

2019

MRL Paint Trucks

PT – 20, 22, 26, & 27



SMC
Safety Marking Inc.

45 Years of Quality Service

Participant Guide
Equipment Training
Safety Marking, Inc.

Rev. 1.1

PURPOSE

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I. PT - 26

Learning Objectives

During this workshop, you will:

1. Realize critical operational steps to take when using MRL paint trucks
2. Identify main components
3. Learn standard operating procedures
4. Understand how to use the handgun
5. Comprehend steps to take to troubleshoot common operating issues

Session One: Equipment Overview

The material used in these MRL trucks is hot applied waterborne latex traffic paint. The trucks are also equipped with a handgun for handwork such as crosswalks, stop bars and arrows, symbols and legends. Tank capacities vary between trucks. Refer to the MRL TANK CAPACITIES chart on the next page. Also, refer to the LEGAL LOAD limits posted in truck on the driver-side visor.

PRO TIP - DO NOT FILL TO TANK NECK. THIS WILL CAUSE PAINT TO FLOW INTO BLOW-OFF AND AGITATOR LINES.

A CDL is required to drive these trucks. All setup controls are on the Control Panel on the rear deck of the truck. Carriage extension (out) and retraction (in) are controlled with the steering wheel on deck. Paint gun controls are in enclosed boxes on outside of shooters seat.

Cautions

1. Although highly unlikely, IF paint is ever visible in Glycol tank sight glass, immediately shut down the entire system.
2. **ALWAYS** wear safety glasses while operating or servicing a paint truck!
3. **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!**
4. Lines are **heat traced**, NOT heat jacketed. See # 5 below.
5. 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.
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 trucks weight.

Comparison: MB v. MRL

COMPONENT PLACEMENT DIFFERENCES BETWEEN MB AND MRL

“Everything is the same, but everything is different” Rafael Robles – Foreman ‘03

Feature	MB	MRL
Master switches	dog house	Rear driver side
Pony Motor / Hydraulics	in cab	Behind driver’s seat – outside – under pony motor
Compressor/Engine RPM	switch	pull knobs
Carriages	unchain	rollout
Change striping cycle	console	control box
Change color	toggle doghouse	valves over carriage
Fuses	doghouse	side panel
Agitators	top of truck	rear console
Solenoids	on carriage	carriage panel
Recirculation	no recirculation	have recirculation
Glycol	furnace 140	glycol 105

MRL Paint and Bead Tank Capacities

Can shoot from cab

TRUCK	GVW	YELLOW PAINT	YELLOW FOOTAGE	WHITE PAINT	WHITE FOOTAGE	BLACK PAINT	BLACK FOOTAGE	BEADS WEIGHT	BEADS FOOTAGE
PT-22	25,950	110 GAL	36,300 FT	110 GAL	36,300 FT			1000 LBS	55,000 FT
PT-27	33,000	140 GAL	46,200 FT	140 GAL	46,200 FT			700 LBS	38,500 FT

GENERAL SURFACE

PT-20	PT-26
39,000	41,740
200 GAL	215 GAL
66,000 FT	70,950 FT
275 GAL	320 GAL
90,750 FT	105,600 FT
200 GAL	215 GAL
66,000 FT	70,950 FT
3000 LBS	3000 LBS
165,000 FT	165,000 FT

AIRPORT SPECIFIC (FIVE GUN/THREE COLOR)

FOOTAGE CAPACITIES FOR EACH COLOR, AND BEADS, ARE CALCULATED FOR AN APPLICATION RATE OF

- 15 MILS on a 4" LINE:
- PAINT: 330 FT / GAL
- BEADS: 6 LBS / GALLON OF PAINT
- >>FOR LEGAL TRUCK WEIGHT SEE CHART ON TRUCK VISOR

Biggest weight issue is larger yellow tank



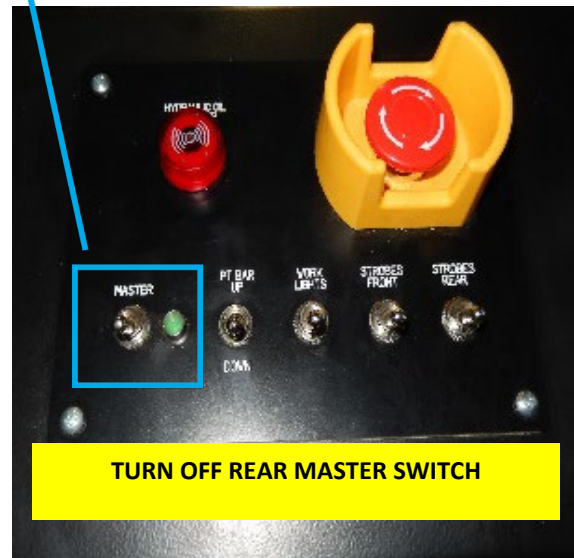
II. MRL rear deck control panel and carriage steering wheels at left and right.

Session Two: Pre-Trip

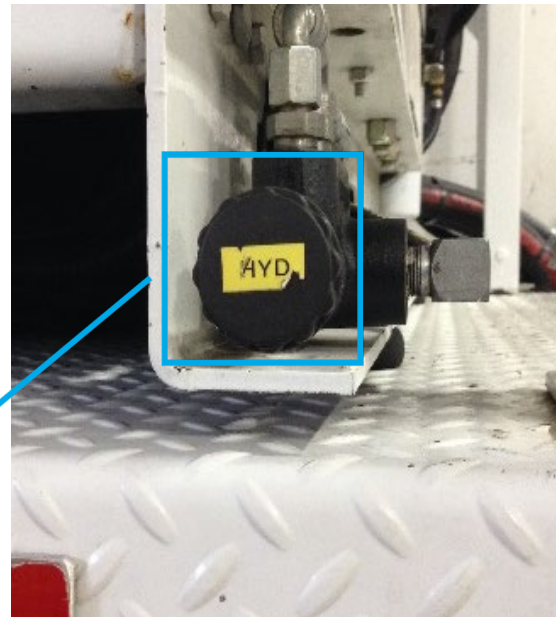
1. **Pre-Trip truck: check running gear, lights, wheels, and check on and Off Road fuel tanks.**
2. **Check material sheet on clipboard in cab to make sure you have enough material for your job. If you think it may not be accurate, physically check the tanks yourself. When checking tanks:**
 - a. **CLOSE air supply valves**
 - b. **OPEN blow off valves and release pressure in tanks**
 - c. **Open fill cap and check level with flashlight**
 - d. **CLOSE blow off valves and OPEN air supply valves.**
3. **Check for tips, tools, spare parts and spill kit.**
4. **Load stencils on truck if needed for your job.**
5. **Start back of truck before leaving shop. Check that all operating systems are working properly.**

Session Three: Standard Operating Procedure

1. Turn MASTER 1 (in cab) and MASTER 2 (rear deck) to ON position for strobe lights, etc.

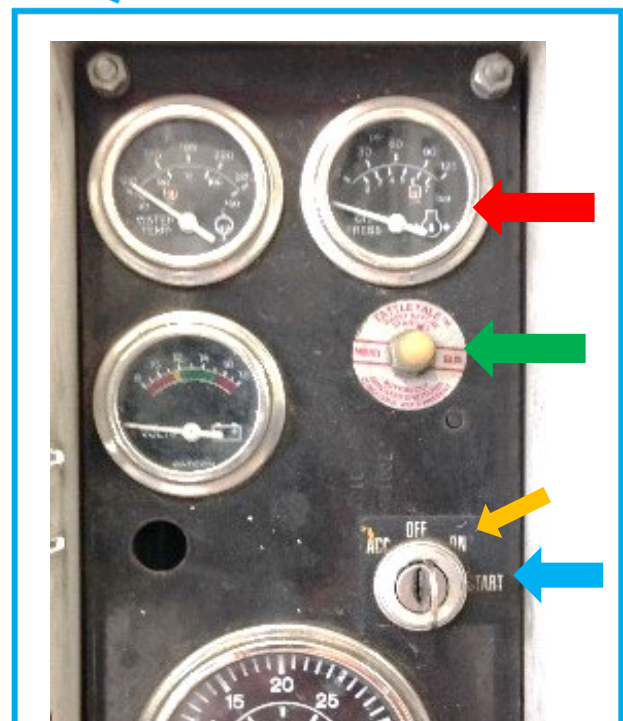


****PT-26 and PT-27 have MASTER 2 switches at mid-deck, driver side**

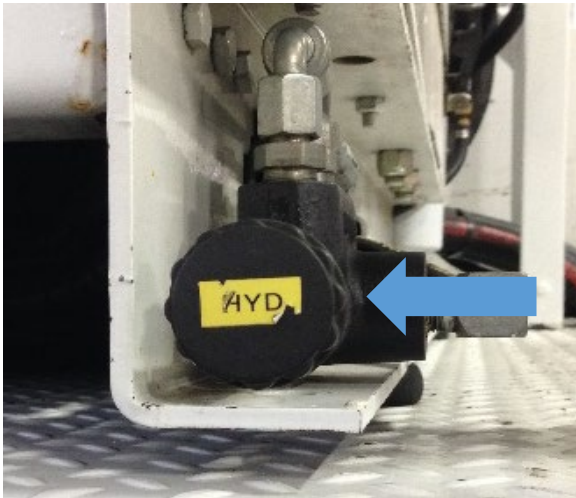


2. Check that HYDRAULICS are OFF (in DISENGAGED position) Knob pushed IN. Under deck behind driver, or below pony motor. PT-26 has a toggle switch IN CONTROL BOX.

3. PONY MOTOR start-up procedure (at right)
A - Turn key to ON position (yellow arrow)
B - Push in and hold oil pressure bypass button (green arrow)
C - Turn key to 'Start' Pony Motor (blue arrow)
D - Hold oil pressure gauge until oil pressure gauge reads 30 PSI (red arrow)



4. Engage HYDRAULICS to 'ON' position by pulling knob OUT (blue arrow below).



5. OPEN both CONTROL BOXES and ensure all toggle switches are in OFF position (below).



PT 27 (L)



PT 26 (R)

6. Pull COMPRESSOR knob OUT to turn ON (leave idling for minimum 30 seconds).

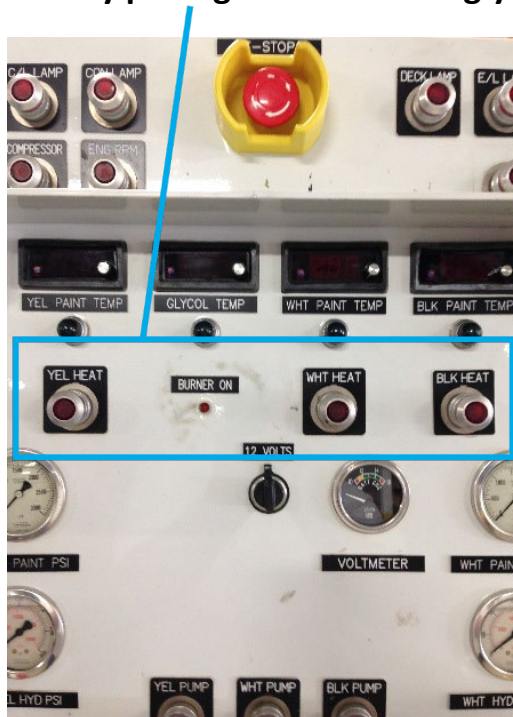


7. Rev engine RPM by pulling ENG RPM knob OUT.

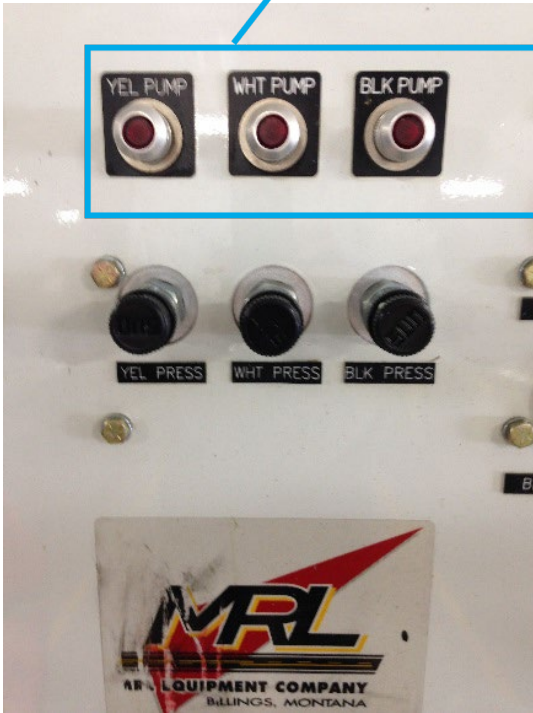


8. Select Color

a) Turn on HEAT by pulling out knob. Set glycol +/- 105° F; Paint 100° F max.



b) Select Pump. Turn ON pump by pulling knob out.

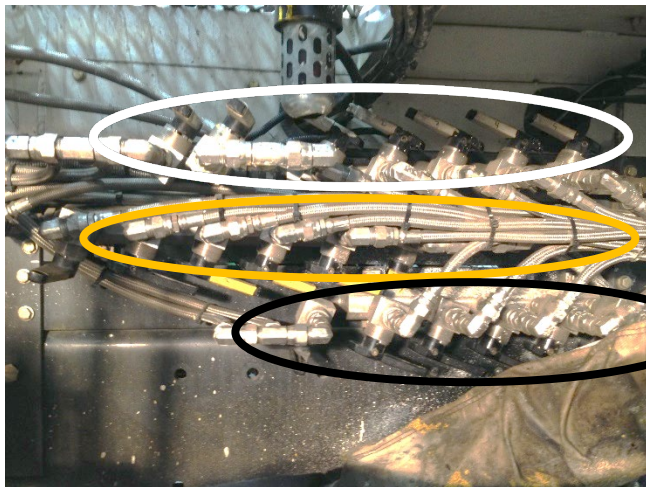


c) Turn Agitator(s) ON.



- 1. PULL KNOB(S) **OUT** FOR COLOR CHOICE
- 2. ADJUST SPEED

9. OPEN material valves (Whitey's) for gun(s) being used. Located under back deck under operator's seats. Ensure main feed to bank is open on PT - 26. Airport trucks – PT 20 & PT 26 – LEFT CARRIAGE: ALL GUNS shoot ALL COLORS.



WHITE VALVES – PT – 20,22,26,27

YELLOW VALVES – PT – 20,22,26,27

BLACK VALVES – PT – 20 & 26

- 10. SELECT and INSTALL TIP(s) on gun(s) being used. (4" -441; 6" -541; 8" -641; 12" – 841)**
- 11. SET CONTROL BOX TOGGLE SWITCHES for work being done (ex: Double yellow, White edge line, Skips, etc.)**



PT – 27



PT - 20

- 12. Wheel out to align and then lower carriage.**
- 13. PAINT**

Session Four: When Striping

1. Check line width. If not correct, adjust using GUN RAISERS UP/DOWN switch located on control box. Gun lifts should not be 'forced' to lift guns – manually adjust when needed.



PT - 27

- A- Line too narrow: Raise gun (UP)
- B- Line too wide: Lower gun (DOWN)

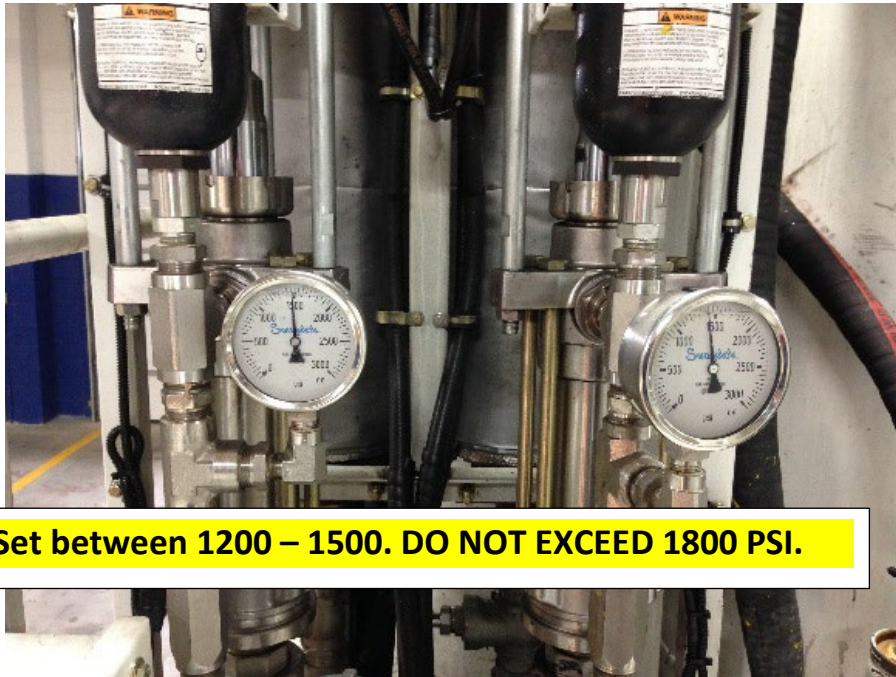
2. Constantly check for good bead flow. Beads should cover the entire line. Stop and adjust if necessary. Bearer fan shall face rear of truck for proper bead application.
3. Once paint gun is raised all the way up, it cannot be raised more. DO NOT CONTINUE PUSHING TOGGLE.

PRO TIP - When switching colors, line width may need adjusting. Ex. If gun is set for 4" white, adjustment may be needed to shoot 4" yellow.

4. Monitor material temperature. Latex should never be heated over 105. Recirculate any material when you are not striping.

- 5. Monitor paint pressures at high pressure pump gauge. Paint pressure is adjusted using hydraulic control (sun dial).

PRO TIP - adjust paint pressure with hydraulic pressure – they DO NOT match



USING HANDGUN:

- 1. Open Whitey valve to HANDGUN.



Paint Supply Valve

2. Install correct tip (see tips)
3. Ready to spray: arrows, stop bars, cross walks and/or stencils.
4. When finished with handgun. Close all supply valves.
5. Spray with carb cleaner

OPERATING NOTES:

- Console/Manifold pressure need to be maintained at 100 psi for proper air supply to 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: This list is subject to the volume of use. Do not use this list literally.

Daily

- Ensure air dryers are operating to keep beads from getting moist and clogging tanks, lines and guns.
- Clean tips
- Inspect paint lines
- Inspect air lines
- Inspect hydraulic lines
- Drain all water traps – air tanks, carriage, rear
- Clean rear deck and operating stations
- Check Springs holding hose lines
- Close Whitey Valves

Weekly

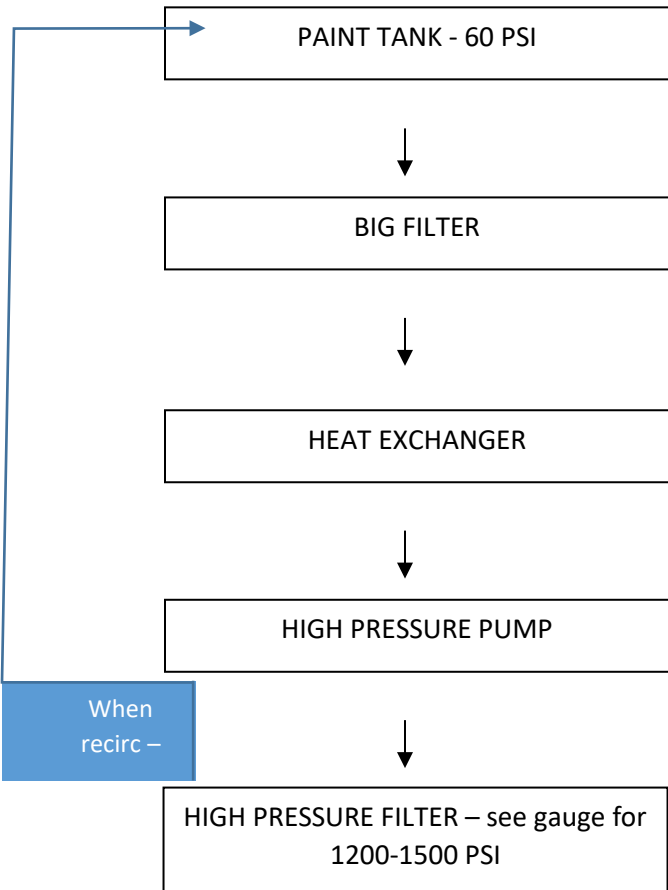
- Clean high pressure filters every full tank
- Clean guns
- Wash truck

Monthly

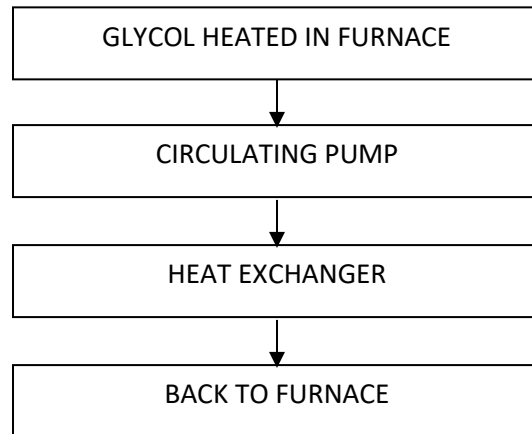
- Clean big paint filters



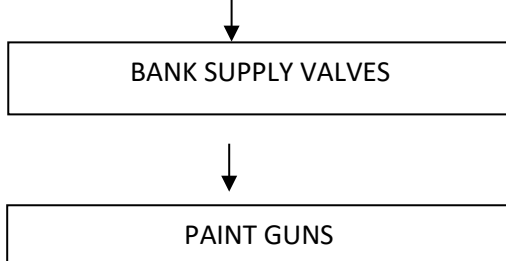
PAINT SYSTEM FLOW CHART



HEATING SYSTEM FLOW CHART



DIAL ALL THE WAY DOWN BEFORE RECIRCULATING



TROUBLESHOOTING:

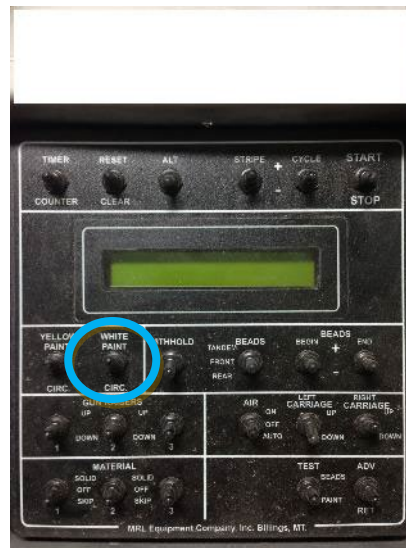
1. No material/Guns not spraying

- 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 WITHHOLD toggle is in DOWN position



- c. Check tips, reverse and shoot a blast of paint. If no paint, remove and clean tip; flip tip. Check bottom of gun – could be clogged.

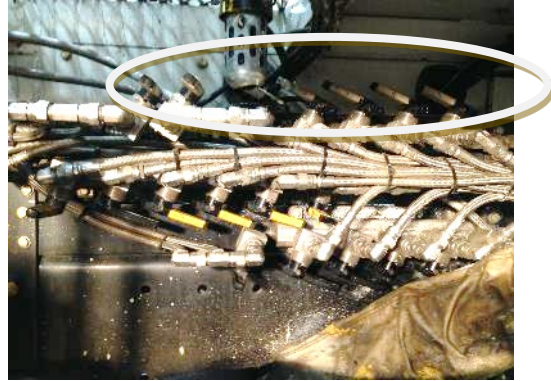


d. Check paint tank pressure. Air supply valve should be open with blow off valve closed and tank should be charged to 60 psi.

- Gun supply valves at paint manifold



Yellow Supply Valves



White Supply Valves

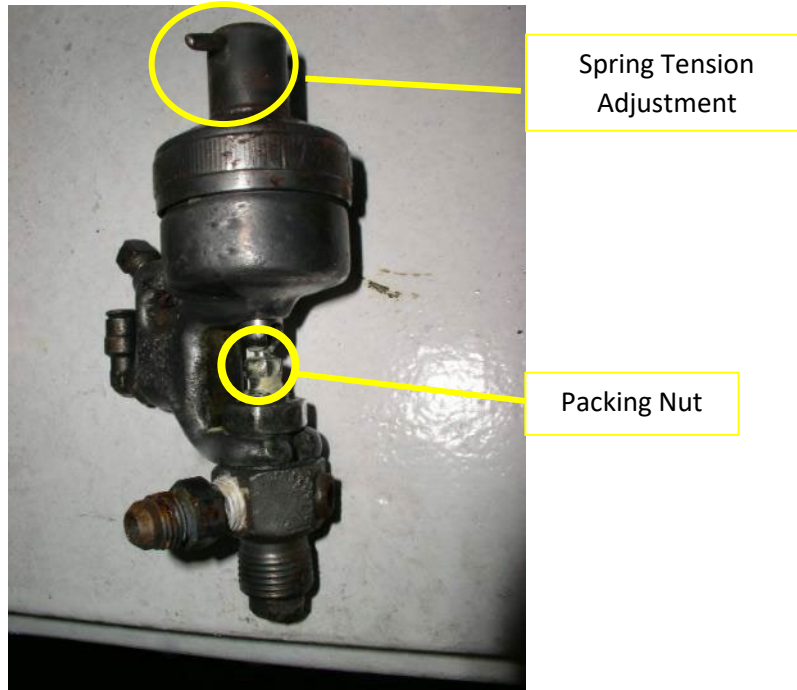
- e. Check high pressure pump filter(s) (clean weekly or every tank of material sprayed).
- f. Check heat exchanger, may be clogged
- Bypass and check flow. Material may be warm. If flowing on bypass, check heat exchanger/furnace troubleshooting section.
- g. High pressure pump rapidly slamming up and down (stroking fast),
- Shut off pump
- (1) Pump could be starved for material

- Check for material
- Check all material supply valves. Must be open to pump.
- Clean filters – clogged filters could starve for material

i. Check Solenoids

2. Guns not shutting off

- a. Packing nut too tight
 - Loosen packing nut, clean and lube
- b. Tighten adjustment on TOP of gun one half turn.
- c. Check for dirty gun



3. Guns dripping

- a. Check packing nut for tightness. Make sure nut is snug.
- b. Dirty gun – pin is not closing
- c. Tip not seated in collar correctly

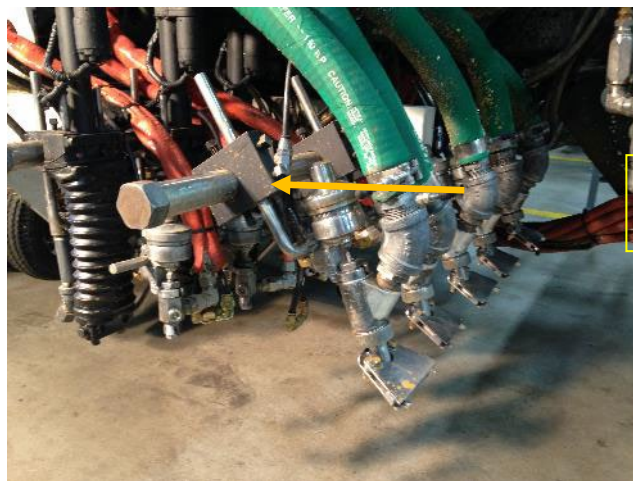
4. Bad line / Hour-glass line shape

- a. Clogged or bad tip: clean or replace.

- b. Check air supply to tank. Should be open with blow-off shut.
- c. Clogged filter: check and clean if necessary.
- d. Check accumulator pressure – at shop.
- e. Verify flow is open throughout entire system

5. No beads/Poor flow

- a. Check air pressure in tank, should be 40 psi minimum
- b. To test Beads:
 - Paint switch on 'SKIP'
 - Start/Stop switch 'OFF'
 - Test toggle in BEAD position
- c. Check for clog in bead gun/hose
- d. Check Solenoids



Bead Flow
Adjustment

6. High pressure pump not stroking, pressure gauge still reading 1500 psi.
 - a. Turn pump OFF, release pressure to pump and clean filter.
 - b. Check paint gun for flow.
7. Material not heating
 - a. Check valves to Heat Exchanger, make sure not bypassed



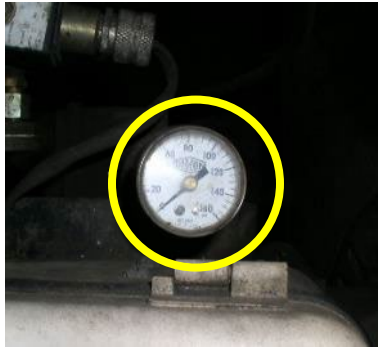
CHECK
VALVE
POSITION
OPEN

- b. Check furnace controls on panel.
- Check that furnace is running
 - Check glycol thermostat setting, should be set at 105 degrees.
- c. Furnace not firing (Burner light BLINKING)
- Turn paint temp OFF then back ON to recirculate.



FURNACE
RESET

- Check fuel pressure gauge to furnace. Should be 60-80 psi. No fuel pressure? Will only have fuel pressure when it is firing, or attempting to fire. Filter may be clogged. Clean or change and try RESET button again (No more than 2x).



- Check furnace motor. Motor should be supplying fuel and air.
(1) Motor not working, check wiring connections.



FURNACE UNDER REAR DECK

- **Check inside furnace (if qualified).**
 - (1) **Inspect fuel nozzle**
 - (2) **Inspect igniters**
 - (3) **Inspect squirrel cage**
- **Inside white box, check ignition module connections.**



- **Check condition of Photo Cell under white box by furnace, glass should be clean and clear of soot.**



d. Furnace to temperature, material not heating

- Pony motor must be running with hydraulics on to supply air to tanks to move material.
- Check material bypass valves to heat exchangers. Bypass valves should be closed.
- Check thermostat settings
- Bleed glycol coming out of heat exchangers and check temp of glycol on console.
- Check if heat exchangers are warm.
- Check valve to heat exchangers, make sure valve is opening, solenoid could be bad.



VALVE
LOCATED
UNDER REAR
PLATFORM
STEPS

- 8. Audible Furnace Alarm sounding. This will only sound if furnace is on and glycol is overheating.**
- a. Shut furnace OFF immediately. Leave circulating pump ON. Check that Circulating Pump is working.**
 - b. Check glycol level in glycol tank and fill if low.**
 - c. Do not fill to more than bottom of sight glass. When off. It is an expansion tank.**

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. Dr. Eugene Jennings discovered these characteristics in his research. Compare your own practices to this list of successful behaviors:

6. Gives clear work instructions.
7. Praises others when they deserve it.
8. Is willing to take time to listen to others.
9. Is calm and cool and takes time to think things through.
10. Projects confidence and self-assurance.
11. Has appropriate technical knowledge of the work.
12. Understands the problems the group encounters.
13. Gains the group's respect.
14. Treats everyone fairly.
15. Demands good work from everyone.
16. Gains people's trust.
17. Goes to bat for the group.
18. Does not act superior to employees.
19. Communicates comfortably.

“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.