

SMITHCO

Wayne, Pennsylvania 19087

**OWNER'S
MANUAL**

**LINE STAR
MODEL # 44-508**

**For Customer Service Call:
(888) 422-5173**

Starting Serial # LN666

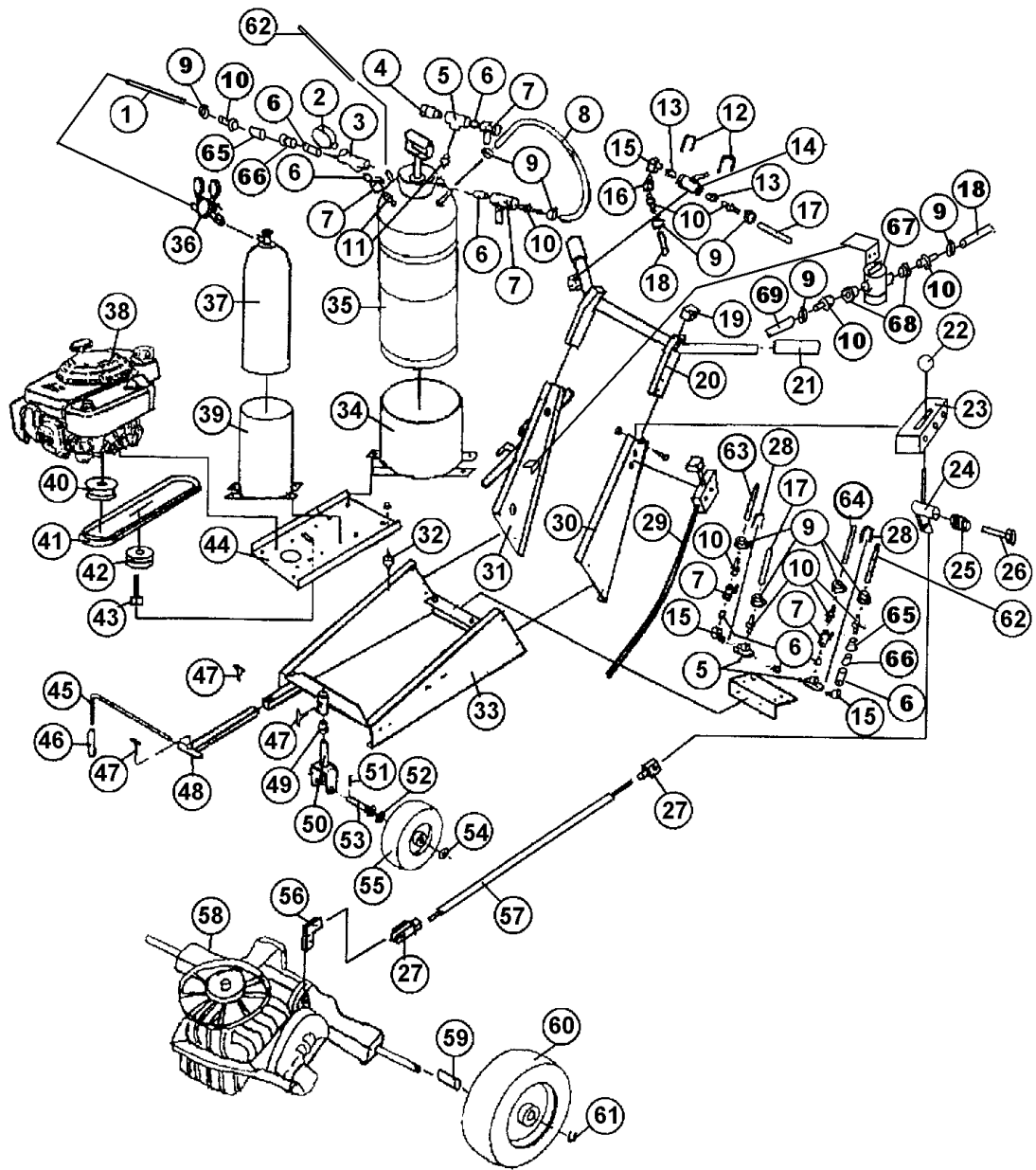
Revised June, 2005

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ATHLETIC FIELD PAINTING POINTERS

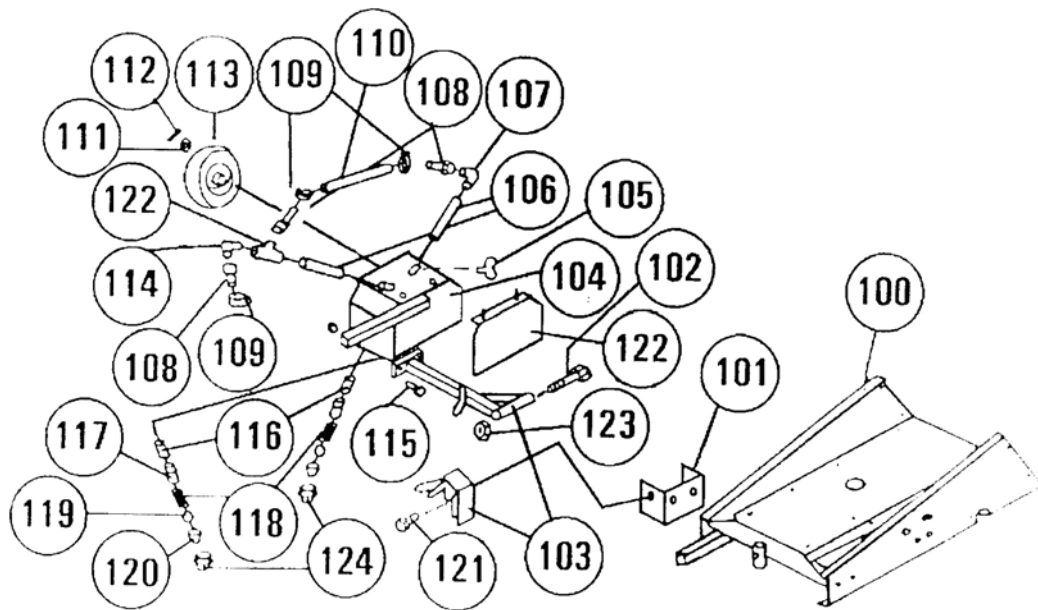
1. To achieve the best results and minimize turf damage, use an athletic field marking paint. Choose water-base, not-toxic, non-phytotoxic paint.
2. Mix the paint thoroughly with proper amounts of water to maintain uniform coverage and color throughout the job. Dilution ratios will vary, but two parts water and one part paint usually works best. Read the paint label to be sure you mix it accurately.
3. Prior to painting, mow the turf to provide an even surface. This will minimize the amount of paint you use and help provide smooth sharp results.
4. The turf should be dry with no dew remaining when you paint. A wet field will substantially increase the drying time.
5. A strong string that will not break when you stretch it tight-rope tight is absolutely necessary.
6. Preset the field with perimeter location marks to paint the lines, numbers and hash marks in a quick, efficient way.
7. Check with your local environmental and hazardous waste office for proper disposal of paint waste material, particularly material that flows directly into a sewer line or storm drain.
8. There are a number of variables affecting line density, such as, forward speed, operating pressure, dilution ratio and tip size. Reducing forward speed will increase paint applied, increasing forward speed will decrease paint applied, although speed must be appropriate to terrain conditions. Increasing pressure at the tip will increase paint applied and decreasing pressure will decrease paint applied. Keep in mind that the spray tips have a recommended range between 30 and 50 PSI and that making changes in operating pressure will result in changes in line widths. Changes in dilution ratios are usually determined from personal experience. When using top quality sports turf paint, for new lines, lower dilution ratios will be more effective, up to 1:1. For relines, higher dilutions (up to 5:1, water to paint) can be used. Consult the paint manufacture's label for best results. Changes in tip size are usually the most effective way to change the amount of paint applied. When performing calculation, remember that tip output must be calculated at the operating pressure and that there are two tips in the paint box. Consult a TeeJet catalog to find flow rates for tips at pressures other than 40 PSI.
Example: Tips at 40 PSI will produce paint at 0.40 GPM. With two tips the total will be 0.80 GPM
9. Plant Growth Regulators or Turf Growth Regulators (PGR or TGR): In many typical applications, painted lines on athletic fields do not usually wear off, but are removed by the mower due to growth of the turf canopy. TGRs (such as Primo) can be added to the tank mix of paint to reduce turf growth and frequency of relining fields. Use of TGRs can cut frequency by half in many situations. Consult your chemical representative for rates to be used in this application.



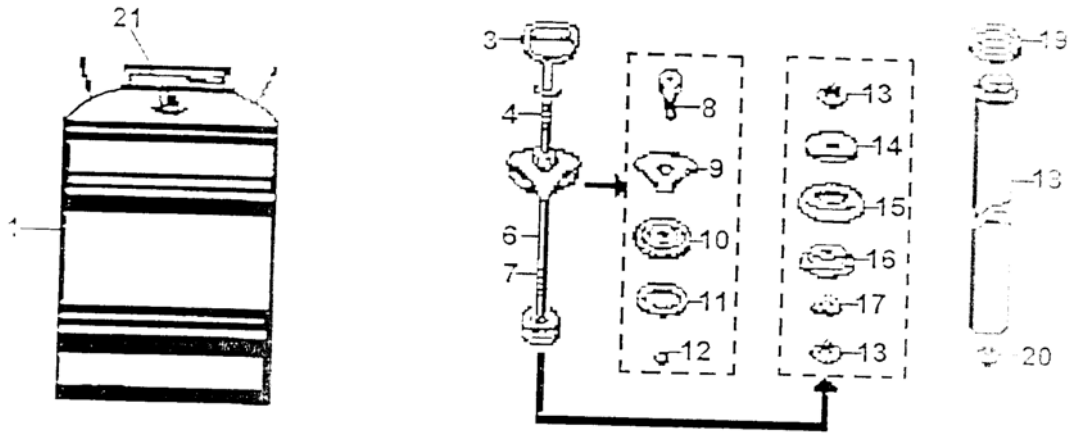
44-508 LINE STAR PARTS LIST

REF#	PART#	DESCRIPTION	QTY.
1	667	¼" Hose 24"	1
2	40-047	Gauge 60 psi	1
3	18-063	¼" Brass Cross	1
4	18-065	Relief Valve	1
5	18-012	¼" Tee	4
6	18-011	¼" Close Nipple	5
7	709-256	¼" Ball Valve	5
8	8800	¼" Clear Vinyl Hose	15"
9	18-003	¼" Hose Clamp	12
10	19-658	¼" NPT x ¼" Barb	11
11	40-313	Compression Fitting	2
12	610-229	U-Bolt	2
13	500-111	½" x ¼" Bushing	2
14	709-257	½" Ball Valve	1
15	18-007	¼" Street Elbow	4
16	18-037	¼" 45° Street Elbow	1
17	8800	¼" Clear Vinyl Hose	42"
18	8800	¼" Clear Vinyl Hose	37"
19	732-041	1 x 1 ½" Poly Plug	2
20	44-017	Handle Bar	1
21	720-011	Vinyl Grip	2
22	730-156	3/8" Ball Knob	1
23	44-013	Throttle Cover	1
24	44-021	Shift Handle	1
25	40-306	Spring	1
26	400-019	3/8" - 16 x 3" Bolt	1
27	44-026	Cable Yoke	2
28	40-393	U-Bolt	2
29	44-004	Throttle Cable	1
30	44-019	Left Handle Upright	1
31	44-018	Right Handle Upright	1
32	1096	Hard Rubber Engine Mount	4
33	44-014	Frame	1
34	40-193-1	Tank Holder	1
35	40-127-2 Assy	12 Gal. Tank	1
36	44-010	CO2 Regulator	1
37	44-009	CO2 Tank	1
38	44-031	6 HP B & S Engine	1
39	44-304	CO2 Tank Holder	1

REF.#	PART#	DESCRIPTION	QTY.
40	44-005	Pulley	1
41	44-006	Belt	1
42	40-022	Idler Pulley	1
43	400-018	3/8" - 16 x 2 1/2" Bolt	1
44	44-016	Engine & Tank Base	1
45	40-273	Marking Guide	1
46	8802	1/2" Clear Hose	6"
47	602-640	Thumb Screw 3/8" - 16 x 1 1/4"	3
48	40-189	Line Guide Arm	1
49	2110	Pivot Post Bearing	2
50	44-015	Front Caster Fork	1
51	400-121	5/8" - 11 Hex 2-Way Locknut	1
52	40-154	Machine Bushing 3/4" x 14	1
53	925-108	5/8" - 11 x 8" Hex Bolt (Caster Axle)	1
54	40-154	Machine Bushing 5/8" x 14GA	2
55	29-597	Caster Wheel	2
56	44-022	Cable Arm	1
57	44-001	Control Cable	1
58	44-003	Transaxle	1
59	44-025	Spacer	2
60	44-125	Wheel & Tire	2
61	40-165	Retainer Ring	2
62	8800	1/4" Clear Vinyl Hose	45"
63	41-222	Grease Seal	2
64	8800	1/4" Clear Vinyl Hose	48"
65	44-008	Plug	2
66	44-007	Socket	2
67	41-115	3/4" Strainer 40 Mesh	1
68	500-100	1/4" x 3/4" Bushing	2
69	8800	1/4" Clear Vinyl Hose	36"



REF.#	PART#	DESCRIPTION	QTY.
100	40-139	Frame	1
101	40-257	Boom Mounting Bracket	1
102	400-030	1/2" x 5" Bolt with 1/2" Lock Nut CT	1
103	40-258	Boom Swivel & Lock	1
104	44-305	Double-Tip Boom Box Side with Flaps	1
105	400-060	5/16" - 18 x 1" Wing Head Thumb Screw	2
106	500-243	1/4" x 4" Gal. Nipple	2
107	500-400	1/4" Elbow Gal.	1
108	19-658	1/4" NPT x 1/4" Barb - Brass	2
109	18-003	Hose Clamp 1/4"	2
110	638	1/4" Black Hose	11"
111	40-128	Machine Bushing 9/16" x 14 GA	1
112	40-168	Cotter Pin 1/8" x 1"	1
113	49-017	Caster Wheel	1
114	18-007	1/4" 90° Street Elbow - Brass	1
115	400-004	5/16" - 18 x 1 1/2" Bolt with Lock Nut	2
116	500-314	1/4" Black Coupler	2
117	19-697	Nozzle Body - Brass	2
118	19-699	Spring	2
119	19-698	Ball	2
120	709-053-8004EVS	Nozzle Tip	2
121	400-026	1/2" - 13 x 1" Bolt with Lock Nut	1
122	44-305-1	Boom Flapper	2
123	400-112	1/2" Lock Nut	1
124	19-680	Brass Nozzle Cap	2



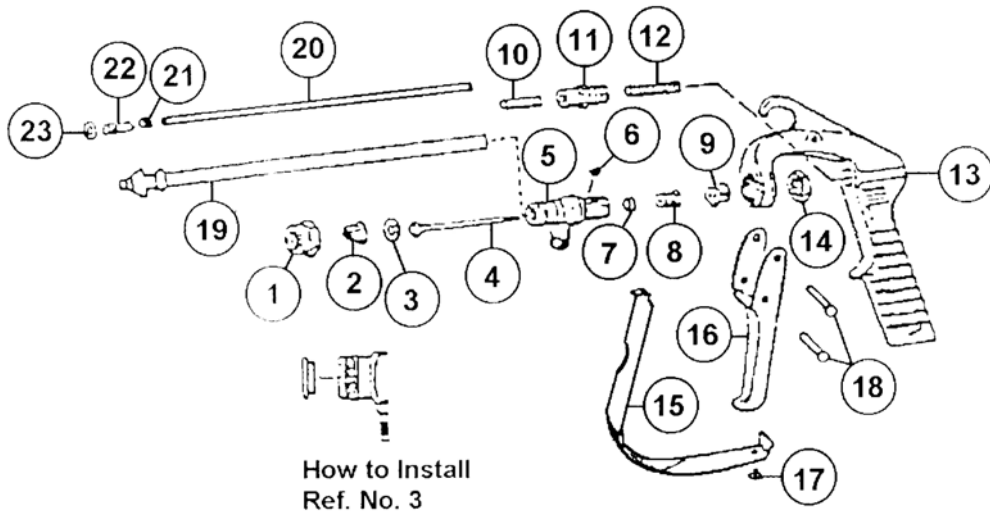
REF.#	PART#	DESCRIPTION	QTY.
1	40-127	Tank, 12-gal. SS (Black Lip)	1
3	40-314	D-Handle	1
4	40-316	Spring	1
6	40-317	Rod Only	1
7	40-306	Spring	1
8	40-319	Nut	1
9	40-302	Clamp	1
10	40-321	Cover	1
	40-321-1	Cover	1
11	40-323	Gasket	1
	40-323-1	Gasket	1
12	40-324	Ring	1
13	40-308	Nut	2
14	40-309	Backing Washer	1
15	40-310	Plunger Cup	1
16	40-311	Disc Spreader	1
17	40-312	Lock Washer	1
18	40-303	Pump Barrel	1
19	40-302	Gasket	1
20	40-304	Rubber Valve	1
21	40-313	Compression Fitting w/O-Ring	2

PLEASE NOTE:

TO REMOVE PUMP FROM 3-PRONG CLAMP HEAD STYLE: Turn handle counterclockwise until 3-prong clamp is loose. Then rotate clamp counterclockwise to stop. Lift pump out.

TO CLOSE AFTER FILLING: Place pump prongs down into slots in funnel. Turn clamp clockwise to further position under bottom slot. Then turn handle clockwise until tightly locked and sealed in place.

CLOSING PUMP AFTER FILLING: Be sure not to over-tighten pump as it will be difficult to remove and can damage seal gasket. Periodically lubricate seal with a white lithium grease to prevent it from drying out and cracking.



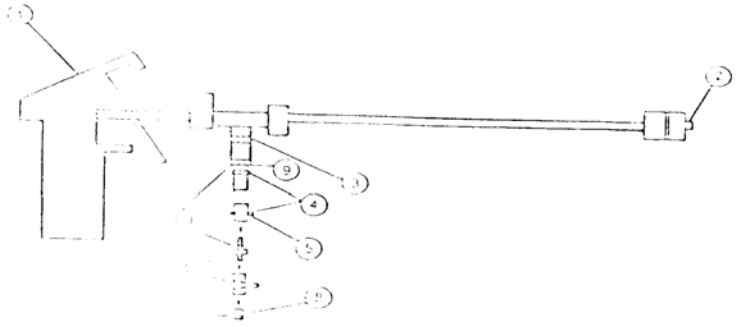
REF#	PART#	DESCRIPTION	QTY.
1	104-158	Tip Retainer	1
2	709-053	Spray Tip (Specify Size)	1
*3	104-228	Seat	1
4	104-226	Stem and Guide Assy.	1
5	104-245	Inlet Body	1
6	104-222	Key	1
*7	104-244	Cup Packing	1
8	104-243	Packing Screw	1
9	104-242	Trigger Guide	1
10	104-206	Spring Stud	1
11	104-204	Spring Screw	1
*12	104-241	Main Spring	1
13	104-240	Body	1
14	104-216	Locknut	1
15	104-246	Trigger Guard	1
16	104-247	Trigger	1
17	104-249	Pan Head Screw	1
18	104-234	Rivet	1
19	104-238	Barrel for 24" Extension	1
20	104-231	SS Stem for 24" Extension	1
21	104-250	Stem Guide Nut	1
*22	104-251	Stem End	1
23	104-252	Gasket	1

*N.I. 104-248 – Spare parts kit (included parts starred)

GUN AND HOSE KIT #40-153

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ATTACH SPRAY GUN

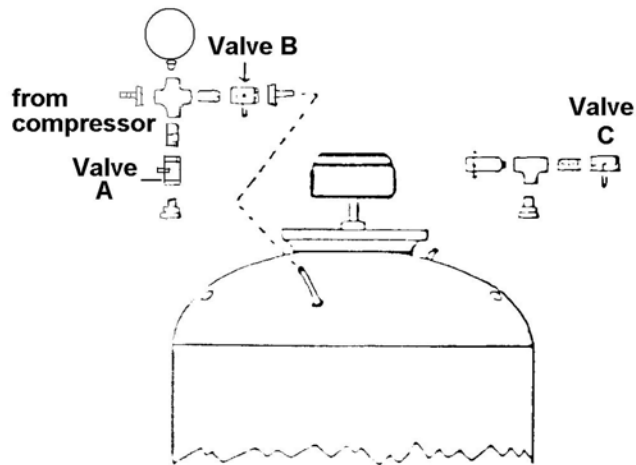


* Note: Remove #18-064 plug and insert into #18-063 cross.

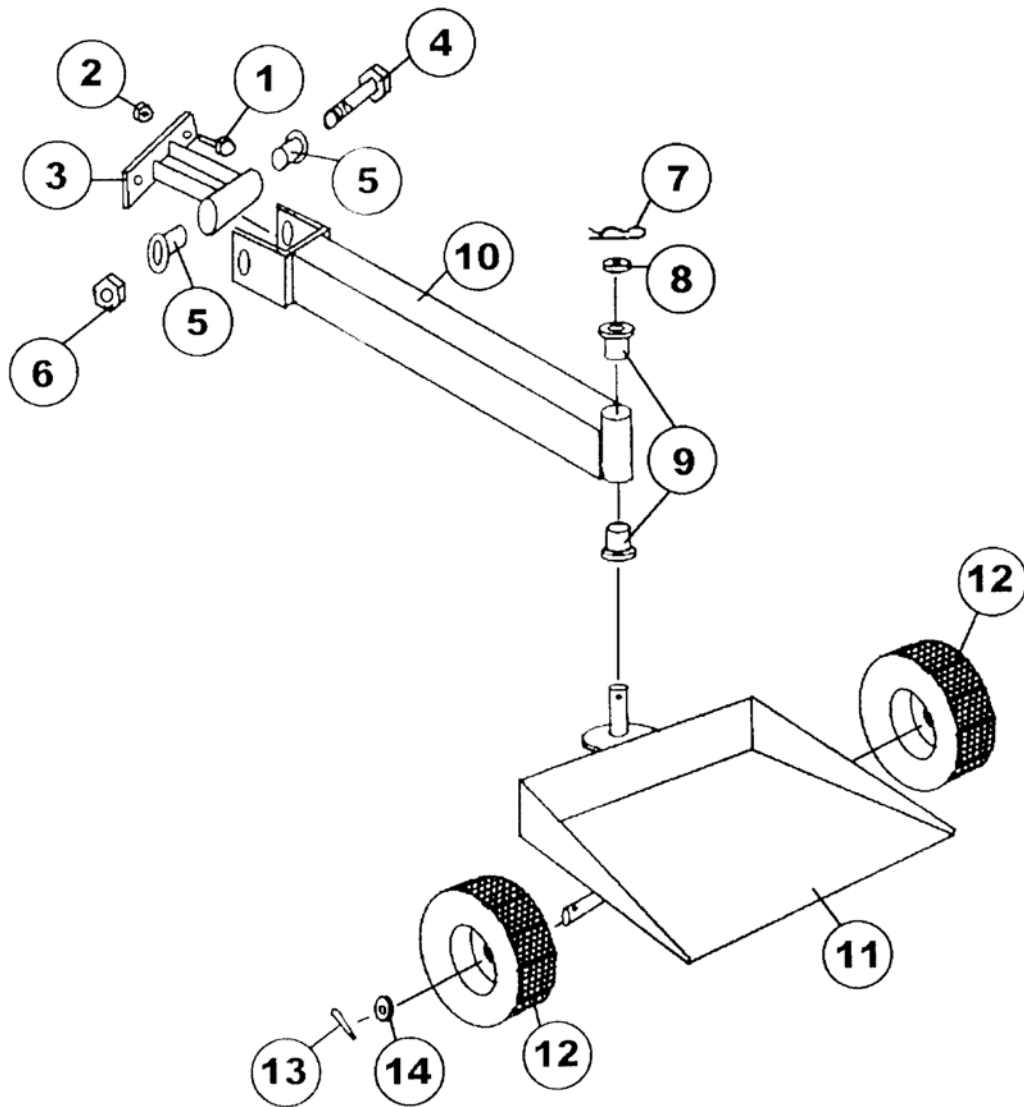
REF.#	PART#	DESCRIPTION	QTY.
1	4085	Spray Gun	1
2	18-066	Nozzle Tip (SS-6503)	1
3	707-040	Adapter ¼" NPT	1
4	18-003	Hose Clamp ¼" NPT	2
5	8800-144	Hose Clear ¼" 12"	1
6	19-658	Barb Fitting ¼" NPT	2
7	40-048	Shut off Valve	1
8	18-011	¼" Close Nipple	1
9	19-725	Gasket	1

Attach spray gun hose to barb fitting using the 18-003 hose clamp.

VALVE DIAGRAM FOR OPERATING INSTRUCTIONS



WARNING: Never have valve "A" and "B" open at the same time. Do not Remove cap from tank unless pressure is released from Tank by opening valve "C".



REF#	PART#	DESCRIPTION	QTY.
1	400-014	3/8" x 1" Bolt	2
2	400-116	3/8" Locknut	2
3	44-201-3	Hitch	1
4	400-093	3/4" x 4" Bolt	1
5	2110	Pivot Post Bearing	2
6	400-129	3/4" Hex Nut	1
7	2050	Snap Pin	1
8	713-368	Machine Bushing	1
9	720-064	Bronze Bushing	2
10	44-201-2	Draw Bar	1
11	44-201-1	Frame	1
12	40-288	Wheel & Tire	2
13	40-168	1/8" x 1" Cotter Pin	2
14	40-128	Machine Bushing	2

OPERATING INSTRUCTIONS

MARKING LIQUID MIXING INSTRUCTIONS

LATEX WATER BASE PAINT

1. Use nozzle Tip 8004EVS.
2. Completely follow mixing instructions on paint container. The solids must be in suspension.
3. To agitate paint in the LINE STAR, see "Agitating Instructions."
4. Never use mixed paint without straining.
5. The depth of color of the line will be determined by the percentage of water added to the paint. The user must decide for himself the consistency because of the variation in paints that are obtainable. In most cases, the probable mix should be at least 2 parts water to 1 part paint.
6. Always drain and flush entire liner with water after each use.
7. The spray gun and nozzle tip should be disassembled for cleaning.

TO SET LINESTAR

1. The line width desired can be set by loosening the wing nuts on the spray box and moving the side plates in or out from 2" to 5".
2. Locate the line guide squarely on the line intended. The line guide can be adjusted sliding the rod to the desired position and then locking with tightener provided.

TO OPERATE

Add oil and gas to engine before starting - Use 10W30 oil

1. Valve "A" must be open.
2. Valve "B" must be closed.
3. Valve "C" must be closed.
4. If spray gun is attached, the Valve (Ref. #7, Figure V, #40-048) must be closed when not in use.

NOTE: NEVER HAVE VALVES "A" AND "B" OPEN AT THE SAME TIME.

5. Prepare paint mixture and pour into tank.
6. Screw tank cap on tightly.
7. Check the engine manual for operating instructions, start engine.
8. The regulator is pre-set to operate up to 45 PSI.
9. Relief valve can be adjusted to desired pressure. To adjust:
 - a.) Loosen locknut of relief valve.
 - b.) Screw adjustment nut all the way into the valve.
 - c.) Charge tank to desired pressure setting.
 - d.) Unscrew adjustment nut until air begins to release through the exhaust port in the top of the nut.
 - e.) Tighten locknut to secure adjustment setting.

10. You can now operate the liner by the hand valve on the handle bar.

11. To drain tank, open drain valve on manifold.

WARNING: Do not remove cap from the tank unless pressure is released from tank by opening valve "C".

AGITATING INSTRUCTIONS (SEE FIG. VI)

If desired to mix the marking liquid in tank, it can be done as follows:

1. Close valve "A".
2. Open valve "B".

NOTE: To keep paint from going down the CO2 Regulator line, be sure to open valve "A" when agitating is done. If this is not done, paint can be drawn into the CO2 Regulator, causing damage.

3. Make sure valve "C" is closed.
4. Start engine.
5. Air will enter tank at the top to agitate marking liquid.

TO USE HAND GUN

1. Valve "A" must be open.
2. Valve "B" must be closed.
3. Valve "C" must be closed.

Always drain and flush system with water or appropriate solvent after each use.

There is only one grease fitting to lubricate:
#29-597 Caster Wheel.

See engine manual for maintenance instructions.

TROUBLE SHOOTING

If the line is not satisfactory, the cause could be one of the following reasons:

1. Paint is too thick and mixed properly.
2. If hoses or nozzle clogs, paint was not strained.
3. Nozzle tip is too small or too large.
4. Nozzle tip may be worn.
5. There may be an air leak in system.
6. Relief valve may need adjusting.

Proper lining will result from the correct adjustment of these variables and can only be ascertained in the field because of the variations in the marking liquids and the desired thickness being used.

LIMITED WARRANTY

SMITHCO warrants this product to be free from defects in material and workmanship under normal use for one year from the date of purchase by the original user. (60 days if product is used for rental purposes.) All warranty claims must be handled through a SMITHCO authorized dealer or by SMITHCO, INC. All transportation charges must be paid by the purchaser.

There is no further express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year. (60 days if product is used for rental purposes) from date of purchase by the original user, and, to the extent permitted by law any and all implied warranties are excluded and disclaimed after the expiration of such period.

All incidental and consequential damages, including pick-up and delivery of the unit, communication, mileage charges and/or rental of a replacement unit during repair, are not covered under this warranty, or is any loss of income and/or other loss resulting from the failure of the product to function due to a warranty defect.

The following items are not covered under the SMITHCO warranty and are warranted by their respective manufacturer.

- a) Engine and engine parts including starters, generators, alternator and filters.
- b) Transaxle, differentials, gear boxes, and mechanical pumps.
- c) Hydrostatic transmissions, hydraulic pumps and motors.
- d) Batteries
- e) Wheels and tires.

A copy of the warranty for the above items is furnished if necessary with each SMITHCO product.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion of limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Federal law now requires disclosure of the warranty which applies to this product prior to the sale to a consumer. Please leave this statement attached to the product and allow the buyer to remove it after purchase.

SMITHCO

Wayne, Pennsylvania 19087

