

## TECHNICAL MANUAL

INSTALLATION MANUAL FOR EXPORT UNITS  
SERVICE MANUAL FOR DOMESTIC UNITS

### TS-44 SERIES

TS-44  
TS-44GP  
TS-66  
TS-66GP

### TSC-44 SERIES

TSC-44  
TSC-44GP  
TSC-66  
TSC-66GP



September 29, 2007  
P/N 7610-002-98-29 (Revision C)

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

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## **MANUFACTURERS WARRANTY**

### **ONE YEAR LIMITED PARTS & LABOR WARRANTY**

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ALL NEW JACKSON DISHWASHERS ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP, UNDER NORMAL USE AND OPERATION FOR A PERIOD OF (1) ONE YEAR FROM THE DATE OF PURCHASE, BUT IN NO EVENT TO EXCEED (18) EIGHTEEN MONTHS FROM THE DATE OF SHIPMENT FROM THE FACTORY.

Jackson MSC agrees under this warranty to repair or replace , at its discretion, any original part which fails under normal use due to faulty material or workmanship during the warranty period, providing the equipment has been unaltered, and has been properly installed, maintained and operated in accordance with the applicable factory instruction manual furnished with the machine and the failure is reported to the authorized service agency within the warranty period. This includes the use of factory specified genuine replacement parts, purchased directly from a Jackson authorized parts distributor or service agency. Use of generic replacement parts may create a hazard and void warranty certification.

The labor to repair or replace such failed part will be paid by Jackson MSC, within the continental United States, Hawaii and Canada, during the warranty period provided a Jackson MSC authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson MSC authorized service agency is the sole responsibility of the customer. Labor coverage is limited to regular hourly rates, overtime premiums and emergency service charges will not be paid by Jackson MSC.

Accessory components not installed by the factory carry a (1) one year parts warranty only. Accessory components such as table limit switches, pressure regulators, pre rinse units, etc. that are shipped with the unit and installed at the site are included. Labor to repair or replace these components is not covered by Jackson MSC.

This warranty is void if failure is a direct result from shipping, handling, fire, water, accident, misuse, acts of god, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for purpose other than it was originally intended.

#### **TRAVEL LIMITATIONS**

Jackson MSC limits warranty travel time to (2) two hours and mileage to (100) one hundred miles. Jackson MSC will not pay for travel time and mileage that exceeds this, or any fees such as those for air or boat travel without prior authorization.

#### **WARRANTY REGISTRATION CARD**

The warranty registration card supplied with the machine must be returned to Jackson MSC within 30 days to validate the warranty.

#### **REPLACEMENT PARTS WARRANTY**

Jackson replacement parts are warranted for a period of 90 days from the date of installation or 180 days from the date of shipment from the factory, which ever occurs first.

#### **PRODUCT CHANGES AND UPDATES**

Jackson MSC reserves the right to make changes in design and specification of any equipment as engineering or necessity requires.

**THIS IS THE ENTIRE AND ONLY WARRANTY OF JACKSON MSC. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND, INCLUDING NEGLIGENCE, WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER, SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.**

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING FOR FITNESS OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF. UNDER NO CIRCUMSTANCES WILL JACKSON MSC BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, OR FOR THE DAMAGES IN THE NATURE OF PENALTIES, ARISING OUT OF THE USE OR INABILITY TO USE ANY OF ITS PRODUCTS.

#### **ITEMS NOT COVERED**

This warranty does not cover cleaning or deliming of the unit or any component such as, but not limited to, wash arms, rinse arms or strainers at anytime. Nor does it cover adjustments such as, but not limited to timer cams, thermostats or doors, beyond 30 days from the date of installation. In addition, the warranty will only cover the replacement of wear items such as curtains, drain balls, door guides or gaskets during the first 30 days after installation. Also, not covered are conditions caused by the use of incorrect (non-Commercial) grade detergents, incorrect water temperature or pressure, or hard water conditions.



**CALL 1-888-800-5672 TO REGISTER THIS PRODUCT!  
FAILURE TO DO SO WILL VOID THE WARRANTY!**

**LLAME AL 1-888-800-5672 PARA REGISTRAR ESTE PRODUCTO!  
AL NO HACERLO LA GARANTIA SERA ANULADA!**

**S.V.P. APPELER 1-888-800-5672 POUR ENREGISTRER CE PRODUIT,  
LA GARANTIE SERA ANNULEE POUR TOUT PRODUIT NON- ENREGISTREE**

REVISION/ PAGE	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
A	11-19-2004	MAW	7202	Initial release of manual.
B	03-17-2005	MAW	7253, 7272 6999	Added hose connections, curtain installation & detailed instruction pages. Updated limit switch actuators. Added 600V models.
C	02-15-2006	MAW	7600, 7571, 7558, 7679, 7660, 7383, 7361, 7463, 7367, 7462	Added gas exhaust fan hookup schematic, updated electric exhaust fan schematic. Added wash tank thermostat replacement kit. Replaced rine drain weldment 5700-021-68-28 with 5700-002-51-12. Added drain plumbing 5700-003-17-34. Added schematic 9905-003-16-50 for dual connection. Replaced vacuum breaker 4830-300-07-00 with 4820-003-06-13. Replaced plastic cap 4730-003-12-00 with s/s cap 5700-011-67-11. Added the rinse fill motor assembly. Added wash, rinse and psi decals. Changed the pre-wash door weldments. Added service procedures. Corrected side loader dimensions.
76	04-19-2007	MAW	7898	Added 09905-003-32-20 fan load decal.
76	09-29-2007	MAW	N/A	Removed alternate limit switches. Changed to centered layout. Added warranty and repair centers listing pages. Removed service procedures.



## TS-44GP

TS = Traditional Series of rack conveyors  
TSC = Traditional Series (water conserver) of rack conveyors

44 = 44" wide machine  
66 = 66" wide machine

No suffix = Electrically heated, hot water sanitizing machine  
GP = Gas heated, hot water sanitizing machine

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

**Serial No.:** \_\_\_\_\_

**Installation Date:** \_\_\_\_\_

**Service Rep. Name:** \_\_\_\_\_

**Phone No.:** \_\_\_\_\_

Jackson MSC LLC. provides technical support for all of the dishmachines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual with you when you call so that our staff can refer you, if necessary, to the proper page. Technical support is available from 8:00 a.m. to 5:00 p.m. (EST), Monday through Friday. Technical support is not available on holidays. Contact technical support toll free at 1-888-800-5672. Please remember that technical support is available for service personnel only.

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# **SECTION 1: SPECIFICATION INFORMATION**



## SECTION 1: SPECIFICATION INFORMATION

### OPERATING CHARACTERISTICS

#### RACKS PER HOUR:

TS-44/TS-44GP	252
TSC-44/TS-44GP	119
TS-66/TS-66GP	252
TSC-66/TSC-66GP	119

#### DISHES OR GLASSES PER HOUR:

TS-44/TS-44GP	6300
TSC-44/TS-44GP	2975
TS-66/TS-66GP	6300
TSC-66/TSC-66GP	2975

#### PREWASH TANK CAPACITY (GALLONS):

TS-66/TS-66GP	17.25
TSC-66/TSC-66GP	17.25

#### WASH TANK CAPACITY (GALLONS):

TS-44/TS-44GP	20.4
TSC-44/TS-44GP	20.4
TS-66/TS-66GP	20.4
TSC-66/TSC-66GP	20.4

#### WASH PUMP CAPACITY

GALLONS PER MINUTE (ALL MODELS):	270
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#### VENTING REQUIREMENTS (CFM)(100% CAP.):

INPUT END	200
OUTPUT END	400
TOTAL	600

#### CONVEYOR SPEED (FPM):

TS-44/TS-44GP	7.0
TSC-44/TS-44GP	3.33
TS-66/TS-66GP	7.0
TSC-66/TSC-66GP	3.33

#### GALLONS PER RACK:

TS-44/TS-44GP	0.74
TSC-44/TS-44GP	0.55
TS-66/TS-66GP	0.74
TSC-66/TSC-66GP	0.55

#### WATER TEMPERATURES:

<b>TS-44/TS-44GP</b>	
WASH (MINIMUM)	160°F
RINSE (MINIMUM)	180°F

<b>TSC-44/TSC-44GP</b>	
WASH (MINIMUM)	160°F
RINSE (MINIMUM)	180°F

<b>TS-66/TS-66GP</b>	
PREWASH (RECOMMENDED)	110-140°F
WASH (MINIMUM)	160°F
RINSE (MINIMUM)	180°F

<b>TSC-66/TSC-66GP</b>	
PREWASH (RECOMMENDED)	110-140°F
WASH (MINIMUM)	160°F
RINSE (MINIMUM)	180°F

<b>FLOW PRESSURE (PSI)</b>	20 ± 5
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<b>FLOWRATE (GPM) TS SERIES</b>	3.1
<b>FLOWRATE (GPM) TSC SERIES</b>	1.1

#### GAS SPECIFICATIONS:

Please refer to your gas booster manufacturer's instructions.

#### MOTOR ELECTRICAL CHARACTERISTICS:

DRIVE MOTOR HP	1/4
WASH MOTOR HP	2
POWER RINSE MOTOR HP	2
PREWASH MOTOR HP:	
TS-66/TS-66GP	1
TSC-66/TSC-66GP	1

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## SECTION 1: SPECIFICATION INFORMATION

### ELECTRICAL REQUIREMENTS

**NOTE: Typical Electrical Circuit is based upon (1) 125% of the full amperage load of the machine and (2) typical fixed-trip circuit breaker sizes as listed in the NEC 2002 Edition. Local codes may require more stringent protection than what is displayed here. Always verify with your electrical service contractor that your circuit protection is adequate and meets all applicable national and local codes. These numbers are provided in this manual simply for reference and may change without notice at any given time.**

#### TS-44/TSC-44:

<u>VOLTS</u>	<u>PH</u>	<u>HZ</u>	<u>RINSE HEATER RATING</u>	<u>TOTAL AMPS</u>	<u>TYPICAL ELECTRICAL CIRCUIT</u>
208	1	60	N/A	83 Amps	110 Amp
230	1	60	N/A	76 Amps	100 Amp
208	3	60	N/A	49 Amps	70 Amp
230	3	60	N/A	45 Amps	60 Amp
460	3	60	N/A	23 Amps	30 Amp
600	3	60	N/A	19 Amps	25 Amp

#### TS-44GP/TSC-44GP:

<u>VOLTS</u>	<u>PH</u>	<u>HZ</u>	<u>RINSE HEATER RATING</u>	<u>TOTAL AMPS</u>	<u>TYPICAL ELECTRICAL CIRCUIT</u>
208	1	60	N/A	12 Amps	15 Amp
230	1	60	N/A	12 Amps	15 Amp
208	3	60	N/A	8 Amps	15 Amp
230	3	60	N/A	8 Amps	15 Amp
460	3	60	N/A	5 Amps	15 Amp

#### TS-66/TSC-66:

<u>VOLTS</u>	<u>PH</u>	<u>HZ</u>	<u>RINSE HEATER RATING</u>	<u>TOTAL AMPS</u>	<u>TYPICAL ELECTRICAL CIRCUIT</u>
208	1	60	N/A	89 Amps	125 Amp
230	1	60	N/A	82 Amps	110 Amp
208	3	60	N/A	52 Amps	70 Amp
230	3	60	N/A	48 Amps	60 Amp
460	3	60	N/A	24 Amps	30 Amp
600	3	60	N/A	22 Amps	30 Amp

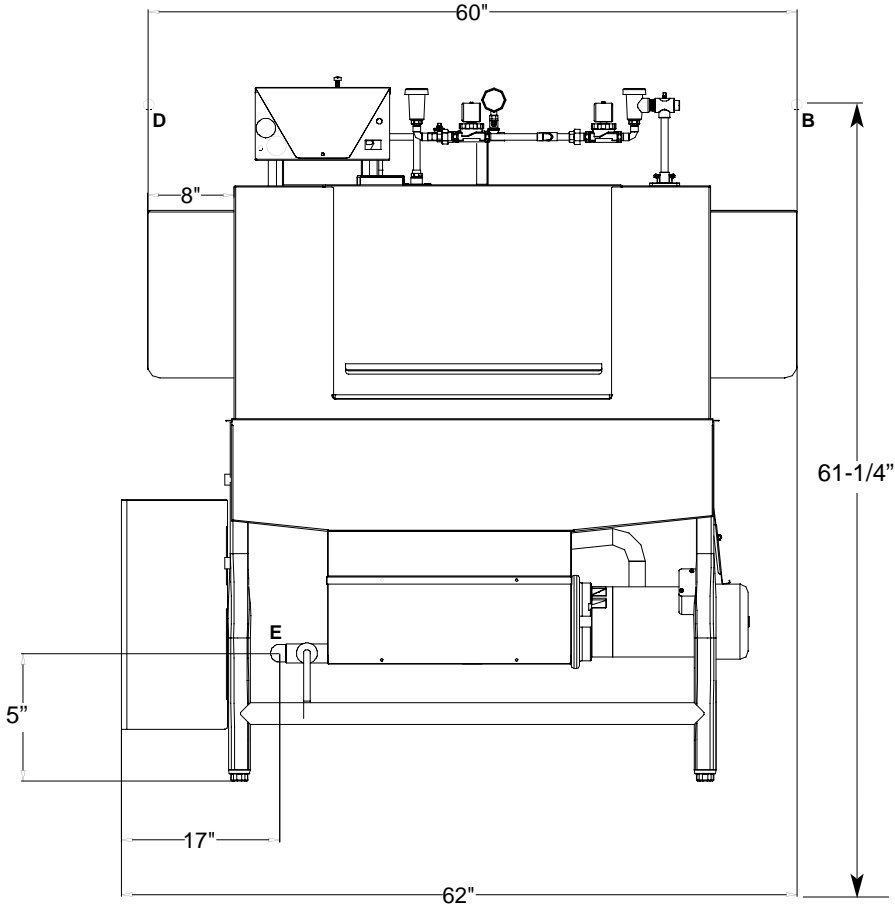
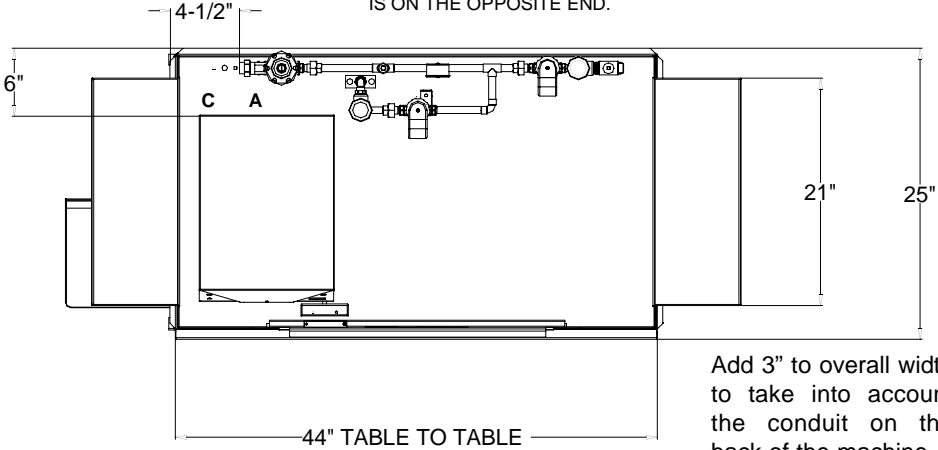
#### TS-66GP/TSC-66GP:

<u>VOLTS</u>	<u>PH</u>	<u>HZ</u>	<u>RINSE HEATER RATING</u>	<u>TOTAL AMPS</u>	<u>TYPICAL ELECTRICAL CIRCUIT</u>
208	1	60	N/A	18 Amps	25 Amp
230	1	60	N/A	18 Amps	25 Amp
208	3	60	N/A	12 Amps	15 Amp
230	3	60	N/A	12 Amps	15 Amp
460	3	60	N/A	7 Amps	15 Amp

**SECTION 1: SPECIFICATION INFORMATION**

**TS-44/TSC-44 DIMENSIONS**

LEFT TO RIGHT MODEL SHOWN.  
ON RIGHT TO LEFT MODELS, THE  
INCOMING WATER CONNECTION  
IS ON THE OPPOSITE END.



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## SECTION 1: SPECIFICATION INFORMATION

### TS-44/TSC-44 DIMENSIONS (CONTINUED)

#### LEGEND FOR TS-44/TSC-44/TS-44GP/TSC-44GP DIMENSIONS:

A = 1/2" IPS incoming water connection, approximately 59-1/2" above the finished floor. Electric heat models only.

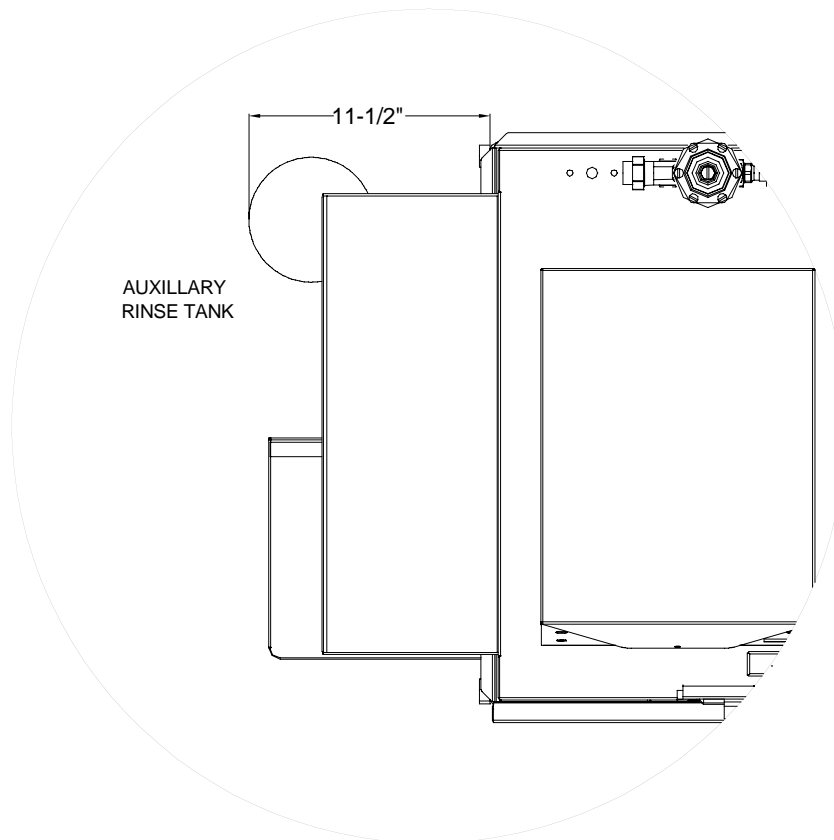
B = 1/2" IPS incoming water connection, approximately 59-1/2" above the finished floor. Gas heat models only.

C = Incoming electrical connection point, approximately 59-1/2" above the finished floor. Refer to machine data plate for electrical requirements.

D = 1/2" IPS incoming water connection, approximately 59-1/2" above the finished floor. Gas heat models only, left to right configuration.

E = 1-1/2" IPS drain point connection. If grease trap is required by code, size for 30 gallons per minute flowrate.

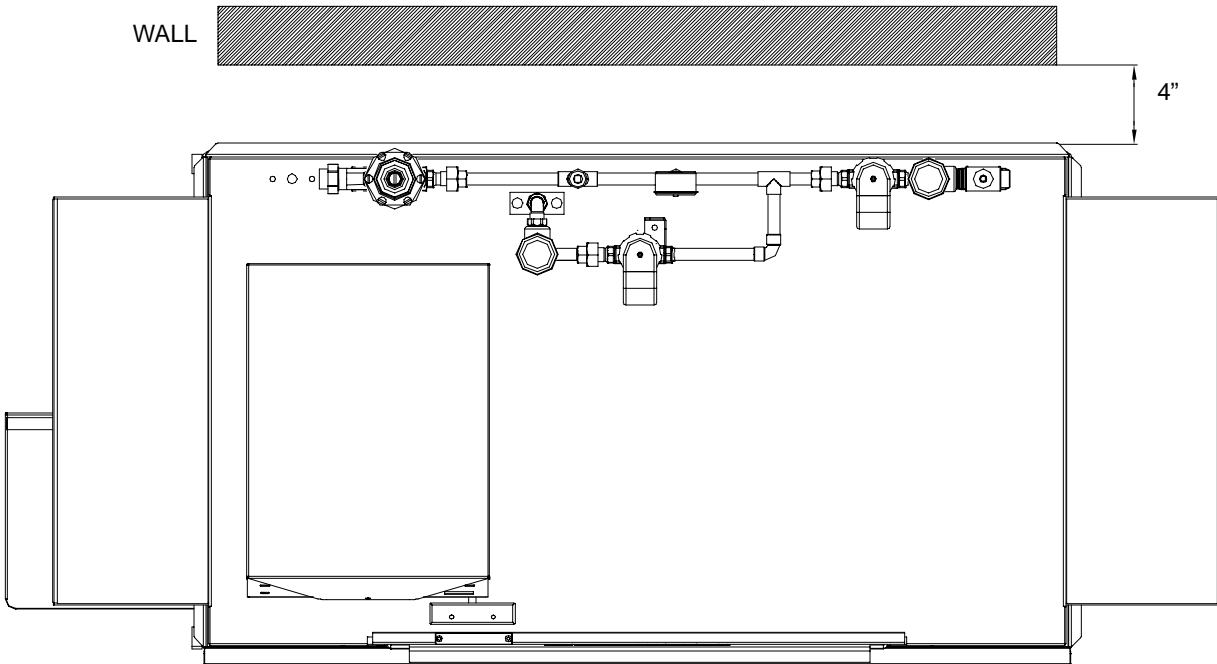
F = 1/2" IPS water outlet, approximately 6" above the finished floor. Gas heat models only.



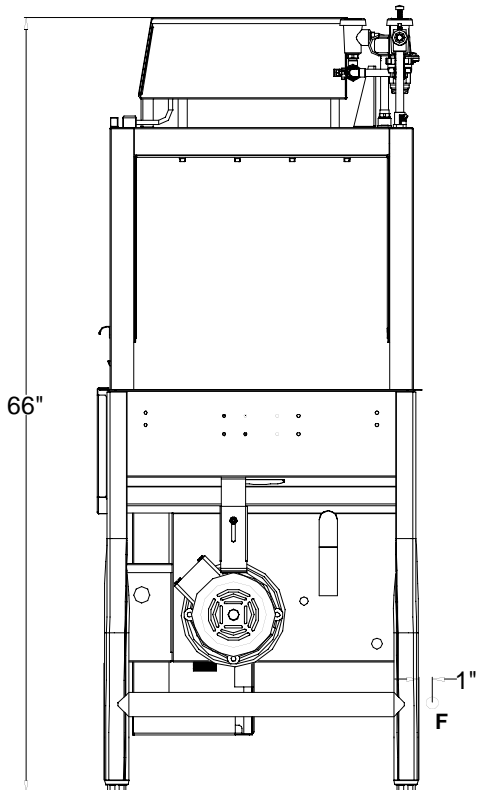
Typical dimension of the auxillary rinse tank found on the gas-heated models.

## SECTION 1: SPECIFICATION INFORMATION

### TS-44/TSC-44 DIMENSIONS (CONTINUED)



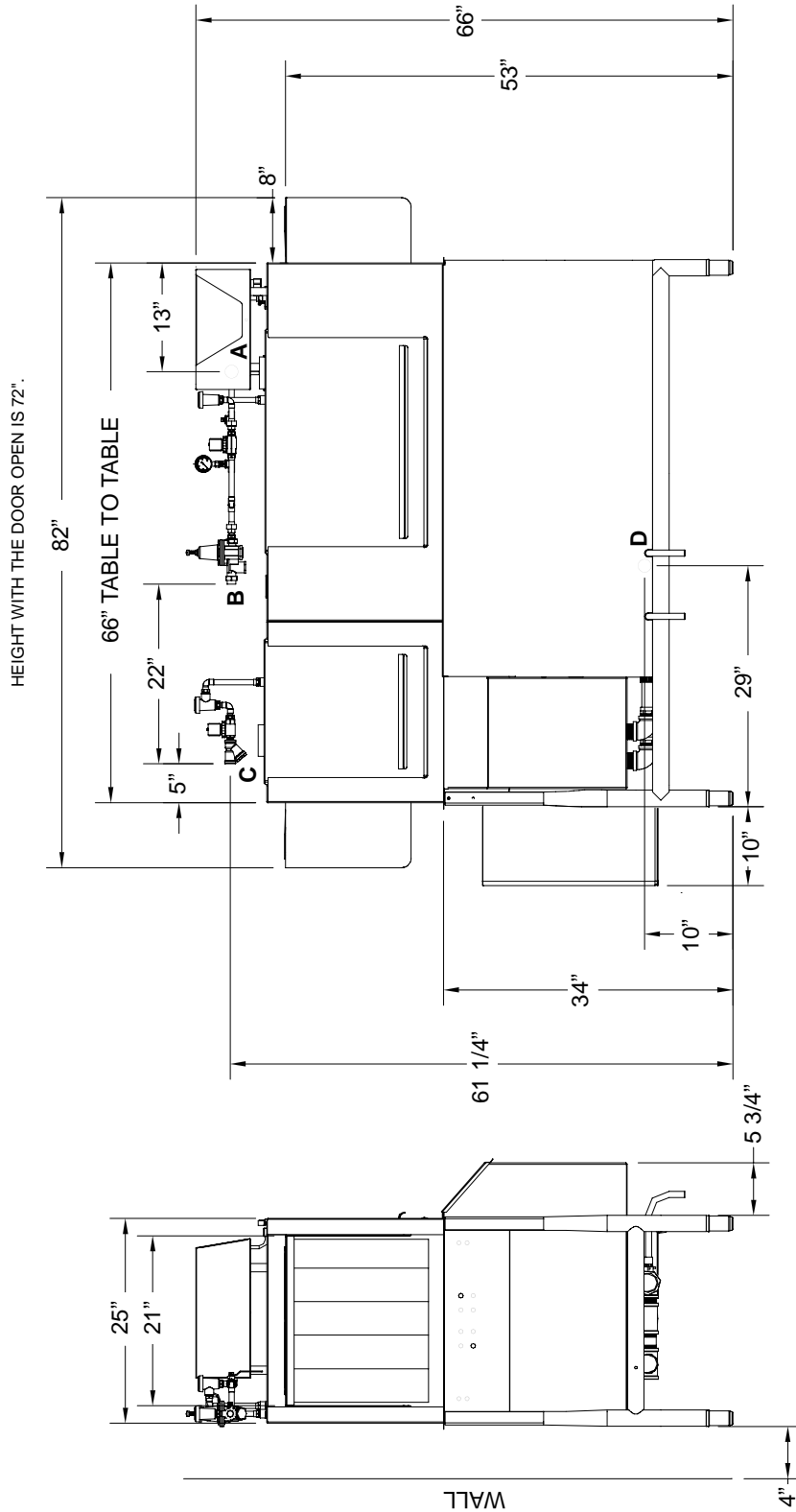
HEIGHT WITH DOOR OPEN: 72"



#### **NOTES CONCERNING THE TS-44/TSC-44 DIMENSIONS:**

1. All dimensions are +/- 1/2" in the vertical due to adjustment of the bullet feet.
2. A minimum of 4" spacing is required between the unit and the walls on all sides.
3. The maximum recommended distance between the unit and any external booster heater (electric or gas) is 20 feet.
4. Booster heaters have separate electrical requirements from the machines.
5. Machine width as dimensioned does not include an approximate 3" for the conduit that is attached to the back of the machine.

**SECTION 1: SPECIFICATION INFORMATION**  
**TS-66/TSC-66 (LEFT TO RIGHT) DIMENSIONS**



Add 3" to overall width to take into account the conduit on the back of the machine.

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## SECTION 1: SPECIFICATION INFORMATION

### TS-66/TSC-66 (LEFT TO RIGHT) DIMENSIONS (CONTINUED)

#### **LEGEND FOR TS-66/TSC-66 (LEFT TO RIGHT) DIMENSIONS:**

A = Incoming electrical connection point, approximately 61-1/4" above the finished floor. Refer to machine data plate for electrical requirements.

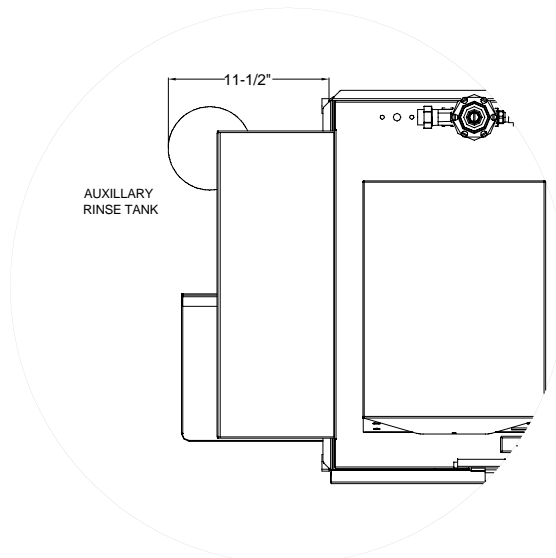
B = 1/2" IPS incoming water connection, approximately 61-1/4" above the finished floor. Electric heat models only.

C = 1/2" IPS prewash incoming water connection, approximately 61-1/4" above the finished floor. Electric heat models only.

D = 1-1/2" IPS drain point connection. If grease trap is required by code, size for 30 gallons per minute flowrate.

#### **NOTES CONCERNING THE TS-66/TSC-66 DIMENSIONS:**

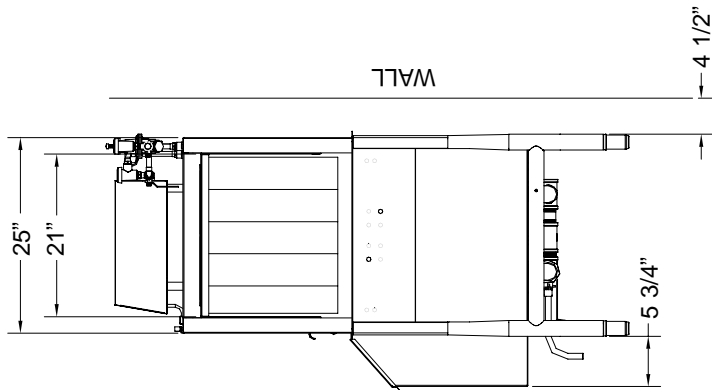
1. All dimensions are +/- 1/2" in the vertical due to adjustment of the bullet feet.
2. A minimum of 4" spacing is required between the unit and the walls on all sides.
3. The maximum recommended distance between the unit and any external booster heater (electric, steam or gas) is 20 feet.
4. Booster heaters have separate electrical requirements from the machines.
5. Machine width as dimensioned does not include an approximate 3" for the conduit that is attached to the back of the machine.



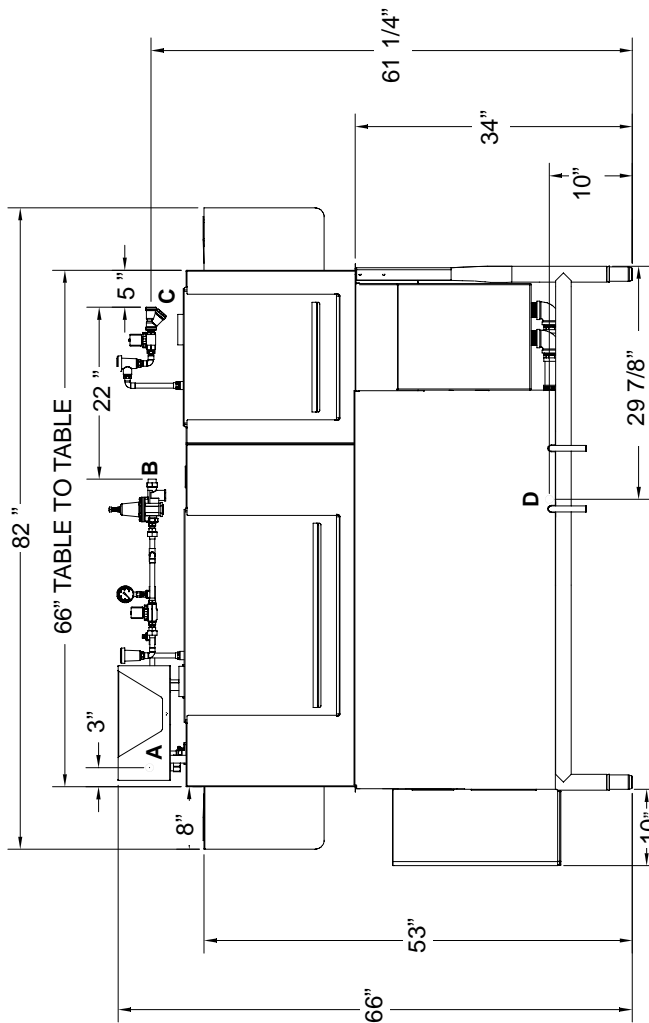
Typical dimension of the auxillary rinse tank found on the gas-heated models.

# SECTION 1: SPECIFICATION INFORMATION

## TS-66/TSC-66 (RIGHT TO LEFT) DIMENSIONS



Add 3" to overall width to take into account the conduit on the back of the machine.





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## SECTION 1: SPECIFICATION INFORMATION

### TS-66/TSC-66 (RIGHT TO LEFT) DIMENSIONS

#### LEGEND FOR TS-66/TSC-66 (RIGHT TO LEFT) DIMENSIONS:

A = Incoming electrical connection point, approximately 61-1/4" above the finished floor. Refer to machine data plate for electrical requirements.

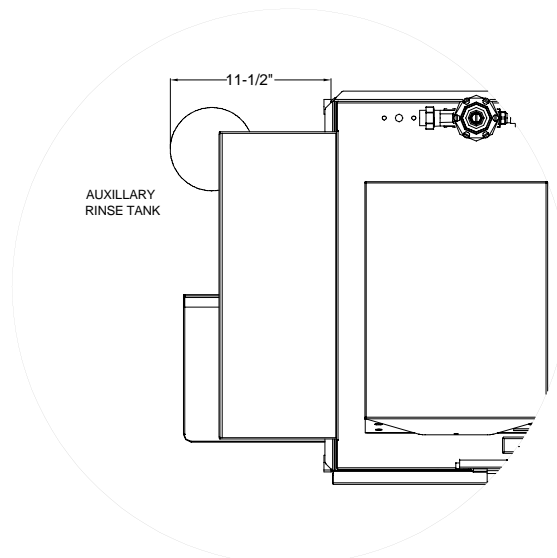
B = 1/2" IPS incoming water connection, approximately 61-1/4" above the finished floor. Electric heat models only.

C = 1/2" IPS prewash incoming water connection, approximately 61-1/4" above the finished floor. Electric heat models only.

D = 1-1/2" IPS drain point connection. If grease trap is required by code, size for 30 gallons per minute flowrate.

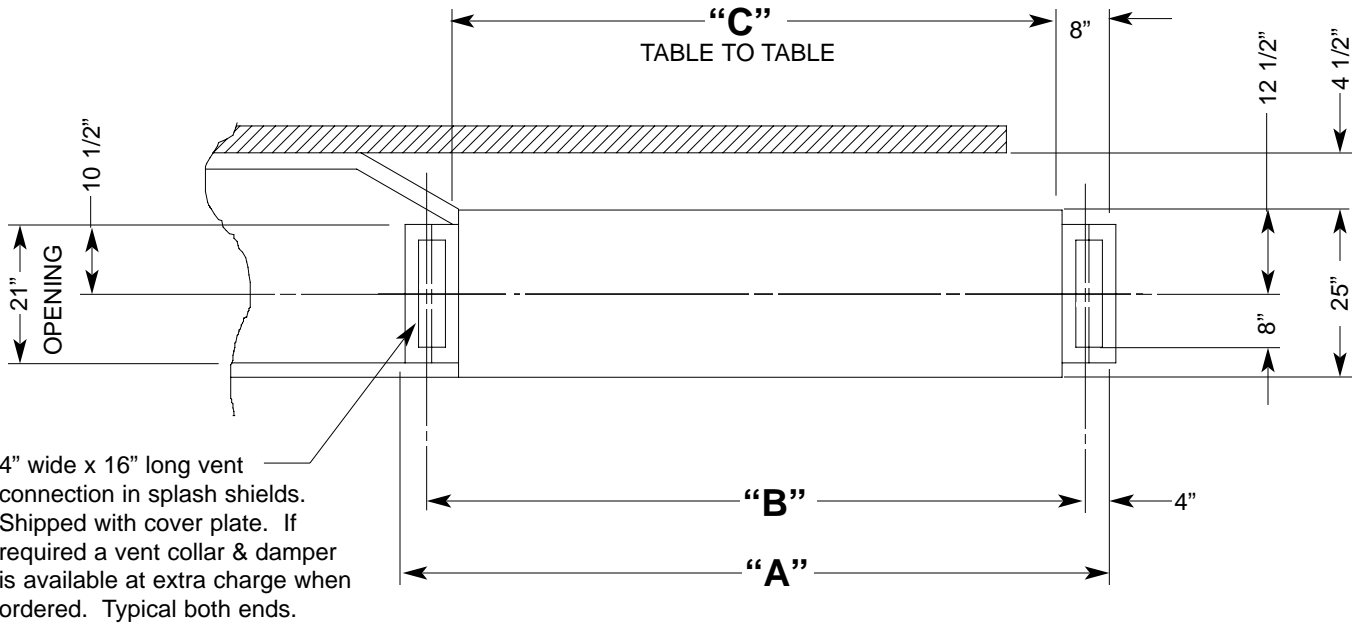
#### NOTES CONCERNING THE TS-66/TSC-66 DIMENSIONS:

1. All dimensions are +/- 1/2" in the vertical due to adjustment of the bullet feet.
2. A minimum of 4" spacing is required between the unit and the walls on all sides.
3. The maximum recommended distance between the unit and any external booster heater (electric, steam or gas) is 20 feet.
4. Booster heaters have separate electrical requirements from the machines.
5. Machine width as dimensioned does not include an approximate 3" for the conduit that is attached to the back of the machine.

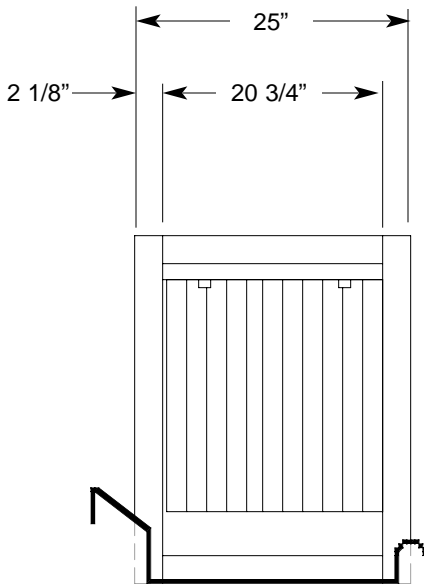


Typical dimension of the auxillary rinse tank found on the gas-heated models.

**SECTION 1: SPECIFICATION INFORMATION**  
**DISHTABLE DIMENSIONS**

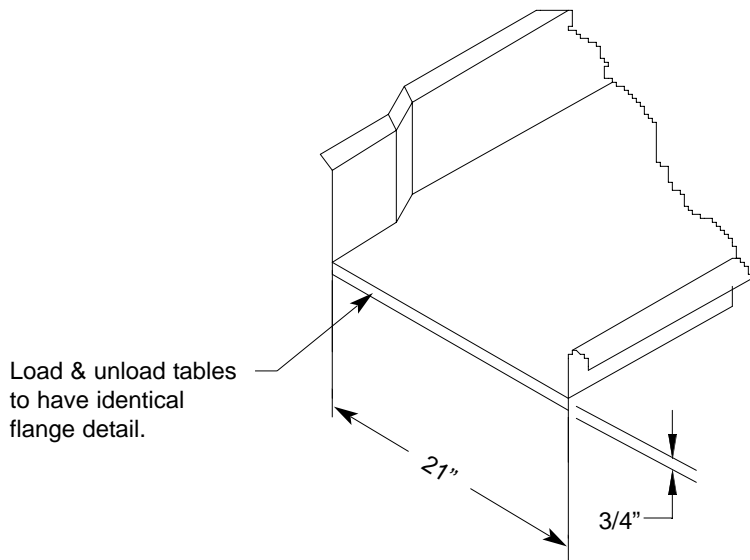


**PLAN VIEW**



**TS/TSC-44 DIMENSIONS:**

"A" = 60"  
"B" = 52"  
"C" = 44"



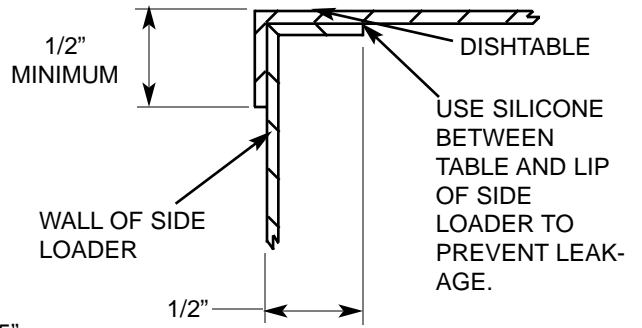
**TS/TSC-66 DIMENSIONS:**

"A" = 82"  
"B" = 74"  
"C" = 66"

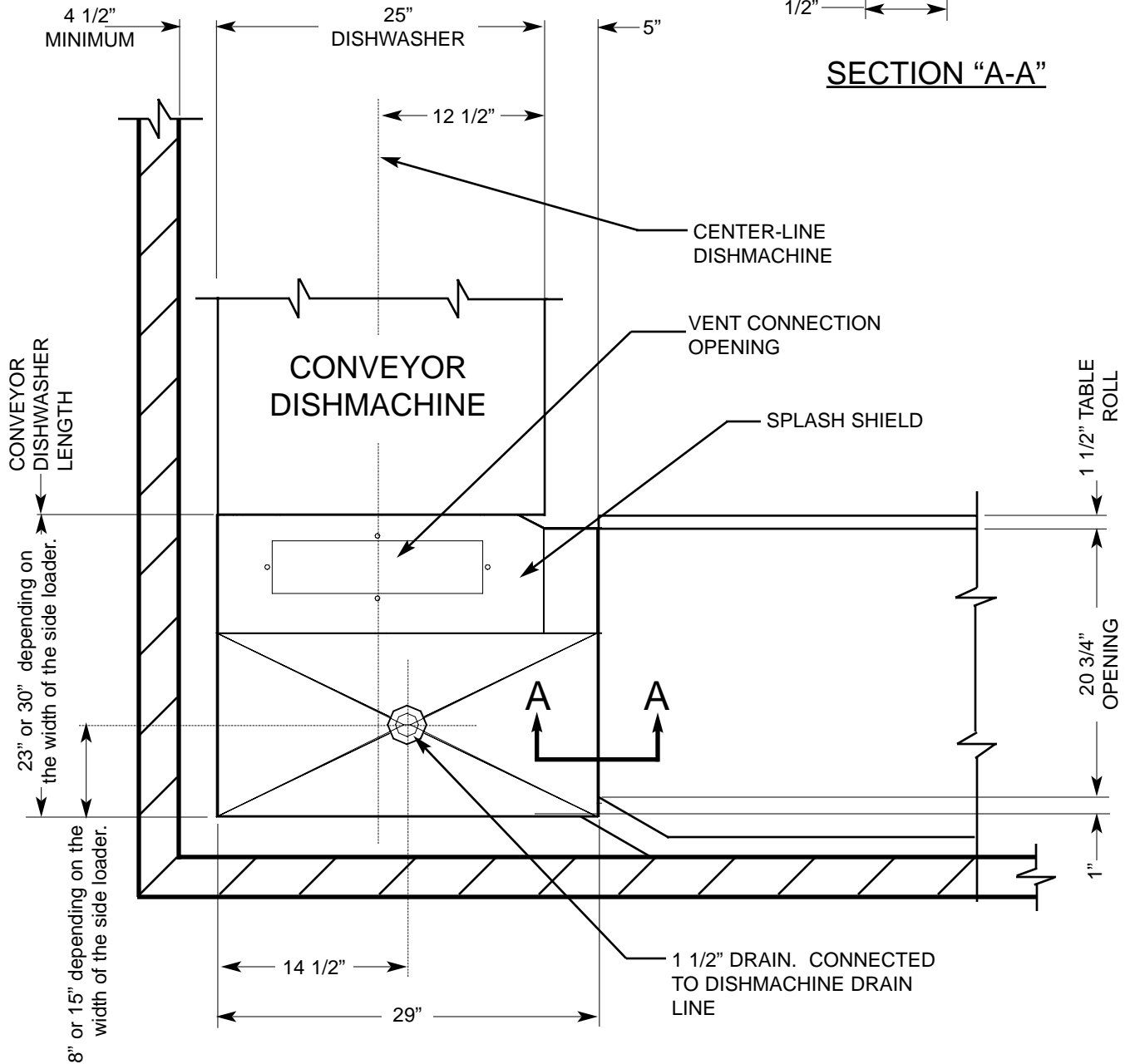
# SECTION 1: SPECIFICATION INFORMATION

## SIDE LOADER (LEFT TO RIGHT) DIMENSIONS

NOTE: ALL DIMENSIONS ARE TYPICAL.

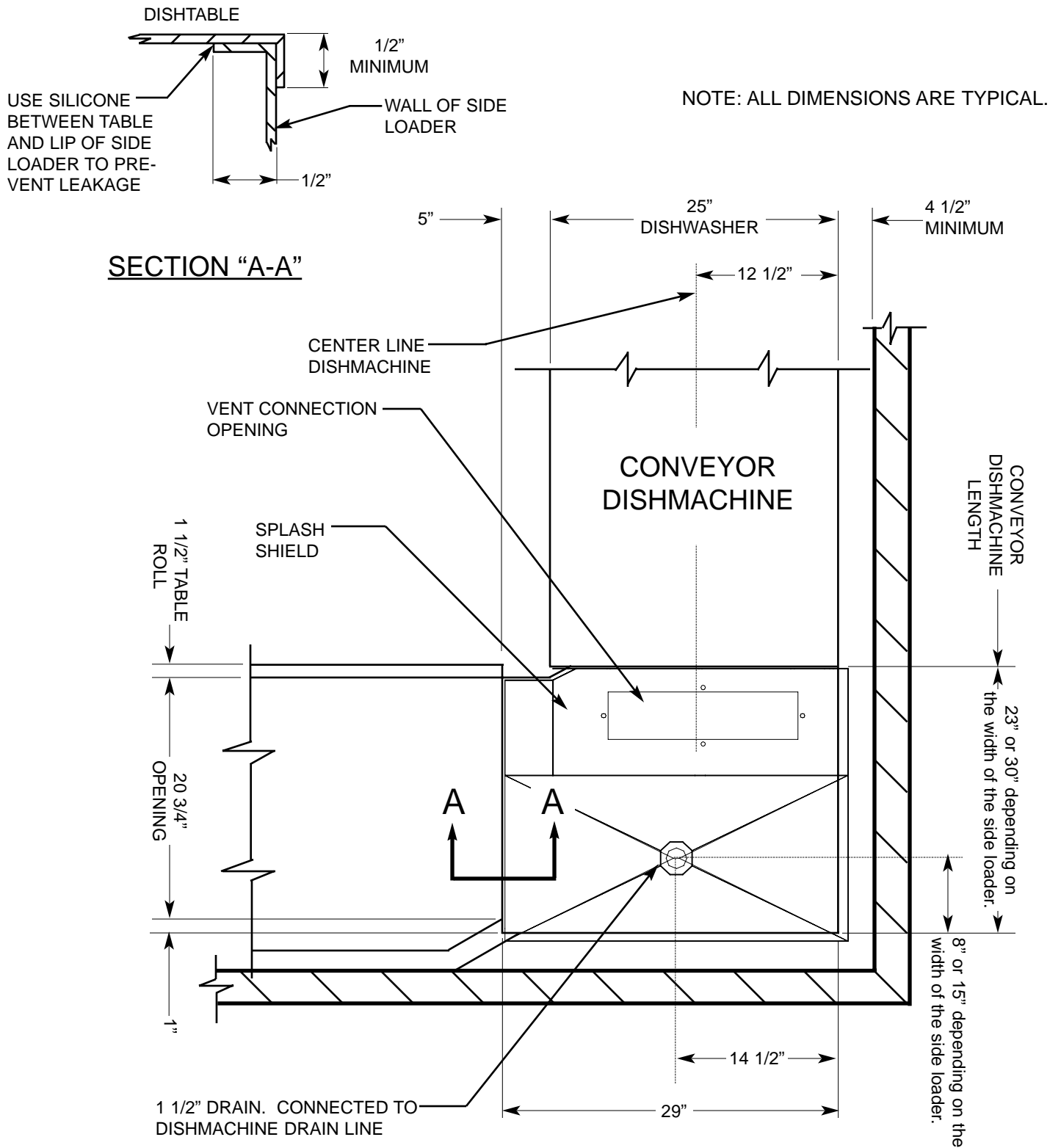


**SECTION "A-A"**



# SECTION 1: SPECIFICATION INFORMATION

## SIDE LOADER (RIGHT TO LEFT) DIMENSIONS



# SECTION 1: SPECIFICATION INFORMATION

## SIDE LOADER (INSTALLED) DIMENSIONS

### 23" SIDE LOADER DIMENSIONS

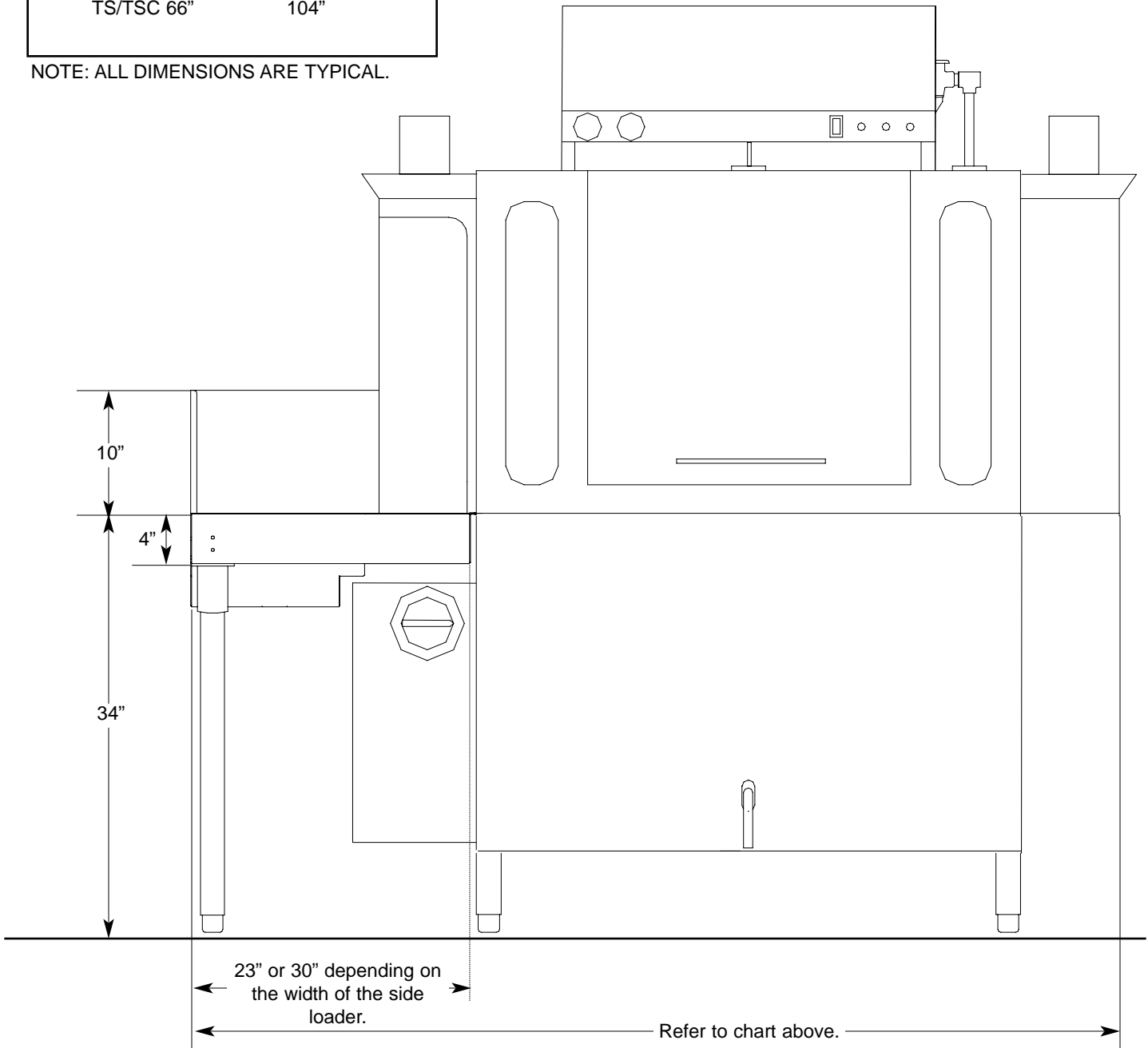
<u>MODEL</u>	<u>DIMENSIONS</u>
TS/TSC 44"	75"
TS/TSC 66"	97"

### 30" SIDE LOADER DIMENSIONS

<u>MODEL</u>	<u>DIMENSIONS</u>
TS/TSC 44"	82"
TS/TSC 66"	104"

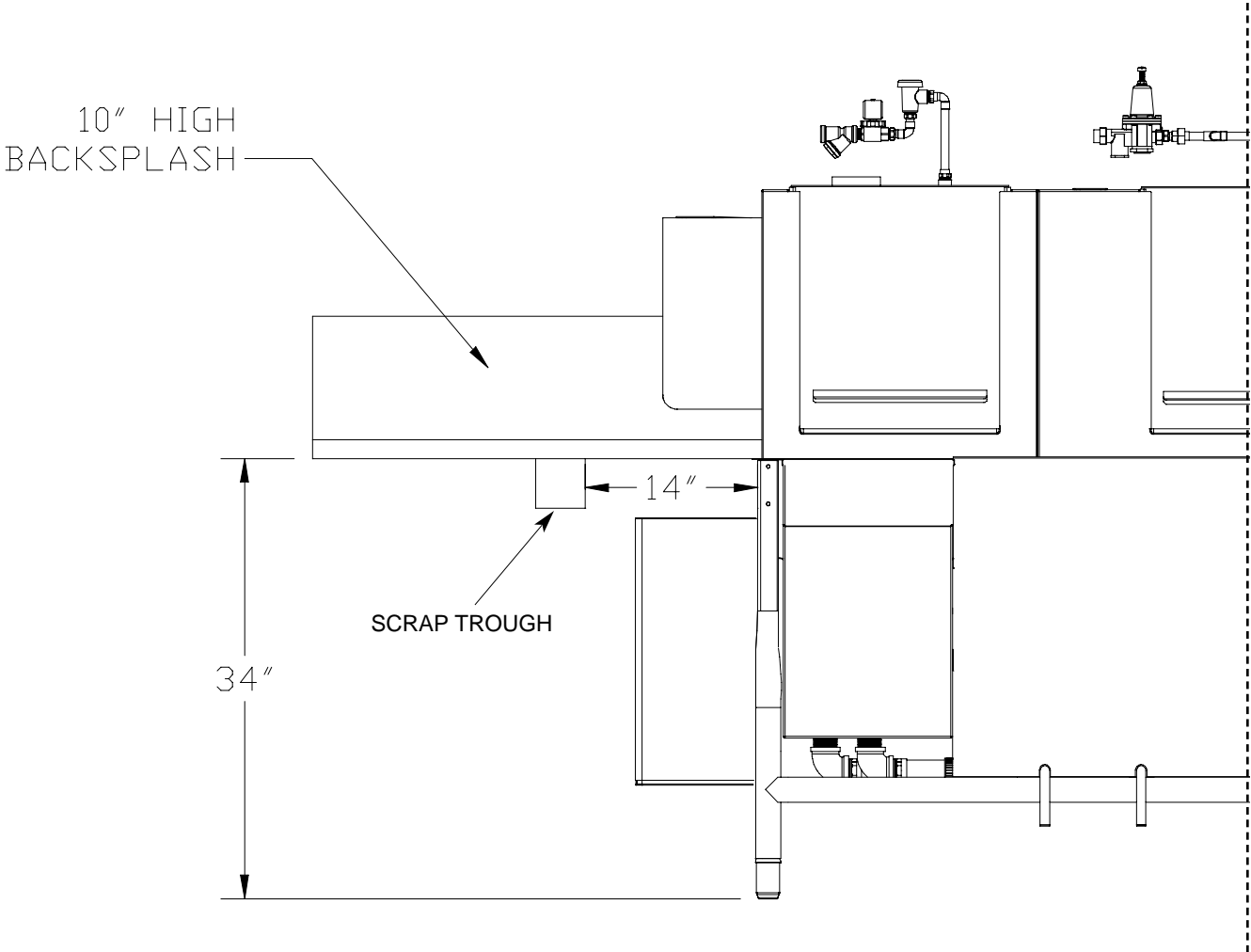
NOTE: ALL DIMENSIONS ARE TYPICAL.

(Left to Right installation shown for reference.)



**SECTION 1: SPECIFICATION INFORMATION**  
**SCRAP TROUGH DIMENSIONS**

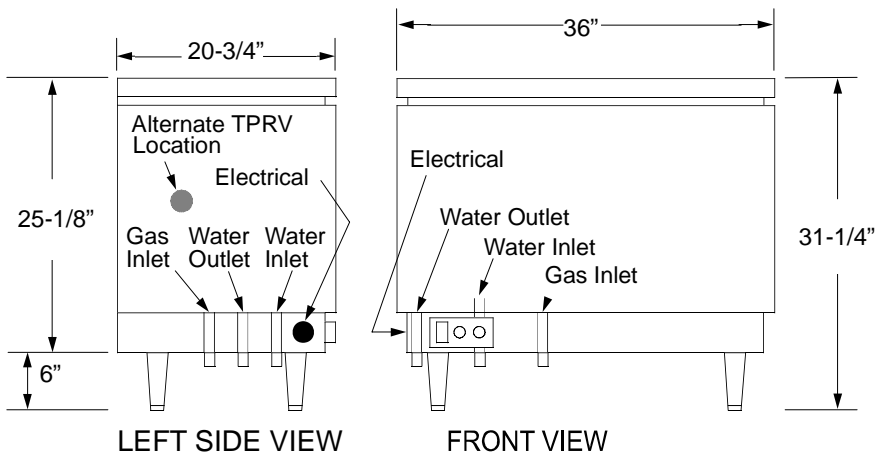
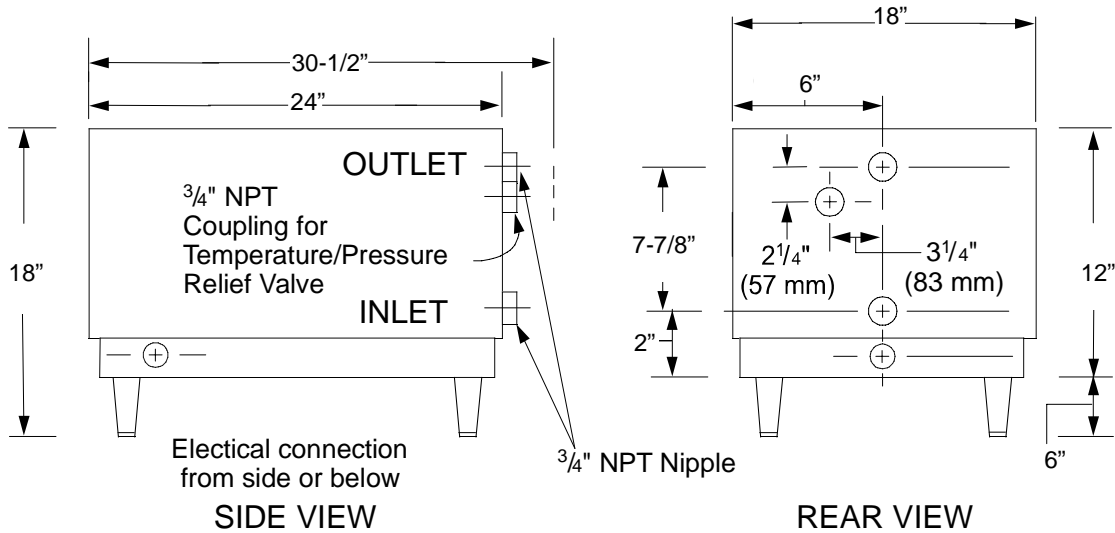
NOTE: DIMENSIONS ARE TYPICAL FOR BOTH ENDS.



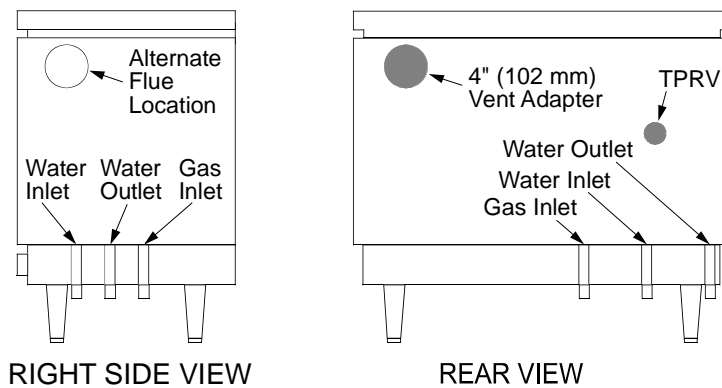
## SECTION 1: SPECIFICATION INFORMATION

### TYPICAL ELECTRIC AND GAS BOOSTER DIMENSIONS

Electric Booster Dimensions (Typical)



Gas Booster Dimensions (Typical)



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# **SECTION 2: INSTALLATION & OPERATION INSTRUCTIONS**



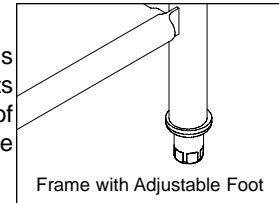
## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

### INSTALLATION INSTRUCTIONS

**VISUAL INSPECTION:** Before installing the unit, check the container and machine for damage. A damaged container is an indicator that there may be some damage to the machine. If there is damage to both the container and machine, do not throw away the container. The dishmachine has been inspected and packed at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others may result in there being damage to the unit while in transit. If such a situation occurs, do not return the unit to Jackson; instead, contact the carrier and ask them to send a representative to the site to inspect the damage to the unit and to complete an inspection report. You must contact the carrier within 48 hours of receiving the machine. Also, contact the dealer through which you purchased the unit.

**UNPACKING THE DISHMACHINE:** Once the machine has been removed from the container, ensure that there are no missing parts from the machine. This may not be obvious at first. If it is discovered that an item is missing, contact Jackson immediately to have the missing item shipped to you.

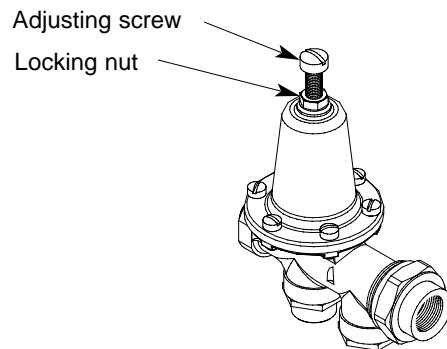
**LEVEL THE DISHMACHINE:** The dishmachine is designed to operate while being level. This is important to prevent any damage to the machine during operation and to ensure the best results when washing ware. The unit comes with adjustable bullet feet, which can be turned using a pair of channel locks or by hand if the unit can be raised safely. Ensure that the unit is level from side to side and from front to back before making any connections.



**PLUMBING THE DISHMACHINE:** All plumbing connections must comply with all applicable local, state, and national plumbing codes. The plumber is responsible for ensuring that the incoming water line is thoroughly flushed prior to connecting it to any component of the dishmachine. It is necessary to remove all foreign debris from the water line that may potentially get trapped in the valves or cause an obstruction. Any valves that are fouled as a result of foreign matter left in the water line, and any expenses resulting from this fouling, are not the responsibility of the manufacturer.

**CONNECTING THE DRAIN LINE:** The drain for the models covered in this manual are gravity discharge drains. All piping from the machine to the drain must be a minimum 1 1/2" NPT and shall not be reduced. There must also be an air gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 30 gallons per minute.

**WATER SUPPLY CONNECTION:** Ensure that you have read the section entitled "PLUMBING THE DISHMACHINE" above before proceeding. Install the water supply line (1/2" pipe size minimum) to the dishmachine line strainer using copper pipe. It is recommended that a water shut-off valve be installed in the water line between the main supply and the machine to allow access for service. The water supply line is to be capable of 25 PSI "flow" pressure at the recommended temperature indicated on the data plate.



In areas where the water pressure fluctuates or is greater than the recommended pressure, it is suggested that a water pressure regulator be installed. The models covered in this manual do come with water pressure regulators as standard equipment. Please notify Jackson immediately if this component is not present on your machine.

Do not confuse static pressure with flow pressure. Static pressure is the line pressure in a "no flow" condition (all valves and services are closed). Flow pressure is the pressure in the fill line when the fill valve is opened during the cycle.

It is also recommended that a shock absorber (not supplied) be installed in the incoming water line. This prevents line hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

**PLUMBING CHECK:** Slowly turn on the water supply to the machine after the incoming fill line and the drain line have been installed. Check for any leaks and repair as required. All leaks must be repaired prior to placing the machine in operation.

**GAS CONNECTIONS:** Some machines covered in this manual are designed to use gas as an outside source of heat for wash tank water. The machines come with connections by which an outside source needs to be connected. Connect all incoming gas lines in accordance with the gas booster manufacturer's instructions. Ensure that all applicable codes and regulations are adhered to.

## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

### INSTALLATION INSTRUCTIONS (CONTINUED)

**ELECTRICAL POWER CONNECTION:** Electrical and grounding connections must comply with the applicable portions of the National Electrical Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

**⚠** *Disconnect electrical power supply and place a tag at the disconnect switch to indicate that you are working on the circuit.*

The dishmachine data plate is located on the right side and to the front of the machine. Refer to the data plate for machine operating requirements, machine voltage, total amperage load and serial number.

To install the incoming power lines, open the control box. Install conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1, L2, and L3 (3 phase only)) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. Tighten the connections. It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.



Incoming Power Connection

Terminal Block

Decal showing "L1", "L2", & "L3"  
(3 phase models only).

**VOLTAGE CHECK:** Ensure that the power switch is in the OFF position and apply power to the dishmachine. Check the incoming power at the terminal block and ensure it corresponds to the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run the dishmachine if the voltage is too high or too low. Shut off the service breaker and mark it as being for the dishmachine. Advise all proper personnel of any problems and of the location of the service breaker. Replace the control box cover and tighten down the screws.

**VENTILATION OF DISHMACHINE:** The dishmachine should be located with provisions for venting into an adequate exhaust hood or ventilation system. This is essential to permit efficient removal of the condensation exhaust. Ensure that the exhaust system is acceptable in accordance with all applicable codes and standards.

**⚠** *NOTE: Any damage that is caused by steam or moisture due to improper ventilation is NOT covered under the warranty.*

This units covered in this manual have the following exhaust requirements:

Load End:	200 CFM
Unload End:	400 CFM

The exhaust system must be sized to handle this volume for the dishmachine to operate as it was designed to.

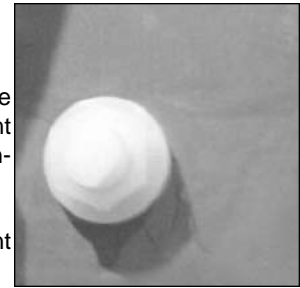
**ELECTRIC HEAT:** The thermostats for the machines covered in this manual are factory set. They should not be adjusted except by an authorized service agent.

## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

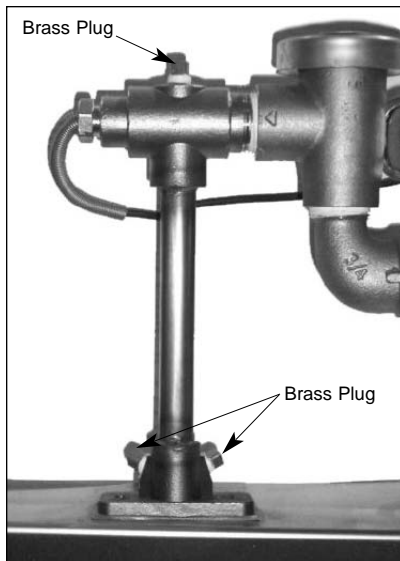
### INSTALLATION INSTRUCTIONS (CONTINUED)

**CHEMICAL FEEDER EQUIPMENT:** Detergent may be introduced into the unit through the removal of the bulkhead plug in the rear of the tub and replacing it with the third party detergent injection fitting. Remove the bulkhead plug in the side of the tub to install the detergent concentration probe.

For more information concerning detergent concerns, please refer to the page entitled "Detergent Control".

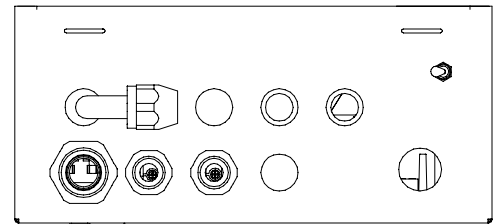


Detergent Connection Point  
(Machine rear view)



Rinse Injector

The 1/8" brass plugs on the incoming plumbing rinse injector may be removed to install rinse aid injection fittings.



Rear of Control Box

All wires for the chemical injectors should be routed through one of the extra openings in the back of the control box.



Connection Points

Terminals in the control box marked "CVS" provide a constant voltage signal whenever the drive motor is operating.

Terminals in the control box marked "DET" provide a voltage signal whenever the wash motor is operating.

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## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

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### DELIMING OPERATIONS

**DELIMING OPERATIONS:** In order to maintain the dishmachine at its optimum performance level, it will be required to remove lime and corrosion deposits on a frequent basis. A deliming solution should be available from your detergent supplier. Read and follow all instructions on the label of the deliming solution.

To proceed with the deliming operation, fill the dishmachine and add the correct amount of deliming solution as recommended by the deliming solution manufacturer. The water capacity of the various tanks of the dishmachine can be verified on the specification sheet(s) of this manual.

Perform the following operations to delime the dishmachine:

1. Turn the NORMAL/DELIME switch on the back of the control box to the DELIME position.
2. Disconnect or turn off all chemical feeder pumps.
3. Close all doors (after adding the deliming solution).
4. Run the machine for the recommended period of time.
5. Turn the unit off and open the doors.
6. Wait five minutes, then inspect the inside of the machine. If the machine is not delimed, run another time cycle as per the deliming solution's instructions.
7. When clean, drain and re-fill the machine.
8. Run in MANUAL for 10 minutes to remove residual deliming solution.
9. Drain and re-fill the machine.



Delime Switch

***This equipment is not recommend for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.***

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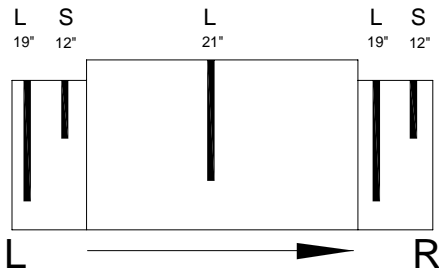
## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

### CURTAIN INSTALLATION DIAGRAMS

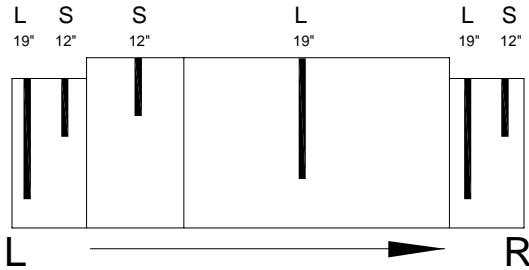
Please refer to the chart for placement of the curtains.

#### TS SERIES MACHINES

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## SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

### SIDE LOADER INSTALLATION & OPERATION INSTRUCTIONS

This accessory assists in the delivery of a full dish rack from the break down (scrapping) table to the dishmachine. It will convert the direction of travel 90°. Since the Side Loader is shipped mounted on the conveyor dishwasher there is no additional installation required for this option. As it is operated mechanically by the dishwasher it does not require any plumbing or electrical connections.

This Side Loader does not require or add any additional electrical or mechanical devices to the unit which could create operational or maintenance problems. As designed the drive mechanism is powered by the conveyor drive motor on the dishmachine. An extension on the pawl bar provides the drive to push the racks into the unit.

**PREPARATION:** Before proceeding with the start-up of the unit, verify that the Side Loader pan strainer is installed.

**WARE PREPARATION:** Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscrapped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy all of the bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

**WASHING A RACK OF WARE:** Once a rack is fully loaded it should be positioned against the front of the dish table. The rack should then be moved into the Side Loader until it activates the actuator switch. Once the machine is started, it should pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

**OPERATIONAL INSPECTION:** Based upon usage, the pan strainer may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainer to ensure it has not become clogged. If the strainer does become clogged, it will reduce the washing capability of the machine. Instruct operators to clean out the pan strainer at regular intervals or as required by work load.

**SHUTDOWN AND CLEANING:** At the end of the workday, remove the pan strainer and clean as required. Wipe out the inside of the Side Loader and then reinsert the strainer.

### DISHMACHINE OPERATING INSTRUCTIONS

**PREPARATION:** Before proceeding with the start-up of the unit, verify the following:

1. Close door(s) on dishmachine.
2. Close the drain valve(s).

**POWER UP:** To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified.

**FILLING THE WASH TUB:** Ensure that the delime switch is in the NORMAL position, and place the power switch into the ON position. The machine should fill automatically and shut off when the appropriate level is reached (just below the pan strainer). The wash tub must be completely filled before operating the wash pump to prevent damage to the component. Once the wash tub is filled, the unit is ready for operation.



**Machines equipped with prewash sections should not be run without water in those sections. This can cause damage to components.**

**WARE PREPARATION:** Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscrapped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy all of the bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

**DAILY MACHINE PREPARATION:** Refer to the section entitled "PREPARATION" at the top of this page and follow the instructions there. Afterwards, check that all of the chemical levels are correct and/or that there is plenty of detergent available for the expected workload.

**WASHING A RACK OF WARE:** To wash a rack, simply slide a rack of soiled ware into the load end of the machine. Once the machine is started, it should pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

**OPERATIONAL INSPECTION:** Based upon usage, the pan strainers may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainers to ensure they have not become clogged. If the strainers do, they will reduce the washing capability of the machine. Instruct operators to clean out the pan strainers at regular intervals or as required by work load.



**NOTE:** On units equipped with prewash sections operators should also take the time to inspect the prewash section strainers and clean them as required by workload.

**SHUTDOWN AND CLEANING:** At the end of the workday, place the power switch in the OFF position and open the door(s). Open the drain valves and allow the machine to drain completely. Remove the pawl bar assembly (clean as required). Remove the pan strainers and, if equipped, the prewash strainers, run off sheets and scrap basket strainer. Remove the wash and, if equipped, the prewash arms and verify that the nozzles and arms are free from obstructions. Flush the arms with fresh water. Remove the pump suction strainers and clean out as required. Remove the rinse tray assembly and clean. Remove the curtains and scrub with a mild detergent and warm water. Wipe out the inside of the unit and then reassemble with the components previously removed.

### DETERGENT CONTROL

Detergent usage and water hardness are two factors that contribute greatly to how efficiently your dishmachine will operate. Using detergent in the proper amount can become, in time, a source of substantial savings. A qualified water treatment specialist can tell you what is needed for maximum efficiency from your detergent, but you should still know some basics so you'll understand what they are talking about.

First, you must understand that hard water greatly effects the performance of the dishmachine. Water hardness is the amount of dissolved calcium and magnesium in the water supply. The more dissolved solids in the water, the greater the water hardness. Hard water works against detergent, thereby causing the amount of detergent required for washing to increase. As you use more detergent, your costs for operating the dishmachine will increase and the results will decrease. The solids in hard water also may build-up as a scale on wash and rinse heaters, decreasing their ability to heat water. Water temperature is important in removing soil and sanitizing dishes. If the water cannot get hot enough, your results may not be satisfactory. This is why Jackson recommends that if you have installed the machine in an area with hard water, that you also install some type of water treatment equipment to help remove the dissolved solids from the water before it gets to the dishmachine.

Second, hard water may have you adding drying agents to your operating cycle to prevent spotting, when the real problem is deposited solids on your ware. As the water evaporates off of the ware, the solids will be left behind to form the spotting and no amount of drying agent will prevent this. Again, using treated water will undoubtedly reduce the occurrences of this problem.

Third, treated water may not be suitable for use in other areas of your operation. For instance, coffee made with soft water may have an acid or bitter flavor. It may only be feasible to install a small treatment unit for the water going into the dishmachine itself. Discuss this option with your qualified water treatment specialist.

Even after the water hardness problems have been solved, there still must be proper training of dishmachine operators in how much detergent is to be used per cycle. Talk with your water treatment specialist and detergent vendor and come up with a complete training program for operators. Using too much detergent has as detrimental effects as using too little. The proper amount of detergent must be used for job. It is important to remember that certain menu items may require extra detergent by their nature and personnel need to be made aware of this. Experience in using the dishmachine under a variety of conditions, along with good training in the operation of the machine, can go a long way in ensuring your dishmachine operates as efficiently as possible.

Certain dishmachine models require that chemicals be provided for proper operation and sanitization. Some models even require the installation of third-party chemical feeders to introduce those chemicals to the machine. Jackson does not recommend or endorse any brand name of chemicals or chemical dispensing equipment. Contact your local chemical distributor for questions concerning these subjects.

Some dishmachines come equipped with integral solid detergent dispensers. These dispensers are designed to accommodate detergents in a certain sized container. If you have such a unit, remember to explain this to your chemical distributor upon first contacting them.

As explained before, water temperature is an important factor in ensuring that your dishmachine functions properly. The data plate located on each unit details what the minimum temperatures must be for either the incoming water supply, the wash tank and the rinse tank, depending on what model of dishmachine you have installed. These temperatures may also be followed by temperatures that Jackson recommends to ensure the highest performance from you dishmachine. However, if the minimum requirements are not met, the chances are your dishes will not be clean or sanitized. Remember, a dish can look clean, but it may not be sanitized. Instruct your dishmachine operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a much larger problem such as a failed heater or it could also indicate that the hot water heater for your operation is not up to capacity and a larger one may need to be installed.

There are several factors to consider when installing your dishmachine to ensure that you get the best possible results from it and that it operates at peak efficiency for many years. Discuss your concerns with your local chemical distributor and water treatment specialist before there is a problem.



**STRIKER PLATE LIMIT SWITCH INSTALLTION INSTRUCTIONS**

**Installation Instructions:**

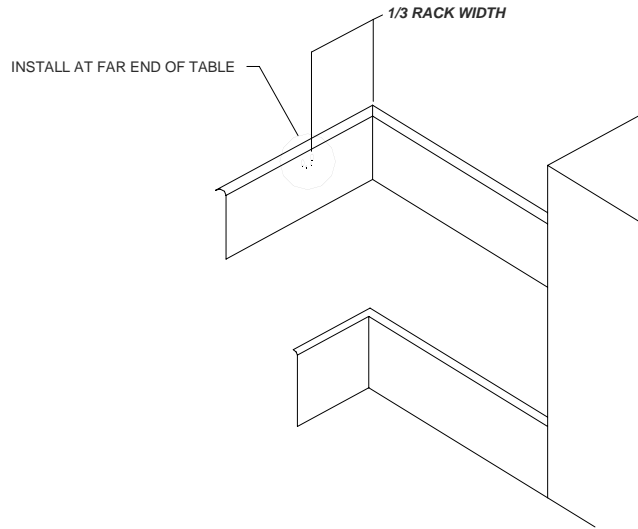
1. Wiring: The switch is wired common and normally open because of the hinge design. By interrupting the line in series with the door switches, the dishmachine ceases to operate. Refer to the machine schematic for details on how to wire the switch.

2. Parts of the table switch are mounted in the dishtable, at the end of the table and under the table. See the drawing(s) for the relationship of the switch to the table.

3. Move the limit switch as far down on the two slots as possible and see that the limit switch is straight on the base plate. This might require adjustment of the nut on the connector for the limit switch.

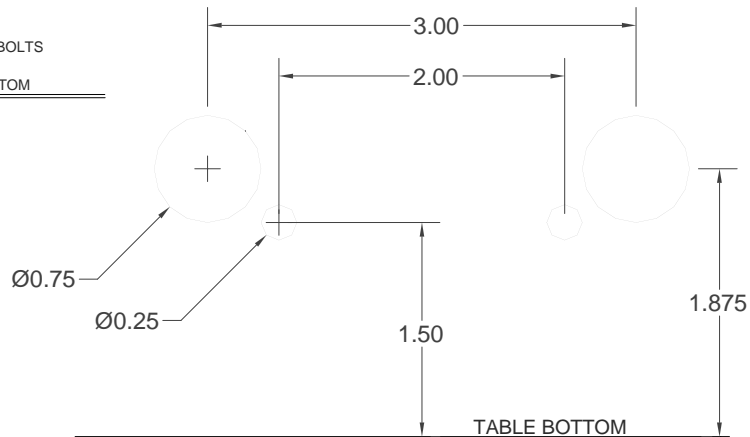
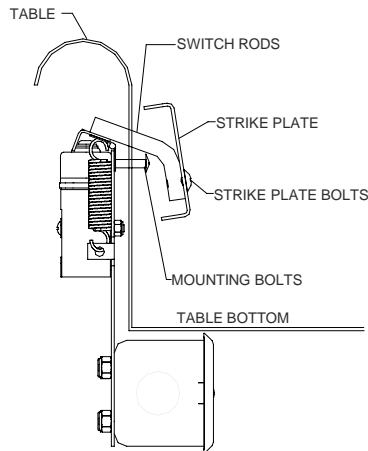
4. Then adjust the inside and the outside connector nuts for the connector box so that it lines up even with the limit switch and the base plate.

5. Tighten down the nuts for the seal so that they are tight.



6. If you have any difficulty you might have to adjust the connectors to the seal, screwing in or screwing out until the installation is straight on the table and the limit switch is actuated correctly by the rack.

**TABLE LIMIT SWITCH THROUGH ROD HOLES**



Unless noted, all dimensions are in inches.

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## **SECTION 3: PREVENTATIVE MAINTENANCE**

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## SECTION 3: PREVENTATIVE MAINTENANCE

### PREVENTATIVE MAINTENANCE

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The dishmachines covered in this manual are designed to operate with a minimum of interaction with the operator. However, this does not mean that some items will not wear out in time. Jackson highly recommends that any maintenance and repairs not specifically discussed in this manual should be performed by **QUALIFIED SERVICE PERSONNEL ONLY**. Performing maintenance on your dishmachine may void your warranty if it is still in effect, so if you have a question or concern, do not hesitate to contact Jackson.

There are many things that operators can do to prevent catastrophic damage to the dishmachine. One of the major causes of component failure has to do with prescrapping procedures. A dishmachine is not a garbage disposal; any large pieces of material that are put into the machine shall remain in the machine until they are either broken up (after spreading out on your ware!) or physically removed. Strainers are installed to help catch debris, but they do no good if they are clogged. Have operators regularly inspect the pan strainers to ensure (1) that they are free of soil and debris and (2) they are laying flat in the tub.

When cleaning out strainers, do **NOT** beat them on waste cans. The strainers are made of metal and can be forgiving; but once severe damage is done, it is next to impossible for the strainer to work in the way it was designed to. Wipe out strainers with a rag and rinse under a faucet if necessary. For stubborn debris, a toothpick should be able to dislodge any obstructions from the perforations. Always ensure that strainers are placed back in the machine before operation and that they lay flat in the tub.

You may wish to also refer to the page entitled "Detergent Control" in order to learn more about how your water hardness will effect the performance of your machine. Hard water makes dishmachines work harder and decreases efficiency.

Again, it is important to remind operators that trying to perform corrective maintenance on the dishmachine could lead to larger problems or even cause harm to the operator. If a problem is discovered; secure the dishmachine using proper shut down procedures as listed in this manual and contact Jackson.

Some problems, however, may have nothing to do with the machine itself and no amount of preventative maintenance is going to help. A common problem has to do with temperatures being too low. Verify that the water temperatures coming to your dishmachine match the requirements listed on the machine data plate. There can be a variety of reasons why your water temperature could be too low and you should discuss it with Jackson to determine what can be done.

By following the operating and cleaning instructions in this manual, you should get the most efficient results from your machine. As a reminder, here are some steps to take to ensure that you are using the dishmachine the way it was designed to work:

1. Ensure that the water temperatures match those listed on the machine data plate.
2. Ensure that all strainers are in place before operating the machine.
3. Ensure that all wash and/or rinse arms are secure in the machine before operating.
4. Ensure that drains are closed/sealed before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure that glasses are placed upside down in the rack.
8. Ensure that all chemicals being injected to machine have been verified as being at the correct concentrations.
9. Clean out the machine at the end of every workday as per the instructions in the manual.
10. Always contact Jackson whenever a serious problem arises.
11. Follow all safety procedures, whether listed in this manual or put forth by local, state or national codes/regulations.

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# **SECTION 4: TROUBLESHOOTING**

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## SECTION 4: TROUBLESHOOTING

### COMMON PROBLEMS



**WARNING:** Inspection, testing and repair of electrical equipment should only be performed by a qualified service technician. Many of the tests require that the unit have power to it and live electrical components be exposed. USE EXTREME CAUTION WHEN TESTING THE MACHINE.

**Problem: Nothing on dishmachine operates. The power switch is ON and the power indicator light is OFF.**

1. Machine is not wired correctly to incoming power source. Have an electrician verify wiring.
2. Machine circuit breaker is tripped. Reset the circuit breaker. If it trips again, contact an electrician to verify the machine amp draw.
3. Service breaker is tripped. Reset the service breaker. If it trips again, contact an electrician to verify the machine amp draw.

**Problem: Machine will not fill. The power switch is ON and the power indicator light is ON.**

1. No water supply to machine. Verify that water lines have been connected to the machine.
2. Dishmachine doors are not closed. Close doors completely.
3. Incoming water solenoid valve damaged/faulty. Verify that the valve is operating. If not, replace.
4. Tank floats faulty. Verify the wiring of the floats. Verify that no debris is jamming the floats. Replace if necessary.

**Problem: Machine fills, but fill is weak.**

1. Low incoming water pressure. Verify that incoming water pressure during fill is  $20 \pm 5$  PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

**Problem: Low wash tank temperature.**

1. Low incoming water temperature. Verify that the incoming water temperature matches what is indicated on the machine data plate.
2. Heater not energizing. Verify that the wash tank heater is operating. If not, replace.
3. Low incoming voltage. Have an electrician verify that the power coming to the machine is the same as indicated on the data plate.

**Problem: Low wash arm pressure, poor spray pattern.**

1. Clogged wash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged wash tank or wash pump strainers. Clean out strainers if necessary.
3. Worn wash pump impeller. Verify status of impeller, replace if necessary.

**Problem: Low prewash arm pressure, poor spray pattern.**

1. Clogged prewash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged prewash tank or prewash pump strainers. Clean out strainers if necessary.
3. Worn prewash pump impeller. Verify status of impeller, replace if necessary.

**Problem: Inadequate rinse.**

1. Low incoming water pressure. Verify that incoming water pressure during fill is  $20 \pm 5$  PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

**Problem: Pawl bar does not move.**

1. Failed or broken overload spring. Replace spring if necessary.
2. No power to the drive motor/failed drive motor. Verify power and wiring connections to the motor. If necessary, replace the motor.
3. Pawl bar not properly installed. Verify that the pawl bar is installed correctly.

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## SECTION 4: TROUBLESHOOTING

### COMMON PROBLEMS

**Problem: Racks go through the machine, but results are poor.**

1. Verify that detergent is being dispensed into the machine at the appropriate quantities for the water volume. If not, get detergent to appropriate level and review results of washing ware.
2. Clogged strainers/scrap basket. Clean out strainers and scrap basket and replace.
3. Ware not being properly prescrapped. Review paragraph entitled "Ware Preparation" in Operating Instructions.
4. Wash or rinse arms missing end plugs or caps. Verify and replace as required.
5. Low tank heat.
6. Inadequate rinse.
7. Incorrect voltage coming to the machine. Verify that the voltage matches that on the machine data plate.
8. Wash pump cavitation due to low water level. Verify that the drains are shut and that the water level is correct.

**Problem: Spotting of silverware, glasses and dishes.**

1. Incorrect final rinse temperature. Verify that the rinse water temperature matches that which is listed on the machine data plate.
2. Clogged wash and/or rinse nozzles and arms. Remove the arms and verify that they and their nozzles are free from debris.
3. Excessively hard water. Install a water softener to reduce hardness.
4. Loss of water pressure due to clogged/obstructed wash pump. Turn the power off to the machine at the source. Drain the wash tank of water and verify that the pump intake is free from debris.
5. Improper scrapping procedures. Review the paragraph entitled "Ware Preparation" in Operating Instructions.
6. incorrect detergent/chemical concentrations. Verify that the detergent/chemical concentrations are correct for the associated water volume.

### TORQUE SETTINGS

When replacing components either in the control box or the heater box area, the manufacturer has suggestions on how much to torque the screws and nuts used in securing items to the machine. Refer to the table below for the torque specifications:

#### ITEMS

#### TORQUE SPEC

Relays	16 In/lbs
Heater Contactor	35 In/lbs
Heater Nuts	16 In/lbs
Terminal Block	50 In/lbs

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