INSTALLATION/OPERATION & TECHNICAL MANUAL

FOR JACKSON MODELS:

CONSERVER XL, CONSERVER XL2

CONSERVER XL2-CML, CONSERVER XL2-CMR

CONSERVER AXL, CONSERVER AXL2

CONSERVER AXL2-CML, CONSERVER AXL2-CMR

September 22, 2009
P/N 7610-002-10-23 (Revision I)

Jackson MSC, LLC.
P.O. BOX 1060
HWY. 25E
BARBOURVILLE, KY. 40906
FAX (606) 523-9196
PHONE (606) 523-9795
www.jacksonmsc.com

MANUFACTURERS WARRANTY

ONE YEAR LIMITED PARTS & LABOR WARRANTY

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	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
F	05-07-04	MAW	7040	Added 2nd Enodis Logo. Changed to new layout. Added new parts for the redesigned Conserver XL unit.
G	11-08-06	MAW	N/A	Added instructions and schematics for use with universal timers.
H	11-28-07	MAW	7107, 7257, 7478, 7293, 7553, 7122, 7447, 7559, 7258, 7518	Converted to centered layout with bottom date stamp for revisions. Combined installation and technical manuals. Added bowl option and new style control box for universal timers. Combined installation & service manuals into one: obsolete I/O manual 7610-002-04-66.
I	09-22-09	ARL	N/A	Corrected shim kit part number on page 57.

NOMENCLATURE FOR THE MODELS COVERED IN THIS MANUAL

CONSERVER XL2-CMR

Conserver XL = Low temperature, chemical sanitizing, single rack dishmachine
Conserver XL2 = Low temperature, chemical sanitizing, dual rack dishmachine
Conserver XL2-CML = Low temperature, chemical sanitizing, dual rack dishmachine with left hand feed through
Conserver XL2-CMR = Low temperature, chemical sanitizing, dual rack dishmachine with right hand feed through
Conserver AXL = Low temperature, chemical sanitizing, universal timer, single rack dishmachine
Conserver AXL2 = Low temperature, chemical sanitizing, universal timer, dual rack dishmachine
Conserver AXL2-CML = Low temperature, chemical sanitizing, universal timer, dual rack dishmachine with left hand feed through
Conserver AXL2-CMR = Low temperature, chemical sanitizing, universal timer, dual rack dishmachine with right hand feed through
Conserver XLS = Solid Dispenser Option

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

CONSERVER XL SPECIFICATIONS

PERFORMANCE/CAPABILITIES

OPERATING CAPACITY (RACKS/HOUR)	
RACKS PER HOUR	37
DISHES PER HOUR	925
GLASSES PER HOUR	925
OPERATING CYCLE (SECONDS)	
WASH TIME	42
RINSE TIME	25
DWELL TIME	23
TOTAL CYCLE TIME	90
TANK CAPACITY (MINIMUM)	
WASH TANK (GALLONS)	1.49
WASH TANK (LITERS)	5.6
WASH PUMP CAPACITY	
GALLONS PER MINUTE	61
LITERS PER MINUTE	231
TEMPERATURES	
WASH---°F (MINIMUM)	120
WASH---°C (MINIMUM)	48.9
WASH---°F (RECOMMENDED)	140
WASH---°C (RECOMMENDED)	60
RINSE---°F(MINIMUM)	120
RINSE---°C(MINIMUM)	48.9
RINSE---°F (RECOMMENDED)	140
RINSE---°C (RECOMMENDED)	60

ELECTRICAL REQUIREMENTS

WASH PUMP MOTOR HORSEPOWER	3/4

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.

VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
115	1	60	N/A	12	15 AMP
220	1	50	N/A	8	15 AMP

WATER REQUIREMENTS

INLET TEMPERATURE (MINIMUM)	120°F
INLET TEMPERATURE (MINIMUM)	48.9°C
INLET TEMPERATURE (RECOMMENDED)	140°F
INLET TEMPERATURE (RECOMMENDED)	60°C
GALLONS PER HOUR	55.5
LIITERS PER HOUR	210
WATER LINE SIZE NPT (Minimum)	3/4”
DRAIN LINE SIZE NPT (Minimum)	2”
FLOW PRESSURE PSI	20 ± 5
MINIMUM CHLORINE REQUIRED (PPM)	50

NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may be subject to change without notice.

SECTION 1: SPECIFICATION INFORMATION

CONSERVER XL2 SERIES SPECIFICATIONS

PERFORMANCE/CAPABILITIES

OPERATING CAPACITY (RACKS/HOUR)	
RACKS PER HOUR	74
RACKS PER HOUR (OPTION)	96
DISHES PER HOUR	1850
GLASSES PER HOUR	1850
OPERATING CYCLE (SECONDS)	
WASH TIME	42
RINSE TIME	25
DWELL TIME	25
TOTAL CYCLE TIME	90
TOTAL CYCLE TIME (OPTION)	72
TANK CAPACITY (MINIMUM)	
WASH TANK (GALLONS)	3.1
WASH TANK (LITERS)	11.7
WASH PUMP CAPACITY	
GALLONS PER MINUTE	61
LITERS PER MINUTE	231
TEMPERATURES	
WASH---°F (MINIMUM)	120
WASH---°C (MINIMUM)	48.9
WASH---°F (RECOMMENDED)	140
WASH---°C (RECOMMENDED)	60
RINSE---°F(MINIMUM)	120
RINSE---°C(MINIMUM)	48.9
RINSE---°F (RECOMMENDED)	140
RINSE---°C (RECOMMENDED)	60

ELECTRICAL REQUIREMENTS

WASH PUMP MOTOR HORSEPOWER	3/4

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.

VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
115	1	60	N/A	23	30 AMP

WATER REQUIREMENTS

INLET TEMPERATURE (MINIMUM)	120°F
INLET TEMPERATURE (MINIMUM)	48.9°C
INLET TEMPERATURE (RECOMMENDED)	140°F
INLET TEMPERATURE (RECOMMENDED)	60°C
GALLONS PER HOUR	111
GALLONS PER HOUR (OPTION)	192
WATER LINE SIZE NPT (MINIMUM)	3/4”
DRAIN LINE SIZE NPT (MINIMUM)	2”
FLOW PRESSURE PSI	20 ± 5
MINIMUM CHLORINE REQUIRED (PPM)	50

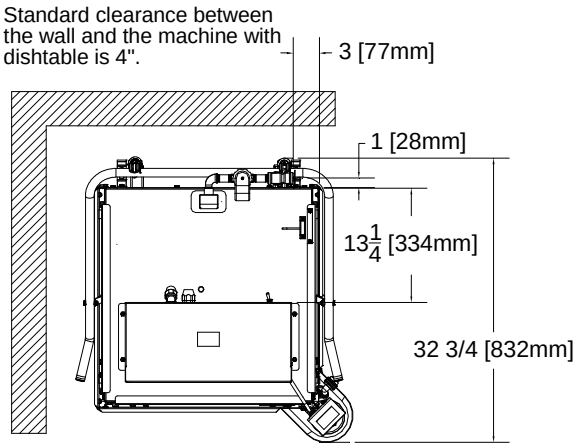
NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may be subject to change without notice.

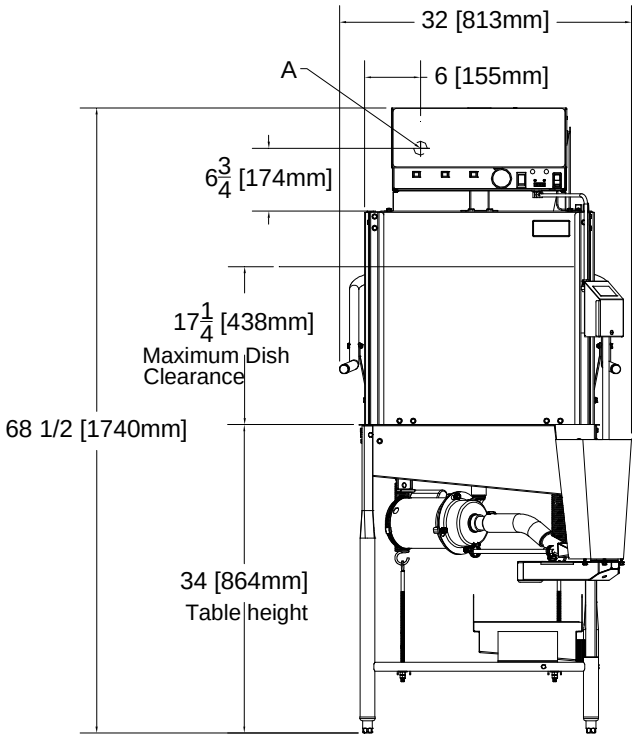
DIMENSIONS CONSERVER AXL

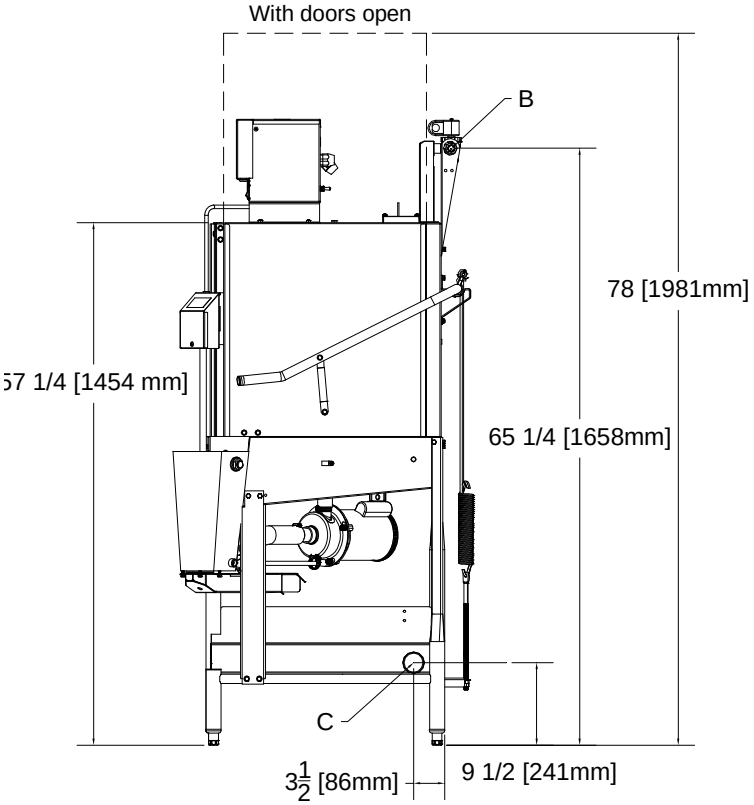
LEGEND:

A - Electrical connection
B - Water inlet 1/2" I.P.S
C - Drain connection 2" I.P.S

All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.

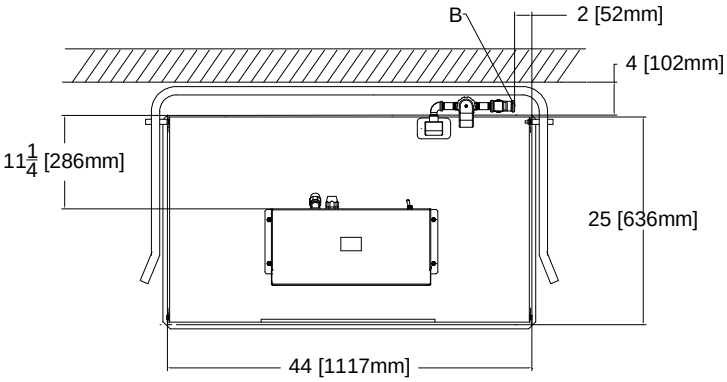


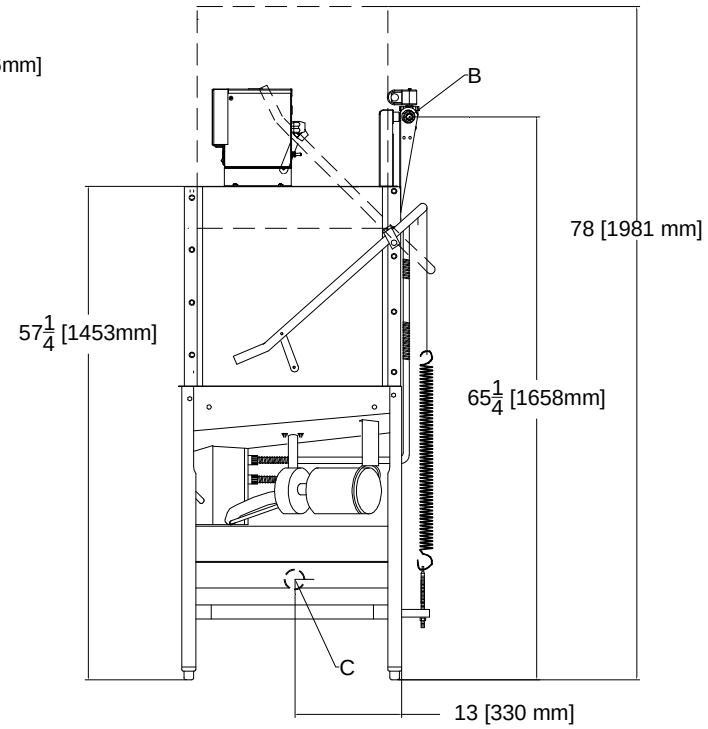




SECTION 1: SPECIFICATION INFORMATION

DIMENSIONS CONSERVER AXL2

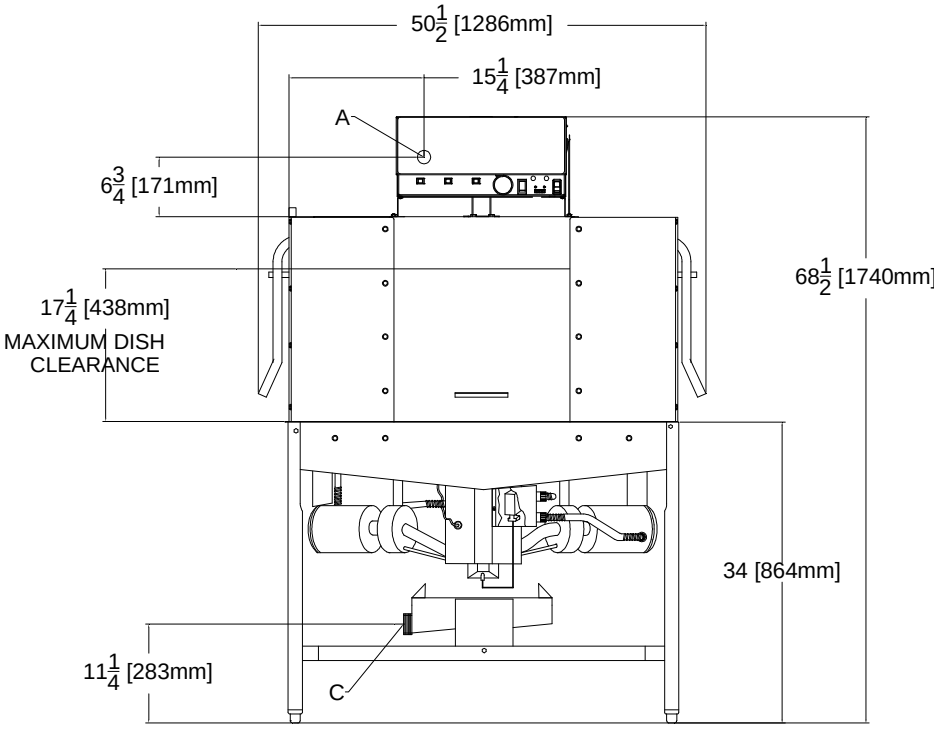




LEGEND:

A - Electrical connection
B - Water inlet 1/2" I.P.S
C - Drain connection 2" I.P.S

All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.



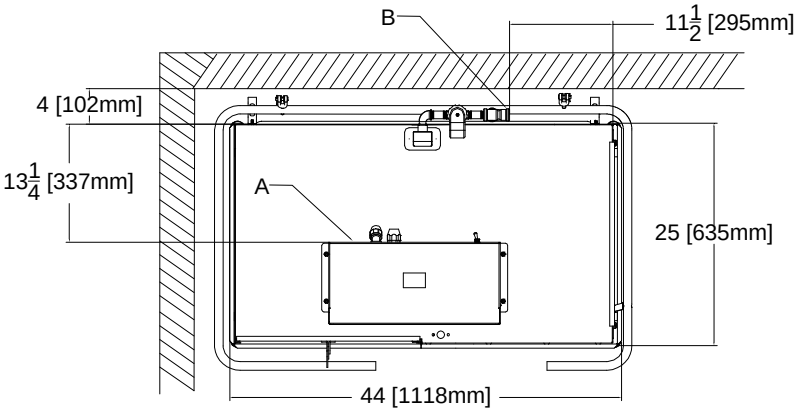
SECTION 1: SPECIFICATION INFORMATION

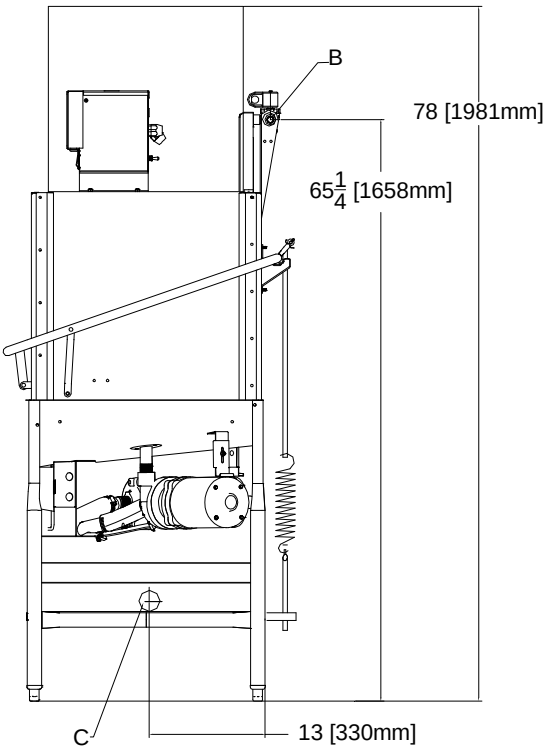
DIMENSIONS CONSERVER AXL2-CML

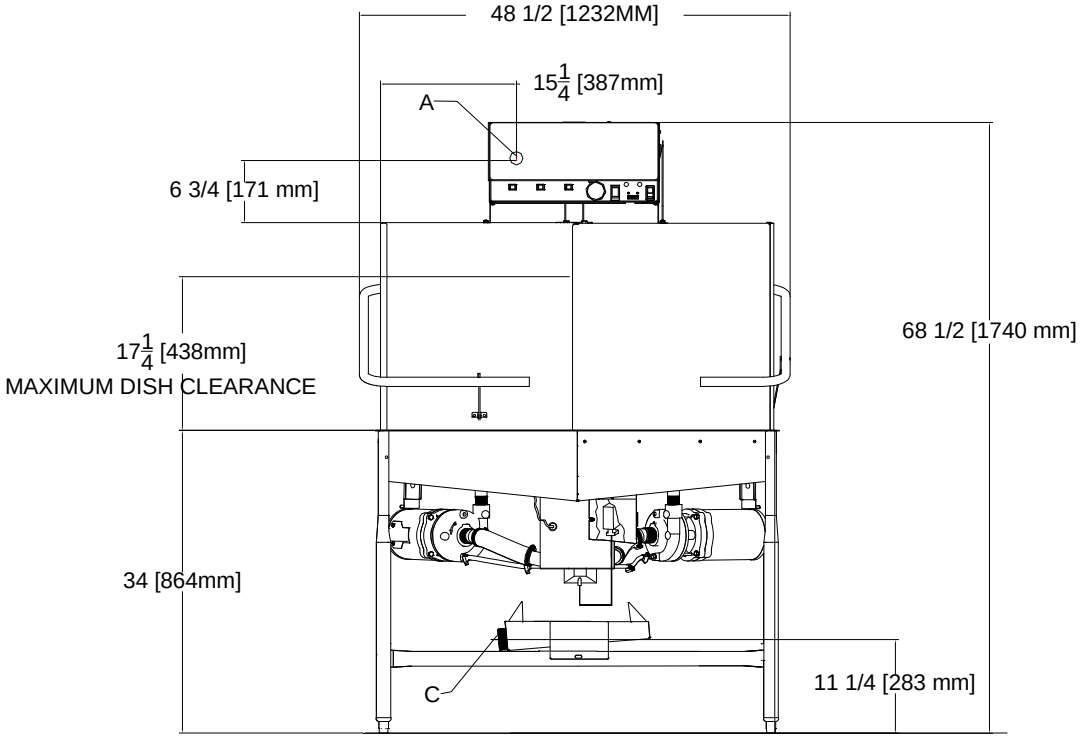
LEGEND:

A - Electrical connection
B - Water inlet 1/2" I.P.S
C - Drain connection 2" I.P.S

All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.







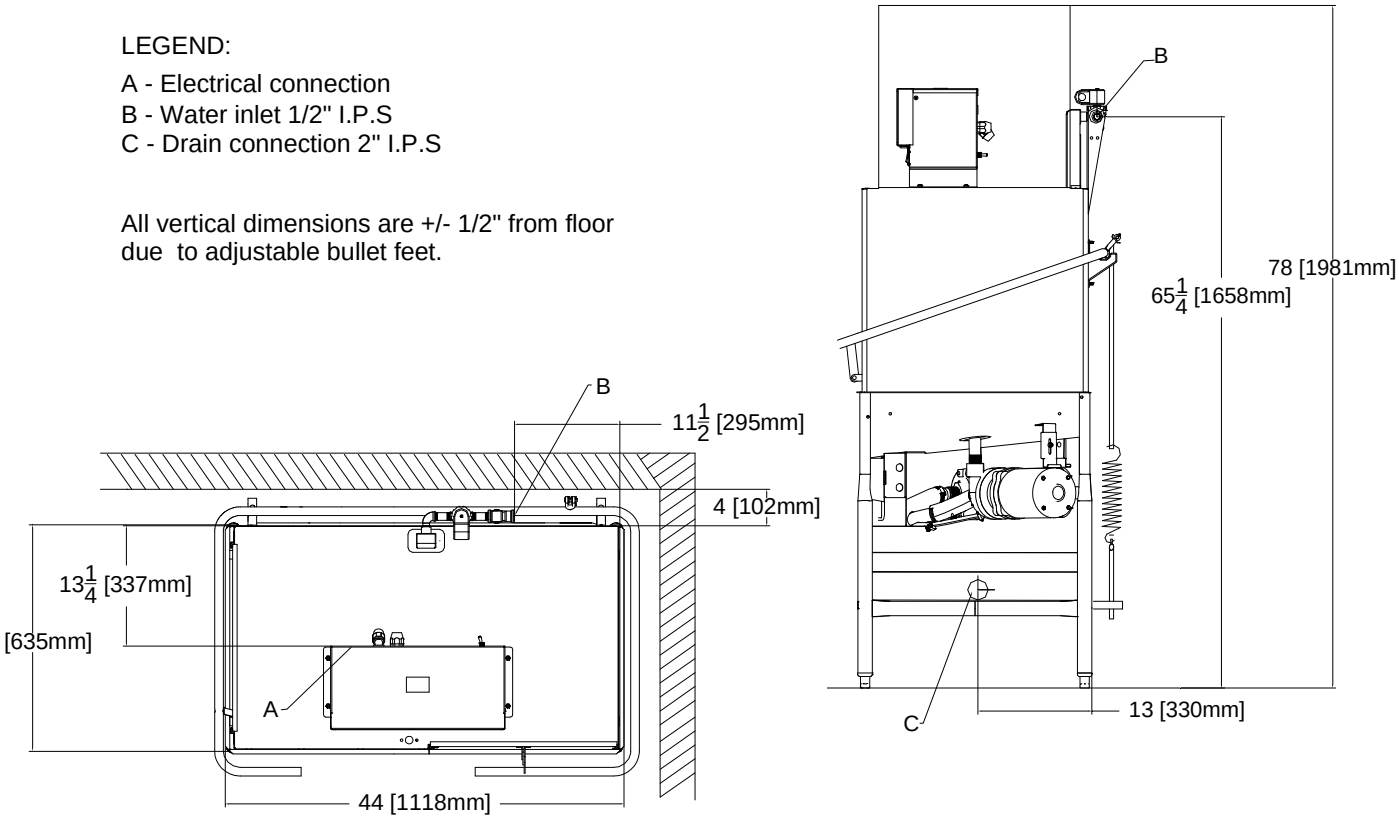
SECTION 1: SPECIFICATION INFORMATION

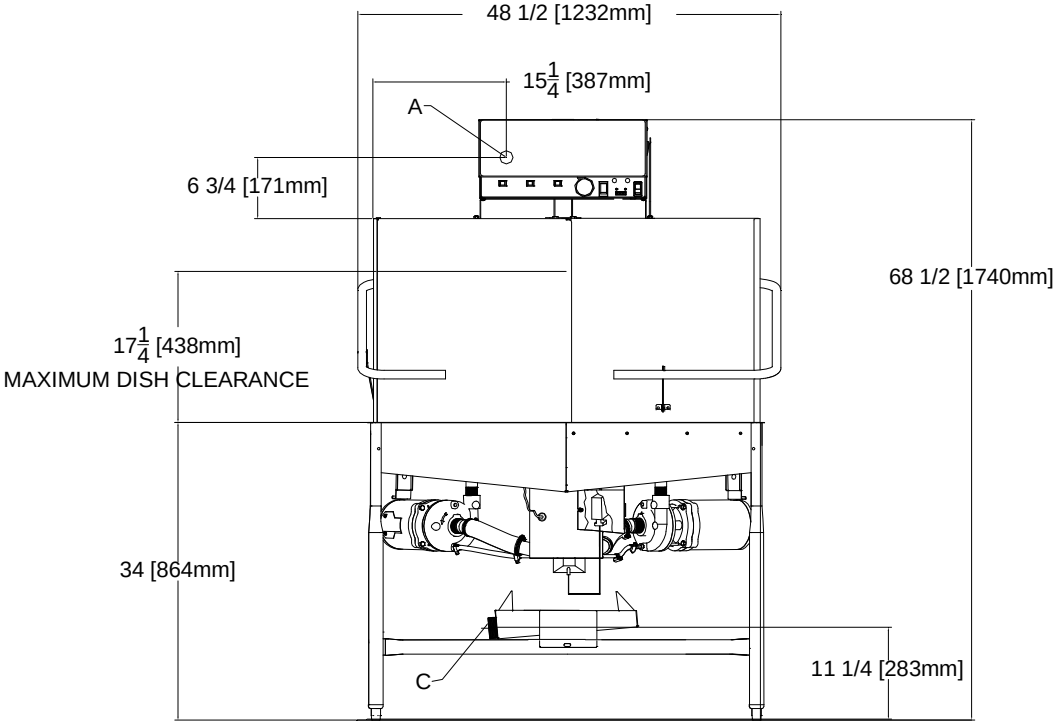
RDIMENSIONS CONSERVER AXL2-CMR

LEGEND:

A - Electrical connection
B - Water inlet 1/2" I.P.S
C - Drain connection 2" I.P.S

All vertical dimensions are +/- 1/2" from floor due to adjustable bullet feet.





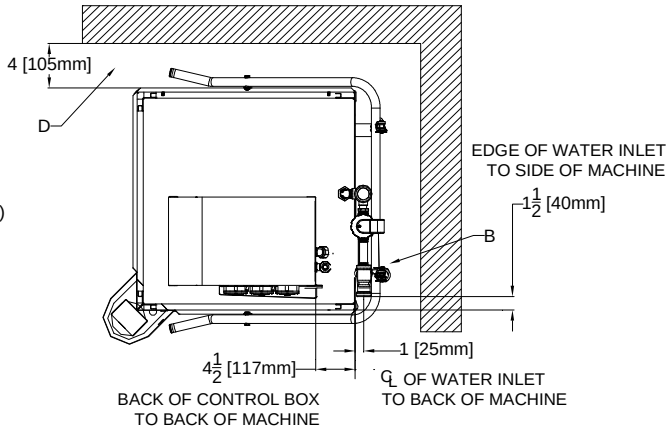
SECTION 1: SPECIFICATION INFORMATION

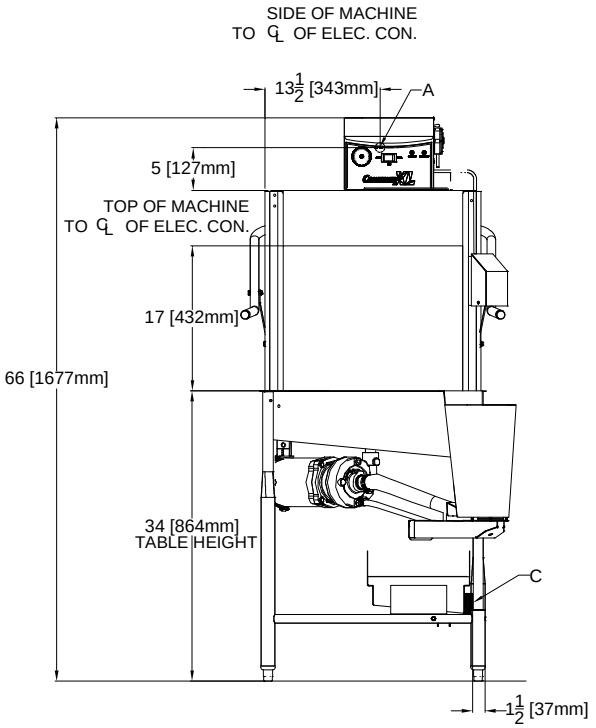
DIMENSIONS CONSERVER XL (Starting with S/N 04D10286)

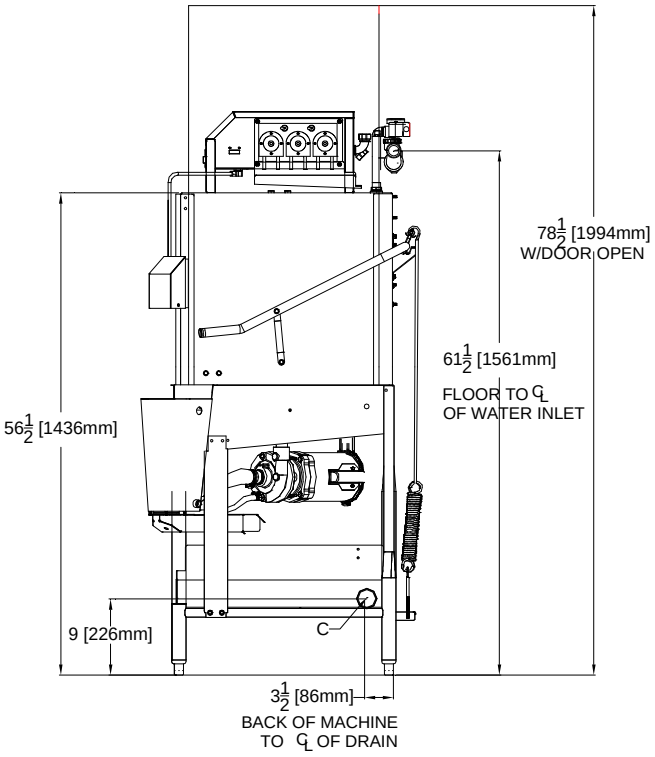
LEGEND

A - ELECTRICAL CONNECTION
B - WATER INLET, 3/4" IPS
C - DRAIN CONNECTION, 2" IPS
D - STANDARD CLEARANCE BETWEEN MACHINE AND WALL (WITH DISHTABLE) IS 4" [105mm]

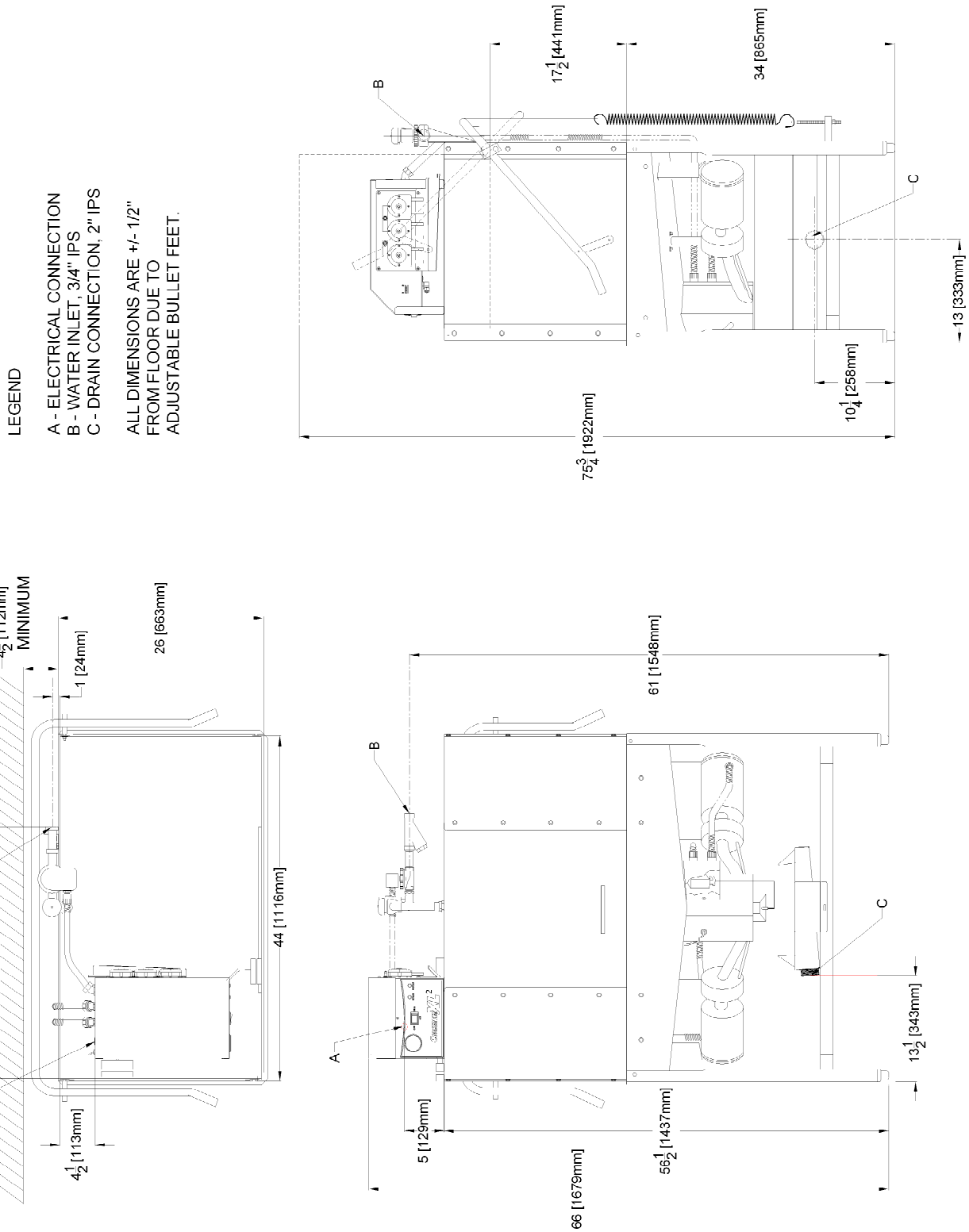
ALL DIMENSIONS ARE +/- 1/2" FROM FLOOR DUE TO ADJUSTABLE BULLET FEET.



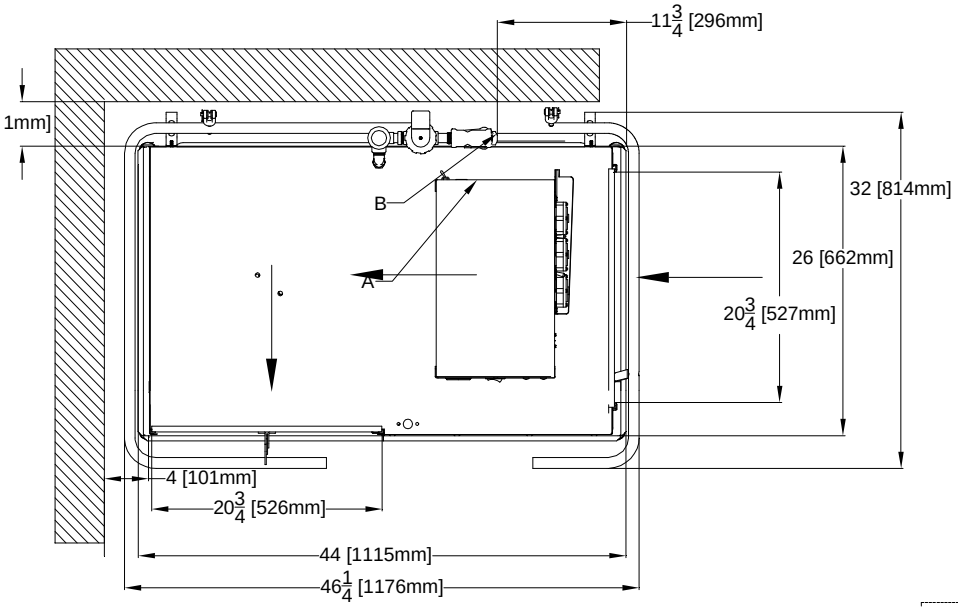




DIMENSIONS CONSERVER XL2



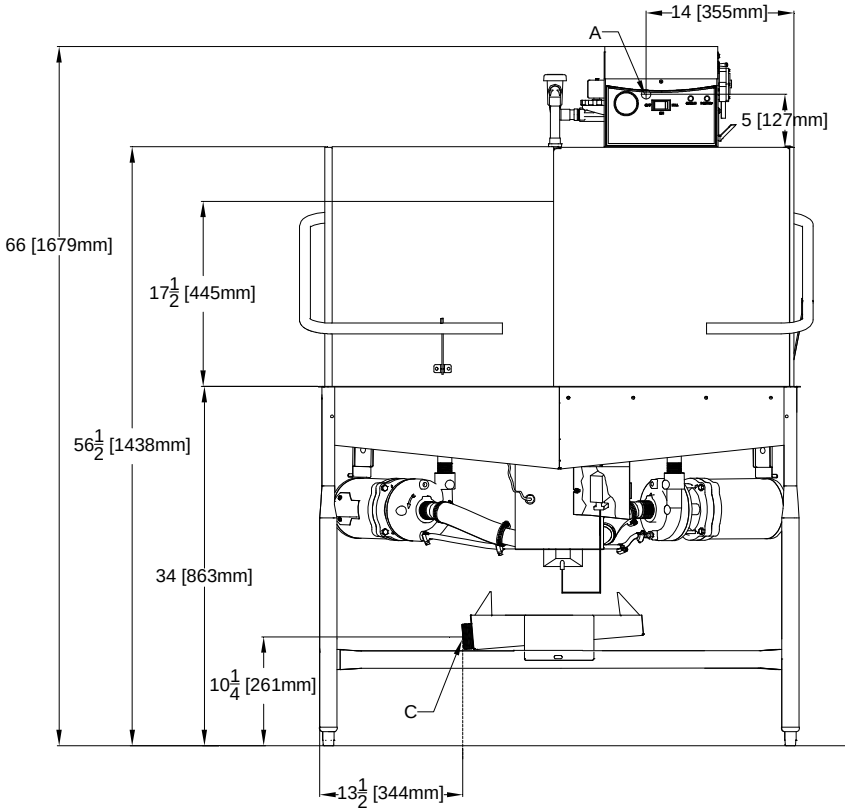
DIMENSIONS CONSERVER XL2-CML

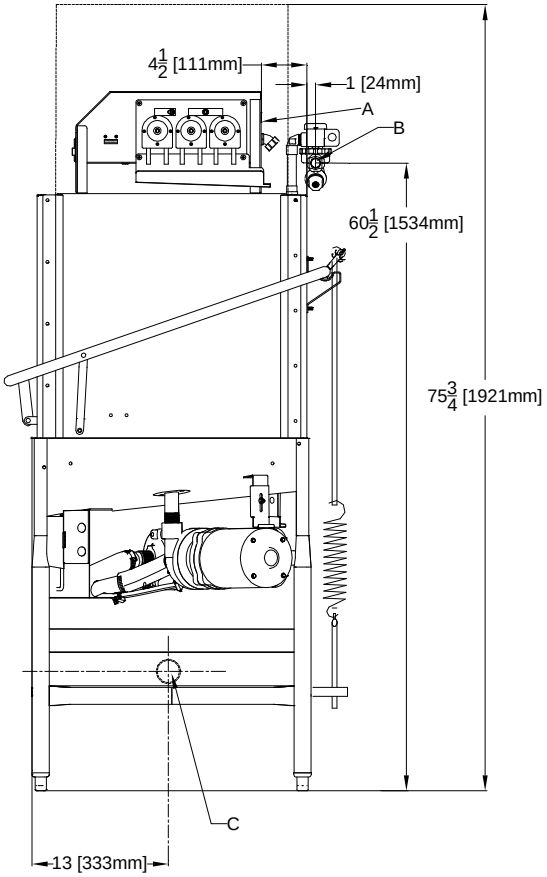


LEGEND

A - ELECTRICAL CONNECTION
B - WATER INLET, 3/4" IPS
C - DRAIN CONNECTION, 2" IPS

ALL DIMENSIONS ARE +/- 1/2" FROM FLOOR DUE TO ADJUSTABLE BULLET FEET.





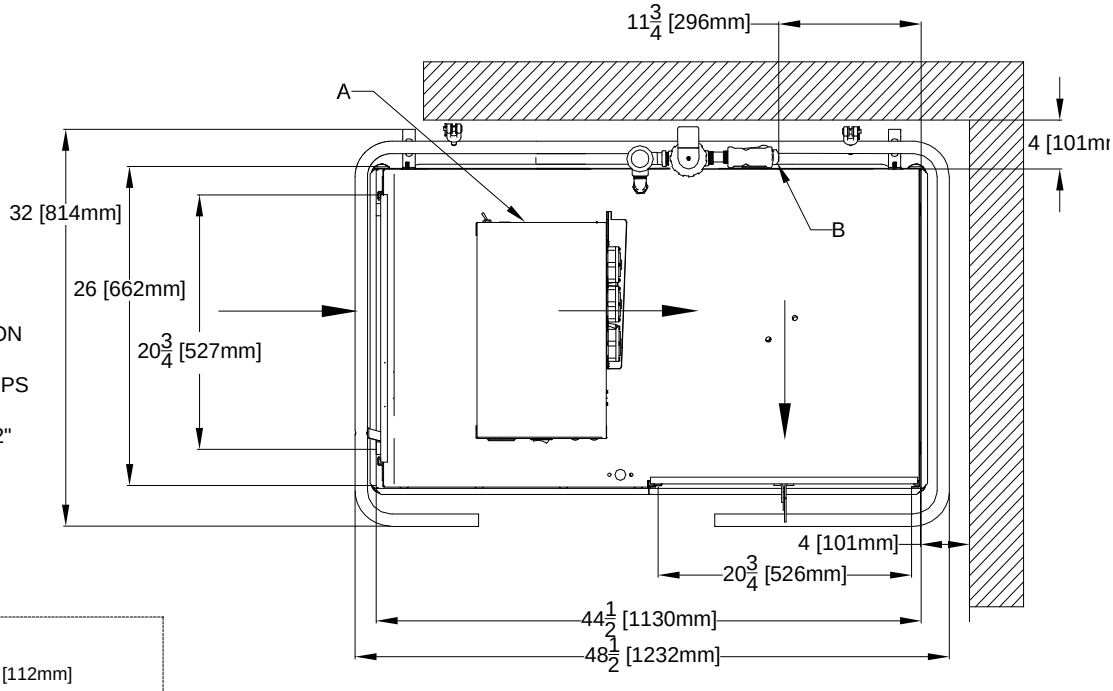
SECTION 1: SPECIFICATION INFORMATION

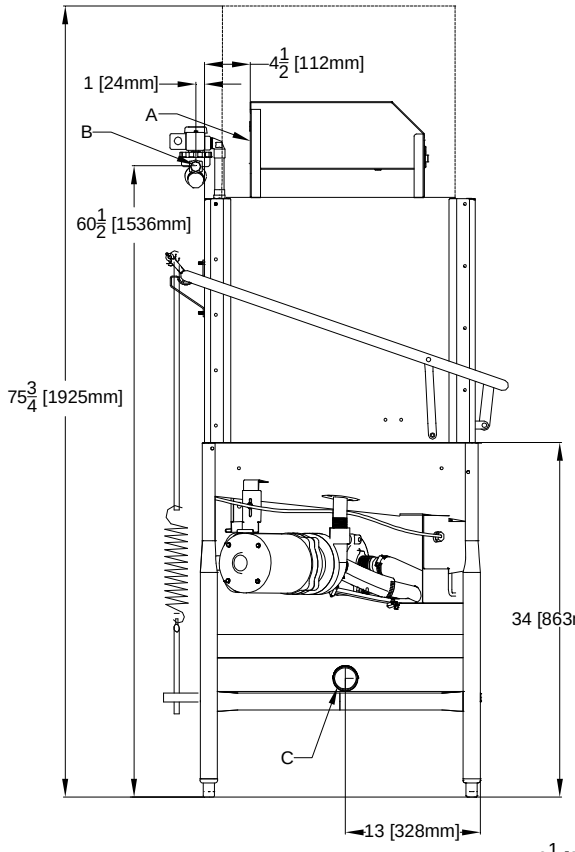
DIMENSIONS CONSERVER XL2-CMR

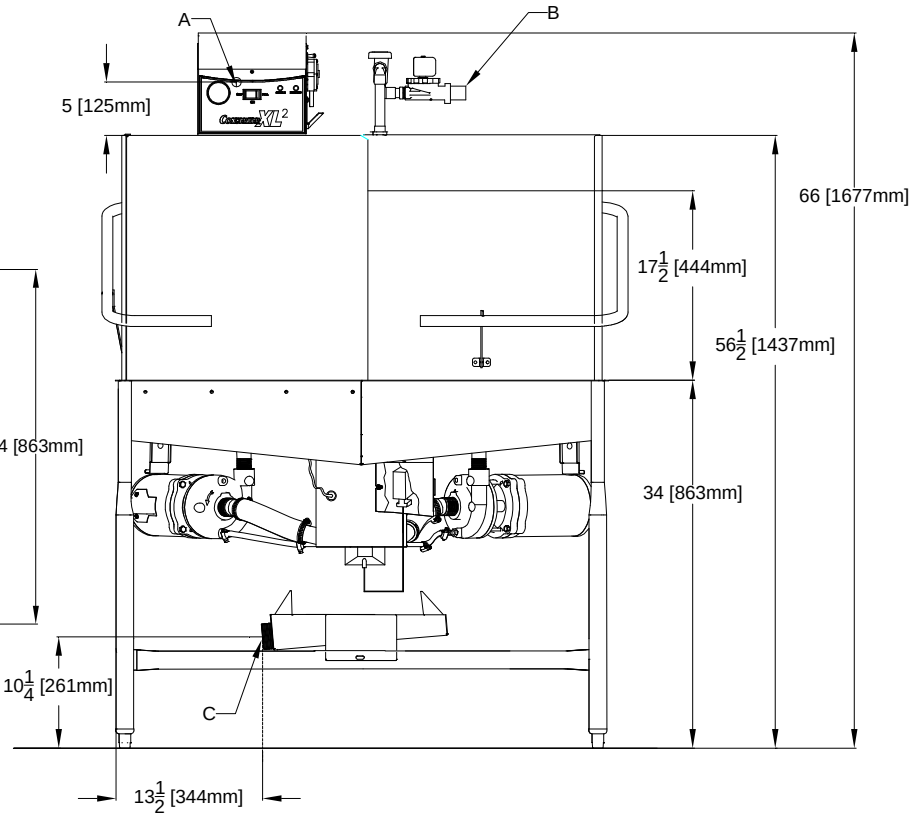
LEGEND

A - ELECTRICAL CONNECTION
B - WATER INLET, 3/4" IPS
C - DRAIN CONNECTION, 2" IPS

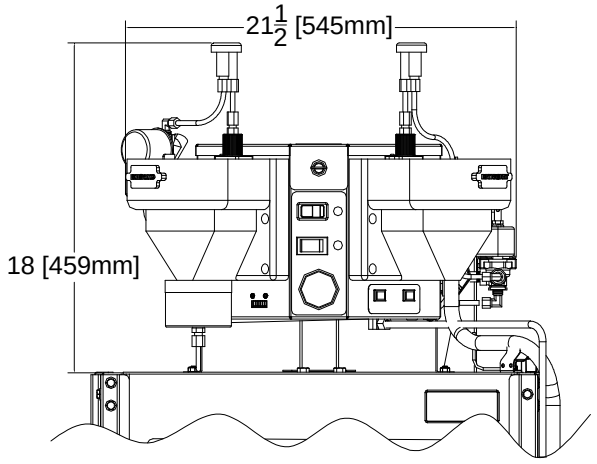
ALL DIMENSIONS ARE +/- 1/2" FROM FLOOR DUE TO ADJUSTABLE BULLET FEET.



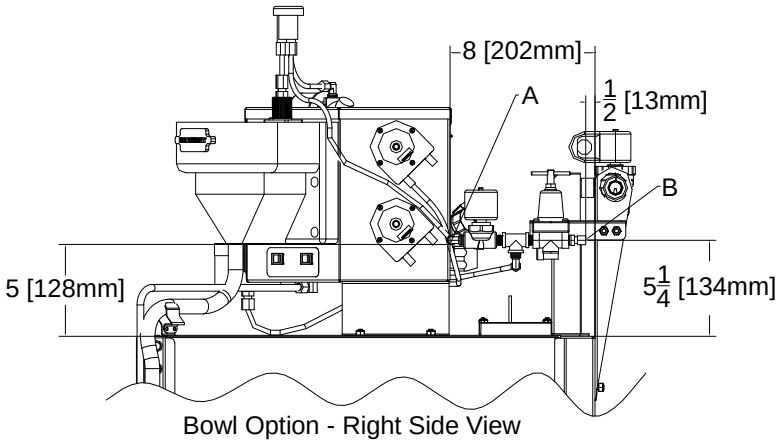




Legend
A - Electrical Connection
B - Water Connection, ¼"



Bowl Option - Front Side View



Bowl Option - Right Side View

TABLE DIMENSIONS

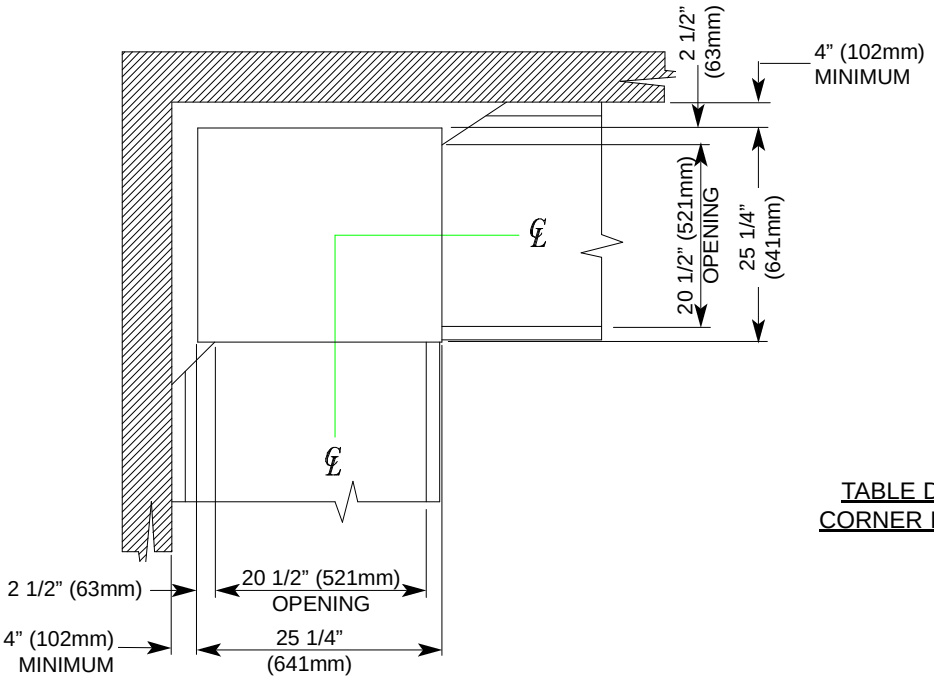


TABLE DIMENSIONS
CORNER INSTALLATION

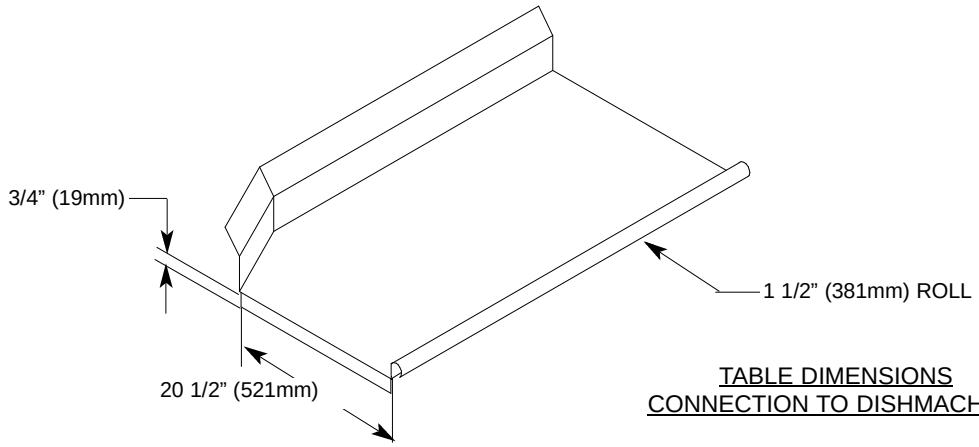


TABLE DIMENSIONS
CONNECTION TO DISHMACHINE

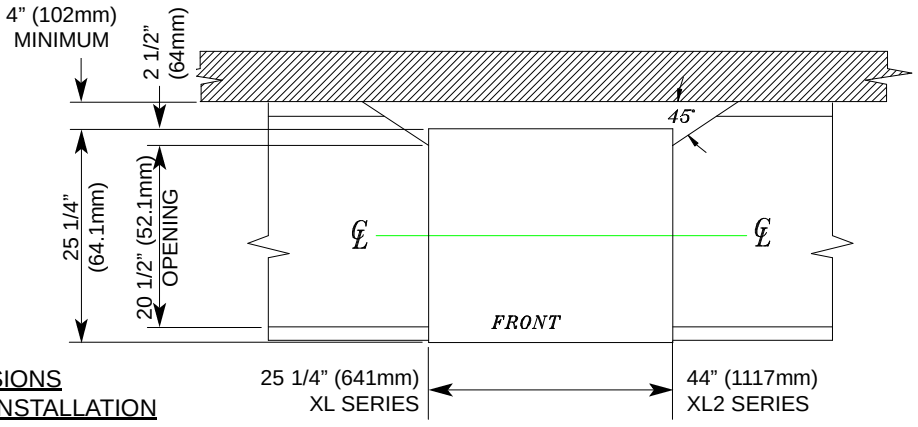


TABLE DIMENSIONS
STRAIGHT THROUGH INSTALLATION

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 Conserver XL/XL2 series is a gravity discharge drain. All piping from the 2” MNPT connection on the waste accumulator must be pitched (1/4” per foot) to the floor or sink drain. All piping from the machine to the drain must be a minimum 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 5 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 (3/4” 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 20 ± 5 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.

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 with the Conserver XL/XL2 series models) 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.

SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

ELECTRICAL INSTRUCTIONS

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. This will require taking a phillips head screwdriver and removing the one (1) screw on the front cover of the control box. Install 3/4" 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 & N) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided.

It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.

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.

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.

TO PREPARE PUMPS FOR OPERATION

The Conserver XL dishmachine is supplied with detergent, rinse additive and sanitizer dispensing chemical feeder pumps. Locate the open ends of the chemical tubes with the tube stiffeners and place each one in the appropriate container.

A. **Red** Tubing = **Detergent**
B. **Blue** Tubing = **Rinse Aid**
C. **White** Tubing = **Sanitizer**

PRIMING CHEMICAL FEEDER PUMPS

Chemical feeder pumps need priming when the machine is first installed or if for some reason the chemical lines have been removed and air is allowed to enter.

CAUTION: Water must be in the sump and wash tank prior to the dispensing of chemicals. Sanitizer in concentration is caustic and may cause damage without dilution.

1. Verify that the proper chemical tube stiffener inlet is in the proper container.

2. Use the toggle switches on the right side of control box to prime each pump. There are two (2) switches mounted by the peristaltic-pumps. One will prime the sanitizer pump only, and the second will prime either the detergent or rinse aid pump, depending upon which way it is depressed.

3. To prime the pumps, hold the switch in the momentary position until chemical can be observed entering the sump.

4. Detergent is dispensed as required during the wash cycle by the cam timer. The amount of detergent may need to be increased or decreased depending on water quality and type of detergent. It is adjusted by changing Cam 6 on the cam timer.

5. Rinse additive is dispensed as required into the final rinse. The amount of rinse aid may need to be adjusted depending on water hardness and results. It can be changed by changing Cam 7 on the cam timer.

6. Chlorine based sanitizer is dispensed into the final rinse. The amount of sanitizer may need to be adjusted depending on the concentration and type of sanitizer used. It is adjusted by changing Cam 5 on the cam timer.

WARNING: Some of the chemicals used in dishwashing may cause chemical burns if they come in contact with your skin. Wear protective gear when handling these chemicals. If you do come in contact with these chemicals, immediately flush the affected area with fresh water. Always refer to the chemical agent packaging for safe handling and first-aid instructions.

SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

OPERATION INSTRUCTIONS

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

1. The sump strainer is in place and is clean.

2. The drain stopper is installed.

3. That the wash and rinse arms are screwed securely into place and that their endcaps are tight. The wash and rinse arms should rotate freely.

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: For the initial fill, close doors and depress and hold the OFF/ON/FILL rocker switch in the FILL position for approximately 8 - 10 seconds. Open the doors and verify that the water level is correct. Hereafter, the water level is controlled by the timer that has been preset at the factory. Verify that the drain stopper is preventing the wash tub water from pouring out excessively. There may be some slight leakage from the drain hole. Verify that there are no other leaks on the unit before proceeding any further. 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.

The water level was set at the factory. If the water level is not at the level noted above, it will require adjustment. Check to ensure that the recommended water pressure is being supplied to the machine (20 ± 5 PSI). If the water pressure is correct then the fill valve will need adjustment. Use the following steps to adjust the cam. Turn power off at the machine circuit breaker. Open the control box cover. Locate the timer fill valve cam (Cam 4 from the timer motor). Locate the spanner wrench taped to the electrical panel. The spanner wrench is used to adjust the cam.

To increase the water level, open the notch of the adjustable cam. To decrease the water level, close the notch. Care must be taken that the set point does not extend into the home position of the timer. Do not move the side of the cam that starts the fill; this will change the sequence of cycle operation. With the door closed turn the power circuit breaker on. Open and close the door to run a cycle, then check the water level. Adjust as necessary then close the control box cover.

The machine runs a complete cycle to drain and fill. If the machine is not allowed to drain, the water will build up inside the tub. After the initial fill, the rinse water for the current cycle will become the wash water for the next cycle.

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 unscraped 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.

WARM-UP CYCLES: For a typical daily start-up, it is recommended to run the machine through 3 cycles to ensure that all of the cold water is out of the system and to verify that the unit is operating correctly. To cycle the machine, ensure that the power is on and that the tub has filled to the correct level. Lift the doors and the cycle light will illuminate. When the light goes out, close the doors, the unit will start, run through the cycle, and shut off automatically. Repeat this two more times. The unit should now be ready to proceed with the washing of ware.

OPERATION INSTRUCTIONS (CONTINUED)

WASHING A RACK OF WARE: To wash a rack, open the doors completely (being careful for hot water that may drip from the doors) and slide the rack into the unit. Close the doors and the
unit will start automatically. Once the cycle is completed, open the door (again watching for the dripping hot water) and remove the rack of clean ware. Replace with a rack of soiled ware and close the doors. The process will then repeat itself.

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, 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, close the doors. When the unit completes the cycle, turn the power switch to the OFF position and open the doors. Manually remove the drain stopper from the tub and allow the tub to drain (NOTE: the wash tank water will be hot so caution is advised). Once the wash tub is drained, remove the pan strainer and the pump suction strainer. Remove soil and debris from the strainer and set to the side. Unscrew the wash and rinse arms from their manifolds. Remove the endcaps and flush the arms with water. Use a brush to clean out the inside of the arms. If the nozzles appear to be clogged, use a toothpick to remove the obstruction. Wipe the inside of the unit out, removing all soil and scraps. Reassemble the wash and rinse arms and replace them in the unit. The arms only need to be hand tight, do not use tools to tighten them down. Reinstall the strainers and close the doors.

CAM TIMER OPERATION

The Conserver XL Series cam timer is a 1 minute, 30 second, 8-cam timer (cam 8 is a spare) that controls the operation of the dishmachine. The following is a description of the set points for each cam and the function of each switch.

CAM 1: Cam 1 is a cut cam with a single notch and serves as the cycle/reset control.

FUNCTION: When the machine is in the operation mode the notch is the home position. The machine will remain idle until the door is opened, then cam 1 moves to the start position and holds until the door is closed. The closing of the door will start the next cycle. The cam will rotate a complete cycle, and return to the home position and hold.

CAM 2: Cam 2 is a cut cam and provides the wash cycle timing.

FUNCTION: The wash cam works off the normally open contacts of Cam 2. This requires the microswitch be held closed by the cam. It will close and energize the wash pump 2 seconds after the cycle switch is activated. The pump will operate through the wash cycle (40 seconds) then shut down for the dwell period (20 seconds). As the cam rotates it energizes the pump for the rinse cycle (25 seconds). When cam 1 reaches it's home position it will de-energize cam 2, shutting down the wash pump.

NOTE: The last 6 cams are adjustable. The following instructions will require that the timer position have the cams to the front and the motor to the left.

CAM 3: Cam 3 is an adjustable cam and controls the drain valve.

FUNCTION: The drain solenoid works off the normally closed contacts of cam 3. When the cycle is initiated, the microswitch will be held open until it is allowed to drop into the notch of the cam. This energizes the drain solenoid which drains the machine. After a 12 second delay the cam reverses the microswitch, de-energizing the drain solenoid. This cam may require adjusting due to varying water pressure. The drain solenoid must remain open long enough to remove whatever water the fill valve solenoid allows in the machine. This could vary due to the water supply line pressure.

SETTINGS: The right side of cam 3 must be set to pick up the switch arm just before the wash/rinse cycle cam switch drops. It will hold the drain solenoid open to drain all the water in the tank from the unit during the dwell period. Any adjustment made to the drain should be made to the left side of cam 3. The cam must be moved back into the wash time until all of the water is drained from the machine.

CAM 4: Cam 4 is an adjustable cam and controls the fill valve and therefore the amount of water used.

FUNCTION: The fill valve cam works off the normally closed contacts of cam 4. This requires the switch to be held open by the cam and allowed to drop into the notch to operate the fill valve. This energizes the fill solenoid which opens to start filling the machine with fresh water. After a 10 second delay, the cam reverses the microswitch, de-energizing the fill solenoid. The fill cam may require adjustment due to varying water pressure. The fill solenoid must remain open a sufficient length of time to fill the machine to the correct level.

SETTINGS: The right side of cam 4 must be set to allow the switch arm to drop 2 seconds before the drain solenoid is de-energized which flushes the detergent residue from the unit. It will hold the fill solenoid open until the cam switch arm is raised. At that time the fill solenoid is de-energized, shutting off the incoming water. The tub will be filled to the correct level. Any adjustment made to the timing of the fill solenoid should be made with the left side of cam 4. To increase the water level, open the notch of the cam and for decreasing the level of the notch should be closed.

CAM 5: Cam 5 is an adjustable cam and controls the sanitizer pump.

FUNCTION: The sanitizer pump cam works off the normally closed contacts of cam 5. This requires the switch arm to be held open by the cam and allowed to drop into the notch to operate the pump. The time that the sanitizer pump will remain energized must be determined in the field to suit the chemical used and water conditions.

SETTINGS: The left side of cam 5 must be set to allow the switch arm to drop in past the starting point of the fill cam and after the drain solenoid has closed. The adjustment for sanitizer volume must be made with the right side of the cam. To increase the volume the notch should be increased or to decrease the amount of sanitizer the notch should be closed slightly in increments until the correct level is reached.

CAM TIMER OPERATION (CONTINUED)

CAM 6: Cam 6 is an adjustable can and controls the detergent pump.

FUNCTION: The detergent pump cam works off the normally closed contacts of cam 6. This requires the switch arm to be held open by the cam and allowed to drop into the notch to operate the pump. The time that the detergent pump will remain energized must be determined in the field to suit the chemical used and water conditions.

SETTINGS: The left side of cam 6 must be set to drop in past the starting point of the wash pump cam. The adjustment for detergent volume must be made with the right side of the cam. To increase the volume, the notch should be increased or to decrease the amount of detergent the notch should be closed slightly in increments until the correct level is reached.

CAM 7: Cam 7 is an adjustable cam and controls the rinse aid pump.

FUNCTION: The rinse aid pump cam works off the normally closed contacts of cam 7. This requires the switch arm to be held open by the cam and allowed to drop into the notch to operate the pump. The time that the rinse aid pump will remain energized must be determined in the field to suit the chemical used and water conditions.

SETTINGS: The left side of cam 7 must be set to drop in past the starting point of the fill cam and after the drain solenoid has closed. The adjustment for rinse aid volume must be made with the right side of the cam. To increase the volume the notch should be increased or to decrease the amount of detergent the notch should be closed slightly in increments until the correct level is reached.

MECHANICAL TIMER TIMING SEQUENCE

2 SECONDS INTO CYCLE
*Wash pump starts, runs for 40 seconds, then shuts down. Controlled by C2 cam.

4 SECONDS INTO CYCLE
*Detergent feed pump is energized. The length of time will be field determined. Time will depend on the detergent used and water conditions. Controlled by C6 cam.

10 SECONDS INTO CYCLE
* Detergent feed pump shuts down. Controlled by C6 cam.

42 SECONDS INTO CYCLE
* Wash pump shuts down. Controlled by C2 cam.
* Drain solenoid is energized (opens). Wash water drains from the unit. Controlled by C3 cam.

51 SECONDS INTO CYCLE
* Fill solenoid valve is energized (opened) starting to fill unit. Controlled by C4 cam.

53 SECONDS INTO CYCLE
* Drain solenoid valve is de-energized (closed). Controlled by C3 cam.

54 SECONDS INTO CYCLE
* Sanitizer pump is energized, injecting sanitizer into wash tank. Controlled by C5 cam.
* Rinse aid pump is energized, injecting rinse aid into wash tank. Controlled by C7 cam.

58 SECONDS INTO CYCLE
* Sanitizer pump is de-energized. The length of time that the sanitizer pump is activated will be determined in the field. Timing will depend on the chemical used and water conditions. Controlled by C5 cam.

60 SECONDS INTO CYCLE
* Rinse aid pump is de-energized. The length of time that the rinse aid pump is activated will be determined in the field. Timing will depend on the chemical used and water conditions. Controlled by C7 cam.

62 SECONDS INTO CYCLE
* Wash pump is energized for the rinse cycle.
* Fill solenoid valve is de-energized.

87 SECONDS INTO CYCLE
* Wash pump is de-energized.
* End of cycle.

UNIVERSAL TIMER PROGRAMMING INSTRUCTIONS

INSTRUCTIONS FOR CHEMICAL FEEDER PUMPS (FOR INSTALLATION TECHNICIAN ONLY)

To access the programming mode, the machine must be ON, and idle (between cycles).

On the timer board, press both the MOVE and ENTER buttons on the timer board simultaneously.

The PROGRAM light will illuminate and the A light will blink.

Once in the programming mode, the MOVE button is used to scroll between the programming categories and the ENTER button is used to select the category.

Press the MOVE button to move the blinking light between FILL, RINSE AID, DETERGENT or SANITIZER.

Press the ENTER button for the chosen category.

The PROGRAM light will illuminate along with the lights corresponding to the time values for the chosen category. The ACCEPT light will blink.

To change the value of a parameter, use the MOVE button to move the blinking light to the time option (time is in seconds). In the time categories, each second in use will light up. To deselect the option, press ENTER and the light will go off, press ENTER again and it will illuminate. Once you have set your time category, press the MOVE button until the ACCEPT light is blinking and press ENTER. This will save the changed parameters.

Once you press the ENTER button when the ACCEPT light is blinking, you will exit the programming mode. To change any other values, you will have to return to the programming mode. To revert back to a previous setting, you must return to that option and change the parameter back to the previous setting.

Once in the programming mode, if there have been no keypad inputs for approximately 2 minutes, the system will automatically exit out of the programming mode. Any changes to parameters will be saved when the programming mode is automatically exited.

All time adjustments are in seconds. Refer to the chart below for the adjustable outputs.

Please note that options A, B, and D are not adjustable outputs.

Please note that options A, B and D are not adjustable outputs.

Timer Programming Board