MART MACHINE FINAL INSPECTION REPORT

THE MART QUALITY MANUFACTURING PROCESS

The Section titled **QUALITY AT MART** explains how MART makes every effort to deliver quality systems to its customers. No easy task, considering the 34 Power Washer models with many variations, and 104 options to choose from.

The entire MART Product Line and each option are engineered. MART engineering files contain thousands of AutoCAD drawings, many in 3-D, and each one updated and kept current. This has enabled MART to establish manufacturing assembly techniques for each subassembly and, in turn, each Power Washer system or EQ-1 Processor. Specific purchased components are inspected and pre-tested prior to installation. During critical stages of the manufacturing process, subassemblies, panels and components are tested again. The testing and inspections continue as a Power Washer or EQ-1 Processor is being built. Electrical Panels, for example, are bench tested before being installed.

When a Power Washer or Processor is assembled and painted, it goes through a rigorous Final Inspection that can take a day or more to complete. All test data are recorded and incorporated into the customer's file, and these records are retained as long as the equipment is in service. In the case of a Power Washer, this could be 25 to 30 or more years. Imagine that, after 15 or 20 years, an owner needs details to service or repair his MART. We have the data at our fingertips. We also have the spare parts components in inventory for the first Power Washers manufactured.

The **MART MACHINE FINAL INSPECTION REPORT** is an 11 page document that must be completed by the Quality Inspector before a MART system can ship. The Inspector reports directly to the General Manager and works independently of the factory and Technical Services. By reviewing the report you will find that the Inspector can stop a shipment for a paint blemish or grinding mark, or an edge that was not ground smooth. In almost every case, the corrections to be made on a completed machine, no matter how complex the machine might be, are minor.

The engineering, fabricating, assembly and testing are the primary reasons why MART systems hold up so well, and why most of the 7,600 Power Washers MART has built over the past 31 years are still in daily service .. cleaning parts for rebuilding and new manufacturing applications.

MART Power Washers and EQ-1 Processors are Built With Pride .. and Installed With Confidence.

MACHINE DATA

P.O.F. _____

	Nameplate HP	IMPELLER TRIM	Nameplate F.L. AMPS
MAIN PUMP	_____	_____	_____
BOOSTER PUMP	_____	_____	_____

Pump Serial Number: _____ Pump Manufacturer: _____

Measured VOLTAGE	1ST CYCLE			3RD CYCLE		
SUPPLY VOLTAGE	_____	_____	_____			
RUNNING VOLTAGE	_____	_____	_____	_____	_____	_____

Measured AMP DRAW	1ST CYCLE			3RD CYCLE		
MAIN WASH PUMP	_____	_____	_____	_____	_____	_____
BOOSTER PUMP	_____	_____	_____	_____	_____	_____
TURNTABLE DRIVE No.1(std)	_____			_____		
TURNTABLE DRIVE No.2	_____			_____		

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PBM MOTOR	_____		_____	
ASE MOTOR	_____		_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HEATING	_____	_____	_____	
_____ kW HABO HEATING	_____	_____	_____	
BURNER SERIAL NUMBER	_____			
BURNER BLOWER MOTOR	_____	_____	_____	
CM PUMP MOTOR	_____	_____	_____	
BLOW-OFF MOTOR	_____	_____	_____	
SLUDGE SCRAPER MOTOR	_____	_____	_____	
SURFACE SCRAPER MOTOR	_____	_____	_____	
FILTER PUMP MOTOR	_____	_____	_____	
INLET CONVEYOR MOTOR	_____	_____	_____	
EXIT CONVEYOR MOTOR	_____	_____	_____	
DOOR UP/DOWN MOTOR	_____	_____	_____	

	SPEC	1ST CYCLE	3RD CYCLE
PRESSURE SPECIFICATION	_____ PSI	_____ PSI	_____ PSI

TRANSFORMER SIZE: _____ KVA

Measurements to be made with all single phase devices operating

CYCLE	TRANSFORMER Secondary VOLTS	TRANSFORMER Secondary AMPS	SUPPLY Primary VOLTAGE	TRANSFORMER Primary AMPS
WASH	_____	_____	_____	_____
A.S.E.	_____	_____	_____	_____

POWER WASHER FINAL INSPECTION CHECKLIST

P.O.F. NO. _____ Date of Initial Inspection: _____

Customer: _____

Note any deficiencies found during this inspection on the Deficiency List. If inspection cannot be continued until a deficiency is corrected, stop the test, note the deficiency, and follow reporting procedures. Each Line Item must be initialed. Check Marks are not acceptable.

_____ Are the following documents available at the time of inspection?
- _____ Production Work Order and Change Orders
- _____ Customer Electrical database
- _____ Electric Bill of Material for the job
- _____ Electrical ladder diagram
- _____ Fabrication check-off list - completed
- _____ Electrical check-off list - completed

_____ Make an overall dimensional sketch of machine (blank forms available in Engineering Dept). Give to Shipping Department for the Shipping File.

_____ Record pump serial numbers and manufacturer of pump(s) on first page of this report .

_____ Verify pump motor nameplate data with CEDbase data.

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_____ Visually inspect machine to verify that it has all the standard features and options called out by the Work Order, additional specifications, or Change Orders that were produced after machine was entered into production.
_____ Check that Door Latch cannot shut by itself and trap someone inside machine.
_____ Electrical service: Check that 3 phase wires are safely connected to Control Panel for testing. Also check for tight connections if splicing block is used.
_____ Check that ground wire is attached to Grounding Lug and that the other end of ground wire is also earth grounded.
_____ Have shift supervisor install the “Caution: High Voltage” sign over the top of the disconnect on machine and then unlock Main Plant Disconnect to machine.

GENERAL

_____ Check for Reservoir Drain.
_____ If machine has a Manifold Valve, a Fold Down Manifold Arm, or some other device that requires the user to step onto the Reservoir Cover Lid, check that expanded metal is welded to top of Cover Lid.
_____ Check that all bearings inside machine are greased with Lubriplate 1444.
_____ On the new style Swivel, check that Grease Relief Check Valve is installed in the proper direction. On 2.2’s, check for grease discharge at weephole on Swivel.
_____ Check that sharp edges of expanded metal on Drain Back Screen have been burned off with torch and made smooth.
_____ Check that the Internal Reservoir Cover has all thumbscrews in place and that screws are not cocked at an angle which indicates that they do not properly line up with the holes.
_____ Check that Internal Reservoir Cover sections have welded handles.
_____ Check around perimeter of Internal Reservoir Cover to ensure there are no gaps between floor and Cabinet walls greater than ¼”.
_____ If there is a flue pipe installed, check that there is a floor section welded between pipe and wall of machine.
_____ On 2.2 machines, check that there is no gap between the Internal Reservoir Cover and PBM Swivel greater than 1/8".
_____ On 2.2 machines, check that DoorStop allows Door to open to 90 degrees.
_____ Check that all Rinse and Wash Nozzles are timed correctly per the drawings.

POWER BLAST MANIFOLD

_____ Record the quantity, location and size _____
_____ Check for any sharp edges or welds that have not been ground off.
_____ Check that Manifold does not contact Door or Wall of machine.
_____ Check for slippage of PBM linkage.
_____ Check that Yellow Movement Indicator Flag is properly attached to PBM Shaft and moves freely without rubbing or contacting components or Cabinet.

TURNTABLE:

_____ Check that there is a continuous weld across top of slot in Door where Turntable Drive Gear penetrates Door. Note weld burn mark on inside of Door.
_____ Check that there is at least 1/2” clearance between the lower Turntable Bearing and Lower DoorSill.
_____ Measure TTBL diameter and work height, and record: _____.
_____ Check that Turntable Drive Motor is not cocked at an angle.
_____ Check that vertical strip around edge of Drip Pan has complete leak proof weld to Turntable Drip Pan.
_____ Check that Turntable Drive Guard is installed. Is it straight? Is anchored securely?
_____ Check Turntable for proper location of Fixture Sockets.
_____ Check that fixture test piece fits easily into each Fixture Socket.
_____ Check for hooks and loops. There must be a hook opposite each loop and vice versa.
_____ Check that all mounting bolts and hardware on Turntable Drive Assembly are tight.
_____ Check that all bolts/studs on Turntable Hub Mount have split lock washers under the nuts and that nuts are tightened.
_____ On Sealed Hub Turntables, check that Turntable is completely welded to Hub.
_____ Check Turntable Drive Torque Limiter for slippage by wedging a wooden block between Door and Turntable.

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_____ Check that Turntable rotates in counter-clockwise direction when viewed from above.
_____ Does Sprocket hit welds on Turntable? Does Table run smoothly? Is Table level?
_____ Does Turntable Drive Gear ride in the center of Turntable Cogs?
_____ Adjust Turntable Drive to Turntable by the following:
Loosen all mounting bolts. Push Turntable Drive assembly inward as far as it will go. Hand tightens two outermost bolts. Rotate Table for two minutes. Retighten all bolts.
_____ On 2.2's, move Turntable back and forth by hand. There should only be slight end play.
Check that jam nut (half the thickness of standard nut) is on Turntable Drive Adjust Bolt.
_____ On Hinged Turntables make sure that Lock Pin is easily removable and that it fits flush or below surface of Turntable.
_____ Check that TTBL Bearing Stops are welded in place.
_____ Note: H-84, H-94 and H-100 washers must have Bearing Caps on lower Turntable Bearing.

SOLUTION LEVEL CONTROL SYSTEM:

_____ Check that there is sufficient slack in conduit to Float System to enable removal of Float Ball for servicing.
_____ Check that Switches are mounted securely and have bushings underneath.
_____ Adjust both Switch Levers so that they switch on and off in the center of the Cam angles.
_____ Note that Water Level Indicator is welded at correct height. Measure from bottom of Water Level Indicator to bottom of machine base: 14" for 2.2, 14-7/8" for 30 & 40, and 14-5/8" for 60 and larger machines. ESS 001. Note that these measurements will be different on machines with Scrapers and on custom machines. See Engineering if unsure of proper water level height.
_____ After checking Water Level Indicator height and water level, adjust Torpedo Cam to correct set point.
_____ Check that both setscrews are tightened down.
_____ Check that Float System moves freely and does not bind or hang up.
_____ Check that Float Stem is long enough that it cannot fall outside upper guide hole when pushed to its lowest down position.
_____ Check that bottom of Torpedo Cam bottoms out in Cabinet Box before Float Ball bottoms out at bottom of Float Box.
_____ Check that stainless washer is installed on Float Rod inside Float Switch Box below Torpedo Cam.
_____ Check Float Rod for excessive side play. Make sure that hole in top of Float Switch Box is not too large in diameter. If it is, then a washer with the correct diameter must be welded over upper hole.
_____ Record how far Float drops from set point when running a wash cycle with Pump(s) operating.
_____ inches.

AUTO STEAM EXHAUST AND FLANGE

_____ Check that Steam Exhaust Motor Identification Label is on ASE Blower Housing.
_____ Check that Direction Arrow is on ASE Venturi Tube – and pointing in right direction.
_____ Check that 90 degree Transition is packed with ASE Venturi Tube.
_____ If ASE is 3 phase 1/2 horsepower or larger, check that Damper/Transition is packed with the Venturi Tube.
_____ Check that all gaskets and mounting hardware are included with ASE Kit.
_____ Check that Steam Exhaust Mounting Flange is completely welded to stub pipe.
_____ Check that A.S.E. is the correct size diameter as specified on work order.
_____ Check that diameter Is correct as stated on S.B.O..
_____ Check that flange is flat within 1/16". Note: Must be flat to seal onto plastic flanges with 1/16" gasket.

ELECTRICAL CHECKOUT

_____ Check P.O.F. number label on Electrical Back Panel.
_____ Check that correct Incoming Voltage Label is on Wiring Back Panel.
_____ Check Ground Label adjacent to the incoming Grounding Lug.
_____ Check that main Grounding Lug is effectively grounded to Cabinet. Check that Self-Tapping Screw is sufficiently tight to firmly hold it in place when tightening down Lug Set Screws.
_____ Check that Main Grounding Lug located directly adjacent to Disconnect Switch.

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_____ Check that Pump Motor(s) are also effectively grounded. If green ground wire is larger than Panel Control Wire, then it must connect to a separate Grounding Lug on Panel. Otherwise it can connect to one of the Din Rail Grounding Terminals.
_____ Check that primary fuses for Control Transformer are rejection type CCMR fuses and that rejection tips of fuses are pressed fully into their slots.
_____ If any wire is detached for shipping, check that wire is long enough to reconnect to accessories. Check that wiring is marked to indicate its connection to accessories. Check that wiring is safe for electrical testing.
_____ Check for DISCONNECT, HOUR METER, 7 DAY CLOCK, and WASH TIMER nameplates
_____ Check that all overloads have been sized correctly by checking the motor nameplates against the sizes of the overloads.
_____ If machine has adjustable overloads, check that they have been adjusted correctly.
_____ Check that all trip loads on the overloads are wired to the N.C. set of Contacts.
_____ If the machine is a "World Model" for overseas installation, check that it has Circuit Breakers and no fuses.
_____ Check that the installed components match the B.O.M.
_____ Check that wiring matches the color code.
_____ Check that all neutrals are grounded.
_____ Verify that all wires have wire markers except for the ground, neutral, number 10 wires with the number 10 already printed on the wire, and 3 phase wires.
_____Verify that all three phase and hot single phase outgoing wires have current loops that are large enough that a clamp amp meter can be inserted in them.

_____ Check appearance of the Panel. Check that components and wiring are neatly installed.
_____ Is wiring on this machine non-standard for any reason? If it is, note this in customer's file.
_____ Are there non-standard components installed in the Panel? If so, note this in customer's file.
_____ Check that Panel and Panel Box mounting hardware are tight.
_____ Check that there are no breaks in the Panel Door gasket. Does gasket seal correctly?
_____ Check electrical connections on Temperature Probe/Controller.
- _____ Check that white wire is connected to "+" Terminal on Temperature Probe.
- _____ Check that red wire is connected to "-" Terminal on Temperature Probe.
- _____ Check that wires of Probe itself are both tucked fully under the screws of the two innermost terminals.
- _____ Check that white and red wires are connected to the two outermost terminals.
- _____ Check that the gasket is under the cover of the Temperature Probe.
- _____ Check that white wire is connected to Terminal 1, and red wire is connected to Terminal 2 on Temperature Control Module base in Panel.

_____ Check that the two terminals are installed adjacent to the A.S.E. thermal overload.
_____ Check that there is a neutral wire connecting to Neutral Terminal Block.
_____ Check that there is a ground wire connecting to Ground Terminal Block.
_____ Compare layout diagram with wiring diagram and components installed in the panel:
_____ Check that fuses positioned in their holders so that the fuse type and size can be read without having to reposition the fuses.
_____ Check that flexible wire is installed to Turntable Drive Motor, if Drive is mounted on Door.
_____ Check that all installed components are included in the Electrical Ladder Diagram.
_____ Check whether wiring and components to Electrical Heating Elements been altered from what is shown on Ladder Logic Diagram.
_____ Check that Transformer is the proper size. 2.2 gets a 1.5KVA, 30 and 40 gets a 2.0 KVA, 60 and larger gets a 3.0 KVA, overseas 2.2 gets a special 2.0 KVA because of the odd voltages.
_____ Check that primary and secondary fuses for Transformer match Panel Layout.
_____ Check that incoming voltage is correct and stated on Electrical Ladder Diagram.
_____ Check that Motor Starter Overloads are set in the manual reset mode

SHUTDOWN SAFETY FEATURE:

_____ Depress Stop Button during a wash cycle.
_____ Depress Test Buttons on Overloads of Pump Motor Starters, one at a time.
_____ Open Door to its hooked position.
_____ If machine has an A.P.E., remove air supply to machine.

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_____ Depress any and all E-stops, one at a time.

PAINT:

_____ Visually inspect machine for paint or cosmetic defects:

_____ Paint. Check for correct color, finish (standard or smooth), overall appearance, shadows, unpainted areas, areas that were improperly masked.

_____ Check that reducing bushings on Pump Motor Knucklehead(s) have been painted.

_____ Check for masking tape that was not remove from machine, scratches, presence of corrosion, or any other visual defects.

_____ Workmanship: Check for grinding scars, general appearance, assembly, and cleanliness of Reservoir.

ELECTRICAL CONDUIT:

_____ Check Conduit runs for proper installation and presence of components.

_____ Check that all sealtight connections are tight.

_____ Check overall appearance of Conduit layout and installation.

_____ Check that Conduit Clamps on front of machine are facing in the correct left/right direction.

_____ If any Strain Relief Connectors are installed in a Conduit Body, check that they are not facing upward. If there is no other way to mount Connectors other than facing upward, then Strain Relief must be sealed with RTV silicone.

PUMPS:

_____ Check mounting hardware to ensure that is tight.

_____ Check Motor/Pump Shaft Couplings to ensure that set screws are tight.

_____ Check that Coupling Guards are installed.

GAS BURNER:

_____If the machine is gas fired and will be installed in Canada, check that Burner is CSA approved. Note that Adams Burners are not CSA approved.

_____On 30's and 40's, check that Flame Diffuser is mounted in Heat Exchanger and welded in place.

_____On 30's and 40's, check that Burner Mounting Plate is installed. Check that its face flat. Check that there are no openings between Plate and Heat Exchanger.

_____Check that nuts and washers are installed on Mounting Suds.

_____Check that Burner mounts up properly with no gaps. Check that Burner easily fits onto Mounting Studs.

_____Check that conduit fitting is secured to Burner Control Panel, and Flex Conduit is cut to proper length.

_____Check wiring to Burner with test light or voltmeter to verify that power is on when Temperature Controller calls for heat.

_____Check that Hot wire to Burner has a closed End Cap Connector installed after test is completed.

_____Check that Burner firing rates and gas pressures are correctly stated on Legend Plate.

_____Test High Limit Control by turning it down until it trips out. Check that it can be reset by its Reset Switch.

_____Verify that Heat Contactor shuts off when High Limit Temperature Controller is turned down. Check that trip point matches the approximate flue air temperature.

_____Check electrical connections on Hi-Limit Thermocouple Probe & Controller.

- _____ Check that white wire is connected to "+" Terminal on Temperature Probe.
- _____ Check that red wire is connected to "-" Terminal on Temperature Probe.
- _____ Check that wires of Probe itself are tucked fully under the screws of the two innermost Terminals.
- _____Check that white and red wires are installed on the two outermost Terminals.
- _____Check that gasket is under the cover of Temperature Probe.
- _____Check that white wire is connected to Terminal 10 and red wire is connected to Terminal 11 on Hi-Limit Control Module.

FLUE DAMPER ASSEMBLY:

_____Check that Test Port Plug is installed in the assembly.

_____Check that line on head of Damper Pivot Bolt falls on same plane as Flue Damper Flap.

_____Check that threaded rod has the special Lock Nut with the rectangle stamped into one of its flats.

_____Check that cutout on Flue Damper Flap is on same side as Test Port.

_____Check that outside diameter of Flue Pipe is correct size.

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_____Check that correct diameter is stated on the S.B.O.

DOOR:

_____Check that there are no Door leaks.
_____Check for weep holes along lower Door Sill.
_____Check that Compression Seals do not stick and Door opens freely.
_____Check that Door Bearing Stops are welded in place.
_____Check inside machine and on Door for any welds or sharp edges that have not been ground off.
_____Door fit: Check for warping at top or bottom. Check Seals for size and quality of welds.

ACCESSORIES: SEE OPTIONS CHECKSHEETS

If options are installed on machine that are not explained in work order or specifications, check with engineering for an explanation and an approved testing method. Write description, details, model numbers, and serial numbers of these components on attached sheet of paper.

OIL SKIMMER:

_____Check that Oil Skimmer Lid is on Oil Skimmer Box.
_____Check that 115 Volt outlet for Oil Skimmer is installed.
_____Check that Oil Skimmer turns on and off correctly with 7 day clock.
_____Check that Mounting Bolts are installed on the Lid.
_____With Oil Skimmer installed on machine, check that Disc is centered in slot cutout in Lid.
_____Check that set screws on “Love Joy” Couplings are tight.
_____Check that Skimmer cord exits from bottom of Junction Box.
_____If machine has 4” Belt Skimmer, check that Heaters are installed.
_____If machine has MART Heated Skimmer, check for Hot Warning Label. Check that Lower Housing Cover is completely sealed with silicone. Check that Heater heats up. Measure amp draw and compare to design amp draw of Heaters. Record amp draw _____

LEVELING BOLTS:

_____Check that Leveling Bolts are installed.
_____Check that there is no paint in threads of Leveling Bolts.
_____Check that Leveling Pads are clear of obstructions for drilling.
_____Check that each mounting hole is 11/16 inch.

CHECK OUT FLOAT SWITCH FUNCTIONS:

_____Check that water fill does not occur unless 7-Day Clock P1 is “on” or 7-Day Clock Control switch is in bypass mode.
_____Check that water fill does not occur while the machine is running.
_____Check that water is not added, and rinse is locked out, when High Switch is made.
_____Check that Heat and Pump(s) shut off if Float is pushed to its full down position.
_____Check that machine fills to set-point after each wash cycle.

FRESH WATER RINSE:

_____Record quantity, location and size _____
_____Check that Rinse Nozzles are all timed correctly. They should all be in same plane and timed 20 degrees from vertical.
_____Check that Rinse Nozzles are aimed at center of Turntable and not off to the side of center.
_____If machine has a Lower Bias Manifold Arm for bucket or pail washing, check that Manifold has at least one Lower Rinse Nozzle.
_____If machine has a special PBM, such as a SHIM Swing Down Arm or Bucket Washer Manifold, draw a sketch below showing Nozzle position and sizes.
_____Temporarily connect a jumper wire from 120V control voltage to Rinse Solenoid Terminal Block to observe Rinse Nozzles spraying with Door open. Check that no Nozzles are clogged and that fan spray patterns are even and symmetrical
_____Set Rinse Pressure Regulator for 30 PSI during rinse.
_____Check that Injector Pump comes on at same time that rinse is on.
_____Tighten down Lock Nut on Rinse Pressure Regulator.
_____Remove jumper wire and run automatic rinse cycle.
_____Observe that rinse occurs by watching Pressure Gage. Check that Gage fluctuates during rinse and remains steady before and after rinse.
_____Verify that high water disables rinse by lifting Float Rod to fully up position during rinse and observing that rinse shuts off.
_____Check Rinse On-Off Switch for proper operation.

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_____Check the time of Rinse Timer against a stopwatch.
_____Check that Injector Pump is installed on machine and mounted securely.
_____Check that Siphon Hose is attached to Pump, is in plastic bag and secured by wire ties for shipping.

OPERATOR CONTROLS

_____Check that switches are correctly installed.
_____Check that Legend Plates are correctly installed.
_____Are there additional Information Plates installed? If so, make a note of Plates in customer's file.
_____Check that Legend Plates are installed neatly and are tight.
_____Check for any spelling errors on Legend Plates and Nameplates.
_____If there are Three Position Switches installed on Control Panel, check that Indicator is straight up and down when Switch is in middle "off" position.
_____Check that Lens Cap for On Indicator Lamp is screwed down tight.
_____Check that gaskets are installed on Hour Meter, 7-Day Clock, Wash Timer, and all other components to meet NEMA 12 Code for sealing.
_____Check that Switches are properly located per NFPA-79. Stop/E-Stop must be on bottom.
_____Check that Operator Switches are easily accessible.
_____Check that Hour Meter can be read.

A.P.E.:

_____Check that Pressure Switch drops out at approximately 30 PSI.
_____Check that there are no sharp bends in air tubing.
_____Check that Timer Circuit runs for 30 sec.
_____Check that Nozzle is installed.

DOOR LIMIT SWITCH

_____Check that Limit Switch is adjusted for 3/8" door opening.
_____Check that Limit Switch is centered in its Guard Housing.
_____Check that Door Position Lock is lockable in both positions. Check that Door Lock Rod moves freely without hitting anything. Check that Spring is installed and is functional.

FUNCTION TESTING:_____

_____While in wash cycle, observe that proper Contactors are pulled in, such as A.S.E., PBM, and Turntable.
_____While in rinse cycle, observe that proper Contactors are pulled in, such as A.S.E. and Turntable. PBM should not be pulled in.
_____While in wash cycle, check Contactor paths from output side of PBM, ASE and TTBL to their respective Thermal Overloads and Motors.
_____Check function of Cycle Light.
_____Check ASE wiring, preferably with a motor, or a test light.
_____Electric Heating Elements: Check that there are spaces between each loop so that they are not touching.
_____Adjust Temperature Control to its lowest setting, verify Heat Contactor releases. Turn Controller up until Heat Contactor pulls in. Note temperature: _____. Turn Controller back down, note temperature when Contactor pulls back in _____. These two temperatures should be above and below the Reservoir temperature and significantly above outside air temperature.
_____Check that Thermometer reading agrees with Temperature Controller reading above.

7 DAY CLOCK: Program Clock and verify its operation.

_____Clear out all programs in Clock.
_____Verify operation of 7-Day Clock Control and Bypass/Auto Switch.
_____Check that Pumps and Heating Devices do not come on when Switch is in "Auto" position and P1 Function Switch on 7-Day Clock is in "Off" position.
_____Check that waterfill is locked out with the above settings.

TIMERS: Verify function of Timers throughout test cycle.

_____Check that Wash Timer is the correct 50 or 60 Hz.
_____Check that maximum setting for Wash Delay Timer is 1 minute.
_____Check that maximum setting for rinse and ASE timer is 10 minutes.
_____If machine has Sludge/Surface Scraper or Surface Scraper, check that Timer can be set for 0-10 hrs.

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REMOTE GREASE SYSTEM:
_____Check that lines are installed and fittings are tight.
_____Check that Remote Grease System is completely installed.
_____Check that all external Grease Fittings have a “Lubriplate 1444 Grease Only” sticker.
AUTO LUBE SYSTEM
_____Check that System pumps grease to each bearing or lube port.
_____Check that Grease Line is connected between PBM Swivel and small sized Orifice Port on Auto Lube Manifold.
SOUND FENCE:
_____Perform dBA sound level measurement, with and without Sound Fence installed, and record the data in report.
_____Set Sound Fence on machine and check that it does not interfere with any part of machine or conduit runs.
JIB CRANE:
_____Verify load rating stencil.
_____Check with Engineering for any special instructions on Jib Crane.
_____Check that Stops are installed on Pivot to prevent Boom from swinging into ASE or Flue Pipe when installed in the field.
_____Check for all Jib Crane components. E.g. thrust washers, Trolley, etc.
_____Check Jib Crane mounting to machine.
_____Check that Track for Trolley can be mounted to top of machine with no obstructions such as Door Limit Switch, etc.
_____Verify that all bolts, studs and mounting hardware are ASTM A307 (GR2).
GREASE and OIL:
_____Check that PBM Swivel and Turntable Bearings are greased.
_____Check all Gearboxes for oil before shipment. Use oil as specified.
_____Check all Gearboxes for Breathers.
CHECK FOR DECALS, TAGS, AND LITERATURE
_____Correct MART Logo and Model Emblem
_____American Technology/World Patents Pending
_____Danger - No Flammable Liquids, etc.
_____Pump Rotation Arrows present and in correct direction
_____“Do Not Run Dry” tags on Pump(s)
_____Danger: High Voltage
_____Patent Numbers Listing and MART Phone Number
_____Machine Nameplate
- _____ Check that model type and number are correct.
- _____ Check that serial number and diagram number are correct.
- _____ Check that full load amps is correct.
- _____ Check that largest amp load is correct.
- _____ Check that Reservoir gallons is correct.
- _____ Check that manufacture date is correct.
- _____ Check that heat type and power rating are correct.
- _____ If gas heat, check that firing rates are correct.

_____Check that electrical meets NEC and ANSI/NFPA Electrical Standards.
_____Check AW-2 GREASE ONLY, LUBRIPLATE 1444 ONLY Nameplates.
_____Check that DOOR LIMIT SWITCH and TEMPERATURE SENSOR Nameplates are on top of machine.
_____Check nameplate labels for all devices external to Control Panel.
_____Check that “EXPRESSLY FOR _____” Nameplate is installed and company name is spelled correctly?
_____If machine has no Internal Reservoir Cover, check that “DANGER No Solution Reservoir Cover” sticker is installed.
_____Layout Diagram Pouch and Layout attached to inside of Panel Door
- _____ Check that all components are identified correctly.
- _____ Check that Layout Diagram is sealed inside the Pouch with tape.
- _____ Check that fuse size and Fuse Circuit Symbol number matches the Fuse and Electrical

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Ladder Diagram.
_____Check that SBO and two sheets are attached to inside Pocket of Panel Door
_____ Check that MART Serial Number is listed correctly.
_____ Check that Model and Turntable Size Number are listed correctly.
_____ Check that Steam Exhaust Vent Stub size is listed correctly.
_____ If applicable, check that Gas Flue Exhaust Stub size is listed correctly.
_____ If Natural Gas or Propane Heat, check that BTU size is listed correctly.
_____ If Gas Heat, check that pressures are listed correctly.
_____ Check that Reservoir water capacity is listed correctly.
_____ Check that sludge containment capacity is listed correctly.
_____ Check that blast pressure is listed correctly.
_____ Check that system flow (GPM) is listed correctly.
_____ Check that blast velocity is listed correctly.
_____ Check that Turntable capacity (lbs) is listed correctly.
_____ Check that work envelope dimensions are listed correctly.
_____ Check that Steam Heat pressure and volume are listed correctly.

IMPORTANT DOCUMENTS IN POUCH:
_____ Check that IMPORTANT sticker is on Pouch.
_____ Injector Pump Manual (remove warranty slip and discard).
_____ 7-Day Clock Manual.
_____ Lubriplate 1444 MSDS.
_____ AW-2 MSDS.
_____ Solenoid cut sheet.
_____ Dalton Torque Limiter cut sheet.
_____ Oil Skimmer literature (only if not a MART Skimmer).
_____ MART Washer Operating Manual.
_____ Machine I.D. sticker in front cover of MART Manual.
_____ Cover Letter on letterhead.
_____ *SAMPLE* Warranty.
_____ Field Start-Up Form.
_____ Service Schedule.
_____ Electrical Ladder Diagram.
_____ Layout Diagram.
_____ Electrical B.O.M.
_____ Service B.O.M.
_____ Burner Warning Sheet (if applicable).

AFTER TESTING:
_____If lever type Limit Switches are employed, retighten lever adjustmens on Switches.
_____Check that hot wires have closed and End Cap Connectors are installed.
_____Check that Reservoir Lid/Lids are easily removable and fit correctly.
_____Disconnect air hose from A.P.E.
_____Remove and roll up water hose.
_____Drain rinse manifold and reinstall Brass Plug in Brass Tee.
_____Remove Filter Bowl and Drain water from Water Inlet Filter. Check that Filter Bowl is clean.
_____Remove Pressure Gauge Hose from PBM and check that PBM Drain Plugs are installed.
_____Install ½" plastic Pipe Plug on Water Inlet to machine.
_____Install plastic Pipe Plugs on all open ports, A.P.E. inlet, Steam Solenoids, Steam Traps, etc.
_____Return air pressure regulator and water hose adapter to Electrical Department.
_____With air nozzle, blow out Float Box and Electrical Panel Box.
_____Reinstall Float Box cover.
_____Remove ASE Motor wires from machine.
_____Set all Timers to their preset positions and turn all Option Switches to their "Off" positions.
T2 A.P.E. Timer = 30 seconds
T2 Wash Delay Timer = 15 seconds
Rinse Timer = 2 minutes
A.S.E. Timer = 2 minutes

MART MACHINE FINAL INSPECTION REPORT

High Limit Temperature = 1,000 deg. F

_____Set Temperature Controller to its lowest setting.
_____Have shift supervisor lock out disconnect box that supplies power to machine.
_____With voltmeter, check that there is no voltage on supply wires to the machine.
_____Remove electrical wires and ground wire from machine, and neatly store them off the ground near the service disconnect boxes.
_____Retighten all electrical connections in Panel Box and additional Panel or Junction Boxes.
_____Install clear Plastic Cover(s) on Distribution Block(s).
_____If there are any Terminal Screws that stick up and prevent installation of Plastic Cover, reinstall the wire under the Screw to a lower Terminal.
_____Check Disconnect Switch on Control Panel Door for proper operation.
_____If Disconnect does not have recessed Input Wire Terminals, then install a one or three piece Shroud over Input Terminals. Check whether it calls for four Isolation Spacers between Terminals on the Disconnect.
_____Make copy of Squawk Report for General Manager.
_____Give Engineering all marked up Electrical Wiring Diagrams, Layout Diagrams and B.O.M.s for corrections if needed.
_____Enter Pump Motor electrical data into proper file in Quatro Pro.
_____After machine is drained, check for both pieces in Filter Box and check that there are no sharp edges.

FINAL INSPECTION STICKER:

_____Check that P.O.F number is stamped into upper left corner of Door Frame.
_____Signed off Final Inspection sticker.

Inspection Completed by: _____