

INSTRUCTIONS—REPAIR



308874

Rev. N



INSTRUCTIONS

KEEP FOR REFERENCE.

Read this and all related manuals for important warnings and instructions.

First choice when
quality counts.™

LineLazer II 3900 and 5900

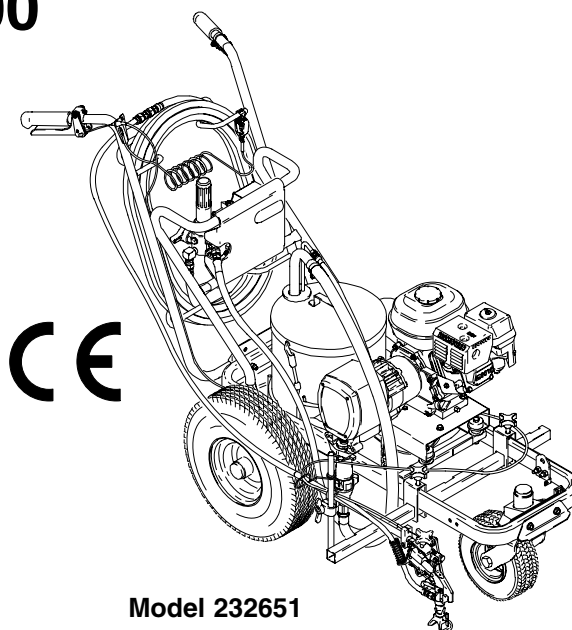
3300 psi (230 bar, 23 MPa) Maximum Working Pressure

LineLazer II 3900

Model	Series	Description
232651	A	Complete Sprayer
232652	A	Complete Sprayer with 2nd Gun Kit
233011	A	Complete Sprayer with Gauge and Pail Kit
233012	A	Complete Sprayer with 2nd Gun Kit, Gauge and Pail Kit

LineLazer II 5900

Model	Series	Description
232661	A	Complete Sprayer
232662	A	Complete Sprayer with 2nd Gun Kit
233013	A	Complete Sprayer with Gauge and Pail Kit
233014	A	Complete Sprayer with 2nd Gun Kit, Gauge and Pail Kit



Model 232651

8824A

All models are not available in all countries

PATENTS PENDING

Related Manuals

Operation	308873
Displacement Pump	308798
Spray Gun	308235
Spray Tip	*
PC Board	308919
Drain Valve Kit	308961

* for spray tip selection see page 4.

Table of Contents

Component Identification and Function	3	Pressure Control	14
Spray Tip Selection Guide	4	Displacement Pump	16
Maintenance	5	Parts	
Troubleshooting	6	Model 232651, 232661 LineLazer II	17
Repair		Pinion Assembly	25
Bearing Housing & Connecting Rod	8	Complete Sprayers	28
Drive Housing	9	Pressure Control	27
Pinion Assembly/Rotor/Field/Shaft/Clutch	10	Dimensions	29
Clamp	11	Technical Data	29
Clutch Housing	12	Graco Warranty	29
Engine	12	Graco Phone Number	29

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

©COPYRIGHT 1999, GRACO INC.

Graco Inc. is registered to I.S. EN ISO 9001

Warnings and Cautions

Warning Symbol








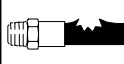



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

 WARNING	
<p>Fire and explosion can occur when spraying or flushing flammable fluid in an area where air circulation is poor and flammable vapors can be ignited by an open flame or sparks.</p> <p>To help prevent a fire and explosion:</p> <ul style="list-style-type: none"> ● Use outdoors or in an extremely well ventilated area. ● Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion. ● Remove, extinguish or unplug all ignition sources; tape wall switch. Do not smoke in spray area. ● Never fill fuel tank while the engine is running or hot. ● Ground Sprayer, object being sprayed, paint and solvent pails. ● Hold gun firmly to side of a grounded pail when triggering into pail. ● Use only conductive airless paint hose. ● Never run engine in inclosed area. ● Do not flush with gasoline. 	   
<p>Fluid injection is a serious injury! If high pressure fluid pierces your skin, the injury might look like "just a cut". But it is a serious wound! Get immediate medical attention.</p> <p>To help prevent injection, always:</p> <ul style="list-style-type: none"> ● Engage trigger safety latch when not spraying. ● Point gun away from yourself or anyone else. ● Relieve pressure before checking or repairing any leak. ● Relieve pressure when you turn off the sprayer or stop spraying. ● Do not use components rated less than system <i>Maximum Working Pressure</i> ● When flushing, ground equipment to grounded object with orange wire clamp. ● Do not flush equipment on asphalt or other non-conductive surfaces. 	   
<p>Never allow children to use this unit. If you are injured using this equipment, get immediate medical treatment.</p>	

Component Identification and Function

Model 232651

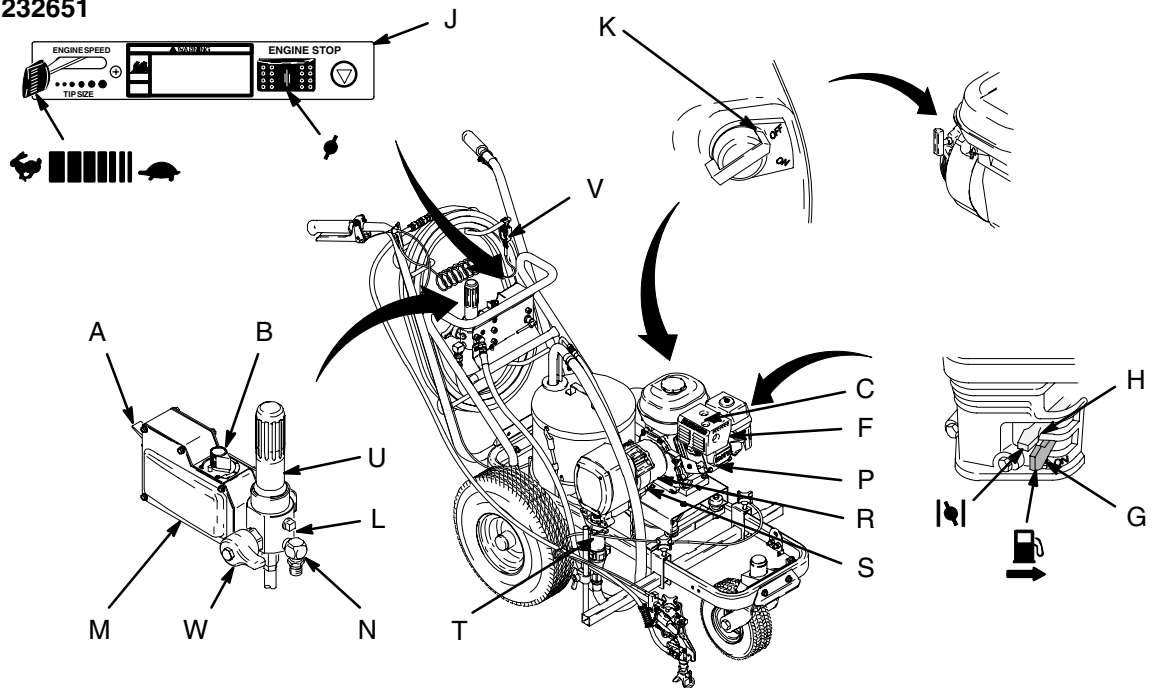


Fig. 1

8825A

A	Pressure Control Switch	ON/OFF, enables/disables clutch function
B	Pressure Adjusting Knob	Controls fluid outlet pressure
C	Air Cleaner*	Filters air entering the carburetor
D	Fuel Tank*	Uses 86 octane gasoline
E	Muffler*	Reduces noise of internal combustion
F	Spark Plug Cable*	Routes electrical current to spark plug
G	Fuel Shutoff Lever*	On/off lever to regulate fuel flow from gasoline tank to carburetor
H	Choke*	Enriches air/gasoline mixture for cold starting
J	Throttle Lever*	Adjusts engine speed for large or small orifice spray tips
K	Engine Switch*	Enables/disables engine operation
L	Secondary Fluid Outlet	Second hose and spray gun is connected here
M	Pressure Control	Controls clutch cycling to maintain fluid pressure
N	Primary Fluid Outlet	Hose and spray gun is connected here
P	Engine*	4-cycle gasoline engine
R	Clutch Housing	Transfers power from engine to drive assembly
S	Drive Housing	Transfers power from clutch to displacement pump
T	Displacement Pump	Provides fluid to be sprayed through spray gun
U	Fluid Filter	Filters fluid between source and spray gun
V	Grounding Clamp and Wire	Grounds sprayer system
W	Pressure Drain Valve	Relieves fluid pressure when open
*	For more detailed explanations of these controls, refer to the Honda Engines Owner's Manual; supplied	

Install the spray tip in the gun. Sprayer is supplied with tip LLT319. For additional applications, use the **Tip Selection Table** on page 4.

Spray Tip Selection Table

LineLazer Tip Selection Guide. Sprayer is supplied with tip LL5319. For additional applications, use the tip selection table as follows:

Note: the last three digits (LL5319) of the tip part number identifies the line width and tip orifice (opening) in millimeters. For example: the line width for tip LL5319 is 4 in. as shown in the table below. The tip orifice for tip LL5319 is 19 mm.

LineLazer Tip Selection Table

Tip Size	Line Width	Used For
286211*	2 inches	Sport court – light film build
LL5213*	2 inches	Sport court – heavy film build
LL5215*	4 inches	Alkyd paints only – light film build
LL5217	4 inches	Alkyd paints only – medium film build
LL5219	4 inches	Alkyd paints only – heavy film build
LL5315	4 inches	Most traffic paints – light film build
LL5317	4 inches	Most traffic paints – medium film build
LL5319	4 inches	Most traffic paints – medium film build
LL5321	4 inches	Most traffic paints – heavy film build
LL5323	4 inches	Most traffic paints – heavy film build
LL5417#	4 – 8 inches	All paints and high solids traffic paints – light film build
LL5419#	4 – 8 inches	All paints and high solids traffic paints – medium film build
LL5421#	4 – 8 inches	All paints and high solids traffic paints – heavy film build
LL5621	8 – 12 inches	All traffic paints – light film build
LL5623	8 – 12 inches	All traffic paints – medium film build
LL5625	8 – 12 inches	All traffic paints – medium film build
LL5627	8 – 12 inches	All traffic paints – heavy film build

* May require 100 mesh filter to minimize tip plugging.

Best for cold weather applications.

How to Maximize Line Quality and Reduce Tip Wear. Observe the following suggestions to increase line quality and minimize sprayer tip wear.

1. Select a larger tip orifice and run the sprayer at a reduced operating pressure.
2. Running larger tip sizes (example: use tip LL5321 @ 2000 psi instead of LL5317 @ 3300 psi) will significantly increase tip life and reduce tip plugging. It will also produce a more uniform film build across the line.

Maintenance

WARNING



INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

Pressure Relief Procedure

1. Lock gun trigger safety.
2. Turn engine ON/OFF switch to OFF.
3. Move pressure control switch to OFF and turn pressure control knob fully counterclockwise.
4. Unlock trigger safety. Hold metal part of gun firmly to side of grounded metal pail, and trigger gun to relieve pressure.
5. Lock gun trigger safety.
6. Open pressure drain valve. Leave valve open until ready to spray again.
7. Disconnect spark plug cable.

If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Now clear tip or hose.

CAUTION

For detailed engine maintenance and specifications, refer to separate Honda Engines Owner's Manual, supplied.

DAILY: Check engine oil level and fill as necessary.

DAILY: Check hose for wear and damage.

DAILY: Check gun safety for proper operation.

DAILY: Check pressure drain valve for proper operation.

DAILY: Check and fill the gas tank.

AFTER THE FIRST 20 HOURS OF OPERATION:

Drain the oil and refill with clean oil.

WEEKLY: Remove air filter cover and clean element. Replace element, if necessary. If operating in an unusually dusty environment: check filter daily and replace, if necessary.

Replacement elements can be purchased from your local HONDA dealer.

WEEKLY: Check level of TSL in displacement pump packing nut. Fill nut, if necessary. Keep TSL in nut to help prevent fluid buildup on piston rod and premature wear of packings.

AFTER EACH 100 HOURS OF OPERATION:

Change oil.

MONTHLY: Oil connecting rod.

SPARK PLUG: Use only BPR6ES (NGK) or W20EPR-U (NIPPONDENSO) plug. Gap plug to 0.028 to 0.031 in. (0.7 to 0.8 mm). Use spark plug wrench when installing and removing plug.

Caster Wheel

(See letter call-outs in **Parts** drawing on page 21)

1. Once each year, tighten nut (A) until spring washer bottoms out. Then back off the nut 1/2 to 3/4 turn.
2. Once each year, tighten nut (B) until it begins to compress spring washer. Then tighten the nut an additional 1/4 turn.
3. Once each month, grease the wheel bearing (F).
4. Check pin (C) for wear. If pin is worn out, there will be play in the caster wheel. Reverse or replace the pin as needed.
5. Check caster wheel alignment as necessary. To align: loosen bolt (D), align wheel and tighten bolt (D).

Troubleshooting

! WARNING



INJECTION HAZARD

To reduce risk of serious injury, including fluid injection or splashing in eyes or on skin, or injury from moving parts, always follow **Pressure Relief Procedure Warning**, page 5, before checking, adjusting, cleaning or shutting down sprayer. *Disconnect spark plug!*

Check everything in chart before disassembling sprayer.


PROBLEM	CAUSE	SOLUTION
Engine won't start	Engine switch is OFF	Turn engine switch ON
	Engine is out of gas	Refill gas tank. Honda Engines Owner's Manual.
	Engine oil level is low	Try to start engine. Replenish oil, if necessary. Honda Engines Owner's Manual.
	Spark plug cable is disconnected or damaged	Connect spark plug cable or replace spark plug
	Cold engine	Use choke
	Fuel shutoff lever is OFF	Move lever to ON position
	Oil is seeping into combustion chamber	Remove spark plug. Pull starter rope 3 or 4 times. Clean or replace spark plug. Try to start engine. Keep sprayer upright to avoid oil seepage.
Engine operates, but displacement pump does not operate.	Pressure control switch is OFF.	Turn pressure control switch ON.
	Pressure setting is too low.	Turn pressure adjusting knob clockwise to increase pressure.
	Fluid filter (318) is dirty.	Clean filter. See page 27.
	Tip or tip filter is clogged.	Clean tip or tip filter. See gun instruction manual.
	Displacement pump piston rod is stuck due to dried paint.	Repair pump. See manual 308798.
	Connecting rod is worn or damaged.	Replace connecting rod. See page 8.
	Drive housing is worn or damaged.	Replace drive housing. See page 9.
	Electrical power is not energizing field.	Check wiring connections. See page 12. Reference control board diagnostics. Page 15. With pressure control switch ON and pressure turned to MAXIMUM, use a test light to check for power between clutch terminals on control board. Remove black clutch wires from control board and measure resistance across wires. At 70° F, the resistance must be between $1.2 \pm 0.2\Omega$ (LL 3900); $1.7 \pm 0.2\Omega$ (LL 5900); if not, replace pinion housing. Have pressure control checked by authorized Graco dealer.
	Clutch is worn, damaged, or incorrectly positioned.	Replace clutch. See page 10.
	Pinion assembly is worn or damaged.	Repair or replace pinion assembly, see pg 10.

PROBLEM	CAUSE	SOLUTION
Pump output is low on upstroke.	Hose inlet screen (27) is clogged.	Clean inlet screen.
	Piston ball (25) is not seating.	Service piston ball. See manual 308798.
	Piston packings are worn or damaged.	Replace packings. See manual 308798.
	O-ring (17) in displacement pump is worn or damaged.	Replace o-ring. See manual 308798.
Pump output is low on downstroke or on both strokes.	Hose strainer (27) is clogged.	Clean strainer screen.
	Piston packings are worn or damaged.	Replace packings. See manual 308798.
	Intake valve ball is not seating properly.	Clean intake valve. See manual 308798.
	Engine speed is too low.	Increase throttle setting. See manual 308873.
	Clutch is worn or damaged.	Replace clutch. See page 10.
Paint leaks into wetcup.	Wetcup is loose.	Tighten wetcup just enough to stop leakage.
	Throat packings are worn or damaged.	Replace packings. See manual 308798.
	Displacement rod is worn or damaged.	Replace rod. See manual 308798.
Fluid delivery is low.	Inlet screen is clogged.	Clean inlet screen.
	Pressure setting is too low.	Increase pressure. See manual 308873.
	Engine speed is too low.	Increase throttle setting. See manual 308873.
	Fluid filter (318), tip filter or tip is clogged or dirty.	Clean filter. See manual 308873. Or, see gun instruction manual.
	Large pressure drop in hose with heavy materials.	Use larger diameter hose and/or reduce overall length of hose. Use of more than 100 ft of 1/4 in. hose significantly reduces performance of sprayer. Use 3/8 in. hose for optimum performance (50 ft minimum).
Fluid is spitting from gun.	Air in pump or hose.	Check and tighten all fluid connections. Reprime pump. See manual 308873.
	Tip is partially clogged.	Clear tip. See gun instruction manual.
	Fluid supply is low or empty.	Refill fluid supply. Prime pump. See manual 308873. Check fluid supply often to prevent running pump dry.
Pump is difficult to prime.	Air in pump or hose.	Check and tighten all fluid connections. Reduce engine speed and cycle pump as slowly as possible during priming.
	Intake valve is leaking.	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.
	Pump packings are worn.	Replace pump packings. See manual 308798.
	Paint is too thick.	Thin the paint according to the supplier's recommendations.
	Engine speed is too high.	Decrease throttle setting before priming pump. See manual 308873.
Clutch squeaks each time clutch engages.	Small irregularities of new clutch surfaces grind together and cause noise	Clutch surfaces need to wear into each other. Noise will dissipate after a day of run time.
High engine speed at no load.	Misadjusted throttle setting.	Reset throttle to 3600–3800 engine rpm at no load.
	Worn engine governor.	Replace or service engine governor.

Bearing Housing and Connecting Rod

NOTE: The item numbers referenced are for the Hi-Boy models. The Lo-Boy models may have different item numbers. Use the Hi-Boy item number and part to find the corresponding Lo-Boy part and item number.

Removal

1.  Relieve pressure; page 5.
2. Fig. 3. Remove screws (29) and front cover (86).
3. Unscrew suction tube (27) from pump, hold wrench on pump intake valve (A) to keep pump from loosening.
4. Disconnect pump outlet hose (25) from displacement pump outlet nipple (107).
5. Fig. 2. Use screwdriver to push up retaining spring (83) at top of pump. Push out pin (82).

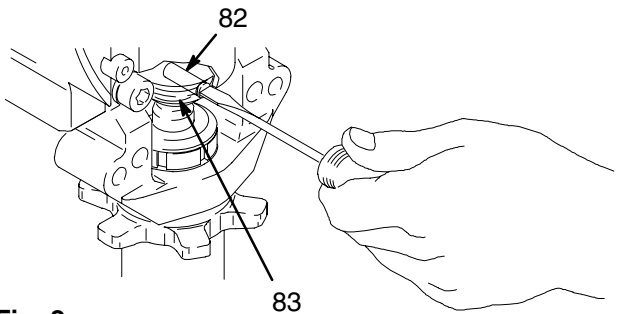


Fig. 2

6. Fig. 3. Loosen jam nut (81). Unscrew and remove displacement pump.
7. Remove four screws (31) and lockwashers (32) from bearing housing (84).
8. Pull connecting rod (85) and lightly tap lower rear of bearing housing (84) with plastic mallet to loosen from drive housing (87). Pull bearing housing and connecting rod assembly (85) off drive housing.
9. Inspect crank (B) for excessive wear and replace parts as needed.

Installation

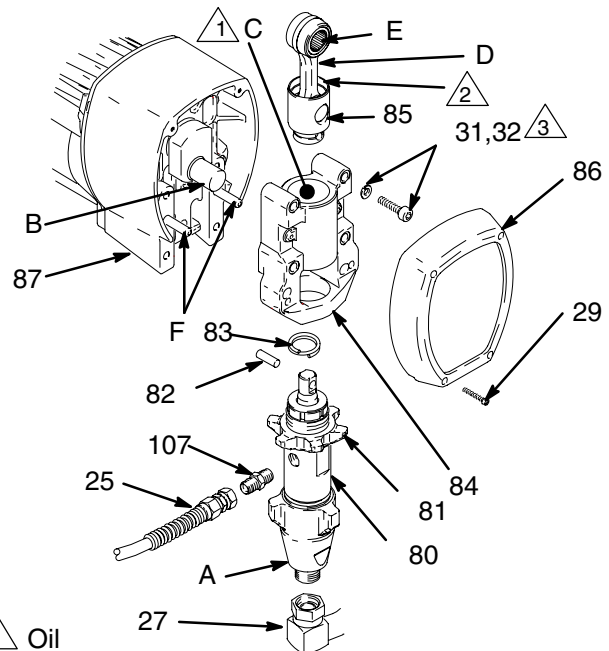
10. Evenly lubricate inside of bronze bearing (C) in bearing housing (84), and inside of connecting rod link (D), with high-quality motor oil (**do not use grease**). Liberally pack roller bearing (E) in connecting rod assembly (85) with bearing grease.

11. Assemble connecting rod (85) and bearing housing (84).
12. Clean mating surfaces of bearing and drive housings.
13. Align connecting rod with crank (B) and carefully align locating pins (F) in drive housing (87) with holes in bearing housing (84). Push bearing housing onto drive housing or tap into place with plastic mallet.


CAUTION

DO NOT use bearing housing screws (31) to align or seat bearing housing with drive housing. Align these parts with locating pins (F), to avoid premature bearing wear.

14. Install screws (31) and lockwashers (32) on bearing housing. Tighten evenly to 175 in-lb (19 N-m).
15. Refer to Displacement Pump, Installation, page 16.



 Oil

 Pack with bearing grease 114819




 LL 3900: Torque to 200 in-lb (22.6 N-m)
LL 5900: Torque to 25 ft-lb (34 N-m)

Fig. 3 **Model 232651 shown**

8796A

Drive Housing

Removal

1.   Relieve pressure; page 5.
2. Fig. 4. Remove bearing housing. Do 1. through 8. of **Bearing Housing and Connecting Rod** procedure on page 8.
3. Remove two screws (51) and lockwashers (50).
4. Remove four screws (120) and lockwashers (119) from pinion housing (88a).
5. Lightly tap around drive housing (87c) to loosen drive housing. Pull drive housing straight off pinion housing. Be prepared to support gear cluster (78), which may also come out.

Installation

1. Liberally apply bearing grease (supplied with replacement gear cluster) to gear cluster (78), and to areas called out by note 3. Use full 0.62 pint (0.29 liter) of grease for LL 3900 and 0.68 pint (0.32 liter) of grease for LL 5900.
2. Place bronze colored washer (87g) on shaft protruding from large shaft of drive housing (87c). Note: If replacing a washer with pin holes with a washer without pin holes, remove guide pins from housing. Place silver colored washer (87h) on pins on pinion housing. Align gears and push new drive housing straight onto pinion housing and locating pins (B).
3. Install four screws (120) and lockwashers (119) into pinion housing (88a).
4. Install two screws (5) and lockwashers (50).
5. Fig. 3. Install bearing housing. Do 10. through 15. of **Bearing Housing and Connecting Rod** procedure on page 8.

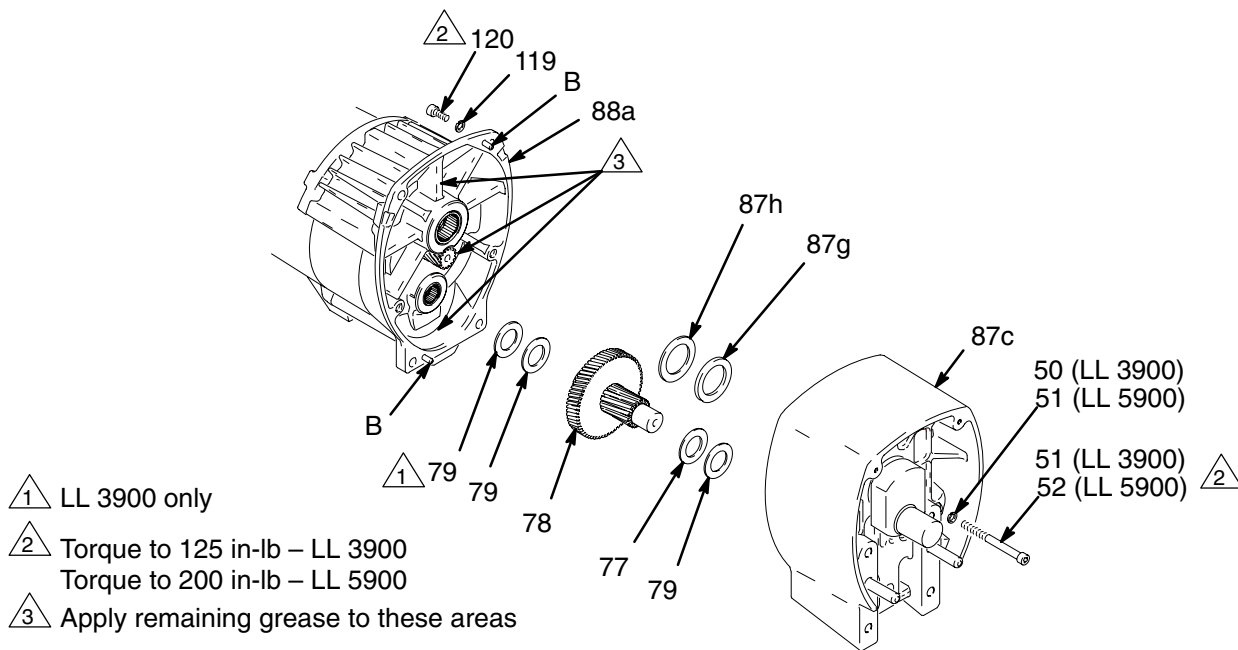


Fig. 4

TI0178A

Pinion Assembly/Rotor/Field/Shaft/Clutch

Removal

Fig. 6. If pinion assembly (88a) is attached to clutch housing (92), do 1. through 4. Otherwise, start at 5.

1.  Relieve pressure; page 5.
2. Fig. 5. Disconnect field cable (X) from pressure control.

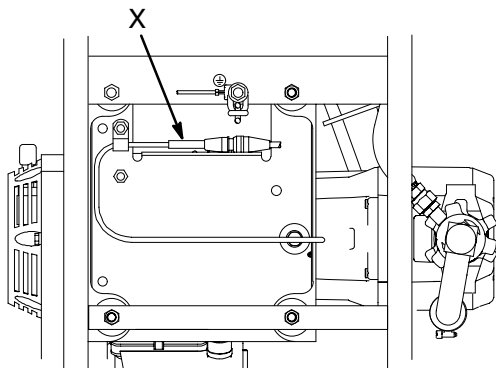


Fig. 5 8837A

3. Fig. 6. Remove five screws (89/96) and lockwashers (50/51) and pinion assembly (88a).

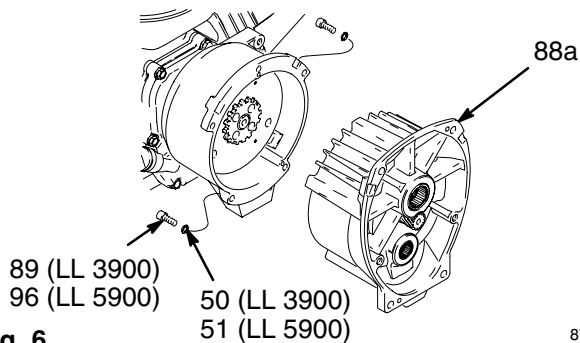


Fig. 6 8700A

4. Fig. 7. Place pinion assembly (88a) on bench with rotor side up.

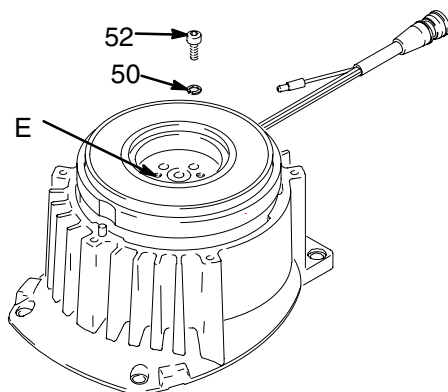


Fig. 7 8701A

5. Remove four screws (52) and lockwashers (50). Install two screws in threaded holes (E) in rotor. Alternately tighten screws until rotor comes off.
6. Fig. 8. Remove retaining ring (Z).
7. Tap pinion shaft (A) out with plastic mallet.

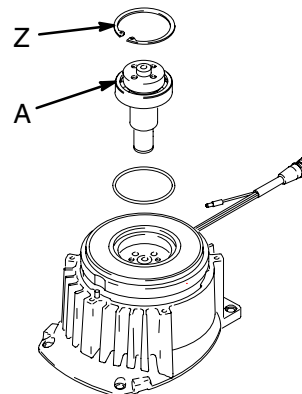


Fig. 8 8703A

8. Fig.9. Use an impact wrench or wedge something between clutch and clutch housing to hold clutch during removal.
9. Remove four screws (50) and lockwashers (53).
10. Remove clutch (91).

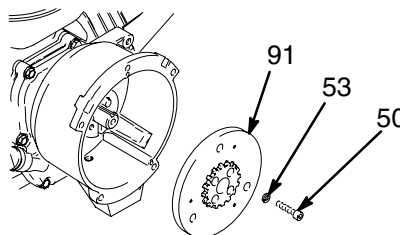


Fig. 9 8704A

Pinion Assembly/Rotor/Field/Shaft/Clutch

Installation

1. Fig. 10. Lay two stacks of two dimes on smooth bench surface.
2. Lay armature (91) on two stacks of dimes.
3. Press center of clutch down on bench surface.

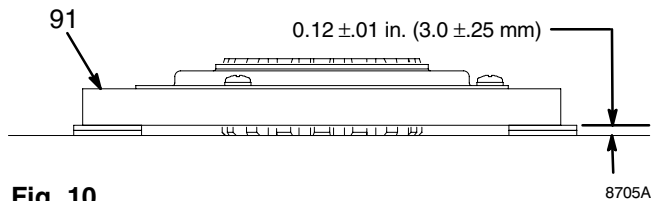


Fig. 10

4. Install armature (91) on engine drive shaft.

5. Install four screws (53) and lockwashers (50) with torque of 125 in-lb.
6. Fig. 8. Tap pinion shaft (A) in with plastic mallet.
7. Install retaining ring (Z).
8. Fig. 7. Place pinion assembly on bench with rotor side up.
9. Apply locktite to screws. Install four screws (53) and lockwashers (50). Alternately torque screws to 125 in-lb until rotor is secure.
10. Install pinion assembly (88a) with five screws (89) and lockwashers (50).
11. Fig. 5. Connect field cable (X) to pressure control.

Clamp

Removal

1. Fig. 11. Loosen two screws (53) on clamp (94).
2. Push screwdriver into slot in clamp (94) and remove clamp.

Installation

1. Fig. 11. Install engine shaft key (95).
2. Tap clamp (94) on engine shaft A. Maintain dimension shown note 2 Fig. 11.
3. Press clamp (94) onto engine shaft (A). Maintain dimension shown note 2 in Fig. 11.

Check dimension: Place rigid, straight steel bar (B) across face of clutch housing (5). Use accurate measuring device to measure distance between bar and face of clamp. Adjust clamp as necessary. Torque two screws (16) to 125 ± 10 in-lb (14 ± 1.1 N·m).

- 1 Face of clutch housing
- 2 1.550 ± 0.010 in. (39.37 ± 0.25 mm); LL 3900
1.812 ± 0.010 in. (46.02 ± 0.25 mm); LL 5900
- 3 Torque to 125 ± 10 in-lb (14 ± 1.1 N·m)

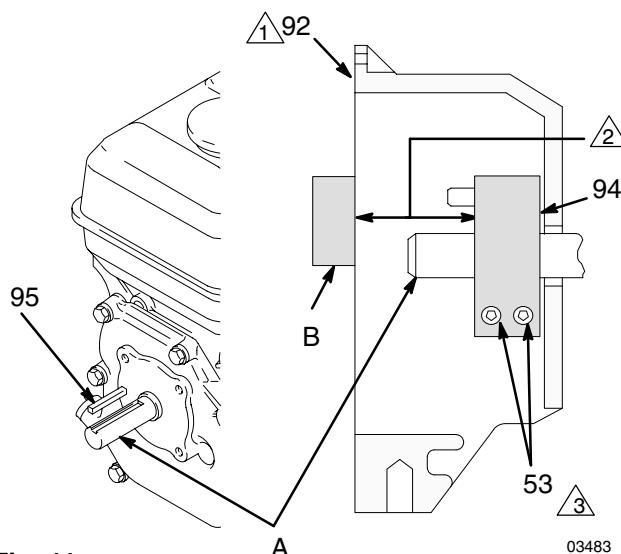


Fig. 11

Clutch Housing

Removal

1. Fig. 12. Remove four capscrews (98) and lockwashers (99) which hold clutch housing (92) to engine.
2. Remove cap screw (96), lockwasher (50), and washer (97) from beneath mounting plate (D).
3. Remove engine key (95).
4. Pull off clutch housing (92).

Installation

1. Fig. 12. Push on clutch housing (92).
2. Install cap screw (96), lockwasher (50), and washer (97) from beneath mounting plate (D).
3. Install four capscrews (98) and lockwashers (99) and secure clutch housing (92) to engine.

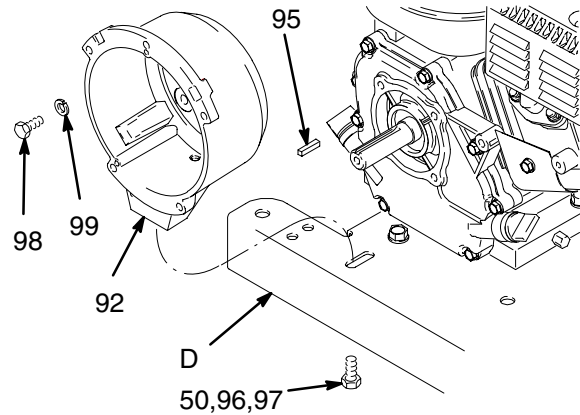


Fig. 12

8826A

Engine

Removal

1. Remove **Pinion Assembly/Rotor/Field/Pinion/Clutch, Clamp** and **Clutch Housing**, as instructed on pages 7, 10 and 11.
2. Fig. 13. Disconnect all necessary wiring.
3. Fig. 14. Remove two locknuts (55) and screws (54) from base of engine.
4. Lift engine carefully and place on work bench.

NOTE: All service to the engine must be performed by an authorized HONDA dealer.

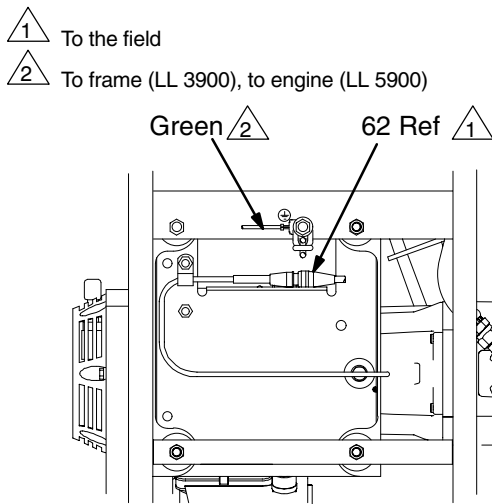


Fig. 13

8837A

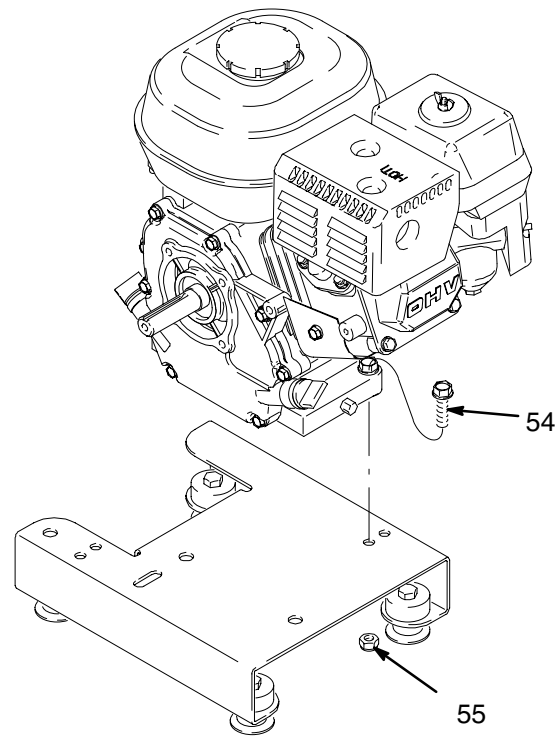


Fig. 14


8827A

Installation

1. Lift engine carefully and place on cart.
2. Fig. 14. Install two screws (54) in base of engine and secure with locknuts (55).
3. Fig. 13. Connect all necessary wiring.
4. Install **Pinion Assembly/Rotor/Field/Pinion/Clutch, Clamp** and **Clutch Housing**, as instructed on pages 10 and 11.

On/Off Switch

Removal

1.  Relieve pressure; page 5.
2. Fig. 15. Remove five screws (307) and cover (322).
3. Disconnect two wires (A) from ON/OFF switch (309).
4. Press in on two retaining tabs on each side of ON/OFF switch (309) and remove switch.

Installation

5. Install new ON/OFF switch (309) so tabs of switch snap into place on inside of pressure control housing.
6. Connect two wires (A) to ON/OFF switch.
7. Install pressure control cover (322) with five screws (307).

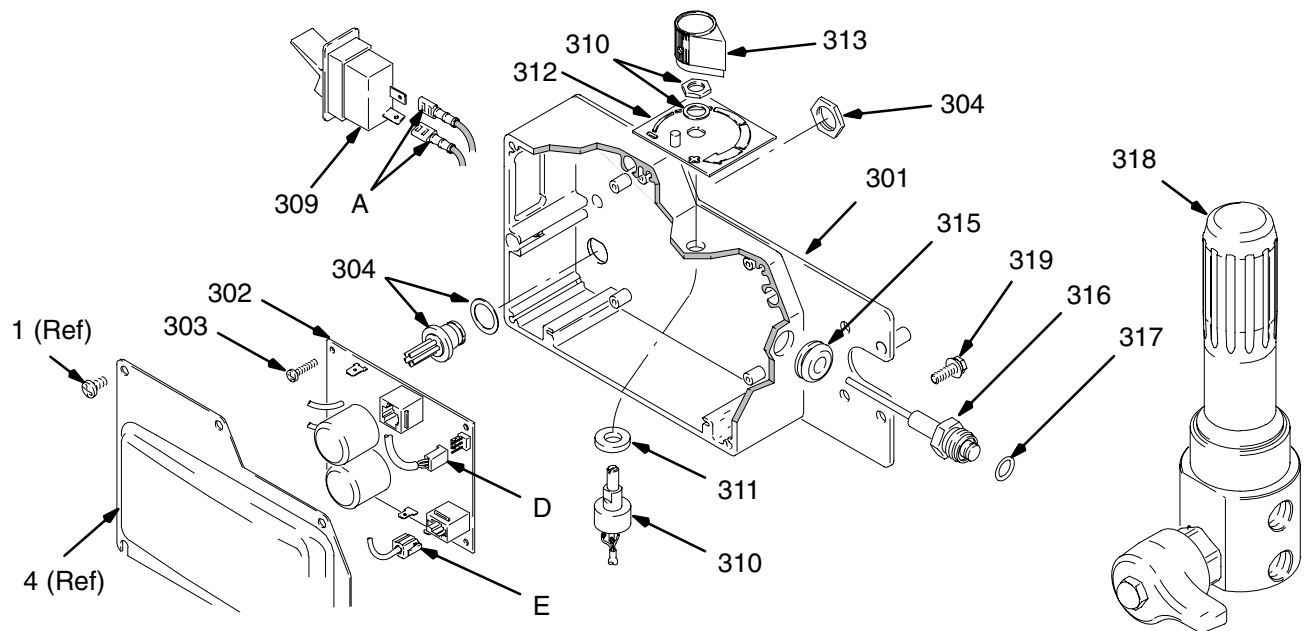



Fig. 15

8711A

Pressure Control

Control Board

Removal

1.  Relieve pressure; page 5.
2. Fig. 15. Remove five screws (307) and cover (322).
3. Disconnect at control board (302):
 - Four clutch leads: two violet and two black.
 - Lead (D) from potentiometer.
 - Lead (E) from transducer.
 - Two red leads (A) to ON/OFF switch (309).
4. Remove four screws (303), green ground wire, and control board (302).


Installation

When installing replacement control board, follow instructions with control board to set model type.

1. Fig. 15. Install control board (302) with five screws (303).
2. Connect control board (302):
 - Two red leads (A) to ON/OFF switch (309).
 - Lead (E) to transducer.
 - Lead (D) to potentiometer.
 - Four clutch leads: two violet and two black.
3. Install cover (322) with five screws (307).

Pressure Control Transducer

Removal

1.  Relieve pressure; page 5.
2. Fig. 15. Remove five screws (307) and cover (322).
3. Disconnect lead (E) from control board (302).
4. Remove three screws (319) and filter housing (318) from control plate (301). Carefully pull transducer connector through rubber grommet (315).


5. Remove pressure control transducer (318z) and packing o-ring (318aa) from filter housing (318).

Installation

1. Fig. 15. Install packing o-ring (317) and pressure control transducer (316) in filter housing (318). Torque to 30–35 ft-lb.
2. Carefully feed transducer connector through rubber grommet (315). Install fluid filter (318) on control plate (301) with three screws (319).
3. Connect lead (E) to control board (302).
4. Install cover (322) with five screws (307).

Pressure Adjust Potentiometer

Removal

1.  Relieve pressure; page 5.
2. Fig. 15. Remove five screws (307) and cover (322).
3. Disconnect lead (D) from control board (302).
4. Loosen set screws on potentiometer knob (313) and remove knob, shaft nut, lockwasher (310) and pressure adjust potentiometer (310).
5. Remove seal (311) from potentiometer (310).

Installation

1. Fig. 15. Install seal (311) on potentiometer (310).
2. Install potentiometer (310), shaft nut, lockwasher (310), and potentiometer knob (313).
 - a. Turn potentiometer shaft (310) clockwise to internal stop. Assemble potentiometer knob (313) to strike pin on plate (312) and have bottom of knob clear plate by .040 to .060 in.
 - b. After adjustment of step a., tighten both set screws in knob 1/4 to 3/8 turn after contact with shaft.
3. Connect lead (D) to control board (302).
4. Install cover (322) with five screws (307).

Pressure Control

Control Board Diagnostics

1. Fig. 15. Remove five screws (307) and cover (322).
2. Start engine.
3. Turn ON/OFF switch ON.
4. Observe LED operation and reference following table:

LED BLINKS	SPRAYER OPERATION	INDICATES	WHAT TO DO
Two times repeatedly	Sprayer shuts down and LED continues to blink two times repeatedly	Run away pressure. Pressure greater than 4500 psi (310 bar, 31 MPa).	<ol style="list-style-type: none">1. Check pressure transducer connection at control board2. Replace pressure transducer3. Replace control board
Three times repeatedly	Sprayer shuts down and LED continues to blink three times repeatedly	Pressure transducer is faulty or missing	<ol style="list-style-type: none">1. Check pressure transducer connection at control board2. Replace pressure transducer3. Replace control board
Four times repeatedly	Sprayer shuts down and LED continues to blink four times repeatedly	Generator voltage is low	<ol style="list-style-type: none">1. Increase engine throttle2. Check wiring connections3. Service Honda engine alternator
Five times repeatedly	Sprayer shuts down and LED continues to blink five times repeatedly	High clutch current	<ol style="list-style-type: none">1. Check clutch 5-pin bulkhead connector. Clean contacts.2. Measure $1.2 \pm 0.2\Omega$ (LL 3900); $1.7 \pm 0.2\Omega$ (LL 5900) across clutch field at 70°F3. Replace clutch field assembly
Six times repeatedly	Sprayer shuts down and LED continues to blink six times repeatedly	High clutch temperature	<ol style="list-style-type: none">1. If clutch is new, let sprayer cool down and then restart2. Inspect clutch. Replace clutch if there is excessive wear.3. Remove pump pin, separate gear box from clutch housing. Rotate rotor clockwise to check for excessive drag in gear box.

Displacement Pump

Removal

1. Fig. 16. Flush pump.

2.  Relieve pressure; page 5.

3. Cycle pump until piston rod (A) is in its lowest position.

4. Remove suction/drain hose (27).

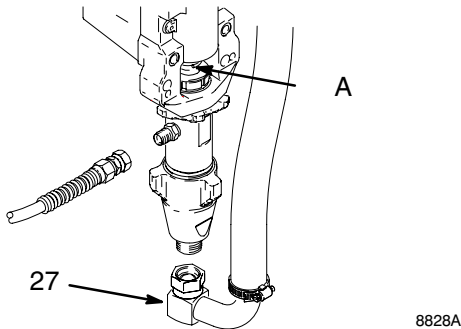


Fig. 16

5. Fig. 17. Use screwdriver: push retaining spring up and push out pin (82).

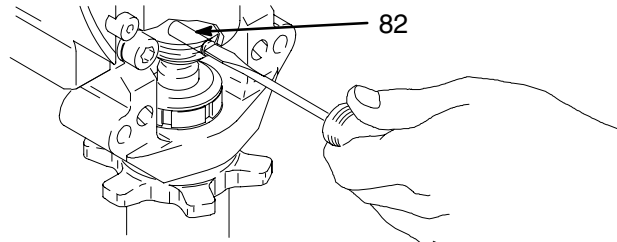


Fig. 17

6. Fig. 18. Loosen locknut by hitting firmly with a 20 oz (maximum) hammer. Unscrew pump.

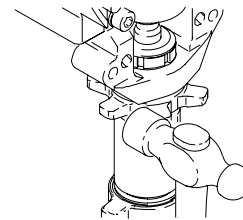


Fig. 18

Repair (See manual 308798 for pump repair instructions)

Installation

WARNING

If pin works loose, parts could break off due to force of pumping action and project through the air and cause serious injury or property damage.

CAUTION

If the pump locknut loosens during operation, the threads of the bearing housing will be damaged.

1. Fig. 19. Pull piston rod out 1.5 in. Screw in pump until holes in bearing cross link and piston rod align.

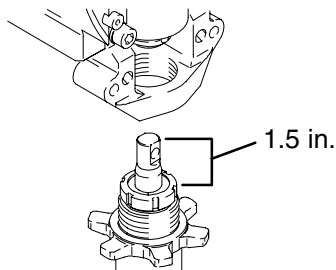


Fig. 19

7676B

2. Fig. 17. Push pin (82) into hole, and push retaining spring into groove around connecting rod.

3. Fig. 20. Screw jam nut down onto pump until nut stops. Screw pump up into bearing housing until it is stopped by jam nut. Back off pump and jam nut to align pump outlet to back. Tighten jam nut by hand, then tap 1/8 to 1/4 turn with a 20 oz hammer to approximately 75 ± 5 ft-lb (102 N·m).

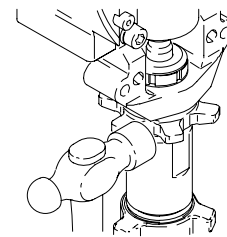


Fig. 20

7673B

4. Fig. 21. Fill packing nut with Graco TSL, through the slit, until fluid flows onto the top of seal.

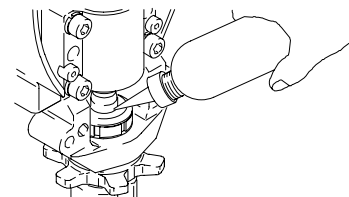
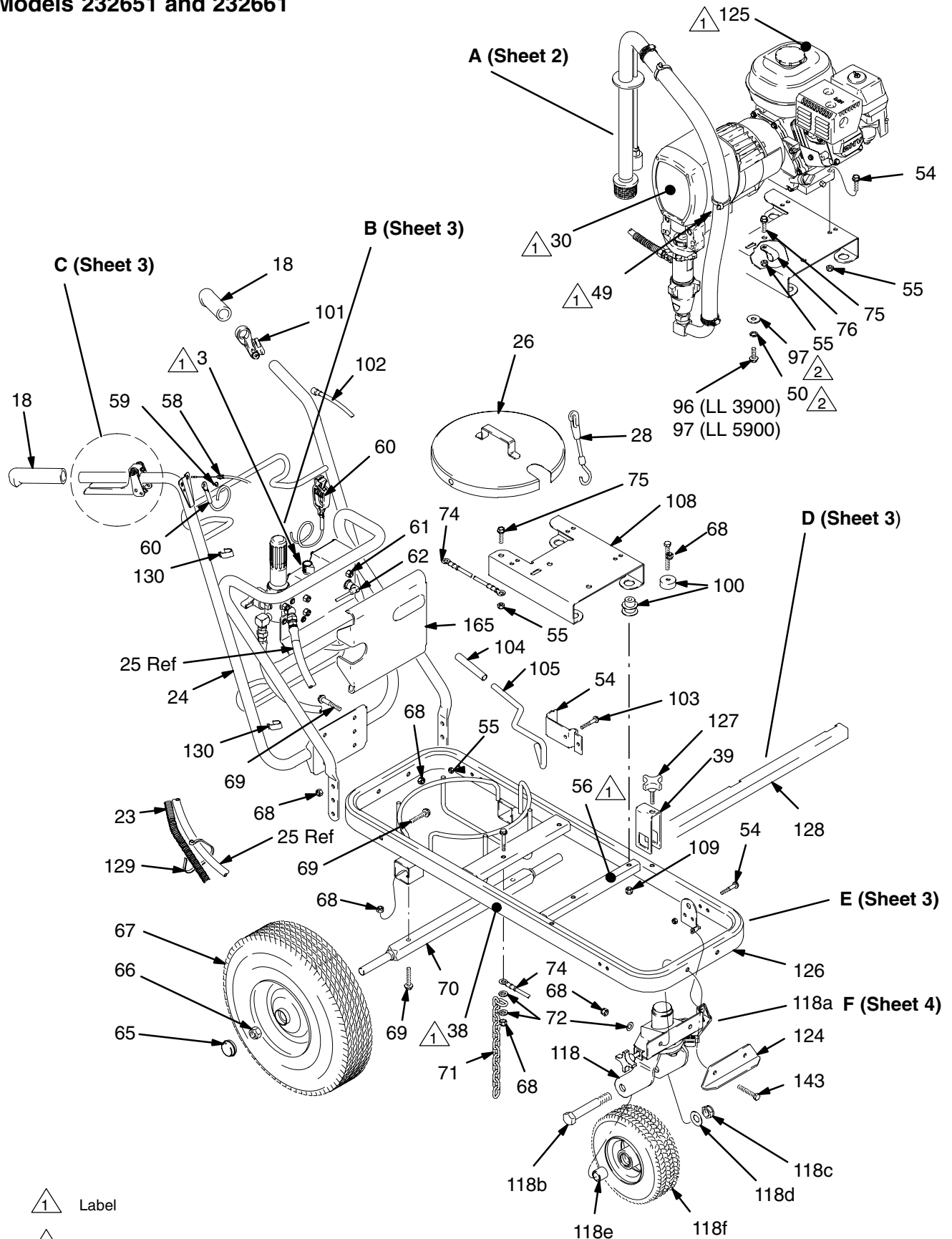


Fig. 21

7677B

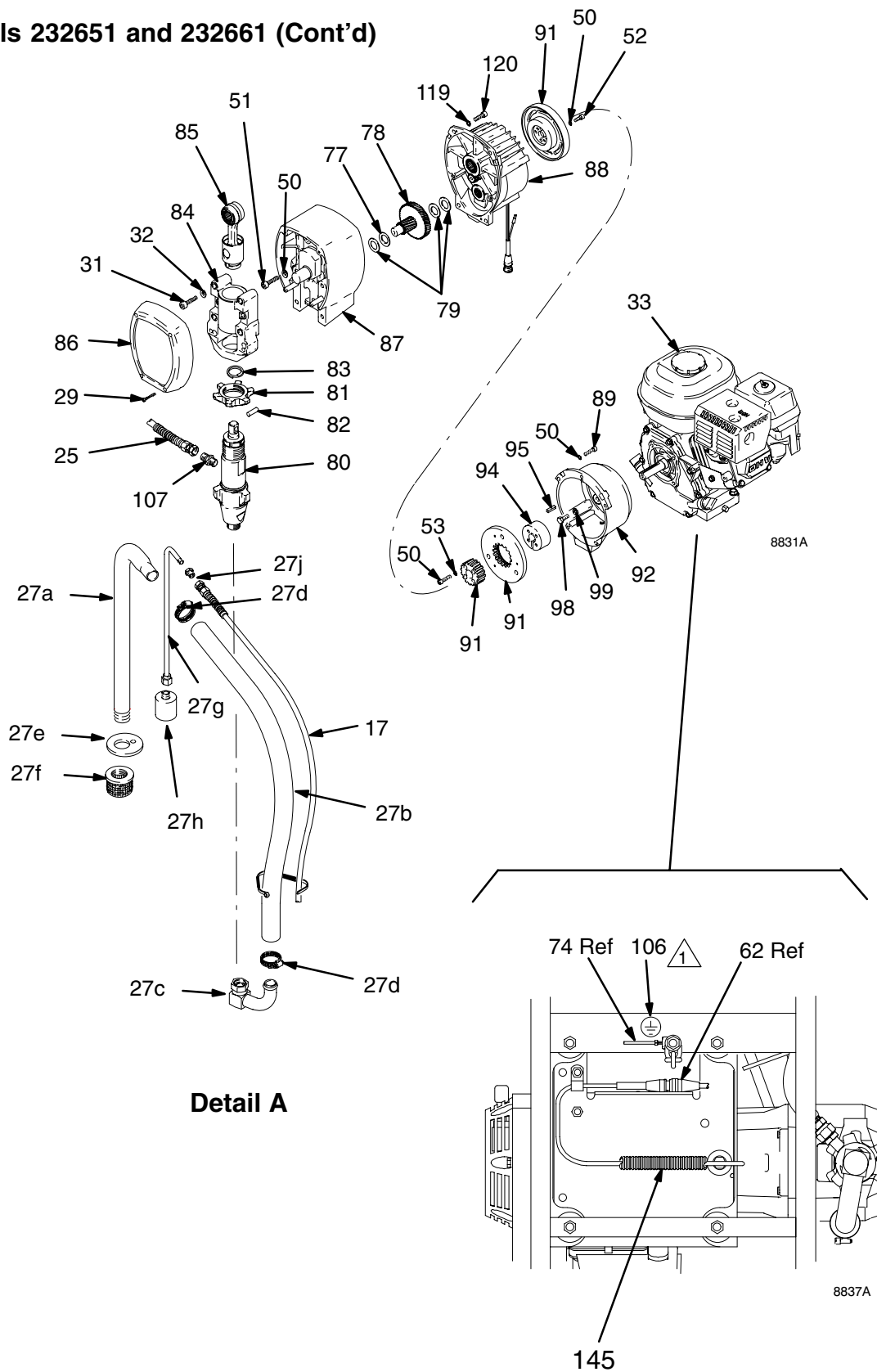
Parts – LineLazer II

Models 232651 and 232661



Parts – LineLazer II

Models 232651 and 232661 (Cont'd)

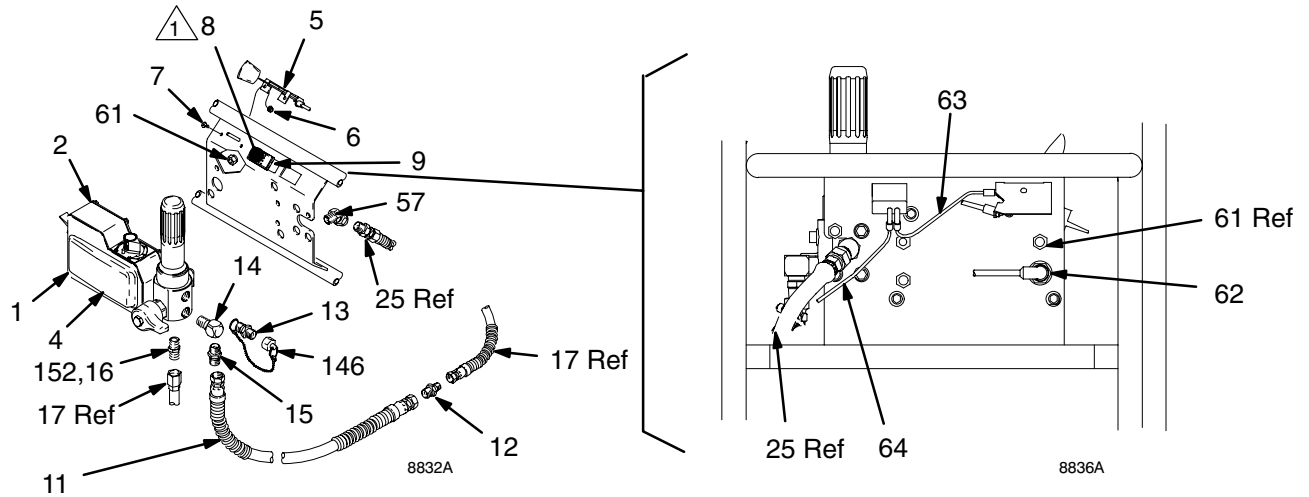


1 Label

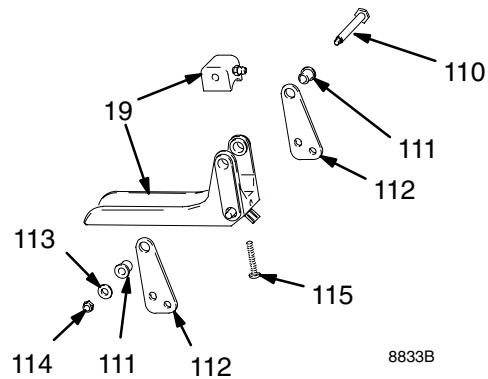
Sheet 2 of 5

Parts – LineLazer II

Models 232651 and 232661 (Cont'd)



Detail B

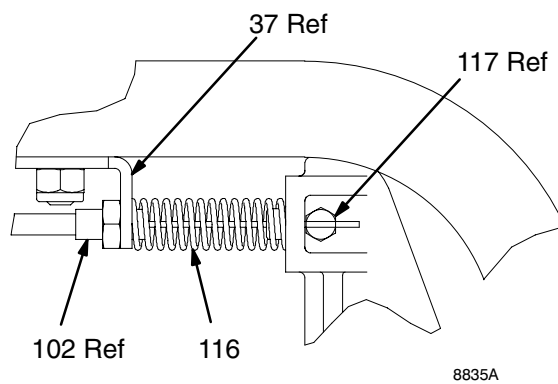
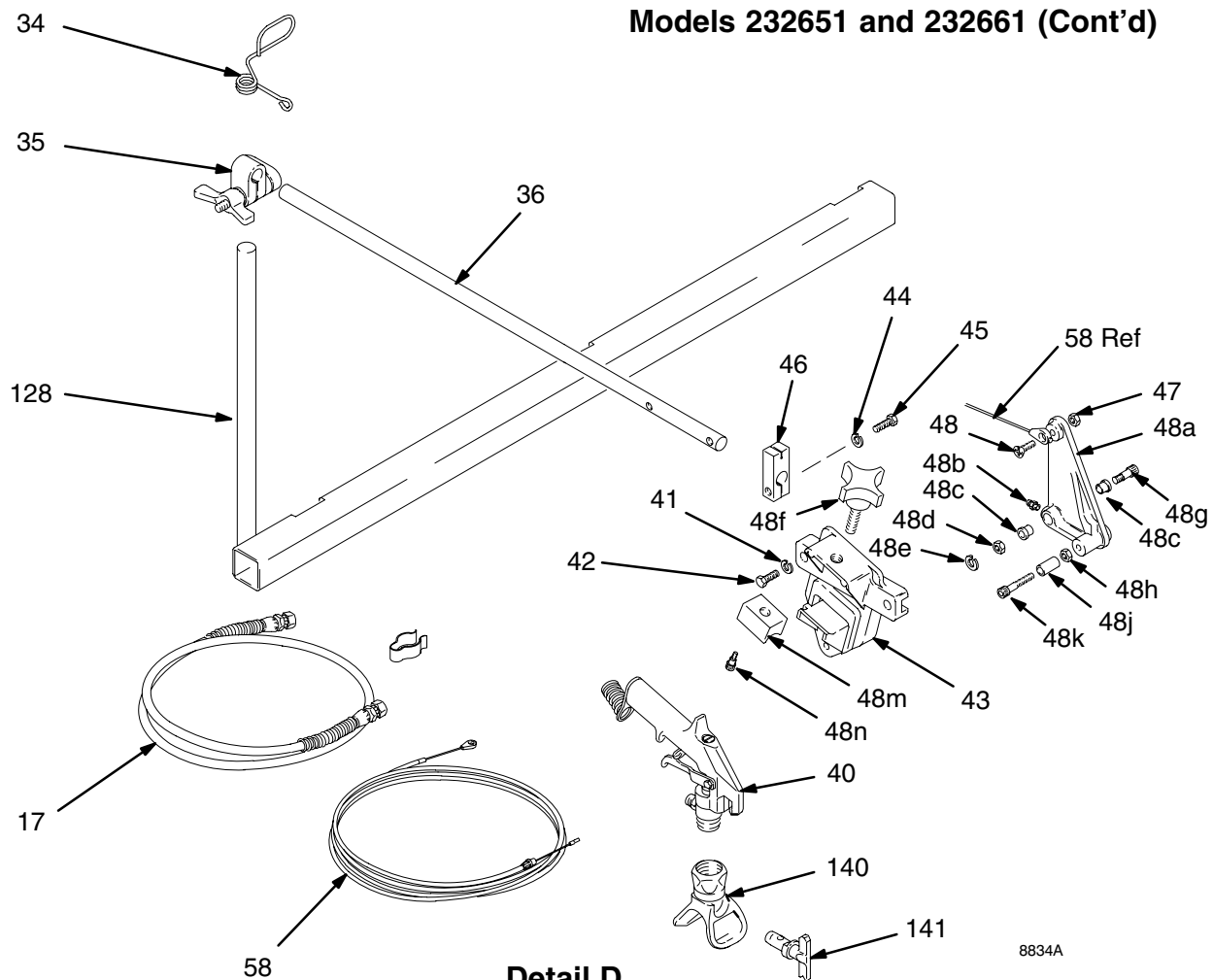


Detail C

Sheet 3 of 5

Parts – LineLazer II

Models 232651 and 232661 (Cont'd)

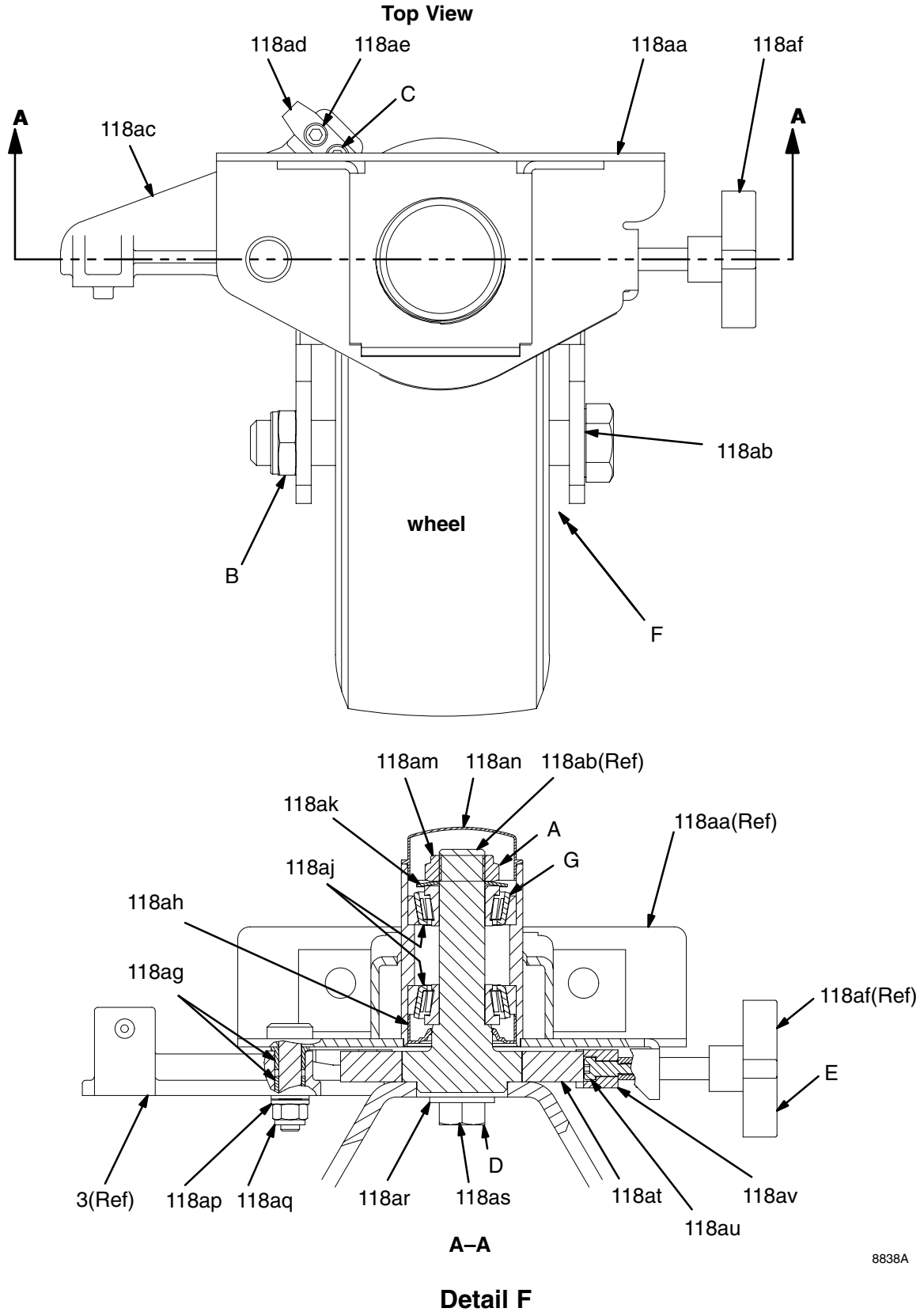


Detail E

Sheet 4 of 5

Parts – LineLazer II

Models 232651 and 232661 (Cont'd)



8838A

Parts – LineLazer II

Models 232651 and 232661

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	114631	SCREW, thread forming, hex hd	5	38	186821	LABEL, warning	2
2		PRESSURE CONTROL Parts, page 26	1	39	240780	BRACKET, arm, gun	2
3	194071	LABEL, identification	1	40	243284	GUN, flex, basic	1
4	241444	COVER, abs, painted	1	41	100016	WASHER, lock	2
5	114955	CONTROL, throttle	1	42	100021	SCREW, cap, hex hd	2
6	109466	NUT, lock, hex	2	43	241001	HOLDER, gun	1
7	112380	SCREW, machine, pan hd	2	44	100133	WASHER, lock	2
8	194314	LABEL, warning	1	45	100101	SCREW, cap, hex hd	1
9	114954	SWITCH, rocker	1	46	186699	BLOCK, mounting, cable	1
10	114271	STRAP, retaining	1	47	101345	NUT, hex, jam	1
11	240797	HOSE, coupled, 3/8 in. x 50 ft	1	48	111230	SCREW, machine, fil hd	1
12	196176	NIPPLE, adapter	2	48a	186747	LEVER, actuator	1
13	196177	ADAPTER	1	48b	100846	FITTING, lubrication	1
14	196179	ELBOW, street	1	48c	111016	BEARING, flanged	2
15	196178	NIPPLE, pipe	1	48d	100015	NUT, hex, 1/4–20	1
16	196181	NIPPLE	1	48e	110755	WASHER	1
17	241000	HOSE, coupled, 1/4 in. x 7 ft	2	48f	181818	KNOB	1
18	114659	GRIP, handle	2	48g	111045	SCREW, shoulder, sch, 5/16 x 1 in.	1
19	224144	TRIGGER, linestriper	1	48h	101345	NUT, hex, 1/4–20	2
20	111482	RIVET, snap	2	48j	108535	BEARING, sleeve	1
21	111484	STRAP, nylon, tie	2	48k	107445	CAPSCREW, sch, 1/4–20 x 1–1/2 in.	1
23	194328	TUBE, nylon	1	48m	181795	JAW, clamp	1
24	240705	HANDLE, linestriper	1	48n	108483	SCREW, shoulder, 1/4 x 3/8 ins	1
25	240791	HOSE, coupled, 3/8 in. x 2.4 ft	1	49	194125	LABEL, danger, English	1
26	241005	KIT, cover, pail	1	50	105510	WASHER, lock, spring	17
27	241340	REPAIR KIT, suction hose	1	51		SCREW, cap, soc. hd	
27a	170957	. TUBE, suction	1		107218	LL 3900	2
27b	185381	. HOSE, nylon	1		104008	LL 5900	10
27c	110194	. UNION, swivel, 180°	1	52		SCREW, cap, soc. hd	
27d	101818	. CLAMP, hose	2		101682	LL 3900	4
27e	193711	. GASKET, pail	1		114686	LL 5900	8
27f	181072	. STRAINER, inlet	1	53		SCREW, hex, soc. hd	
27g	194298	. TUBE, drain	1		108803	LL 3900	10
27h	241718	. DEFLECTOR	1		108803	LL 3900	6
27j	196180	. BUSHING	1	54	110837	SCREW, flange, hex	3
28	114690	STRAP	2	55	111040	NUT, lock, nylock	5
29	114418	SCREW, self tap, fil hd	4	56	189919	BLANK, label	1
30		LABEL, identification		57	196182	UNION, swivel, 90°	1
	194069	LL 3900	1	58	241418	REPAIR KIT, cable	1
	194070	LL 5900	1	59	112798	SCREW, thread forming, hex hd	1
31		SCREW		60	237686	CLAMP, grounding assembly	1
	107210	LL 3900	4	61	110838	NUT, lock	4
	114666	LL 5900	4	62	114647	CABLE, power	1
32	106115	WASHER, lock spring	4	63	241294	CONDUCTOR, electrical	1
33		ENGINE		64	241293	CONDUCTOR, electrical	1
	108879	LL 3900	1	65	114648	CAP, dust	2
	114530	LL 5900	1	66	112405	NUT, lock	3
34	188135	GUIDE, cable	1	67	111020	WHEEL, pneumatic	2
35	114029	CLAMP, swivel, adjustable	1	68	101566	NUT, lock	18
36	181734	ARM, support	1	69	111194	SCREW, cap, flange hd	6
37	193665	BRACKET, cable	1	70	193405	AXLE	1

Parts – LineLazer II

Models 232651 and 232661 (Cont'd)*

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
71	186812	CHAIN, ground, 3.5 hp	1	92		CLUTCH HOUSING	
72	100731	WASHER	3		193540	LL 3900	1
73	114653	SCREW, cap, flange hd	1		193531	LL 5900	1
74	240999	CONDUCTOR, ground	2	94	193680	COLLAR, shaft	1
75	110963	SCREW, cap, flange hd	2				
76	108868	CLAMP, wire	2	95	183401	KEY, parallel	1
77	114699	WASHER, thrust	1	96		SCREW, cap, hex hd	
78		GEAR, combination			100469	LL 3900	1
	241439	LL 3900	1		101864	LL 5900	4
	241440	LL 5900	1	97		WASHER, plain	
79	114672	WASHER, thrust	3		108851	LL 3900	1
80		DISPLACEMENT PUMP			113802	LL 5900	1
	239923	LL 3900	1	98		SCREW, cap, soc. hd	
	240291	LL 5900	1		109031	LL 3900	4
					108842	LL 5900	4
81		NUT, retaining		99		WASHER, lock, spring	
	192723	LL 3900	1		104008	LL 3900	4
	193031	LL 5900	1		100214	LL 5900	4
82		PIN, STRAIGHT		100	104766	MOUNT, motor	4
	176818	LL 3900	1				
	183210	LL 5900	1	101	194310	LEVER, actuator	1
83		SPRING, retaining		102	241445	CABLE	1
	176817	LL 3900	1	103	193693	BRACKET, mounting	1
	183169	LL 5900	1	104	114808	CAP, vinyl	1
84		BEARING HOUSING		105	193692	ROD, brake	1
	240523	LL 3900	1	106	186620	LABEL, symbol, ground	1
	241015	LL 5900	1	107		NIPPLE, adapter	
85		CONNECTING ROD			196176	LL 3900	2
	241008	LL 3900	1		196178	LL 5900	1
	241012	LL 5900	1	108	193677	PLATE, mounting	1
86		COVER, housing		109	106212	SCREW, cap, hex hd	4
	179899	LL 3900	1	110	190098	TRIGGER, pivot	1
	241308	LL 5900	1	111	111017	BEARING, flange	2
87		DRIVE HOUSING; Parts, page 25		112	186696	PLATE, lever, pivot	2
	241007	LL 3900	1	113	100718	WASHER	1
	241011	LL 5900	1	114	107110	LOCKNUT	1
88		PINION HOUSING; Parts, page 25		115	111235	SCREW, mach, pan hd	1
	241108	LL 3900	1				
	241112	LL 5900	1				
89	100644	SCREW, cap, soc. hd	5				
91		KIT, clutch**					
	241109	LL 3900 (4 in.)	1				
	241113	LL 5900 (5 in.)	1				

▲ *Danger & Warning labels, tags, and cards are free.*

* *Models 233011 through 233014 include European Pail Cover and Holder 240717 and Pressure Gauge Kit 241339*

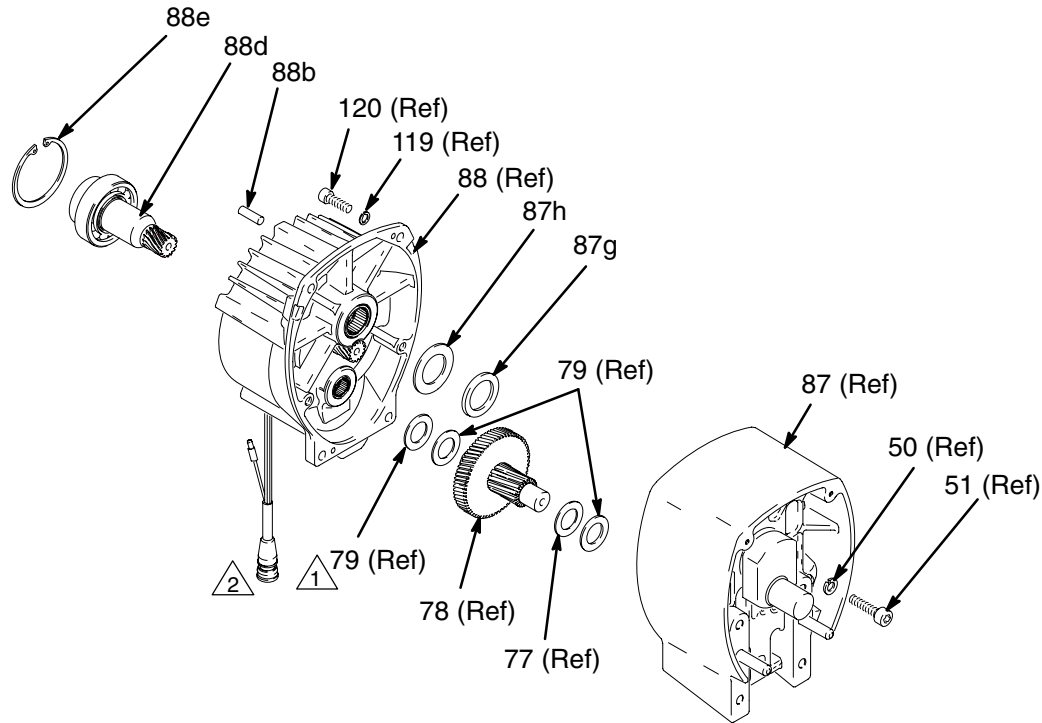
** *Includes rotor, armature, and hub.*

Parts – LineLazer II

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
116	114682	SPRING, compression	1				
117	114802	STOP, wire	1	119		LOCKWASHER	
					105510	LL 3900	4
118	240719	KIT ASSY, wheel/swivel	1		104008	LL 5900	4
118a	240719	. CASTER ASSY, swivel	1	120		SCREW, cap, soc. hd	
118aa	240940	. . KIT, repair, bracket, hub	1		100644	LL 3900	4
		includes 118aj (2) and 118ah (1)			101864	LL 5900	4
118ab	240942	. . SHAFT, fork	1	124	240991	BRACKET, caster, front	1
118ac	193528	. . ARM, detent	1	125	194126	LABEL, warning	1
118ad	193662	. . PIN, locking, tapered	1	126	240704	FRAME, linestriper	1
118ae	110754	. . SCREW, cap, soc hd	2	127	108471	KNOB, pronged	2
118af	181818	. . KNOB, pronged	1	128	224052	BRACKET, support gun	1
118ag	114548	. . BEARING, bronze	2	129	114958	STRAP, tie	7
118ah	113484	. . SEAL, grease	1	130	178342	CLIP, spring	4
				138	206994	THROAT SEAL LIQUID; not shown	1
118aj	113485	. . BEARING, cup/cone	2	140	243161	GUARD, tip, spray, cylinder	1
118ak	112825	. . SPRING, belleville	1				
118am	112405	. . NUT, lock	1	141	LL5319	TIP, spray, cylinder	1
118an	114648	. . CAP, dust	1	143	114982	SCREW, cap, flange hd	2
118ap	107194	. . WASHER, plain	1	144	114956	TERMINAL (not shown)	1
118aq	108000	. . NUT, lock	1	145	194438	WRAP, corrugated	1
118ar	113962	. . WASHER, hardened	1	146	240131	PLUG, fitting	1
118as	114681	. . SCREW, cap, hex hd	1	147	404378	CLAMSHELL (not shown)	1
118at	193660	. . DISK, adjuster	1	150	115077	PAIL (not shown)	1
118au	193661	. . JAW	1	151		SPACER	
118av	108483	. . SCREW, shoulder, soc hd	1		194411	LL 3900	1
					194172	LL 5900	1
118b	113471	. . SCREW, cap, hex hd	1	152	195119	LABEL, caution	1
118c	112405	. . NUT, lock	1	165	194953	SHIELD, control	1
118d	112825	. . SPRING, Belleville	1				
118e	193658	. . SPACER, seal	2				
118f	114549	. . WHEEL, pneumatic	1				

▲ *Danger & Warning labels, tags, and cards are free.*

Parts – Drive and Pinion Housings



△1 Only used on LineLazer 3900.

△2 Pinion housing 88 includes clutch field and connector.

TI0177A

Ref No. 87 and 88

Ref No. 88: Pinion Housing Assembly 241108 for LL 3900; Pinion Housing Assembly 241112 for LL 5900

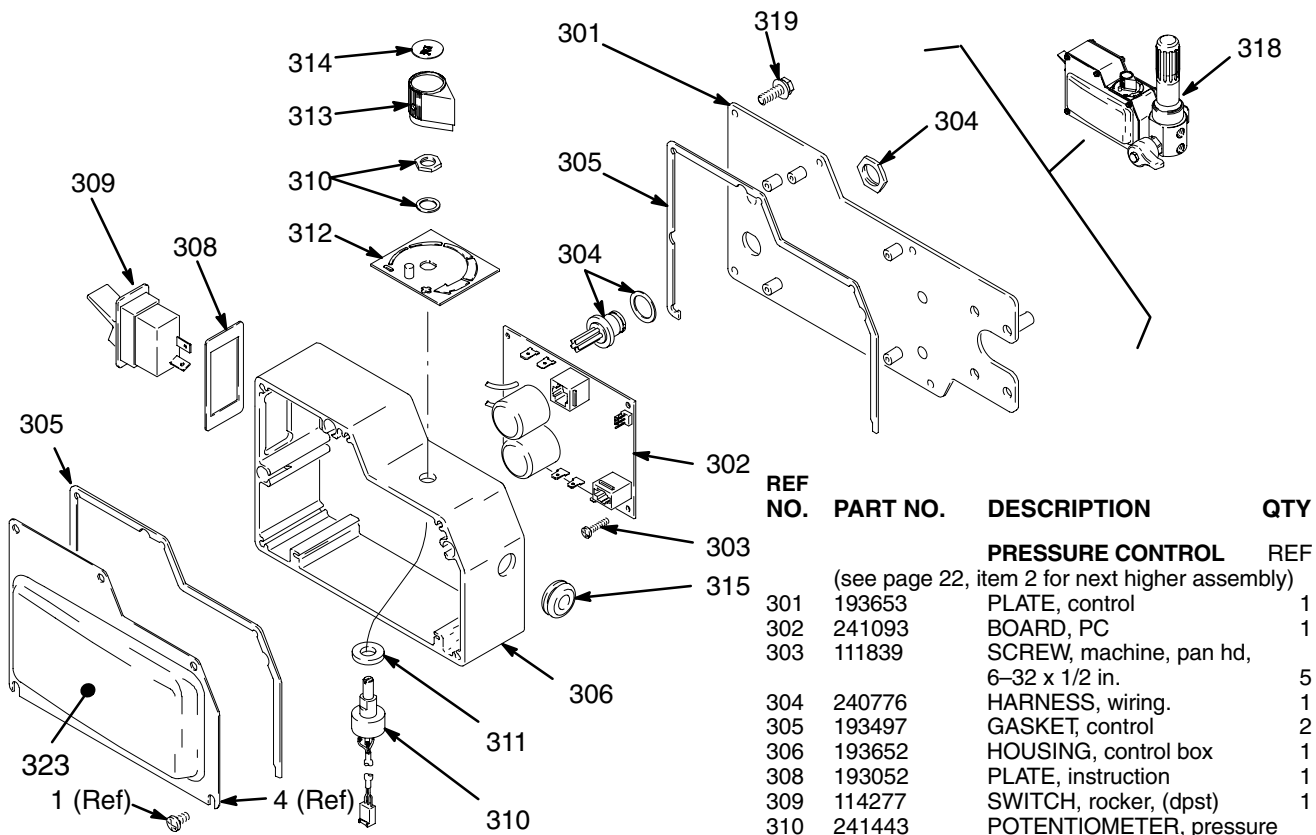
Ref No. 87: Drive Housing Assembly 241007 for LL 3900; Drive Housing Assembly 241011 for LL 5900

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
88		PINION HOUSING	1	87		DRIVE HOUSING ASSEMBLY	
88b	105489	PIN	2	87g*		WASHER	
88d*		PINION SHAFT			107089	LL 3900	1
	241110	LL 3900	1		194173	LL 5900	1
	241114	LL 5900	1	87h*		WASHER	
88e*		RETAINING RING, large			194411	LL 3900	1
	113094	LL 3900	1		194172	LL 5900	1
	112770	LL 5900	1				

*Must be ordered separately.

*Must be ordered separately.

Parts – Pressure Control



REF NO.	PART NO.	DESCRIPTION	QTY
		PRESSURE CONTROL	REF
	(see page 22, item 2 for next higher assembly)		
301	193653	PLATE, control	1
302	241093	BOARD, PC	1
303	111839	SCREW, machine, pan hd, 6-32 x 1/2 in.	5
304	240776	HARNESS, wiring.	1
305	193497	GASKET, control	2
306	193652	HOUSING, control box	1
308	193052	PLATE, instruction	1
309	114277	SWITCH, rocker, (dpst)	1
310	241443	POTENTIOMETER, pressure control	1
311	193657	O-RING, packing	1
312	193654	PLATE, instruction	1
313	114273	KNOB, potentiometer	1
314	193072	LABEL, control	1
315	114629	GROMMET, transducer	1
316	240314	TRANSDUCER, pres. cont. (see page 27 for parts location)	1
317	111457	PACKING, o-ring (see page 27 for parts location)	1
318		FLUID FILTER; Parts, page 27	1
319	110997	SCREW, flange, hex	3
320	114532	TIE, wire, twist	1
322	241444	COVER, pressure control	1
323	194071	LABEL, identification	1

Wiring Diagrams

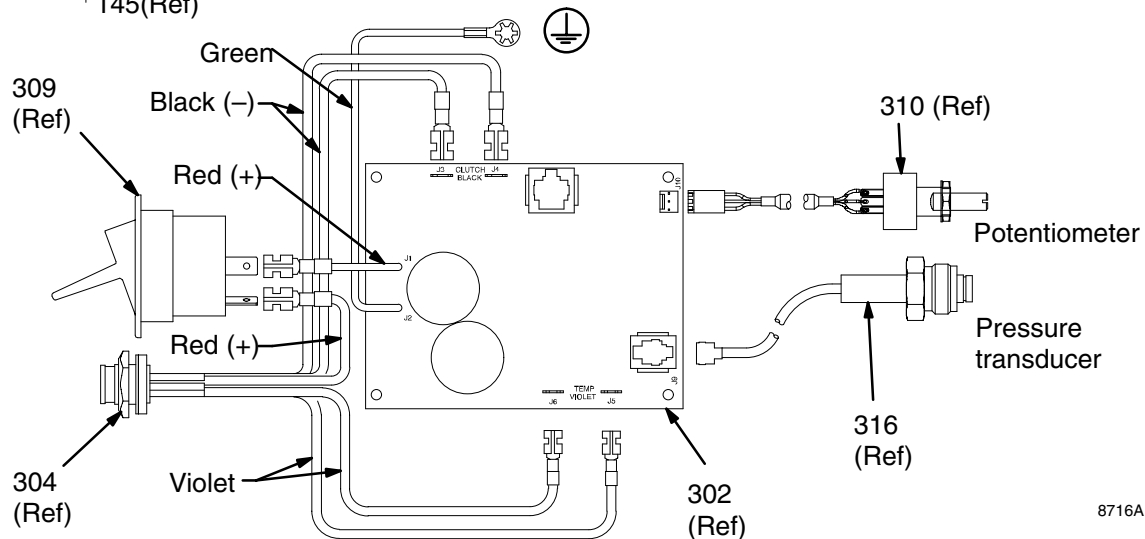
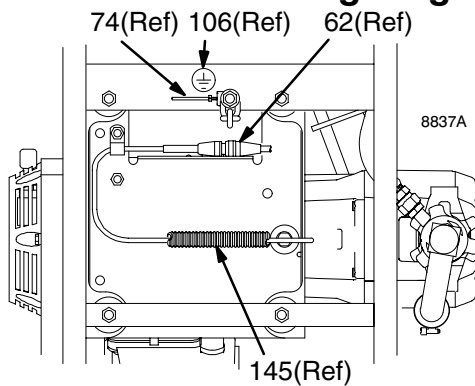
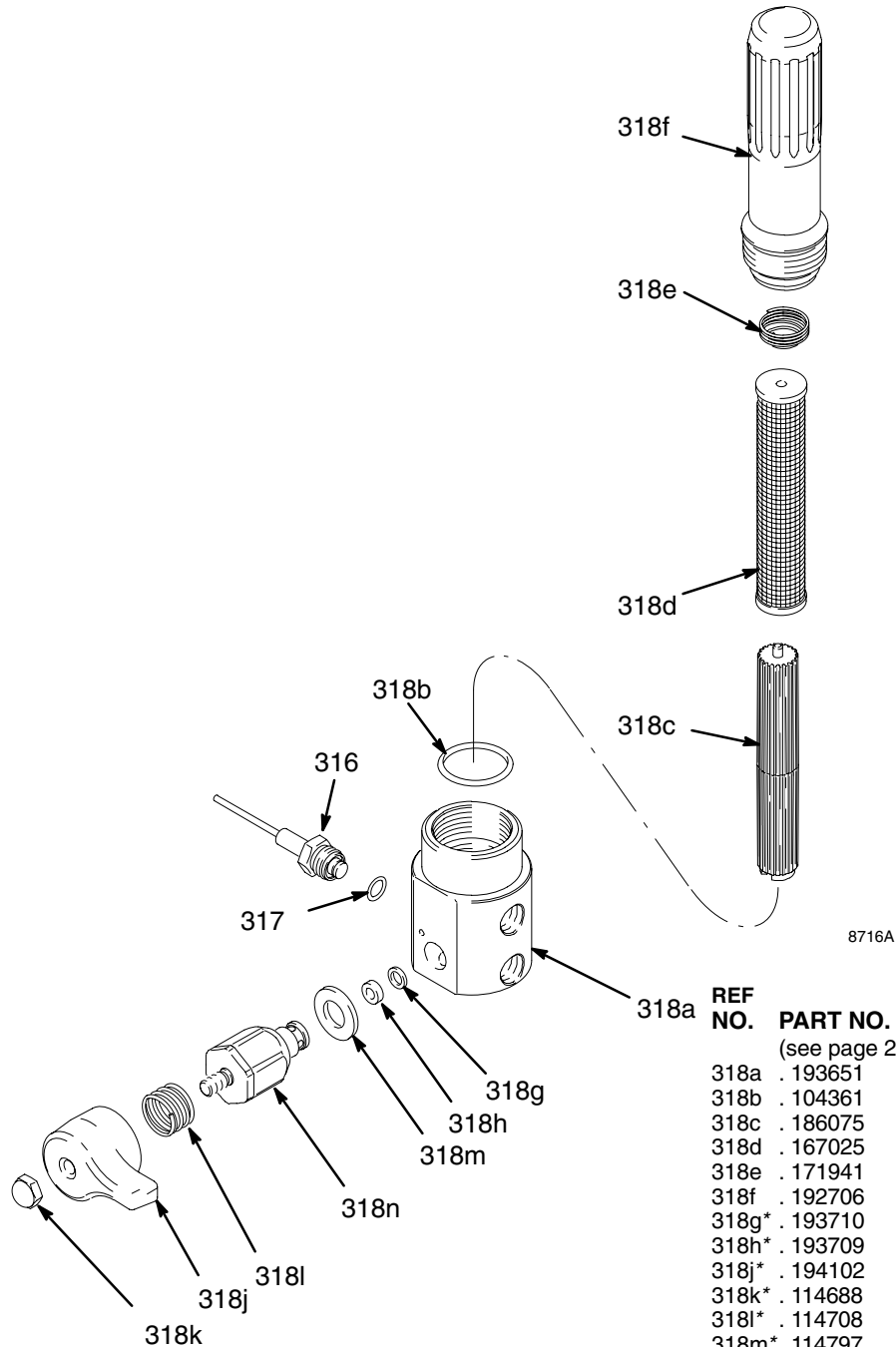


Fig. 22

8716A

Parts – Fluid Filter



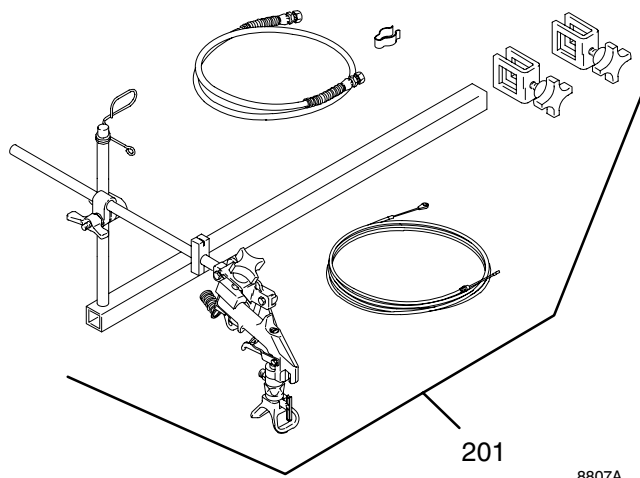
REF NO.	PART NO.	DESCRIPTION	QTY
(see page 26, item 318 for next higher assembly)			
318a	. 193651	HOUSING, filter	1
318b	. 104361	O-RING	1
318c	. 186075	SUPPORT, filter	1
318d	. 167025	STRAINER, mesh, 60	1
318e	. 171941	SPRING, compression	1
318f	. 192706	BOWL, filter	1
318g*	. 193710	SEAT, valve	1
318h*	. 193709	SEAT, valve	1
318j*	. 194102	HANDLE, valve	1
318k*	. 114688	NUT, cap, hex hd	1
318l*	. 114708	SPRING, compression	1
318m*	. 114797	GASKET	1
318n*	. 245103	VALVE	1
316	240314	TRANSDUCER, pres. cont.	REF
(see item 316 page 26 for parts list)			
317	111457	PACKING, o-ring	REF
(see item 317 page 26 for parts list)			

*Part of 245103 Drain Valve Replacement Kit.

Complete Sprayers with 2nd Gun Kit

Models 232652, 232662 with 2nd Gun Kit

Ref No.	Part No.	Description	Qty
	232652	LineLazer II 3900 See parts list on page 17	1
	232662	LineLazer II 5900 See parts list on page 17	1
201	241284	KIT, second gun and hose Parts, manual 308939	1

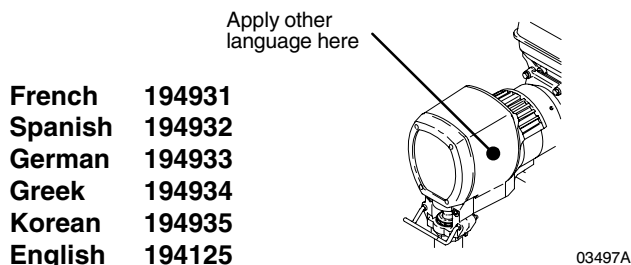


Accessories

DANGER LABELS

An English language DANGER label is on your sprayer. If you have painters who do not read English, order one of the following labels to apply to your sprayer. The drawing shows the best placement of these labels for good visibility.

Order the labels from your Graco distributor.



15 Gallon Paint Hopper Kit 241104

Provides large material capacity for LL 3900/LL5900.

15 Gallon Paint Hopper Kit 241103

Provides large material capacity for LL 3500/LL5000.

(Note: for LL3500 also order **Suction Tube Kit 238962**).

Caster Wheel Replacement Kit 240719

Replacement caster wheel.

Displacement Pump Repair Kit

Packing repair kit.

LineLazer 3900 239928

LineLazer 5900 240248

European Pail Cover and Holder 240717

Flex Gun Repair Kit 235474

Includes needle, gasket, diffuser/seat.

Glass Bead Application Systems

An application system for applying glass beads.

One Dispenser System (complete system) 241447

Two Dispenser System (complete system) 241100

Dispenser Kit (includes dispenser and hose) 241448

Two Dispenser System 241530
(for LL 3500 and LL 5000)

Line Pointer Kits

Used as pointer guides for line application.

Short 241101

Long 241102

Pressure Gauge Kit 241339

Reverse Handlebar Kit 240714

Allows application from either front or back of unit.

Swivel Wheel Kit 241105

Swivel wheel replacement kit for LL 3500 and LL 5000.

Technical Data

Honda GX120 Engine

Power Rating @ 3600 rpm

ANSI 4.0 Horsepower
DIN 6270B/DIN 6271

NA 2.1 Kw – 2.8 Ps

NB 2.6 Kw – 3.6 Ps

Honda GX160 Engine

Power Rating @ 3600 rpm

ANSI 5.5 Horsepower
DIN 6270B/DIN 6271

NA 2.9 Kw – 4.0 Ps

NB 3.6 Kw – 4.9 Ps

Maximum working pressure 3300 psi
(227 bar, 22.7 MPa)

Noise Level

Sound power 105 dBA
per ISO 3744

Sound pressure 96 dBA
measured at 3.1 feet (1 m)

Cycles/gallon (liter)

LineLazer II 3900 104 (27.5)

LineLazer II 5900 104 (27.5)

Maximum delivery

LineLazer II 3900 1.15 gpm (4.4 liter/min)

LineLazer II 5900 1.5 gpm (5.7 liter/min)

Maximum tip size

LineLazer II 3900 1 gun with 0.034 in. tip

2 guns with 0.024 in. tip

LineLazer II 5900 1 gun with 0.041 in. tip

2 guns with 0.028 in. tip

Inlet paint strainer 16 mesh (1190 micron)
stainless steel screen, reusable

Outlet paint filter 60 mesh (250 micron)
stainless steel screen, reusable

Pump inlet size 3/4 in. npt (m)

Fluid outlet size 1/4 npsm from fluid filter

Wetted parts

Displacement Pump .. stainless steel, carbon steel,
polyurethane, UHMW polyethylene,
Delrin®, leather

Filter aluminum, carbon steel, stainless steel

NOTE: Delrin® is a trademark of the DuPont Company.

Dimensions

LineLazer II 3900

Model 232651, 233011

Complete Sprayer

Weight (dry, without packaging) 212 lb (96 kg)

Height 40 in. (101.6 cm)

Length 65 in. (165.1 cm)

Width 32 in. (81.3 cm)

Model 232652, 233012

Complete Sprayer with 2nd Gun Kit

Weight (dry, without packaging) 222 lb (101 kg)

Height 40 in. (101.6 cm)

Length 65 in. (165.1 cm)

Width 32 in. (81.3 cm)

LineLazer II 5900

Model 232661, 233013

Complete Sprayer

Weight (dry, without packaging) 232 lb (105 kg)

Height 40 in. (101.6 cm)

Length 65 in. (165.1 cm)

Width 32 in. (81.3 cm)

Model 232662, 233014

Complete Sprayer with 2nd Gun Kit

Weight (dry, without packaging) 242 lb (110 kg)

Height 40 in. (101.6 cm)

Length 65 in. (165.1 cm)

Width 32 in. (81.3 cm)

Graco Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

ADDITIONAL WARRANTY COVERAGE

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
1-800-690-2894 Toll Free

*All written and visual data contained in this document reflect the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.*

Sales Offices: Minneapolis, Detroit
International Offices: Belgium, Korea, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

www.graco.com

PRINTED IN USA 308874 March 1999, Revised 01/2006