2019

M-B Paint Trucks

PT – 23, 24, & 28

SMC
Safety Marking Inc.

45 Years of Quality Service

Participant Guide
Equipment Training
SMC Inc. Training Library

Rev. 1.1

PURPOSE

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Session One: Course Overview

Introduction

These trucks are equipped with two 350-gallon paint tanks and a 4,000 lb. bead tank. They have the capacity to stripe 112,000 linear feet of 4 inch yellow and 112,000 linear feet of 4 inch white latex paint at a mil thickness of 15 mils and with a bead application of 6 lbs. per gallon. The material used is hot applied waterborne latex traffic paint. The trucks are also equipped with a handgun for handwork such as crosswalks, stop bars and arrows.

These paint trucks are also equipped with left and right hand drive, used for striping edge line and other various jobs.

A CDL is required to drive these trucks.

All setup controls are on the Control Panel in the doghouse of the truck. The carriages are controlled with the steering wheels above each carriage and the paint guns are controlled with the control boxes next to each steering wheel.

Learning Objectives

During this course, you will:

- **Realize critical operational steps to take when using M-B paint trucks**
- **Identify main components**
- **Learn standard operating procedures**
- **Understand how to use the handgun**
- **Comprehend steps to take to troubleshoot common operating issues**

Session Two: What You Must Know and Do

1. **ALWAYS** wear safety glasses while operating or servicing a paint truck!
2. **NEVER** subject fingers or body parts to material spraying from guns. Guns spray at 1200-1800 psi, which will cause an immediate injection wound resulting in **SERIOUS INJURY**!
3. When troubleshooting, BEWARE of heated lines if changing or switching any valves, fitting or gun lines. ANY rupture may contaminate glycol heating system. Make sure valves are always in OFF position. If paint is ever visible in Glycol tank sight glass, shut down the system.
4. Crossover valve (between the two material tanks) must be closed or mixing of material will occur and contaminate the whole system. Crossover valve may only be open when both tanks are filled with the same color material.
5. Paint tanks should be filled/maintained at half-full to be within weight for scales. Bead tanks should also be kept at half full to maintain safe operating weight for the truck.
6. If filling tanks for big jobs, never fill above bottom of tank necks. NEVER LEAVE A SHOP WITHOUT KNOWING YOUR MATERIAL LEVELS (PAINT/BEADS). This is to ensure you have enough material for the job you are doing and you are aware of your truck's weight.

PRE-TRIP:

1. Check running gear, lights, wheels, and check **On** and **Off** Road fuel tanks.
2. Check material sheet on clipboard in cab to make sure you have enough material for your job. *See Pre-Trip video for how to calculate material amounts*

   If you doubt the materials clipboard, physically check the tanks and document results.

When checking paint and bead tanks:

1. CLOSE air supply valves
2. OPEN blow off valves and release pressure in tanks *See Video for Blowing Off Bead Tank Pressure*
3. Open fill cap and check level with flashlight
4. CLOSE blow off valves and OPEN air supply valves.
5. Check for tips, tools and spare parts.
6. Load stencils on truck if needed for your job.
7. Start back of truck before leaving shop. Check that all operating systems are functioning properly.

Session Three: Standard Operating Procedure

1. Turn ON master switch in cab

2. Turn ON master switch on control console in doghouse.

3. Start Pony Motor, and let warm up by holding oil bypass button and turning ignition key. Hold oil bypass button until oil pressure gauge reaches 50 PSI. (See #s in image below)

4. Flip idle switch from IDLE to RUN position.

5. Flip hydraulic switch from Bypass to RUN

6. Flip Circulating Pump switch ON.

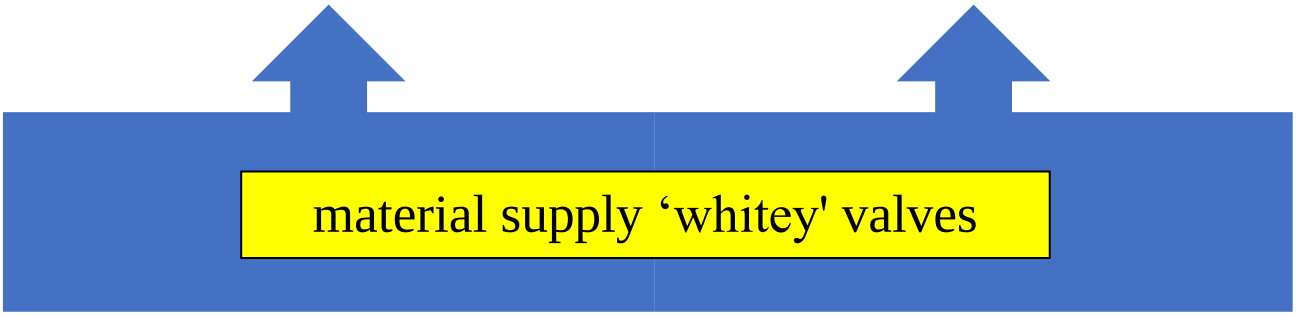
7. Flip furnace switch to ON (Glycol Heat)

***NOTE**: Glycol should be set to 140˚. Latex paint cannot be heated above 105 degrees.*

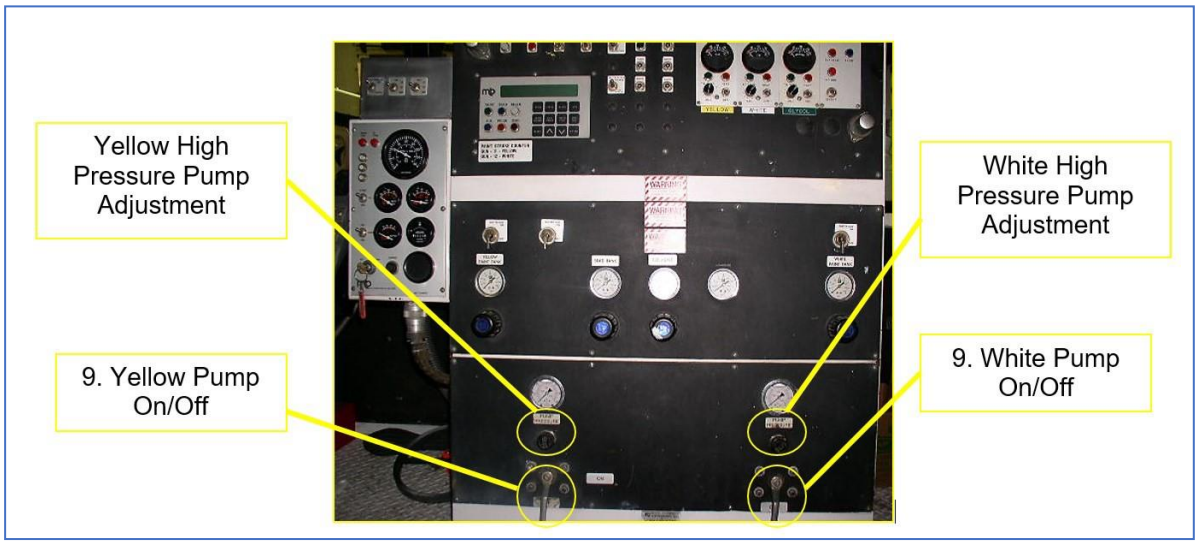
8. Open Whitey valves at high pressure pump to guns being used. (i.e. – Single Yellow, Double Yellow, Left White, Right White, or handgun)

Yellow Supply Valves (Drivers side)

White Supply Valves (Passenger side)



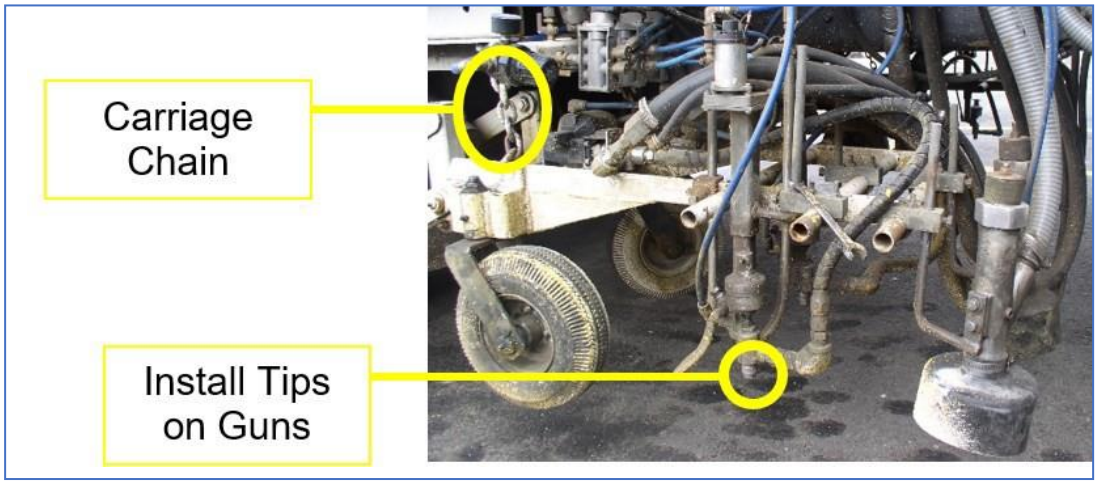
9. Turn ON pump(s) on bottom of console: yellow, white or both. Pump pressure should be 1200-1800 psi with 1500 psi optimum from high pressure pump. Pump pressure is adjusted with Sun dials for each pump.



10. Raise carriage UP with OUTRIGGER UP/DOWN switch on control box for each side of operation. Install proper tips (See TIPS, next section) Unchain carriage.

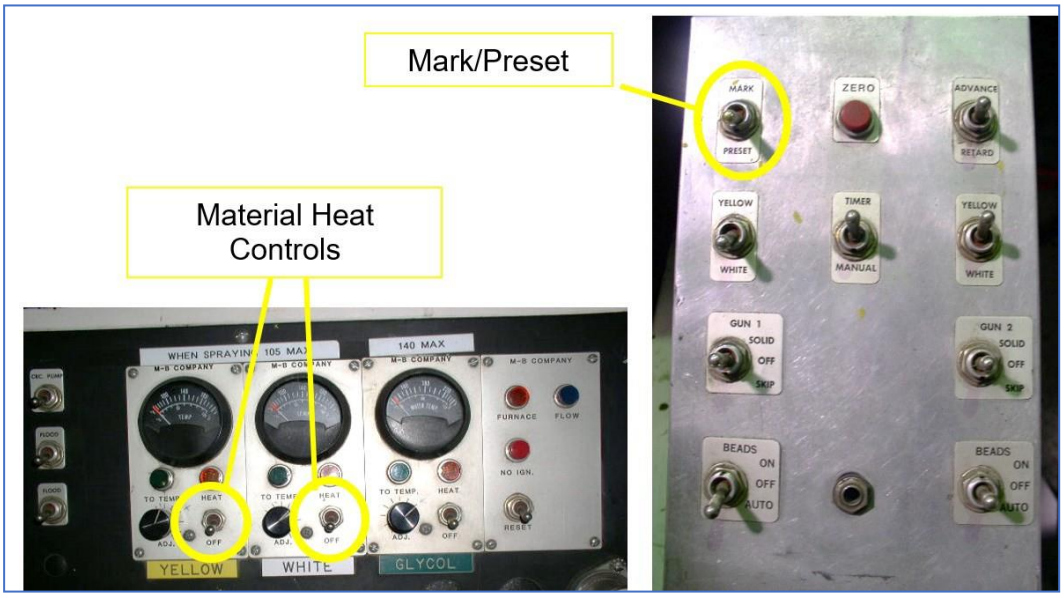
Tips

4” Line: 441 or 431
6” Line: 641 & 631
8” Line: use 4” tip with carriage up
12” Line: use 6” tip with carriage up



11. Set control panel and control boxes for work being done. Control boxes are used to set the paint guns color and type of line: double yellow, single yellow, single white or skip. The control box is also used to turn bead guns ON and set to Auto. Control panel is used to set skip cycle and set guns for skips or cat tracks. Check that all counters are cleared.

12. Ready to stripe. Turn ON Heat to Material. Check communication with driver, line up truck, turn on duster gun, drop carriage, and switch MARK/PRESET switch on control box to MARK when rolling.



Session Four: When Striping

1. Check line width. If not correct, adjust gun using GUN UP/DOWN switch located on control box.
   a. Line too narrow: raise gun.
   b. Line too wide: lower gun.

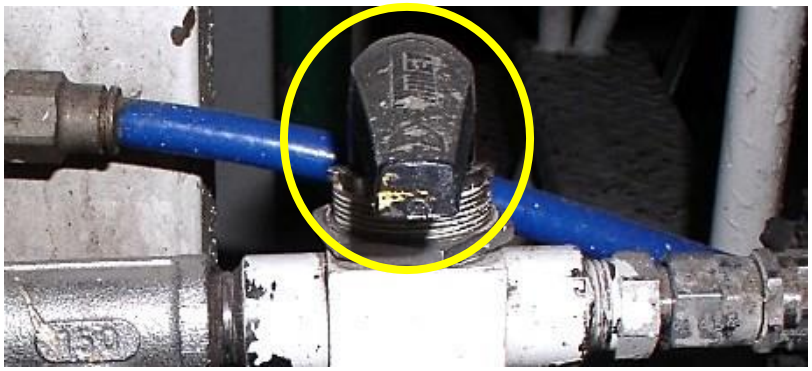
2. Constantly check for good bead flow. Beads should cover entire line. Stop and adjust if necessary. Beader fan must face rear of truck for proper bead application.

3. Monitor material temperature. Latex should never be heated over 105˚. Shut OFF heat to any material when you are not striping. With heat ON, paint can get cooked and clog the heat exchangers, if not flowing!

4. Monitor pump pressures at high pressure pump gauge. DO NOT EXCEED 1800 PSI.

Using the Handgun:

1. Follow steps 1-9 of the standard procedure.



Paint Supply Valve

2. Install correct tip (see **Tips** chart)
3. Ready to spray: arrows, stop bars, cross walks and/or stencils.
4. When finished with handgun. Close all supply valves (From high pressure pump back to gun).

Operating Notes:

- To switch operating sides for driver: put truck in neutral, engage parking brake and switch driver control switch on cab control panel to Left or Right side.
- Console/Manifold pressure need to be maintained at 100 psi for proper air supply to turn agitators, run guns, run duster guns and operate carriage pumps. If carriages don't respond, duster guns may need to be turned off.
- Stroke counters on pumps can be used as flow meters to measure paint use.
- NEVER heat latex paint above 105˚.

Maintenance:

Daily

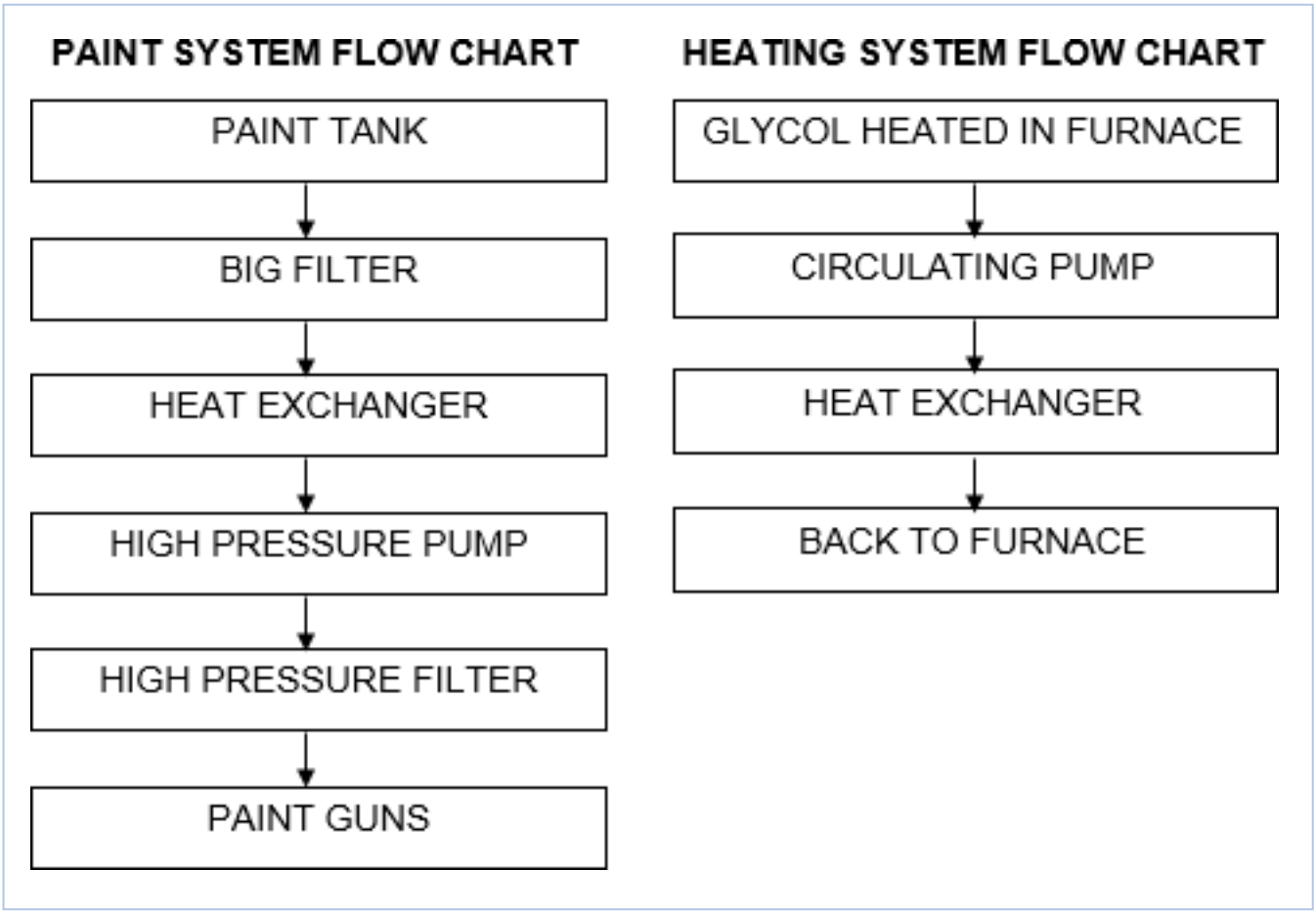
- Clean tips
- Inspect paint lines
- Inspect air lines
- Inspect hydraulic lines
- Drain all water traps
- Clean cab and doghouse
- Check Springs holding hose lines
- Close Whitey Valves

Weekly

- Clean high-pressure filters
- Clean guns
- Wash truck

Monthly

- Clean big paint filters

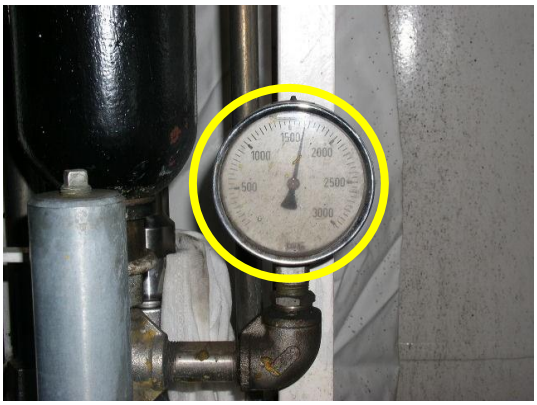

PAINT SYSTEM FLOW CHART
PAINT TANK
BIG FILTER
HEAT EXCHANGER
HIGH PRESSURE PUMP
HIGH PRESSURE FILTER
PAINT GUNS
HEATING SYSTEM FLOW CHART
GLYCOL HEATED IN FURNACE
CIRCULATING PUMP
HEAT EXCHANGER
BACK TO FURNACE

Session Five: Troubleshooting

TROUBLESHOOTING:

No material/Guns not spraying

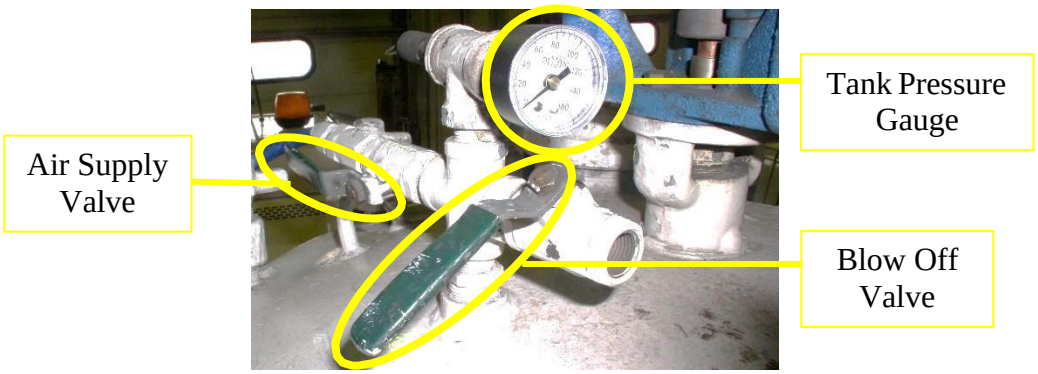
a. Check that hydraulic pump is ON and pressure is 1200-1800 psi



b. Check control box switches. Make sure guns, etc. are ON
Check that TIMER/MANUAL switch is on TIMER.

c. Check tips, reverse and shoot a blast of paint. If no paint, remove and clean tip.

d. Check paint tank pressure. Air supply valve should be open with blow-off valve closed and tank should be charged to **60 psi**.

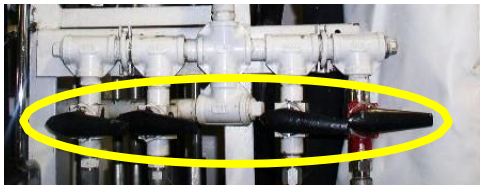


- Main supply valves from tank

Material supply 'whitey' valves.

- Valves at high pressure pump
- Gun supply valves

Yellow Supply Valves (Drivers side)



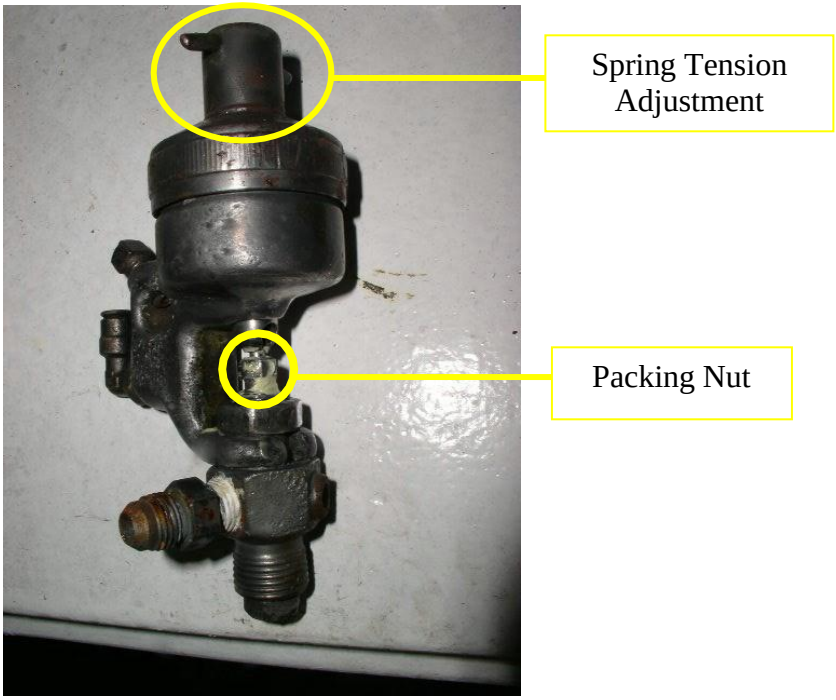
White Supply Valves(Passenger side)

e. Check paint tank pressure. Should have at least 60 psi in tank being used.
f. Check high pressure pump filter(s) (clean weekly).
g. Check heat exchanger, may be clogged
   a. Bypass and check flow. Material may be warm. If flowing on bypass, check heat exchanger/furnace troubleshooting section.
h. Hi pressure pump going wild, pump is starved for material
   a. Check for material
   b. Check all material supply valves. Must be open to pump.

i. Check Solenoids

Guns not shutting off

1. Needle valve too tight
   a. Loosen carbide nut, clean and lube
2. Tighten adjustment on TOP of gun one half turn.
3. Dirty Gun



Guns dripping

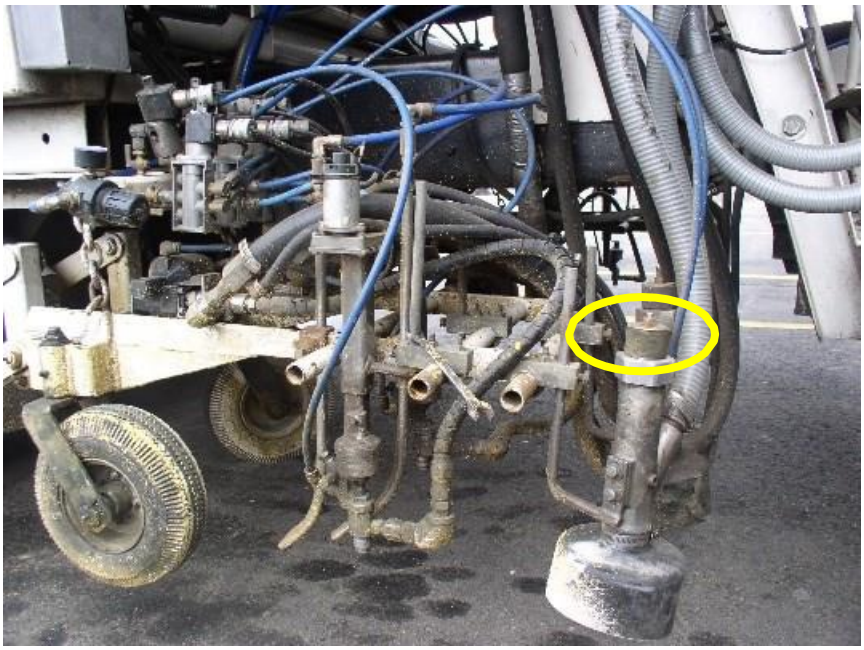
1. Check carbide nut around needle (gun pin) for tightness. Make sure nut is snug

Bad line

1. Clogged or bad tip: clean or replace.
2. Check air supply to tank. Should be open with blow off shut.
3. Clogged filter: check and clean if necessary.

No beads/Poor flow

1. Check switch on control box
   a. Paint switch OFF
   b. Mark switch ON
   c. Beads ON/OFF to check, should dispense beads
   d. Mark switch OFF
2. Check for clog in bead gun/hose
3. Check air pressure in tank, should be **40 psi**.
4. Poor flow of beads
   a. Loosen nut on top of bead gun. Push top to check.



Bead Flow Adjustment

High pressure pump not stroking, pressure gauge still reading 1500 psi.

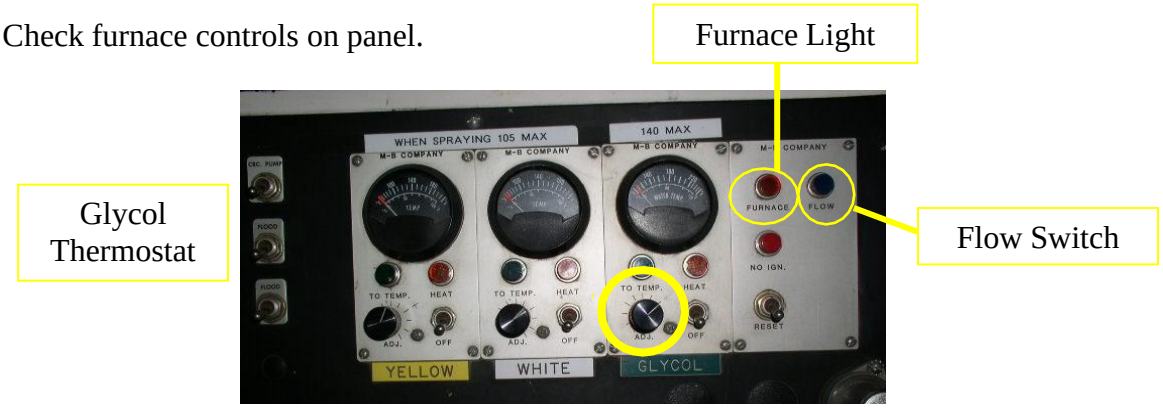
1. Turn pump OFF, release pressure to pump and clean filter.
2. Check paint gun for flow.

Material not heating

1. Check valves to Heat Exchanger, make sure not bypassed

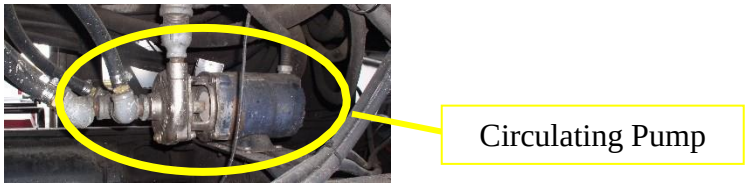
Heat Exchanger Bypass Valve (Closed)

2. Check furnace controls on panel.



3. Check that furnace is running
4. Check glycol thermostat setting, should be set at 140 degrees.

5. NO FLOW light
   a. Check that circulating pump is turned ON
   b. Visually check that circulating pump is working/spinning. If pump is spinning FLOWlight bulb may be burnt out. If pump is not working that is not a road fix.



   a. Check sight glass in glycol tank. If fluid is low, fill.

   b. Still not working, may be power or flow switch by furnace.

6. Furnace not firing
   a. Try RESET button. If this doesn't work after two attempts move on to next step.

Reset Button

b. Check fuel pressure gauge to furnace. Should be **60-80 psi.** No fuel pressure. Filter maybe clogged. Clean or change and try RESET button again.

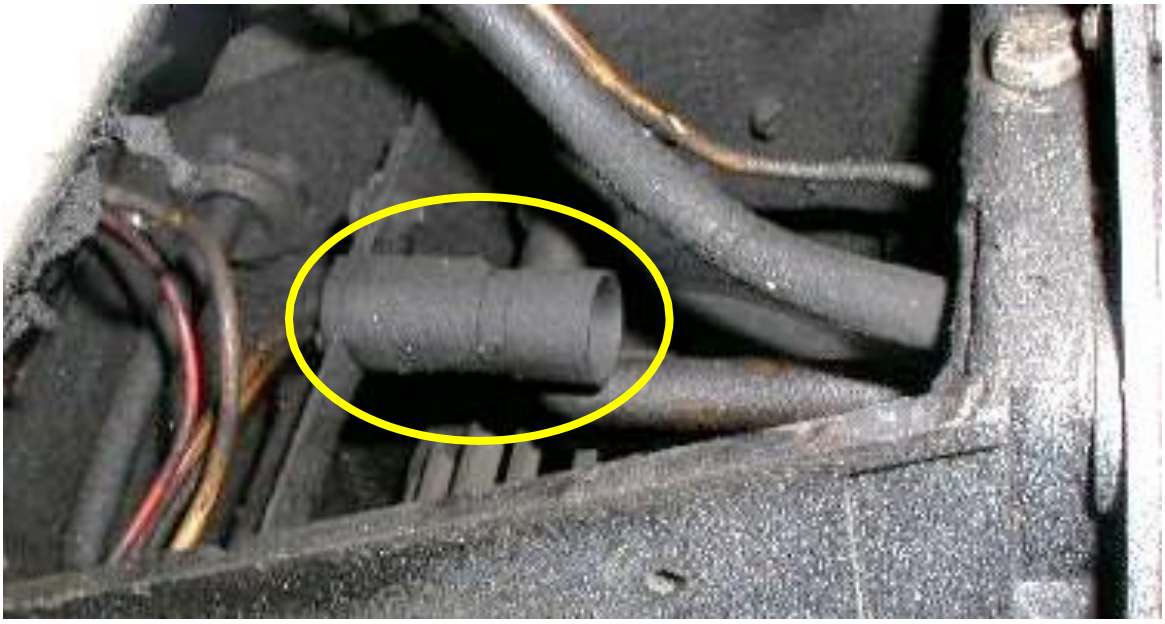
c. Check furnace motor. Motor should be supplying fuel and air.

(1) Motor not working, check wiring connections.

d. Check inside furnace (if qualified).
    1. Inspect fuel nozzle
    2. Inspect igniters
    3. Inspect squirrel cage

e. Inside white box, check ignition module connections.

f. Check condition of Photo Cell <u>under</u> white box by furnace, glass should be clean and clearof soot.



g. Furnace to temperature, material not heating
    (1) Pony motor must be running with hydraulics on to supply air to tanks to move material.
    (2) Check material bypass valves to heat exchangers. Bypass valves should be closed.
    (3) Check thermostat settings
    (4) Bleed glycol coming out of heat exchangers and check temp.
    (5) Check if heat exchangers are warm.
h. Check Humphrey valve to heat exchangers, make sure valve is opening, solenoid could be bad.

i. Audible Furnace Alarm sounding. This will only sound if furnace is on and glycol is overheating.
j. Shut furnace OFF immediately. Leave circulating pump ON. Check that Circulating Pump isworking.
k. Check glycol level in glycol tank and fill if low.

Session Six: What Successful Leaders Do

Secrets to Success

Over the years there have been many studies done in an effort to find out just what it is that successful leaders do that make them so successful. These are the characteristics that Dr. Eugene Jennings discovered in his research. Compare your own practices to this list of successful behaviors:

i. **Gives clear work instructions.**
ii. **Praises others when they deserve it.**
iii. **Is willing to take time to listen to others.**
iv. **Is calm and cool and takes time to think things through.**
v. **Projects confidence and self-assurance.**
vi. **Has appropriate technical knowledge of the work being supervised.**
vii. **Understands the problems the group encounters.**
viii. **Gains the group's respect.**
ix. **Treats everyone fairly.**
x. **Demands good work from everyone.**
xi. **Gains people's trust.**
xii. **Goes to bat for the group.**
xiii. **Does not act superior to employees.**
xiv. **Is easy to talk to.**

"I'm infinitely more inclined to lead than push; pushing gets tiresome."
Robert Anderson, CEO of Atlantic Richfield

A Personal Action Plan

I know where I'm starting from. I know I am already good at these things, and I can do them more often:

I can learn this, I am learning this, and I am doing what I can at this stage as well. I have already learned:

I will start with small steps, especially in areas that are difficult for me. My short –term goals for improvement are:

I promise to congratulate and reward myself every time I do something, no matter how small, to maintain and improve my skills. My rewards will be:

I'm setting myself up for success by choosing long-range goals to work for gradually. My long-term goals for success are as follows:

Recommended Reading List

The Promotable Woman, by Norma Carr-Ruffino, 4th Edition, Career Press, 2004.

Crucial Conversations, Tools for Talking When Stakes are High, by Kerry Patterson, Joseph Grenny, Ron McMillan, Al Switzer, McGraw Hill, 2002.

Follow this Path, How the World's Greatest organizations Drive Growth by Unleashing Human Potential, by Curt Coffman and Gariel Gonzales-Molina, Warner Books Inc., 2002.

Effective Strategic Leadership, by John Adair, Pan Macmillan Ltd., 2002 Facilitation with Ease, by Ingrid Bens, Jossey-Bass Inc., 2000.

The Situational Leader by Dr. Paul Hersey, Centre for Leadership Studies, 1992.