



LVO Manufacturing Inc.

808 N. 2nd Avenue E., P.O. Box 188
Rock Rapids, IA 51246
www.lvomfg.com

(712) 472-3734
1-800-346-5749 Fax (712) 472-2203

WARRANTY

LVO Manufacturing Inc. warrants equipment manufactured by it to be free from defects in material and workmanship for a period of one (1) year from date of delivery except as noted below.

LVO will **not** be held responsible for damage or unsatisfactory performance due to negligence, accident, alteration, unauthorized repair, improper installation or startup (see owner's manual), improper application, or improper maintenance (see owner's manual).

Parts found, on factory inspection, to be defective in workmanship or materials during the warranty period will be replaced (parts and labor, not overtime), provided the Buyer returns the defective parts to LVO Manufacturing Inc. within 30 days, transportation prepaid. LVO Manufacturing Inc. will pay UPS 2nd Day Air shipping charges for parts (with the exception of excessively large or heavy items) covered on warranty if the machine is not operational.

LVO Manufacturing Inc. reserves the right to make changes in design and construction of its products without imposing any obligation upon itself toward products previously manufactured.

This warranty is in lieu of any other warranties, expressed or implied, made on the part of LVO Manufacturing Inc. who does not accept responsibility to any purchaser of its products for any representation or warranty made by dealers or salespersons beyond those herein expressed including any implied warranties of merchantability or fitness for a particular purpose.

Warranty Procedure

- 1) Locate and record the 12 digit serial number located on the upper left-hand side of the pan washer.
- 2) Gather as much information about the problem as possible.
- 3) **Call LVO Manufacturing Inc. at 1-800-346-5749 and request technical service. Prior to performing any warranty work you must call the factory for a warranty authorization number (WA-____). This warranty authorization number must be on every invoice we receive for services rendered on the machine. Without this authorization number the invoice will not be paid. The warranty number must also be included with the defective part returned.**



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RW2580 SPECIFICATIONS

OVERALL DIMENSIONS

WIDTH = 55" (57" WITH SUPPORT ANGLES)

DEPTH = 96"

HEIGHT = 81" FROM FLOOR WITH MACHINE IN A PIT (17" BELOW FLOOR)

DOOR OPENING = 31" WIDE x 77" HIGH

HOT WATER SYSTEM

1-1/4" HOT WATER SUPPLY REQUIRED, UNION PROVIDED

140° F. WATER REQUIRED AT THE MACHINE

260 GPH AT 20 PSI (26 GAL./CYCLE x 10 CYCLES/HR.

RINSE BOOSTER: THREE 9kW HEATING ELEMENTS IN A 30 GAL. RINSE TANK

FULL LOAD AMPS

	208 VOLT	230 VOLT	460 VOLT
ELECTRIC	219.3	196.4	99.2
GAS	145.5	129.8	66.3
STEAM	69.3	60.8	31.4

GAS SYSTEM (GAS MACHINES ONLY)

SUPPLY 3/4"@ 7" W.C. – NATURAL GAS

8" W.C. – LP GAS

STEAM SYSTEM (STEAM MODELS ONLY)

1-1/2" STEAM LINE, 10-15 PSI - 125 LBS. / HR. AVERAGE

INJECTED OR RECIRCULATING WASH, RECIRCULATING RINSE

WASH SYSTEM

25 HP PUMP RECIRCULATES APPROXIMATELY 480 GPM @ 55 PSI.

HEAT: >ELECTRIC – THREE 9kW HEATING ELEMENTS

>STEAM – DIRECT INJECTION, 10-15 PSI

RECIRCULATING, 10-15 PSI

>GAS – POWER BURNER 190,000 BTU INPUT

160 GALLON WASH TANK

2" NPT DRAIN CONNECTION

12" STEAM EXHAUST VENT COMPANION FLANGE



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Electrical Data for MODELS RW2580 - Electric

Voltage	208	230	460
Phase	3	3	3
Pump Motor (25HP)	67.3	58.8	29.4
Control Circuit	2.0	2.0	2.0
Wash Heaters (three 9kW)	75.0	67.8	33.9
Rinse Heaters (three 9kW)	<u>75.0</u>	<u>67.8</u>	<u>33.9</u>
Total	219.3	196.4	99.2
Exhaust Fan (Opt.) 1hp	2.8	2.7	1.35

Electrical Data for MODELS RW2580 - Gas

Voltage	208	230	460
Phase	3	3	3
Pump Motor (25HP)	67.3	58.8	29.4
Control Circuit	3.2	3.2	3.2
Rinse Heaters (three 9kW)	<u>75.0</u>	<u>67.8</u>	<u>33.9</u>
Total	145.5	129.8	66.5
Exhaust Fan (Opt.) 1hp	2.8	2.7	1.35

Electrical Data for MODELS RW2580 - Steam

Voltage	208	230	460
Phase	3	3	3
Pump Motor (25HP)	67.3	58.8	29.4
Control Circuit	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>
Total	69.3	60.8	31.4
Exhaust Fan (Opt.) 1hp	2.8	2.7	1.35

*Electrical Supply to the machine should **exceed** the figures by the amount required by local codes.*

Note: Changing the voltage of the machine in the field requires different heating elements. Contact the factory if this situation arises.



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General Warnings and Cautions

1. Service work on the machine should be done by either a factory representative or qualified local service company. **Contact the factory if the machine is under warranty.**
2. Failure to follow the cleaning guidelines described in this manual will damage the machine and will void the warranty.

Gas Model Warnings and Cautions:

1. Installation must conform with local codes and the National Fuel Gas Code, ANSI Z223.1.
In Canada: Installation must be in accordance with CGA Standard CAN/CGA-B149.1, Natural Gas Installation Code or CAN/CGA-B149.2, Propane Installation Code.

FOR YOUR SAFETY: DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING: IF YOU SMELL GAS, SHUT OFF THE GAS SUPPLY TO THE APPLIANCE, EXTINGUISH ANY OPEN FLAME, AND TEST ALL JOINTS WITH A SOAP SOLUTION. IF ODOR PERSISTS, CALL YOUR GAS SUPPLIER IMMEDIATELY.

AVERTISSEMENT: SI UNE ODEUR DE GAZ EST DÉCELÉE, COUPER L'ALIMENTATION EN GAZ DE L'APPAREIL, ÉTEINDRE TOUTES LES FLAMMES ET VÉRIFIER TOUS LES RACCORDS À L'AIDE D'UNE SOLUTION SAVONNEUSE. SI L'ODEUR PERSISTE, AVERTIR IMMÉDIATEMENT LE FOURNISSEUR DE GAZ.

2. Instructions should also be posted in a prominent location describing what to do in the event that the smell of gas is detected in the vicinity of the machine. (This information can be obtained from your local gas supplier).
3. Do not obstruct the flow of ventilation and combustion air to the machine.
4. Gas model pan washers are equipped with an electronic ignition which automatically lights the burners when the power switch is turned to the "ON" position and there is enough water in the machine. To shut the burners off, the power switch should be turned to the "OFF" position.



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Introduction

This manual should be read and understood by everyone involved with the installation and operation of the rack washer. Keep this manual in a safe place for future reference. Extra copies or replacement copies can be purchased from the manufacturer.

Service work on the machine should be done by either a factory representative or qualified local service company. **Contact the factory if the machine is under warranty.**

The LVO rack washer is designed for use in bakeries, restaurants, schools, hospitals, and hotels, to clean racks, pots, pans, bowls, and utensils. LVO rack washers are constructed of 14 gauge stainless steel (cabinets) and 12 gauge stainless steel (framework). The interior piping, rinse system, wash arms, and screens are stainless steel. The control panel is assembled with UL approved components and is housed in a stainless steel control box. Because of its sturdy construction, it will deliver years of powerful, thorough cleaning.

The machine is equipped with heating element(s) in the rinse tank to boost the rinse water to a sanitizing 180 F at the inlet to the machine. A rinse tank heated with recirculating steam is an option available on some models.

The wash tank on electric models incorporates heating element(s) for heating the wash water. The gas models generally use a 190,000 BTU power burner. Steam models use a direct injection system or a recirculating steam heating coil.

The pump recirculates wash water at approximately 55 pounds per square inch of pressure.

Each machine is equipped with two safety switches. The first is a low water cut-off, which shuts the machine off when the water level in the wash tank falls below the required level. The other safety device is a door switch which prevents the machine from operating when the door is not completely closed. An electrical schematic for your machine is posted inside the control box cover.

Detergent Feeders

This machine must be operated with an automatic detergent feeder, including a visual means to verify that detergent is delivered or a visual or audible alarm to signal that detergent is not available for delivery. Power for the feeder can be provided by the pump supply connection in the control panel. See feeder equipment manual for additional information.



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Installation Instructions

Step 1 READ: Read and understand these instructions thoroughly before attempting any part of the installation procedure.

WARNING: Not following these instructions may void warranty, cause damage to the equipment and/or cause injury to anyone involved in the installation or operation of this machine.

A copy of the installation instructions and start-up procedure is printed on the yellow sheet attached to the side of the machine. EVERYONE involved with the installation must be familiar with all aspects of the installation procedure.

Step 2 POSITIONING: The factory recommends leaving as much room as possible around the machine for future service work. No less than 16" should be allowed along the sides of the machine (36" for side with control box) and no less than 12" between the rear of the machine and the wall. Extra room around the machine will facilitate cleaning the washer area.

Note: Gas models should be installed in a location free of drafts and are required to be at least 16" from combustibles.

Step 3 UNCRATING: Leave the machine fully crated until the washer is placed in the location where it is to be installed. Inside you will find the accessories for the machine. Among these will be the fan and the legs (if ordered). Legs are not required for pit models.

When a pit is used it can be installed prior to receiving the machine. There are two types of pits to choose from: concrete (see page 27) or stainless steel (see pages 28 - 30). Concrete pits are the most common. They are usually installed by a general contractor. Note that the drain system will also be installed at this time. Generally concrete pits are epoxy coated to make them water proof.

A stainless steel pit is available for installations in buildings with basements. The stainless pit can also be used as a liner with concrete poured around it. The stainless steel pit is equipped with a coupler to allow the plumber to connect the drain (see pages 28 - 30).

Prior to receiving the rack washer, the service lines can be stubbed in close to where the rack washer will be installed (see page 26). This will speed up the completion of the installation once the machine is in place.



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There are many methods for setting the machine in the pit. Often the machine is slid into the pit from the front. Hydraulic jacks, pry bars and pallet jacks or a forklift are usually necessary to accomplish the task. Keep in mind that the heaviest part of the machine is the backside where the pump is located.

Once the machine is in the pit, the front floor grate should be set in place. The machine should then be moved ahead to eliminate any gaps between the machine and the floor grate yet leaving enough a space that the floor grate can be removed for periodic hosing down of the pit floor.

Step 4 DRAIN: Provisions for the drain should be made next. The rack washer has a copper drain located as shown on pages 23 - 25 of this manual (see page 3 for drain size). The drain should be plumbed according to local code. Local ordinance may require a grease trap, vent, and/or a floor sink. If required these should be installed before the machine is installed. It is strongly recommended that unions be used to allow the machine to be easily moved. Failure to do so may void the warranty.

Models that set in a pit do not require a drain connection because the wash tank drains directly into the pit.

Step 5 WATER SUPPLY HOOK-UP: The factory recommends 140° F (120° F minimum) hot water at the machine (see page 3 for water line size). This may require a dedicated water heater for the rack washer. If hard water is present the manufacturer recommends installing a water softener or calcium filter. Hard water deposits will shorten the life of many of the components on the rack washer, resulting in higher maintenance costs. Please note that a union is installed at the point of hook-up (see pages 23 - 25). This will allow the machine to be moved for service and cleaning. The customer must furnish a shut-off valve on the supply side of the union. This shut-off should be easily accessible to the operator of the machine.

Step 6 STEAM VENT: The machine is equipped with a collar for 12" duct work as shown on page 21. This duct should be directly vented to the outside of the building. DO NOT vent into a wall, attic, or any other concealed space of the building and avoid horizontal runs of duct.

The factory recommends 12" cpvc pipe or stainless steel duct for the vent. Pvc can be used if allowed by local codes. If stainless steel is used the duct work should be installed with reverse joints so that the condensate inside the vent can drain back into the machine without leaking. All seams should also be sealed with silicon.

Generally the machine is ordered with a 1 Hp squirrel cage exhaust fan. The exhaust fan should be mounted and siliconed directly to the flange on the top of the machine before the duct work is installed. The ductwork attaches directly to the exhaust of the fan. Wire is provided to wire the fan directly into the control panel. A dedicated breaker and contactor for



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the exhaust fan are provided. The fan is controlled by a timer and runs for a short time at the end of each cycle.

Note: Consult the factory before connecting any fan not supplied with the machine.

Step 7 ELECTRICAL CONNECTION: The electrical connection to the machine should be made by a qualified electrician. All steps should be taken to insure that the supply voltage to the machine is the same as the rated voltage of the machine. Also check that sufficient amperage service is supplied to the machine (see page 3 or page 4 for ratings).

A main power shut-off, supplied by the customer, must be installed near the machine in a place easily accessible by anyone operating or servicing the machine. The line from the main shut-off to the machine should be watertight flex conduit. The factory strongly recommends that a few extra feet be used to allow the machine to be moved if necessary. The wire used to supply the machine must be heavy enough to carry the amperage load of the machine.

The first connection should be the main ground to the grounding lug on the control panel. Next the hook-up can be made to the main power block. On 230 VAC machines the wild leg must be connected to the center terminal.

Once the hook-up is complete the circuit breakers in the control box of the washer must be checked to make sure they are in the "OFF" position. The main switch on the wall can then be turned on to power the machine.

Step 8 GAS CONNECTION (Gas models only): A certified gas technician is required for the hook-up and final adjustments of the burners. This is necessary to insure proper inlet and manifold pressure for the gas machines (see gas data plate gas pressure settings).

The gas line hook-up must be made with a union at the location shown on page 23 (see page 3 for gas line size). This line must have a shut-off valve (supplied by the customer) installed near the machine and accessible by anyone operating or servicing the machine.

A 4" stainless steel gas chimney runs up the backside of the machine (see page 3 for size of chimney). A draft diverter and a 4" to 6" adapter is included with the machine (shipped inside the machine with the other accessories). The 6" draft diverter and adapter must be installed on top of the factory installed chimney. The 6" Type B gas flue can then be continued to the outside of the building per local codes.

The initial start-up of the burners should not be done until the following start-up procedures for the machine have been completed.



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Step 9 STEAM HOOKUP (Steam models only): A steam line is required to supply the steam injector or recirculating steam heat exchanger coil (see page 3 for size of steam line). A strainer is already built into the machine but a union will be required in the supply line (supplied by the customer). The Specification sheet on page 3 lists the rated pressure and average steam consumption rate for the machine.



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Start-Up Procedures

Warning: These instructions must be followed or damage to the machine will result.

Step 1: Close the drain valve (see location on pages 23 - 25). On machines equipped with **Auto Fill** and **Auto Drain**, the drain valve will automatically close when the **Auto Fill** button is pushed.

Step 2: Open the main water supply valve (if the machine is equipped with the Auto Fill option skip to Step 3), then open the fill valve (see location on pages 23 - 25). Fill the machine to the overflow level (covering the bottom of the scrap trays). **The machine is equipped with a low water protection device and will not run without sufficient water in the wash tank.**

Step 3: With the circuit breakers in the control panel of the machine in the "OFF" position and the main power supply to the machine connected, the **ON-OFF switch** on the button panel can be turned to the "ON" position. This should light the amber power light. If not, check this bulb and the other two bulbs to make certain they are tight.

Machines equipped with the **Auto Fill** option can now be filled by pressing the **Auto Fill** button. (If the building pressure is quite high, some water may run out the overflow at the end of the fill cycle).

Note: The machine has a door safety switch and will not operate with the door open.

Step 4: With the machine full of water and with the door closed, press the start button and let the machine go through a complete cycle. The timers in the control panel will go through their sequence, lighting the wash and rinse lights on the front of the machine. The cycle is complete when the clear and red light go off and the amber light stays on. The pump will not run at this time because the pump circuit breaker in the control panel is in the "OFF" position.

Step 5: Repeat **Step 4** at least one more time or until water can be heard spraying out of the rinse nozzles. This ensures that the rinse tank is full of water before the heating element is energized.

Step 6: All circuit breakers in the control panel can now be switched to the "ON" position. This will energize the heating system in the wash and rinse tanks.

Step 7: Check the pump for proper rotation by pressing the start button and observing the wash pressure gauge on the front of the machine for 5 to 10 seconds. Then press the stop button. The wash pressure should be 45 - 60 psi. If the pressure is erratic and only rises to about 25 psi, the pump is running backwards. The pump will also have a noticeable growl when running backwards. The outside two wires that feed the power block in the control panel should be reversed. Run the pump again to confirm that it is operating correctly.



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Step 8: With the power on, the wash and rinse heating systems should be checked. The rinse tank should take 5 to 10 minutes to reach 195 F and the wash should take approximately 60 minutes to reach 150 F. The times will vary depending on the temperature of the incoming water. **Note:** The rinse manifold gauge measures the temperature of the rinse water just before it enters the machine. Therefore this water temperature reading is only accurate while the machine is rinsing.

If the machine is not reaching temperature check to make sure that all the breakers in the control panel are in the "ON" position. If the wash tank is gas heated make certain that main gas valve and pilot gas valve is open. During initial start-up gas machines may have to be turned on and off several times to bleed the air out of the gas lines. Wait about a minute after turning the machine off before turning it back on. If the machine still does not appear to be heating up properly call LVO Manufacturing at 1-800-346-5749.

Step 9: Adjust the water pressure regulator (see location on page 23). The pressure should be set at 20 psi on the rinse gauge **while the machine is rinsing**. Variations in building water pressure may require the pressure to be increased or decreased from its factory setting.

Step 10: If the machine is equipped with the exhaust fan option (see page 8 for a description of the fan option) check to make sure that it is rotating in the correct direction. If the fan is blowing into the machine rather than out the vent the two outside wires on the three phase fan connection in the control panel need to be swapped. Recheck to confirm proper rotation.

Step 11: Replace all covers and peel off the plastic protective coating and tape etc. from the machine which may have been used to prepare the machine for shipping.



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Sequence of Operation

- Power switch "ON".
- LOGO logic control is energized.
- Fill button (optional) energizes fill solenoid.
- Low water safety switch closes terminals 1 and 4 in the control panel if there is sufficient water in the wash tank.
- Amber indicator light comes on.
- Wash and rinse temp controls are energized.
- Temp controls energize wash and rinse heating systems.
- Door safety switch is energized.
- Stop and Start buttons are energized.
- Start button is pushed energizing the internal timing functions of the logic control.
- Red indicator light is energized
- Wash timer (Light, Medium, or Heavy) starts, energizing the pump contactor for set amount of time.
- Wash time runs out energizing the rest timer.
- After set amount of rest time, the rinse timer starts, energizing the rinse solenoid valve and clear indicator light.
- If the machine is equipped with the exhaust fan option, the fan timer runs for the set time when the rinse times out.
- After the rinse timer (or optional fan timer) has timed out, all timers are reset, and the red/clear indicator lights are de-energized.



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Operation of the Machine

Initial Daily Start-Up

1. Check if the inside of the machine has been properly cleaned since its last use. If not, clean the machine (refer to **Final Clean-Up** on the following page for cleaning information).
2. Make sure scrap tray screens and the pump inlet screen are in place (see page 35).
WARNING: Do not operate washer without all screens in place.
3. Close the drain valve. (If equipped with the auto drain option, pushing the fill button will close the drain).
4. If the machine is equipped with the **Auto Fill** option, turn power switch "ON" and push **Fill Button** to fill the unit. If not, proceed to step 5.
5. Open fill valve and fill wash tank to the top of the scrap trays or until water begins to run out of the overflow.
6. Turn power "ON" and allow wash and rinse temperatures to come up to recommended levels.
7. While machine is warming up, the first load can be prepared and placed in the machine. If the pans are excessively dirty, they should be pre-soaked and scraped before being placed in the rack. Pan preparation will reduce the need to change the wash water and will speed-up the entire washing process. The correct manner for loading the racks is illustrated on pages 31 - 33
8. Once the machine has reached the recommended temperatures, detergent should be added to the wash water. Detergent should be used according to the recommendations of the chemical supplier. A non-suds detergent is necessary and local water conditions should be considered when selecting the concentration of the detergent. An automatic soap dispenser should be installed at the job site by the chemical supplier. There should be a visible or audible means of determining detergent delivery. If they have any questions concerning the installation of their dispenser to the LVO rack washer, they can call the factory for advice (800-346-5749).
9. The rack of pans can now be placed in the machine. The rack should be centered in the machine to subject the pans to the full force of the spray arms.

WARNING: Loose items and glassware should not be put in the washer. The high pressure wash cycle will damage them and potentially the machine.

Bowls or buckets can be washed by placing them in the bowl/utensil rack with the tops toward the lower side of the shelf to facilitate draining.

The utensil basket is to be used to contain smaller items such as paddles, whisks, scrapers, etc. The utensil basket can be placed in the bowl/utensil rack and washed along with a load of bowls or buckets.

CAUTION: When loading the machine make sure that nothing will obstruct the path of the wash arms. This will avoid damage to the machine and to the items being washed.



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When loading bowls, pans, or buckets into the machine make sure they are loaded in a manner that will allow the wash water to drain out of them.

9. The machine cycle is completely automatic, with the timing sequence controlled internally by the LOGO logic control mounted on the control panel. The timers are factory set to the following recommended values:

Wash - Light	3 min.
- Medium	5 min.
- Heavy	7 min.
Rest	20 sec.
Rinse	60 sec.
Fan (optional)	30 sec.

Select the length of wash (Light/Medium/High) with the 3 position selector on the button panel and push the green start button to initiate the wash cycle. The red indicator light will come on. At the end of the wash cycle the red light will stay on and the 20 sec rest will begin. The rest period allows the wash water and suds to drain from the pans. After the rest cycle, the rinse cycle begins. During the rinse cycle, the clear indicator light will come on. If the machine is equipped with a fan timer (see page 8 for a description of the fan options) the fan will start after the rinse is finished. After the rinse or fan cycle is finished the red and clear lights will go off. The cycle is now complete. The amber power light will stay on as long as the power switch is in the "ON" position and there is enough water in the machine.

10. Throughout the day as the machine is being used, the scrap tray screens (see page 35 for location of screens) should be periodically removed from the machine, dumped out, washed out in the sink and replaced in the machine.

Final Clean-Up

At the end of each day's use, the operator of the machine must clean the machine according to the following procedure:

1. Check and clean any plugged wash nozzles.
If necessary, the wash arm assembly can be removed by pulling out the grip ring pin, sliding the assembly out of the hub, and rinsing with the spray gun.
2. Drain the machine.
3. Remove the floor grates and scrap trays (see page 35 for location), empty them out and wash them off in the sink.
4. Spray down the inside of the machine.



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5. Brush off the heating element (electric models), probes, and anyplace that doesn't come clean from spraying with the hose.

NOTE: (Electric Models) Brushing the elements clean is very important in prolonging the life of the element.

6. Check and clean the rinse nozzles with a piece of wire to keep them from plugging up with lime and scale.

7. Spray down the inside of the machine again.

8. Remove the pump inlet screen (see page 35 for location of screen) and clean it thoroughly in the sink.

NOTE: While removing the screen be careful not to allow any debris to fall into the pump inlet opening.

9. Replace the pump inlet screen and the scrap tray screens.

10. Close the drain and leave the machine empty of water until it is to be used again.

11. (For Pit Models Only) Remove front floor grate(s) and spray pit floor from front toward the rear. Clean pit drain thoroughly. Water back-up from a clogged drain can cause major burner damage and machine malfunction. When cleaning is completed, replace floor grate(s).



LVO Manufacturing Inc.

808 N. 2nd Avenue E., P.O. Box 188

Rock Rapids, IA 51246

www.lvomfg.com

(712) 472-3734

1-800-346-5749

Fax (712) 472-2203

Trouble Shooting - Electric Machines

<u>Problem</u>	<u>Cause</u>	<u>Cure</u>
Machine won't run	No power to machine Not enough water Door open	Check building power supply Fill machine to overflow level Close door tightly
Wash pressure too high	Nozzles plugged	Remove debris from nozzles
Wash pressure too low	Pump running backward Pump screen clogged Excessive suds Missing wash nozzles Missing wash arm end plugs	See installation instructions See cleaning instructions Change soap or use less Replace nozzles or wash arm Replace wash arm end plugs
Wash temperature too low	Temp Control set too low Wash element blown	Adjust wash temp control* Replace wash heating element
Rinse temperature too low	Temp Control set too low Water supply too cold Rinse element blown	Adjust rinse temp control* Set building hot water to 140° F Replace rinse heating element
No rinse water	Nozzles plugged Solenoid valve stuck Rinse strainer clogged	See cleaning instructions Clean solenoid valve or replace Clean pressure regulator/strainer
Rinse does not shut off	Rinse solenoid stuck open	Clean or replace solenoid valve
Utensils not clean	Wash time too short Water too hard Wash temperature too low Detergent problem Improper stacking of utensils	Use a longer wash Install softener Adjust thermostat* Consult chemical supplier See racking instructions

* Wash and rinse temp controls are located on the gauge panel on the front/side of machine.

WARNING: Do not set rinse temp control above the boiling point of water. The boiling point of water decreases with increased elevation at approximately 2° F per 1000 ft of elevation.



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Trouble Shooting - Gas Machines

(Same as electric model except for the following)

Low wash temperature

1. Check temp control setting.*
2. Check switches, fuses, and breakers that control the burners.
3. Check to be sure electrical power and gas supply have not been interrupted to the burners.
4. Check that all shut-off valves in the gas line and main gas valve are in the "OPEN" position.
5. Reset ignition control and try again. To reset control press reset button inside control panel.
6. If above steps do not light the main burner, call your local gas appliance service technician. Provide the person working on the machine with the ignition system information included with this owner's manual.

WARNING: Do not attempt to light the burner manually.

Trouble Shooting - Steam Machines

(Same as electric model except for the following)

Low wash temperature

1. Check temp control setting.*
2. Check boiler pressure.
3. Check to be sure electric signal is being sent to the steam solenoid.
4. Verify that strainer in steam line is open.
5. Check steam solenoid.

* Wash and rinse temp controls are located on the front/side of the machine.

WARNING Do not set rinse thermostat above the boiling point of water. The boiling point of water decreases with increased elevation at approximately 2° F per 1000 ft of elevation.



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RW2580 Replacement Parts List

HEATING SYSTEM PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
509-5004	WASH & RINSE ELEMENT, 9KW 208 VOLT
509-5005	WASH & RINSE ELEMENT, 9KW 240 VOLT
509-5006	WASH & RINSE ELEMENT, 9KW 480 VOLT
509-5132	HIGH LIMIT THERMOSTAT
509-5141	PYRONICS TFR-B-65 BURNER
509-5142	RM7895 CONTROL
509-5144	ST7800A PURGE CARD
509-5145	R7847A FLAME RECTIFICATION AMPLIFIER
509-5146	PH/BE-64 IGNITER ROD
509-5147	PH200 FLAME ROD
509-5031	1" STEAM SOLENOID 24V (STEAM MODEL)

WASH SYSTEM PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
103-2025	HUB ASSEMBLY
103-2048	BASIC HUB REPAIR KIT
103-2049	COMPLETE HUB REPAIR KIT
519-5038	GRIP RING PIN FOR HUB
510-5091	25 HP BERKELEY PUMP & MOTOR 208-230/460 VOLT
510 5104	BERKELEY PUMP IMPELLER 25 HP
510-5097	BERKELEY PUMP SEAL KIT 25 HP
510-5093	BRASS SLEEVE
510-5094	GASKET FOR EXT. BRACKET 25 HP
131-2004	WASH ARM ASSEMBLY

RINSE AND FILL SYSTEMS PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
510-5011	RINSE NOZZLE, 1/4" HH10 BRASS
510-5138	1" SOLENOID VALVE 24V
510-5026	1" PARKER SOLENOID VALVE REPAIR KIT
510-5193	1 1/4" PRESSURE REGULATOR
510-5052	1" VACUUM BREAKER
510-5067	1" VACUUM BREAKER REPAIR KIT
510-5137	1-1/4" VACUUM BREAKER
510-5146	1-1/4" VACUUM BREAKER REPAIR KIT
510-5053	1" BALL VALVE
510-5132	1" BRONZE WYE STRAINER
514-5056	3/8" X 20' SPRAY HOSE
519-5043	BRASS SWIVEL
519-5027	SPRAY GUN



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GAUGE PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
509-5153	TEMP CONTROL – DIXELL
509-5152	TEMP CONTROL NTC SENSOR - 20' LEAD
509-5133	TEMP DISPLAY - RINSE MANIFOLD
509-5134	TEMP DISPLAY NT SENSOR - 10' LEAD
509-5060	PRESSURE GAUGE - WEISS 2-1/2"
509-5061	WEISS LENS - 2-1/2"
509-5096	GAUGE SNUBBER

MISCELLANEOUS PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
510-5055	2" NPT BALL VALVE (DRAIN)
517-5011	4" CASTERS FOR RACKS
517-5020	INSIDE DOOR HANDLE RELEASE
517-5024	DOOR HINGE
517-5025	LATCH - KASON
517-5026	STRIKE – KASON
512-5006	1HP FAN MOTOR
512-5007	FAN BLOWER WHEEL



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ELECTRICAL PARTS

<i>PART NUMBER</i>	<i>DESCRIPTION</i>
511-5257	LOW WATER CUT-OFF FLOAT
511-5258	HIGH WATER CUT-OFF FLOAT
511-5272	ON-OFF SELECTOR
511-5273	3-POSITION SELECTOR (WASH)
511-5214	INDICATOR LIGHT 24V - CLEAR
511-5215	INDICATOR LIGHT 24V - AMBER
511-5216	INDICATOR LIGHT 24V - RED
511-5270	START PUSH BUTTON
511-5269	STOP PUSH BUTTON
511-5271	AUTOFILL PUSH BUTTON
511-5122	CLEAR BUTTON COVER
511-5212	LOGO CONTROL 24V
511-5213	LOGO EXPANSION MODULE 24V
511-5139	TIMER - SOLID STATE MULTI-FUNCTION
511-5179	RELAY 24V, OPDT
511-5149	CIRCUIT BREAKER, 4 AMP, 1-POLE
511-5150	CIRCUIT BREAKER, 10 AMP, 3-POLE
511-5151	CIRCUIT BREAKER, 20 AMP, 3-POLE
511-5153	CIRCUIT BREAKER, 40 AMP, 3-POLE
511-5021	CIRCUIT BREAKER, 90 AMP, 3-POLE
511-5294	HEATER CONTACTOR 24V (CGC22)
511-5298	PUMP CONTACTOR 24V, 208/230V 25HP
511-5296	PUMP CONTACTOR 24V, 460V 25HP
511-5309	PUMP OVERLOAD, 208/230V 25HP
511-5306	PUMP OVERLOAD, 460V 25HP
511-5290	FAN CONTACTOR 24V, 208/230/460V
511-5300	FAN OVERLOAD, 208/230/460V
511-5056	.250 KVA TRANSFORMER (CONTROL CIRCUIT)
511-5118	1.000 KVA TRANSFORMER (CONTROL CIRCUIT - GAS)
511-5253	LIMIT SWITCH
511-5045	FUSE, 2 AMP, 500 V
511-5130	FUSE, 3 AMP, 250 V
511-5112	FUSE, 4 AMP, 500 V
511-5115	FUSE, 5 AMP, 500 V
511-5181	FUSE, 12 AMP, 250 V



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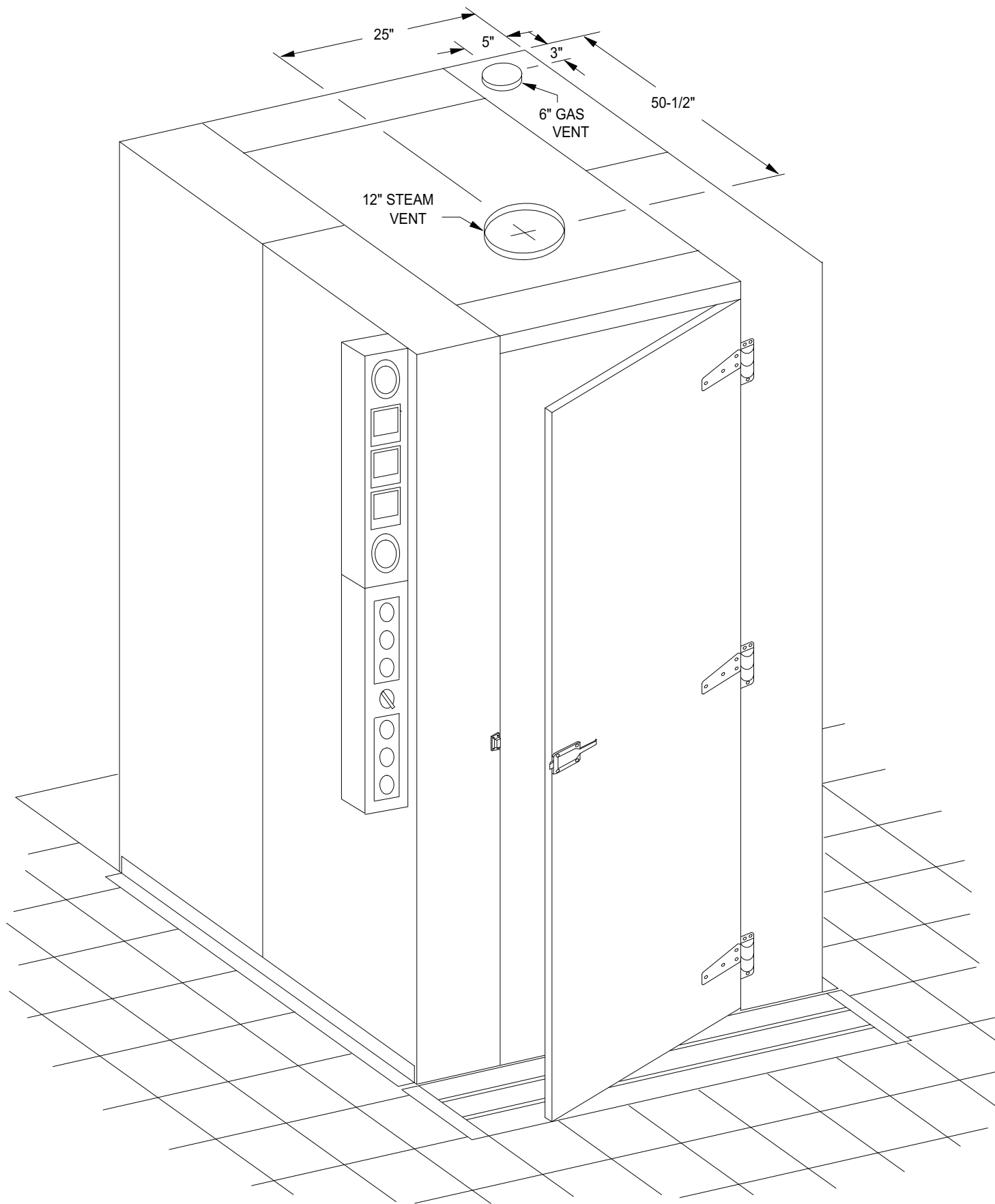
PREVENTIVE MAINTENANCE FOR LVO PAN WASHERS

- Turn off power and drain machine, making sure it drains freely.
- Check machine for general cleanliness. Make sure the pump screen and scrap trays are clean and properly in place. Wash heating elements (electric models only) must be cleaned on a daily basis for proper operation. Check for plugged wash and rinse nozzles. Check if all cleanout plugs are in place at the ends of the rotating wash arms and make sure they are not cracked or broken. If necessary, the entire wash arm assembly can be removed by pulling out the grip ring pin and sliding the assembly out of the hub. These items are part of the daily maintenance schedule and should be done on a daily basis.
- Check for excessive play in the hub/wash arm assemblies. Excessive wear can affect the wash pressure and shorten the life of some hub components. Basic and complete hub repair kits are available from the factory.
- Close drain valve and fill machine, making sure drain does not leak (some water may initially run out the drain through the overflow). Run through a Light, Medium, and Heavy wash cycle, checking for proper timer operation. Machines prior to 1997 may have a single adjustable wash timer in place of the three-position selector.
- Check if Power “ON”, Wash, and Rinse lights are working.
- Check if pump pressure during wash cycle is within recommended range (See owners manual or legend on gauge panel).
- Check if rinse pressure is approximately 20 psi. Note: This must be checked during rinse cycle only for accurate reading.
- Make sure steam exhaust fan is working properly. On machines with a 100cfm Tjernlund fan, the fan should run continuously when power switch is turned on. On machines with a 700 cfm American fan, the fan should run for set amount of time after the rinse cycle.
- Allow machine to heat up to recommended temperatures, noting if temp gauges and thermostats are operating properly (see start up procedure in owners manual for approximate heat up times). Wash temperature and Rinse Tank temperature should be noted at this time. The rinse water temperature gauge is accurate only during rinse cycle and should be checked while machine is rinsing.
Note: If a qualified technician is available, current readings for heating elements should be taken to ensure they are heating properly.
- On machines with slide-up doors, door cables and connections should be inspected for damage or excessive wear and replaced if necessary. Make sure cable pulleys turn freely and door switch is still adjusted properly.
- Pump motor(s) should be greased occasionally depending on usage. Once or twice yearly should be sufficient under normal use.

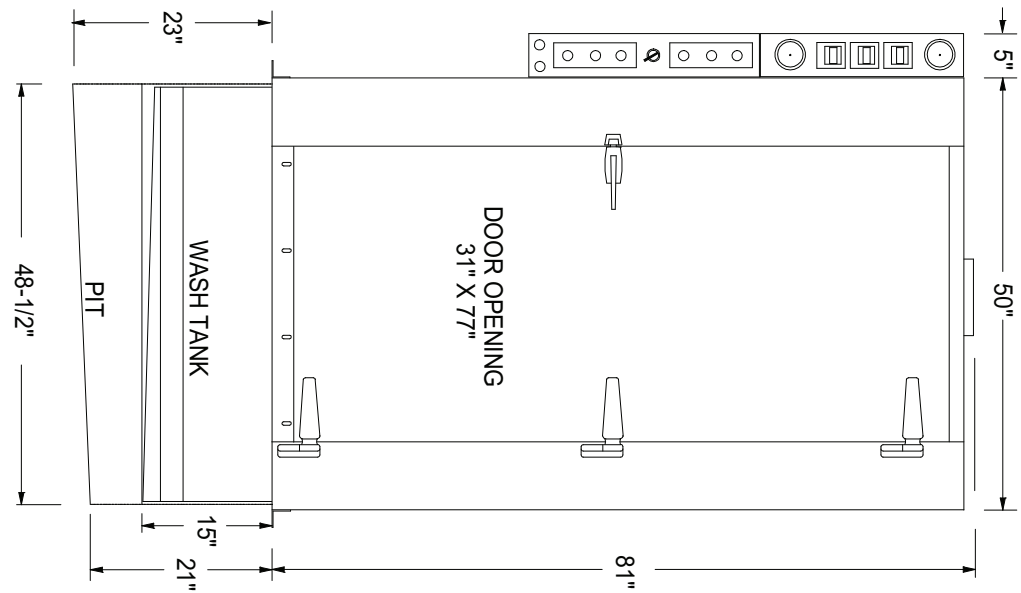
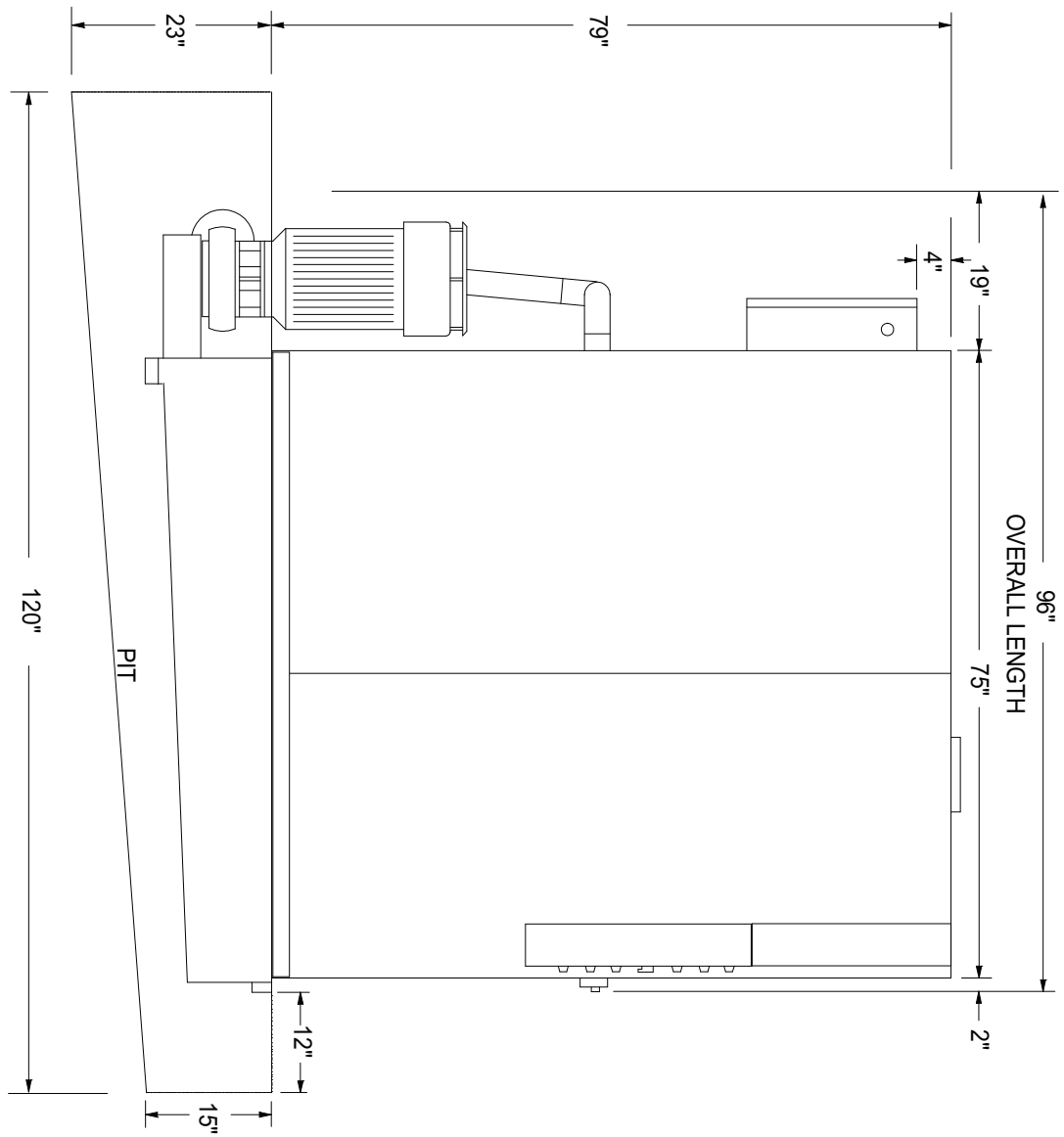
Note:

> Items above marked ■ are easily identified visually and should be checked on a daily basis. Other items should be checked periodically, depending on usage.

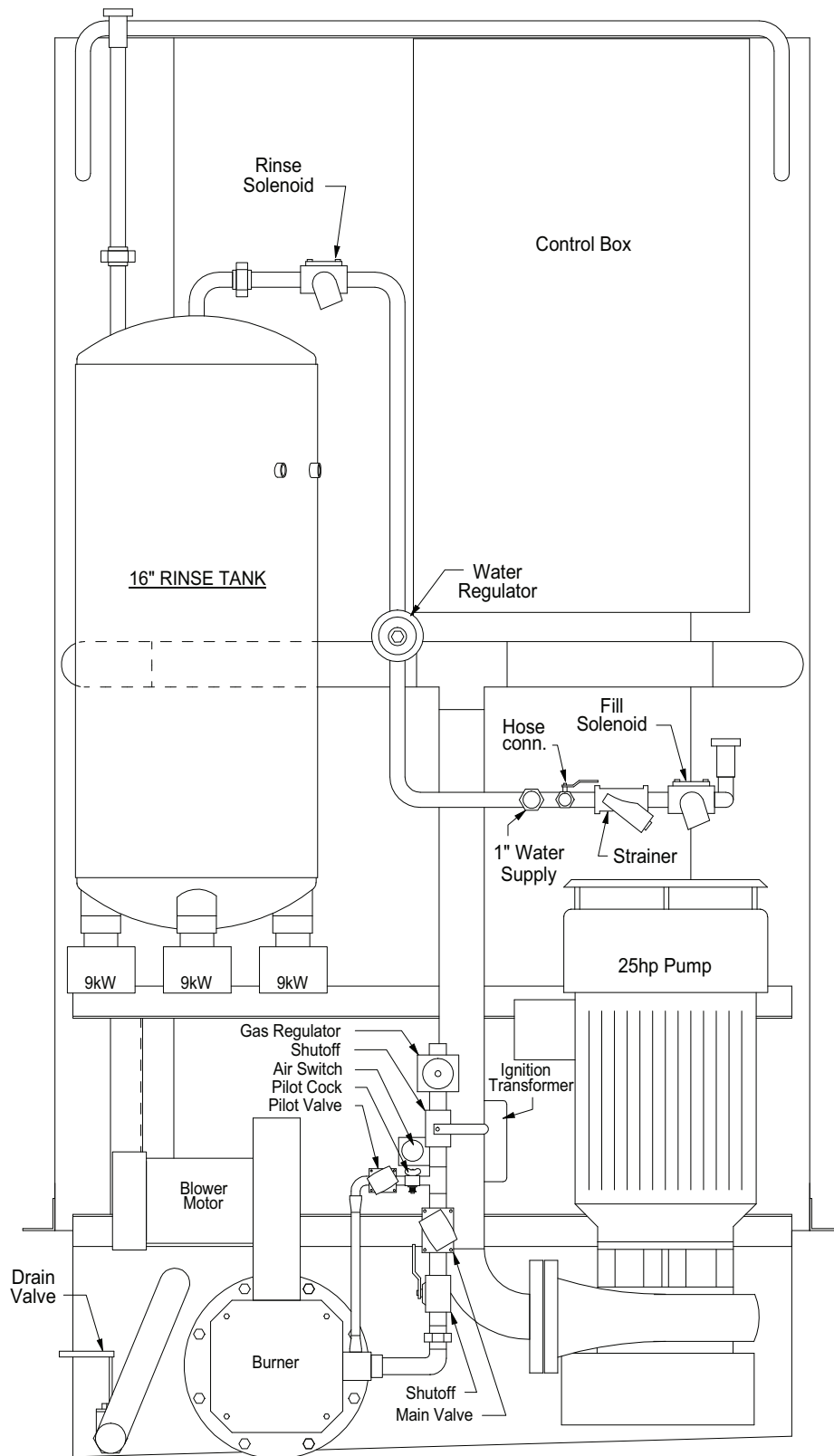
> Time required for complete inspection may vary, depending on wash timer settings, heat up time, etc. One to two hours is a reasonable amount of time unless problems are encountered that need attention. If any problems or questions arise, call the factory for assistance.



<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME: OVERALL VIEW
	REV.	SCALE		RW2580G INFORMATIVE
		TOL ⁺	07-10-02	NO. 131-1001
		-	M. Elbers	



<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME RW2580 GENERAL	
	REV.	SCALE		INFORMATIVE	
		TOL ⁺ -	07-10-02 M. Elbers	NO.	131-1006



Pyronics Burner

3/4" Gas Supply
190,000 BTU Input
6" Flue Required

Natural

7" W.C. Inlet
3.5" W.C. Manifold

LP

8" W.C. Inlet
4" W.C. Manifold



MFG. CO. INC.

MAT.

GA.

NAME REAR VIEW RW2580

REV.

SCALE

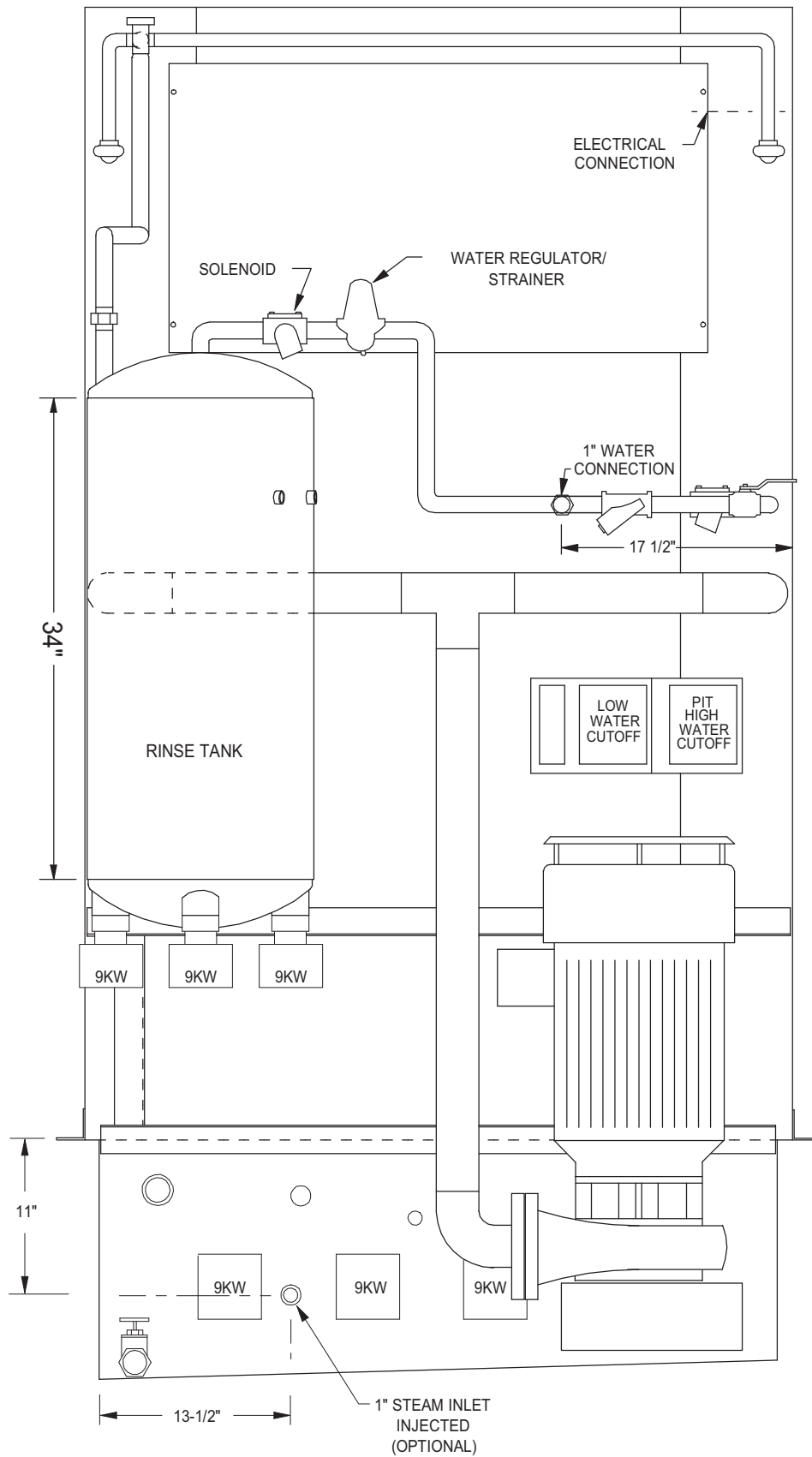
INFORMATIVE - GAS

ROCK RAPIDS, IA. 51246

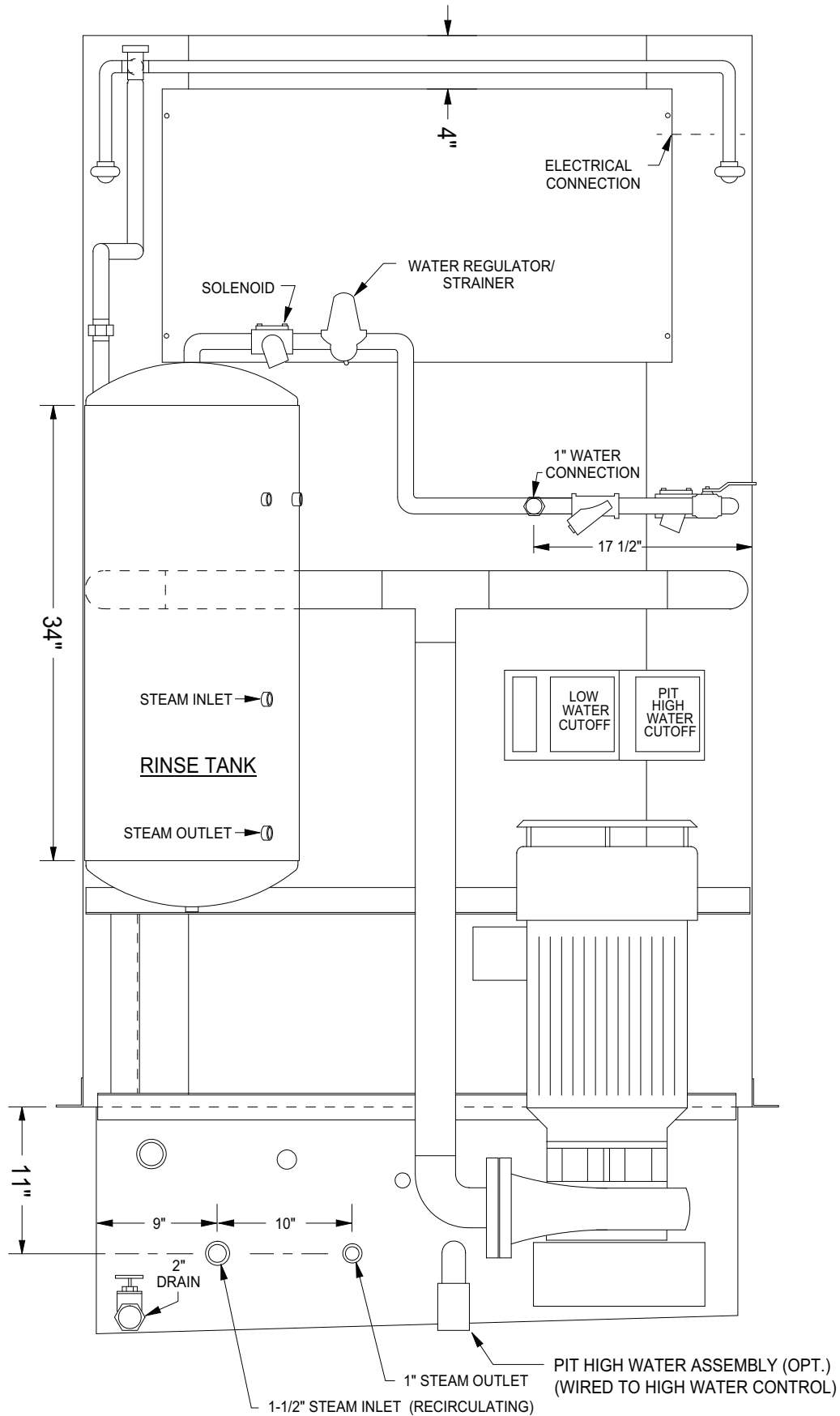
TOL ⁺
-

12-05-06
M. Elbers

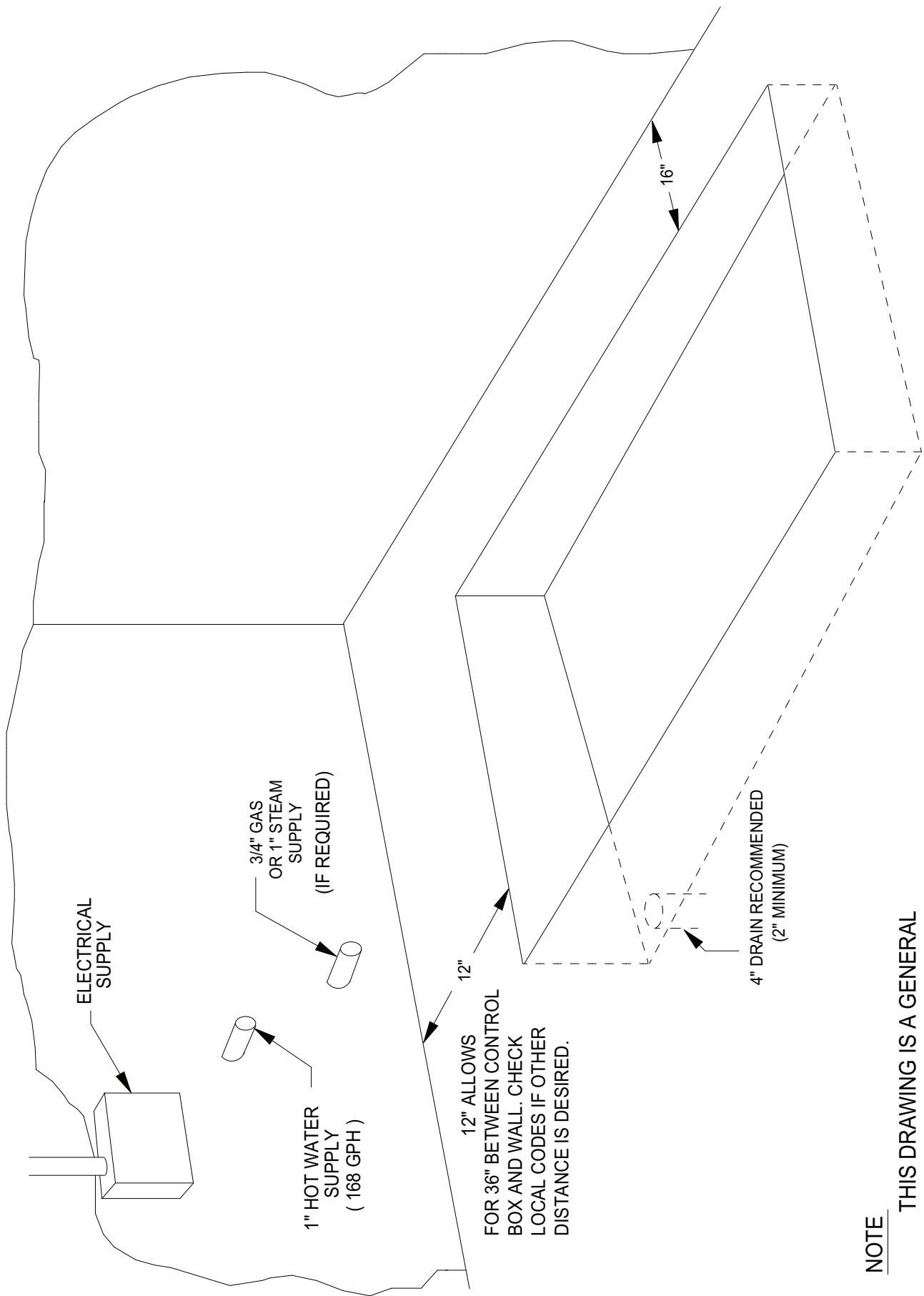
NO. 131-1004C



<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME REAR VIEW RW2580
	REV. 05-08-02	SCALE		INF. - ELEC. OR INJ. STEAM
		TOL ⁺ -	12-05-01 <i>M. Elbers</i>	NO. 131-1005C



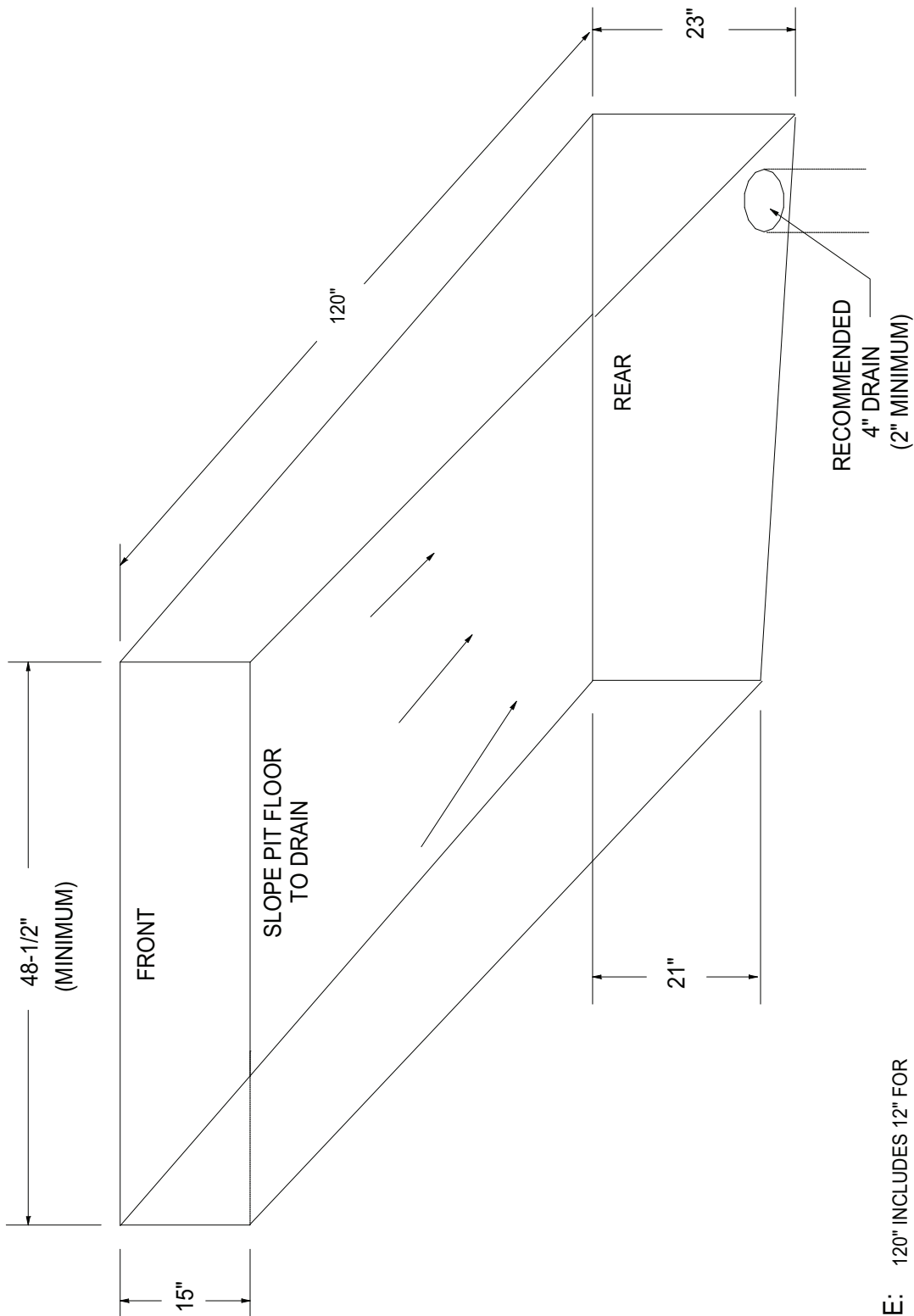
<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME REAR VIEW RW2580	
	REV. 06-13-02	SCALE		INF. - RECIRCULATING STEAM	
		TOL ⁺ -	12-05-01 <i>M. Elbers</i>	NO. 131-1117C	



NOTE

THIS DRAWING IS A GENERAL
ILLUSTRATION. PLEASE CONTACT
LVO MFG. FOR MORE SPECIFIC
DETAILS

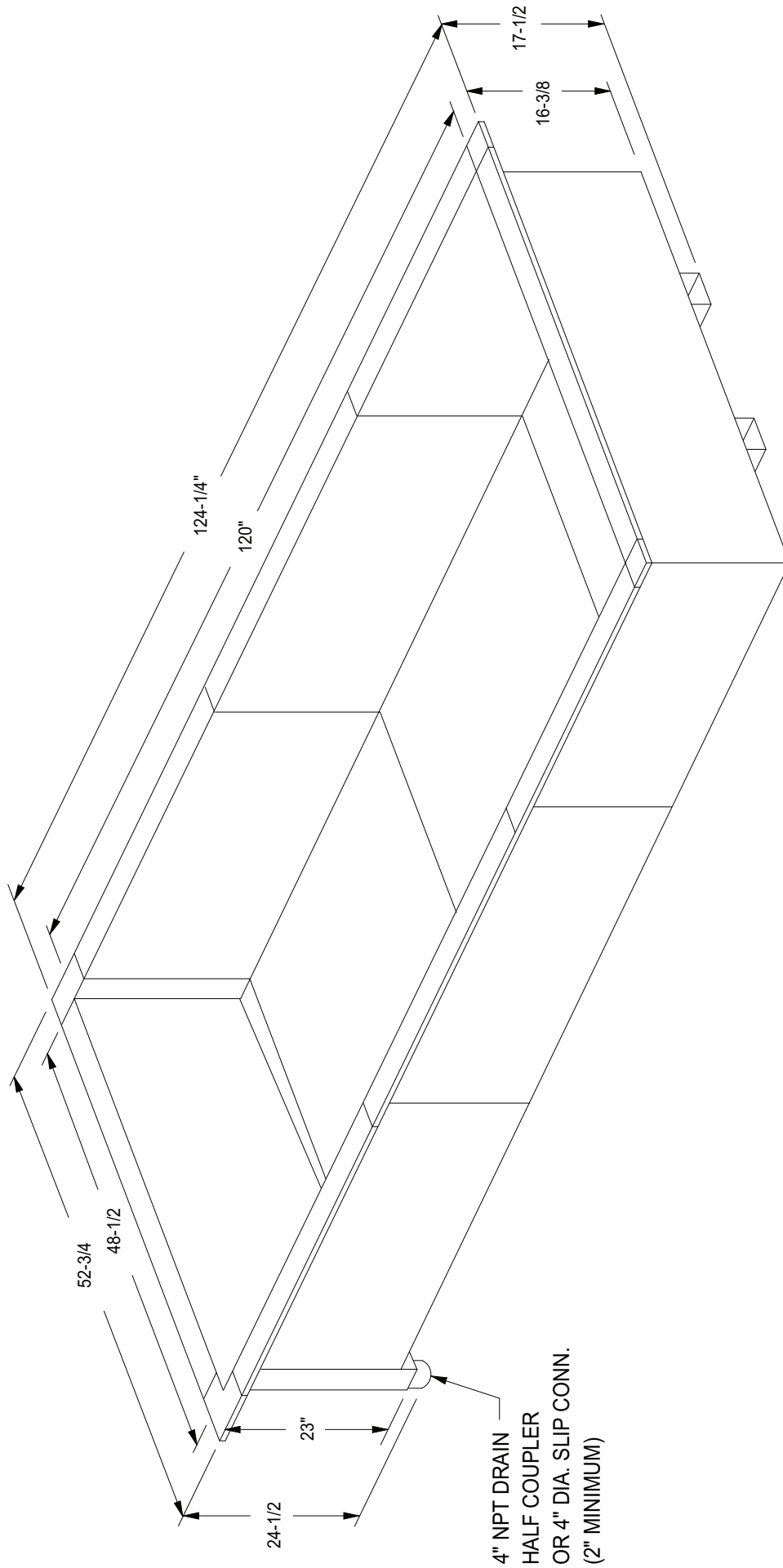
<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME	RACK WASHER 2580
	REV.	SCALE		INSTALLATION ILLUSTRATION	
		TOL $\begin{smallmatrix} + \\ - \end{smallmatrix}$	03-20-99 <i>M. Elbers</i>	NO.	131-1112



NOTE: 120" INCLUDES 12" FOR FRONT FLOOR GRATE

ANY ADDITIONAL FLOOR GRATES
REQUIRES ADDITIONAL PIT LENGTH

<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME	INFORMATIVE
	REV.	SCALE		RW 2580 CONCRETE PİT	
		TOL +	06-19-02	NO.	131-1111
		-	M. Elbers		



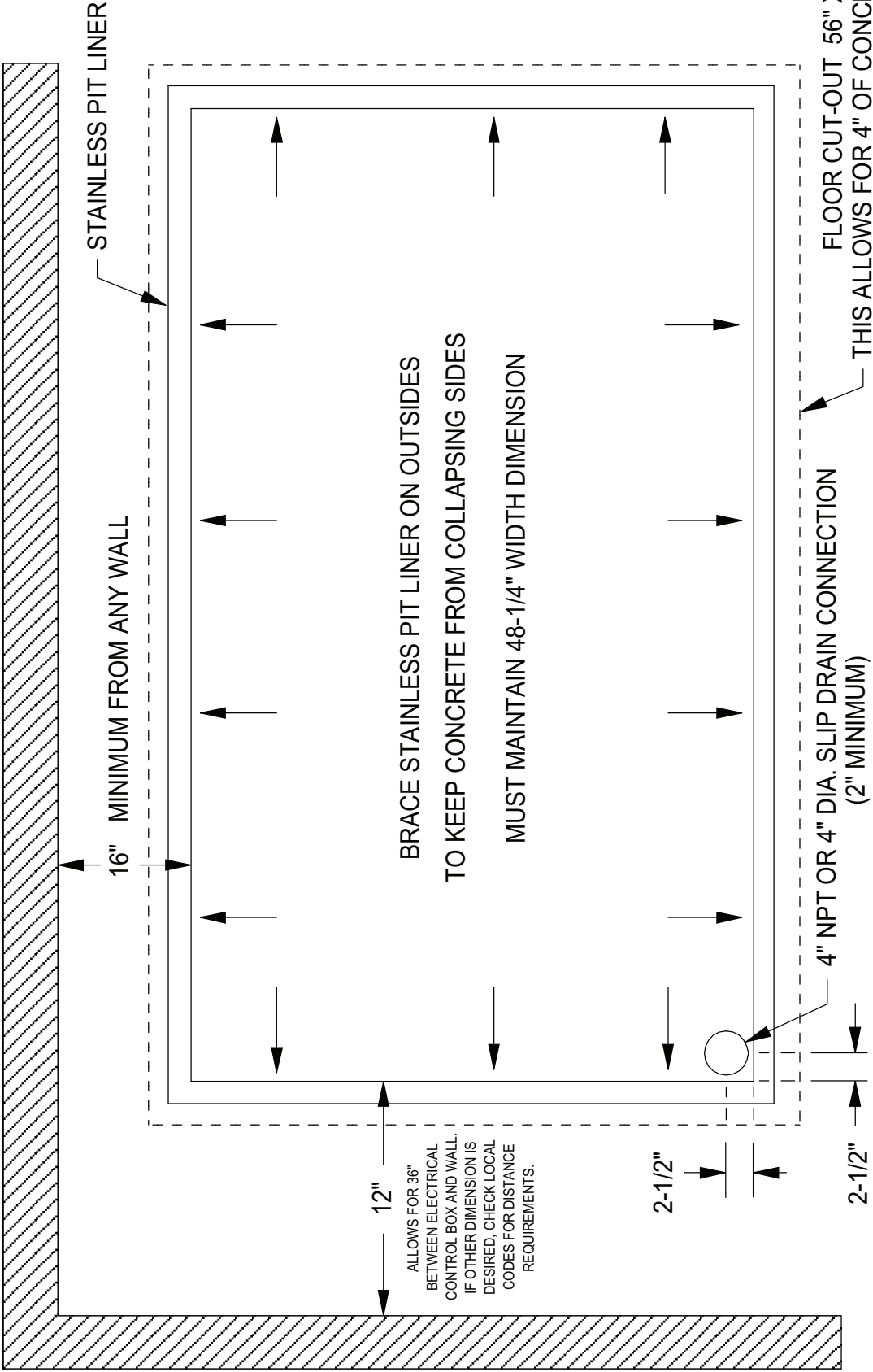
120" DIMENSION INCLUDES
12" FOR FRONT FLOOR GRATE

12" EXTRA PIT LENGTH REQUIRED
FOR EACH ADDITIONAL FRONT GRATE

NOTE: TO BE PLACED IN FLOOR &
CEMENT POURED AROUND PERIMETER

<div>LVO</div> <div>PAN WASHERS</div>	LVO MFG. INC.				MAT.		GA.	NAME: STAINLESS PIT	
	ROCK RAPIDS IA.							RW2580 (1 FLOOR GRATE)	
	712-472-3734				SCALE		TOL. +	-	NO. 131-1114

OPTIONAL STAINLESS PIT LINER WITH ONE FRONT FLOOR GRATE



NOTE: ALL DIMENSIONS ARE FOR STANDARD 120" PIT
CONSULT FACTORY FOR ANY CHANGES OR INFORMATION



LVO MFG., INC.
ROCK RAPIDS IA.
712-472-3734

MAT.

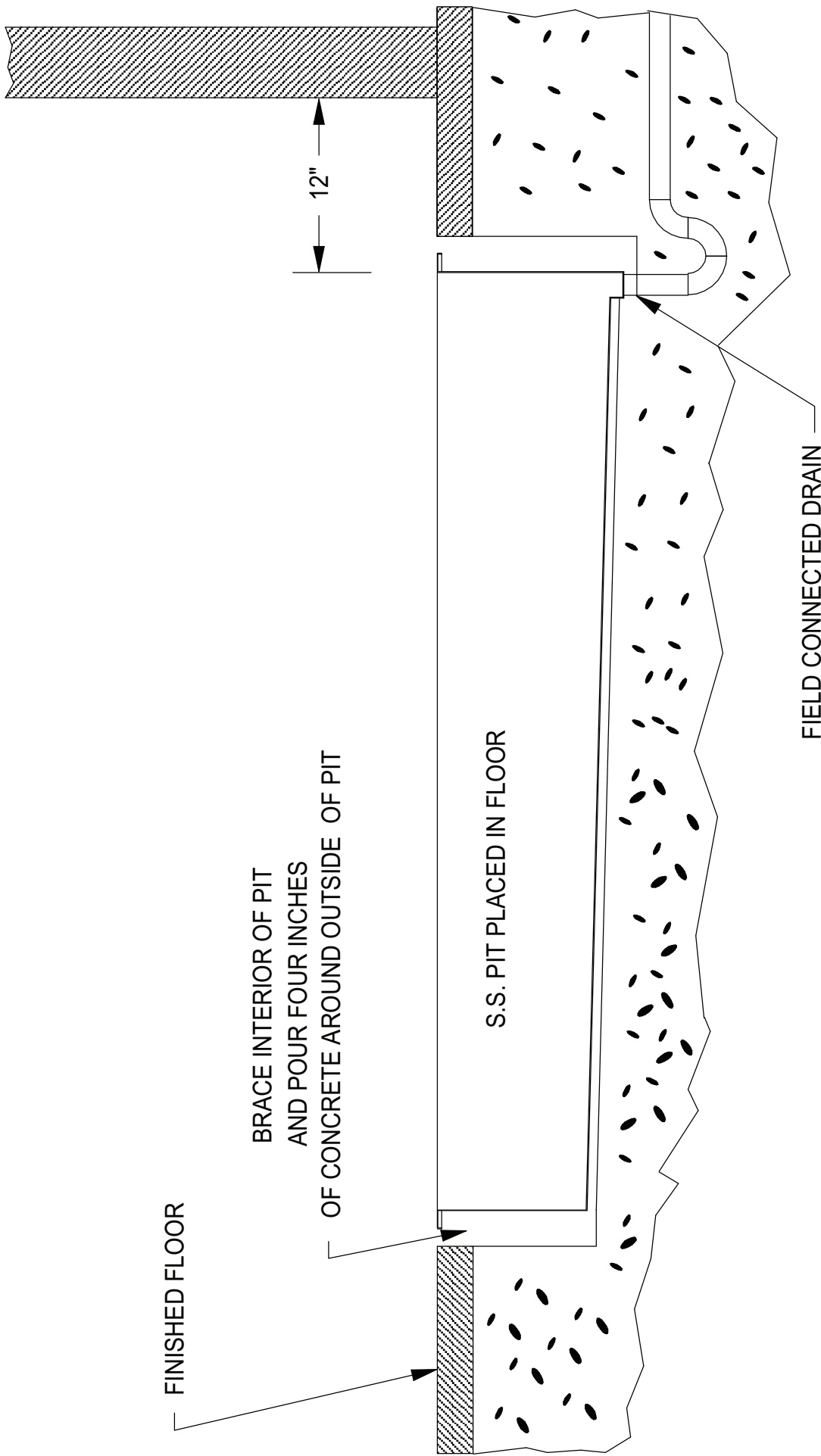
SCALE

TOL. + -

GA.

07-10-02
Martin E.

NAME: INFORMATIONAL
PIT WITH STAINLESS LINER
NO. 131-1113



NOTE:

SEE DRAWINGS 131-1114 & 131-1115
FOR ADDITIONAL INFORMATION



LVO MFG. INC.
808 N. 2ND AVE. EAST
ROCK RAPIDS, IA. 51246
PHONE 712-472-3734

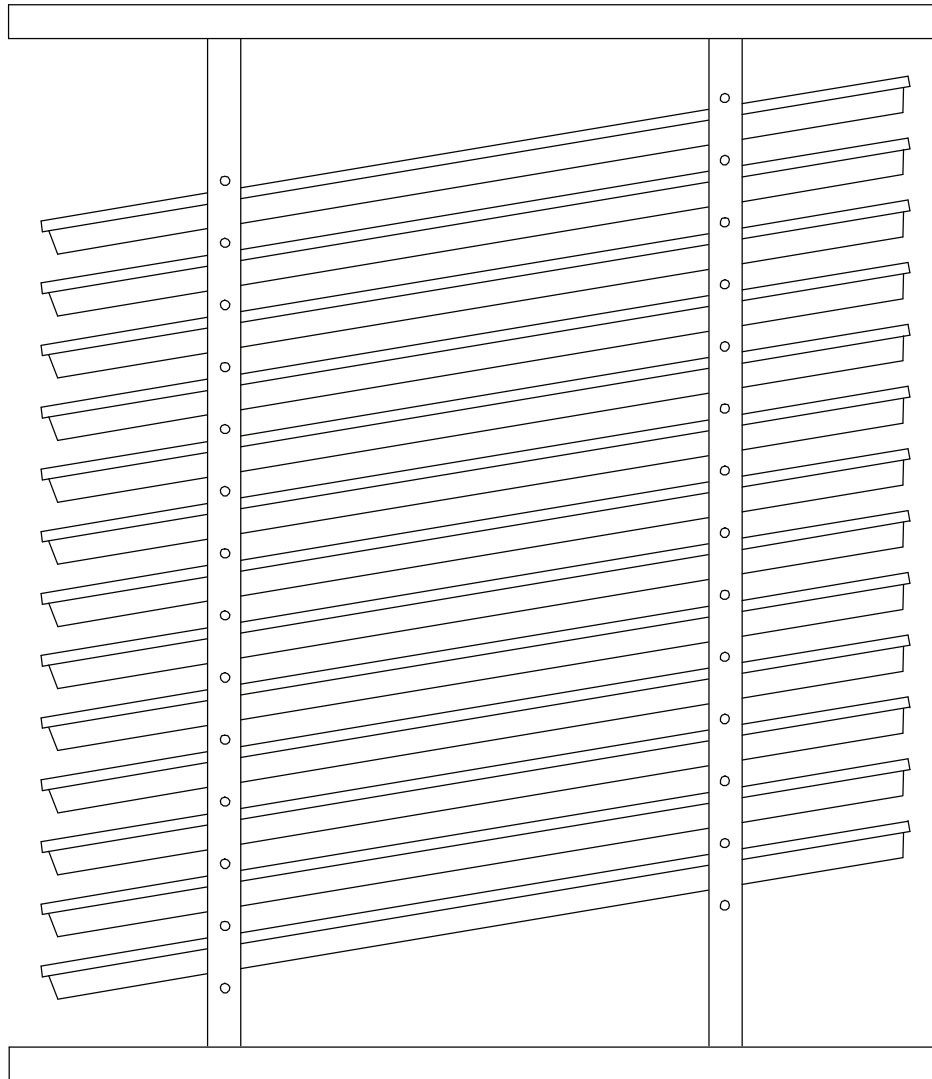
MAT.

SCALE

TOL. + -

GA.
07-10-02
Martin E.

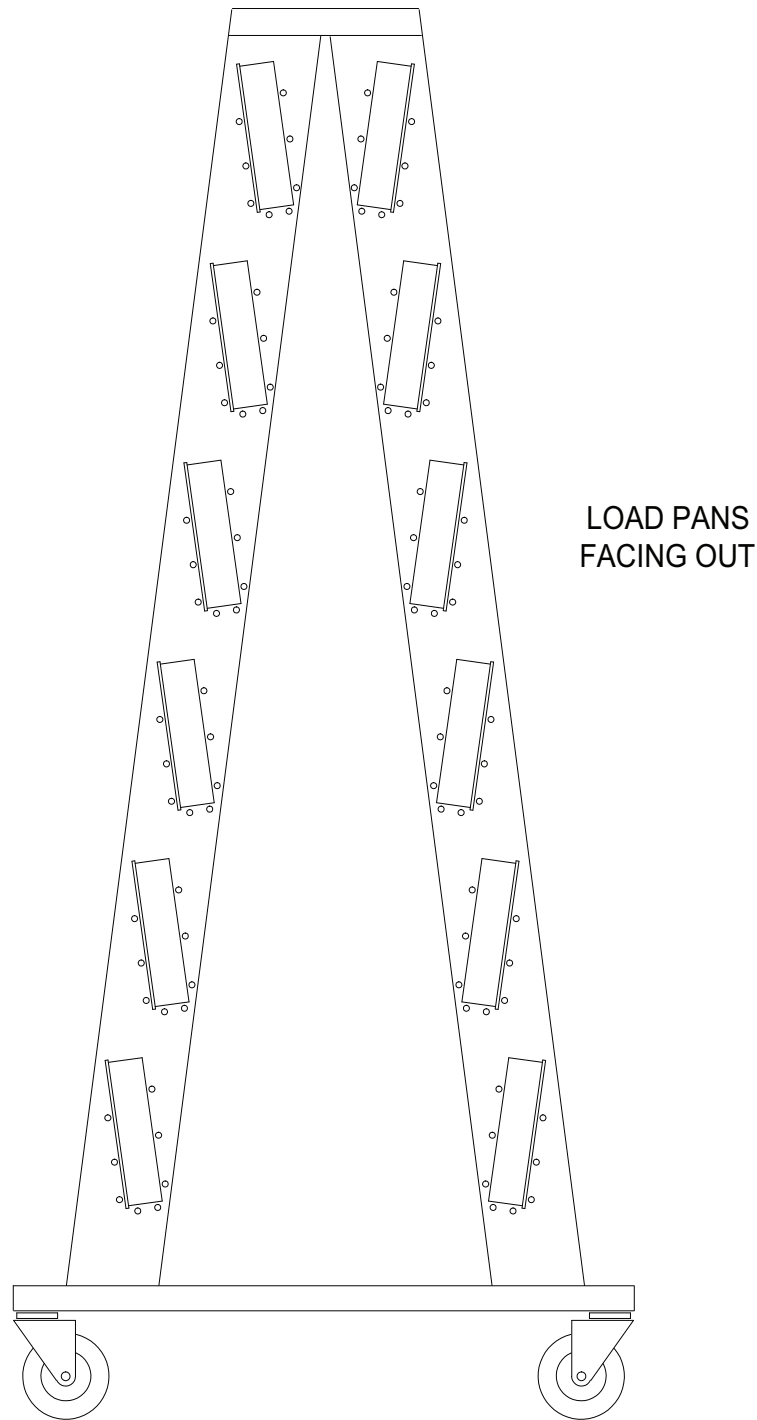
NAME: S.S. PIT INFORMATIVE
RW2580
NO. 131-1115



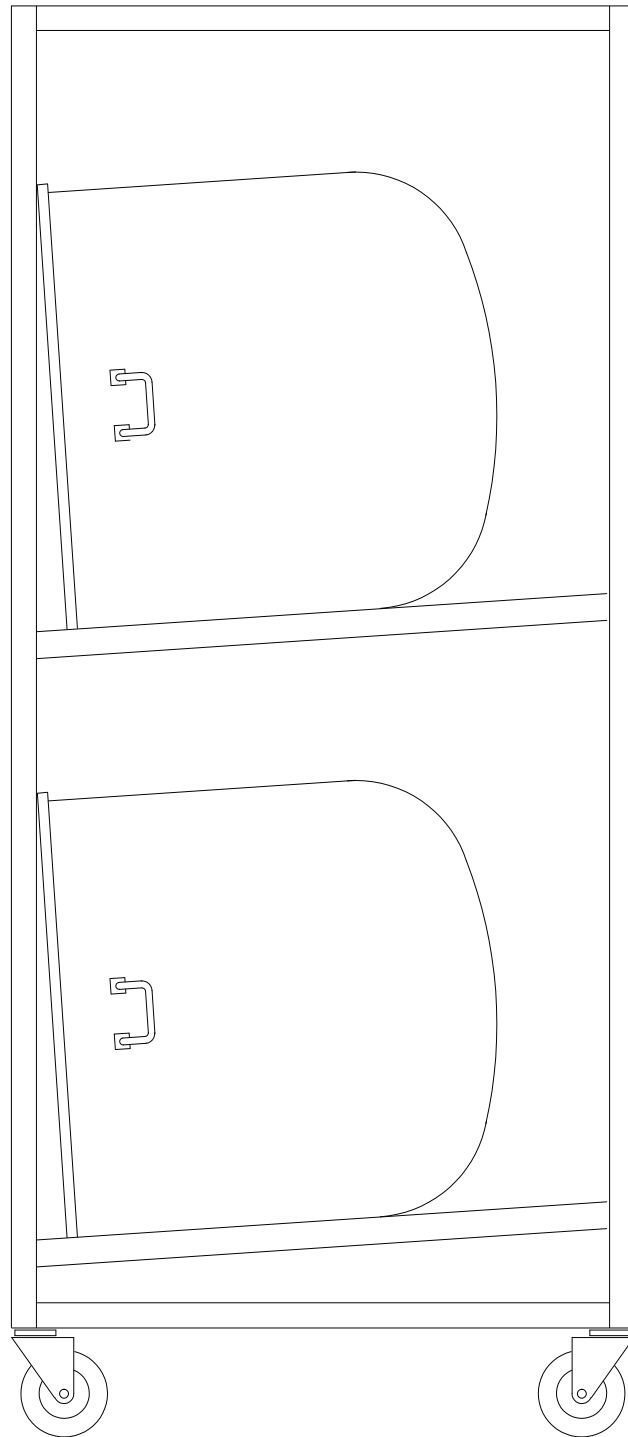
TOP VIEW OF BUN PAN RACK

LOAD ALL PANS FACING SAME DIRECTION

<div style="border: 1px solid black; border-radius: 50%; width: 60px; height: 60px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="text-align: center;"> LVO <small>PAN WASHERS</small> </div> </div> <div style="margin-top: 5px;">MFG. CO. INC.</div>	MAT.		GA.	NAME	BUN PAN RACK
	REV.	SCALE		RW2580	INFORMATIVE
		TOL $\begin{smallmatrix} + \\ - \end{smallmatrix}$	02-12-97 <i>M. Elbers</i>	NO.	BPR-INF
ROCK RAPIDS, IA. 51246					

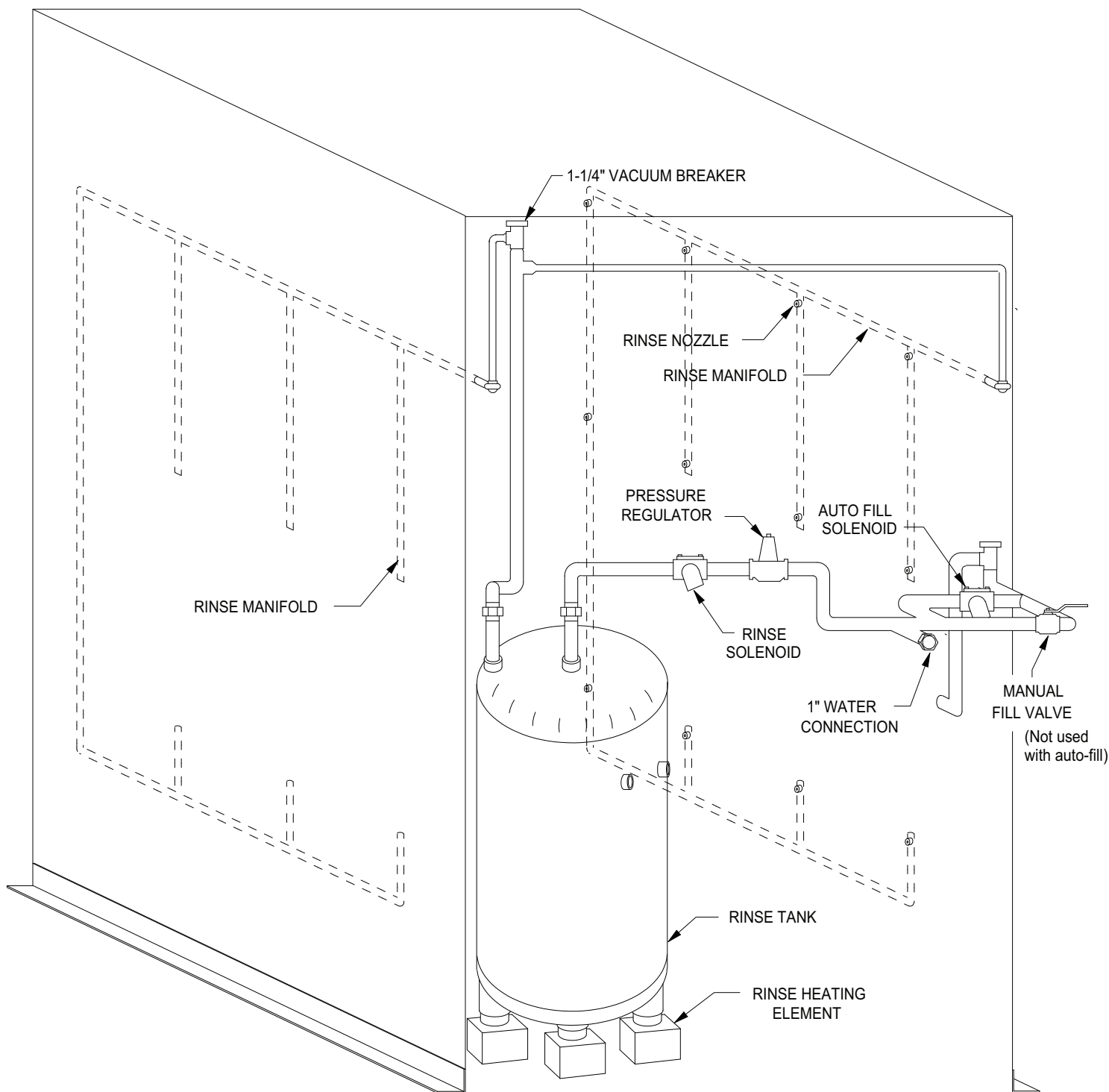


<div><div>LVO</div><div>PAN WASHERS</div></div>	MFG. CO. INC.	MAT.			GA.	NAME	CAKE PAN RACK
		REV.	SCALE			RW2580	INFORMATIVE
			TOL ⁺	02-12-97			
ROCK RAPIDS, IA. 51246			TOL ⁻	M. Elbers		NO.	CPR-INF



BOWLS SHOULD BE
LOADED TOP FIRST
TO ALLOW WATER
TO DRAIN OUT

<div> <div>LVO</div> <div>PAN WASHERS</div> </div> <div>MFG. CO. INC.</div> <div>ROCK RAPIDS, IA. 51246</div>	MAT.		GA.	NAME	BOWL RACK
	REV.	SCALE		RW2580	INFORMATIVE
		TOL $\begin{smallmatrix} + \\ - \end{smallmatrix}$	02-12-97 <i>M. Elbers</i>	NO.	BR-INF



MFG. CO. INC.

MAT.

GA.

NAME: ELECTRIC RINSE SYSTEM

REV. 04-19-02

SCALE

RW2580

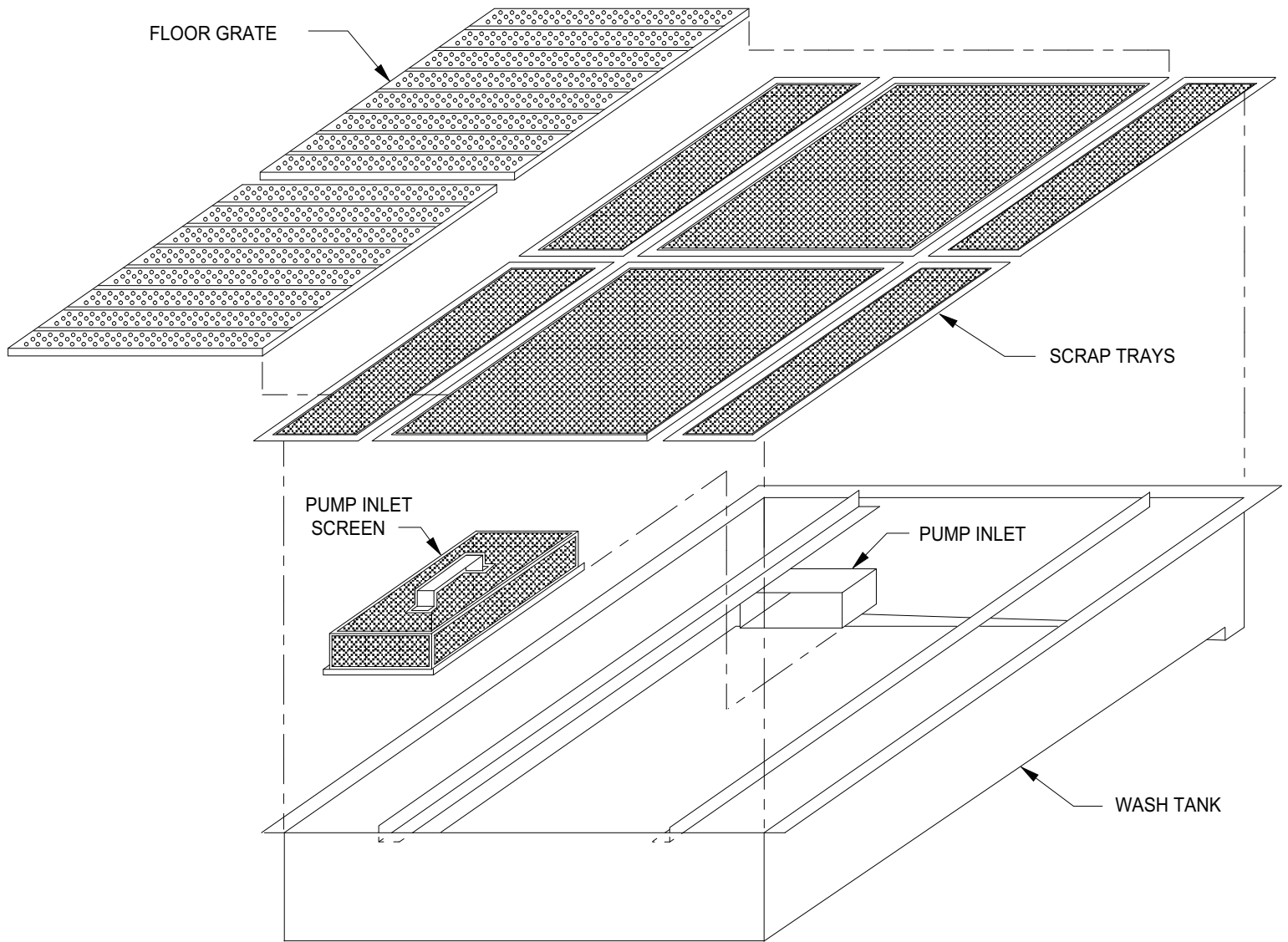
INFORMATIVE

ROCK RAPIDS, IA. 51246

TOL ⁺
-

02-12-97
M. Elbers

NO. 131-1010



LVO MFG., INC.
808 N. 2ND AVE. EAST
ROCK RAPIDS, IA. 51246

PHONE: 712-472-3734

MAT.

REV.

SCALE

TOL

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GA.

02-11-97

M. Elbers

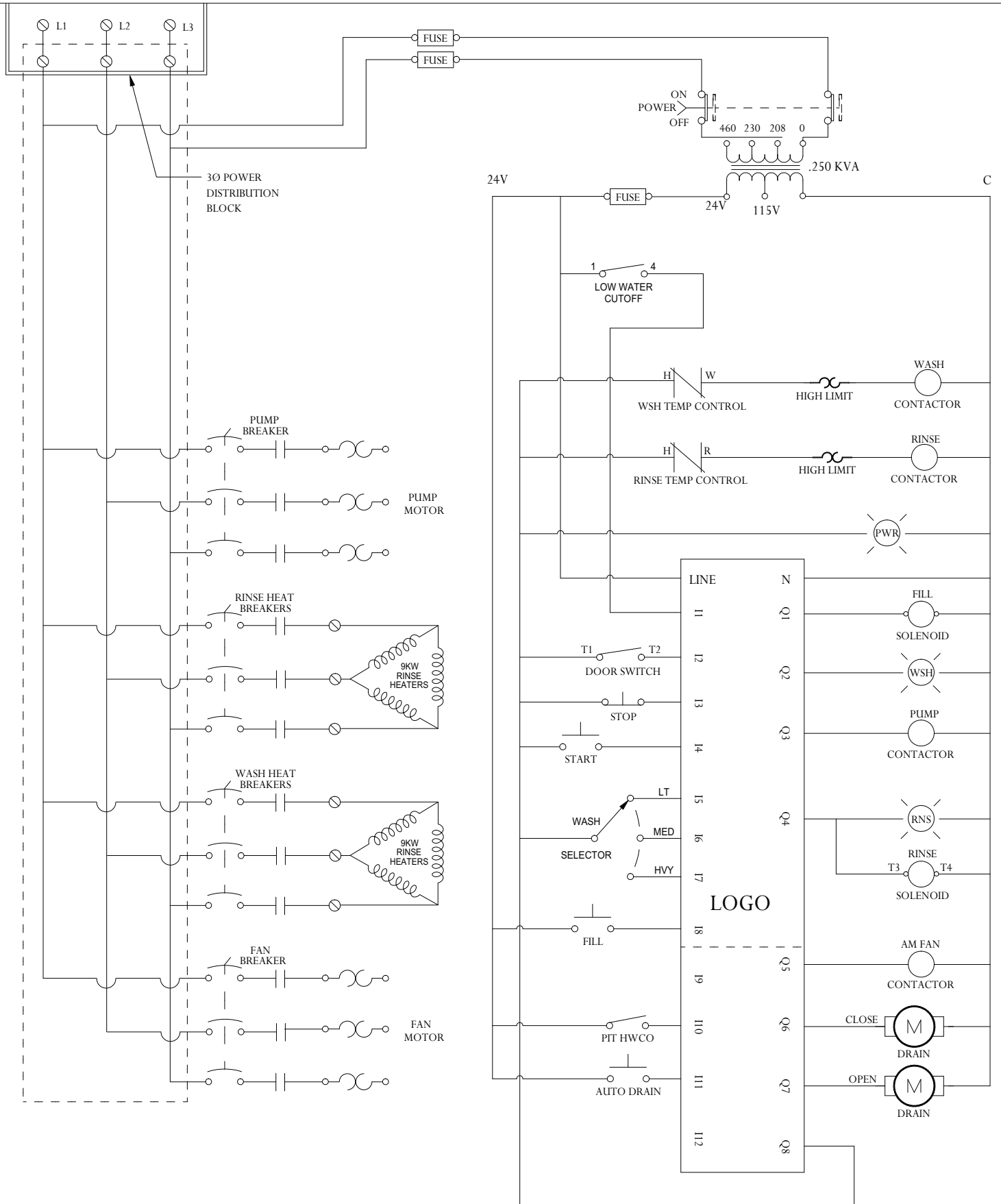
NAME

GRATE & SCREEN

INFORMATIVE

NO.

131-1009



LVO MFG., INC.
808 N. 2ND AVE. EAST
ROCK RAPIDS, IA. 51246

PHONE: 712-472-3734

MAT.

REV.

SCALE

TOL $\frac{+}{-}$

GA.

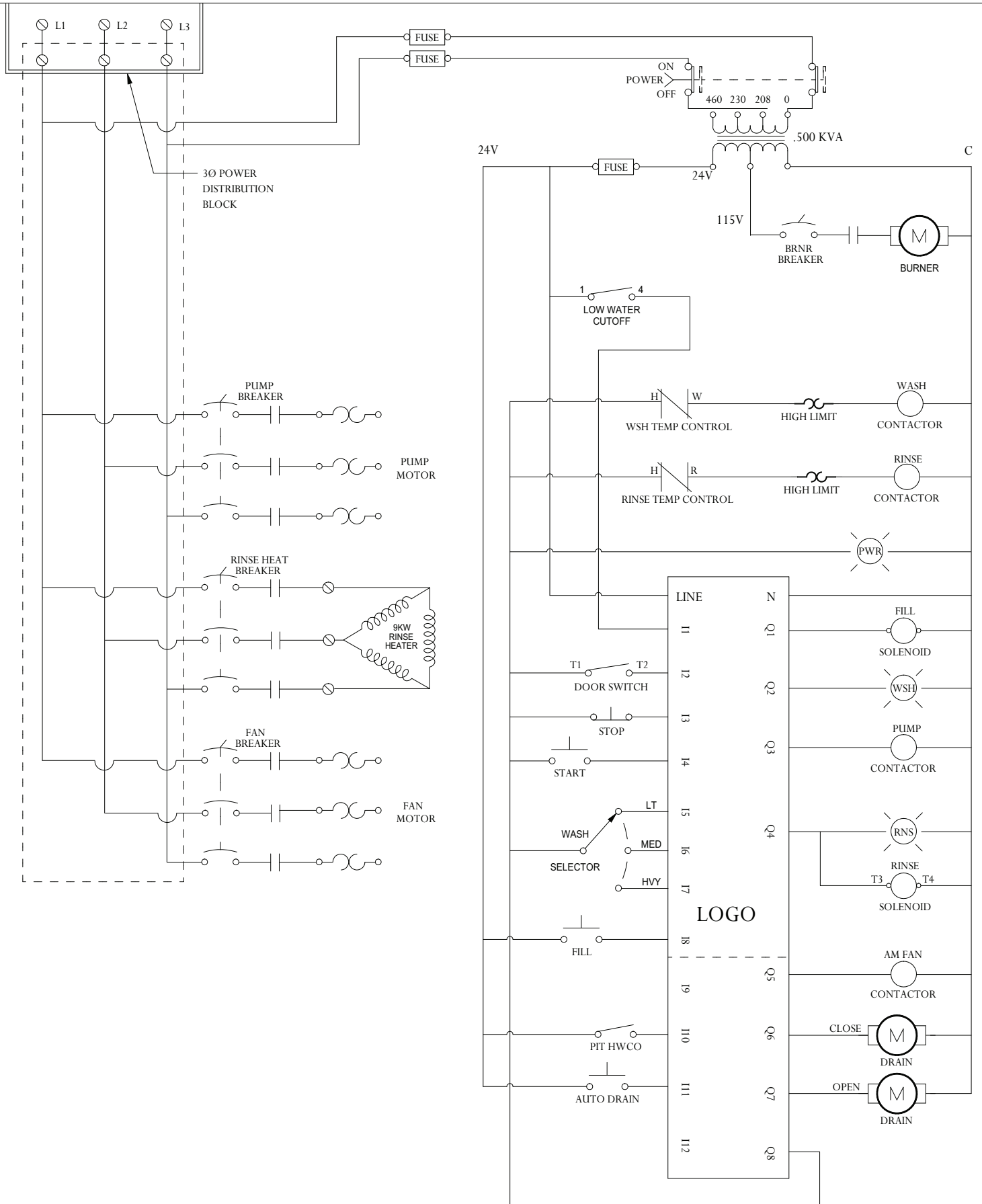
08-21-07

C. Woiwood

NAME: LOGO LADDER DIAGRAM

RW2580 ELEC. AF-AD-AM-PF

NO. 124L1170



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ROCK RAPIDS, IA. 51246

PHONE: 712-472-3734

MAT.

REV.

SCALE

TOL +
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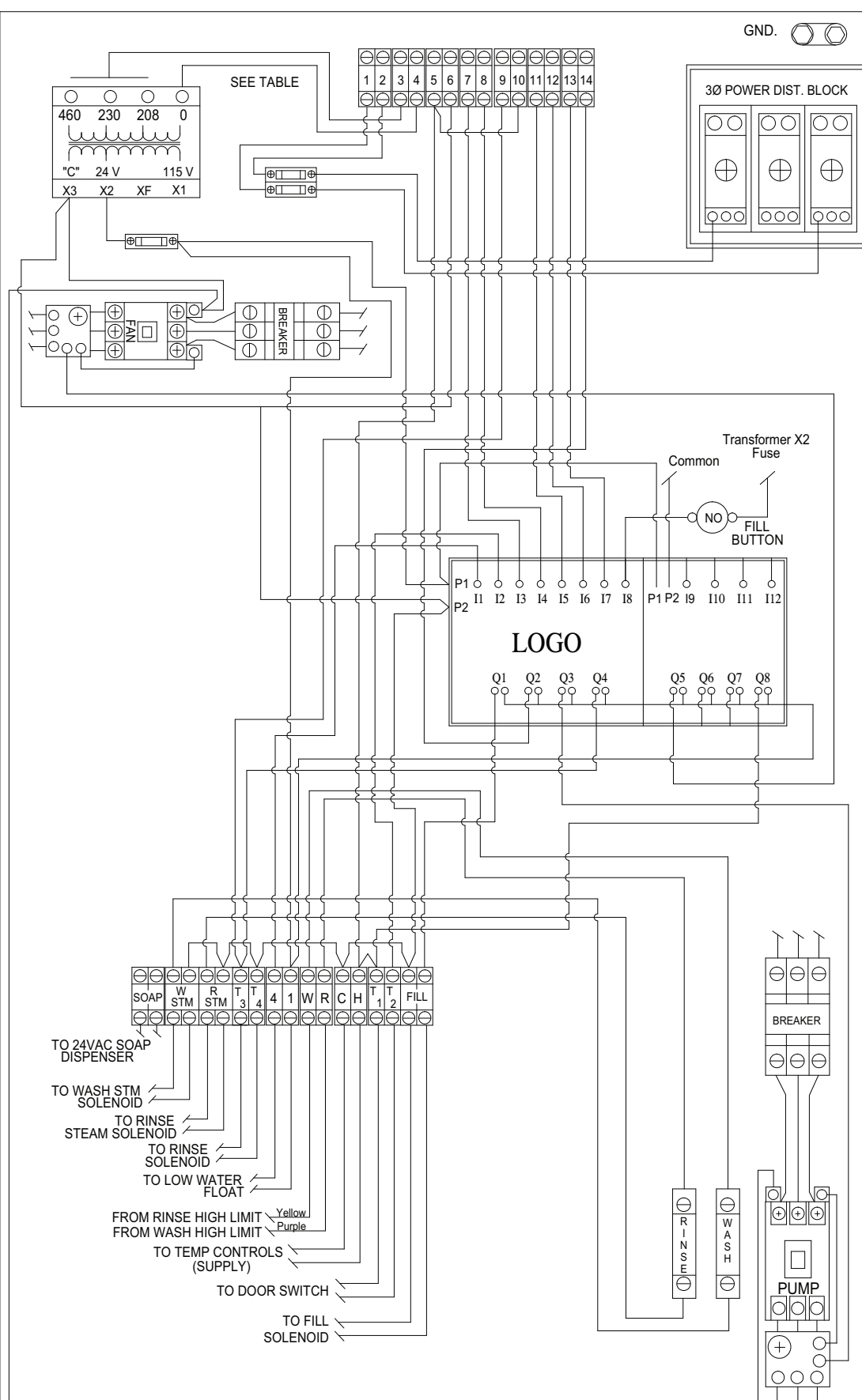
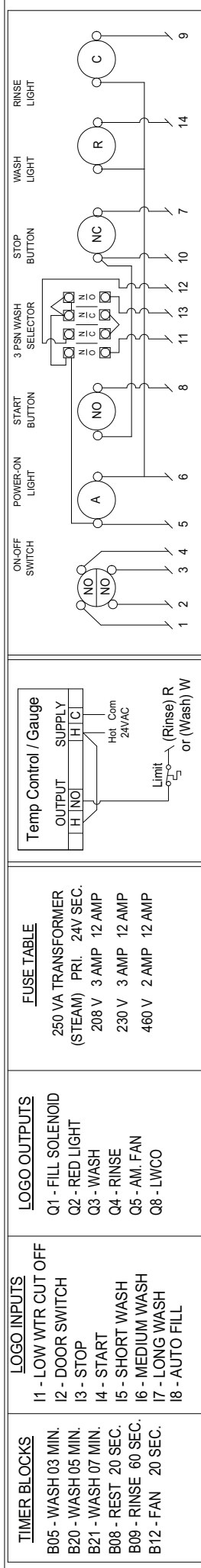
08-21-07


M. Elbers

NAME: LOGO LADDER DIAGRAM

RW2580 GAS AF-AD-AM-PF

NO. 124L1173



 <p>LVO MFG. INC. 808 N. 2ND AVE. EAST ROCK RAPIDS, IA. 51246 PHONE 712-472-3734</p>	Prog. L24-AF-AD-FN-LW-PF	GA.	NAME: 24V ELEC. SCHEMATIC
	SCALE	TOL. + -	RW2580 STEAM
			AUTO FILL & AM FAN
			NO. 124-1176

