

# ALVEY CL-1 WASHER

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**CINCINNATI**  
**INDUSTRIAL MACHINERY**

This **ALVEY WASHING EQUIPMENT** machine was installed by

\_\_\_\_\_

(lead installer)

on the day of

\_\_\_\_\_

(month / day / year).

Serial #: \_\_\_\_\_

Customer PO #: \_\_\_\_\_

Manufacturer SO #: \_\_\_\_\_

For parts and services, call

**ARMOR AFTERMARKET**

at

**1-800-725-9957**

or email [partsandservice@armoraftermarket.com](mailto:partsandservice@armoraftermarket.com)



**CINCINNATI**  
INDUSTRIAL MACHINERY

**A Division of The Armor Group, Inc.**

**Welcome**

Dear Valued Customer,

Thank you for your trust in, and relationship with Alvey Washing Equipment. We hope you have many years of uninterrupted service from our product.

If you need parts, service, or support, contact **ARMOR AFTERMARKET** at 1-800-725-9957, or email [partsandservice@armoraftermarket.com](mailto:partsandservice@armoraftermarket.com). Some advantages of requesting **ARMOR AFTERMARKET** to fill your replacement parts orders are:

1. Being the original manufacturer of this equipment offers simplicity in order replacement.
2. We are entitled to original equipment manufacturer discounts, which are passed on to our customers.
3. It is our primary responsibility to serve you in a timely and professional manner.

A suggested spare parts list for your machine is included in the CD we are providing your company. This CD has been created to assist you in learning about and using your new machine. The program will help you quickly find documentation and instructions regarding common usage and parts. Adobe Acrobat Reader will be required to view the manual; a download is available from the CD.

If the CD does not start automatically, run "CD\_Start.exe" on your CD drive. Should you have problems reading any files, please contact us.

Sincerely,

Alvey Washing Equipment

Documentation and Manual Team and The Parts and Service Department





**CL-1 Turntable Washer**  
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## **CL-1 Turntable Washer**

### **I. WARRANTY**

**ACCEPTANCE** – The quote of which these terms and conditions are incorporated therein in their entirety is conditioned upon its written acceptance by the customer (hereinafter “Purchaser”) within thirty (30) days from the date of the quote, and prior to such written acceptance, the quote and these terms and conditions are subject to change without notice. Upon Manufacturer’s (as defined below) acceptance of the purchase order, these terms and conditions shall be binding on Purchaser. All previous agreements, understandings and quotations are superseded by these terms and conditions. No modification of any of these terms and conditions herein shall be binding on Manufacturer unless such modification is agreed to in writing by an authorized representative of Manufacturer from the Mason Office of Armor Metal Group. “Manufacturer” as used herein shall be deemed to mean the manufacturer as identified on the quote of which these terms and conditions are incorporated therein.

**SHIPPING DATES** - Shipping dates are approximate, based on prompt receipt by Manufacturer of all necessary information, and are subject to change by reason of factory conditions. Receipt of the product quoted (hereinafter the “Equipment”) by the Purchaser shall constitute a waiver of all claims for delay.

**PRICING** - All prices quoted by Manufacturer are subject to change at any time and to any addition which may be necessary to cover any regional or nationwide material price increase or shipping surcharge to Manufacturer for materials. Manufacturer reserves the right to correct all typographical or clerical errors, which may be present in Manufacturer’s prices or specifications.

**TERMS** - Unless otherwise mutually agreed upon in writing, the Equipment is sold F.O.B. Manufacturer’s Factory. Terms of this sale are subject to separate written agreement between Manufacturer and Purchaser, to be determined at the time of consummation of this sale. Unless otherwise provided in such separate written agreement, payment in full shall be due and invoiced when the Equipment is ready for delivery. No cash discounts are allowed unless otherwise specifically provided by Manufacturer in writing. If, in the exclusive judgment of Manufacturer,

the financial condition of Purchaser at any time does not justify the commencement or continuance of production or shipment on the terms specified herein, Manufacturer may, in addition to all other remedies it may have at law or in equity, make a written demand for full or partial payment in advance, suspend its performance until such payment is made and cancel the contract if such payment is not received by Manufacturer within 30 days after delivery in person or mailing of such demand by Manufacturer. If Purchaser fails to pay within ten (10) days after the due date thereof any sum required to be paid by Purchaser to Manufacturer hereunder, Purchaser will pay to Manufacturer for each delinquent payment or part thereof interest on such delinquent amount from the due date thereof until paid at the lesser of the maximum interest rate allowed by law or eighteen percent (18%) per annum. Sale price shall be payable in current funds of the United States at par.

**BACKCHARGE POLICY** - When a suspected problem develops in the field involving Manufacturer’s product, Manufacturer should be contacted immediately. Purchaser shall give a written statement to Manufacturer detailing the nature of the problem and its probable cause. Manufacturer will evaluate the issue, and if confirmed to be a warranty issue, will respond in accordance with the warranty provisions below. Unless otherwise agreed in writing by Manufacturer, Manufacturer’s personnel shall perform all required field service work. In the event an outside party performs any work for which the Manufacturer has not consented in writing, Purchaser shall be responsible for all such work. Prior consent consists of a written purchase order from the Manufacturer detailing the work to be performed and cost.

**DUTY, TAXES, PERMITS AND BONDS** - Any Federal, State, local or Import Duty or tax arising out of either sale, manufacture or installation of the Equipment or performance of the within contract, is not included in the quoted price, and where necessary, will be made an additional charge to be paid by Purchaser.



## **CL-1 Turntable Washer**

### **I. WARRANTY**

All licenses and permits, including without limitation, any building or erection licenses and permits, if necessary, shall likewise be paid by Purchaser; and should Manufacturer be required to furnish any Bond or Bonds on the within contract, the cost thereof shall also be added to the quoted price.

**ADDITIONAL MATERIAL AND LABOR** - Any material added to, or labor performed on or in connection with the Equipment or installation thereof, shall be at Purchaser's own expense, unless otherwise agreed to in writing by Manufacturer.

**SAFETY DEVICES** - Manufacturer will supply such safety devices or fire protection equipment as is specified in writing in its proposals. If Purchaser desires or requests through local, State or Insurance Underwriter's Specifications or regulations, other additional safety devices or equipment, Manufacturer will undertake, without being obligated therefore, to furnish same at Purchaser's cost. Manufacturer assumes no liability for loss or damage to persons or property occasioned by any accident or casualty resulting from the use of fuel gas, fuel oil, oven or immersion tube atmosphere gas in connection with the Equipment.

**USE OF SPECIFICATIONS AND DRAWINGS** - The drawings, designs, specifications and data accompanying any proposal are Manufacturer's property and are subject to recall by Manufacturer at any time. Such drawings, designs, specifications and data, or any part of them, shall not be used by Purchaser for competitive bidding or similar purposes without Manufacturer's prior written approval.

**TITLE AND OWNERSHIP** - It is the intention that the Equipment be sold to Purchaser and that title to the same shall be acquired by Purchaser upon shipment from Manufacturer's premises. Manufacturer shall retain a purchase money security interest lien on each piece of Equipment, including without limitation, any accessories to such Equipment, proceeds from the sale thereof and any insurance proceeds related to such Equipment, until final payment thereof is made as per the agreed terms. If Manufacturer gives Purchaser possession before final payment is made, it is hereby mutually agreed that:

a) The title and the right of possession of the Equipment shall transfer to the Purchaser upon shipment; provided however, Manufacturer shall retain a purchase money security interest lien on each piece of Equipment, including without limitation, any accessories to such Equipment, proceeds from the sale thereof and any insurance proceeds related to such Equipment until full and final payment therefore (including payment of any promissory notes and/or other security taken in lieu of or in accordance with the terms hereof) shall have been made. Purchaser also authorizes Manufacturer to act as its agent and attorney-in-fact (where permitted by law) for the limited purpose of preparing, executing in Purchaser's name, and filing on its behalf, a financing statement (for example, a UCC-1) to perfect Manufacturer's purchase money security interest in each piece of Equipment. Until title or license has passed to Purchaser and full and final payment has been received by Manufacturer, Purchaser shall not cause nor permit any piece of the Equipment to be sold, leased, or subject to a lien or other encumbrance other than Manufacturer's security interest;

b) In the event of default or breach of any of the Terms and Conditions of the contract, Manufacturer may, at its option, repossess the Equipment and all additions thereto, wherever found, free from all claims whatsoever;

c) Any risk of loss during shipment shall be borne by Purchaser and any loss or damage to the Equipment during shipment shall not relieve Purchaser of its obligations hereunder, including but not limited to making full and final payment to Manufacturer.

The Equipment, or any part thereof, shall not be considered a fixture or be incorporated into realty by reason of its attachment thereto, and may be separated from realty, as well as personality, for the purpose of repossession. Manufacturer shall not be liable to Purchaser, nor shall Manufacturer be subject to any legal proceedings, criminal or civil, for Manufacturer's acts in such repossession, nor for the repayment of any money paid before such repossession as part payment for the Equipment, which shall be retained by Manufacturer as or on account of liquidating damages.





## **CL-1 Turntable Washer**

### **I. WARRANTY**

In addition to the purchase money security interest lien described above, Manufacturer shall have the right to elect or assert Manufacturer's claim of a mechanics lien against the property upon which the Equipment may be erected and to waive Manufacturer's right to repossess under section (b) above at any time before the expiration of the time fixed by law for filing such lien.

#### **CLAIMS/LIABILITY -**

a) Manufacturer shall not be liable for loss, damage, detention, or delay resulting from causes beyond its control or by acts of God, including floods, and acts of foreign nations, or caused by fire, strike, civil or military authority insurrection or riot, embargoes, car shortages, wrecks or delay in transportation.

b) Manufacturer shall have no responsibility for loss or damage to the Equipment after delivery to the carrier.

c) Manufacturer's liability arising out of the supplying of the Equipment or its use shall not under any circumstances exceed a credit of the purchase price, F.O.B. Manufacturer's factory, of the Equipment.

d) IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LIQUIDATED DAMAGES, OR INDIRECT, OR CONSEQUENTIAL DAMAGE OF ANY NATURE.

#### **WARRANTIES -**

a) Manufacturer warrants to Purchaser that the material and workmanship of the Equipment is of good quality and free of defects and the Equipment of its own manufacture and design delivered hereunder shall be of the kind and quality described in the specifications, and that it shall be suitable for performing the work therein described; provided, however, that the work for which it is intended shall have been fully and adequately presented, shown and described to Manufacturer. The warranty period will start upon shipment from a facility of Manufacturer and conclude based upon a separate prearranged warranty period agreed to in writing by Manufacturer.

b) EXCEPT AS SPECIFICALLY PROVIDED IN (a) ABOVE, MANUFACTURER MAKES NO WARRANTY, EXPRESS OR IMPLIED, RELATING TO THE

EQUIPMENT, ITS MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

c) Manufacturer does not provide a separate warranty for parts or components not manufactured by Manufacturer. Equipment, parts and accessories made by other manufacturers are warranted only to the extent of the original manufacturer's warranty to Manufacturer, which if extendable, Manufacturer will extend to Purchaser.

d) In the event of Manufacturer's breach of its warranty as provided in (a) above, Manufacturer's total liability shall be to repair or replace the Equipment and in no event shall Manufacturer have any liability for any consequential, incidental or other special damages, including but not limited to damages or loss of profits resulting from failure of the Equipment or delay caused by its repair.

e) All transportation costs of returning defective goods shall be borne by Purchaser. All transportation costs of returning repaired or replaced products to Purchaser shall be borne by Purchaser.

f) This warranty shall not be in force and effect unless: Purchaser is current with all payments due to Manufacturer; Purchaser gives Manufacturer immediate notice of defective part or parts; Purchaser affords the Manufacturer the opportunity to inspect defective part or parts; material is still property of the original owner; material is still part of the original installation operating under normal usage (eight hours per day and five days per week constitutes normal usage); and material is properly maintained and lubricated per factory instructions.

g) THE ABOVE WARRANTY DOES NOT COVER PARTS WHICH UPON INSPECTION ARE DETERMINED BY MANUFACTURER TO HAVE BEEN SUBJECTED TO MISUSE, NEGLIGENCE, ALTERATIONS, ACCIDENT, ABUSE, DAMAGE BY FIRE, FLOOD OR OTHER SIMILAR CASUALTY.

PATENTS - Manufacturer shall hold Purchaser harmless from any and all costs and damages which shall be recovered against Purchaser in any suit at law or in equity for any infringement of any Letters Patent by reason of the use by Purchaser of the Equipment



## **CL-1 Turntable Washer**

### **I. WARRANTY**

herein specified; provided and upon the express condition that the Equipment is used in the manner directed and exclusively for the purpose for which it is sold without any changes and installed or used in compliance with Manufacturer's plans and instructions, and upon further express condition that Purchaser shall immediately after service of the writ in any such suit at law or in equity notify Manufacturer in writing of the commencement of such suit, giving the names of the parties and the title of the court, and shall permit Manufacturer to defend same by its own counsel and at its own expense and to have exclusive control and management of the defense, and that Purchaser shall give Manufacturer all needed information, assistance and authority to enable Manufacturer to defend such suit.

**INDEMNIFICATION** - Purchaser agrees to indemnify Manufacturer, and hold Manufacturer harmless from, all costs and expenses incurred by Manufacturer, including, without limitation, costs of investigation, attorneys' fees, and amounts paid in settlement or satisfaction of claims, proceedings, or judgments, in connection with all claims and proceedings against Manufacturer based upon claimed defects in design in any item or items manufactured for Purchaser by Manufacturer to Purchaser's design and/or specifications.

**CANCELLATIONS** - In the event Purchaser should request cancellation of this contract, or part of it, Purchaser agrees to pay Manufacturer the contract price on any articles which are delivered and ready for delivery on the date when such cancellation becomes effective. As to all such articles not so delivered, Purchaser shall have the option:

- 1) To require completion and to pay the contract price thereof; or
- 2) To reimburse Manufacturer for actual expenditures made with respect to the articles which are uncompleted; to reimburse Manufacturer for commitments incurred with respect to the uncompleted articles of the contract; and to pay Manufacturer for the anticipated profit of the entire contract.

Manufacturer may, by written notice to Purchaser and without any liability, cancel Purchaser's contract if

Purchaser (i) fails to perform any of the terms and conditions hereof and does not cure such failure within a period of 10 days after receipt of written notice from Manufacturer specifying such failure: (ii) in Manufacturer's opinion has not established or maintained credit to meet promptly the payment terms imposed by Manufacturer: (iii) becomes insolvent, makes an assignment in favor of creditors, or becomes subject to any bankruptcy, dissolution, or similar proceedings; or (iv) is merged into, or all or a substantial part of its assets are sold to, another company.

**FORCE MAJEURE** - Delays by Manufacturer or by Purchaser in the performance of this contract shall be excused whenever Manufacturer or the supplying manufacturer is prevented from producing or delivering, or Purchaser from receiving or using the above material, by strikes, differences with workmen, fires, accidents, delays or difficulties in transportation acts of God or the public enemy, or other causes beyond the reasonable control of Purchaser or of Manufacturer or of the supplying manufacturer, as well as acts or demands of the government in times of war or national emergency. Any such delayed performance, however, shall not in any way invalidate this contract or any part thereof.

**JURISDICTION** - Purchaser irrevocably consents and voluntarily submits to personal jurisdiction of the courts located in Warren County and the United States District Court for the Southern District of Ohio, Western Division in any proceeding arising out of or relating to the contract and agrees that all claims raised in such proceeding may be heard and determined in such court.

**GOVERNING LAW** - The contract shall be governed by and construed in accordance with the internal laws of the State of Ohio, United States of America, without regard for its choice and or conflict of laws provisions and without regard to the United Nations Convention on Contracts for the International Sale of Goods.

Purchase Orders and/or contracts may only be accepted in writing by an authorized representative of Manufacturer from the Mason Office of Armor Metal Group.



## CL-1 Turntable Washer

### II. SETUP—LOCATION, RECEIVING, & PLACEMENT

#### Selecting a Location

In selecting a location for your washer, the following factors should be given consideration.

- Near utilities required - see dimension sheet.
- Near an outside wall or directly under a roof for inexpensive ventilation hook-up.
- Ample floor space.
- Easy access for inspection and maintenance.
- Accumulation area for cleaned and soiled pans.

#### Receiving

The machine is provided in one main section, with accessory items located inside. The doors are wired shut. Remove the wire from the door and the shipping blocks from under counterweight on the side of the machine.

Inside the washer, you will find the work tray, exterior rinse piping assembly and any accessory equipment that has been purchased, such as exhaust fan, booster, baskets and racks. The items will be banded together. Accessory items and rinse piping should be unbanded and removed from the machine. Do not remove the work tray. Some items may be crated separately.

Installation tips, maintenance and operating manual is located inside control enclosure. To prevent damage: before start-up, place green solenoid coil back onto the exterior rinse valve body located on top of washer.

#### Placement

After machine has been removed from the shipping crate, spot in the desired location. At this time, make sure machine has enough clearance all the way around for future maintenance and removal of components. Machine can also be leveled at this time by adjustment of the legs. Make sure there is weight on all four (4) legs after adjustment.



**Note:** Fresh water rinse requires 9 GPM @ 20 PSI line flow pressure.



## **CL-1 Turntable Washer**

### **II. SETUP—SERVICE CONNECTIONS**

#### **Service Connections**

Refer to dimension sheets for location of each service connection. Drawing is enclosed in installation package.



**Caution:** It is recommended that a fused safety switch be provided in the line to disconnect the circuit to permit work to be done on the machine without danger of shock. The outside power line should be connected to L-1, L-2 and L-3 on the terminal block (See Wiring Diagram inside control panel).

#### **TANK WATER FILL/FRESH WATER RINSE**

The tank is filled automatically through the fresh water rinse line. The tank will fill until the solution reaches a preset level in the main tank. The washer will shut off automatically. Door must be closed to operate auto water fill.

#### **START UP**

Unlock and turn on the Main Disconnect Switch (provided by others). Turn on the washer's Power Switch located on the front of the washer's control panel. A white indicator light will come on.

Push the green Start Button and allow the washer to fill the wash tank and to complete one (1) cycle. A cycle is complete when the red Cycle End Light goes off.

#### **VENTILATION**

A 12" inside diameter watertight duct is required for the Model CL-1. Be sure to use proper inside lapping of joints and to use the provided gasket between the fan and washer housing so that condensate is not permitted to seep out at the connections.

#### **ROTATION OF MOTORS**

On initial start-up, the motors should be checked to make sure they are running in the proper direction as shown by the arrows.

#### **TANK PREPARATION**

Flush out tank after draining, to remove any foreign substance that may have collected during shipment.

Remove filter screens and flush out. Close drain valve, close door and push auto water fill button.



**Note:** The CL-1 turntable washer incorporates a safety circuit that will NOT allow the pump to operate until the tank is filled to the proper fill depth. Electric heating elements will not operate unless tank is full of water.



**Note:** During the first week of operation, watch the spray nozzles for any chips or scale which may have collected. If this occurs, remove the clogged nozzles, then clean and replace.



## CL-1 Turntable Washer

### III. DAILY STARTUP

#### Daily Startup



**Note:** The start up procedures listed below, are for tanks with steam, and electric heat, sources. Please check to see which heat source is provided with your washer.

Unlock and turn on the Main Disconnect Switch (provided by others).

Turn on the washer's Main Power Switch. A white indicator light will come on. Close the door to activate the water fill. The water fill system will automatically allow the wash tank to fill with water and shut off when the proper level is reached.

Set the wash temperature controller, located on the front of the main control panel to 150° F / 71.1° C. When the temperature for the wash tank reaches the 150° F / 71.1° C set point, the washer door can be opened and a rack can be loaded. At this time, adjust the wash cycle switch to the light, medium or heavy soil position depending soil conditions. The green cycle start button can now be pushed. A red in-cycle light activates and stays on until the cycle completes. When the cycle completes, the light goes off, the door to the washer can be opened, and the contents removed.

#### ACTIVATING STEAM HEATING ASSEMBLY (STEAM INJECTOR OR STEAM COIL)

1. Turn main power switch off (provided by other) and open control panel.
2. Set temperature control located in the main control panel, to the desired operating temperature (140° F to 160° F).
3. Close control panel door and turn main power switch (provided by others) back on.
4. Turn all steam valves to the "ON" position.
5. Turn control panel tank heat switch to the "ON" position.

#### ACTIVATING ELECTRIC HEATING ASSEMBLY

1. Turn main power switch (provided by others) off and open control panel.
2. Set temperature control located in the main control panel, to the desired operating temperature (140° F to 160° F).
3. Close control panel door and turn main power switch (provided by others) back on.
4. Turn control panel tank heat switch to the "ON" position.



**Note:** The SL-2S washer incorporates a safety circuit that will NOT allow the pump to operate until the tank is filled to the proper fill depth. Electric heating elements will not operate unless tank is full of water.

#### DETERGENT

When the solution reaches operating temperature, add the proper amount of cleaning compound at the rate recommended by your chemical supplier.

If the detergent is in a powder form, pour the powder in the filter baskets, then close the door and run the pump until all compounds have been dissolved. If the compound has been broken up or partially dissolved, this operation will go faster.



**Caution:** The cleaning compound should be the non-foaming type and should not contain a chemical substance that will injure copper or aluminum.



**Note:** Alvey recommends the use of an automatic detergent dispenser. To ensure the economic use of compounds, ensure that the sensing probes are kept clean of any foreign matter. Consult your cleaning compound supplier for recommendations.



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## CL-1 Turntable Washer

### IV. SEQUENCE OF OPERATION

#### Sequence of Operation

1. Turn on main power by closing disconnect switch (provided by others).
2. Close door.
3. Turn power switch to the on position. The Tank Fill Relay, Rinse Solenoid, will energize.
4. After the solution level reaches the correct operating level, the Tank Fill Relay and the Rinse Solenoid will de-energize.

#### WASHER OPERATION - (Wash & Fresh Water Rinse)

After Automatic Waterfill is complete, open the door and check for the proper solution level. Load items to be washed. Close doors.

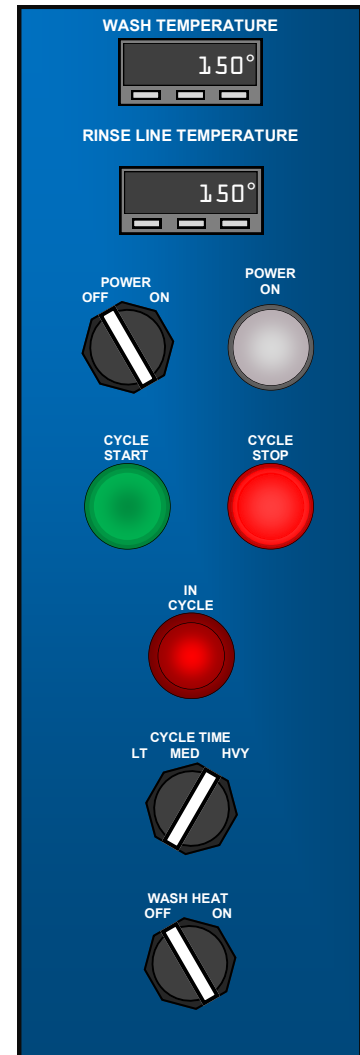
Turn Heat Selector Switch to the 'on' position. The green Cycle Start button can now be pushed. A red In Cycle light activates. The light stays on until the cycle is complete. When the light goes off, the cycle is complete and the door to the washer can be opened and the rack removed.

At this time, adjust the wash cycle switch to the light, medium or heavy soil position depending soil conditions. The machine will wash for a 2 minutes in the 'light' position. After the Wash the pump shuts off and the Rinse cycle begins.

The machine will rinse for a 30 time interval. An exhaust dwell will follow the rinse cycle to help remove steam from the cabinet prior to opening the doors for rack removal. When the red light goes off, the cycle is complete and the door to the washer can be opened and the rack removed.

#### EXHAUST FAN (If provided)

Turn Selector Switch to the 'on' position. When the door is opened, the exhaust fan, 2M, and the green illuminated Selector Switch will energize. The exhaust fan will run until the door is closed, the switch is turned off, or if the door is left open for longer than five minutes.





## CL-1 Turntable Washer

### IV. SEQUENCE OF OPERATION

#### Electric Heat

1. Turn main disconnect power switch (provided by others) to the 'on' position.
2. Turn the main power switch (2) on the control panel to the 'on' position.
3. Set wash temperature control (1), located on the front of the main control panel, to the desired operating temperature (140° F to 160° F).
4. Turn control panel tank heat switch (3) to the ON position.

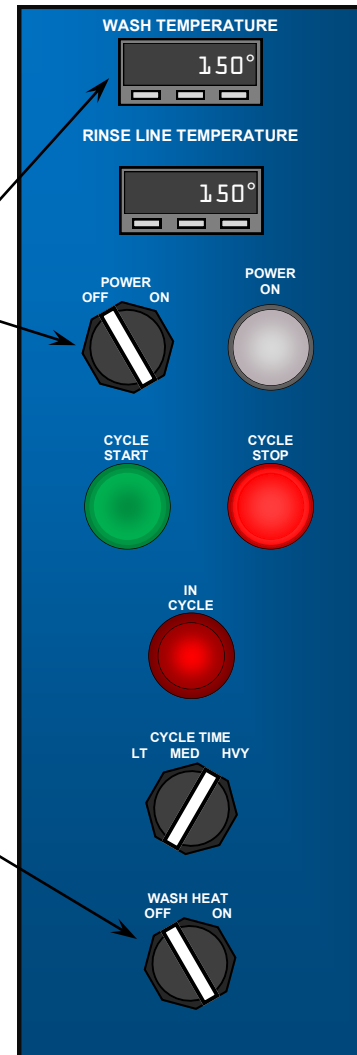
#### Steam Injector Heat/Steam Coil

1. Turn main disconnect switch (provided by others) on.
2. Turn on main power switch (2) on the control panel.
3. Set wash temperature control (1), located on the front of the main control panel, to the desired operating temperature (140° F to 160° F).
4. Turn all steam valves to the ON position.
5. Turn control panel tank heat switch (3) to the ON position.

(1) Wash Temp Control

(2) Main Power Switch

(3) Tank Heat Switch







## **CL-1 Turntable Washer**

### **V. SHUT-DOWN**

#### **Shut-Down**

1. Turn off heat.
2. Drain washer completely.
3. Remove the filter screens and flush out tank. Clean sludge and scale thoroughly from the inside of the washer.
4. Prepare the washer for next start-up by filling wash tank and adding detergent. Leave the door partially open to eliminate odors.
5. Turn main power switch to the "Off" position and lock out the main disconnect switch (provided by others).



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## CL-1 Turntable Washer

### VI. SERVICE AND MAINTENANCE

#### Wash Pump

The CL-1 washer is equipped with a 10 HP horizontal immersion pump. The pump delivers an operating pressure of 55 to 60 lbs. See Figure 1.

If your pump pressure is below normal, check the following:

- Pump rotation.
- Nozzles missing in spray pipe assembly.
- End caps missing on spray pipes.
- Pump suction clogged.
- Pump gauge defective.

Should operating pressure be higher than normal look for:

- Clogged nozzles.
- Discharge on pump clogged.

To prevent damage to the pump, periodic check of the following should be made:

- After any electrical work has been completed, always check motor rotation.
- Inspect impeller for any clogging.
- Grease every six months.



Figure 1: Wash Pump

#### Nozzle Cleaning and Adjustment

Inspect nozzles once a week for clogging. When clogging occurs, remove end caps on the wash pipes. Using a small wire or screwdriver, push the debris back down into the pipe to remove the nozzle clog. Close the door and run the pump for 2 to 4 seconds to flush the debris out the ends of the pipes. Replace the end caps when finished. Excessive

pump pressure will indicate clogging condition. Do not remove the nozzles from the wash pipes unless absolutely necessary. The adjustment of the nozzles has been made by the factory and is located in a pattern for the best performance.

#### Door Cable Assembly

The counterweight is fastened to the doors and stainless steel cables are threaded through the pulleys and held in place by cable clamps. See Figure 2.

Replace door cables. Thread cables through holes on door strip.

Thread other end of cables through pulleys to door counterweight, insert through hole, loop back and clamp. Always double clamp for safety.

Replace grid cables. Thread cables through holes on grid. Thread other end of cables through the pulleys to the grid counterweight, insert through holes and clamp.



Figure 2: Pulley Counterweight



## CL-1 Turntable Washer

### VI. SERVICE AND MAINTENANCE

#### Exhaust Fan (as provided)

Any time the doors are opened, the exhaust fan shall operate. The exhaust fan shall continue to run until the doors are closed, or if they are left open for longer than five minutes of inactivity.

#### Electric Booster (as provided)

The primary function of the electric booster is to raise water temperatures to 180 degrees to meet sanitation requirements for rinsing. When installing the booster, it will require the following services.

Water Design flow pressure is 50 PSI 120-140 degree F. incoming water temperature at the inlet of the booster and maintain 20PSI inlet pressure at the inlet to the rinse manifold. Electrical connections for the electric booster are to be provided by others.

#### Lubrication Guide

Pump Motor: Grease twice yearly.

Exhaust Fan & Motor: No greasing required.

Turntable Drive Unit: Check twice yearly and grease as required.

#### Steam Booster (as provided)

The primary function of the steam booster is to raise water temperatures to 180 degrees to meet sanitation requirements for rinsing. When installing the booster, it will require the following services:

- Steam: Maximum 10 PSI flow rate. Higher pressure will result in unsatisfactory results.
- Water: Design flow pressure is 20 PSI 120-140 degree F. incoming water temperature.
- Electric: connects for solenoid if booster is not factory mounted.
- Other: Condensate return required.



**Note:** This booster has been designed to operate on specific pressures, temperatures and volumes. If you have not supplied correct information, the booster will not perform properly. If you have supplied the incorrect information, Alvey will advise on the problem, but will not share and cost.



**CL-1 Turntable Washer**  
**VII. TROUBLE-SHOOTING GUIDE**

**Wash Pump**

PROBLEM	DIAGNOSIS	SOLUTION
Low Pressure	Pump is running backwards.	Check main electrical wire phasing.
	Nozzles missing.	Replace missing nozzles.
	Leak in discharge piping.	Tighten all pipe fittings.
	Faulty pressure gauge.	Replace gauge.
	Excessive soap suds.	Contact chemical supplier.
	End caps loose or missing.	Tighten or replace end-caps.
High Pressure	Clogged nozzles or discharge piping.	Find and remove clogged nozzle; dislodge and remove obstruction.
	Discharge piping clogged.	Remove obstructions.
	Faulty pressure gauge.	Replace gauge.
Pump Vibration	Worn impeller.	Remove impeller from pump, examine and replace if necessary.
	Worn wear ring.	Remove wear ring from pump, examine and replace if necessary.
	Bent shaft.	Remove shaft from pump, examine and replace if necessary.
	Clogged impeller.	Remove obstruction.
	Worn motor bearings.	Replace bearings.
Motor Overheating	Low voltage.	
	Missing spray nozzles.	Replace missing nozzles.
	Faulty motor.	
	Motor running backwards.	Check main electrical wire phasing and connections.
Motor Will Not Start	Tripped breaker in high voltage (3 phase).	Check fuses in customer-provided disconnect.
	Tripped breaker on transformer secondary.	Reset circuit breaker
	Overload has dropped out.	Reset overload.
	Faulty door switch—door not fully closed.	
	Faulty coil in pump starter.	
	Faulty switch.	



## CL-1 Turntable Washer

### VII. TROUBLE-SHOOTING GUIDE

#### Fresh Water Rinse

PROBLEM	DIAGNOSIS	SOLUTION
Will Not Shut Off	Dirty rinse solenoid (piston sticking open).	Clean solenoid valve body.
Will Not Turn on	Dirty rinse solenoid (piston sticking closed).	Clean solenoid valve body.
	Faulty solenoid valve coil.	Replace coil.

#### Exhaust Fan

PROBLEM	DIAGNOSIS	SOLUTION
Exhaust Fan Vibration	Worn bearings.	Replace bearings.
	Wheel out of balance.	
	Bent shaft.	Replace shaft.
Exhaust Fan Motor Overheating	Low voltage.	
	Bent shaft.	Replace shaft.
	Worn bearings.	Replace bearings.
	Motor running backwards.	Check main electrical wire phasing and

#### Spinning Assembly Arms

PROBLEM	DIAGNOSIS	DIAGNOSIS
Arms Will Not Turn	Remove arms and flush out.	Check to ensure arms spin freely before reinstallation.
	Drive hole clogged.	Remove debris from drive hole.
	Ball bearings are worn.	Replace worn ball bearings.
	Ball bearings clogged.	Remove debris from bearings.



**CL-1 Turntable Washer**  
**VII. TROUBLE-SHOOTING GUIDE**

**Steam Injector**

PROBLEM	DIAGNOSIS	SOLUTION
Will Not Heat.	Temperature controller set too low.	Increase temperature on controller.
	Faulty temperature controller.	Replace controller.
	Low steam pressure.	Minimum of 10 PSI pressure required.
	Clogged steam coil.	Remove, clean out, and replace.
	Clogged steam strainer.	Remove, clean out, and replace.
Overheats.	Temperature controller set too high.	Move set point down on digital temperature controller.
	Faulty temperature controller.	Replace controller.

**Steam Booster**

The primary function of the steam booster is to raise water temperatures to 180 degrees to meet sanitation requirements for rinsing. When installing the booster, it will require the following services:

1. Steam Maximum 10 PSI flow rate. Higher pressure will result in unsatisfactory results.
2. Water Design flow pressure is 20 PSI, 120-140 degree F. incoming water temperature measured at the pressure gauge at the freshwater rinse manifold.
3. Condensate return required.
4. Electric connects for solenoid if booster is not factory mounted.

**Note:** This booster has been designed to operate on specific pressures, temperatures and volumes. If the correct information has not been supplied, the booster will not perform properly. If you have supplied the incorrect information, Alvey will advise on the problem, but will not share any cost.

**Electric Heat**

PROBLEM	DIAGNOSIS	DIAGNOSIS
Will Not Heat.	Temperature controller set too low.	Move set point up on digital temperature
	Faulty temperature controller.	Replace controller.
	Corroded heating elements.	Replace heater.
	Faulty low level switch.	
	Faulty heat contactor.	
Overheats.	Temperature controller set too high.	Move set point down on digital temperature controller.
	Faulty temperature controller.	Replace controller.



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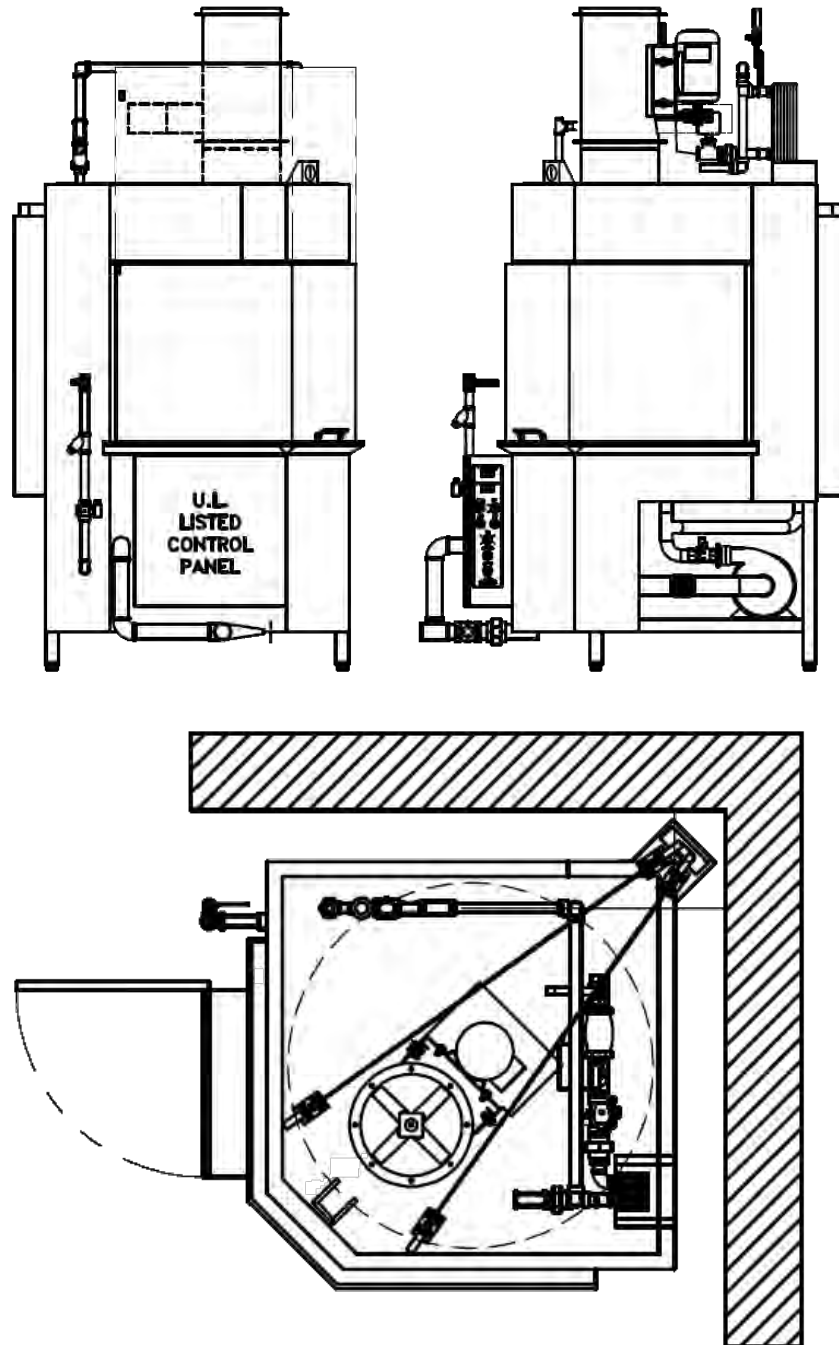
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**CL-1 Turntable Washer**  
**VIII. ILLUSTRATIONS**





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