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**

<table>
<thead>
<tr>
<th>P.O.F.</th>
<th>Nameplate HP</th>
<th>IMPELLER TRIM</th>
<th>Nameplate F.L. AMPS</th>
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<tbody>
<tr>
<td>MAIN PUMP</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
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<tr>
<td>BOOSTER PUMP</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
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</tbody>
</table>

Pump Serial Number: ____________  Pump Manufacturer: ____________

<table>
<thead>
<tr>
<th>Measured VOLTAGE</th>
<th>1ST CYCLE</th>
<th>3RD CYCLE</th>
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<tr>
<td>SUPPLY VOLTAGE</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>RUNNING VOLTAGE</td>
<td>_______</td>
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<table>
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<tr>
<th>Measured AMP DRAW</th>
<th>1ST CYCLE</th>
<th>3RD CYCLE</th>
</tr>
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<tbody>
<tr>
<td>MAIN WASH PUMP</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>BOOSTER PUMP</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>TURNTABLE DRIVE No.1(std)</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>TURNTABLE DRIVE No.2</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>
MART MACHINE FINAL INSPECTION REPORT

PBM MOTOR  ______ ______
ASE MOTOR  ______ ______

_____ kW HEATING  ______ ______
_____ 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  ______ ______ ______

PRESSURE SPECIFICATION  SPEC  1ST CYCLE  3RD CYCLE

PRESSURE SPECIFICATION  ______ PSI  ______ PSI  ______ PSI

TRANSFORMER SIZE: ______ KVA
Measurements to be made with all single phase devices operating

<table>
<thead>
<tr>
<th>CYCLE</th>
<th>TRANSFORMER</th>
<th>TRANSFORMER</th>
<th>SUPPLY</th>
<th>TRANSFORMER</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASH</td>
<td>Secondary VOLTS</td>
<td>Secondary AMPS</td>
<td>Primary VOLTAGE</td>
<td>Primary AMPS</td>
</tr>
<tr>
<td>A.S.E.</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
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</tbody>
</table>

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.
MART MACHINE FINAL INSPECTION REPORT

_____ 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.
MART MACHINE FINAL INSPECTION REPORT

_____ 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.
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.
MART MACHINE FINAL INSPECTION REPORT

_____ 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 Studs.
_____ 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.
MART MACHINE FINAL INSPECTION REPORT

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
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.
_____ 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 adjustmenes 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: ________________________________