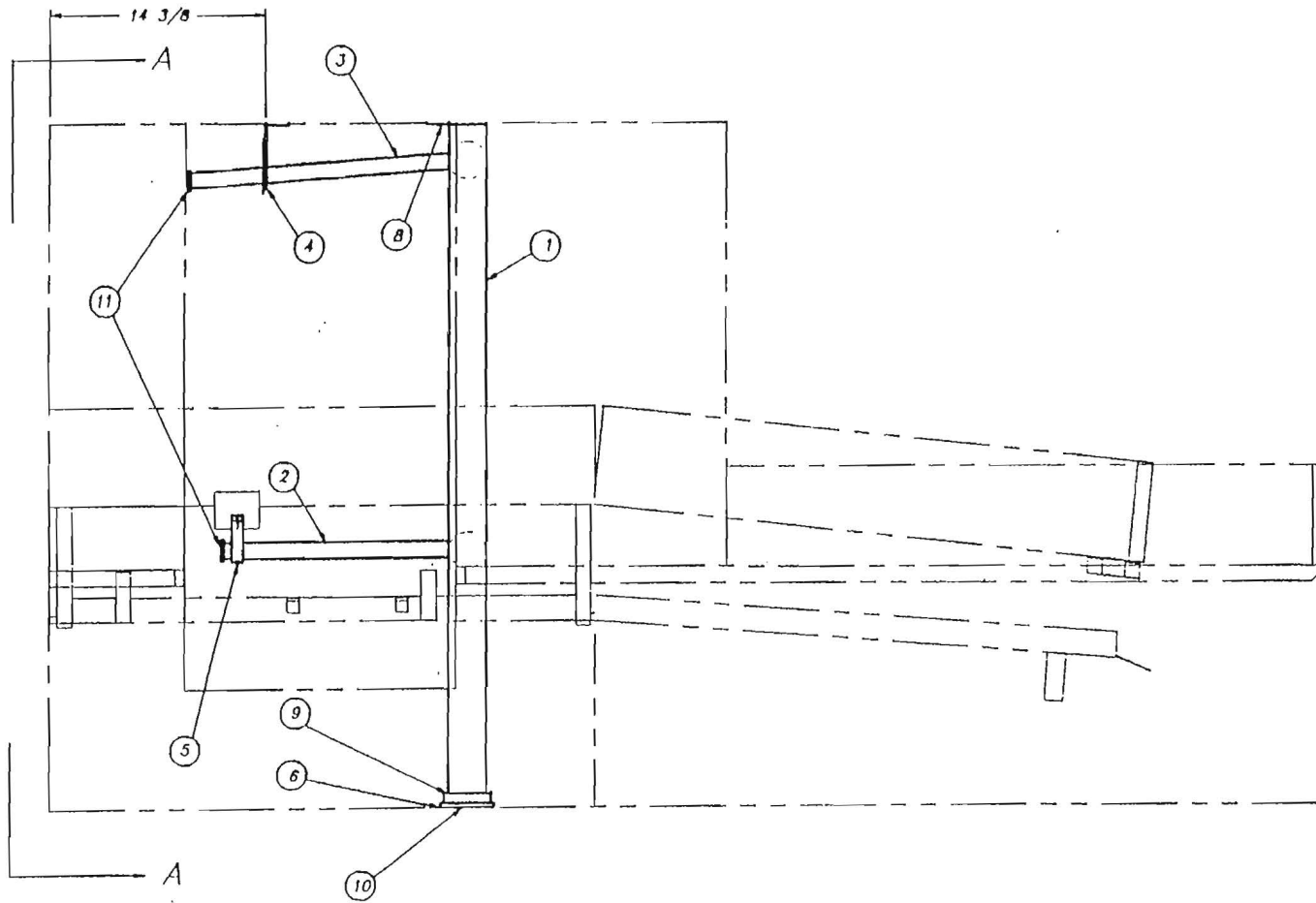
TOLERANCES			TITLE	NEXT ASSY	DWG. NO.
IRACIONS ±1/64			DISCHARGE LINE ASSEMBLY	1390-1	1390-56
DECIMALS			LOAD SECTION	REQ'D 1	
.XXX ± .005					
.XX ± .01			MATL	SCALE	USED ON
ANGLES ±1/2°			NOTED	1=8	CENTURY
UNLESS OTHERWISE SPECIFIED					
REV	ECN NO	DATE	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8866		
FILE: PARTS\1390-56					DRW/DATE PC 4.5.03



R.H. MACHINE SHOWN


SHEET 1 OF 3

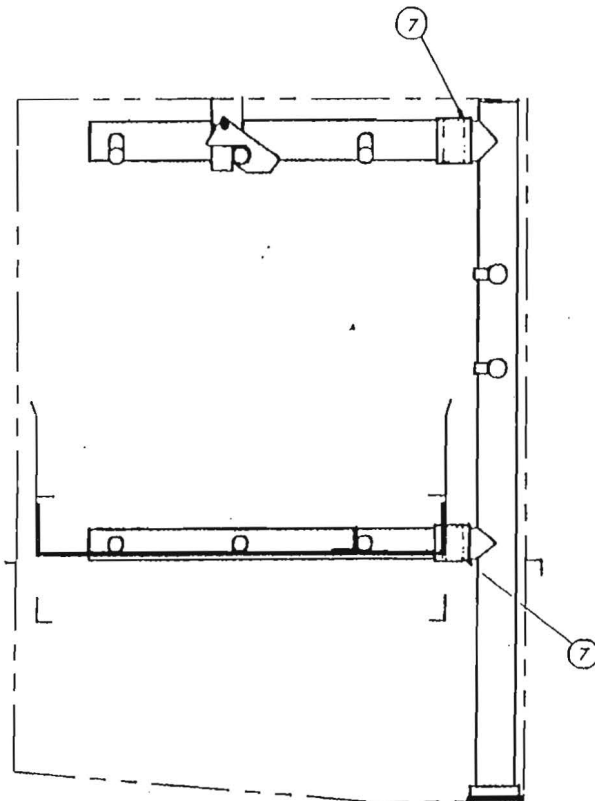
			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DISCHARGE LINE ASSEMBLY	1390-1	1390-57
			DECIMALS	UNLOAD SECTION	REQD 1	
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	AS NOTED	1=8	CENTURY
			ANGLES ±1/2°			
			UNLESS OTHERWISE SPECIFIED	Insinger	Philadelphia, PA 19135	DRWN/DATE
REV	ECN NO	DATE		Machine Company	(215) 824-4800	PC
			FILE: PARTS\1390-57		FAX (215) 824-8866	4.12.93



L.H. MACHINE SHOWN

SHEET 2 OF 3

			TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED		TITLE DISCHARGE LINE ASSEMBLY UNLOAD SECTION MATL AS NOTED		NEXT ASSY 1390-1 REQ'D 1 SCALE 1=8 USED ON CENTURY		DWG. NO. 1390-57 DRWN/DATE PC 4.12.93	
REV	ECN NO	DATE	FILE: PARTS\1390-57		 Insinger Machine Company		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8888			

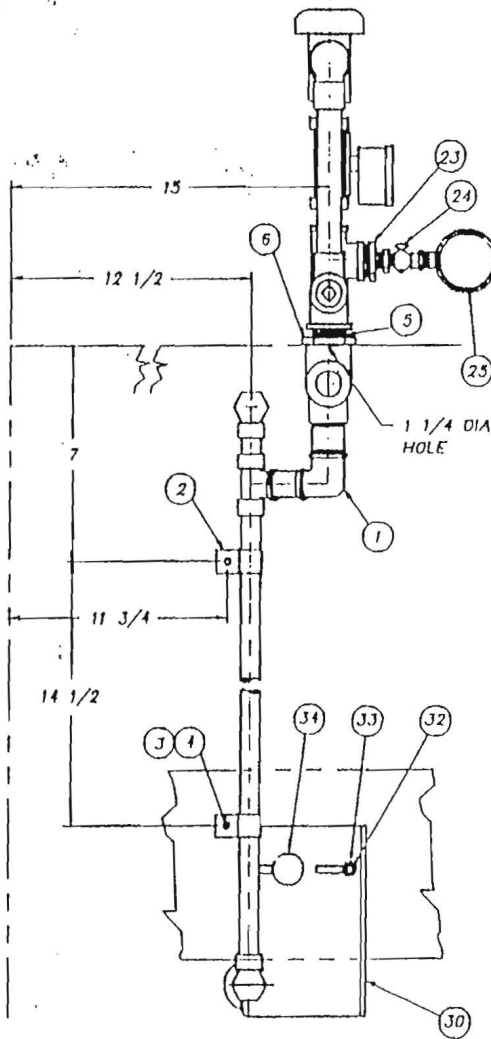
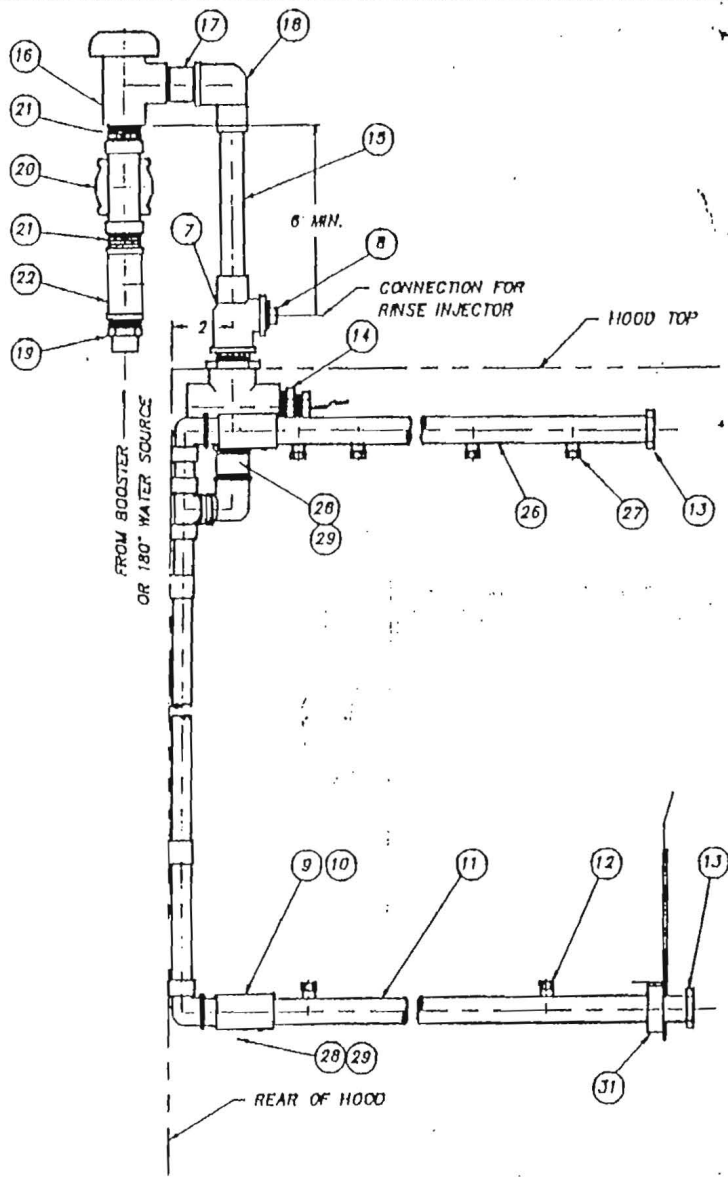


SECTION A-A

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-67	B	DISCHARGE TUBE-RINSE	1
2	1390-33	B	MANIFOLD ASSEMBLY-LOWER	1
3	1390-34	B	MANIFOLD ASSEMBLY-UPPER	1
4	1372-17	A	LATCH ASSEMBLY-SPRAY PIPE	1
5	1390-59	A	CRADLE-SPRAY PIPE	1
6	D3-511	-	CUPSEAL,PARKER#8408-0250-4180	1
7	D2-664	-	"O" RING (01-032)	2
8	1169-98	A	SUPPORT INSTALLATION	1
9	D2-158	A	TANK FLANGE	1
10	D-514	A	GASKET	1
11	02-554-J	A	PLUG 7/8-9 UNC-2A	8

SHEET 3 OF 3

TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED			TITLE DISCHARGE LINE ASSEMBLY UNLOAD SECTION		NEXT ASSY DWO. NO. 1390-1 1390-57
MATL AS NOTED			SCALE 1=8		USED ON CENTURY
REV FILE: PARTS\1390-57	ECN NO.	DATE	Insinger Machine Company		Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8986
			DRM/DATE PO 4.12.03		

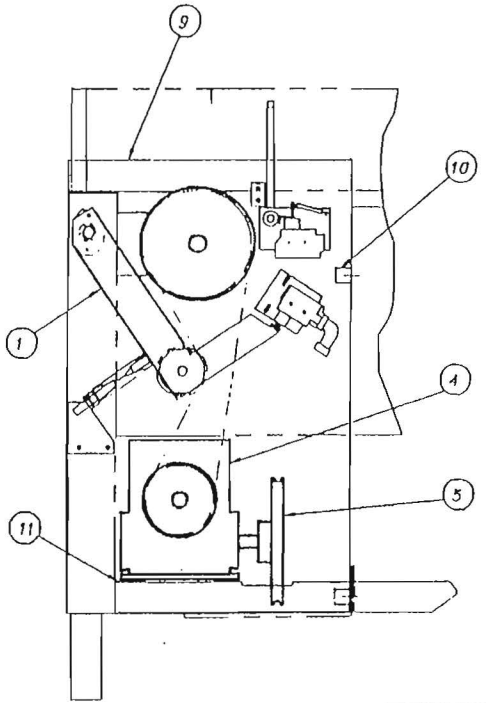
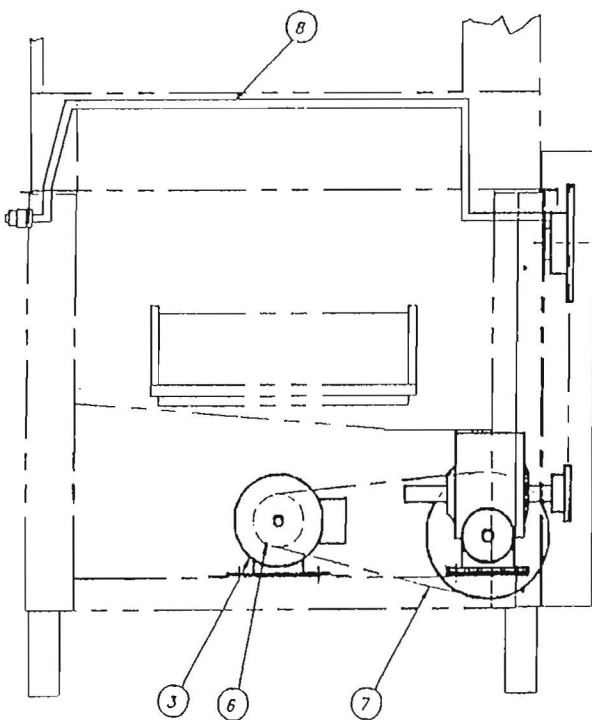
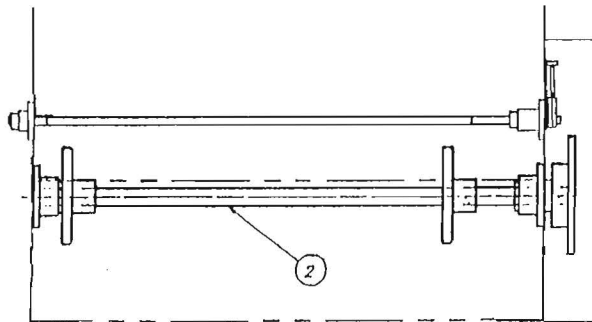


FRONT VIEW
AT RINSE END

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-69	B	FINAL RINSE INSIDE PIPING	1
2	975-100	A	BRACKET	2
3	0309C-EF-3G	-	WELDSTUD 10-32 X3/8	2
4	0312C-EF-5	-	LOCKNUT 10-32	2
5	0314F-EA-12	-	NIPPLE 3/4 IPS X 1 1/2 AT	1
6	0326F-E1	-	LOCKNUT 3/4 IPS	1
7	0320A-E3E101	-	TEE 3/4 IPS X 3/4C X 1/2 IP	1
8	0326F-D2-A	-	PIPE PLUG 1/2 IPS	1
9	03-80J	A	ADAPTER	2
10	02-594	-	"O" RING	2
11	SK-361B	A	SPRAY PIPE	1
12	0-2266	-	SPRAY NOZZLES 1/8 IPS	4
13	02-554-2	A	PLUG 3/4-10 UNC-2A	2
14	0322F-E2-01	-	HEX RED 3/4IPS X 1/2IPS	1
15	0207A-08-22	-	COP TUBE 3/4CTS X 5 1/2	1
16	0-224J	-	VACUUM BREAKER 3/4 IPS	1
17	0314F-ES-16	-	NIPPLE 3/4 IPS X 2	1
18	0316F-E3-E1	-	90° EL 3/4 C X 3/4 FPS	1
19	0317A-E3-E2	-	ADAPTER 3/4 IPS X 3/4 C	1
20	0-2597	-	SOLENOID (WATER) 3/4 IPS	1
21	0314F-EC-00	-	CLOSE NIPPLE 3/4 IPS	2
22	0320F-E1E1E1	-	TEE 3/4 IPS	1
23	0322F-E2-81	-	HEX RED 3/4 IPS X 1/4 FPS	1
24	0-2497	-	PETCOCK 1/4 IPS	1
25	SK-143J	A	PRESSURE GAUGE 1/4 IPS	1
26	1100-28J	B	SPRAY PIPE	1
27	02701	-	SPRAY NOZZLE	8
28	0312C-EF-7	-	WRENUT #10-32	2
29	0309C-EF-6B	-	RO 10 SDR #10-32 X 3/4	2
30	1390-98	A	RETAINER	1
31	1390-68	A	COLLAR	1
32	0309C-GC-5C	-	WELDSTUD 1/4-20 X 5/8 LG.	2
33	0312C-GC-5	-	LOCKNUT 1/4-20	1
34	02-651	-	KNOB 1/4-20	1

R.H. MACH, SHOWN L.H. MACH. OPPOSITE

			TOLERANCES	TITLE	FINAL RINSE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	FINAL RINSE	ASSEMBLY	1390-1	1390-68
			DECIMALS			REQD 1	
			.XXX ± .005				
			.XX ± .01				
			ANGLES ±1/2°				
			UNLESS OTHERWISE SPECIFIED				
B	1004	5.18.94		SCALE	NOTED	1=4	USED ON CENTURY
A	976	1.14.94					
REV ECH NO DATE							DRWN/DATE
FILE: PARTS\1390-68							PG 4.6.9J
					Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-6866		

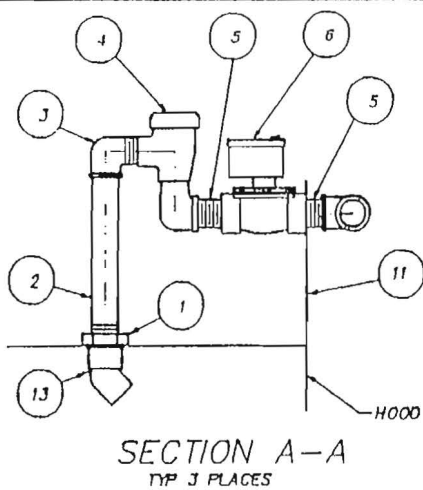


UNLOAD END

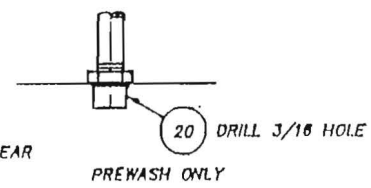
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1100-289	B	CONVEYOR OVERLOAD SHUTOFF	1
2	1100-117	B	DRIVE SHAFT ASSY	1
3	-	-	MOTOR BALDOR MJ108 ODP	1
4	D-2344A	-	REDUCER BOND 262B 64:1	1
5	D-2527	-	PULLEY 7.95 O.D.	1
6	818-16	A	PULLEY	1
7	D2-582	-	"V" BELT 4L450	1
8	1100-123	B	STOP BAR ASSY & LOCATION	1
9	1390-80	A	COVER, MECHANISM GUARD	1
10	D2-843	A	BRACKET, MECHANISM GUARD	2
11	1390-89	A	SHIM	2

R.H SHOWN L.H. OPPOSITE

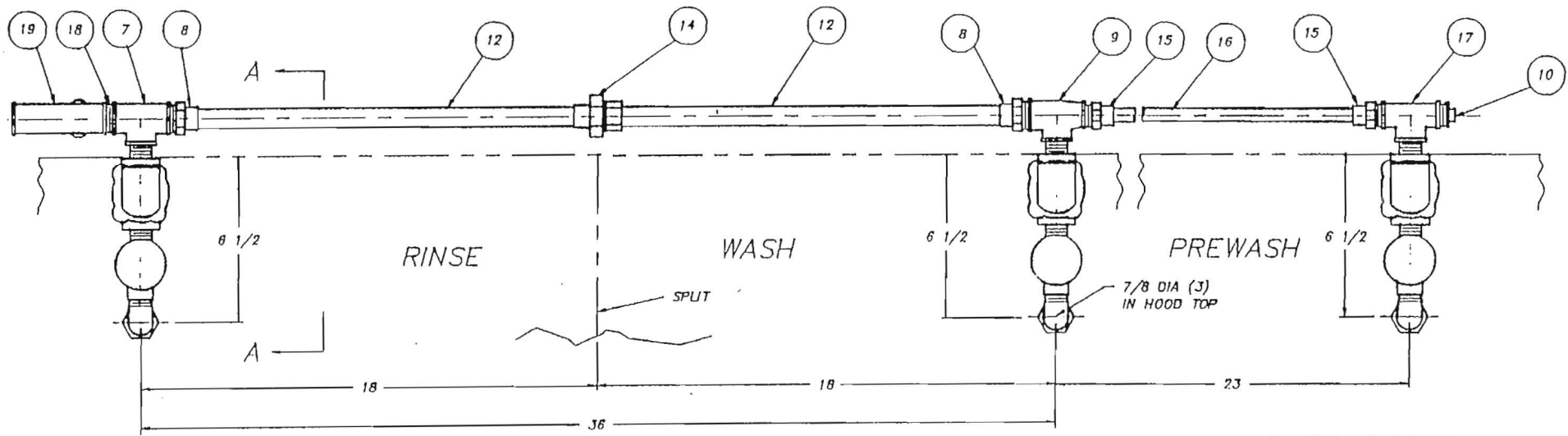
TOLERANCES		TITLE	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		CONVEYOR DRIVE	1390-1	1390-72
DECIMALS		ASSEMBLY	REQ'D 1	
.XXX ± .005		MATL	SCALE	USED ON
.XX ± .01		AS NOTED	1=8	CENTURY
ANGLES ±1/2°				
UNLESS OTHERWISE SPECIFIED		Insinger Machine Company	Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8866	DRWN/DATE PC 4.15.93
REV	ECN NO	DATE	FILE: PARTS\1390-72	



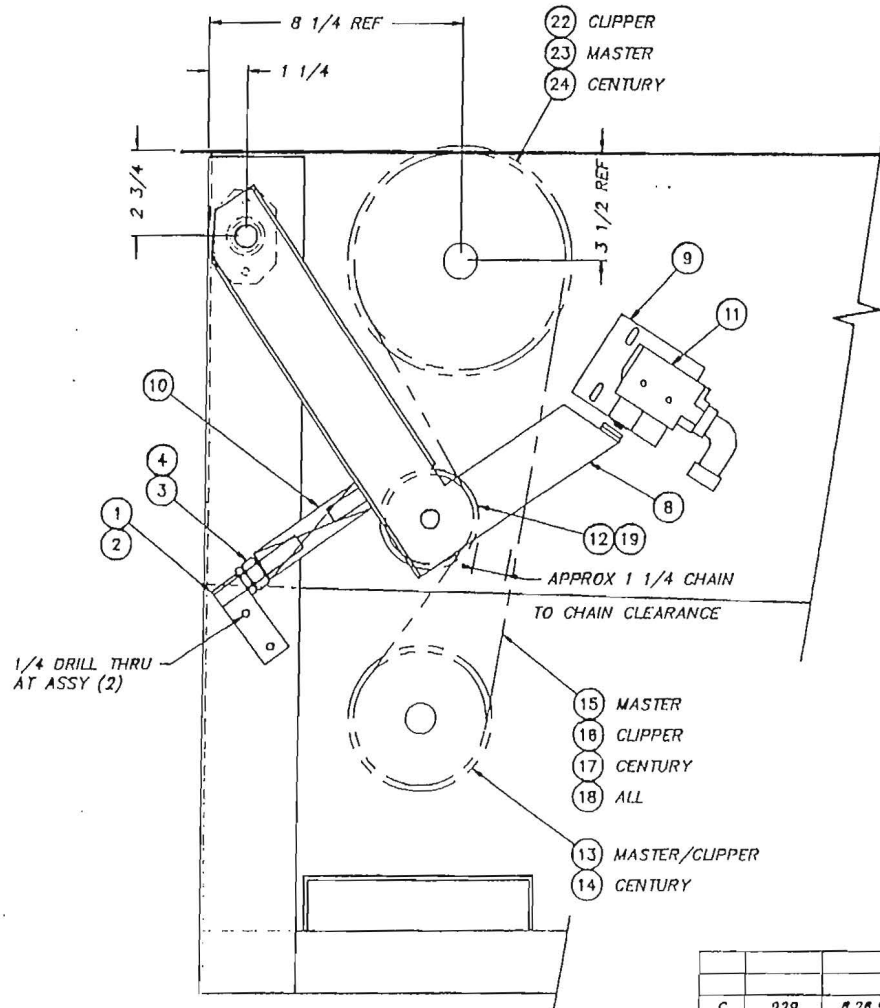
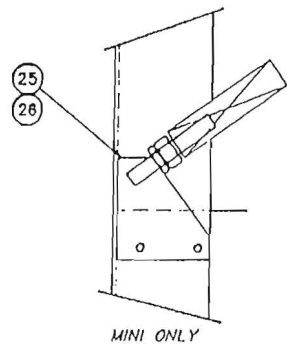
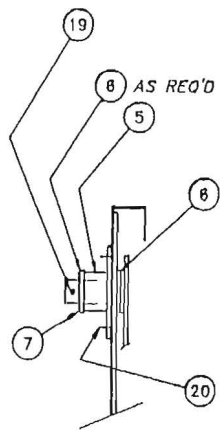
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
15	DJ17A-DJ-D2	-	ADAPTER 1/2 C X 1/2 MIPS	2
16	D207A-B4-80	-	COPPER TUBING 1/2 CTS X 20 LG.	1
17	DJ20F-D1D101	-	TEE 1/2 IPS	
18	DJ14F-EC-00	-	CLOSE NIPPLE 3/4 IPS	1
19	D-24B2	-	"Y" STRAINER 3/4 IPS	1
20	DJ28F-D1	-	CAP 1/2 IPS	1



ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	DJ26F-D1	-	LOCKNUT 1/2 IPS	J
2	DJ14F-OL-52	-	NIPPLE 1/2 IPS X 6 1/2 L.O.E.	J
3	DJ16F-D1-D2	-	90° STREET ELL 1/2 IPS	6
4	D-2241	-	VACUUM BREAKER 1/2 IPS	J
5	DJ14F-DC-00	-	CLOSE NIPPLE 1/2 IPS	6
6	D-2608	-	SOLENOID VALVE 1/2 IPS 24V	J
7	DJ20F-E1E101	-	TEE 3/4FIPS X 3/4FIPS X 1/2FIPS	1
8	DJ17A-EJ-E2	-	ADAPTER 3/4 C X 3/4 MIPS	2
9	DJ20F-E1D101	-	TEE 3/4FIPS X 1/2FIPS X 1/2FIPS	1
10	DJ28F-D2-A	-	PIPE PLUG 1/2 IPS	1
11	957-80	A	BRACKET	J
12	D207A-B8-88	-	COPPER TUBING 3/4CTS X 17	2
13	DJ15A-D1-D1	-	45° 1/2 FIPS X 1/2 FIPS	2
14	DJ18A-E3-E	-	UNION 3/4C	1



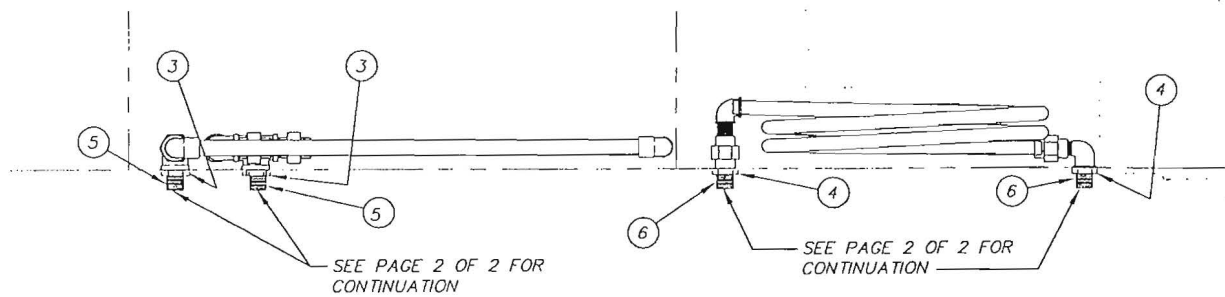
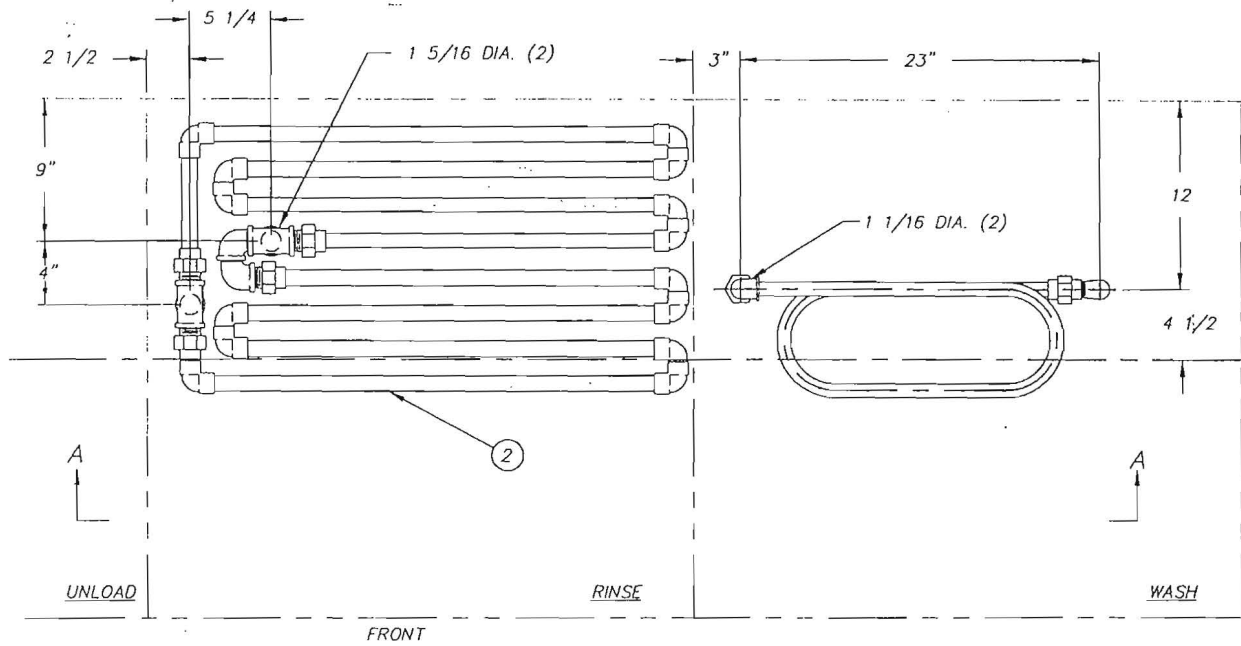
REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
A	1004	4.23.04	FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	AUTO TANK FILL ASSEMBLY WASH & RINSE	1390-1 REQD 1	1390-71
				MATL NOTED	SCALE 1=4	USED ON CENTURY
				Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8088	DRWN/DATE PC 4.18.03



ITEM	PART NO.	DESCRIPTION	QTY.
1	1100-285	ADJUSTABLE SPRING STOP	1
2	1100-309	SHIM	1
3	D312C-LC-2	1/2-13 HEX NUT	1
4	D312C-LC-1	1/2-13 JAM NUT	1
5	1100-286	ATC PIVOT CUP	1
6	D2-525	1/8 THK SPACER	3
7	D470A	1/16 THK WASHER	1
8	1100-287	ATC ARM WELDMENT	1
9	1100-288	MICROSWITCH BRACKET	1
10	D351	SPRING	1
11	D2215A	MICROSWITCH	1
12	1100-310	IDLER SPROCKET	1
13	D2714	60B18-F1 SPROCKET	1
14	D2760	60B13-F1 SPROCKET	1
15	D308C-60	ROLLER CHAIN, 48 3/4 LG	1
16	D308C-60	ROLLER CHAIN, TBD LG	1
17	D308C-60	ROLLER CHAIN, 49' LG.	1
18	D308C-60CL	ROLLER CHAIN CONN. LINK	1
19	D311-22	S/S COTTER PIN, 1/8 x 1 1/4	2
20	D309C-GC-5	1/4-20 x 5/8 LG WELD STUD	2
21	-	-	-
22	D-2333	60B36-F1 1/8 SPROCKET	1
23	D2-146	60B29-F1 1/8 SPROCKET	1
24	D2761	60B30-F1 1/8 SPROCKET	1
25	1100-311	ADJUSTABLE SPRING STOP	1
26	1100-312	SHIM	1
27	-	-	-
28	-	-	-
29	-	-	-

RIGHT HAND SHOWN LEFT HAND OPPOSITE
DRAWN TO SCALE FOR MASTER MACHINE

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
C	929	8.26.93	FRACTIONS ±1/64	CONVEYOR OVERLOAD	REQ'D 1	1100-289
D	851	3.12.93	DECIMALS	SHUTOFF ASSEMBLY		
A	560	-	.XXX ± .005	MATL	SCALE	USED ON
REV	ECH NO	DATE	.XX ± .01		1=4	CLP/MASTER
FILE:	PARTS\1100-289		ANGLES ±1/2°			DRWN/DATE
			UNLESS OTHERWISE SPECIFIED		Philadelphia, PA 19135	JRS
				Machine Company	(215) 824-4800	4.15.91
					FAX (215) 824-6966	

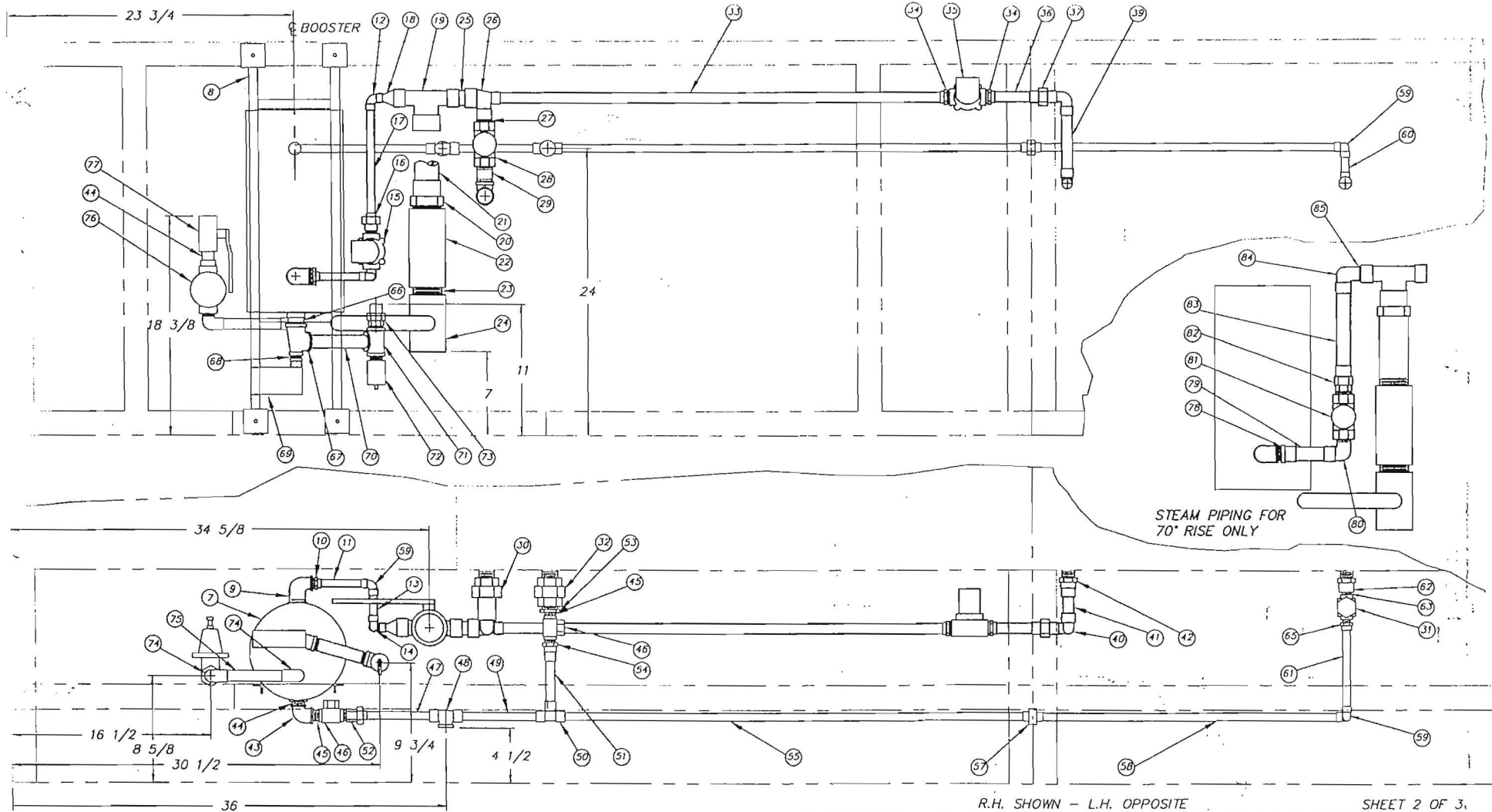


VIEW A - A

R.H. SHOWN - L.H. OPPOSITE


SHEET 1 OF 3

			TOLERANCES		TITLE		NEXT ASSY	
			FRACTIONS ±1/64		STEAM PIPING		1390-1	
			DECIMALS		WASH & RINSE TANKS		REQ'D 1	
			.XXX ± .005		AS NOTED		SCALE 1=B	
			.XX ± .01				USED ON	
			ANGLES ±1/2°				CENTURY	
			UNLESS OTHERWISE SPECIFIED		INSINGER Machine Company		DRWN/DATE	
REV A			ECN NO 979		Philadelphia, PA 19135		PG	
			DATE 1.17.94		(215) 624-4800		4.26.93	
			FILE: PARTS\1390-74		FAX (215) 624-6966			



R.H. SHOWN - L.H. OPPOSITE

SHEET 2 OF 3

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS $\pm 1/64$	STEAM PIPING	1390-1	1390-74
			DECIMALS	WASH & RINSE TANKS	REQ'D 1	
			.XXX $\pm .005$			
			.XX $\pm .01$	MAT'L	SCALE	USED ON
			ANGLES $\pm 1/2^\circ$	AS NOTED	1=8	CENTURY
A	979	1.17.94	UNLESS OTHERWISE SPECIFIED			DRWN/DATE
REV	ECN NO	DATE		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966		PG
FILE: PARTS\1390-74						4.26.93

ITEM	PART NO.	DESCRIPTION	QTY.
61	D207A-B4-29	COPPER TUBING 1/2 CTS X 7 1/4	1
62	D320F-E1-C1	RED COUPLING 3/4 FIPS X 3/8 FIPS	1
63	D314F-CC-00	NIPPLE CLOSE 3/8 IPS	-1
64	-	-	-
65	D317A-D3-C2	ADAPTER 1/2 C X 3/8 MIPS	1
66	D314F-FC-00	NIPPLE CLOSE 1" IPS	1
67	D320F-F1D1E1	TEE 1" FIPS X 1/2 FIPS X 3/4 FIPS	1
68	D322F-D2-C1	HEX RED 1/2 MIPS X 3/8 FIPS	1
69	D2396	THERMOSTAT (SEE NOTE #2)	1
70	D314A-ES-43	NIPPLE 3/4 IPS X 5 3/8	1
71	D320F-E1E1E1	TEE 3/4 IPS	1
72	D2507	PRESSURE RELIEF VALVE 3/4 IPS	1
73	D318A-E3-E2	UNION 3/4 C X 3/4 MIPS	1
74	D316A-E3-E2	90° ELBOW 3/4 C X 3/4 MIPS	2
75	D207A-B6-24	COPPER TUBING 3/4 CTS X 6	1
76	D1012	PRESSURE REG & STRAINER 3/4 IPS	1
77	D2340	BALL VALVE 3/4 IPS	1
78	D317A-F3-F2	ADAPTER 1" C X 1" MIPS	1
79	D207A-B8-16	COPPER TUBING 1" IPS X 4	1
80	D316A-F3-F2	90° ELBOW 1" C X 1" MIPS	1
81	-	SAME AS ITEM #2B	1
82	D318A-F3-F2	UNION 1" C X 1" MIPS	1
83	D207A-B8-31	COPPER TUBING 1" CTS X 7 3/4	1
84	D316A-F4-F3	90° ELBOW 1" FTG X 1" C	1
85	D323A-G4-F3	FLUSH BUSH 1 1/4 FTG X 1" C	1

FOR 70" RISE

ITEM	PART NO.	DESCRIPTION	QTY.
31	D2102	STEAM TRAP 3/8 IPS	1
32	D318F-F1-F1	UNION 1" FIPS X 1" FIPS	1
33	D207A-B6-152	COPPER TUBING 3/4 CTS X 3B	1
34	D317A-E3-E2	ADAPTER 3/4 C X 3/4 MIPS	2
35	D2595	SOLENOID VALVE 3/4 IPS	1
36	D207A-B6-18	COPPER TUBING 3/4 CTS X 4 1/2	1
37	D319A-E3-E3	UNION ELL 3/4 C X 3/4 C	1
38	-	-	-
39	D207A-B6-24	COPPER TUBING 3/4 CTS X 6	1
40	D316A-E3-E3	90° ELBOW 3/4 C X 3/4 C	1
41	D207A-B6-14	COPPER TUBING 3/4 CTS X 3 1/4	1
42	D317A-E3-E1	ADAPTER 3/4 C X 3/4 FIPS	1
43	D316F-E2-E1	90° RED ELL 3/4 FIPS X 1/2 FIPS	1
44	D314F-EC-00	NIPPLE CLOSE 3/4 IPS	2
45	D314F-DC-00	NIPPLE CLOSE 1/2 IPS	2
46	D2102A	STEAM TRAP 1/2 IPS	2
47	D207A-B4-25	COPPER TUBING 1/2 CTS X 6 1/4	1
48	D320A-E3D3E1	TEE 3/4 C X 1/2 C X 3/4 FIPS	1
49	D207A-B6-31	COPPER TUBING 3/4 CTS X 7 3/4	1
50	D320A-E3D3E3	TEE 3/4 C X 1/2 C X 3/4 C	1
51	D207A-B6-19	COPPER TUBING 3/4 CTS X 4 3/4	1
52	D318A-D3-D2	UNION 1/2 C X 1/2 MIPS	1
53	D322F-F2-D1	HEX RED BUSH 1" MIPS X 1/2 FIPS	1
54	D317A-E3-D2	ADAPTER 3/4 C X 1/2 MIPS	1
55	D207A-B4-157	COPPER TUBING 1/2 CTS X 39 1/4	1
56	-	-	-
57	D318A-D3D3	UNION 1/2 C X 1/2 C	1
58	D207A-B4-101	COPPER TUBING 1/2 CTS X 25 1/4	1
59	D316A-D3-D3	90° ELBOW 1/2 C	3
60	D207A-B4-9	COPPER TUBING 1/2 CTS X 2 1/4	1

FOR 40" RISE

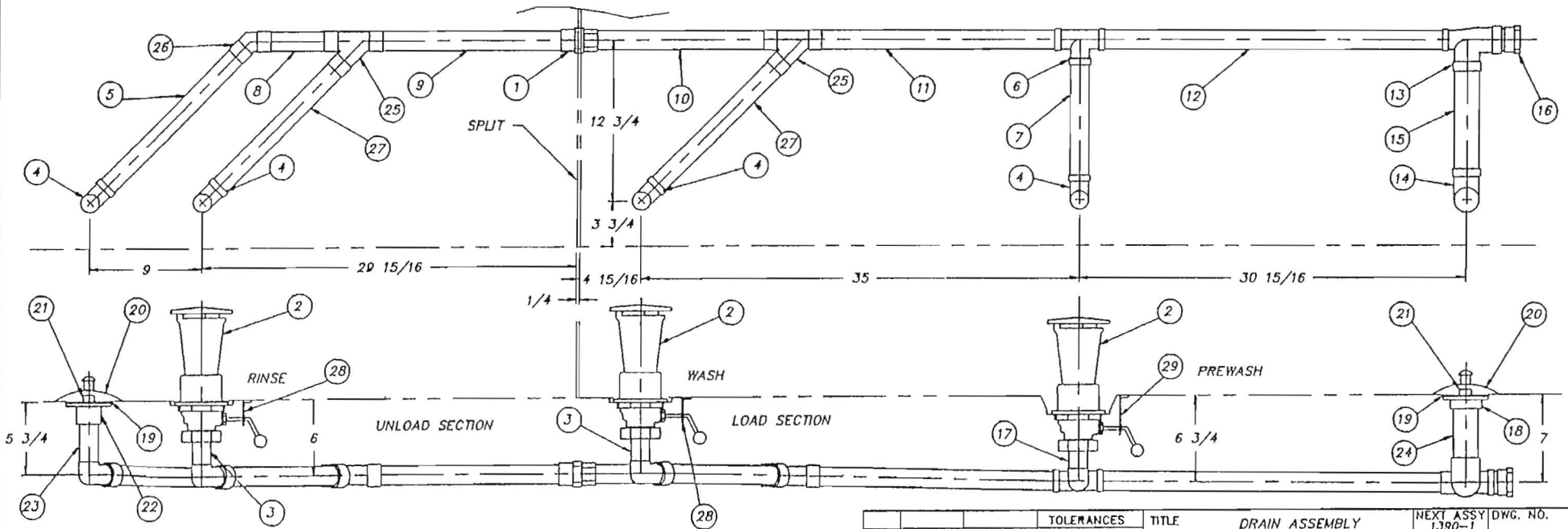
ITEM	PART NO.	DESCRIPTION	QTY.
1	1100-B4	STEAM COIL - WASH	1
2	9019-01	STEAM COIL - RINSE	1
3	D326F-F1	LOCKNUT 1" IPS	2
4	D326F-E1	LOCKNUT 3/4" IPS	2
5	D314F-FA-16	NIPPLE 1" IPS X 2" ALL THD.	2
6	D314F-EA-14	NIPPLE 3/4 IPS X 1 3/4 ALL THD.	2
7	D 2100	STEAM BOOSTER (1-2) (SEE NOTE #1)	1
8	1390-90	BOOSTER SUPPORT	1
9	D316F-F2-F1	90° STREET ELL 1" MIPS X 1" FIPS	1
10	D317A-D3-F2	ADAPTER 1/2 C X 1 MIPS	1
11	D207A-B4-17	COPPER TUBING 1/2 CTS X 4 1/4	1
12	D316A-D4-D3	90° STREET ELL 1/2 FTG C 1/2 C	1
13	D207A-B4-10	COPPER TUBING 1/2 CTS X 2 1/2	1
14	D316A-D3-D2	90° ELBOW 1/2 C X 1/2 MIPS	1
15	D2594	SOLENOID VALVE 1/2 IPS	1
16	D318F-D3-D2	UNION 1/2 C X 1/2 MIPS	1
17	D207A-B4-3B	COPPER TUBING 1/2 CTS X 9 1/2	1
18	D323A-G4-D3	RED BUSH 1 1/4 FTG X 1/2 C	1
19	D320A-G3G3J3	TEE 1 1/4 C X 1 1/4 C X 2 C	1
20	D317AJ3-J2	ADAPTER 2" C X 2" MIPS	1
21	D207A-B16-23	COPPER TUBING 2" CTS X 5 3/4	1
22	D2756	"Y" STRAINER 2" IPS	1
23	D314F-JC-00	NIPPLE CLOSE 2" IPS	1
24	D2757	BALL VALVE 2" IPS	1
25	D207A-B10-10	COPPER TUBING 1 1/4 CTS X 2 1/2	1
26	D320A-G3E3F3	TEE 1 1/4 C X 3/4 C X 1 C	1
27	D317A-F4-F2	ADAPTER 1" FTG X 1" MIPS	1
28	D2772	SOLENOID VALVE 1" IPS	1
29	D314F-FS-21	NIPPLE 1" IPS X 2 5/8	1
30	D319F-F1-F1	90° UNION ELL 1" IPS	1

NOTE :
 1. (ITEM #7) ADD SUFFIX "NM" FOR NON-MAGNETIC MACHINES.
 2. (ITEM #69) USE PART NO. D2396 AS STANDARD AND PART NO. D2301 WHEN LOW TEMP. CUT-OFF IS SPECIFIED.

			TOLERANCES	TITLE	STEAM PIPING	NEXT ASSY	DWG. NO.	
			FRACTIONS ±1/64	WASH & RINSE TANKS		1390-1	1390-74	
			DECIMALS			REQ'D	1	
			.XXX ± .005			SCALE	USED ON	
			.XX ± .01	AS NOTED		1=B	CENTURY	
			ANGLES ±1/2°			UNLESS OTHERWISE SPECIFIED		
A	979	1.17.94	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966					DRWN/DATE
REV	ECN NO	DATE						PG
FILE: PARTS\1390-74								4.26.93

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
16	D317A-JAJ1	-	ADAPTER 2 CFTG X 2 FPS	1
17	D207A-B12-10	-	COPPER TUBING 1 1/2 CTS X 2 3/8 LG	1
18	D-135	A	DRAIN FLANGE	1
19	D-514	A	GASKET	2
20	D-108	A	DRAIN STRAINER	2
21	D-90	A	GLASS DRAIN STRAINER	2
22	D-134	A	DRAIN FLANGE	1
23	D207A-B12-16	-	COPPER TUBING 1 1/2 CTS X 4 LG	1
24	D207A-B16-20	-	COPPER TUBING 2 CTS X 4 7/8 LG	1
25	D352A-H3H3H3	-	Y 45° 1 1/2 C	2
26	D348A-H3-H3	-	ELL 45° 1 1/2 C	1
27	D207A-B12-88	-	COPPER TUBING 1 1/2 CTS X 14 3/4 LG	2
28	1133-84	A	DRAIN HANDLE BRACKET	2
29	1390-88	A	DRAIN HANDLE BRACKET	1

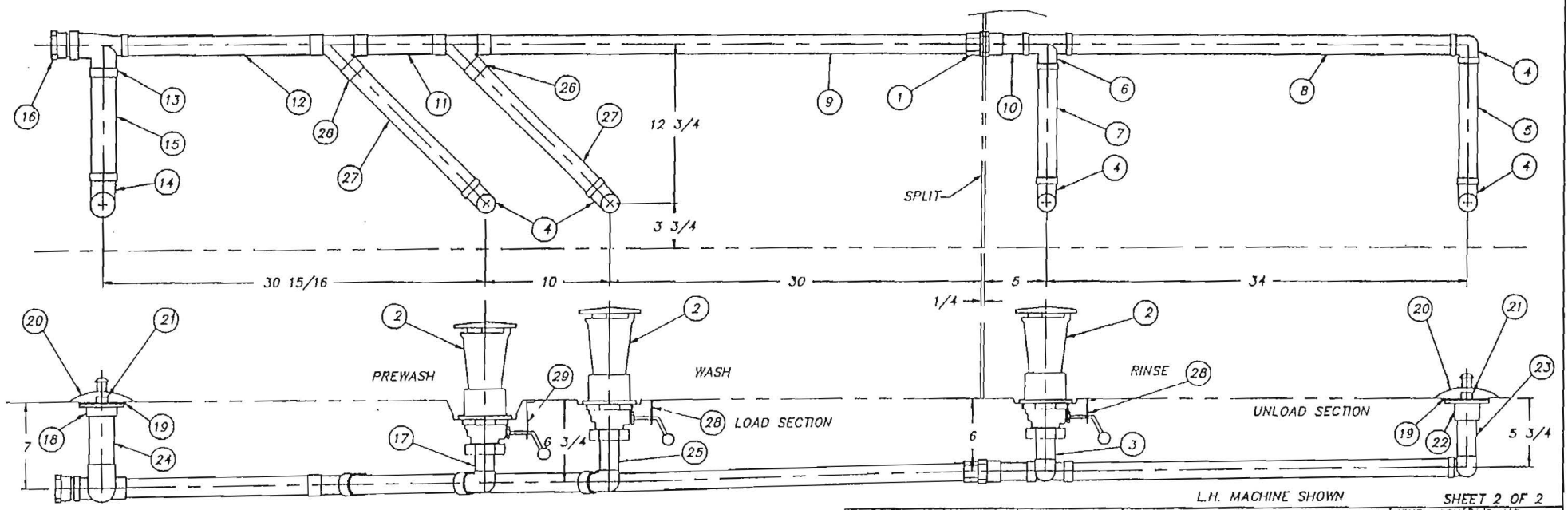
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	D305A-H3-H3	-	UNION	1
2	R34-1	A	DRAIN ASSEMBLY	3
3	D207A-B12-7	-	COPPER TUBING 1 1/2 CTS X 1 5/8 LG	2
4	D347A-H3-H3	-	90° ELL 1 1/2 C	4
5	D207A-B12-85	-	COPPER TUBING 1 1/2 CTS X 18 1/4 LG	1
6	D348A-H3H3H3	-	TEE 1 1/2 C	1
7	D207A-B12-37	-	COPPER TUBING 1 1/2 CTS X 8 1/4 LG	1
8	D207A-B12-23	-	COPPER TUBING 1 1/2 CTS X 5 3/4 LG	1
9	D207A-B12-65	-	COPPER TUBING 1 1/2 CTS X 18 1/4 LG	1
10	D207A-B12-61	-	COPPER TUBING 1 1/2 CTS X 15 1/4 LG	1
11	D207A-B12-83	-	COPPER TUBING 1 1/2 CTS X 20 3/4 LG	1
12	D207A-B12-115	-	COPPER TUBING 1 1/2 CTS X 28 3/4 LG	1
13	D348A-H3J3J3	-	TEE 1 1/2 C X 2 C X 2 C	1
14	D347A-J3-J3	-	90° ELL 2 C	1
15	D207A-B16-33	-	COPPER TUBING 2 CTS X 8 1/4 LG	1




SHEET 1 OF 2
R.H. MACHINE SHOWN

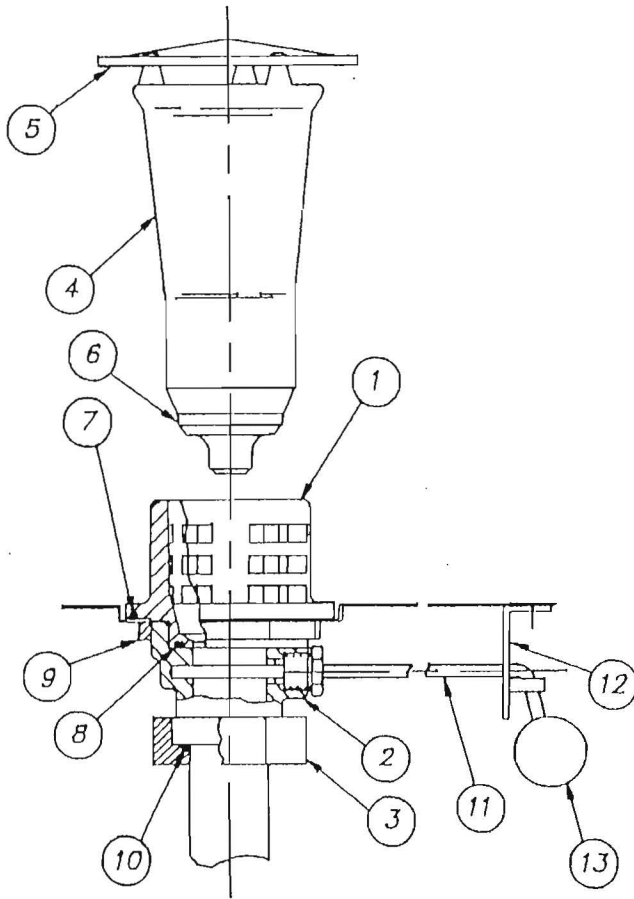
REV		ECN NO.	DATE	TOLERANCES FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	TITLE DRAIN ASSEMBLY PREWASH, WASH, RINSE	NEXT ASSY 1390-1 REG'D 1	DWG. NO. 1390-73
FILE: PARTS \1390-73							
B	1268	09.22.95			MATL NOTED	SCALE 1/8	USED ON CENTURY
A	886	03.07.94					
				Insinger Machine Company		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6866	
						DRWN/DATE PC 4.21.93	

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.	ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
16	D317A-J4-J1	-	ADAPTER 2 CFTG X 2 FPS	1	1	D305A-H3-H3	-	UMON	1
17	D207A-B12-10	-	COPPER TUBING 1 1/2 CTS X 2 3/8 LG	1	2	B54-1	A	DRAIN ASSEMBLY	3
18	D-135	A	DRAIN FLANGE	1	3	D207A-B12-7	-	COPPER TUBING 1 1/2 CTS X 1 5/8 LG	1
19	D-514	A	GASKET	2	4	D347A-H3-H3	-	90° ELL 1 1/2 C	3
20	D-100	A	DRAIN STRAINER	2	5	D207A-B12-34	-	COPPER TUBING 1 1/2 CTS X 8 1/2 LG	1
21	D-90	A	CLASP DRAIN STRAINER	2	6	D348A-H3H3H3	-	TEE 1 1/2 C	1
22	D-134	A	DRAIN FLANGE	1	7	D207A-B12-37	-	COPPER TUBING 1 1/2 CTS X 9 1/4 LG	1
23	D207A-B12-16	-	COPPER TUBING 1 1/2 CTS 4 LG	1	8	D207A-B12-100	-	COPPER TUBING 1 1/2 CTS X 30 3/4 LG	1
24	D207A-B16-20	-	COPPER TUBING 2 CTS X 4 7/8 LG	1	9	D207A-B12-161	-	COPPER TUBING 1 1/2 CTS X 40 1/4 LG	1
25	D207A-B12-10	-	COPPER TUBING 1 1/2 CTS X 2 3/8 LG	1	10	D207A-B12-13	-	COPPER TUBING 1 1/2 CTS X 3 1/4 LG	1
26	D352A-H3H3H3	-	"Y" 45° 1 1/2 C	2	11	D207A-B12-29	-	COPPER TUBING 1 1/2 CTS X 7 1/4 LG	1
27	D207A-B12-59	-	COPPER TUBING 1 1/2 CTS X 14 3/4 LG	2	12	D207A-B12-67	-	COPPER TUBING 1 1/2 CTS X 16 3/4 LG	1
28	1133-64	A	DRAIN HANDLE BRACKET	2	13	D348A-H3C3C3	-	TEE 1 1/2 C X 2 C X 2 C	1
29	1390-88	A	DRAIN HANDLE BRACKET	1	14	D347A-J3-J3	-	90° ELL 2 C	1
					15	D207A-B12-33	-	COPPER TUBING 2 CTS X 8 1/4 LG	1




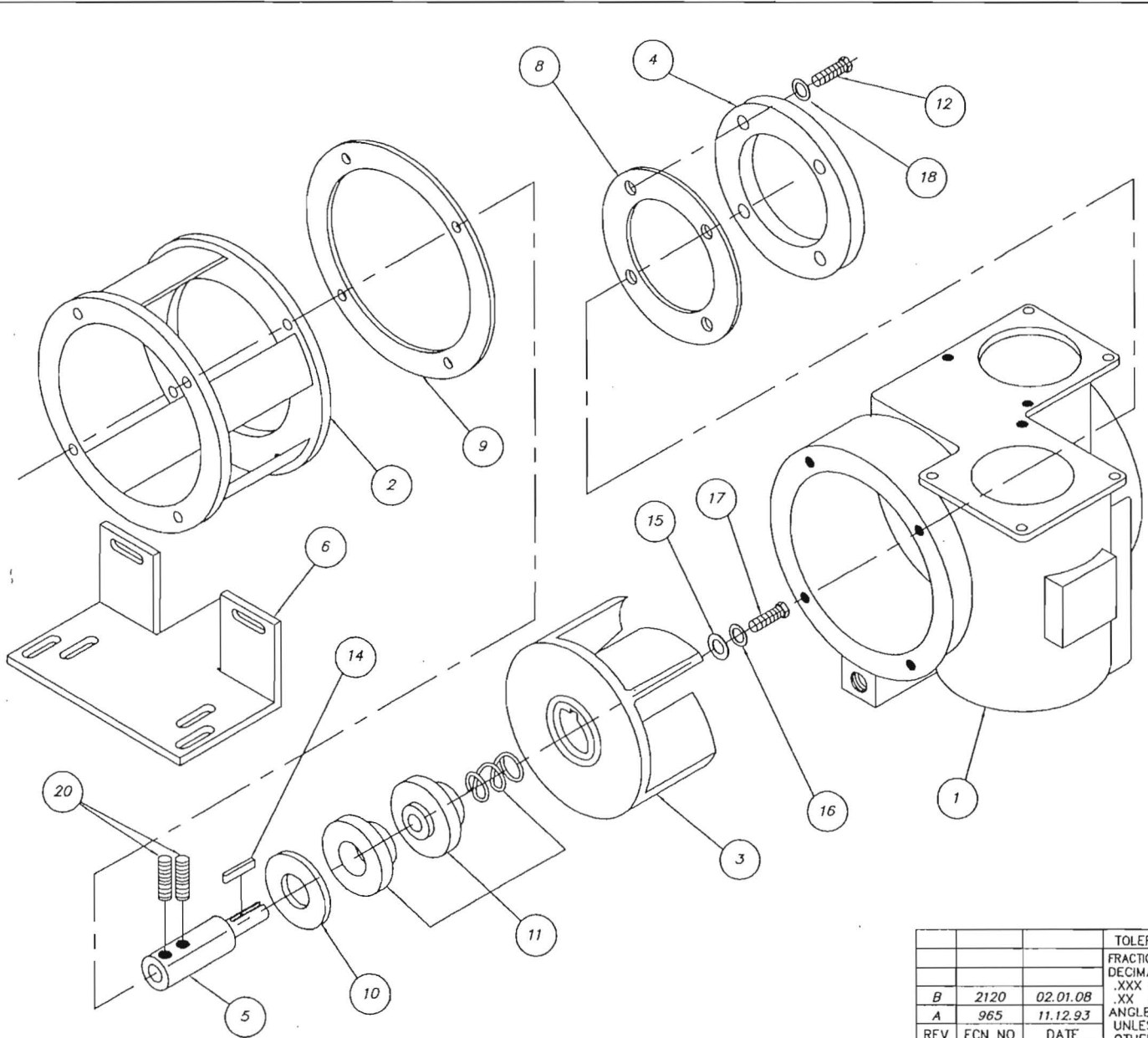
L.H. MACHINE SHOWN SHEET 2 OF 2

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DRAIN ASSEMBLY	1390-1	1390-73
			DECIMALS	PREWASH, WASH, RINSE	REDD 1	
B	126B	09.22.95	.XXX ± .005	MATL	SCALE	USED ON
A	986	03.07.84	.XX ± .01	NOTED	1/8	CENTURY
REV	ECN NO	DATE	ANGLES ±1/2°	UNLESS OTHERWISE SPECIFIED		
FILE:	PARTS\1390-73		 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8866			
			DRAWN/DATE		PC	
					4.21.93	



ITEM	PART NO.	DESCRIPTION	QTY.
	954-50	DRAIN ASS'Y (COMPLETE)	-
1	954-50A	UPPER BODY	1
2	954-50B	LOWER BODY	1
3	954-50C	NUT	1
4	954-50D	OVERFLOW TUBE	1
5	D-193	SKIMMER CAP	1
6	D2-557	"U"-CUP SEAL - DRAIN SEAT	1
7	D2-548	"O" RING	1
8	D2-549	"O" RING	1
9	D-305	DRAIN JAM NUT	1
10	D2-550	"O" RING	1
11	1100-79	DRAIN HANDLE ASSEMBLY	1
12	1100-156	BRACKET - W & R	1
	1100-157	BRACKET - PW	1
13	D-2407	BALL	1

			TOLERANCES	TITLE	DRAIN ASSEMBLY	NEXT ASSY	DWG. NO.
			FRACTIONS $\pm 1/64$			REQ'D	SK-2613
			DECIMALS			SCALE	USED ON
			.XXX $\pm .005$	MATL	NOTED	1/4	RACKLESS "W"
			.XX $\pm .01$				DRWN/DATE
			ANGLES $\pm 1/2^\circ$				EP
			UNLESS				2.01.83
			OTHER				
REV	ECN NO	DATE	SPECIF.	 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966			
FILE: SKETCHA \SK-2613							

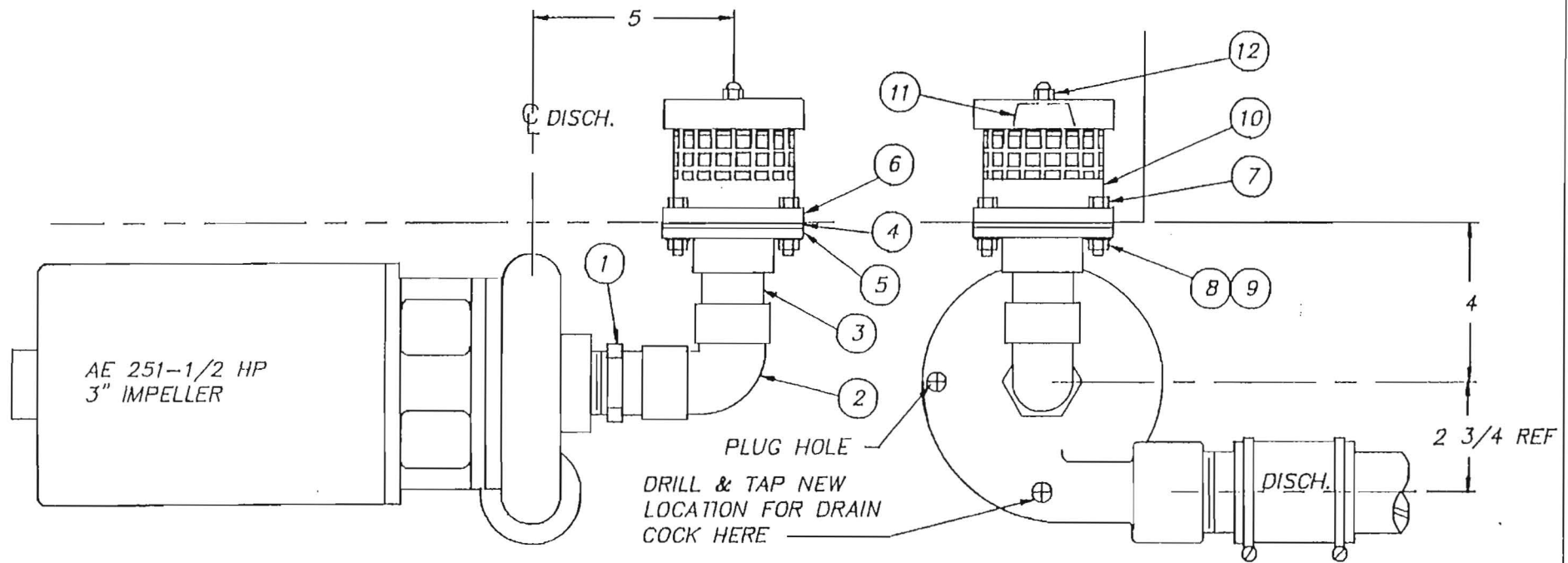


ITEM	PART NO.	DESCRIPTION	QTY.
1	UP-1	PUMP BODY	1
2	D-435	ADAPTER	1
3	NOTED	IMPELLER	1
4	SUP-3	END COVER PLATE	1
5	D3-B05	PUMP SHAFT	1
6	D3-B16	MOUNTING BRACKET	1
7			
8	UP-8	END COVER GASKET	1
9	UP-9	HOUSING COVER GASKET	1
10	UP-13	FLINGER	1
11	UP-15	CERAMIC SEAL	1
12	D309C-JC-6A	END COVER BOLT	12
13			
14	D302-1	KEY	1
15	D3-B24A	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)

			TOLERANCES	TITLE	PUMP ASSEMBLY	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64		MODEL 2 1/2 SUP	REQ'D	SK-2456A
			DECIMALS	MAT'L		SCALE	USED ON
B	2120	02.01.08	.XXX ± .005			FULL	
A	965	11.12.93	.XX ± .01				
REV	ECN NO	DATE	ANGLES ±1/2°	Insinger		Philadelph, PA 19135	DRWN/DATE
			UNLESS OTHERWISE SPECIFIED	Insinger		(215) 624-4800	PG
				Insinger		FAX (215) 624-6966	8.29.94
FILE: SKETCH\SK-2456A							

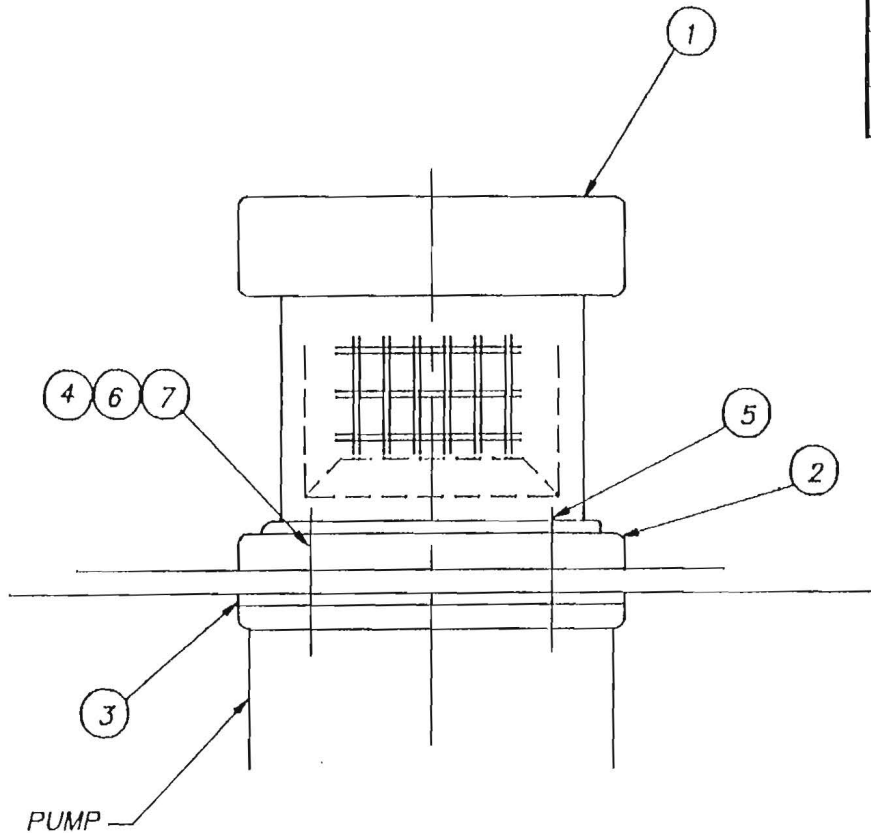
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.	ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	DJ17A-H2-H4	-	FTG. ADAPTER 1 1/2 MIPS X 1 1/2 FTG	1	7	D309C-JC-10	--	HEX HD SCR 3/8-16 X 1 1/4 LG	4
2	DJ16A-H3	-	ELBOW 90° 1/2 C	1	8	D313A-1J	-	COPPER WASHER 3/8	4
3	D207A-B12-6	-	COPPER TUBING 1 1/2 CTS X 1 1/2 LG	1	9	D312C-JC-5	-	LOCKNUT 3/8-16	4
4	D-514	A	GASKET	1	10	D2-541	A	STRAINER	1
5	D-134	A	FLANGE, TANK	1	11	D3-825	A	CLASP	1
6	963-38	A	FLANGE, STRAINER	1	12	DJ12C-EC-6	--	ACORN NUT #10-32 S/S	1




USED ON :
SPEEDER 86-3
ADMIRAL 66-3

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	SUCTION LINE		1182-13
			DECIMALS	ASS'Y - PREWASH	REQ'D NOTED	
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	NOTED	1=4	NOTED
D	B9B	7.16.93	ANGLES ±1/2°	 Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED		DRWN/DATE	
FILE: PARTS\1182-13					PG	
						7.15.93

ITEM	PART NO.	DESCRIPTION	QTY.
1	D2-541	STRAINER	1
2	D2-1350	STRAINER FLANGE	1
3	D-530	GASKET	1
4	D313A-1J	WASHER COPPER 3/8	2
5	D309C-CJ-10A	HEX HD SCR 3/8-16 X 1 1/4	2
6	D309C-CJ-11A	HEX HD SCR 3/8-16 X 1 3/8	2
7	D312C-JC-5	HEX LOCKNUT 3/8-16	2



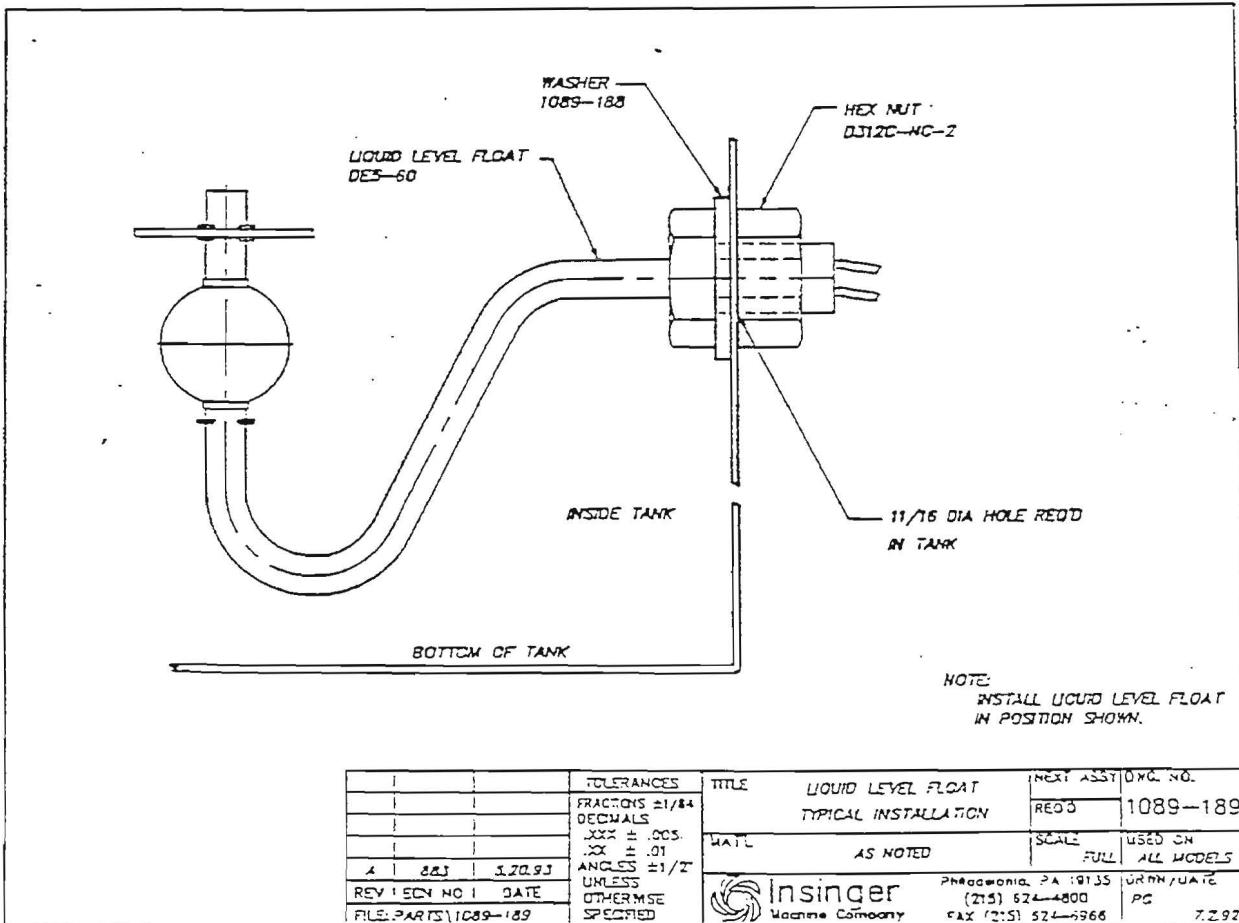
USED ON CLIPPER RC 21 W

			TOLERANCES	TITLE	PUMP SUCTION	NEXT ASSY	DWG. NO.
			FRACTIONS $\pm 1/64$	ASSEMBLY		REQ'D	1100-76
			DECIMALS	MAT'L	NOTED	SCALE	USED ON
			.XXX $\pm .005$			1=2	SEE ABOVE
			.XX $\pm .01$				DRWN/DATE
			ANGLES $\pm 1/2^\circ$				PG
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED			Philadelphia, PA 19135	
FILE: PARTS\1100-76				Machine Company		(215) 624-4800	
						FAX (215) 624-6966	
						1.4.92	

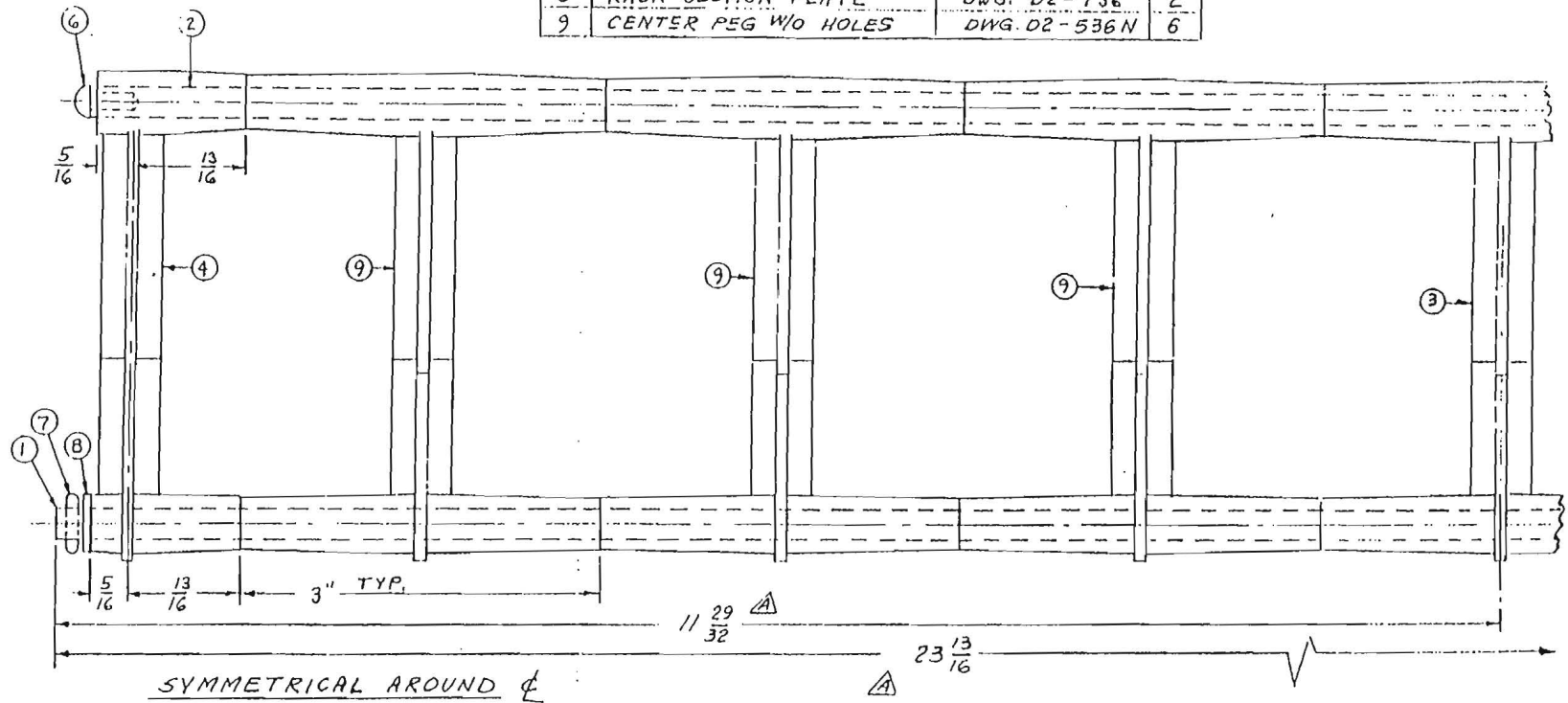
In order to insure the proper operation of your INSINGER dishwasher, it is necessary that the LIQUID LEVEL FLOAT be wiped free of any residue and/or moisture at each cleaning. This should be done, preferably, after each use of the machine, or, at a minimum, once each day.

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.



NO	NAME	DWG. NO.	REQ.
1	RACK SECTION ROD	DWG. 1100-138	2
2	UPPER ROD	DWG. D3-810	1
3	CENTER PEG W/MTG. HOLES	DWG. D2-536	1
4	END PEG	DWG. D2-536 C	1
5	END PEG (NOT SHOWN)	DWG. D2-536 D	1
6	DRIVE SCREW RO. HD. TYPE U	#8-32 x 3/8 LG	2
7	ROD PIN	DWG. D2-852	2
3	RACK SECTION PLATE	DWG. D2-736	2
9	CENTER PEG W/O HOLES	DWG. D2-536 N	6



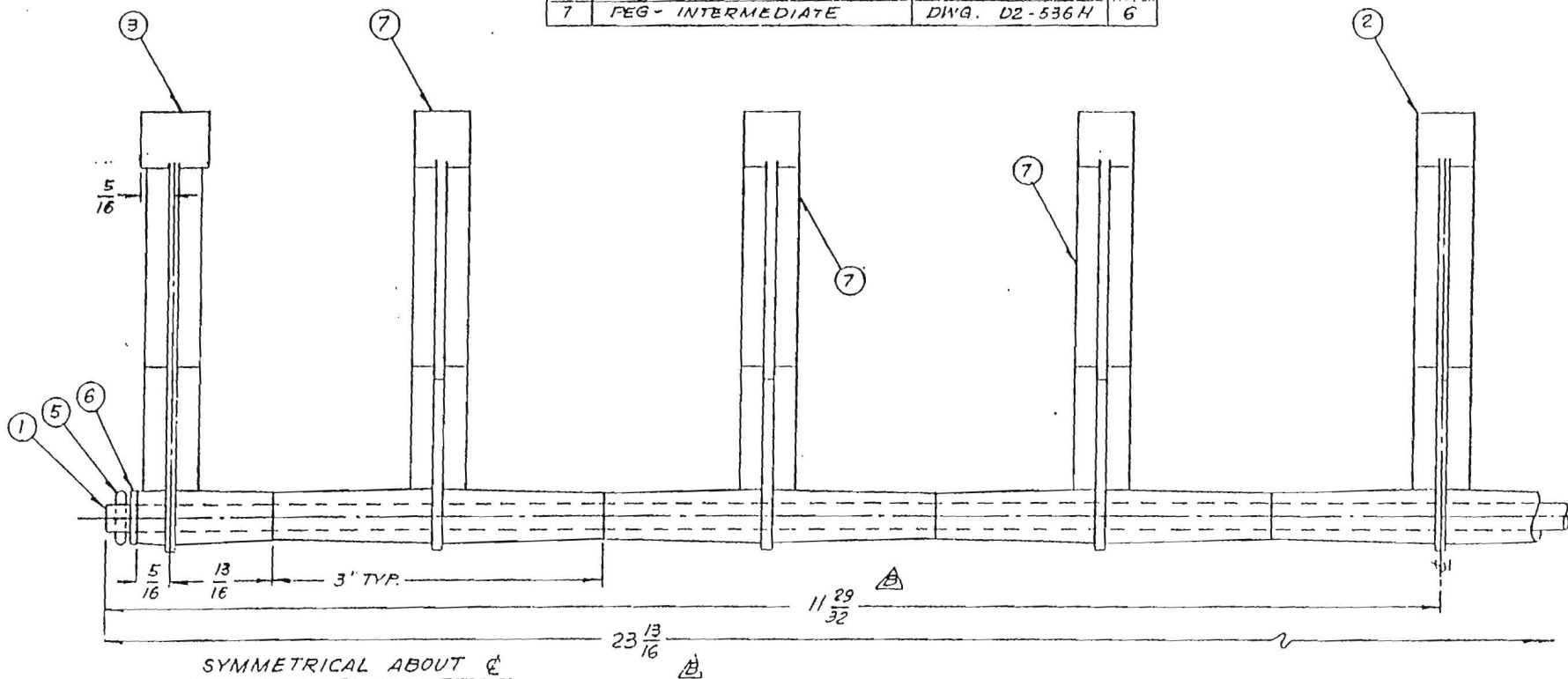
SYMMETRICAL AROUND ϕ

(SAME AS D-2463)

QTY. (1) WAS (7) (ITEM # 3) AND
 ADDED ITEM # 9 RA L10.86
 25^{13/16} WAS 24^{1/16}. 11^{29/32} WAS 12^{1/32} RA 1.2.04

MACHINE	RC MACHINE W		DWG. NO. 1100-137
TITLE	POLY RACK SECTION - FIRE RETARDENT		PATT. NO.
MATL	REQ. -	SCALE 1/1	DRWN RA 9.15.83
INSINGER MACHINE CO.			CHKD.
PHILA. PA. 19135			APPD.

NO.	DESCRIPTION	PART NO.	REQ.
1	ROD - RACK SECTION	DWG. 1100-138	2
2	PEG - CENTER	DWG. D2-536G	1
3	PEG - END	DWG. D2-536J	1
4	PEG - END (NOT SHOWN)	DWG. D2-536K	1
5	PIN - ROD	DWG. D2-852	2
6	PLATE - RACK SECTION	DWG. D2-736	2
7	PEG - INTERMEDIATE	DWG. D2-536H	6

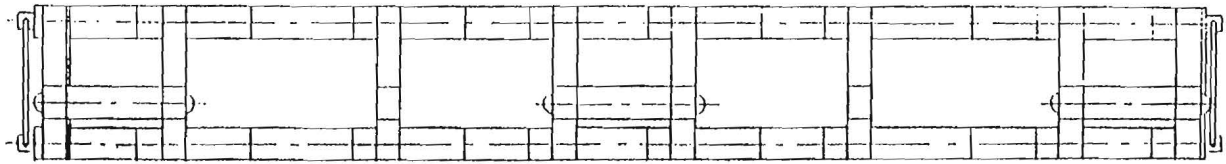


(SAME AS D-2510)

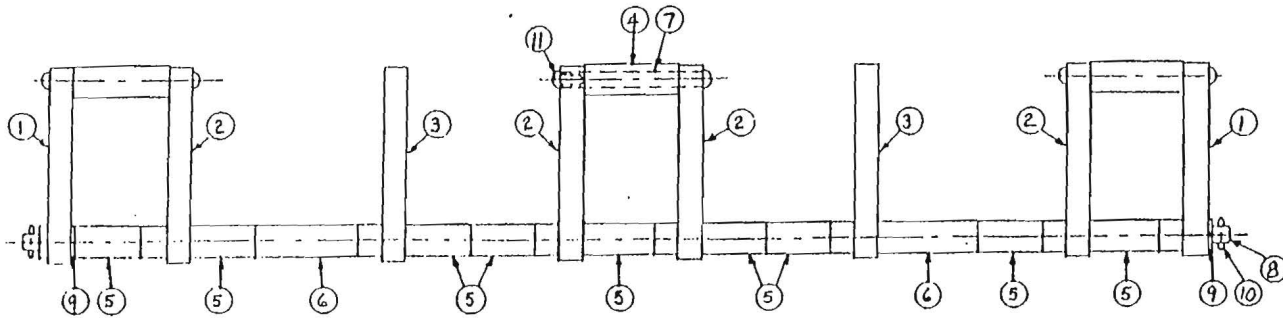
TOLERANCES	TITLE	PATT NO.	DWG. NO.
FRACTIONS ± 1/64	POLY RACK SECTION ASS'Y.	REQ -	1100-139
DECIMAL ± .005		SCALE 1/2	USED ON CLIPPER "W" MASTER
ANGULAR ± 1/2°		MATL. NOTED	DATE 9.15.83
UNLESS OTHERWISE SPECIFIED	INSINGER MACHINE CO. PHILA., PA. 19135 (215) 624-4800		

2 23 13/16 WAS 24 1/16, 11 29/32 WAS 12 1/32 RAF 1.2.84

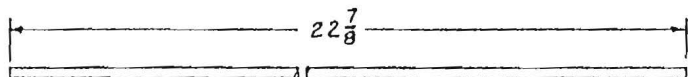
1 D2-536J WAS D2-536C (ITEM # 3) AND D2-536K WAS D2-536D (ITEM # 4) RAF 11.9.84



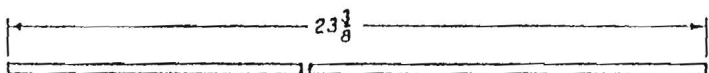
NO.	NAME	DWG. NO.	REQ.
1	PEG - END	D-593	LONG BOSS SHORT BOSS 2
2	PEG	D-594	LONG 4
3	PEG (RC-15-222)	D-2167	LONG 2
4	SPACER 1 ¹ / ₃₂ LG	D-595	3
5	SPACER 1 ¹ / ₃₂ LG	D-592	SHORT 18
6	SPACER 1 ² / ₃₂ LG	D-592	LONG 4
7	UPPER ROD	D2-895	3
8	RACK SECT, ROD	D2-854	2
9	RACK SECT, PLATE	D2-736	2
10	RACK SECT, ROD PIN	D2-852	2
11	DRIVE SCREW #8-32 x 3/8 LG	RD. HD. TYPE U	6



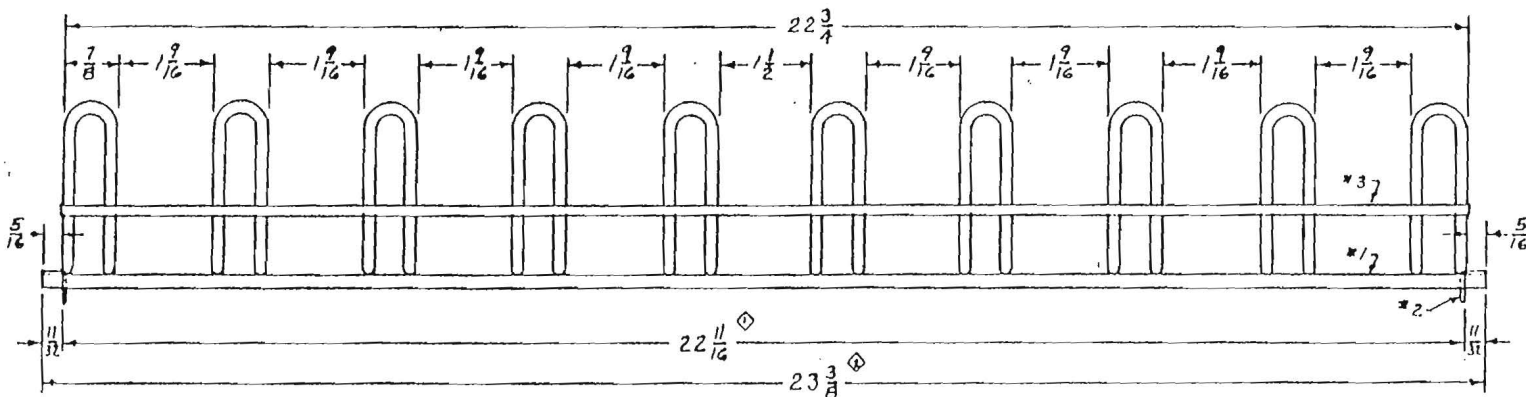
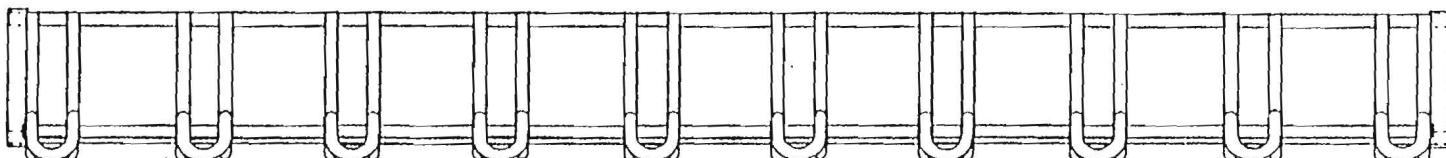
MACHINE	CLIPPER RC-21		DWG. NO.	997-5
TITLE	POLY RACK SECTION ASSY.		PATT. NO.	
MAT'L	REQ.	SCALE	1/2	
INSINGER MACHINE CO.			DRWN.	B.F. 5.22.79
PHILA., PA. 19135			CHKD.	
			APPD.	



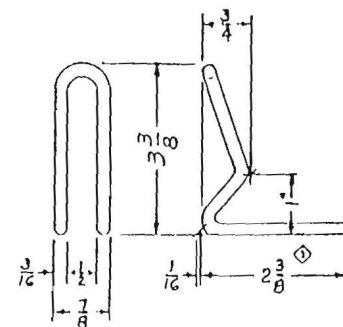
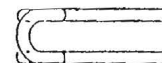
PC # 3 - 1 REQ'D



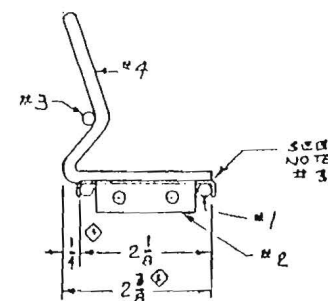
PC # 1 - 2 REQ'D



PC. #	NAME	DWG. NO. OR SIZE	REQ.
1	BASE ROD	3/16 DIA. S/S ROD	2
2	RACK SECTION BRACKET	DWG. D2-749	2
3	RACK REST	3/16 DIA. S/S ROD	1
4	PEG	3/16 DIA. S/S ROD	10



PC. # 4 - 10 REQ'D
3/16 DIA. S/S ROD APPROX. 11" LG



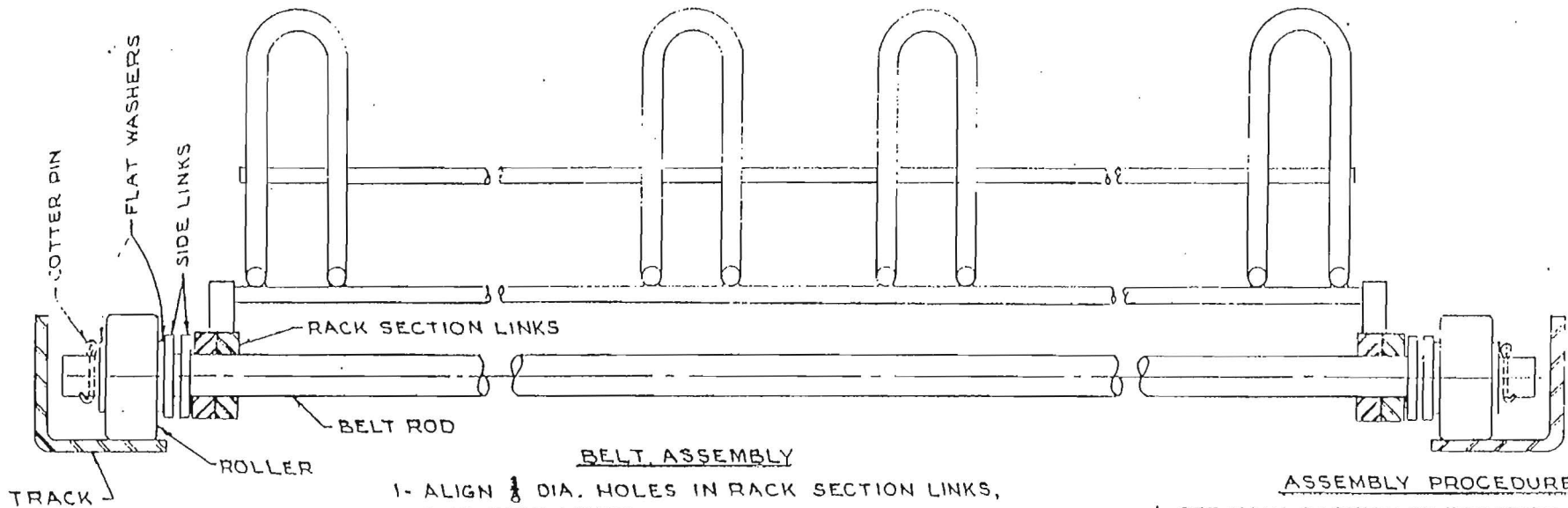
NOTE 1. COMPLETED ASS'Y MUST BE SQUARE & STRAIGHT

- THE SYMBOL \diamond DENOTES CRITICAL DIMENSIONS THAT AFFECT FUNCTION AND FIT. THERE ARE 5 CRITICAL DIMENSIONS ON THIS PART.
- BASE OF PIECE # 4 MUST BE TRIMMED FLUSH TO TANGENT OF PIECE # 1.

FIRST USED ON
FOLDER

(SAME AS 1100-198)

CLIPPER, MASTER "W"	901-79
RACK SECTION ASSEMBLY & DETAILS	
NOTED	9.19.85
INSINGER MACHINE CO.	



BELT ASSEMBLY

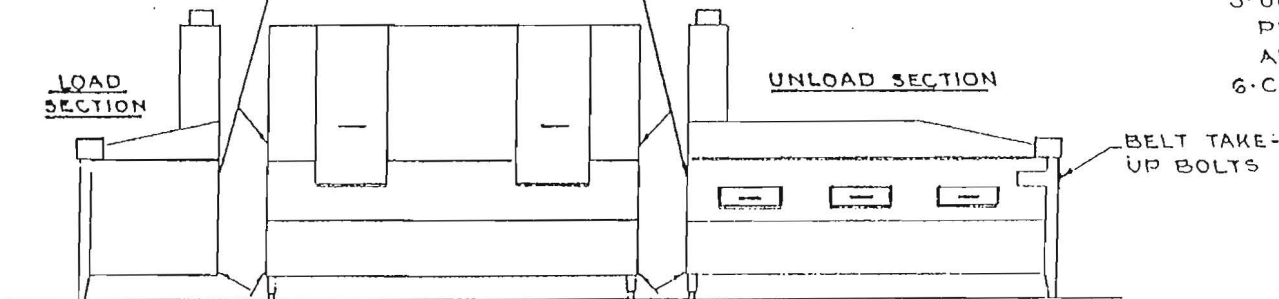
- 1- ALIGN $\frac{1}{8}$ DIA. HOLES IN RACK SECTION LINKS, AND SIDE LINKS.
- 2- LIFT BELT SO HOLES ARE ABOVE TRACK.
- 3- INSERT BELT ROD THRU SIDE LINKS & RACK SECTION LINKS.
- 4- INSTALL FLAT WASHERS & ROLLERS AS SHOWN.
- 5- INSTALL COTTER PINS.

ASSEMBLY PROCEDURE

- 1- SET MAIN SECTION IN POSITION & CHECK LEVELNESS. LEVEL MACHINE BY TURNING ADJUSTABLE FEET UP & DOWN.
- 2- LOOSELY BOLT LOAD & UNLOAD SECTIONS TOGETHER AT BASE FRAME & DOOR OPENINGS. BE SURE TO APPLY GASKET SEALER LIBERALLY.
- 3- LEVEL LOAD & UNLOAD SECTIONS, ALIGN TRACKS & THEN FASTEN BOLTS SECURELY.
- 4- LOOSEN BELT TAKE UP BOLTS & JOIN CONVEYOR BELT IN 4 PLACES (SEE BELT ASSEMBLY) ADJUST TAKE UP BOLTS TO REMOVE EXCESS SLACK. DO NOT OVERTIGHTEN.
- 5- UNIONS OR DISCONNECTS HAVE BEEN PROVIDED WHERE SECTIONS JOIN. CONNECT ALL PIPING & CONDUIT.
- 6- CONNECT WIRES AS PER WIRING DIAGRAM.

APPLY GASKET SEALER (PERMATEX NO.1 OR EQ) BEFORE BOLTING SECTIONS

APPLY GASKET SEALER (PERMATEX NO.1 OR EQ) BEFORE BOLTING SECTIONS.



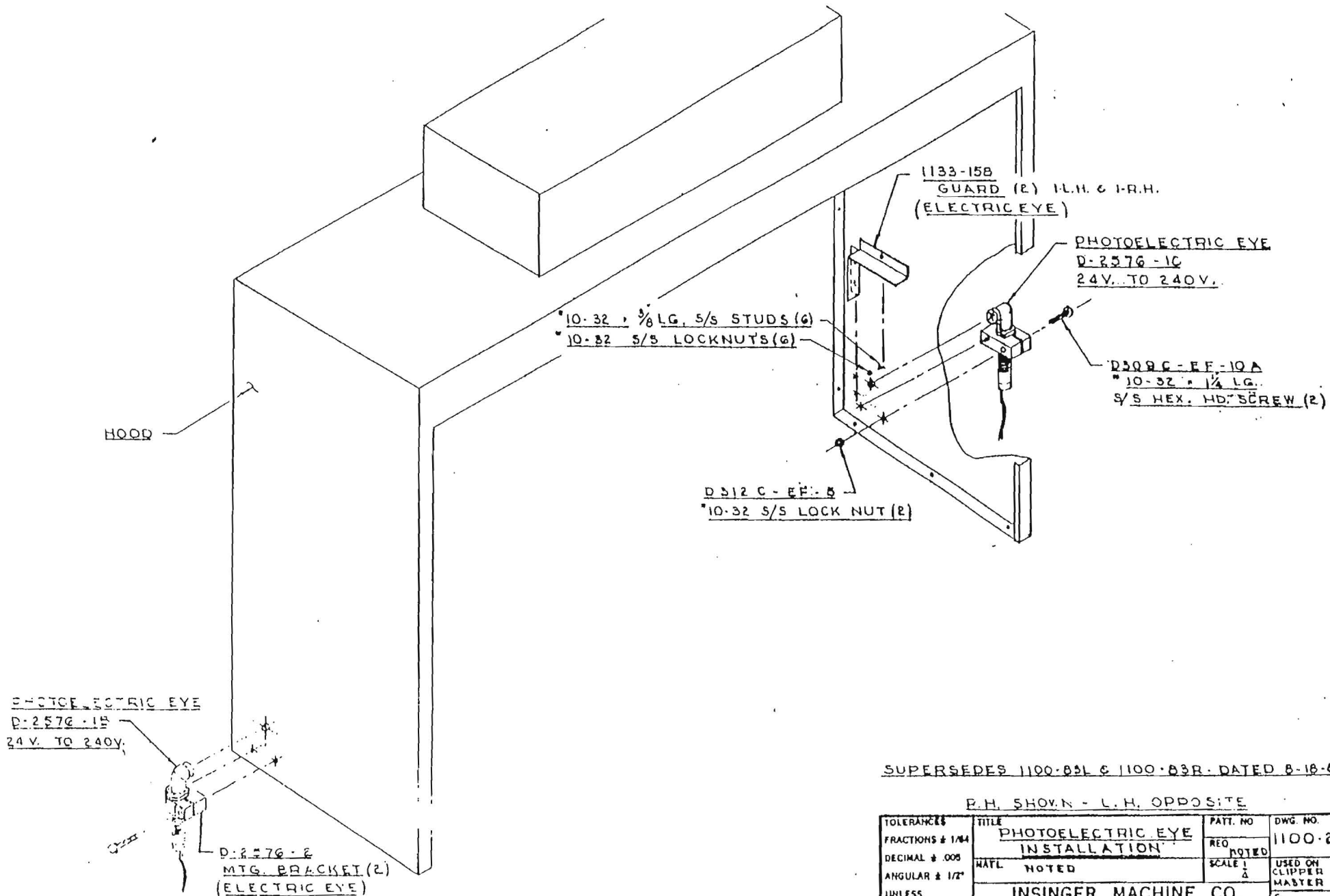
BOLT BASE FRAME LOOSELY, CHECK TRACK ALIGNMENT & THEN TIGHTEN SECURELY.

TYPICAL ASSEMBLY PROCEDURE FOR RACKLESS MACHINES.

INSINGER MACHINE CO.
PHILA., PA. 19135

SK-2650

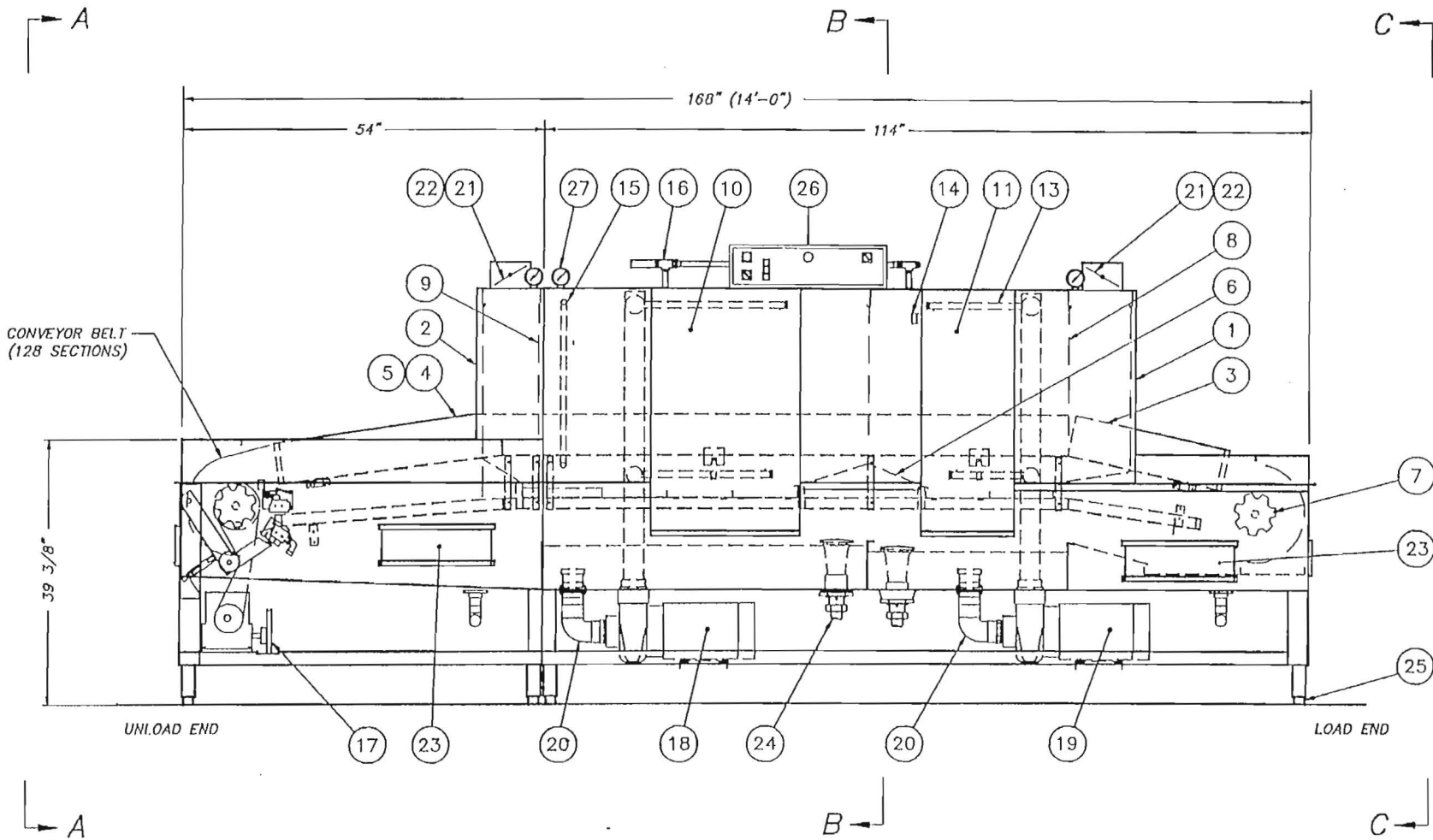
7-24-84



SUPERSEDES 1100-83L & 1100-83R DATED 8-18-83

R.H. SHOWN - L.H. OPPOSITE

TOLERANCES	TITLE	PATT. NO.	DWG. NO.
FRACTIONS ± 1/64	PHOTOELECTRIC EYE INSTALLATION	REQ.	1100-265
DECIMAL ± .005	NOTE	NOTED	
ANGULAR ± 1/2°	SCALE	SCALE	USED ON CLIPPER W MASTER W
UNLESS OTHERWISE SPECIFIED	INSINGER MACHINE CO. PHILA., PA. 19135 (215) 624-4800	5-4-83	



SHEET 1 OF 3

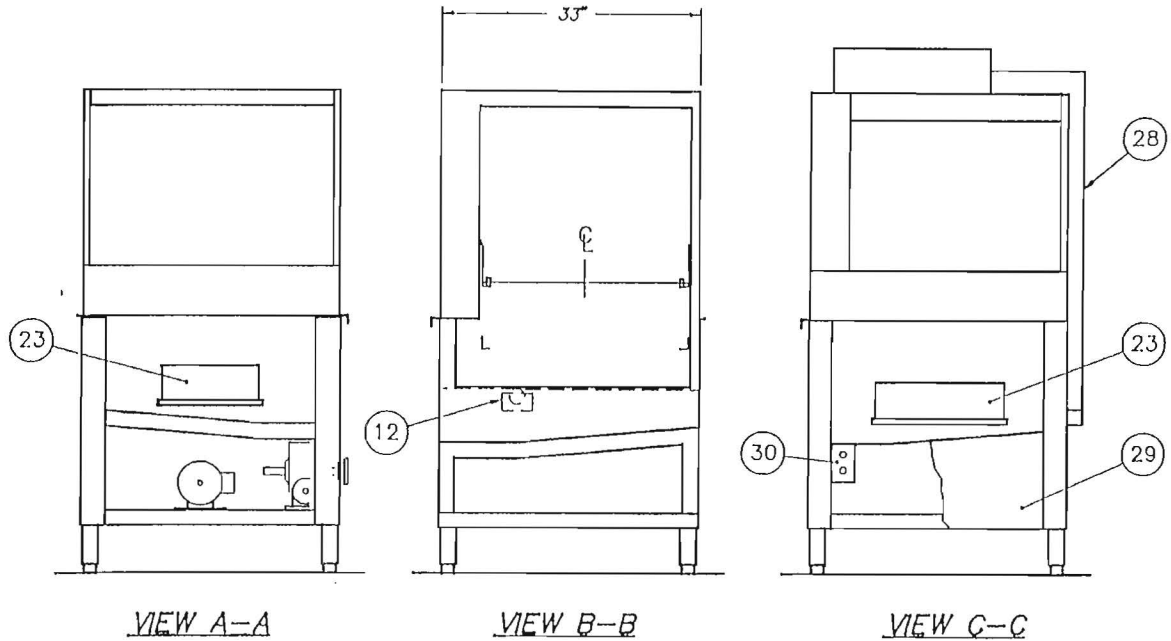
	OPTION	DWG No	SIZE
1	ELECTRIC HEATER LOCATIONS	1462-58	B
2	STEAM PIPING-COILS	1462-86	B
3	STEAM PIPING-INJECTORS	1462-72	B
4	CLOSE-OFF PANELS	1462-95	B
5	CONVEYOR W/SILVERWARE TROUGH	1457-1	B

REV	ECN NO	DATE
FILE: PARTS\1462-1		

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

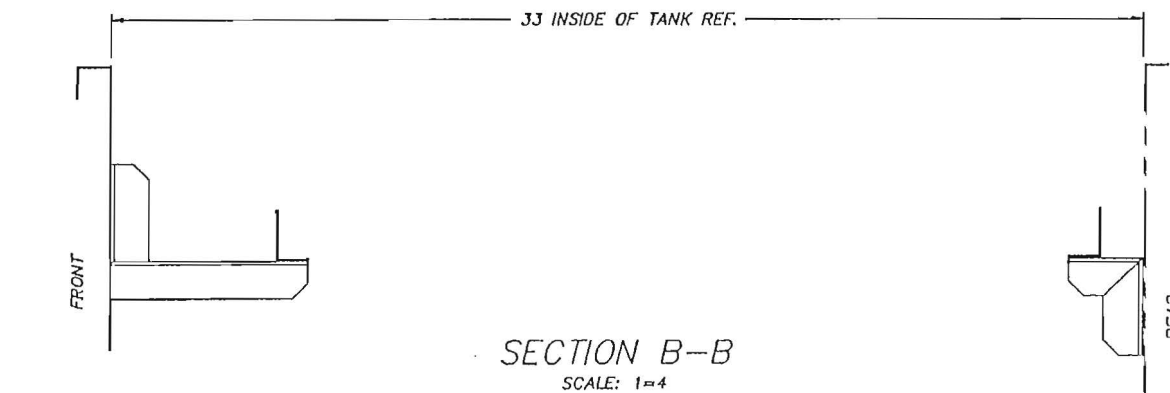
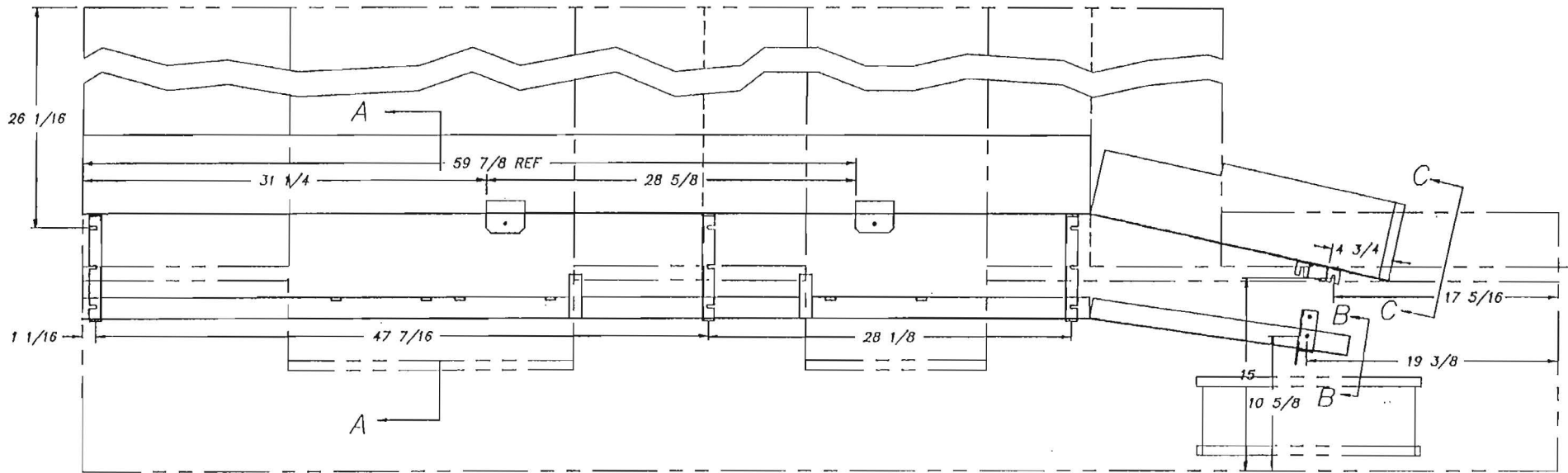
TITLE	DEFENDER	NEXT ASSY	DWG. NO.
	R.H. MACHINE	REQ'D	1462-1
MATL	SCALE	USED ON	DEFENDER 14
	1=16	DRWN/DATE	YC
 Insinger Machine Company		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8968	2.25.97

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1462-2	B	SHELL ASSEMBLY, LOAD SECTION	1
2	1462-3	B	SHELL ASSEMBLY, UNLOAD SECTION	1
3	1462-4	B	TRACK INSTALLATION, LOAD SECTION	1
4	1462-5	B	TRACK INSTALLATION, UNLOAD SECTION (D-17)	1
5	1462-74	B	TRACK INSTALLATION, UNLOAD SECTION (D-14)	1
6	1462-7	B	BAFFLES & SCRAP SCREENS, LOAD SECTION	1
7	1462-21	B	DRIVEN SHAFT ASSEMBLY	1
8	1462-9	B	CURTAIN & BAFFLE INSTALL. LOAD SECTION	1
9	1462-10	B	CURTAIN & BAFFLE INSTALL. UNLOAD SECTION	1
10	1462-42	A	DOOR 23"	1
11	1390-32	A	DOOR 15"	1
12	1462-32	A	WEIR PLATE INSTALLATION	1
13	1462-82	B	DISCHARGE LINE ASSY. LOAD SECTION	1
14	D2715	A	DOOR LATCH	4
15	1462-59	B	FINAL RINSE ASSEMBLY	1
16	1462-60	B	AUTO TANK FILL ASSEMBLY	1
17	1390-72	B	CONVEYOR DRIVE ASSEMBLY	1
18	3091-K305	-	PUMP WASH	1
19	3043-K038	-	PUMP PREWASH	1
20	1462-69	A	PUMP SUCTION ASSEMBLY	2
21	D2-728	A	VENT DAMPER BLADE	2
22	D2-831	A	DAMPER ASSEMBLY	2
23	1100-94	A	TANK DOOR	4
24	1462-70	B	DRAIN ASSEMBLY	1
25	D2587	A	ADJUSTABLE FOOT ASSY	8
26	SEE SPEC.	B	CONTROL BOX	1
27	D2390	A	THERMOMETER	3
28	1438-6	B	ELECTRICAL CHANNEL - STEAM	1
	1438-7	B	ELECTRICAL CHANNEL - ELECTRIC	1
29	1462-95	B	CLOSE-OFF PANELS	1
30	1390-95	B	START/STOP STATION	1




SHEET 3 OF 3

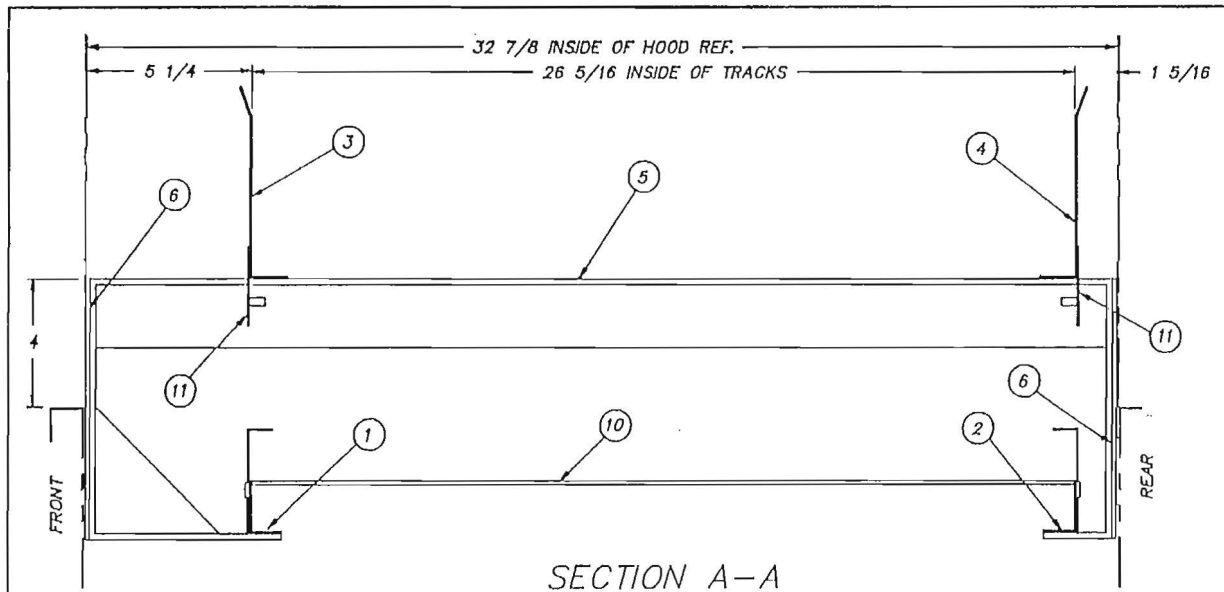
			TOLERANCES	TITLE	DEFENDER	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/84		R.H. MACHINE	REQ'D	1462-1
			DECIMALS				USED ON
			.XXX ± .005			SCALE	
			.XX ± .01			1=16	
			ANGLES ±1/2°				DRWN/DATE
			UNLESS OTHERWISE SPECIFIED				YC
REV	ECN NO.	DATE				Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6088	
FILE: PARTS\1462-1						2.26.97	



R.H. MACHINE SHOWN

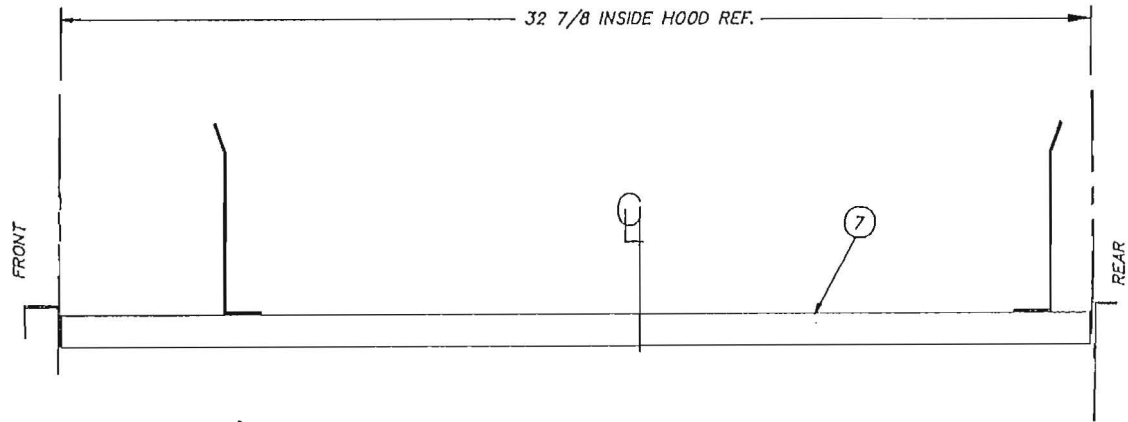
SHEET 1 OF 3

			TOLERANCES	TITLE	TRACK INSTALLATION	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	LOAD SECTION		REQ'D	1462-4
			DECIMALS	NOTED		SCALE	USED ON
			.XXX ± .005			1=8	DEFENDER
			.XX ± .01				DRWN/DATE
			ANGLES ±1/2°				PG
			UNLESS OTHERWISE SPECIFIED				2.21.97
REV	ECH NO	DATE		 Insinger Machine Company		Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8888	
FILE: PARTS\1462-4							



SECTION A-A

SCALE: 1=4




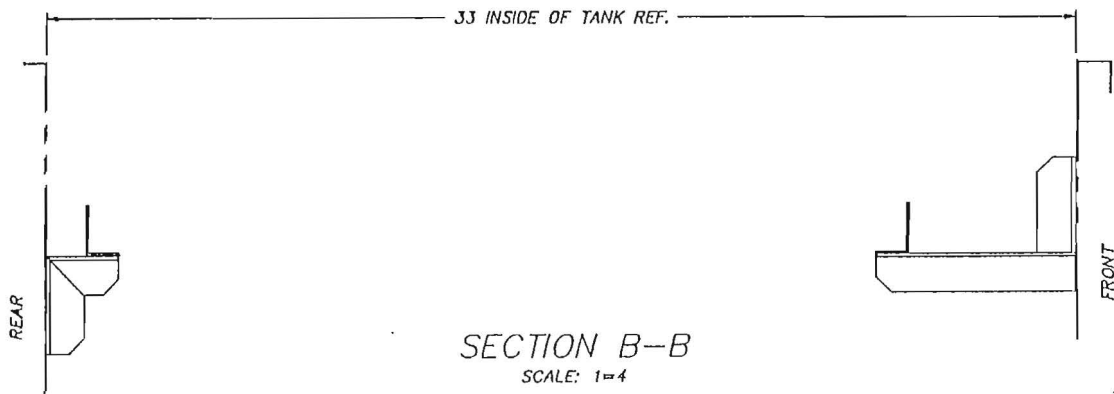
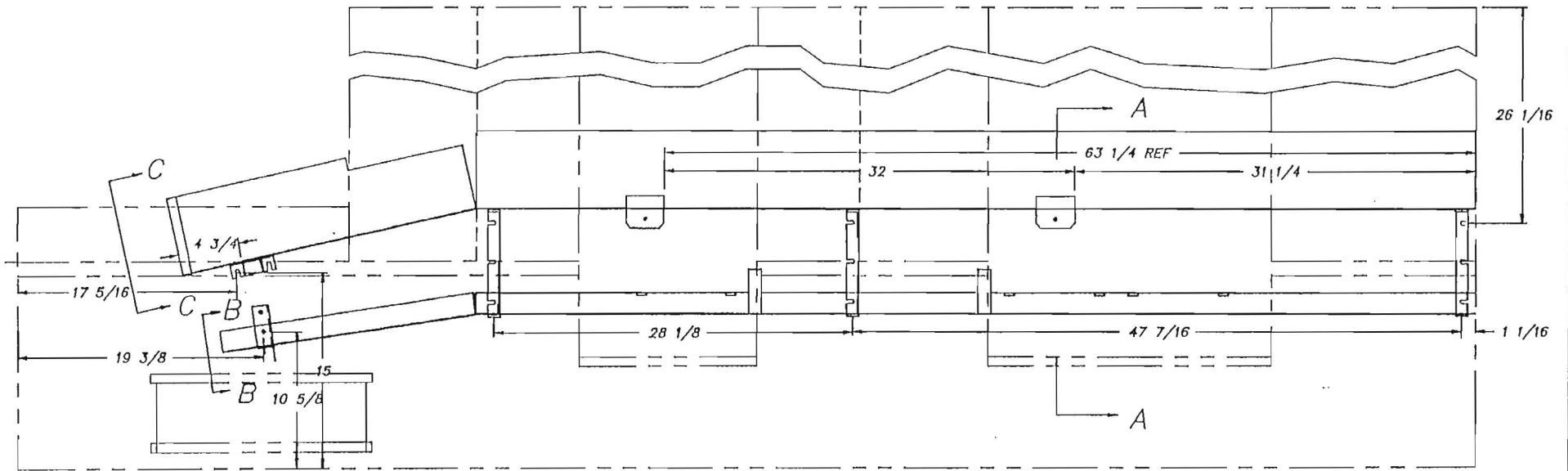
SECTION C-C

SCALE: 1=4

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1462-39	B	TRACK LOWER - FRONT	1
2	1462-39	B	TRACK LOWER - REAR	1
3	1462-36	B	TRACK UPPER - FRONT	1
4	1462-36	B	TRACK UPPER - REAR	1
5	1100-50	B	TRACK SUPPORT	3
6	1100-50A	A	SHIM	6
7	1100-55	B	TRACK SUPPORT UPPER	1
8	1100-152	A	TRACK SUPPORT LOWER - REAR	1
9	1462-6	A	TRACK SUPPORT LOWER - FRONT	1
10	1100-58	A	SUPPORT BAR INSTALLATION	6
11	1390-70	A	CRADLE SUPPORT	4

R.H. MACH. SHOWN L.H. MACH. OPPOSITE SHEET 2 OF

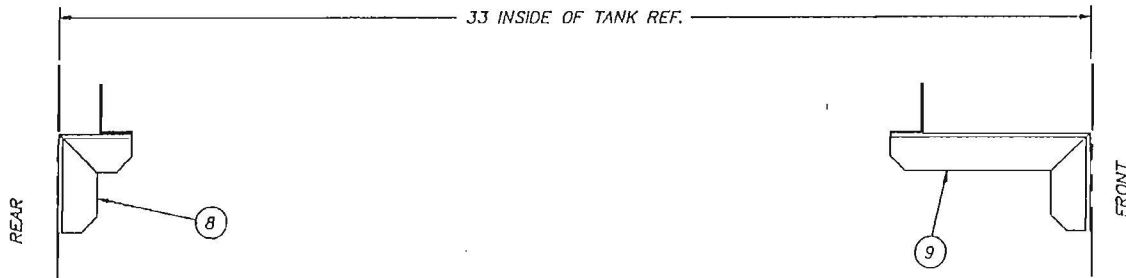
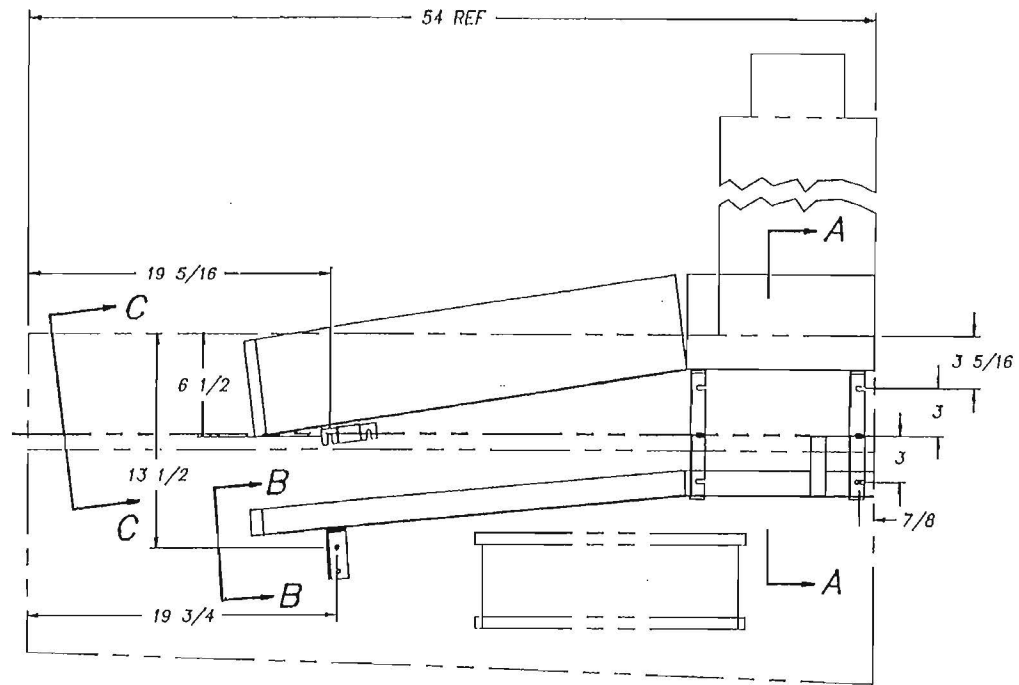
TOLERANCES		TITLE	TRACK INSTALLATION	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		LOAD SECTION		REQ'D 1	1462-4
DECIMALS		MAT'L		SCALE	USED ON
.XXX ±.005		NOTED		1=8	DEFENDER
.XX ±.01		UNLESS OTHERWISE SPECIFIED		DRWN/DATE	PC
ANGLES ±1/2°		 Insinger Machine Company Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8888		7.3.96	
REV	ECN NO	DATE	FILE: PARTS\1462-4		



L.H. MACHINE SHOWN

SHEET 3 OF 3


		TOLERANCES		TITLE		NEXT ASSY		DWG. NO.	
		FRACTIONS ±1/64		TRACK INSTALLATION		REQ'D 1		1462-4	
		DECIMALS		LOAD SECTION					
		.XXX ± .005		MATERIAL		SCALE		USED ON	
		.XX ± .01		NOTED		1=8		DEFENDER	
		ANGLES ±1/2°						DRAWN/DATE	
		UNLESS		Insinger		Philadelphia, PA 19135		PG	
		OTHERWISE		Machine Company		(215) 624-4800		2.21.97	
		SPECIFIED				FAX (215) 624-8988			
REV	ECN NO	DATE							
FILE: PARTS\1462-4									

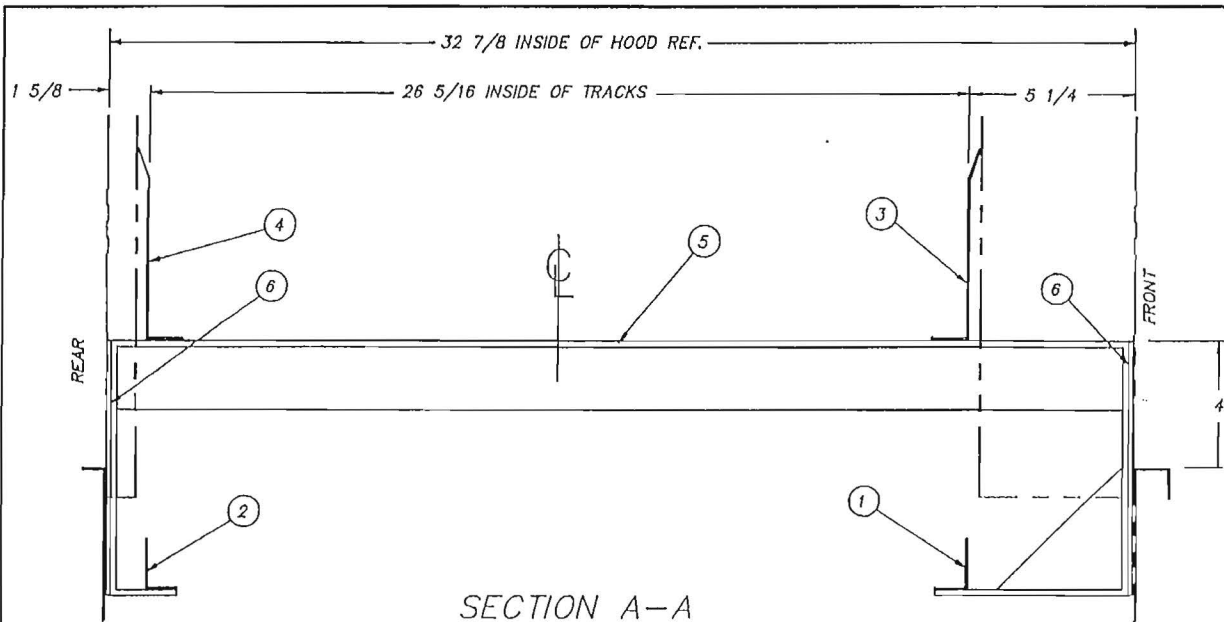


SECTION B-B
SCALE: 1=4

R.H. SHOWN L.H. OPPOSITE

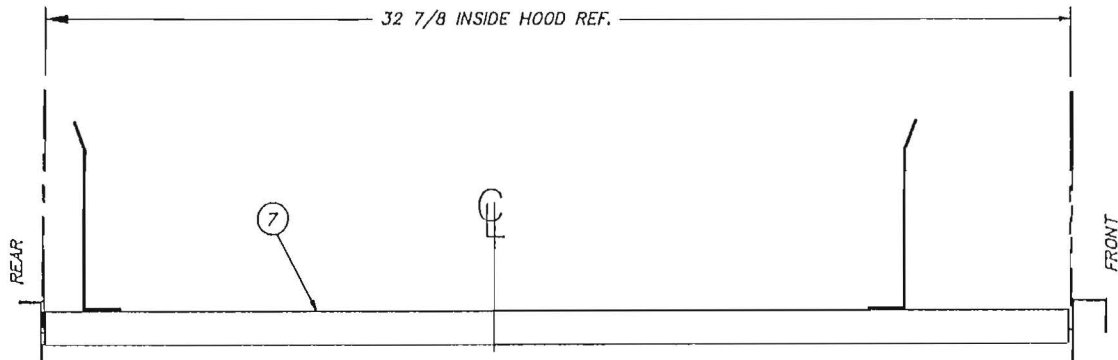
SHEET 1 OF 2

REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	TRACK INSTALLATION	REQD 1	1462-74
			DECIMALS	4'-6" UNLOAD SECTION		
			.XXX ± .005	MAT'L	SCALE 1=8	USED ON DEFENDER
			.XX ± .01	NOTED		
			ANGLES ±1/2°			
			UNLESS OTHERWISE SPECIFIED	 Insinger Machine Company	Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8888	DRWN/DATE CES 12.20.98
				FILE: PARTS\1462-74		



SECTION A-A

SCALE: 1=4



SECTION C-C

SCALE: 1=4

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1462-76	B	TRACK LOWER - FRONT	1
2	1462-76	B	TRACK LOWER - REAR	1
3	1462-75	D	TRACK UPPER - FRONT	1
4	1462-75	D	TRACK UPPER - REAR	1
5	1100-50	B	TRACK SUPPORT	2
6	1100-50A	A	SHIM	4
7	1100-55	B	TRACK SUPPORT UPPER	1
8	1100-152	A	TRACK SUPPORT LOWER REAR	1
9	1100-56	A	TRACK SUPPORT LOWER FRONT	1

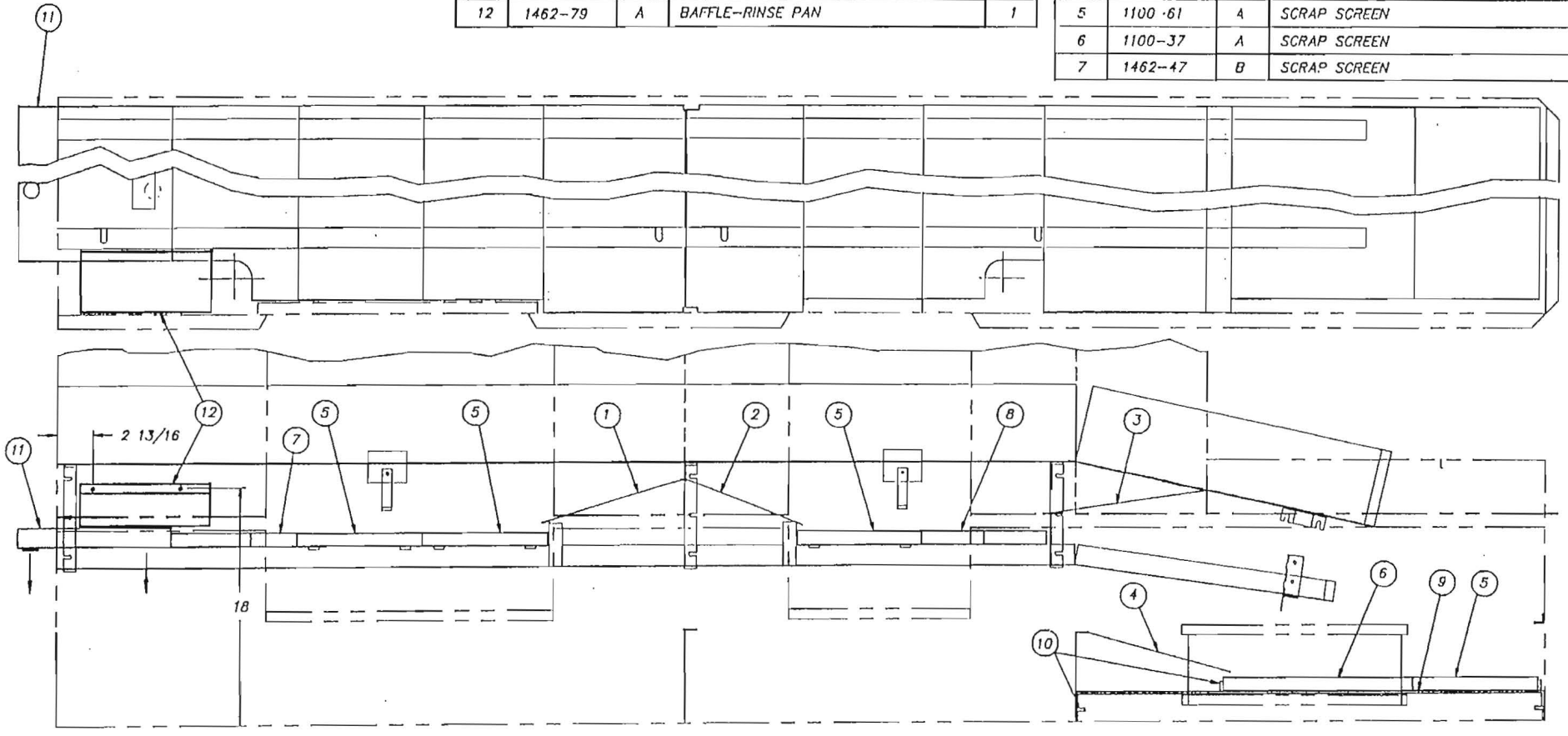
R.H. SHOWN L.H. OPPOSITE

SHEET 2 OF 2

TOLERANCES		TITLE TRACK INSTALLATION 4'-6" UNLOAD SECTION	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64			REQ'D 1	1462-74
DECIMALS		MATERIAL NOTED	SCALE	USED ON
.XXX ± .005			1=8	DEFENDER
.XX ± .01		Insinger Machine Company Philadelphia, PA 19133 (215) 624-4800 FAX (215) 624-6886	DRWN/DATE	CES
ANGLES ±1/2°			UNLESS OTHERWISE SPECIFIED	12.20.98
REV	ECN NO	DATE		
FILE: PARTS\1462-74				

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
8	1462-48	B	SCRAP SCREEN	1
9	1462-49	A	SUPPORT RAIL	1
10	D309C-GP-6G	-	WELDSTUD 1/4 X 3/4 LG.	6
11	1462-33	B	RINSE PAN	1
12	1462-79	A	BAFFLE-RINSE PAN	1

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1462-43	A	BAFFLE	1
2	1462-44	A	BAFFLE	1
3	1462-45	A	BAFFLE	1
4	1462-46	A	BAFFLE	1
5	1100-61	A	SCRAP SCREEN	4
6	1100-37	A	SCRAP SCREEN	1
7	1462-47	B	SCRAP SCREEN	1

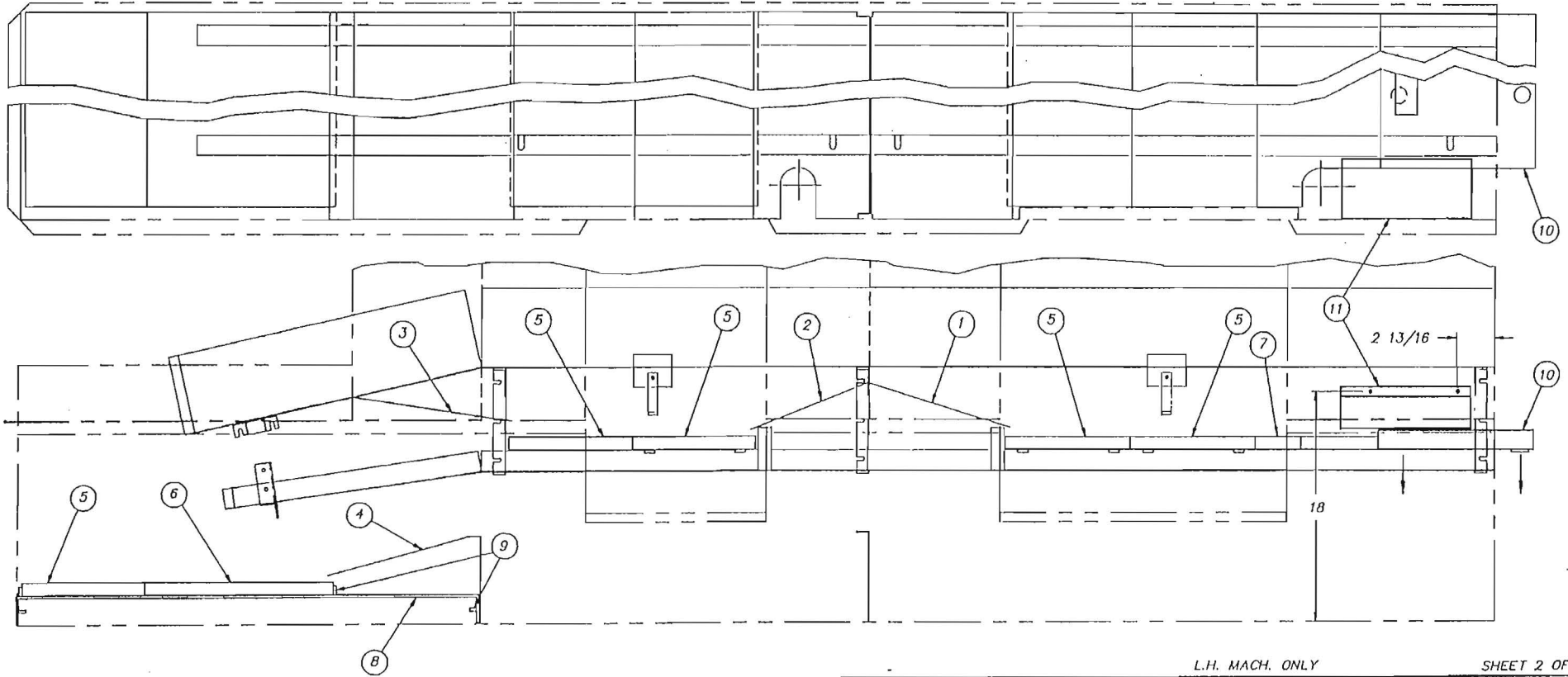


R.H. MACH. ONLY SHEET 1 OF 2

			TOLERANCES	TITLE	BAFFLES & SCRAP SCREEN	NEXT ASSY	DWG. No.
			FRACTIONS ±1/64	LOAD SECTION		REQ'D	1462-7
			DECIMALS			SCALE	USED ON
			.XXX ± .005	MAYL		1=8	DEFENDER
			.XX ± .01	NOTED		DRWN/DATE	
			ANGLES ±1/2°	Insinger		PG	
			UNLESS OTHERWISE SPECIFIED	Machine Company		7.8.96	
REV	ECN NO	DATE	Philadelphia, PA 19135				
FILE: PARTS/1462-7			(215) 824-4800				
			FAX (215) 824-8988				


ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
8	1462-49	A	SUPPORT RAIL	1
9	0309C-GP-6G	-	WELDSTUD 1/4 X 3/4 LG.	6
10	1462-33	B	RINSE PAN	1
11	1462-79	A	BAFFLE-RINSE PAN	1

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1462-43	A	BAFFLE	1
2	1462-50	A	BAFFLE	1
3	1462-45	A	BAFFLE	1
4	1462-46	A	BAFFLE	1
5	1100-61	A	SCRAP SCREEN	5
6	1100-37	A	SCRAP SCREEN	1
7	1462-47	B	SCRAP SCREEN	1

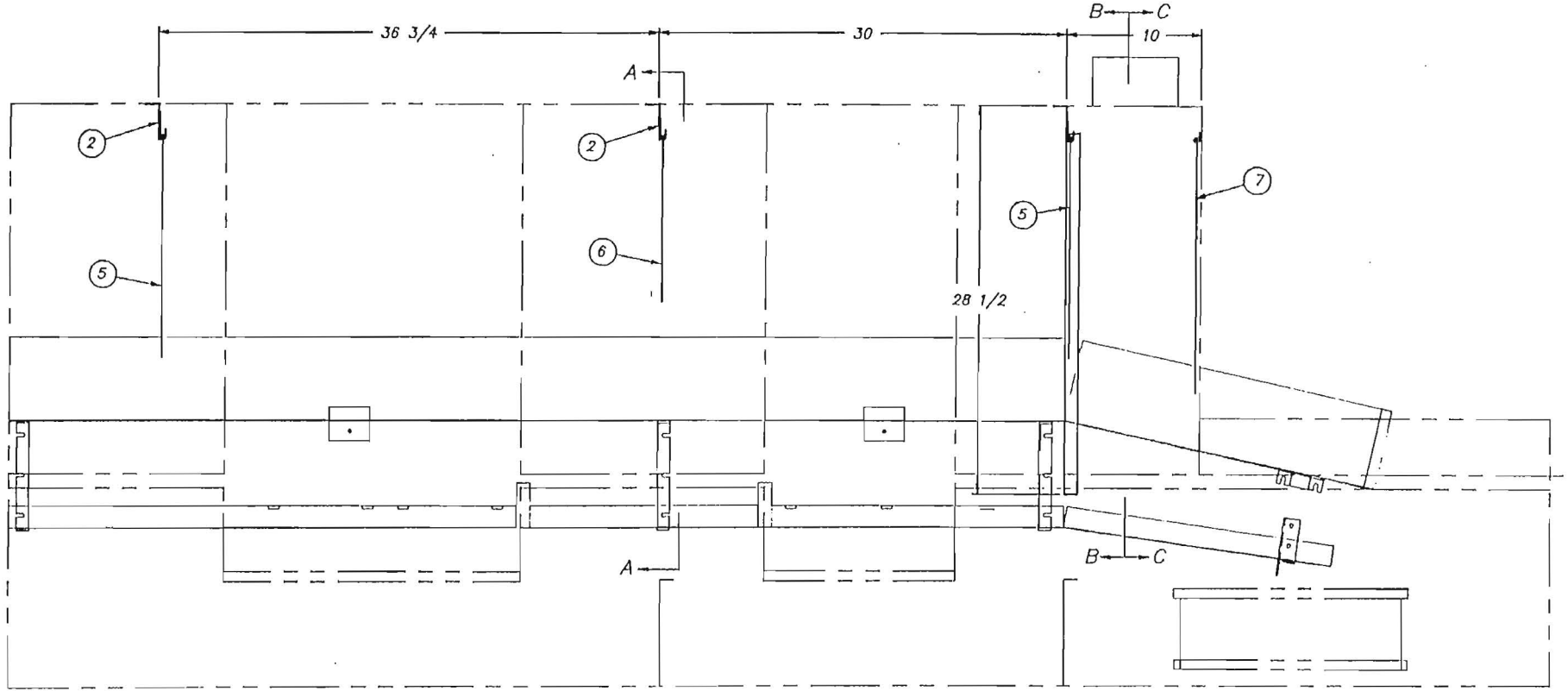


L.H. MACH. ONLY

SHEET 2 OF 2

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	BAFFLES & SCRAP SCREEN	REQ'D 1	1462-7
			DECIMALS	LOAD SECTION		
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	NOTED	1=0	DEFENDER
			ANGLES ±1/2°			
			UNLESS OTHERWISE SPECIFIED	 Insinger Machine Company	Philadelphia, PA 19135	DRWN/DATE
REV	ECN NO	DATE			(215) 624-4800	PG
FILE: PARTS/1462-7					FAX (215) 624-6968	7.8.96

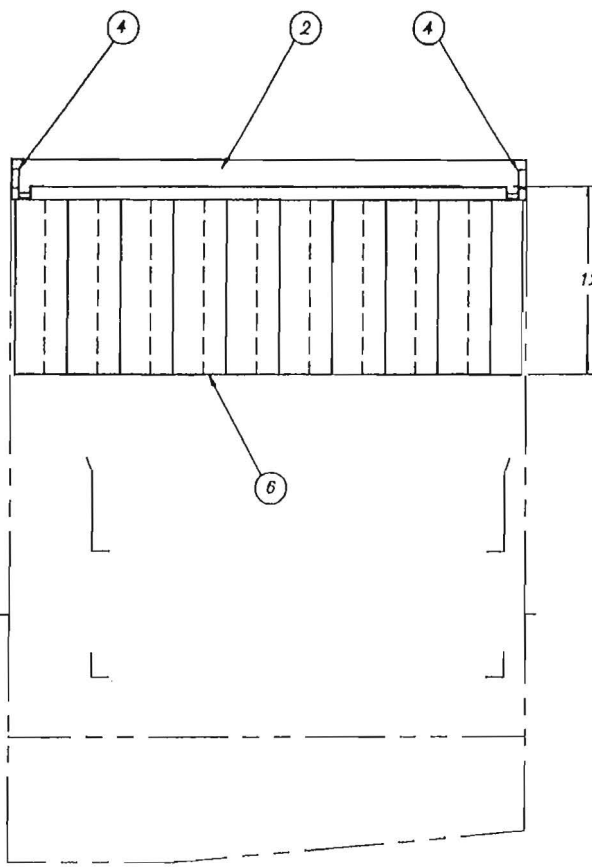
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-53-1	A	TOP BAFFLE	1
2	1390-54	A	TOP BAFFLE	2
3	1390-52	A	SIDE BAFFLE	1
4	D-761B	A	CURTAIN ROD CLIP	8
5	D2-522-1	A	SPLASH GUARD CURTAIN (16") CENTER	2
6	D2-522-2	A	SPLASH GUARD CURTAIN (12") CENTER	1
7	D2-522-3	A	SPLASH GUARD CURTAIN (18 1/2) ENTER	1



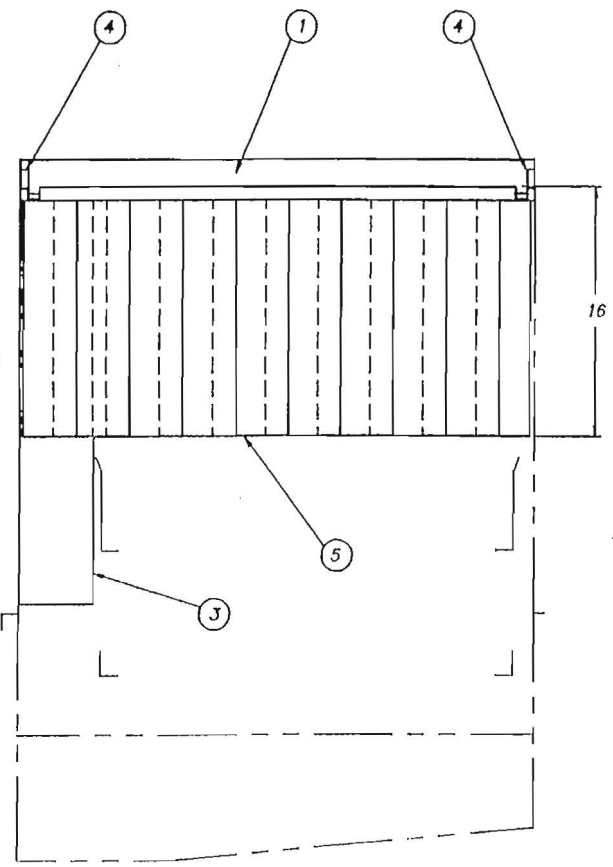
R.H. MACH. SHOWN L.H. MACH. OPPOSITE SHEET 1 OF 2

NOTE:
1. SEE DWG. D-761D & 1100-322
FOR PRISON PACKAGE.

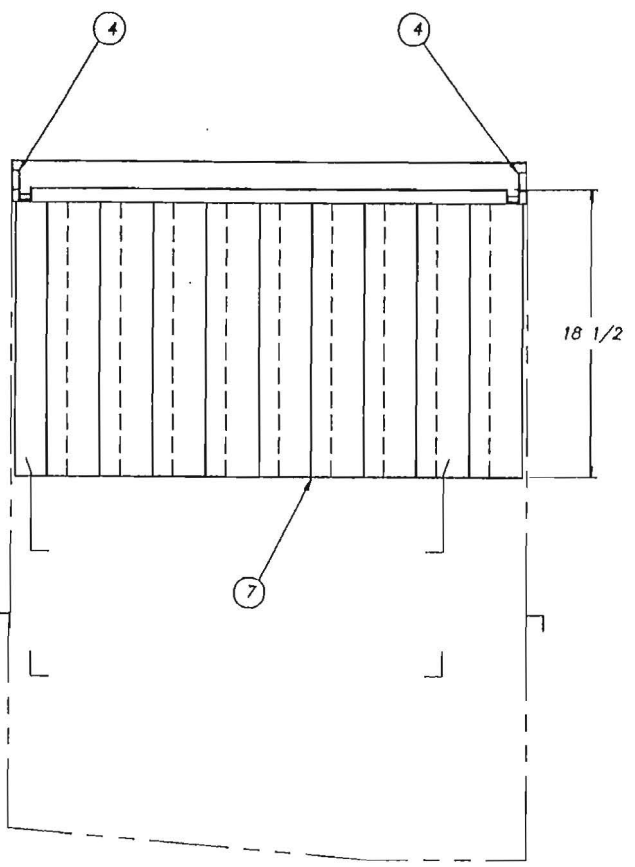
TOLERANCES		TITLE	CURTAIN & BAFFLE INSTALL.	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		LOAD SECTION		REQ'D	1
DECIMALS		NOTED		SCALE	1=B
.XXX ± .005		MATERIAL		USED ON DEFENDER	
.XX ± .01		INSINGER Machine Company		Phildelpho, PA 19135	
ANGLES ±1/2°		Machine Company		(215) 824-4800	
UNLESS OTHERWISE SPECIFIED		FAX (215) 824-8088		DRWN/DATE	
REV	ECN NO	DATE	PG		
FILE: PARTS/1462-9			2.24.97		



SECTION A-A



SECTION B-B




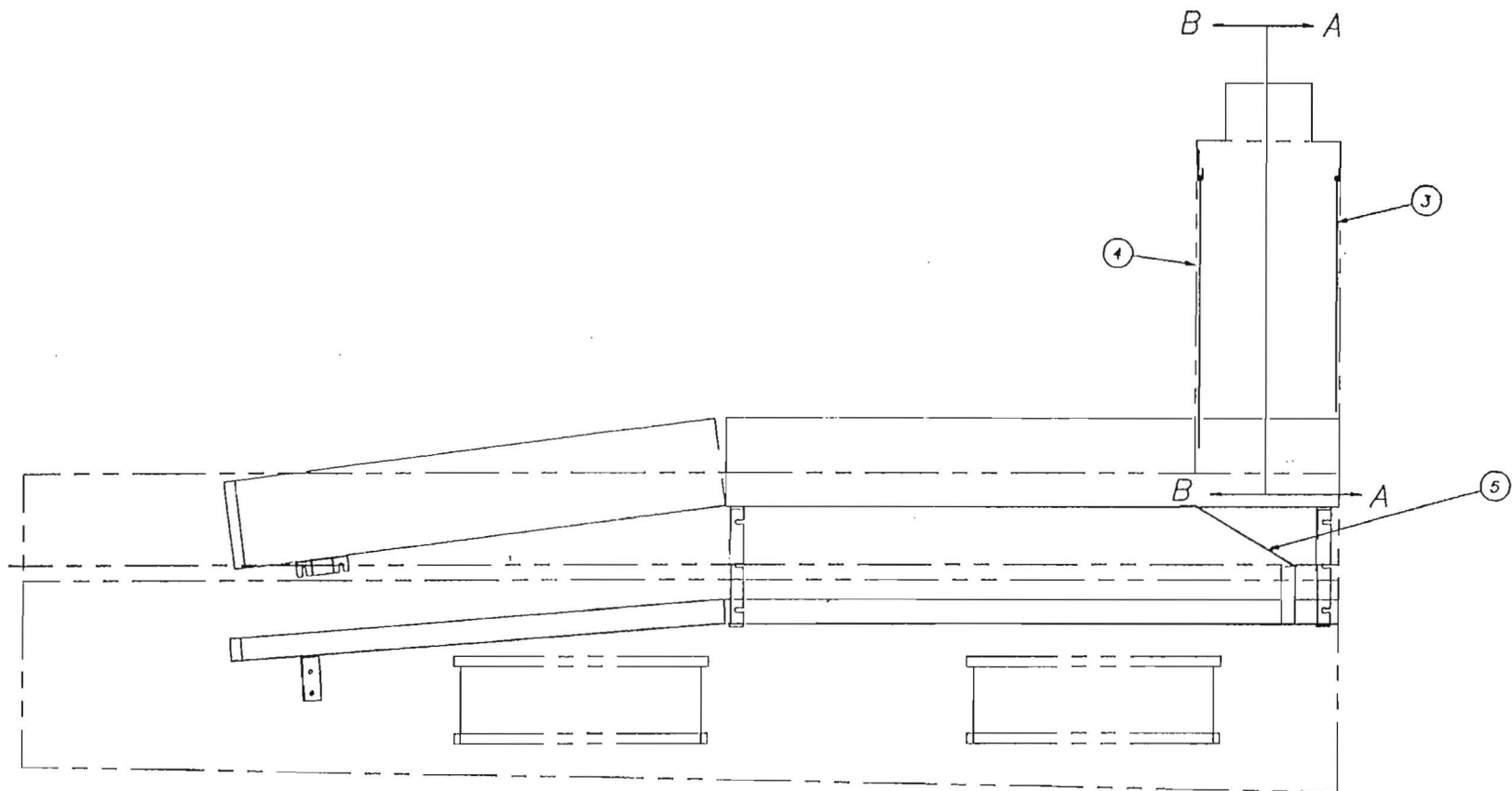
SECTION C-C

NOTE:
 1. SEE DWG. D-761D & 1100-322
 FOR PRISON PACKAGE.

R.H. MACH. SHOWN L.H. MACH. OPPOSITE


SHEET 2 OF 2

			TOLERANCES		TITLE CURTAIN & BAFFLE INSTALL		NEXT ASSY		DWG. NO.	
			FRACTIONS ±1/64		LOAD SECTION		REQD 1		1462-9	
			DECIMALS		MTRL NOTED		SCALE		USED ON	
			.XXX ± .005				1-8		DEFENDER	
			.XX ± .01						DRWN/DATE	
			ANGLES ±1/2°						PC	
REV EGN NO DATE			UNLESS OTHERWISE SPECIFIED		 Insinger Machine Company		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8988		2.24.97	
FILE: PARTS/1462-9										

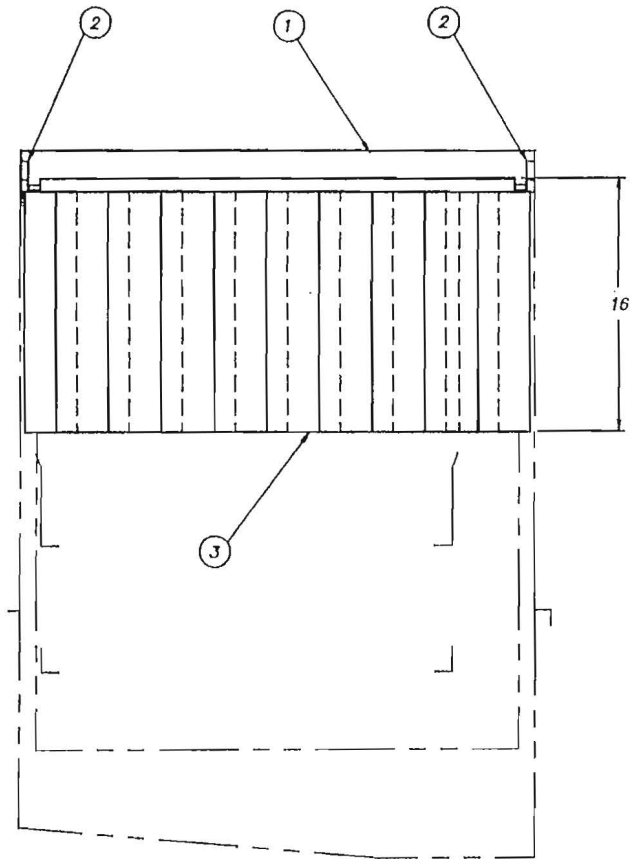


R.H. SHOWN L.H. OPPOSITE

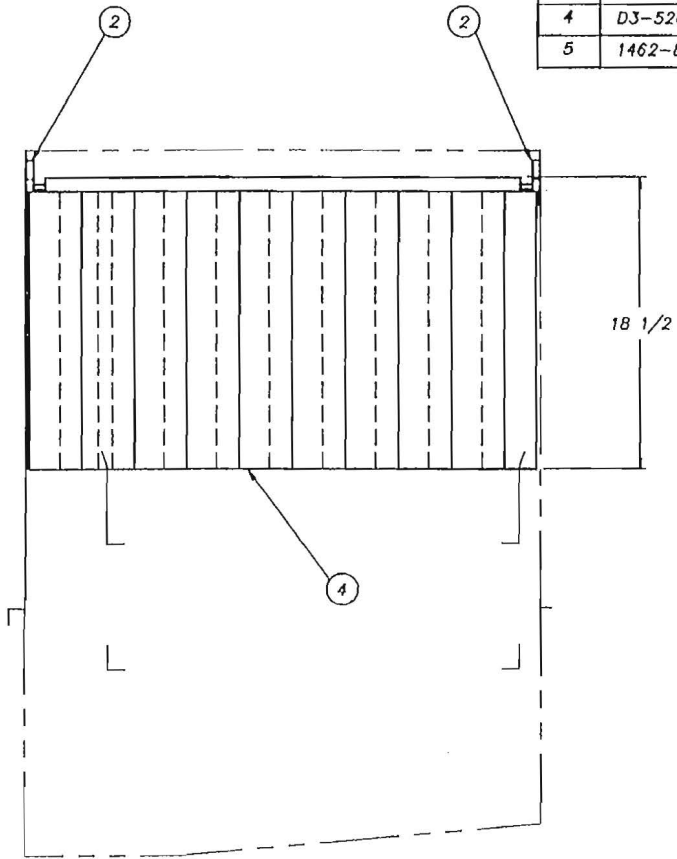
SHEET 1 OF 2

			TOLERANCES	TITLE	CURTAIN INSTALLATION	NEXT ASSY	DWG. NO.
			FRACTIONS $\pm 1/64$		UNLOAD SECTION	REQ'D	1462-10
			DECIMALS	MATL	NOTED	SCALE	USED ON
			.XXX $\pm .005$			1=B	DEFENDER
			.XX $\pm .01$				
			ANGLES $\pm 1/2^\circ$				
			UNLESS				DRWN/DATE
			OTHERWISE				PC
			SPECIFIED				2.25.97
REV	ECN NO	DATE		 Insinger Machine Company		Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8988	
FILE: PARTS/1462-10							

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1390-53-2	A	TOP BAFFLE	1
2	D-761B	A	CURTAIN ROD CLIP	4
3	D2-522-1	A	SPLASH GUARD CURTAIN (16") CENTER	1
4	D3-526	A	SPLASH GUARD CURTAIN (18 1/2")	1
5	1462-B	A	BAFFLE, UNLOAD SECTION	1



SECTION A-A



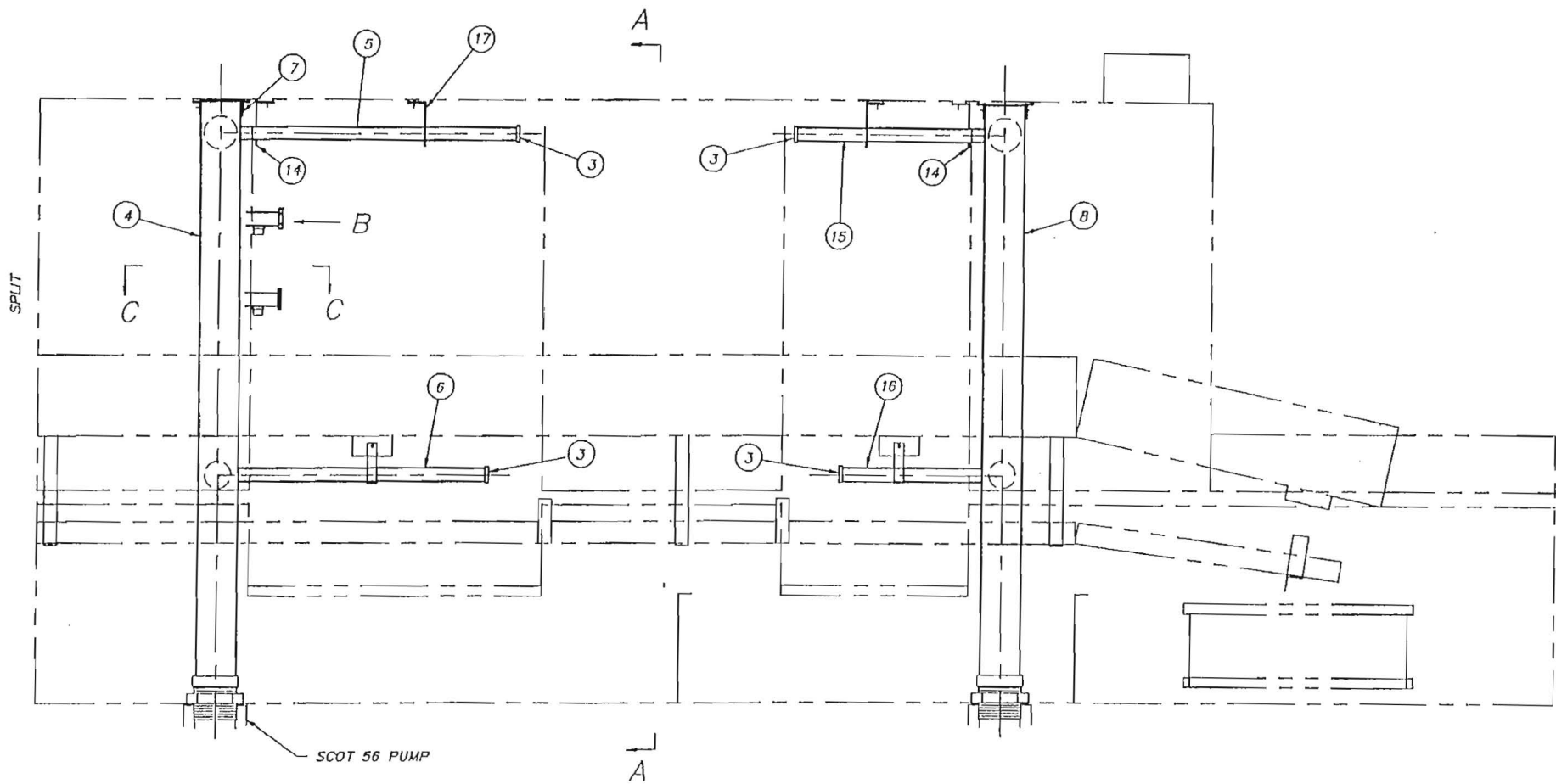
SECTION B-B

NOTE:
1. SEE DWG. D-761D & 1100-322
FOR PRISON PACKAGE.

R.H. MACH. SHOWN L.H. MACH. OPPOSITE

SHEET 2 OF 2

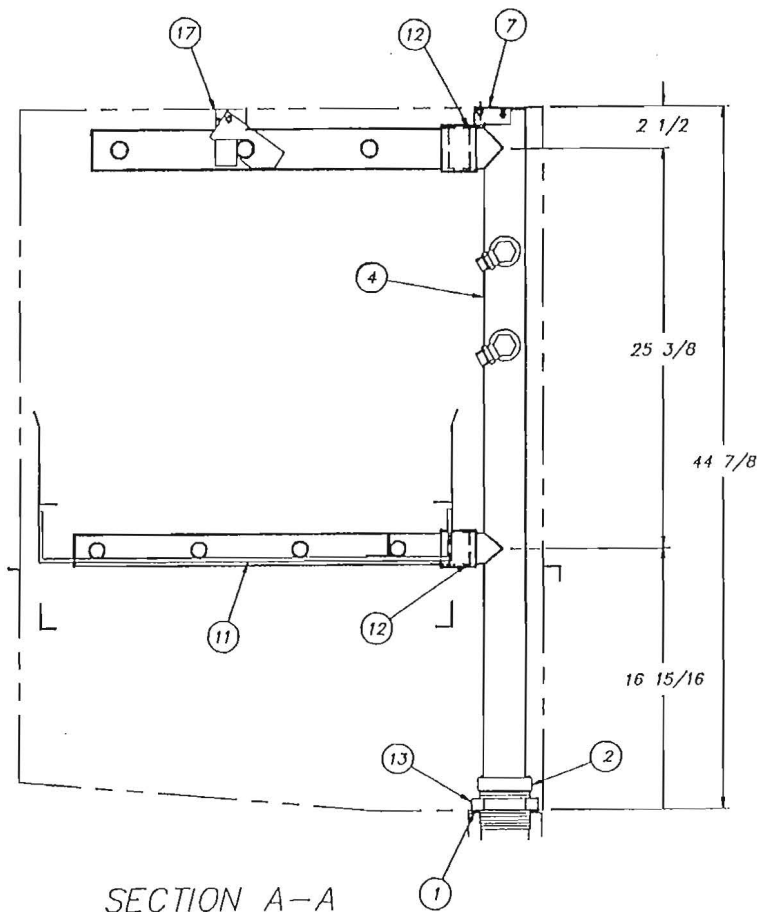
TOLERANCES			TITLE CURTAIN INSTALLATION UNLOAD SECTION	NEXT ASSY REQ'D 1	DWG. NO. 1462-10
REV	ECN NO	DATE			
FRACTIONS ±1/64			MATERIAL AS NOTED	SCALE 1=8	USED ON DEFENDER
DECIMALS					
.XXX ± .005			Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6880		
.XX ± .01					
ANGLES ±1/2'			DRWN/DATE		
UNLESS OTHERWISE SPECIFIED			PG 2.25.97		
FILE: PARTS/1462-10			Insinger Machine Company		



R.H. MACHINE SHOWN

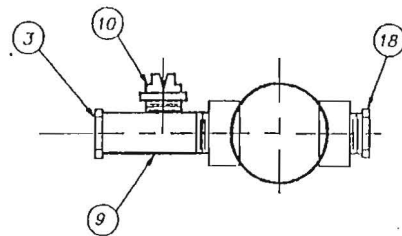
SHEET 1 OF 3

			TOLERANCES	TITLE	DISCHARGE LINE ASSY (LOAD)	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	W/O SILVERWARE TROUGH		REQ'D	1462-82
			DECIMALS	NOTED		SCALE	USED ON
			.XXX ± .005			1=B	DEFENDER
			.XX ± .01				
			ANGLES ±1/2°				
REV	ECN NO	DATE	UNLESS	Machine Company		Phildelphia, PA 19135	DRWN/DATE
			OTHERWISE	Machine Company		(215) 624-4800	CES
			SPECIFIED			FAX (215) 624-8986	1.9.97
FILE: PARTS\1462-82							

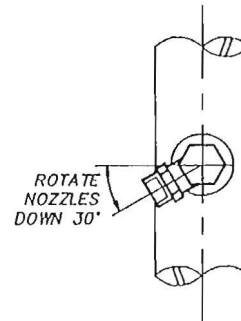


SECTION A-A

L.H. WASH TANK SHOWN



SECTION C-C



VIEW B

ITEM	PART NO.	DESCRIPTION	QTY.
1	1104-67	GASKET, PUMP DISCHARGE	1
2	1104-65	NIPPLE, DISCHARGE LINE	1
3	D2-554-3	PLUG 7/8-9 UNC-2A	16
4	1462-81	DISCHARGE TUBE-WASH (3" OD)	1
5	1462-34	MANIFOLD ASSY-UPPER WASH	1
6	1462-35	MANIFOLD ASSY-LOWER WASH	1
7	1169-96	SUPPORT INSTALLATION	2
8	1462-80	DISCHARGE TUBE-PW (3" OD)	1
9	1162-94	EXTENSION MANIFOLD	2
10	D2272	SPRAY NOZZLE #80-200	2
11	1390-59	GRADLE-SPRAY PIPE	2
12	D2-564	"O" RING (01-032)	2
13	D326F-L1	LOCKNUT	2
14	SK-373J	STOP BRACKET	2
15	1462-56	MANIFOLD ASSY-UPPER PWASH	1
16	1462-57	MANIFOLD ASSY-LOWER PWASH	1
17	D-2349	LATCH ASSEMBLY-SPRAY PIPE	2
18	D328F-E2-C	HEX PLUG 3/4 IPS	2

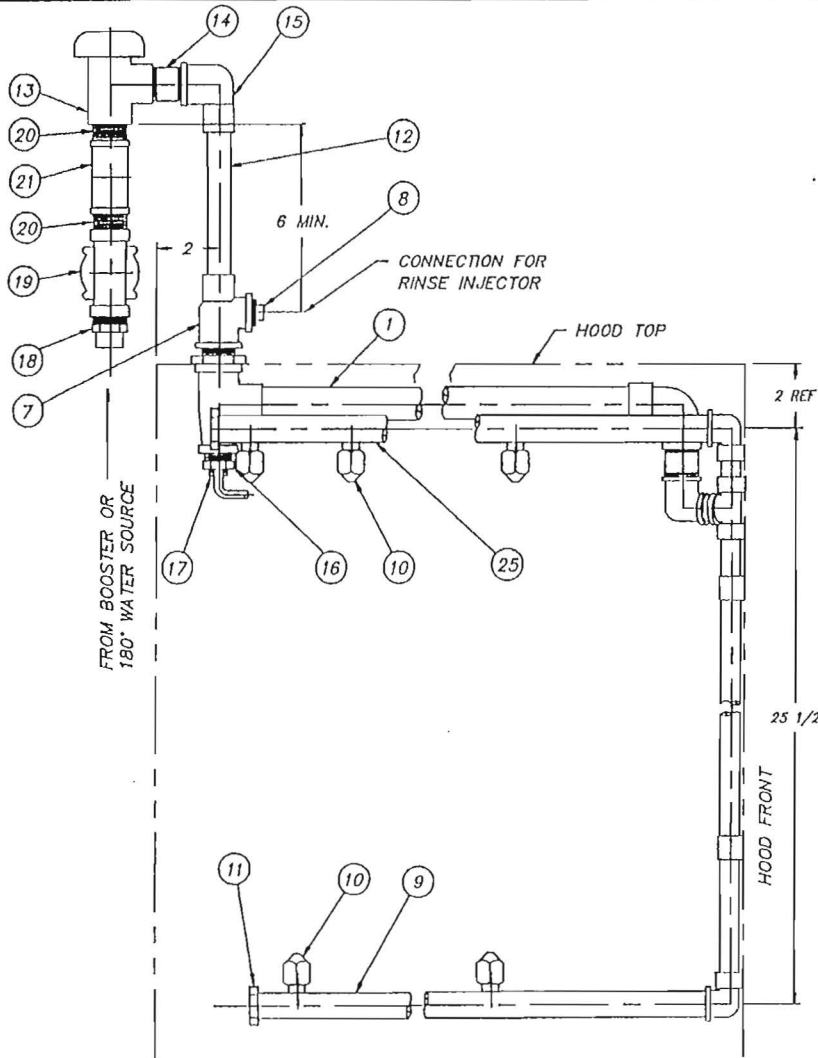
SHEET 3 OF 3

REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DISCHARGE LINE ASSY (LOAD)	REQ'D 1	1462-82
			DECIMALS	W/O SILVERWARE TROUGH		
			.XXX ± .005	MAT'L NOTED	SCALE 1=8	USED ON DEFENDER
			.XX ± .01			
			ANGLES ±1/2°			
			UNLESS OTHERWISE SPECIFIED			
				INSINGER Machine Company	PhBadelphia, PA 19135	DRWN/DATE CES
					(215) 624-4800	1.9.97
					FAX (215) 624-6988	

FILE: PARTS\1462-82

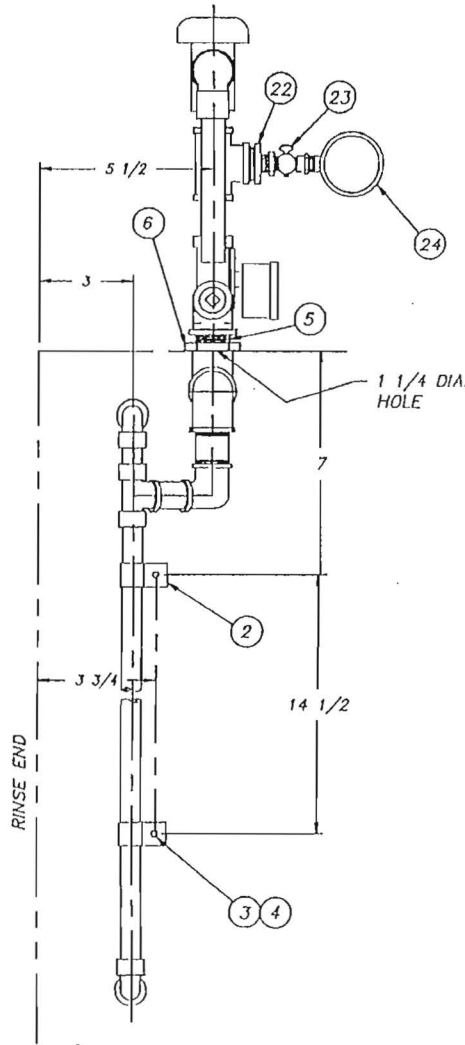


PART 5
REPLACEMENT PARTS
FOR DEFENDER SERIES



VIEW FROM RINSE END

* DENOTES NICKEL PLATED

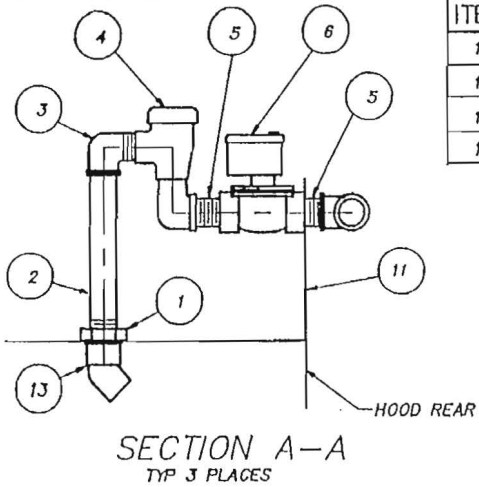


RINSE END

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1100-319D	B	FINAL RINSE INSIDE PIPING	1
2	875-100	A	BRACKET	2
3	DJ09C-EF-3G	--	WELDSTUD 10-32 X 3/8	2
4	DJ12C-EF-5	--	LOCKNUT 10-32	2
5	DJ14F-EL-12	--	NIPPLE 3/4 IPS X 1 1/2 L.O.E.	1
6	DJ26F-E1	--	LOCKNUT 3/4 IPS	1
7	DJ20F-E1E301	--	TEE 3/4 IPS X 3/4C X 1/2 IPS	1
8	DJ28F-D2-A	--	PIPE PLUG 1/2 IPS	1
9	1462-84	B	SPRAY PIPE, LOWER	1
10	D-2836	--	SPRAY NOZZLE 1/4 IPS	9
11	D2-554-2	A	PLUG 3/4-10 UNC-2A	2
12	D207A-B6-22	--	COP. TUBE 3/4 CTS X 5 1/2	1
13	D-2243	--	VACUUM BREAKER 3/4 IPS	1
14	DJ14F-ES-16	--	NIPPLE 3/4 IPS X 2	1
15	DJ16F-E3-E1	--	90° ELL 3/4 C X 3/4 FIPS	1
16	D2390SP-1	--	BRASS UNION	1
17	D2390SP	--	SPLIT JAM NUT	1
18	D318A-E3-E2	--	COPPER UNION 3/4 C X 3/4 WPS	1
19	D-2597	--	SOLENOID (WATER) 3/4 IPS	1
20	DJ14F-EC-00	--	CLOSE NIPPLE 3/4 IPS	2
21	DJ20F-E1E1E1	--	TEE 3/4 IPS	1
22	DJ22F-E2-B1	--	HEX RED 3/4 MIPX X 1/4 FIPS	1
23	D-2497	--	PETCOCK 1/4 IPS	1
24	SK-1433	A	PRESSURE GAUGE 1/4 IPS	1
25	1100-329A	B	SPRAY PIPE, UPPER X 27 3/4	1

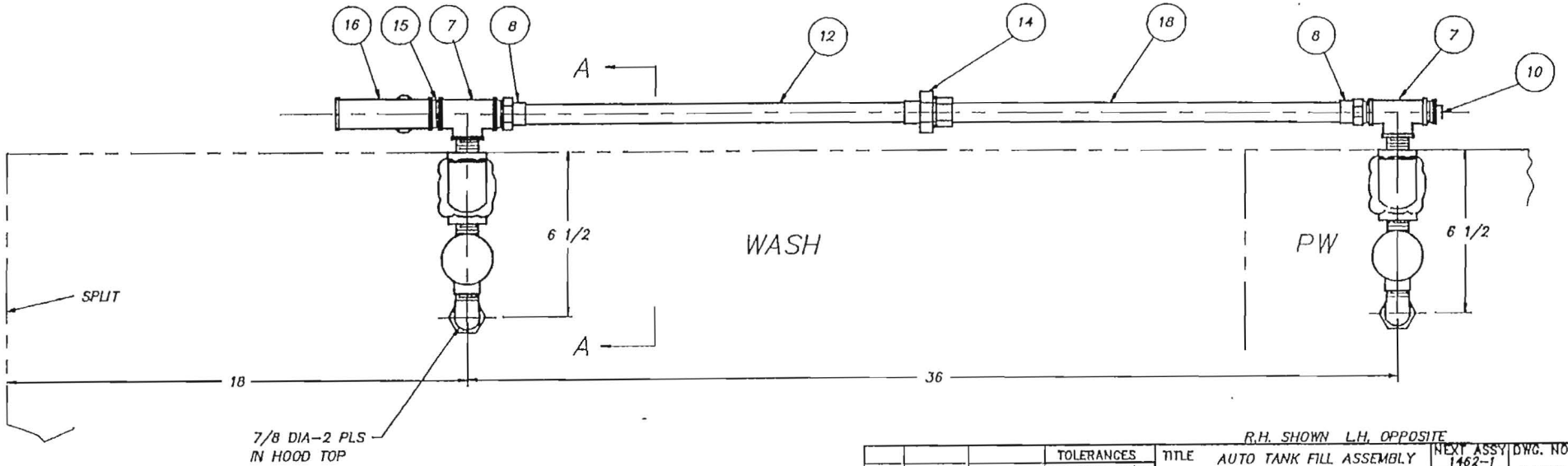
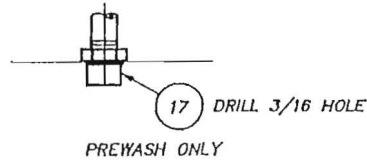
R.H. SHOWN L.H. OPPOSITE

			TOLERANCES	TITLE	FINAL RINSE ASSEMBLY	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64			REQ'D	1462-59
			DECIMALS .XXX ±.005			SCALE	USED ON DEFENDER
			.XX ±.01	MATTL NOTED		1=4	DRWN/DATE
			ANGLES ±1/2°			CES	
			UNLESS OTHERWISE SPECIFIED			2.20.97	
REV	ECN NO.	DATE	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8968				
FILE: PARTS\1462-59							



ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
15	DJ14F-EC-00	-	CLOSE NIPPLE 3/4 IPS	1
16	D-2482	-	"Y" STRAINER 3/4 IPS	1
17	DJ28F-D1	-	CAP 1/2 IPS	1
18	D207A-B4-99	-	COPPER TUBING 1/2 CTS X 24 3/4 LG.	1

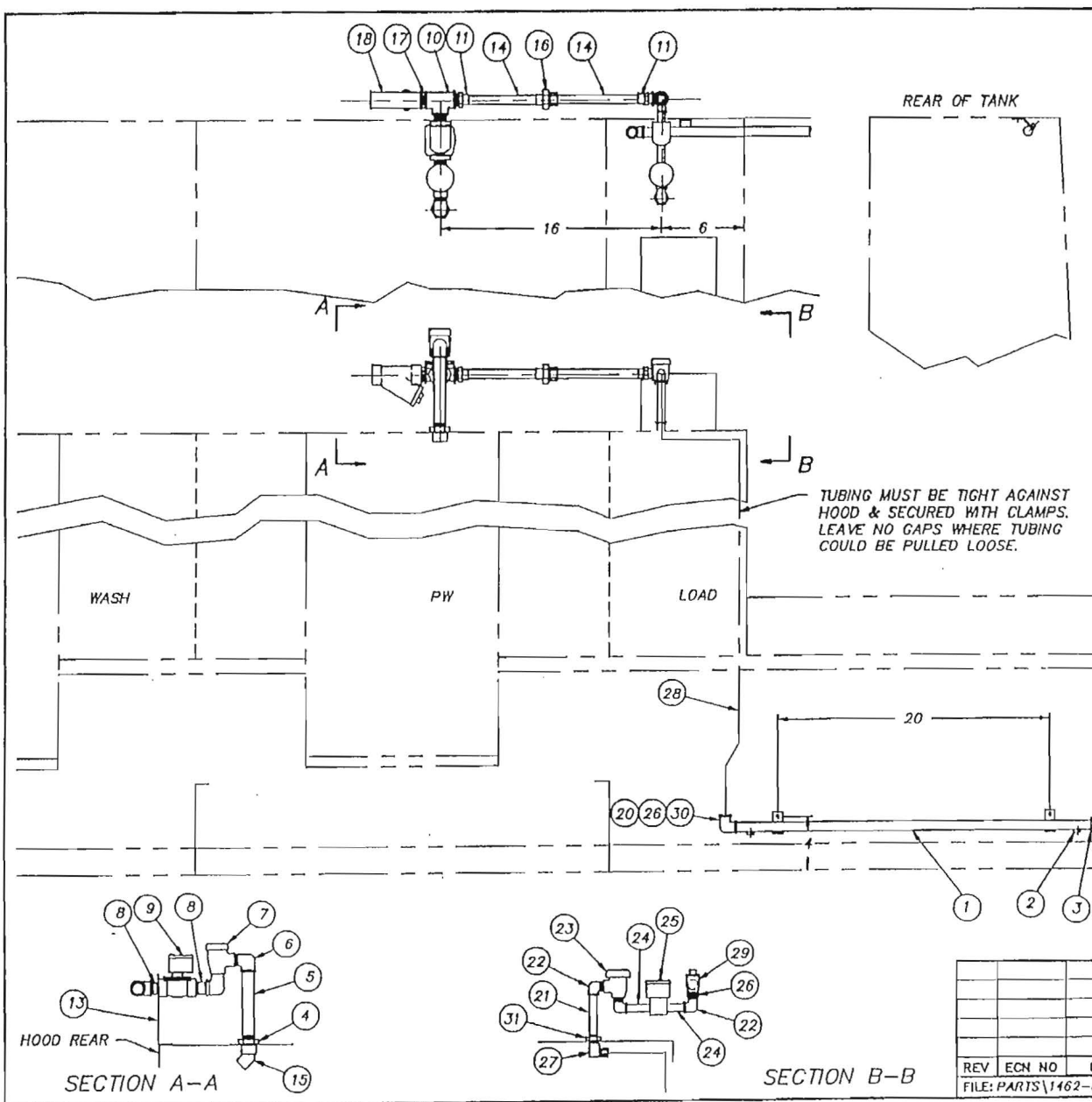
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	DJ28F-D1	-	LOCKNUT 1/2 IPS	3
2	DJ14F-DL-52	-	NIPPLE 1/2 IPS X 6 1/2 L.O.E.	3
3	DJ16F-D1-D2	-	90° STREET ELL 1/2 IPS	6
4	D-2241	-	VACUUM BREAKER 1/2 IPS	3
5	DJ14F-DC-00	-	CLOSE NIPPLE 1/2 IPS	6
6	D-2606	-	SOLENOID VALVE 1/2 IPS 24V	3
7	DJ20F-E1E1D1	-	TEE 3/4IPS X 3/4IPS X 1/2IPS	2
8	DJ17A-EJ-E2	-	ADAPTER 3/4 C X 3/4 MIP	2
9	-	-	-	-
10	DJ28F-E2-A	-	PIPE PLUG 3/4 IPS	1
11	957-80	A	BRACKET	3
12	D207A-B6-68	-	COPPER TUBING 3/4CTS X 17	1
13	DJ15A-D1-D1	-	45° 1/2 FIPS X 1/2 FIPS	2
14	DJ18A-EJ-E	-	UNION 3/4C	1



REV	ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	AUTO TANK FILL ASSEMBLY	1462-1	1462-60
			DECIMALS	PREWASH & WASH	REQ'D 1	
			.XXX ± .005		SCALE	USED ON
			.XX ± .01		1-4	DEFENDER
			ANGLES ±1/2°			ORIN/DATE
			UNLESS OTHERWISE SPECIFIED			CES
						8.8.96

Insinger
Machine Company

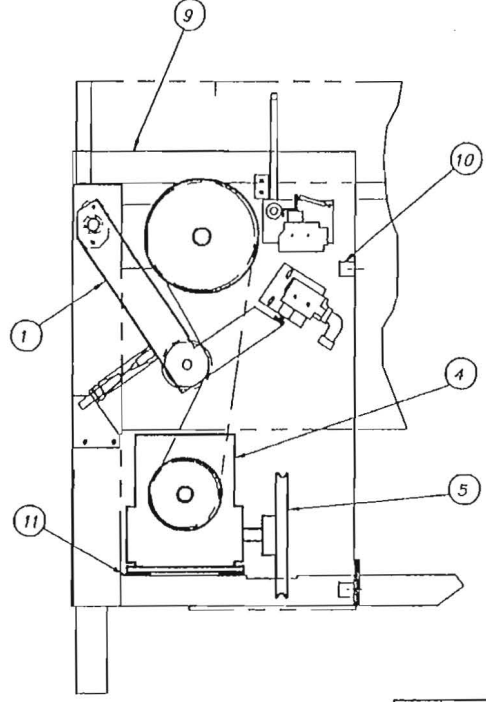
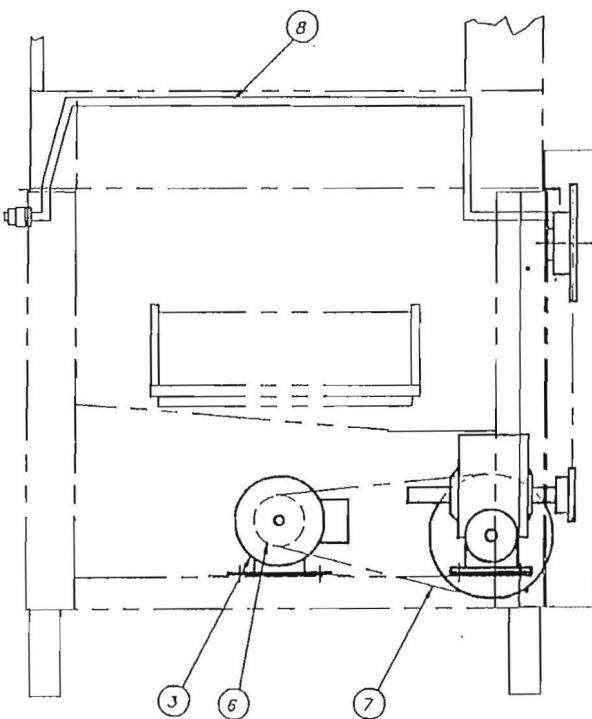
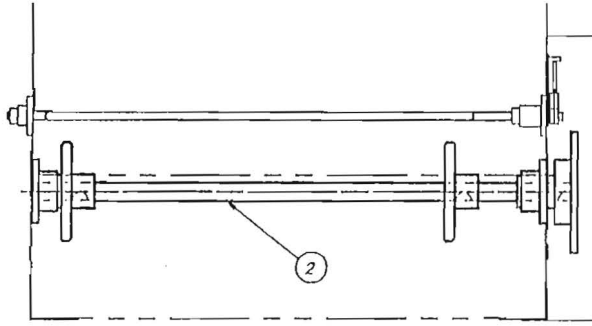
Philadelphia, PA 19135
(215) 824-4800
FAX (215) 824-8988



ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1104-81B	A	SPRAY PIPE WELDMENT 3' LOAD	1
2	D-2534	-	SPRAY NOZZLE	3
3	D2-554-1	A	PIPE PLUG 9/16-12 UNC-2A	1
4	DJ26F-D1	-	LOCKNUT 1/2 IPS	1
5	DJ14F-DL-52	-	NIPPLE 1/2 IPS X 6 1/2 L.O.E.	1
6	DJ16F-D1-D2	-	90° STREET ELL 1/2 IPS	2
7	D-2241	-	VACUUM BREAKER 1/2 IPS	1
8	DJ14F-DC-00	-	CLOSE NIPPLE 1/2 IPS	2
9	D-2606	-	SOLENOID VALVE 1/2 IPS 24V	1
10	DJ20F-D101D1	-	TEE 1/2 FIPS X 1/2 FIPS X 1/2 FIPS	1
11	DJ17A-DJ-D2	-	ADAPTER 1/2 C X 1/2 MIPS	2
12	DJ28F-D2-A	-	PIPE PLUG 1/2 IPS	2
13	957-80	-	BRACKET	1
14	D207A-B4-24	-	COPPER TUBING 1/2 CTS X 6 LG	2
15	DJ15A-D1-D1	-	45° 1/2 FIPS X 1/2 FIPS	1
16	DJ18A-DJ-DJ	-	UNION 1/2 CTS	1
17	DJ14F-DC-00	-	CLOSE NIPPLE 1/2 IPS	1
18	D-2483A	-	"Y" STRAINER 1/2 IPS	1
19	-	-	-	-
20	DJ16F-C1-C1	-	90° ELBOW 3/8 IPS	1
21	DJ14F-BL-40	-	NIPPLE 1/4 IPS X 5" L.O.E.	1
22	DJ16F-B1-B2	-	90° STREET EL 1/4 IPS	3
23	D-2438A	-	VACUUM BREAKER 1/4 IPS	1
24	DJ14F-BS-12	-	NIPPLE 1/4 IPS X 1 1/2 LG	2
25	D-2605	-	SOLENOID VALVE 1/4 IPS 24V	1
26	DJ22F-C2-B1	-	HEX REDUCER 3/8 MIPS X 1/4 FIPS	2
27	DJ16F-B1-C5	-	90° ELBOW 1/4 FIPS X 3/8 COMP	1
28	D207A-N3	-	3/8 OD COPPER TUBING X 6 FT LG	1
29	DJ20F-D1C1D1	-	TEE 1/2 FIPS X 3/8 FIPS X 1/2 FIPS	1
30	DJ17F-B2-C5	-	ADAPTER 1/4 MIPS X 3/8 COMP	1
31	DJ26F-B1	-	LOCKNUT 1/4 IPS	1

R.H. SHOWN L.H. OPPOSITE

TOLERANCES			TITLE	COLD WATER THERMOSTAT/ LOAD FLUSH PIPING	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64			MATL	NOTED	REQD/NOTED	1462-83
DECIMALS					SCALE	USED ON
.XXX ± .005					1=8	DEFENDER
.XX ± .01					DRWN/DATE	CES
ANGLES ±1/2°					1.15.97	
UNLESS OTHERWISE SPECIFIED						
REV	ECN NO	DATE	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6988			
FILE: PARTS\1462-83						

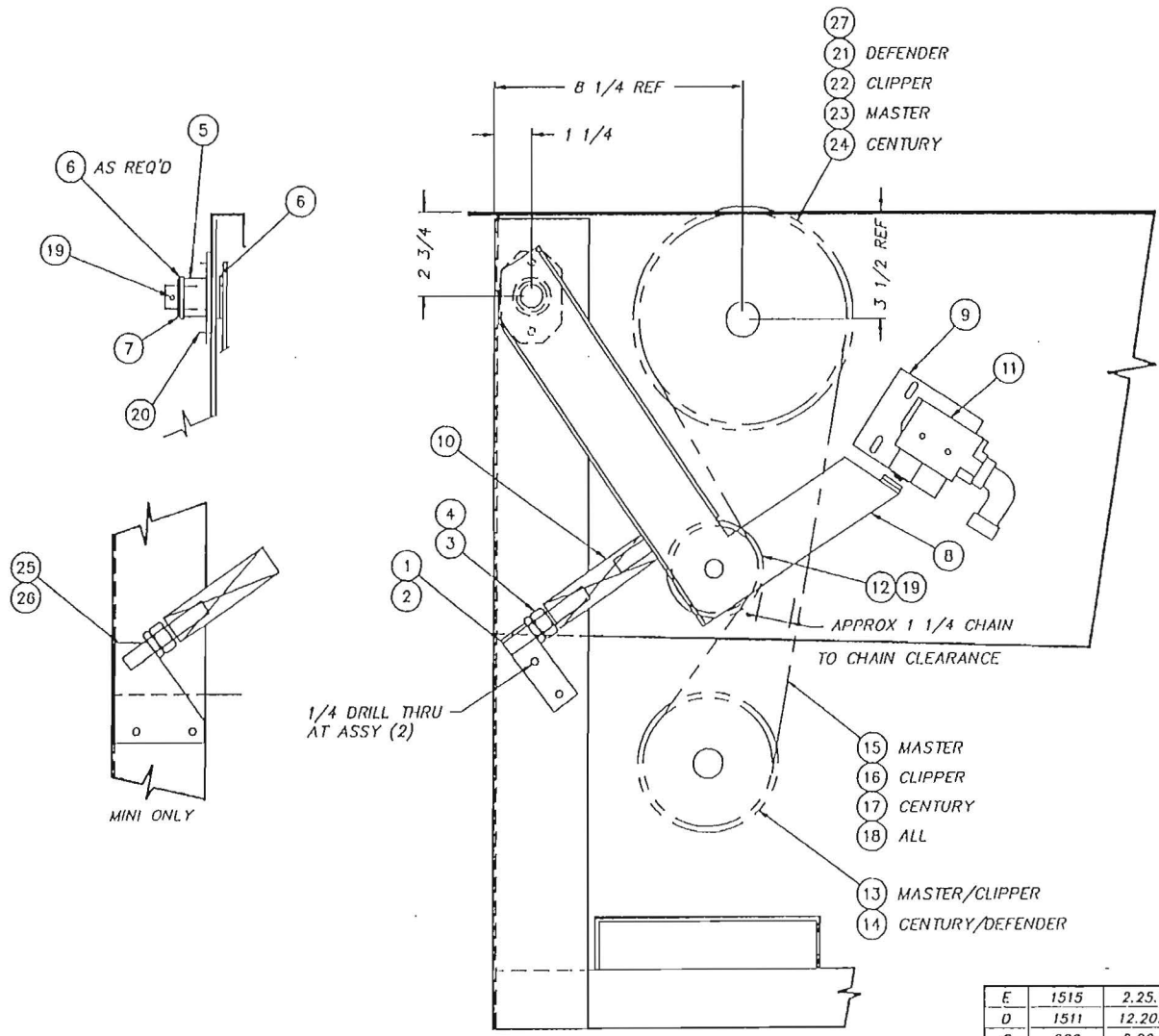


UNLOAD END

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1100-289	B	CONVEYOR OVERLOAD SHUTOFF	1
2	1100-117	B	DRIVE SHAFT ASSY	1
3	-	-	MOTOR BALDOR M3108 ODP	1
4	D-2344A	-	REDUCER BOND 262B 64:1	1
5	D-2527	-	PULLEY 7.95 O.D.	1
6	818-16	A	PULLEY	1
7	D2-582	-	"V" BELT 4L450	1
8	1100-123	B	STOP BAR ASSY & LOCATION	1
9	1390-80	A	COVER, MECHANISM GUARD	1
10	D2-84J	A	BRACKET, MECHANISM GUARD	2
11	1390-89	A	SHIM	2

R.H SHOWN L.H. OPPOSITE

TOLERANCES		TITLE	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		CONVEYOR DRIVE	1390-1	1390-72
DECIMALS		ASSEMBLY	REQ'D 1	
.XXX ± .005		MAT'L	SCALE	USED ON
.XX ± .01		AS NOTED	1=8	CENTURY
ANGLES ±1/2°		Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6866	
UNLESS OTHERWISE SPECIFIED			DRWN/DATE PC 4.15.9J	
REV	ECN NO	DATE	FILE: PARTS\1390-72	



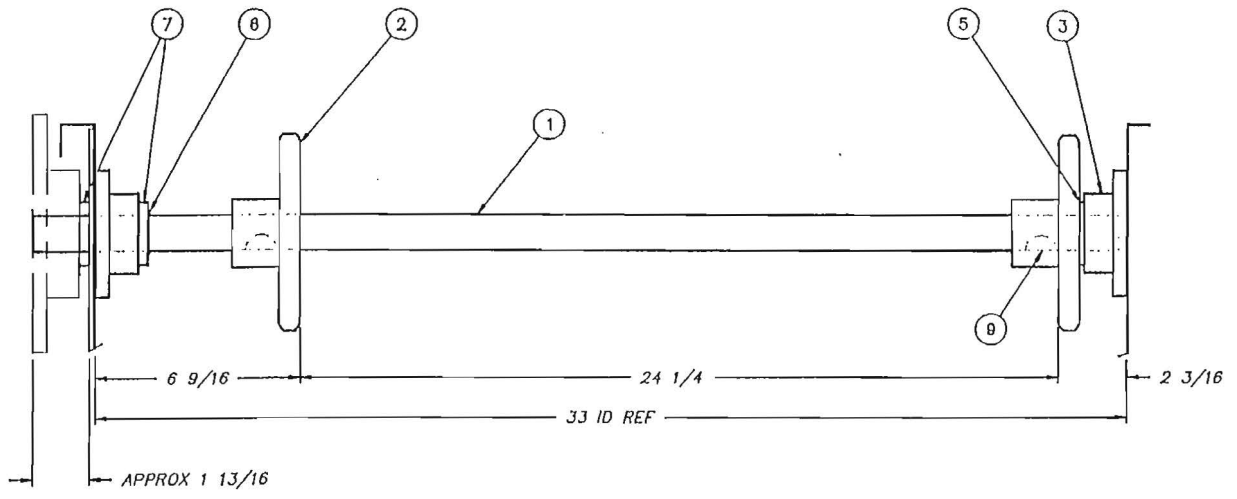
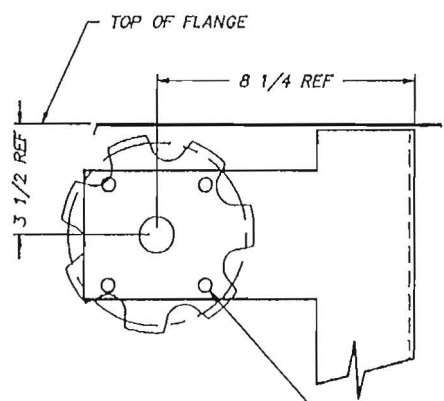
ITEM	PART NO.	DESCRIPTION	QTY.
1	1100-285	ADJUSTABLE SPRING STOP	1
2	1100-309	SHIM	1
3	D312C-LC-2	1/2-13 HEX NUT	1
4	D312C-LC-1	1/2-13 JAM NUT	1
5	1100-286	ATC PIVOT CUP	1
6	D2-525	1/8 THK SPACER	3
7	D470A	1/16 THK WASHER	1
8	1100-287	ATC ARM WELDMENT	1
9	1100-288	MICROSWITCH BRACKET	1
10	D351	SPRING	1
11	D2215A	MICROSWITCH	1
12	1100-310	IDLER SPROCKET	1
13	D2714	60B18 F 1' SPROCKET	1
14	D2760	60B13-F 1' SPROCKET	1
15	D308C-60	ROLLER CHAIN, 48 3/4 LG	1
16	D308C-60	ROLLER CHAIN, TBD LG	1
17	D308C-60	ROLLER CHAIN, 49' LG.	1
18	D308C-60CL	ROLLER CHAIN CONN. LINK	1
19	D311-22	S/S COTTER PIN, 1/8 x 1 1/4	2
20	D309C-GC-5	1/4-20 x 5/8 LG WELD STUD	2
21	D2-146A	60B29 1 1/8 SPROCKET	1
22	D-2333	60B36-F 1 1/8 SPROCKET	1
23	D2388A	60B26F 1 1/8 SPROCKET	1
24	D2761	60B30-F 1 1/8 SPROCKET	1
25	1100-311	ADJUSTABLE SPRING STOP	1
26	1100-312	SHIM	1
27	D302-2	#15 WOODRUFF KEY (1/4 X 1)	1
28	-	-	-
29	-	-	-

RIGHT HAND SHOWN LEFT HAND OPPOSITE
DRAWN TO SCALE FOR MASTER MACHINE

REV	ECN NO	DATE	TOLERANCES
E	1515	2.25.97	FRACTIONS ±1/64
D	1511	12.20.96	DECIMALS
C	929	8.26.93	.XXX ± .005
B	851	3.12.93	.XX ± .01
A	560	-	ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED			
FILE: PARTS\1100-289			

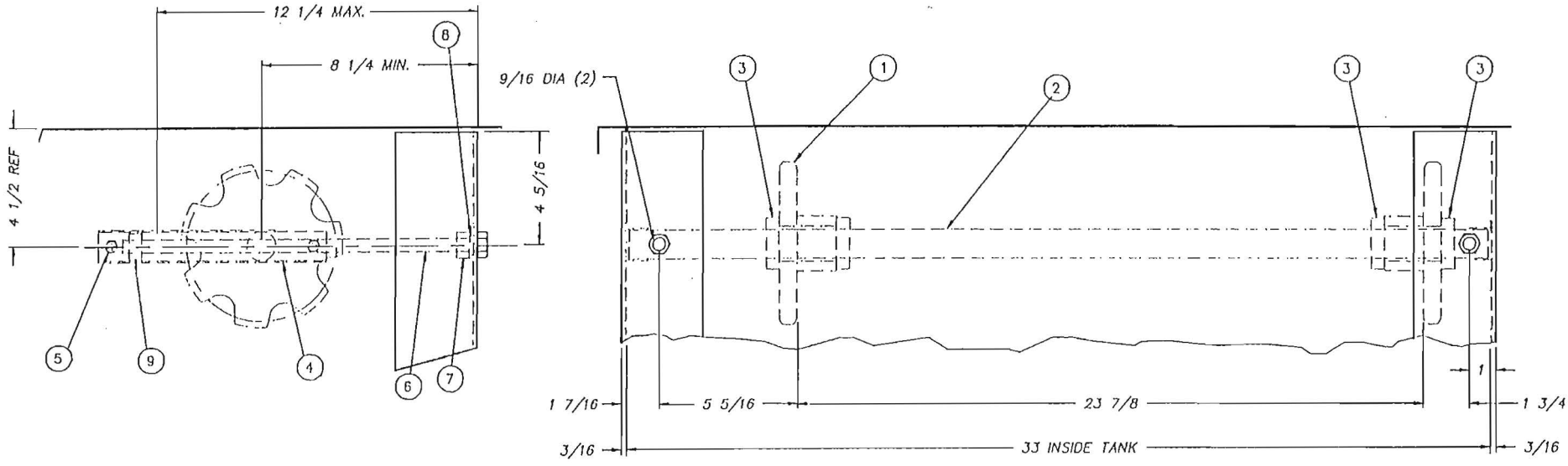
TITLE	CONVEYOR OVERLOAD SHUTOFF ASSEMBLY	NEXT ASSY	DWG. NO.
		REQ'D	1100-289
MATL	-	SCALE	USED ON
		1=4	CLIP/MASTER
		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8986	DRWN/DATE JRS 4.15.91

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1100-118	A	DRIVE SHAFT	1
2	D2-138	B	BELT SPROCKET, DRIVEN	2
3	1100-119	A	BRACKET, DRIVE SHAFT BRG	2
4	1100-120	A	BUSHING	2
5	1100-339	A	SPACER, 1/8 THK	1
6	DJ11-17	-	COTTER PIN, 1/8 DIA x 2	1
7	1100-122	A	SPACER, 5/16 THK	2
8	-	-	-	-
9	DJ02-2	-	#15 WOODRUFF KEY (1/4 x 1)	2



			TOLERANCES	TITLE	DRIVE SHAFT ASSEMBLY	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64			REQ'D	1100-117
			DECIMALS			SCALE	USED ON
C	1511	12.19.96	.XXX ± .005	MATERIAL		1/4	
B	1365	01.31.96	.XX ± .01	NOTED			
A	858	3.25.93	ANGLES ±1/2°				
REV	ECN NO.	DATE	UNLESS OTHERWISE SPECIFIED	Insinger Machine Company		Phladelphia, PA 19135 (215) 824-4800 FAX (215) 824-8800	DRWN/DATE MFJ 3.25.93
FILE: PARTS\1100-117							

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	D2-138	A	SPROCKET- BELT	2
2	1100-146	A	SHAFT -- DRIVEN	1
3	D2- 848	A	COLLAR	4
4	1390 .50	A	CHANNEL	2
5	D312C .GC .2	-	HEX NUT S/S 1/4-20	4
6	1390-51	A	ADJUSTING SCREW	2
7	D2-839	A	COLLAR	2
8	O-585	-	"O" RING (O1-014)	2
9	D312C-LC-2	-	HEX NUT S/S 1/2-13	2
10	1462-38	B	LEGS	REF

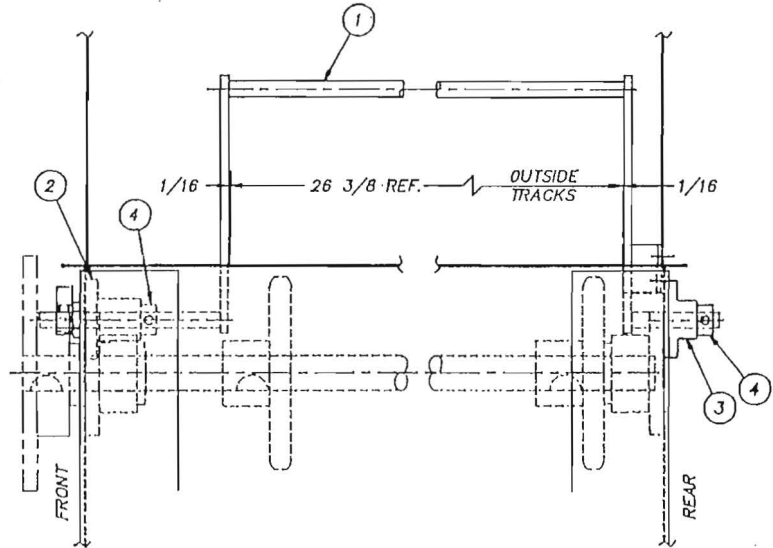
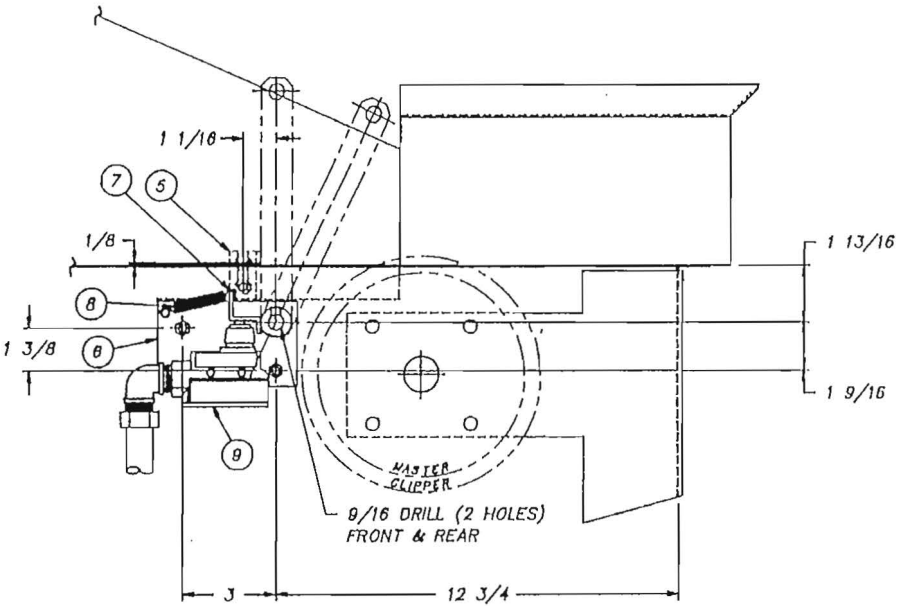


NOTE: STD MASTER CLIPPER LEGS (#1100-46) EXCEPT HEIGHT OF 9/16 DIA HOLES

R.H. SHOWN - L.H. OPPOSITE

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	DRIVEN SHAFT ASSEMBLY	1462-1	1462-21
			DECIMALS	(LOAD END)	REQD 1	
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	NOTED	1=4	DEFENDER
			ANGLES ±1/2°		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8966	
REV	ECN NO	DATE	UNLESS OTHERWISE SPECIFIED		ORWN/DATE	CES 7.11.96
FILE: PARTS\1462-21						

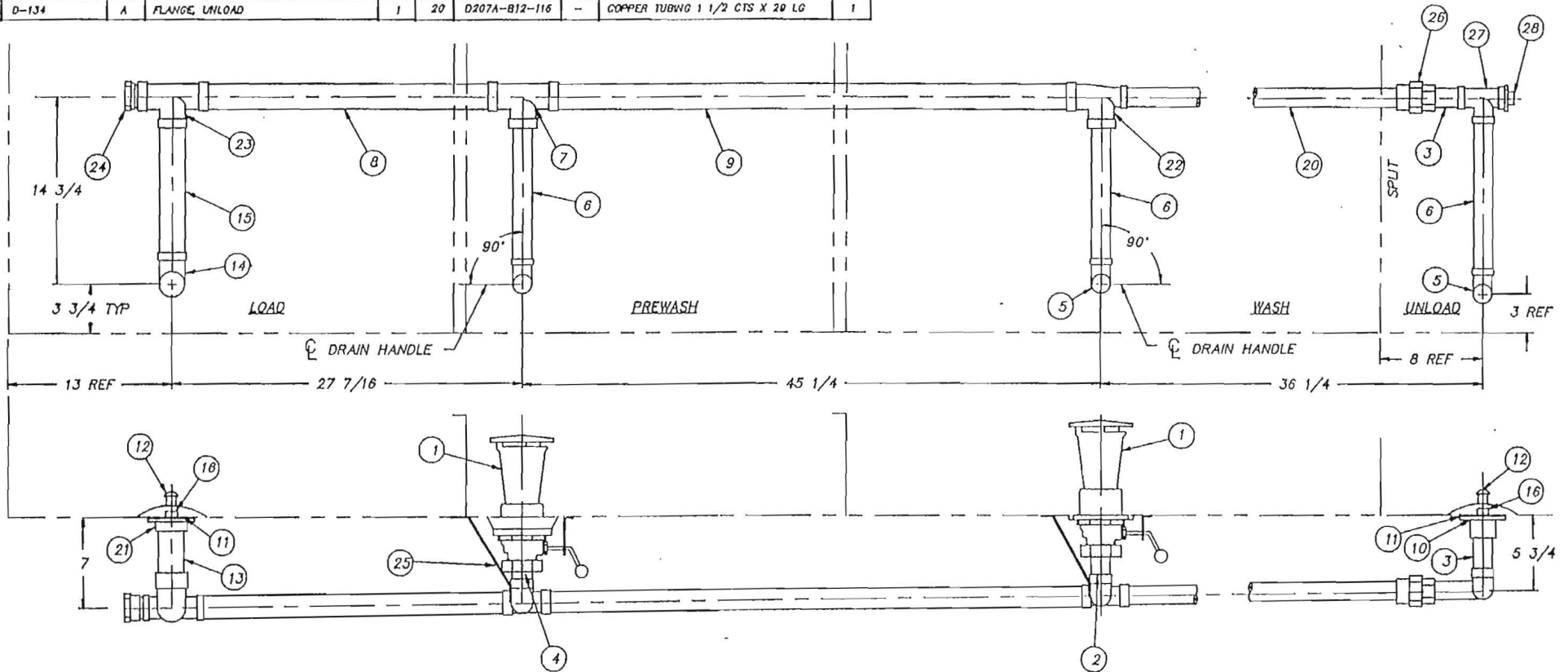
ITEM	DESCRIPTION	PART NO.	QTY.
1	STOP BAR	DWG. 1100-126	1
2	BEARING - FRONT	DWG. D2-141	1
3	BEARING - REAR	DWG. 1100-124	1
4	COLLAR	DWG. D2-839	2
5	BRACKET - STOP	DWG. 1100-125	1
6	BRACKET - MICROSWITCH MTG.	DWG. 1100-130	1
7	ACTUATOR - MICROSWITCH	DWG. 1100-131	1
8	SPRING	DWG. 1100-132	1
9	MICROSWITCH B2E6-2RN	D-2215A	1



L.H.SHOWN - R.H. OPPOSITE

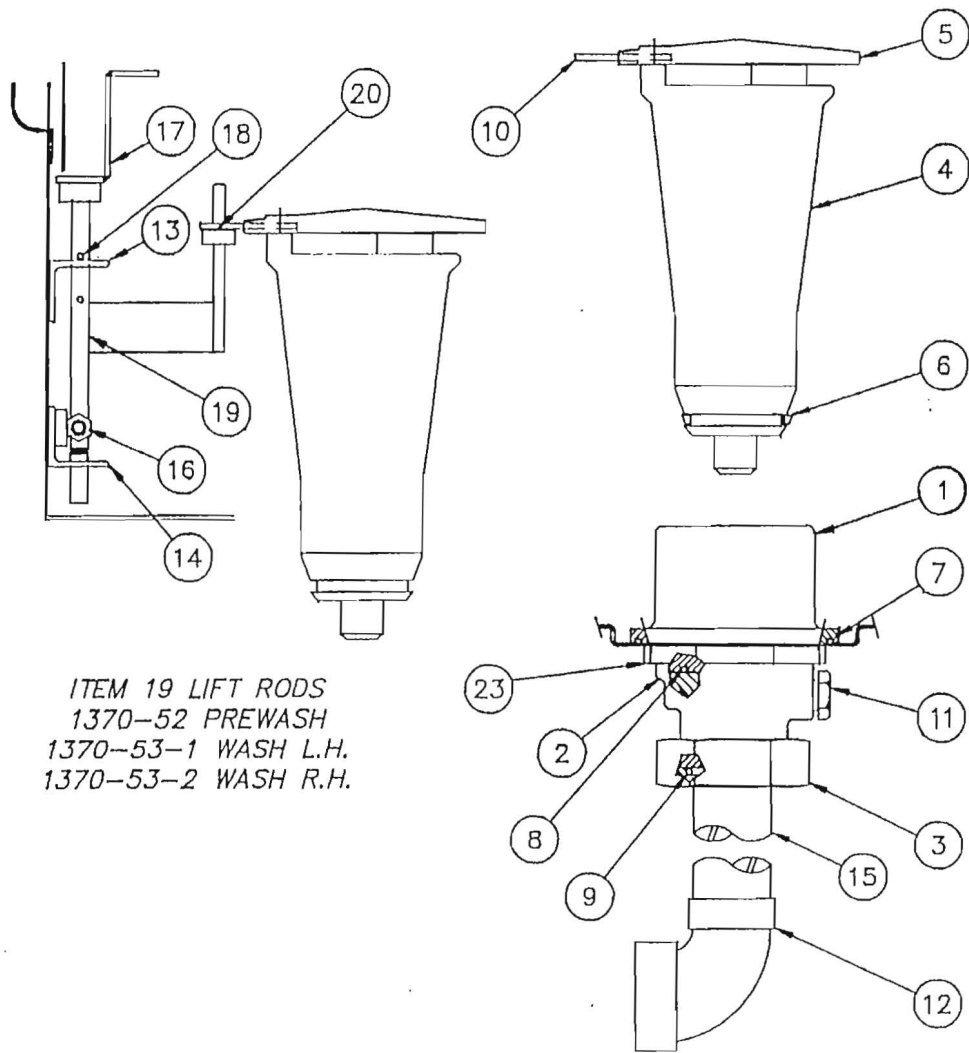
			TOLERANCES	TITLE	STOP BAR ASS'Y & LOCATION	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64			REQ'D	1100-123
			DECIMALS			SCALE	USED ON
			.XXX ± .005			1:4	RC-21 W
			.XX ± .01				DRWN/DATE
			ANGLES ±1/2°				RAF
			UNLESS OTHERWISE SPECIFIED				12.5.83
A	1378	2.14.86			 Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6906		
REV	ECN NO	DATE					
FILE: PARTS\1100-123							

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.	ITEM	PART NO.	SIZE	DESCRIPTION	QTY.	ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	D54-50	B	DRAIN ASSEMBLY	2	11	D-514	A	GASKET	2	21	D-135	A	FLANGE, LOAD (PATTERN P8-2)	1
2	D207A-B12-11	-	COPPER TUBING 1 1/2 CTS X 2 3/4 LG	1	12	D-108	A	STRAINER	2	22	DJ48A-JJ1JHJ	-	TEE DRAINAGE 2C X 1 1/2C X 1 1/2C	1
3	D207A-B12-16	-	COPPER TUBING 1 1/2 CTS X 4 LG	2	13	D207A-B16-20	-	COPPER TUBING 2 CTS X 4 7/8 LG	1	23	DJ48A-JJ3JJJ	-	TEE, DRAINAGE 2C	1
4	D207A-B12-9	-	COPPER TUBING 1 1/2 CTS X 2 1/4 LG	1	14	DJ16A-JJ-JJ	-	90° ELBOW 2"C	1	24	DJ17A-J1-J4	-	ADAPTER 2 FPS X 2 FTG	1
5	DJ16A-HJ-HJ	-	90° ELL 1 1/2 C	1	15	D207A-B16-45	-	COPPER TUBING 2 CTS X 11 1/4 LG	1	25	1105-37	A	BRACKET, PIPING SUPPORT	2
6	D207A-B12-48	-	COPPER TUBING 1 1/2 CTS X 12	1	16	D-90	A	CLASP STRAINER	2	26	DJ18A-HJ-HJ	-	UNION 1 1/2 C	1
7	DJ48A-JJ3JJJ	-	TEE DRAINAGE 2 C X 2 C X 1 1/2 C	1	17	-	-	-	-	27	DJ48A-HJ11HJ	-	TEE, DRAIN 1 1/2C X 1 1/2C X 1 1/2C	1
8	D207A-B16-100	-	COPPER TUBING 2 CTS X 23 LG	1	18	-	-	-	-	28	DJ28F-H2A	-	PIPE PLUG 1 1/2 IPS	1
9	D207A-B16-170	-	COPPER TUBING 2 CTS X 42 1/2 LG	1	19	DJ32A-HJ-HJ	-	90° ELBOW 1 1/2 C	1					
10	D-134	A	FLANGE, UNLOAD	1	20	D207A-B12-116	-	COPPER TUBING 1 1/2 CTS X 20 LG	1					



L.H. MACHINE ONLY

TOLERANCES			TITLE	DRAIN ASSEMBLY	NEXT ASSY	DWG. No.
FRACTIONS ±1/84			SINGLE CONNECTION		REQ'D	1462-70L
DECIMALS .XXX ± .005			NOTED		SCALE	USED ON
.XX ± .01			MAYL		1/8	DEFENDER 17
ANGLES ±1/2°			NOTED		ORVN/DATE	
UNLESS OTHERWISE SPECIFIED			Insinger Machine Company		CES	
REV	ECN NO	DATE	Philadelphia, PA 19135		8.9.96	
FILE: PARTS\1462-70			(215) 624-4800		FAX (215) 624-6868	



ITEM 19 LIFT RODS
 1370-52 PREWASH
 1370-53-1 WASH L.H.
 1370-53-2 WASH R.H.

ITEM	PART NO.	DESCRIPTION	QTY.
1	954-50A	UPPER BODY	1
2	954-50B	LOWER BODY	1
3	954-50C	NUT	1
4	954-50D	OVERFLOW TUBE	1
5	1370-3	SKIMMER CAP (MODIFIED)	1
6	D2-557	"V" SEAL	1
7	D2-548	O RING	1
8	D2-549	O RING	1
9	D2-550	O RING	2
10	1370-5	SKIMMER CAP TAB	1
11	1370-11	PLUG	1
12	D316A-H3-H1	90° ELL 1-1/2 C x 1-1/2 FPT	1
13	1370-6	UPPER BRACKET	1
14	1370-7	LOWER BRACKET	1
15	D-207A-B12-17	CU TUBE, 1-1/2 CTS x 4-1/4 LG	1
16	D2738	SPRING PLUNGER	1
17	1370-30	LIFT HANDLE	1
18	D311-8	ROLL PIN, 1/8 DIA	2
19	SEE TABLE	LIFT ROD	1
20	D2739	CLAMP COLLAR, 1/4 DIA	1
21	SK 3476	DECAL	1
22	1370-51	INSTALLATION NOTES	X
23	D305	DRAIN LOCKING NUT	1

REV	ECN NO	DATE
FILE: PARTS\1370-54		

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

TITLE DRAIN ASSY - SELF CLOSING
 DEFENDER STEAM HEAT

MATL NOTED

 **Insinger**
 Machine Company

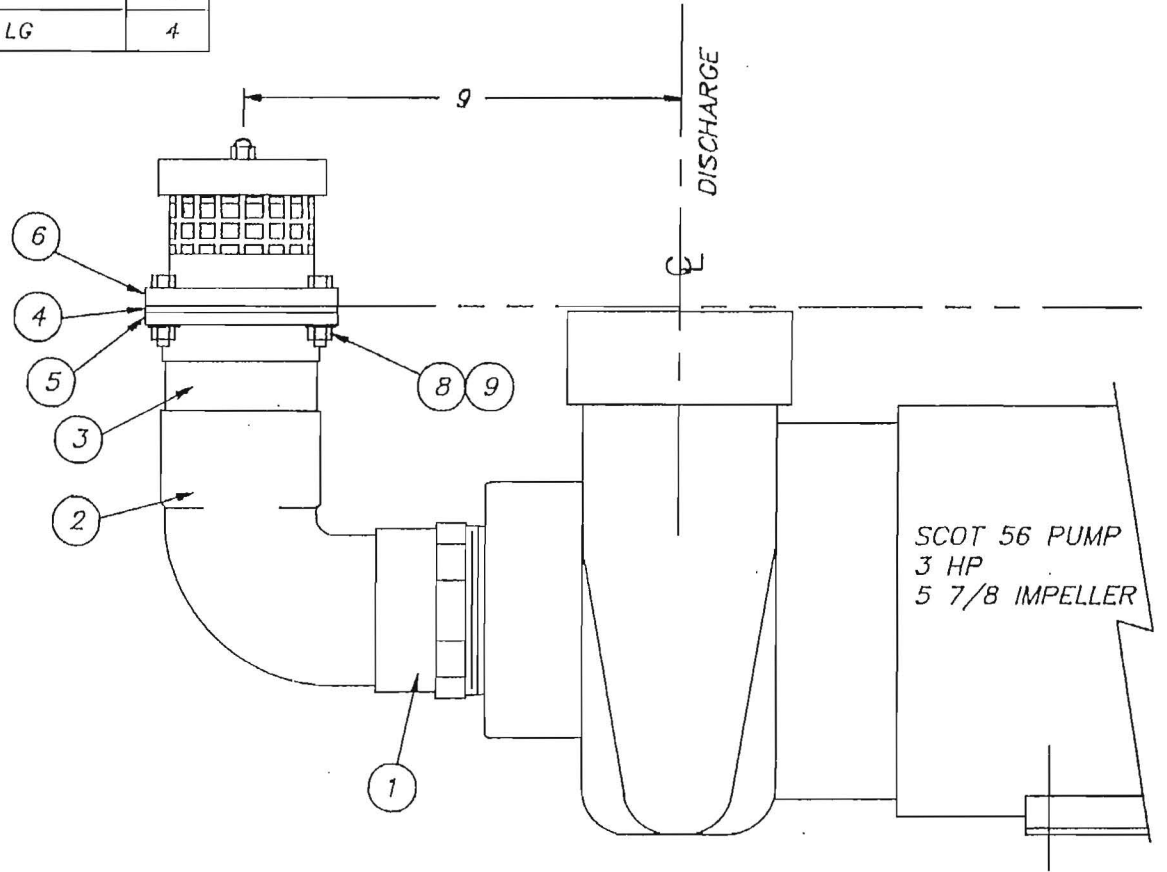
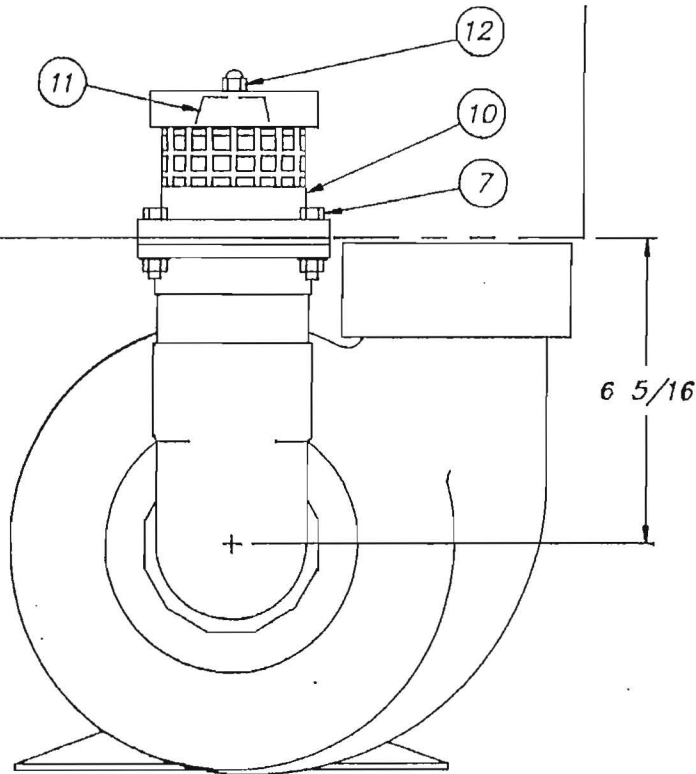
Philadelphia, PA 19135
 (215) 624-4800
 FAX (215) 624-6966

NEXT ASSY
 REQ'D 2
 SCALE
 1=4

DWG. NO.
 1370-54
 USED ON
 DEFENDER
 DRWN/DATE
 CES
 1.3.97


ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	D317A-L3-L2	-	ADAPTER 3 MIPS X 3 C	1
2	D316A-L3-L4	-	90° STREET ELBOW 3 CTS X 3 CFTG	1
3	D207A-K24	-	COPPER TUBING 3 CTS X 3 1/4 LG	1
4	D-530	A	GASKET	1
5	1104-68	A	FLANGE, TANK	1
6	D2-135	A	FLANGE, STRAINER	1
7	D309C-JC-12	-	HEX HD SCR 3/8-16 X 1 1/2 LG	4

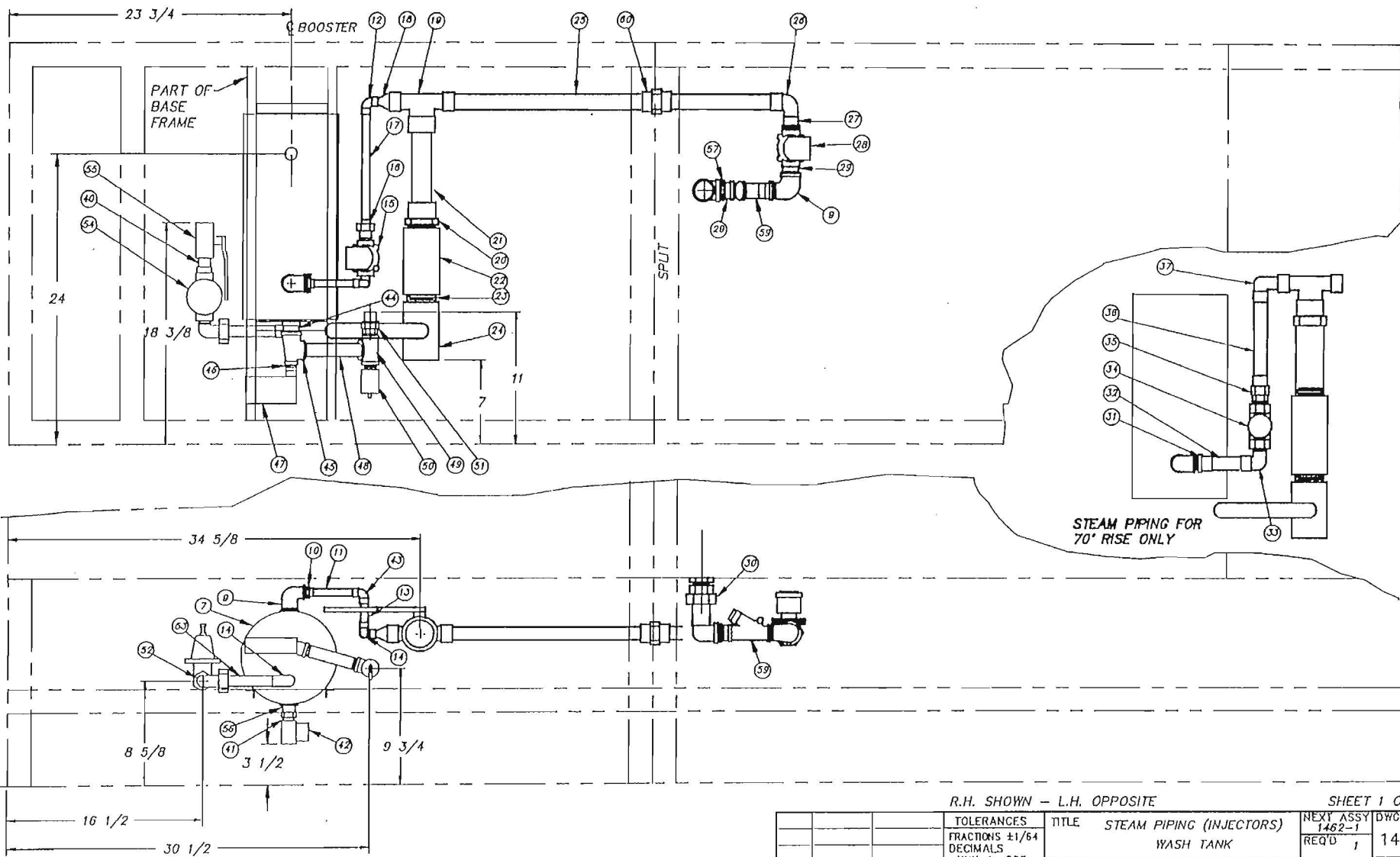
ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
8	D313A-1J	-	COPPER WASHER 3/8	4
9	D312C-JC-5	-	LOCKNUT 3/8-16	4
10	D2-541	A	STRAINER	1
11	D3-825	A	CLASP	1
12	D312C-EF-8	-	ALL-METAL LOCKNUT #10-32 S/S	1



SCOT 56 PUMP
3 HP
5 7/8 IMPELLER

NOTE: SAME AS #1104-69

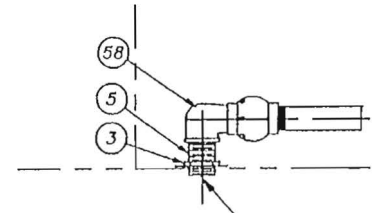
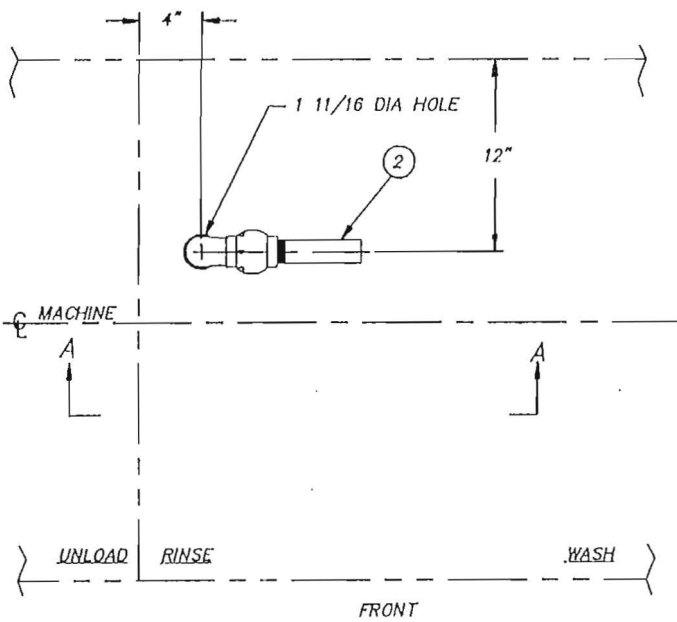
			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS $\pm 1/64$	SUCTION LINE ASSY		1462-69
			DECIMALS	SCOT PUMP	REQ'D NOTED	
			.XXX $\pm .005$	MAT'L	SCALE	USED ON
			.XX $\pm .01$	NOTED	1/4	DEFENDER 17
			ANGLES $\pm 1/2^\circ$			DRWN/DATE
			UNLESS OTHERWISE SPECIFIED			CES
REV	ECN NO	DATE			Philadelphia, PA 19135	9.6.96
				Machine Company	(215) 624-4800	
					FAX (215) 624-6966	



R.H. SHOWN - L.H. OPPOSITE

SHEET 1 OF 2

TOLERANCES		TITLE	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		STEAM PIPING (INJECTORS)	1462-1	1462-72
DECIMALS		WASH TANK	REQ'D	1
.XXX ± .005		MATL	SCALE	USED ON
.XX ± .01		AS NOTED	1=B	DEFENDER
ANGLES ±1/2°		INSINGER		DRWN/DATE
UNLESS OTHERWISE SPECIFIED		Machine Company		CES
REV	ECN NO	DATE	Philadelphia, PA 19135	2.26.97
FILE: PARTS\1462-72			(215) 624-4800	
			FAX (215) 624-8008	



VIEW A - A

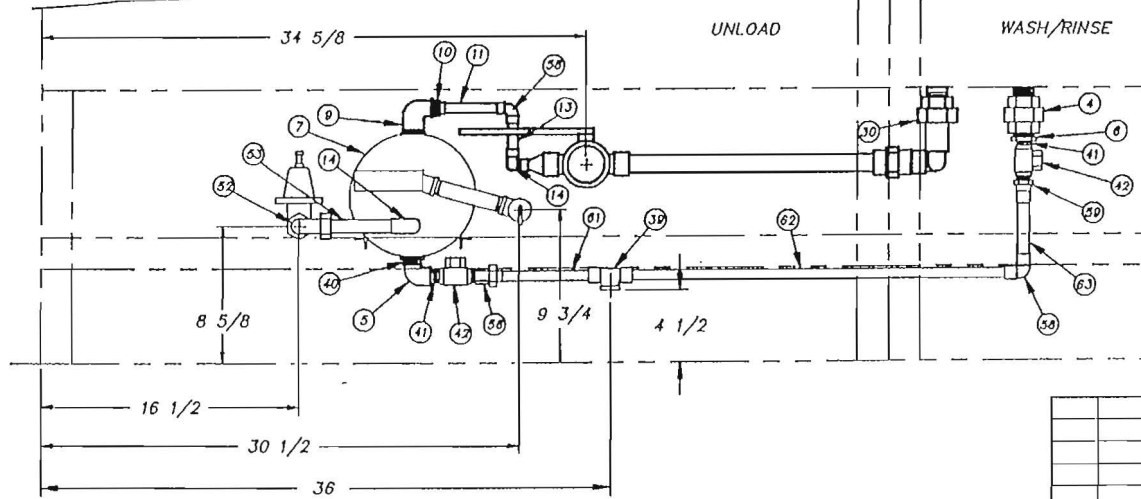
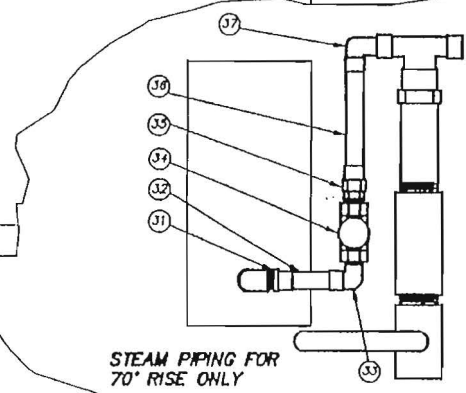
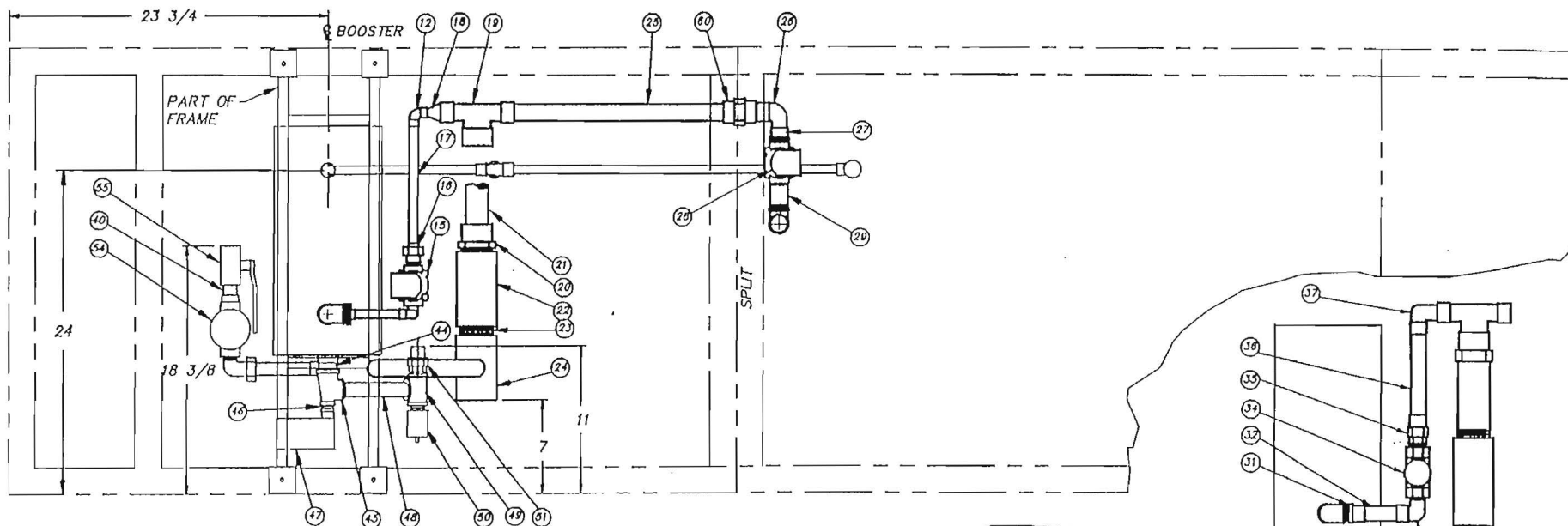
R.H. SHOWN - L.H. OPPOSITE

ITEM	PART NO.	DESCRIPTION	QTY.
31	DJ17A-F3-F2	ADAPTER 1" C X 1" MIPS	1
32	D207A-B8-16	COPPER TUBING 1" IPS X 4	1
33	DJ16A-F3-F2	90° ELBOW 1" C X 1" MIPS	1
34	--	SAME AS ITEM #28	1
35	DJ18A-F3-F2	UNION 1" C X 1" MIPS	1
36	D207A-B8-31	COPPER TUBING 1" CTS X 7 3/4	1
37	DJ16A-F4-F3	90° ELBOW 1" FTG X 1" C	1
38	DJ23A-G4-F3	FLUSH BUSH 1 1/4 FTG X 1" C	1
39	--	--	--
40	DJ14F-EC-00	NIPPLE CLOSE 3/4 IPS	1
41	DJ14F-DC-00	NIPPLE CLOSE 1/2 IPS	1
42	D2102A	STEAM TRAP 1/2 IPS	1
43	DJ16A-E3-E3	90° ELBOW 3/4 C	1
44	DJ14F-FC-00	NIPPLE CLOSE 1" IPS	1
45	DJ20F-F1D1E1	TEE 1" FIPS X 1/2 FIPS X 3/4 FIPS	1
46	DJ22F-D2-C1	HEX RED 1/2 MIPS X 3/8 FIPS	1
47	D2398	THERMOSTAT (SEE NOTE #2)	1
48	DJ14A-ES-43	NIPPLE 3/4 IPS X 5 3/8	1
49	DJ20F-E1E1E1	TEE 3/4 IPS	1
50	D2507	PRESSURE RELIEF VALVE 3/4 IPS	1
51	DJ18A-E3-E2	UNION 3/4 C X 3/4 MIPS	1
52	DJ19A-E3-E2	90° UNION ELL 3/4 C X 3/4 MIPS	1
53	D207A-B6-24	COPPER TUBING 3/4 CTS X 6	1
54	D1012	PRESSURE REG & STRAINER 3/4 IPS	1
55	D2340	BALL VALVE 3/4 IPS	1
56	DJ22F-E2-D1	HEX RED 3/4 MIPS X 1/2 FIPS	1
57	DJ22F-G2-F1	HEX RED 1 1/4 MIPS X 1" FIPS	1
58	DJ16A-G1-G2	90° STREET ELL 1 1/4 IPS	1
59	D2291	CHECK VALVE 1" IPS	1
60	DJ18A-F3-F3	UNION 1" C	1

NOTE :
 1. (ITEM #7) ADD SUFFIX "NM" FOR NON-MAGNETIC MACHINES.
 2. (ITEM #47) USE PART NO. D2396 AS STANDARD AND PART NO. D2301 WHEN LOW TEMP. CUT-OFF IS SPECIFIED.


ITEM	PART NO.	DESCRIPTION	QTY.
1			
2	D-2456	STEAM INJECTOR - 1 1/4 IPS	1
3	DJ28F-C	LOCKNUT 1 1/4 IPS	1
4			
5	DJ14F-GA-16	NIPPLE 1 1/4 IPS X 2 ALL THD	1
6			
7	D 2100	STEAM BOOSTER (1-2) (SEE NOTE #1)	1
8	--	--	--
9	DJ16F-F2-F1	90° STREET ELL 1" MIPS X 1" FIPS	2
10	DJ17A-E3-F2	ADAPTER 3/4 C X 1" MIPS	1
11	D207A-B6-17	COPPER TUBING 3/4 CTS X 4 1/4	1
12	DJ16A-E4-E3	90° STREET ELL 3/4 FTG X 3/4 C	1
13	D207A-B6-10	COPPER TUBING 3/4 CTS X 2 1/2	1
14	DJ16A-E3-E2	90° ELBOW 3/4 C X 3/4 MIPS	2
15	D2595	SOLENOID VALVE 3/4 IPS	1
16	DJ18F-E3-E2	UNION 3/4 C X 3/4 MIPS	1
17	D207A-B6-42	COPPER TUBING 3/4 CTS X 10 1/2	1
18	DJ23A-F4-E3	RED. BUSHING 1" FTG X 3/4 C	1
19	DJ20A-F3F3H3	TEE 1" C X 1" C X 1 1/2" C	1
20	DJ17A-H3H2	ADAPTER 1 1/2 C X 1 1/2 MIPS	1
21	D201A-B12-36	COPPER TUBING 1 1/2 CTS X 9	1
22	D2848	"Y" STRAINER 1 1/2 IPS	1
23	DJ14F-HC-00	NIPPLE CLOSE 1 1/2 IPS	1
24	D2849	BALL VALVE 1 1/2 IPS	1
25	D207A-K8-68	COPPER TUBING 1" CTS X 17	1
26	DJ16A-F3-F4	90° ELBOW 1" C X 1" CFTG	1
27	DJ17A-F3-F2	ADAPTER 1" C X 1" MIPS	1
28	D2772	SOLENOID VALVE 1" IPS	1
29	DJ14F-FS-B	NIPPLE 1" IPS X 1" LG	2
30	DJ19F-G1-G1	90° UNION ELL 1 1/4 IPS	1

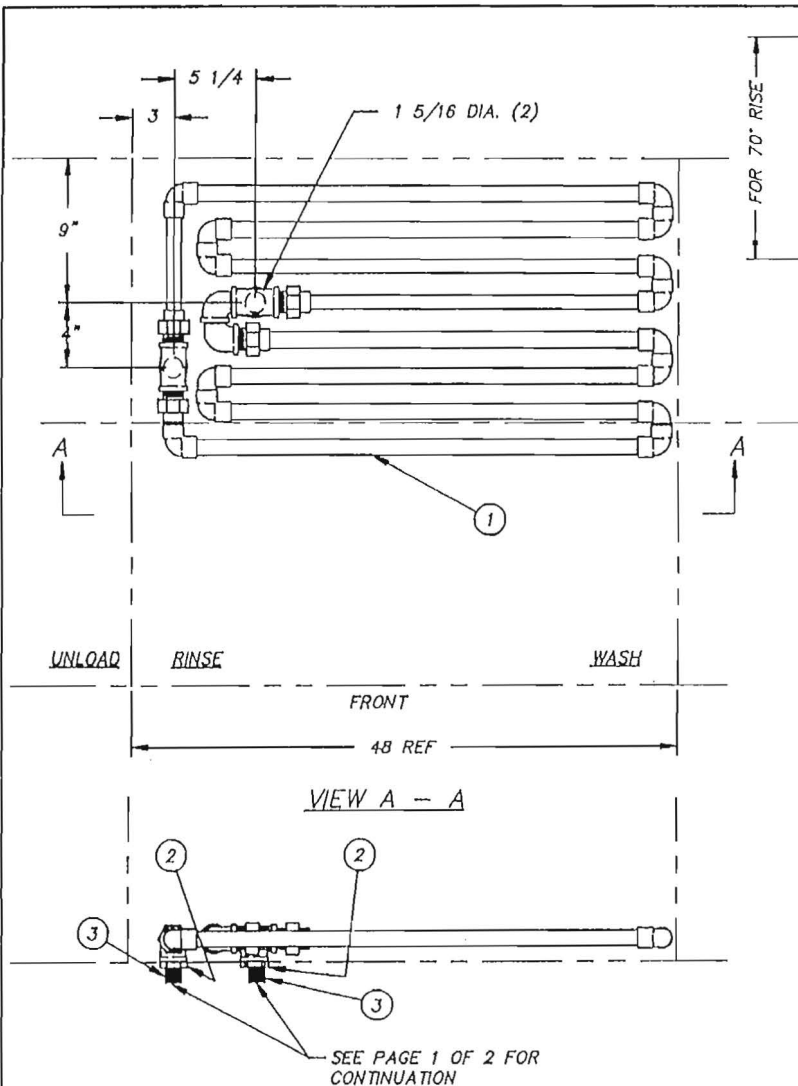
TOLERANCES		TITLE	STEAM PIPING (INJECTORS)	NEXT ASSY	DWG. NO.
FRACTIONS ±1/64		WASH TANK		1462-1	1462-72
DECIMALS		MAT'L	AS NOTED	SCALE	USED ON
.XXX ± .005				1=B	DEFENDER
.XX ± .01				DRWN/DATE	
ANGLES ±1/2°				CES	
UNLESS OTHERWISE SPECIFIED		Insinger Machine Company		2.26.97	
REV	ECN NO	DATE	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-8868		
FILE: PARTS\1462-72					



R.H. SHOWN - L.H. OPPOSITE

SHEET 1 OF 2

			TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
			FRACTIONS ±1/64	STEAM PIPING (COILS)	1462-1	1462-86
			DECIMALS	WASH/RINSE TANK	REQ'D	1
			.XXX ± .005	MATL	SCALE	USED ON
			.XX ± .01	AS NOTED	1=8	DEFENDER
			ANGLES ±1/2°	 Insinger Machine Company	DRWN/DATE	
			UNLESS OTHERWISE SPECIFIED		CES	
REV			ECN NO		DATE	
FILE: PARTS\1462-86			Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6988			



ITEM	PART NO.	DESCRIPTION	QTY.
31	D317A-F3-F2	ADAPTER 1" C X 1" MIPS	1
32	D207A-B8-16	COPPER TUBING 1" IPS X 4	1
33	D316A-F3-F2	90° ELBOW 1" C X 1" MIPS	1
34	-	SAME AS ITEM #28	1
35	D318A-F3-F2	UNION 1" C X 1" MIPS	1
36	D207A-B8-31	COPPER TUBING 1" CTS X 7 3/4	1
37	D316A-F4-F3	90° ELBOW 1" FTC X 1" C	1
38	-	-	-
39	DJ320A-E3DJE1	TEE 3/4 C X 1/2 C X 3/4 FIPS	1
40	D314F-EC-00	NIPPLE CLOSE 3/4 IPS	2
41	D314F-DC-00	NIPPLE CLOSE 1/2 IPS	2
42	D2102A	STEAM TRAP 1/2 IPS	2
43	D316A-D3-D3	90° ELBOW 1/2 C	1
44	D314F-FC-00	NIPPLE CLOSE 1" IPS	1
45	DJ320F-F1D1E1	TEE 1" FIPS X 1/2 FIPS X 3/4 FIPS	1
46	DJ322F-D2-C1	HEX RED 1/2 MIPS X 3/8 FIPS	1
47	D2396	THERMOSTAT (SEE NOTE #2)	1
48	D314A-E5-43	NIPPLE 3/4 IPS X 5 3/8	1
49	DJ320F-E1E1E1	TEE 3/4 IPS	1
50	D2507	PRESSURE RELIEF VALVE 3/4 IPS	1
51	-	-	-
52	D319A-E3-E2	90° UNION ELL 3/4 C X 3/4 MIPS	1
53	D207A-B6-24	COPPER TUBING 3/4 CTS X 6	1
54	D1012	PRESSURE REG & STRAINER 3/4 IPS	1
55	D2340	BALL VALVE 3/4 IPS	1
56	D318F-D3-D2	UNION 1/2 C X 1/2 MIPS	1
57	-	-	-
58	D316A-E3-E3	90° ELBOW 3/4 C X 3/4 C	2
59	D317A-E3-D2	ADAPTER 3/4 C X 1/2 MIPS	1
60	D318A-F3-F3	UNION 1" C	1
61	D207A-B4-25	COPPER TUBING 1/2 CTS X 6 1/4	1
62	D207A-B6-102	COPPER TUBING 3/4 CTS X 25 1/2	1
63	D207A-B6-19	COPPER TUBING 3/4 CTS X 4 3/4	1

ITEM	PART NO.	DESCRIPTION	QTY.
1	9019-02	STEAM COIL - RINSE (MASTER)	1
2	DJ26F-F1	LOCKNUT 1" IPS	2
3	D314F-FA-16	NIPPLE 1" IPS X 2" ALL THD.	2
4	D318F-F1-F1	UNION 1" FIPS X 1" FIPS	1
5	DJ16F-E2-E1	90° RED ELL 3/4 FIPS X 1/2 FIPS	1
6	DJ22F-F2-D1	HEX RED BUSH 1" MIPS X 1/2 FIPS	1
7	D 2100	STEAM BOOSTER (1-2) (SEE NOTE #1)	1
8	-	-	1
9	D316F-F2-F1	90° STREET ELL 1" MIPS X 1" FIPS	1
10	D317A-E3-F2	ADAPTER 3/4 C X 1" MIPS	1
11	D207A-B6-17	COPPER TUBING 3/4 CTS X 4 1/4	1
12	D316A-E4-E3	90° STREET ELL 3/4 FTG X 3/4 C	1
13	D207A-B6-10	COPPER TUBING 3/4 CTS X 2 1/2	1
14	D316A-E3-E2	90° ELBOW 3/4 C X 3/4 MIPS	1
15	D2595	SOLENOID VALVE 3/4 IPS	1
16	D318F-E3-E2	UNION 3/4 C X 3/4 MIPS	2
17	D207A-B6-42	COPPER TUBING 3/4 CTS X 10 1/2	1
18	DJ323A-F4-E3	RED. BUSHING 1" FTG X 3/4 C	1
19	DJ320A-F3F3H3	TEE 1" C X 1" C X 1 1/2" C	1
20	D317A-H3H2	ADAPTER 1 1/2 C X 1 1/2 MIPS	1
21	D201A-B12-36	COPPER TUBING 1 1/2 CTS X 9	1
22	D2848	"Y" STRAINER 1 1/2 IPS	1
23	D314F-HC-00	NIPPLE CLOSE 1 1/2 IPS	1
24	D2849	BALL VALVE 1 1/2 IPS	1
25	D207A-K8-68	COPPER TUBING 1" CTS X 17	1
26	D316A-F3-F4	90° ELBOW 1" C X 1" CFTG	1
27	D317A-F3-F2	ADAPTER 1" C X 1" MIPS	1
28	D2772	SOLENOID VALVE 1" IPS	1
29	D314F-FS-15	NIPPLE 1" IPS X 2	1
30	D319F-F1-F1	90° UNION ELL 1" IPS	1

NOTE:
 1. (ITEM #7) ADD SUFFIX "NM" FOR NON-MAGNETIC MACHINES.
 2. (ITEM #47) USE PART NO. D2396 AS STANDARD AND PART NO. D2301 WHEN LOW TEMP. CUT-OFF IS SPECIFIED.

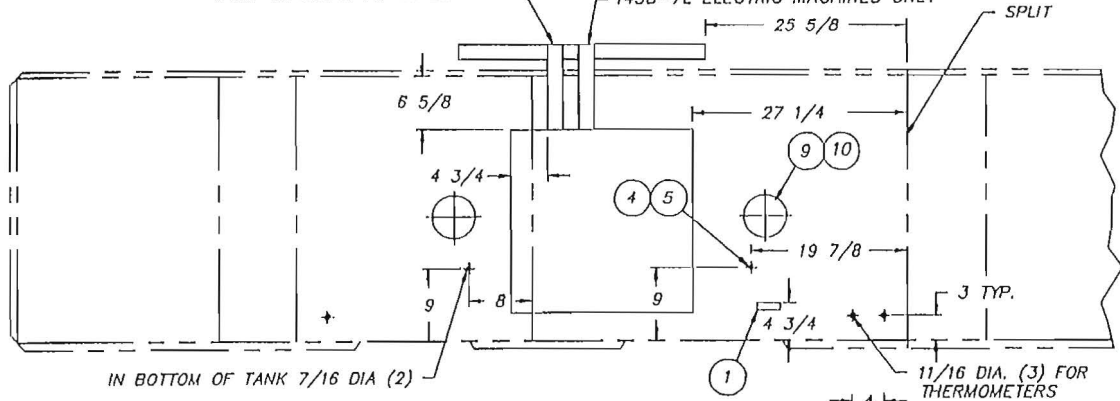
REV	ECN NO	DATE
FILE: PARTS\1462-86		

TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
FRACTIONS ±1/84 DECIMALS .XXX ±.005 .XX ±.01 ANGLES ±1/2' UNLESS OTHERWISE SPECIFIED	STEAM PIPING (COILS) WASH/RINSE TANK	1462-1 REQD 1	1462-86
	MATL AS NOTED	SCALE 1=8	USED ON DEFENDER
	INSINGER Machine Company	Philadelpho, PA 19135 (215) 824-4800 FAX (215) 824-8908	DRWN/DATE CES 2.20.97

R.H. SHOWN - L.H. OPPOSITE SHEET 2 OF 2

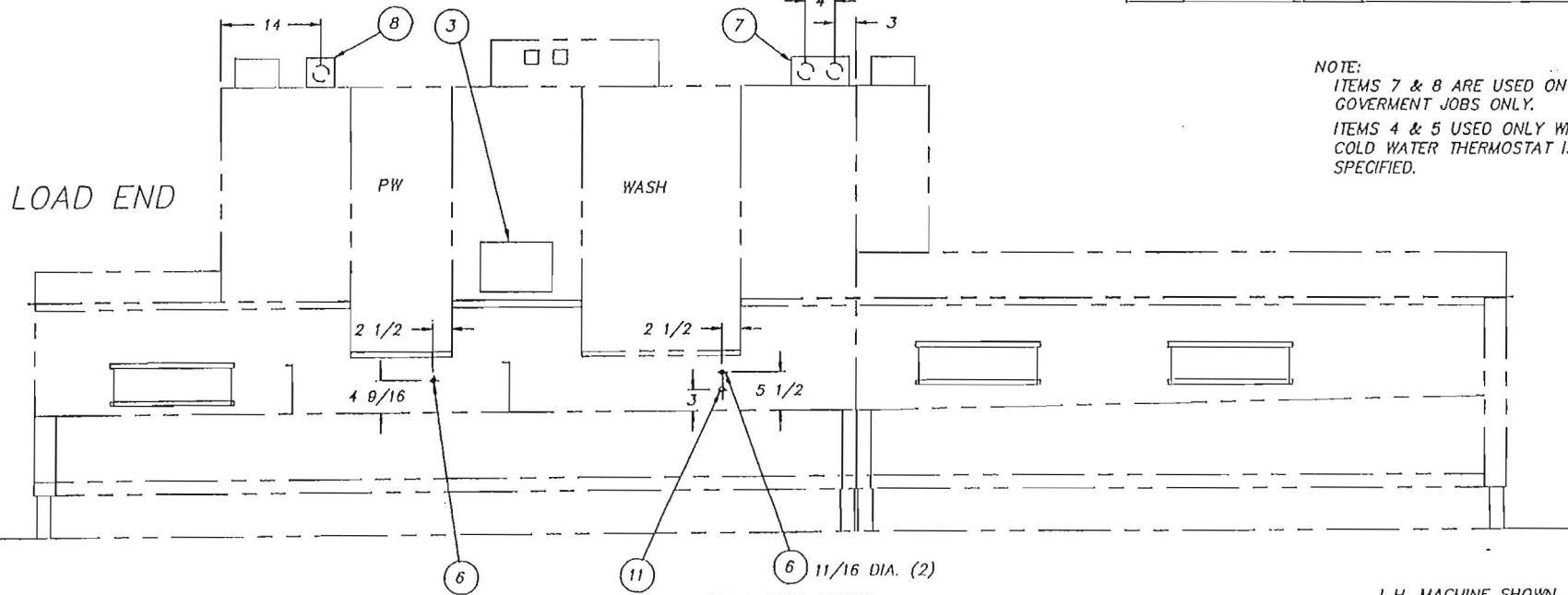
143B-6L STEAM MACHINES ONLY

143B-7L ELECTRIC MACHINES ONLY



ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1372-15	A	BRACKET, TEMP. GAUGE BULB	1
2	D2470-6	-	DETERGENT METER (IF SPECIFIED)	1
3	D2470-45 D2470-47	-	DETERGENT DISPENSOR (IF SPECIFIED)	1
4	D2599	-	DIODE JUNCTION (SEE NOTE)	1
5	D337	-	SEAL NUT (SEE NOTE)	1
6	1089-189	A	LIQUID LEVEL FLOAT	2
7	D2-755A	A	THERMOMETER GUARD-DOUBLE (SEE NOTE)	1
8	D2-754A	A	THERMOMETER GUARD-SINGLE (SEE NOTE)	1
9	DE9-217	-	LAMP 12V-25W	2
10	1454-1	B	HOOD TOP LIGHT ASSEMBLY	2
11	D2470-23	A	PLUG (DETERGENT PROBE)	1

NOTE:
 ITEMS 7 & 8 ARE USED ON
 GOVERNMENT JOBS ONLY.
 ITEMS 4 & 5 USED ONLY WHEN
 COLD WATER THERMOSTAT IS
 SPECIFIED.



7/8 DIA FOR DETERG. PROBE
 (USE ITEM 11 IF DETERG.
 DISPENSER NOT SPECIFIED)

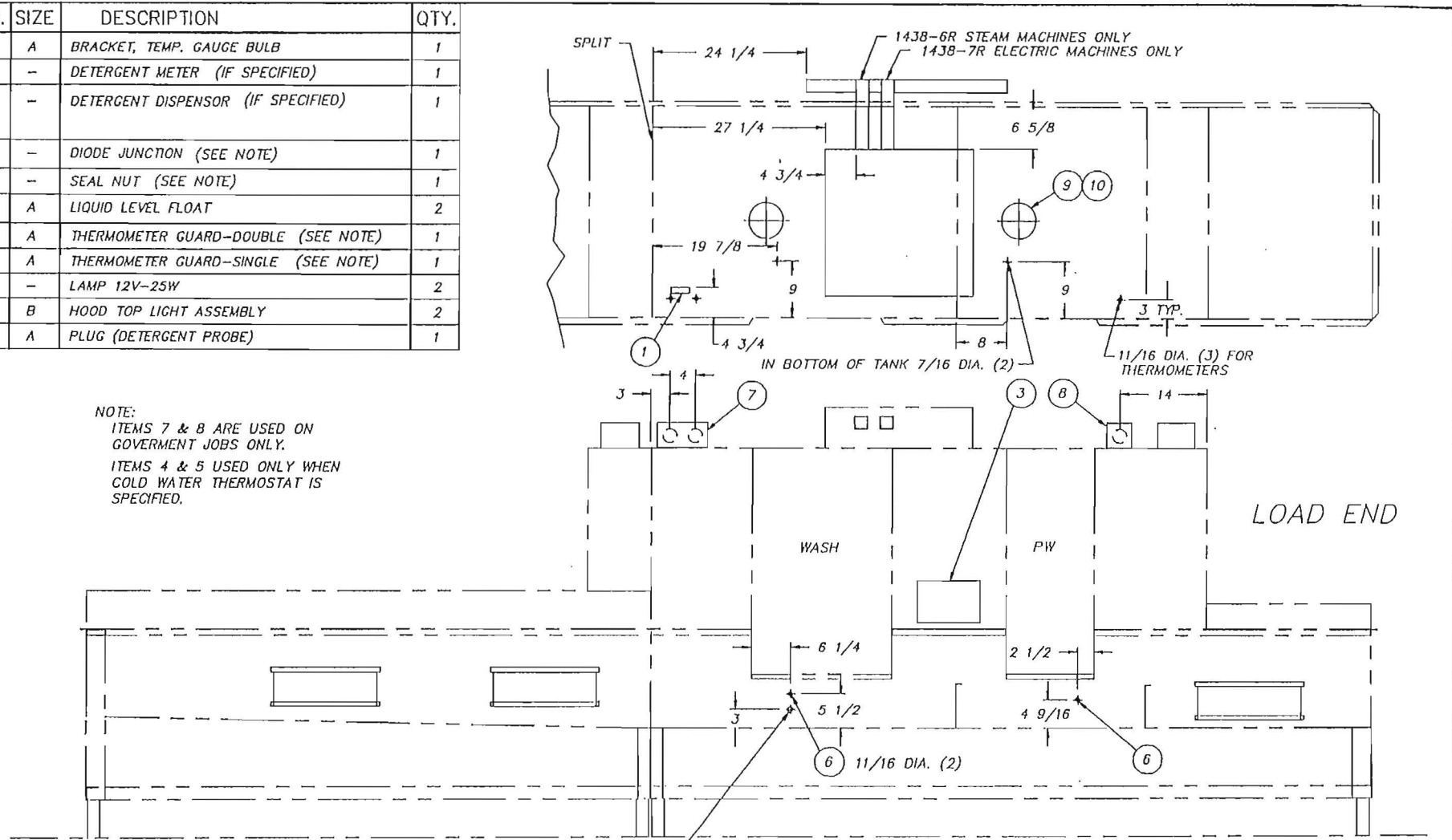
FRONT VIEW OF MACHINE

L.H. MACHINE SHOWN SHEET 1 OF 2

TOLERANCES		TITLE ACCESSORY LOCATIONS		NEXT ASSY	DWG. NO.
FRACTIONS ±1/64				REQ'D	1462-78
DECIMALS				SCALE	USED ON
.XXX ± .005		MATERIAL NOTED		1=16	DEFENDER
.XX ± .01				DRWN/DATE	
ANGLES ±1/2°				PC	12.27.96
UNLESS OTHERWISE SPECIFIED		Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966			
REV	ECN NO	DATE	FILE: PARTS\1462-78		

ITEM	PART NO.	SIZE	DESCRIPTION	QTY.
1	1372-15	A	BRACKET, TEMP. GAUGE BULB	1
2	D2470-6	-	DETERGENT METER (IF SPECIFIED)	1
3	D2470-45 D2470-47	-	DETERGENT DISPENSER (IF SPECIFIED)	1
4	D2599	-	DIODE JUNCTION (SEE NOTE)	1
5	DJ37	-	SEAL NUT (SEE NOTE)	1
6	1089-189	A	LIQUID LEVEL FLOAT	2
7	D2-755A	A	THERMOMETER GUARD-DOUBLE (SEE NOTE)	1
8	D2-754A	A	THERMOMETER GUARD-SINGLE (SEE NOTE)	1
9	DE9-217	-	LAMP 12V-25W	2
10	1454-1	B	HOOD TOP LIGHT ASSEMBLY	2
11	D2470-23	A	PLUG (DETERGENT PROBE)	1

NOTE:
 ITEMS 7 & 8 ARE USED ON
 GOVERNMENT JOBS ONLY.
 ITEMS 4 & 5 USED ONLY WHEN
 COLD WATER THERMOSTAT IS
 SPECIFIED.



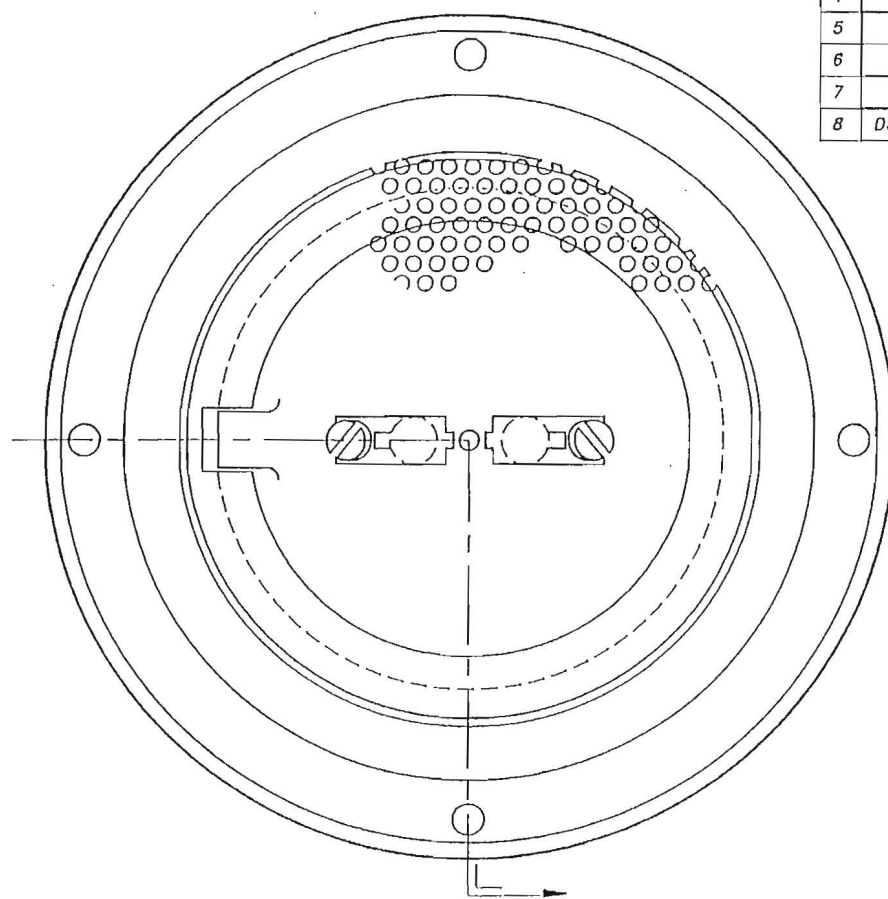
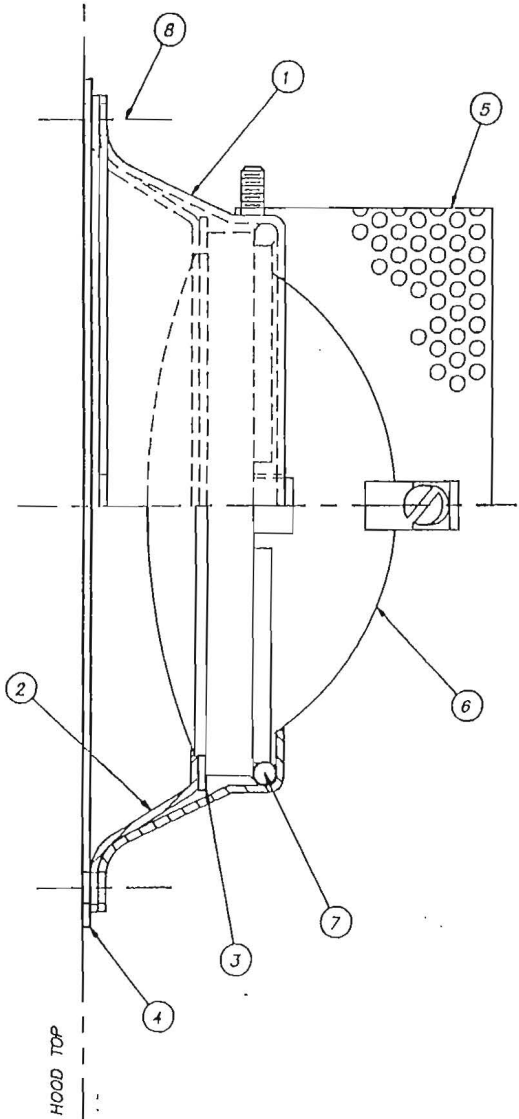
FRONT VIEW OF MACHINE

(USE ITEM 11 IF DETERG.
 DISPENSER NOT SPECIFIED)
 7/8 DIA. FOR DETERGENT
 PROBE

REV		ECN NO	DATE	TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
FILE: PARTS\1462-78				FRACTIONS ±1/64	ACCESSORY LOCATIONS	REQ'D 1	1462-78
				DECIMALS	NOTED	SCALE	USED ON
				.XXX ± .005		1=16	DEFENDER
				.XX ± .01			DRWN/DATE
				ANGLES ±1/2°			PG
				UNLESS OTHERWISE SPECIFIED	Insinger Machine Company	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6866	12.27.96

R.H. MACHINE SHOWN

SHEET 2 OF 2




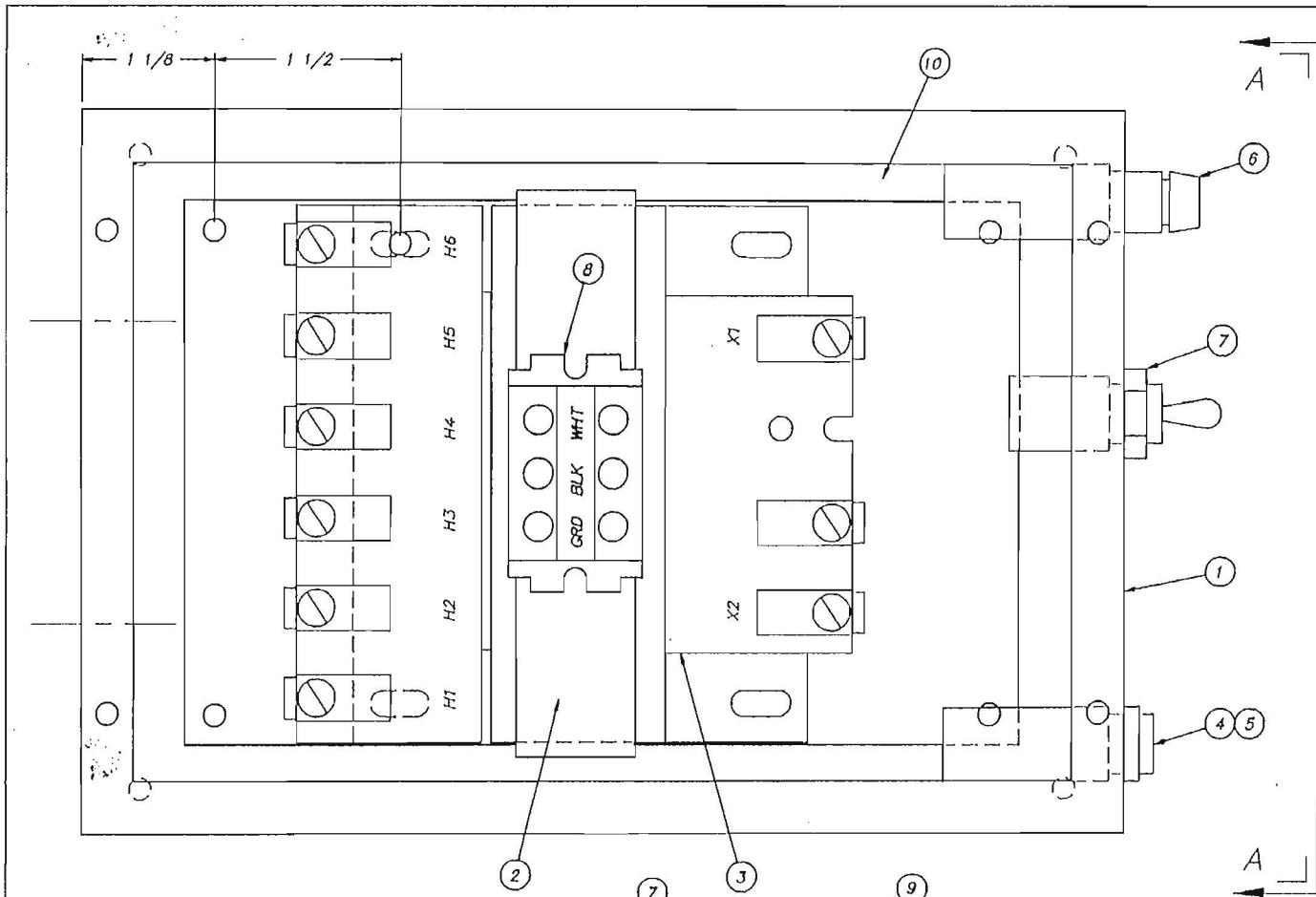
ITEM	PART NO.	DESCRIPTION	QTY.
1	1454-2	UPPER HOUSING	1
2	1454-3	LOWER HOUSING	1
3	1454-4	GASKET-LIGHT BULB	1
4	1454-5	GASKET-HOOD TOP	1
5	1454-8	COVER	1
6	DE9-217	#4446 EMERGENCY LAMP 12V-25W	1
7	D3-547	O-RING, 4 1/8 ID X 4 1/2 OD	1
8	D309C-EF-4G	#10-32 X 1/2 WELDSTUD	4

NOTES:

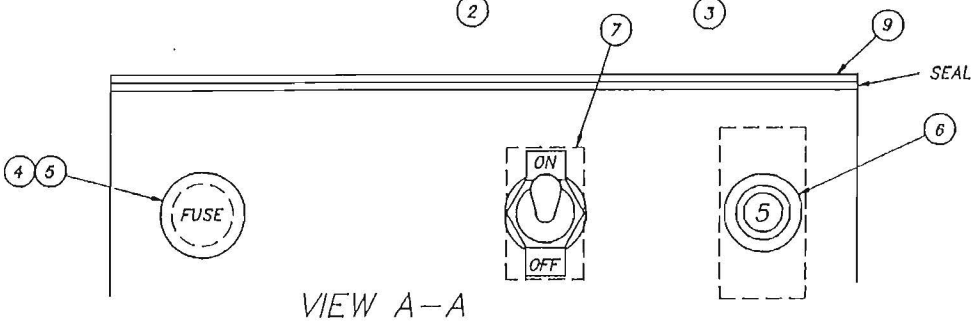
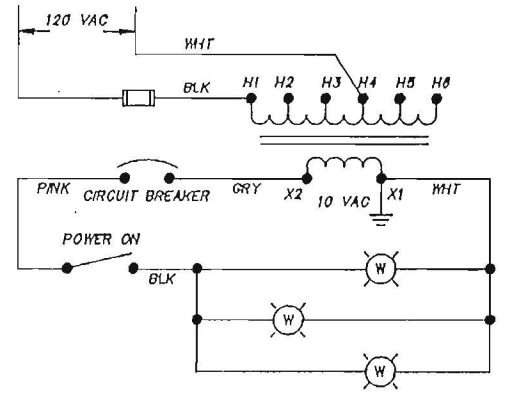
- 1) CUT 5 1/4 TO 5 1/2 DIA HOLE IN HOOD TOP AT EACH LAMP LOCATION
- 2) MASTER REQUIRES 3 LAMP ASSEMBLIES AS SHOWN. ONLY 1 ELECTRICAL CONTROL BOX IS REQUIRED.
- 3) STUD ITEM #5 TO ITEM #1
- 4) PUNCH ITEM #5 FOR 1/2" ELEC CONDUIT

SHEET 1 OF 2

		TOLERANCES	TITLE	NEXT ASSY	DWG. NO.
		FRACTIONS ±1/64	ASSEMBLY-HOOD TOP LIGHT	REQ'D 1	1454-1
		DECIMALS	MECHANICAL COMPONENTS		
		.XXX ± .005	MAT'L	SCALE	USED ON
		.XX ± .01	SEE ABOVE	1=1	MASTER/CLIP
		ANGLES ±1/2°			
		UNLESS OTHERWISE SPECIFIED			
REV	ECN NO.	DATE	 Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-6888		DRWN/DATE
					GES
FILE: PARTS\1454-1					2.14.98



ITEM	PART NO.	DESCRIPTION	QTY.
1	1454-6	ELEC. ENCLOSURE	1
2	1454-7	MOUNTING STRAP	1
3	DE6-9	TRANSFORMER (150VA, 24VAC)	1
4	DE9-219	FUSEHOLDER HKP-HH	1
5	DE9-218	FUSE MDL-3.2	1
6	DE9-43	CIRCUIT BREAKER, 5A	1
7	DE5-8	TOGGLE SWITCH (4X846)	1
8	DE3-9	TERMINAL BLK ASSY	1
9	1454-8	TOP-ELEC. ENCL.	1
10	1454-10	PANEL-ELEC. ENCL.	1



VIEW A-A

SHEET 2 OF 2

			TOLERANCES		TITLE		NEXT ASSY		DWG. NO.	
			FRACTIONS ±1/8		ASSEMBLY-HOOD TOP LIGHT		REQ'D		1454-1	
			DECIMALS		ELECTRICAL COMPONENTS		SCALE		USED ON	
			.XXX ± .005		SEE ABOVE		1=1		MASTER/CUP	
			.XX ± .01						DRWN/DATE	
			ANGLES ±1/2°						CES	
			UNLESS OTHERWISE SPECIFIED						1.10.98	
REV	ECN NO	DATE	FILE: PARTS\1454-1		Insinger Machine Company		Philadelphia, PA 19135 (215) 824-4800 FAX (215) 824-8808			