

Line Painting Machine, Graco LineLazer ES 2000 HP Auto

Notes from tutorial by Patrick & Connor & Roland of Pittsburgh Spray Equipment Co, 2024/5/8
revised after two days of using the machine in 2024/5

Full instruction manual is online: go to steelvalleytrail.org, click on administration and operator-manuals and Line-Painter-Use-Manual-3A9033EN-A.pdf
<https://steelvalleytrail.org/wp-content/uploads/2024/05/Line-Painter-Use-Manual-3A9033EN-A.pdf>

Paul Heckbert

PARTS

other tips are available (order from Graco)

we have 2 guns

gun 1 (on left) can be activated with button on left (manual or automatic mode) or trigger lever on right

gun 2 (on right) can only be activated with trigger on right

Each gun's nozzle has a yellow arrow that is normally pointed down, but can be pointed up for flushing/cleaning

The right trigger has mechanical linkages to the two guns' cables to control whether the trigger activates both guns, just one, or neither. Probably wisest for us to configure it so this trigger activates just gun 2.

Each linkage has two slots, to give cable more or less pull.

If trigger doesn't cause gun to spray, you may need to adjust cables (like bicycle cable tension adjuster).

we have tip 319, paints 6 inch wide line if 12 inches off ground.

SAFETY: never put hand under gun when pressurized - you could lose a finger!

the lever on left unlocks the front wheel making it much easier to steer
for brake, kick out orange lever near left wheel, and kick in to unlock brake

adjust guns on lateral rods so that the right tire doesn't run over wet paint

adjust gun up or down to control line width

tubes into paint bucket:

fat tube is pickup tube, sucks paint out of bucket

thin tube is discharge tube

when valve set to "spray", nothing comes thru it, so put it into paint bucket

when valve set to "prime", paint or water comes thru it, so put it into waste bucket

our machine is battery-powered; no gasoline engine

battery lasts 4-5hrs on a charge. on 2024/5/22 we ran it for about 7 hrs

make sure battery is charged before starting a paint job

RECORD-KEEPING

you can keep track of distance painted and volume of paint sprayed on each "job"

hit computer disk button

right arrow button to start new job

or A button to view jobs

double E gets you back to main menu

USB stick into port: A to extract current job for record-keeping, e.g. how many feet did we paint

PAINT COVERAGE FOR SVTC

5 gallons of paint will cover 3-4 miles, if solid line 4 inches wide

Our skip (dashed) pattern is 3 feet paint, 9 feet space (gap), so 12 foot period

Dave Wright estimated

320 feet (solid) per gallon = 1/16 mile/gal

8 miles of trail will require 10 5-gallon paint buckets

Paul H estimates

If 1/16 mile/gal for solid line is correct

8 miles * 16 gal/mile * 1/4 coverage by skip line = 32 gallons to paint 8 miles of trail

CALIBRATE

do at least once per year

fat rectangular button (to turn on/off laser)

menu / A (calibration) / red button (to start) / [push machine for distance] / red button (to end)

check mark appears on screen when calibration is done

use measure mode to check that calibration is correct

PRIMING: SETUP TO PAINT (start of painting, or when changing colors)

smart to test all of the following with water before switching to paint

1. power on

2. put discharge tube into waste bucket

3. put pickup tube into paint bucket

4. turn pressure dial all the way down

5. switch valve from "spray" to "prime"

6. turn pressure up until paint comes thru discharge

7. switch valve back to "spray"

8. put discharge tube in paint bucket

9. do test spraying, adjusting pressure up or down

1600-2000 psi is reasonable, 3000 psi is max

if pressure set too high, you get messy line

Patrick settled on 1600 psi for our yellow paint, eventually

priming uses about .5 gallon of paint

PAINTING

Mechanical spraying

use right trigger, see notes above about mechanical linkages that allow this trigger to control gun 1 or 2

Electronic spraying

Red light at bottom of screen must be on to select solid line or skip line for gun 1

Hit button "1" to select solid or turn off; hold down for 1 second to select skip

At top of screen:

M = manual: hold down round red button at left to spray

advantage is that if something happens and you get interrupted, you don't leave a puddle of paint

A = automatic: tap round red button once to start spray, once to stop

must remember to hit button to stop spray, or you'll get a puddle of paint

the A blinks while spray is activated

if skip is selected

we have machine set to do the skip before paint, so hit button at end of paint strip, to start

if you stop, the skip-measuring resets

the faster you walk, the thinner the layer of paint you're putting down

so walk at a consistent speed

TROUBLESHOOTING

finding the right pressure

if pressure is too low, ?

if pressure is too high, perimeter of line gets fuzzy, "blown out"

filter needs cleaning if tip is getting clogged frequently

if outside of line is heavier with paint than center

flip tip (yellow arrow next to gun), spray into waste bucket, and flip tip back

CLEANING AFTER EACH USE

thorough cleaning is important!

if using Latex paint, clean with water, not solvent

water required to clean the system: about 3 gallons

our paint is quick-drying; we should **leave the machine sitting for no more than 1 hour before cleaning,**

or hoses, filters, and guns could become clogged

best to clean immediately

1. remove lid from bucket

2. wipe down pickup tube pretty well

3. put pickup tube into water bucket and discharge tube into waste bucket

flush pump first:

4. pressure to 0

5. turn valve slowly to prime, but be ready for a blast

6. pressure up to 3000, run until discharge is watery

7. maybe change water supply bucket to fresh water ... run several gallons of water thru

flush guns next:

8. turn valve to spray

9. for a few seconds turn pressure up & spray

10. flip tip (yellow arrow next to gun)

11. pressure up briefly & spray

12. flip tip back

13. pressure to 0, leave guns on until pressure is way down

14. remove guard & tip and rinse (perhaps for days)

15. put small bucket under where guns were

16. with hose aimed at side of bucket, pressure up briefly (could get a blast)

17. run for a minute until water almost clear

18. power off, laser off

MAINTENANCE

every other time you use machine, squeeze some Throat Seal Liquid into the pump

STORAGE

don't store battery above 100F (is our building a problem in summer?)

CLEANING AT END OF SEASON (before winter)

flush with "pump armor" antifreeze - see Tom Brophy

check filter

use crescent wrench to loosen the cylindrical filter from filter housing

when reinstalling filter, you must push down hard

NEED TO CARRY

paint buckets

waste bucket

small bucket

2 5-gallon buckets of water: 1 in case you need to clean pump etc, 1 for cleaning outside of machine

big flat screwdriver to open paint bucket

tape measure

chalk to mark trail center

Roy Bires' measuring stick to help mark trail center

cloth for cleaning pickup tube

rags to wipe machine

big crescent wrench if removing filter

small crescent wrench in case of cable adjustments

leaf-blower & many batteries & broom to clean trail ahead of machine
note: your clothes are likely to get spattered with paint, especially during cleaning