INSTRUCTIONS-PARTS LIST

LineLazer™ III 3900 and 5900 Airless Paint Stripers

3300 psi (228 bar, 22.8 MPa) Maximum Working Pressure

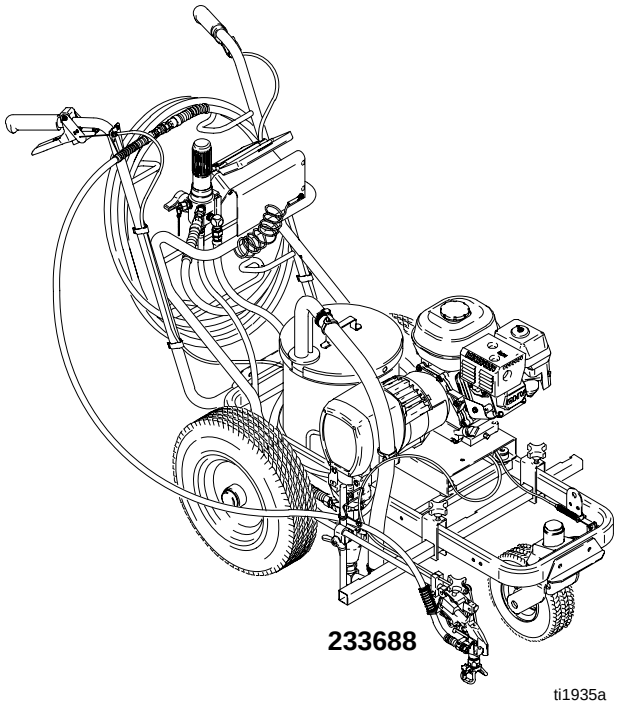
309414 rev.G

LineLazer III 3900

Model	Series	Description
233688	A	Striper with one Gun
233689	A	Striper with Second Gun Kit
233664	A	International Striper with one Gun
233694	A	International Striper with 2nd Gun Kit

LineLazer III 5900

Model	Series	Description
233690	A	Striper with one Gun
233691	A	Striper with Second Gun Kit
233627	A	International Striper with one Gun
233695	A	International Striper with 2nd Gun Kit



233688

ti1935a

Important Safety Instructions
Read all warnings and instructions in this manual.
Save these instructions.

Related Manuals

* for spray tip selection, see page 4

Table of Contents

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

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

Warnings and Cautions

Warning Symbol

⚠ WARNING

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

Caution Symbol

⚠ CAUTION

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

⚠ WARNING

Fire and explosion hazard: Solvent and paint fumes can ignite or explode.

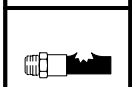
To help prevent a fire and explosion:

- **Use only in an extremely well ventilated area.**
- Eliminate all ignition sources; such as pilot lights, cigarettes and plastic drop cloths (static arc hazard). Do not plug or unplug power cords or turn lights on or off in spray area.
- Ground Sprayer, object being sprayed, paint and solvent pails.
- Hold gun firmly to side of grounded pail when triggering into pail.
- Use only conductive airless paint hose.
- 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.
- Do not fill fuel tank while engine is running or hot.
- Do not flush with gasoline.

Fluid injection and high pressure hazard: High pressure spray or leaks can inject fluid into the body.

To help prevent injection, always:

- Engage trigger safety latch when not spraying.
- Keep clear of nozzle and leaks.
- Never spray without a tip guard.
- Do **PRESSURE RELIEF** if you stop spraying or begin servicing sprayer.
- Do not use components rated less than sprayer *Maximum Working Pressure.*
- Never allow children to use this unit.



If high pressure fluid pierces your skin, the injury might look like “just a cut”. But it is a serious wound! Get immediate surgical treatment.

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 (LL5**319**) of the tip part number identifies the line width and tip orifice (opening).
For example: the line width for tip LL5319 is 4 in. as shown in the table below. The tip orifice for tip LL53**19** is .019 in.

LineLazer Tip Selection Table

Tip Size	Line Width	Used For
221203*	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
LL5327†	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

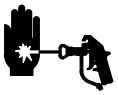
* May require 100 mesh filter to minimize tip plugging.
† Best for use with LineDriver.
# Best for cold weather applications.

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 pump 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.

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 engine oil and refill with clean oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

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.

Repack connecting rod (22) top needle bearing after every pump change.

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 engine oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

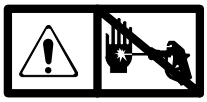
SPARK PLUG: Use only BPR6ES (NGK) or W20EPR–U (NIPPONDENSO) plug. Gap plug to 0.028 to 0.031 in. (0.7 to 0.8 mm). Use spark plug wrench when installing and removing plug.

Caster Wheel

(See letter call-outs in **Parts** drawing on page 22)

1. Once each year, tighten nut (164m) until spring washer bottoms out. Then back off the nut 1/2 to 3/4 turn.
2. Once each year, tighten nut (62) 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 (164e) 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 (154), align wheel and tighten bolt (154).

Troubleshooting



Relieve pressure; page 4.

PROBLEM	CAUSE	SOLUTION
E=XX is displayed	Fault condition exists	Determine fault correction from table, page 14.
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 3 to 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage.
Engine operates, but displacement pump does not operate	Error code displayed?	Reference pressure control repair. Page 13.
	Pump switch is OFF	Turn pump switch ON.
	Pressure setting is too low	Turn pressure adjusting knob clockwise to increase pressure.
	Fluid filter (318) is dirty	Clean filter. Page 24.
	Tip or tip filter is clogged	Clean tip or tip filter. Manual 309091.
	Displacement pump piston rod is stuck due to dried paint	Repair pump. Manual 309277.
	Connecting rod is worn or damaged	Replace connecting rod. Page 8.
	Drive housing is worn or damaged	Replace drive housing. Page 9.
	Electrical power is not energizing clutch field	Check wiring connections. Page 10. Reference pressure control repair. Page 13. Reference wiring diagram. Page 28. With pump switch ON and pressure turned to MAXIMUM, use a test light to check for power between clutch test points on control board. Remove 7–pin connector from control board and measure resistance across clutch coil. At 70° F, the resistance must be between 1.2 ±0.2Ω (LineLazer III 3900); 1.7 ±0.2Ω (LineLazer III 5900); if not, replace pinion housing. Have pressure control checked by authorized Graco dealer.
	Clutch is worn, damaged, or incorrectly positioned	Replace clutch. Manual 309890.
	Pinion assembly is worn or damaged	Repair or replace pinion assembly. Manual 309890.

Troubleshooting

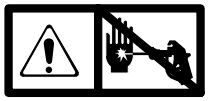
PROBLEM	CAUSE	SOLUTION
Pump output is low	Strainer (31) is clogged	Clean strainer. Sprayer 233716 strainer is for use in paint only.
	Piston ball (206) is not seating	Service piston ball. Manual 309277.
	Piston packings are worn or damaged	Replace packings. Manual 309277.
	O-ring (227) in pump is worn or damaged	Replace o-ring. Manual 309277.
	Intake valve ball is not seating properly	Clean intake valve. Manual 309277.
	Intake valve ball is packed with material	Clean intake valve. Manual 309277. Do not leave 233716 sprayer under pressure for more than 5 minutes when spraying texture and not actively spraying.
	Engine speed is too low	Increase throttle setting. Manual 309413.
	Clutch is worn or damaged	Replace clutch. Manual 309890.
	Pressure setting is too low	Increase pressure. Manual 309413.
	Fluid filter (318), tip filter or tip is clogged or dirty	Clean filter. Manual 309413 or 309093.
	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).
Excessive paint leakage into throat packing nut	Throat packing nut is loose	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
	Throat packings are worn or damaged	Replace packings. Manual 309277.
	Displacement rod is worn or damaged	Replace rod. Manual 309277.
Fluid is spitting from gun	Air in pump or hose	Check and tighten all fluid connections. Reprime pump. Manual 309413.
	Tip is partially clogged	Clear tip. Manual 309093.
	Fluid supply is low or empty	Refill fluid supply. Prime pump. Manual 309413. 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. Manual 309277.
	Paint is too thick	Thin the paint according to the supplier's recommendations
	Engine speed is too high	Decrease throttle setting before priming pump. Manual 309413.
Clutch squeaks each time clutch engages	Clutch surfaces are not matched to each other when new and may 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 3700 engine rpm at no load
	Worn engine governor	Replace or service engine governor

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Gallon counter not working	Broken or disconnected wire	Check wires and connections. Replace broken wires.
	Bad sensor	Replace sensor
	Missing magnet	Replace magnet. Locate in correct spot.
Sprayer operates, but display does not	Bad connection between control board and display	Remove display and reconnect
	Display damaged	Replace display
Distance counter not operating properly	Trigger sensor not set correctly	See “Spray icon does not show on display when fluid is sprayed”
	Bad wiring connections	Check connector, and reconnect
	Distance sensor not spaced correctly from gear	Adjust space between sensor and gear to .050 –/+ .020”
	Distance and gear not aligned	Remove tire, and press in or pull out gear to align sensor and gear.
	Gear teeth missing or damaged.	Replace distance gear/wheel
	Wire cracked or broken	Replace sensor
Mils not calculating	Distance sensor	See “Distance counter not operating properly”
	Trigger sensor	See “Spray icon does not show on display when fluid is sprayed”
	Gallon counter	See “Gallon counter not working”
	Bad or damaged control board	Replace control board
Fluid spray starts after spray icon is shown on display	Interrupter (213) is improperly positioned	Turn screw (215) counterclockwise until spray icon synchronizes with fluid spray
Fluid spray starts before spray icon is shown on display	Interrupter (213) is improperly positioned	Turn screw (215) clockwise until spray icon is synchronized with fluid spray
Spray icon does not show on display when fluid is sprayed	Loose connector	Check that 5-pin connector and reed switch are properly connected
	Interrupter (213) is improperly positioned	Turn screw (215) counterclockwise until spray icon synchronizes with fluid spray
	Reed switch assembly (207) is damaged	Replace reed switch assembly (207)
	Magnet on assembly (207) is missing	Replace reed switch assembly (207)
	A connector on wiring harness (58) or on reed switch (207) is damaged	Disconnect reed switch and 5-pin connector from back of control board. Check continuity between pin 1 on 2-pin connector and pin 1 on 5-pin connector. Check continuity between pin 2 on 2-pin connector and pin 4 on 5-pin connector. If there is no continuity in either case, replace wiring harness (58). If there is continuity in both cases replace reed switch assembly (207).
	Cut or sliced wire	Replace wiring harness (58)
	Control board is damaged	Replace control board
	Display is damaged	Replace display
Spray icon is always shown on display	Interrupter (213) is improperly positioned	Turn screw (215) clockwise until spray icon is synchronized with fluid spray
	Reed switch assembly (207) is damaged	Replace reed switch assembly (207)

Bearing Housing and Connecting Rod

Removal

1.  Relieve pressure**;** page 4.

2. Fig. 2. Remove screws (27) and front cover (92).

3. Unscrew suction tube (12) from pump, hold wrench on pump intake valve (A) to keep pump from loosening.

4. Disconnect pump outlet hose (61) from displacement pump outlet nipple (6).

5. Fig. 1. Use screwdriver to push up retaining spring (95) at top of pump. Push out pin (96).

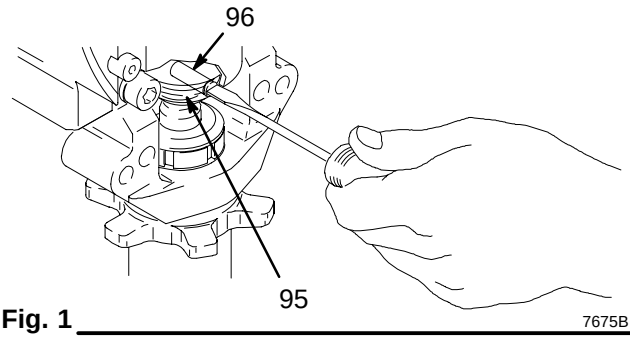


Fig. 1

6. Fig. 2. Loosen retaining nut (97). Unscrew and remove displacement pump (119).

7. Remove four screws (26) and lockwashers (25) from bearing housing (94).

8. Pull connecting rod (83) and lightly tap lower rear of bearing housing (94) with plastic mallet to loosen from drive housing (101). Pull bearing housing and connecting rod assembly (83) off drive housing.

9. Inspect crank (B) for excessive wear and replace parts as needed.

Installation

1. Evenly lubricate inside of bronze bearing (C) in bearing housing (94) with high-quality motor oil. Liberally pack top roller bearing (E), lower bearing (D) inside connecting rod assembly (83) with bearing grease.

2. Assemble connecting rod (83) and bearing housing (94).

3. Clean mating surfaces of bearing and drive housings.

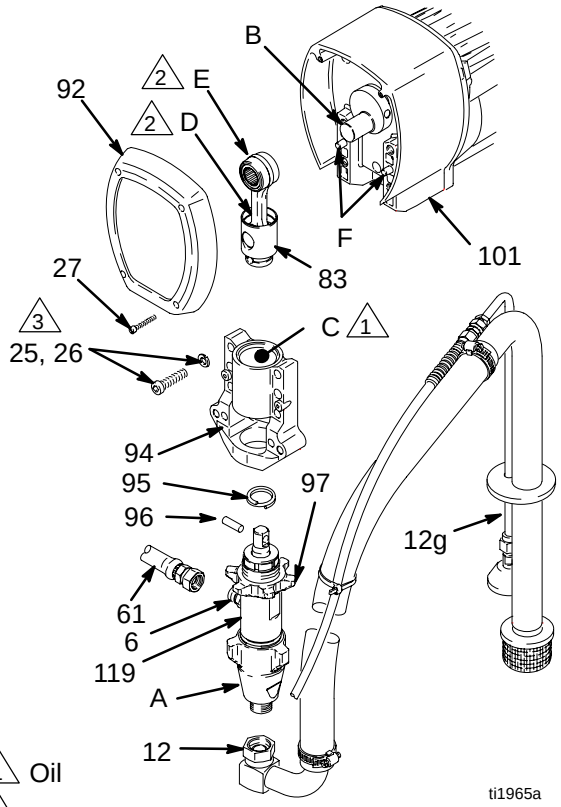
4. Align connecting rod with crank (B) and carefully align locating pins (F) in drive housing (101) with holes in bearing housing (94). Push bearing housing onto drive housing or tap into place with plastic mallet.

⚠ CAUTION

DO NOT use bearing housing screws (26) to align or seat bearing housing with drive housing. Align these parts with locating pins (F), to avoid premature bearing wear.

5. Install screws (26) and lockwashers (25) on bearing housing. Torque evenly to note 3 value in Fig. 2.

6. Refer to Displacement Pump, Installation, page 15.



1 Oil

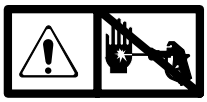
2 Pack with bearing grease 114819

3 LineLazer III 3900: Torque to 200 in-lb (22.6 N·m)
LineLazer III 5900: Torque to 25 ft-lb (34 N·m)

Fig. 2 **Model 233701 shown**

Drive Housing

Removal

1.  Relieve pressure**;** page 4.

2. Fig. 3. Remove bearing housing. Do 1. through 8. of **Bearing Housing and Connecting Rod** procedure on page 8.

3. Fig. 3. Disconnect gallon counter sensor at (A). **Cut tie wrap holding gallon counting sensor wire to clutch wire.**

4. Fig. 3. Remove two screws (145) and lockwashers (122).

5. Remove four screws (102) and lockwashers (122) from pinion housing (183).

6. Lightly tap around drive housing (101) to loosen drive housing. Pull drive housing straight off pinion housing. Be prepared to support gear cluster (99), which may also come out.

Installation

1. Liberally apply bearing grease (supplied with replacement gear cluster) to gear cluster (99) and to areas called out by note 3. Use full 0.62 pint (0.29 liter) of grease for LineLazer III 3900 and 0.68 pint (0.32 liter) of grease for LineLazer III 5900.

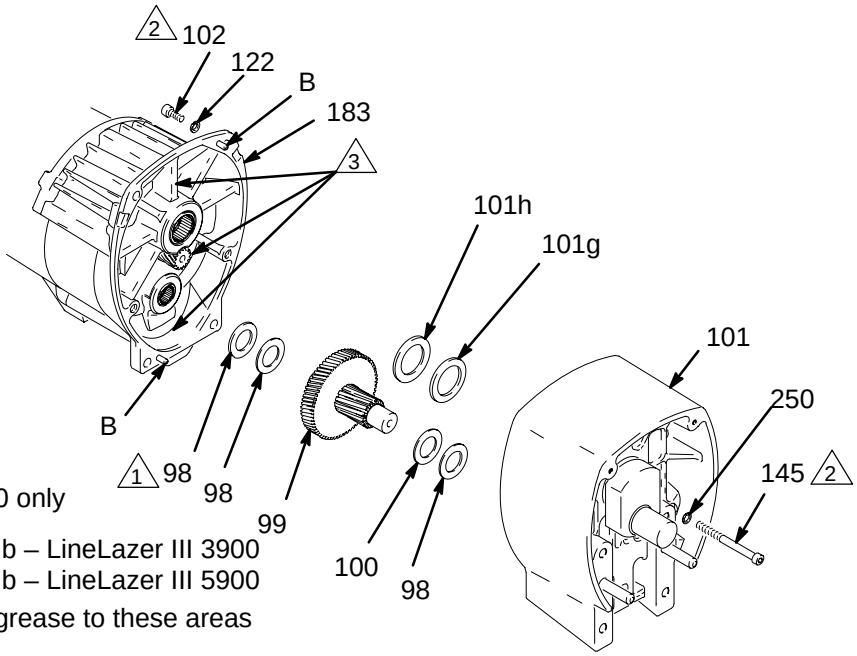
2. Place bronze colored washer (101g) on shaft protruding from large shaft of drive housing (101). Place silver colored washer (101h) on pinion housing. Align gears and push new drive housing straight onto pinion housing and locating pins (B).

3. Install four screws (102) and lockwashers (122) from pinion housing (183).

4. Install two screws (145) and lockwashers (122).

5. Fig. 2. Connect gallon counter sensor at (A). **Secure gallon counting sensor wire to clutch wire with a tie wrap.**

6. Fig. 3. Install bearing housing. Do 1. through 6. of **Bearing Housing and Connecting Rod** procedure on page 8.



1 LineLazer III 3900 only

2 Torque to 125 in-lb – LineLazer III 3900
Torque to 200 in-lb – LineLazer III 5900

3 Apply remaining grease to these areas

Fig. 3 TI0178A

Engine

Removal

1. Remove **Pinion Assembly/Rotor/Field/Pinion/ Clutch, Clamp** and **Clutch Housing**, as instructed in Manual 309890.

2. Fig. 4. Disconnect all necessary wiring.

3. Fig. 5. Remove two locknuts (72) and screws (131) 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.

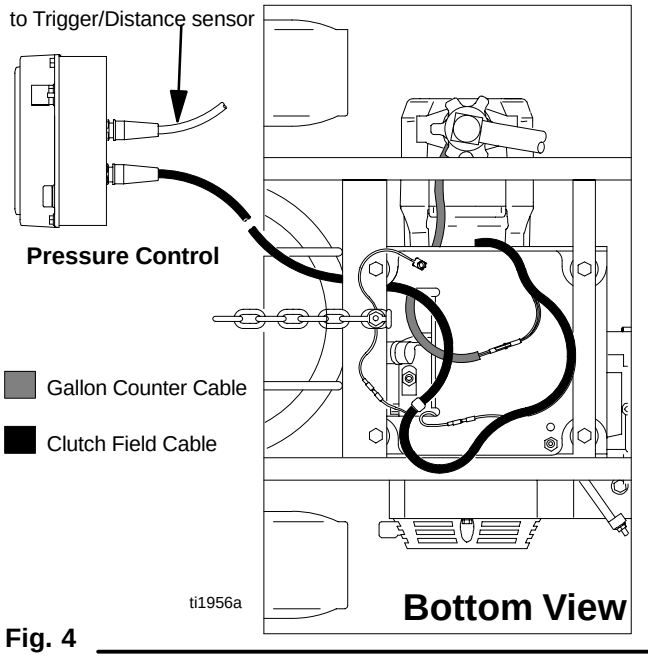


Fig. 4

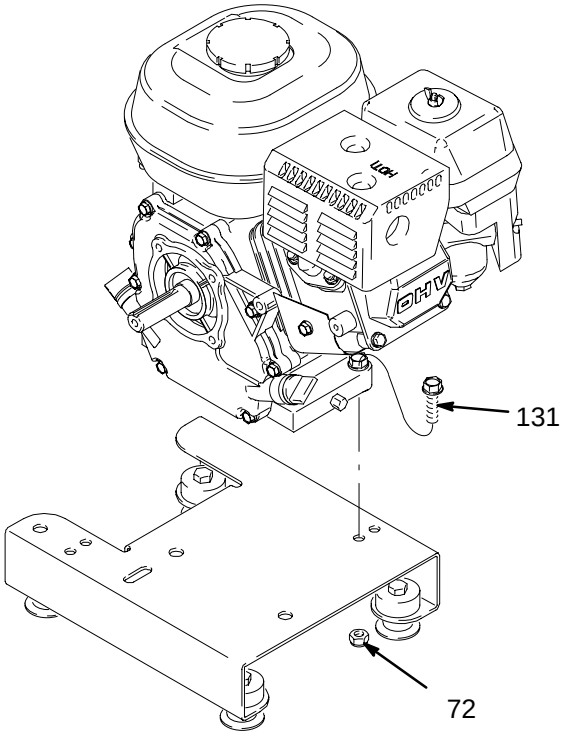


Fig. 5

Installation

1. Lift engine carefully and place on cart.

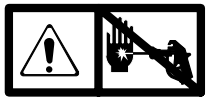
2. Fig. 5. Install two screws (131) in base of engine and secure with locknuts (72). Torque to 200 in-lb (22.6 N•m).

3. Fig. 4. Connect all necessary wiring.

4. Install **Pinion Assembly/Rotor/Field/Pinion/ Clutch, Clamp** and **Clutch Housing**, as instructed in Manual 309890.

On/Off Switch

Removal

1.  Relieve pressure**;** page 4.
2. Fig. 6. Remove four screws (93) and display/cover (139).
3. Pull display connector wings (A) open on PC board and pull display connector out.
4. Disconnect ON/OFF switch connector (B) from PC board.
5. Press in on two retaining tabs on each side of ON/OFF switch (24) and remove switch.

Installation

1. Install new ON/OFF switch (24) so tabs of switch snap into place on inside of pressure control housing.
2. Connect ON/OFF switch connector (B) to PC board.
3. Push display connector into PC board close display connector wings (A) on PC board.
4. Install display/cover (139) with four screws (93).

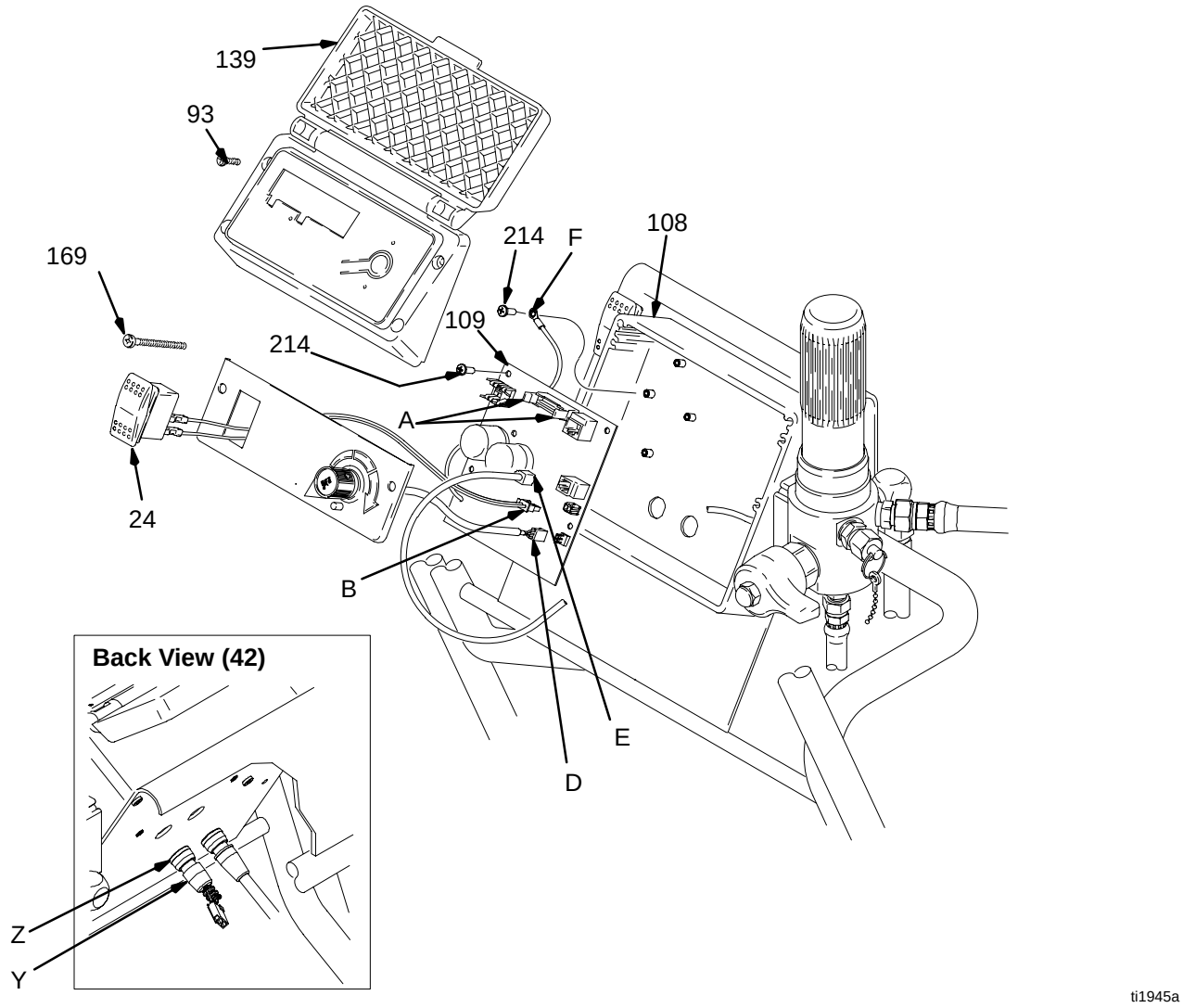


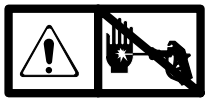
Fig. 6

Trigger Sensor Adjustment

Refer to **Troubleshooting** for trigger sensor adjustment, and Manual 309413.

Distance Sensor Adjustment

Gear Alignment

1.  Relieve pressure**;** page 4.
2. Fig. 7. Remove dust cap (74) from wheel. Remove nut (62).
3. Remove wheel (82) from LineLazer.
4. Align gear (57) with sensor.
   a. Pull gear out from wheel with gear puller.
   b. Push gear in toward wheel with mallet.
5. Install wheel (82) on LineLazer.
6. Install nut (62) until tight, then back off 1/4 turn. Install dust cap (74) on wheel.

Sensor Height Adjustment

1. Remove wheel (82) from LineLazer.
2. Remove sensor assembly (58).
3. Adjust sensor assembly height with two 17 mm nuts of sensor so bottom surface of sensor is 0.638 +/–0.020 from bottom surface of shield. Torque to 8 +/– 2 in-lb.

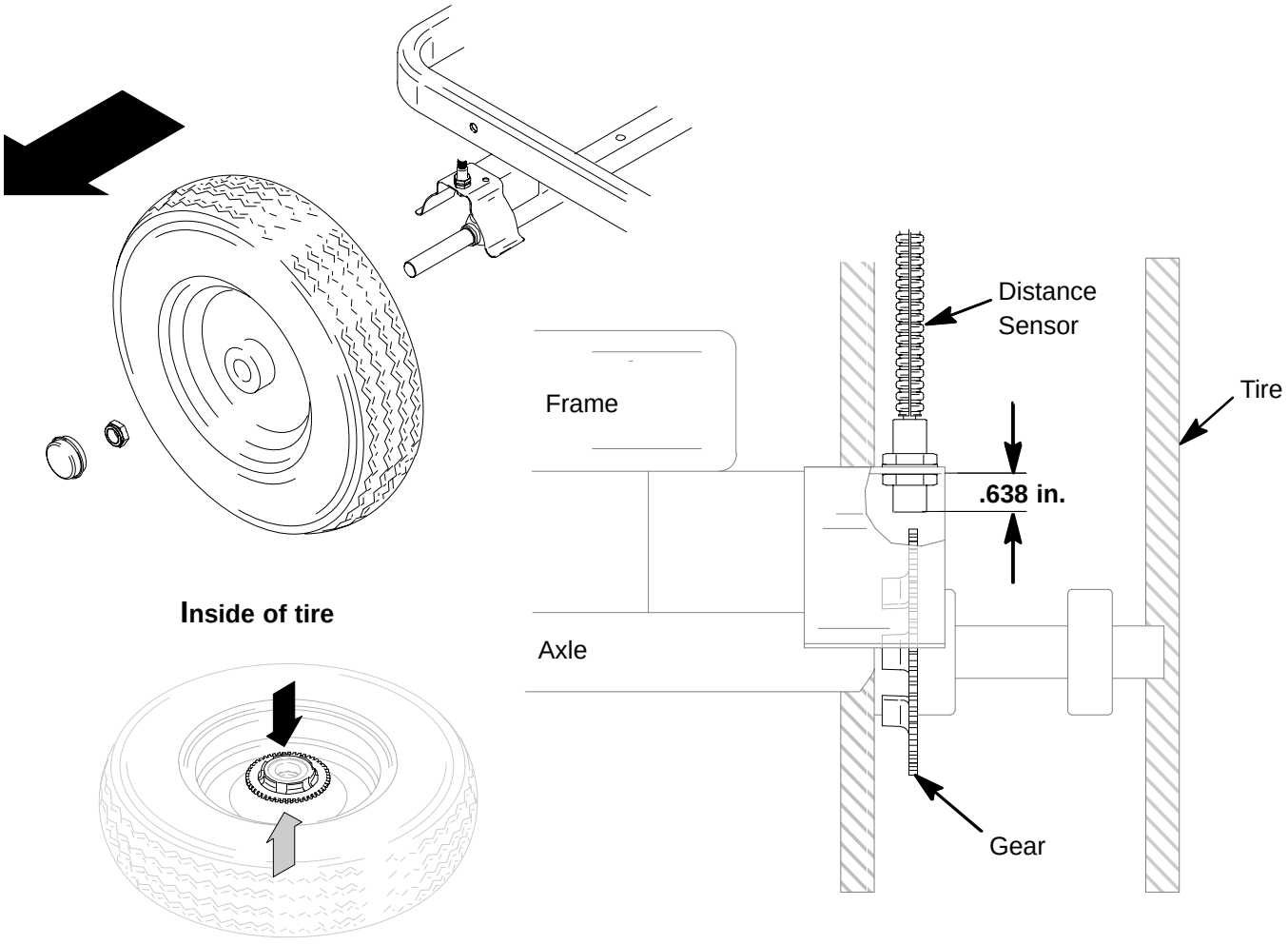


Fig. 7

Pressure Control

Control Board

Removal

1.  Relieve pressure**;** page 4.
2. Fig. 6. Remove four screws (93) and display/cover (139). Pull display connector wings open on PC board and pull display connector out.
3. Fig. 14. Disconnect at control board (109):
   - Lead (D) from potentiometer.
   - Lead (E) from transducer.
   - Remove ON/OFF switch (24) connector (A).
4. Fig. 6. Remove six screws (214) from control board (109) and green ground wire.
5. Remove two connectors (Y) at backside of pressure control. Remove jam nuts (Z) and control board (109).

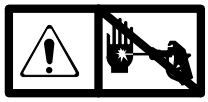
Installation

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

1. Fig. 6. Install control board (109) and jam nuts (Z). Install two connectors (Y) at backside of pressure control.
2. Install green ground wire and control board (109) with six screws (214).
3. Fig. 14. Connect to control board (109):
   - Connect ON/OFF switch (24) connector (A).
   - Lead (E) to transducer.
   - Lead (D) to potentiometer.
4. Fig. 6. Push display connector into PC board close display connector wings on PC board. Install display/cover (139) with four screws (93).

Pressure Control Transducer

Removal

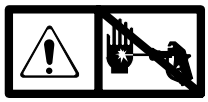
1.  Relieve pressure**;** page 4.
2. Fig. 6. Remove four screws (93) and display/cover (139).
3. Disconnect lead (E) from control board (109).
4. Remove two screws (201) that connect control housing (108) to filter housing (200e). From inside of control box, pull transducer connector through control housing (108).
5. Remove pressure control transducer (200p) and o-ring (200r) from filter housing (200e).

Installation

1. Fig. 6. Install o-ring (200r) and pressure control transducer (200p) in filter housing (200e). Torque to 30–36 ft-lb.
2. Install transducer cable through control box. Install filter housing and spacer to control box with two screws (201).
3. Connect lead (E) to motor control board (109).
4. Install display/cover (139) with four screws (93).

Pressure Adjust Potentiometer

Removal

1.  Relieve pressure**;** page 4.
2. Fig. 6. Remove four screws (93) and display/cover (139).
3. Disconnect lead (D) from control board (109).
4. Loosen set screws on potentiometer knob (19) and remove knob, shaft nut, lockwasher and pressure adjust potentiometer (81).
5. Remove seal (148) from potentiometer (81).

Installation

1. Install seal (148) on potentiometer (81).
2. Fig. 6. Install pressure adjust potentiometer (81), shaft nut, lockwasher and potentiometer knob (19).
   a. Turn potentiometer shaft (81) clockwise to internal stop. Assemble potentiometer knob (19) to strike pin on plate (23).
   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 (109).
4. Install display/cover (139) with four screws (93).

Control Board Diagnostics

Digital Display Messages

Relieve pressure before repair**;** page 4. No display does not mean that sprayer is not pressurized.

DISPLAY	SPRAYER OPERATION	INDICATION	ACTION
No Display	Sprayer may be pressurized.	Loss of power or display not connected	Check power source. Relieve pressure before repair or disassembly. Verify display is connected.
- - - -	Sprayer may be pressurized.	Pressure less than 200 psi (14 bar, 1.4 MPa)	Increase pressure as needed
3000 **psi** 210 **bar** 21 **MPa**	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting.)	Normal operation	Spray
E-02	Sprayer stops. Engine is running.	Exceeded pressure limit	Remove any filter clogs or flow obstructions. Make sure gun trigger is locked open if using AutoClean valve.
E-03	Sprayer stops. Engine is running.	Pressure transducer faulty, bad connection or broken wire.	Check transducer connections and wire. Replace transducer or control board, if necessary.
E-05	Sprayer stops. Engine is running.	High clutch current	1. Check clutch 7–pin bulkhead connector. Clean contacts. 2. Measure 1.2 ±0.2Ω (LineLazer III 3900); 1.7 ±0.2Ω (LineLazer III 5900) across clutch field at 70°F 3. Replace clutch field assembly
E-06	Sprayer stops. Engine is running. Display alternates E=06.	High clutch temperature	1. If clutch is new, let sprayer cool down and then restart 2. Inspect clutch. Replace clutch if there is excessive wear. 3. Remove pump pin, separate pinion housing from clutch housing. Rotate rotor clockwise to check for excessive drag.

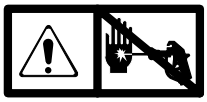
After a fault, follow these steps to restart sprayer:

1. Correct fault condition
2. Turn sprayer OFF
3. Turn sprayer ON

Displacement Pump

Removal

1. Flush pump.

2.  Relieve pressure**;** page 4.

3. Fig. 8. Cycle pump with piston rod (222) in its lowest position.

4. Fig. 8. Remove suction tube (12) and hose (61).

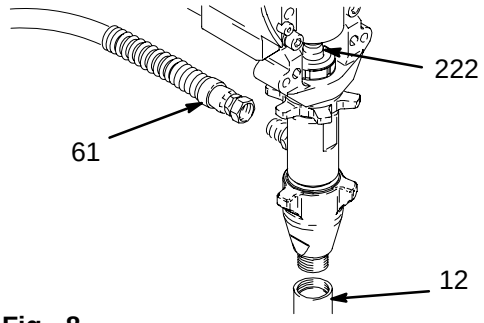


Fig. 8

5. Fig. 9. Use screwdriver: push retaining spring up and push out pin (96).

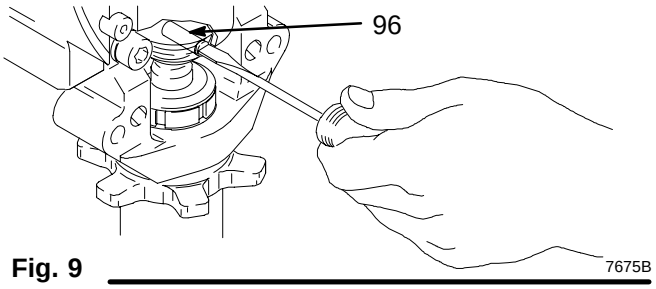


Fig. 9

6. Fig. 10. Loosen locknut by hitting firmly with a 20 oz (maximum) hammer. Unscrew pump.

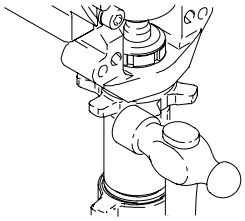


Fig. 10

Repair

See manual 309277 for pump repair instructions.

Installation

⚠ WARNING

If pin works loose, parts could break off due to force of pumping action. Parts could project through the air and result in serious injury or property damage. Make sure pin and retaining spring are properly installed.

⚠ CAUTION

If the pump locknut loosens during operation, the threads of the bearing housing will be damaged. Make sure locknut is properly tightened.

1. Fig. 11. Pull piston rod out 1.5 in. Screw in pump until holes in bearing cross link and piston rod align.

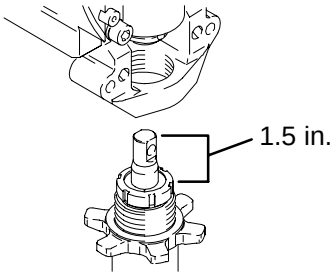


Fig. 11

2. Fig. 9. Push pin (96) into hole. And push retaining spring into groove all the way around connecting rod.

Fig. 12. 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 (maximum) hammer to approximately 75 ± 5 ft–lb (102 N·m).

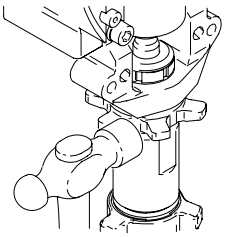


Fig. 12

Fig. 13. Fill packing nut with Graco TSL until fluid flows onto the top of seal.

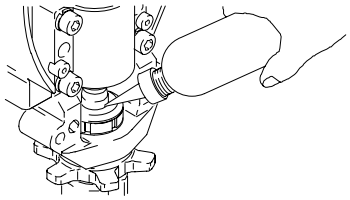


Fig. 13

Parts – Pinion and Drive Housing Assemblies

Ref No. 183 and 101

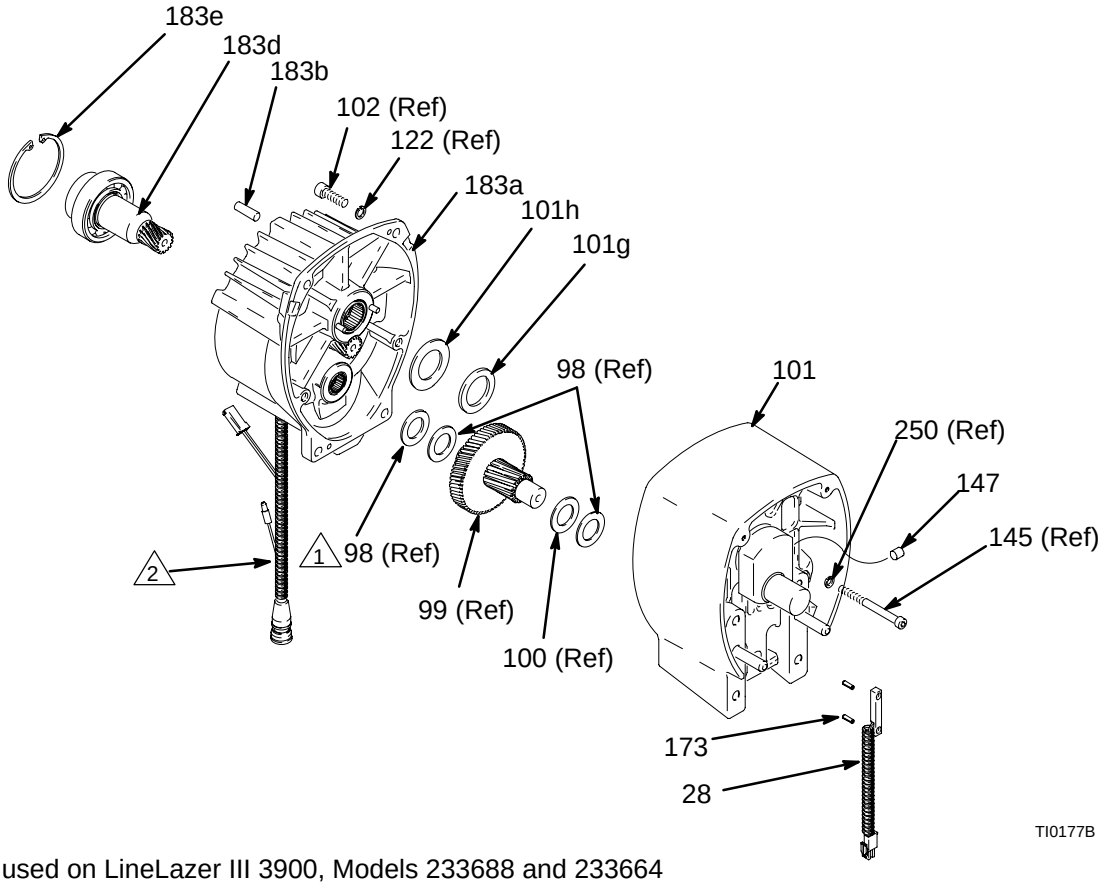
Ref No. 183: Pinion Housing Assembly 245715 for LineLazer III 3900; Pinion Housing Assembly 245834 for LineLazer 5900

Ref No.	Part No.	Description	Qty
183		PINION HOUSING	1
183a		KIT, repair, coil	
	245419	LineLazer III 3900	1
	245420	LineLazer III 5900	1
183b	105489	PIN	2
183d*		PINION SHAFT	
	241110	LineLazer III 3900	1
	241114	LineLazer III 5900	1
183e*		RETAINING RING, large	
	113094	LineLazer III 3900	1
	112770	LineLazer III 5900	1

**Must be ordered separately.*

Ref No. 101: Drive Housing Assembly 245442 for LineLazer III 3900; Drive Housing Assembly 245443 for LineLazer III 5900

Ref No.	Part No.	Description	Qty
101		DRIVE HOUSING	1
101g		WASHER	
	107089	LineLazer III 3900	1
	194173	LineLazer III 5900	1
101h		WASHER	
	116191	LineLazer III 3900	1
	116192	LineLazer III 5900	1
28	116806	SWITCH, reed	1
173	116838	PIN, spring	2
147	116618	MAGNET	1

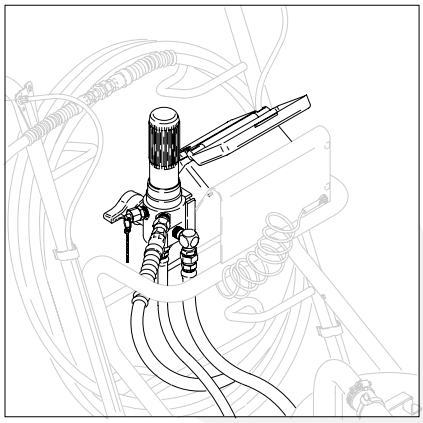


1 Only used on LineLazer III 3900, Models 233688 and 233664

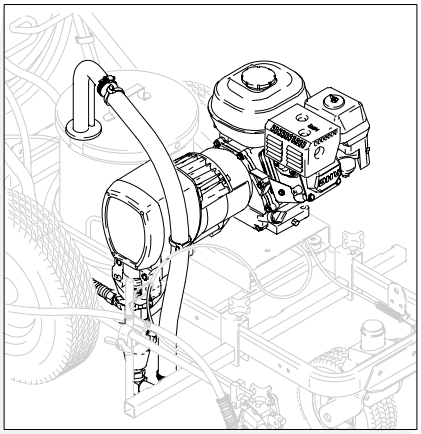
2 Pinion housing assembly (183) includes clutch field and connector

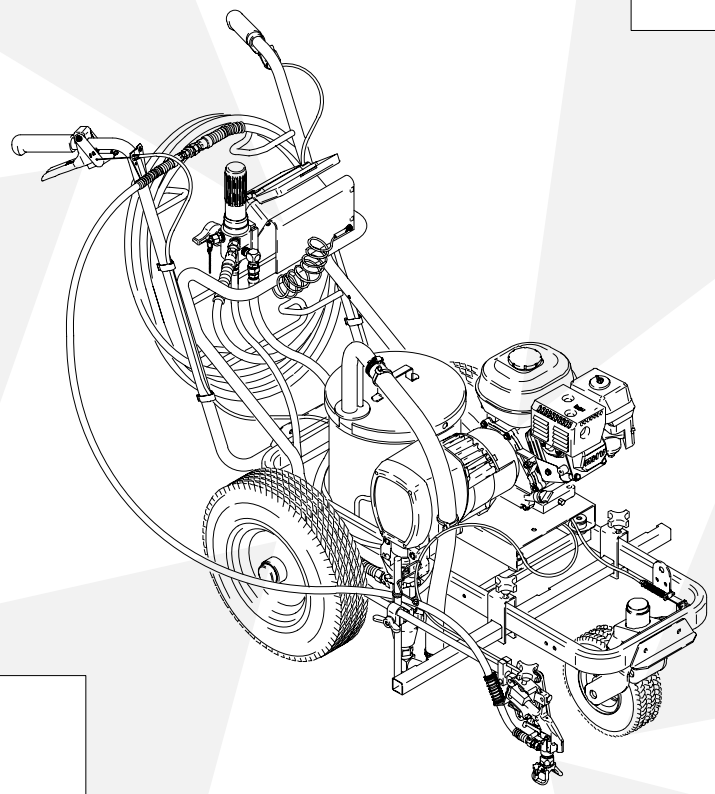
Parts – LineLazer III

Parts Page 26

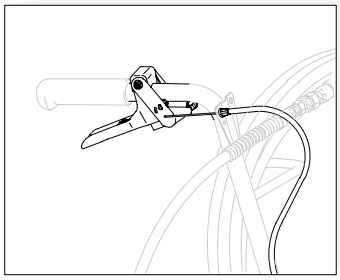


Parts Page 20

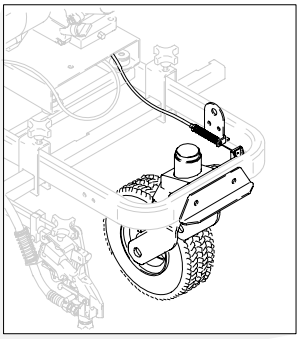




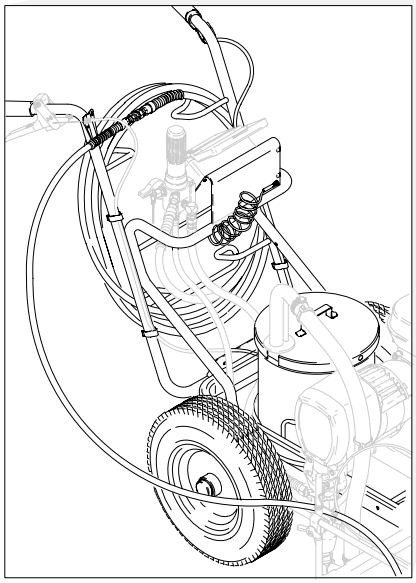
Parts Page 24



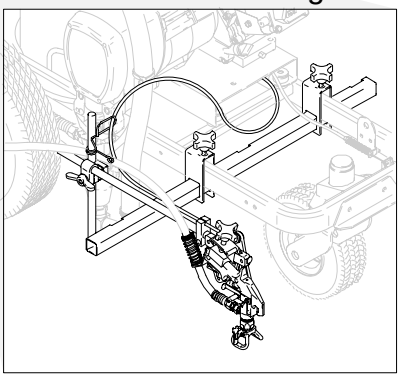
Parts Page 22



Parts Page 18



Parts Page 24



Sheet 1 of 6

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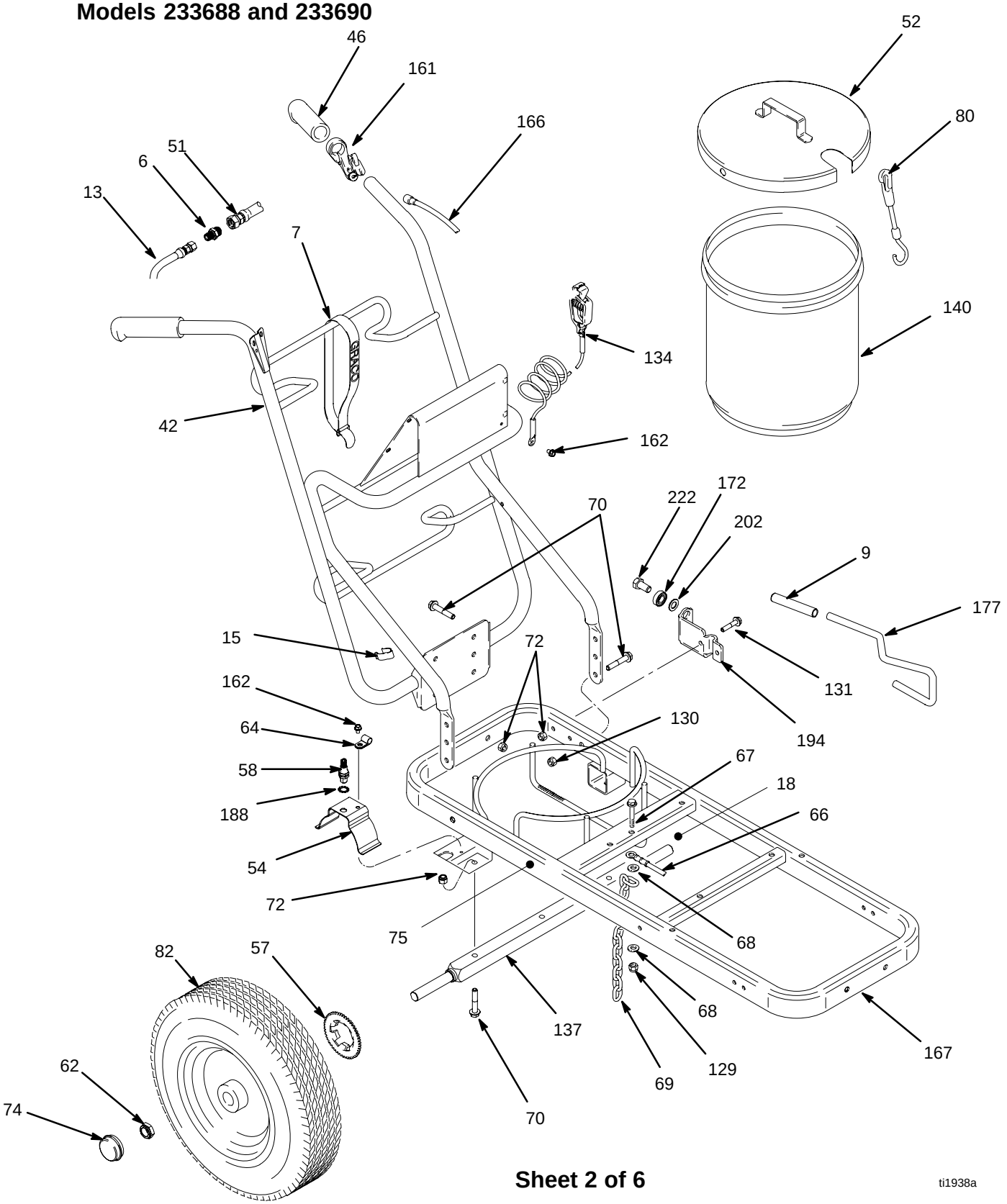
Parts – LineLazer III

Models 233688 and 233690



Sheet 2 of 6

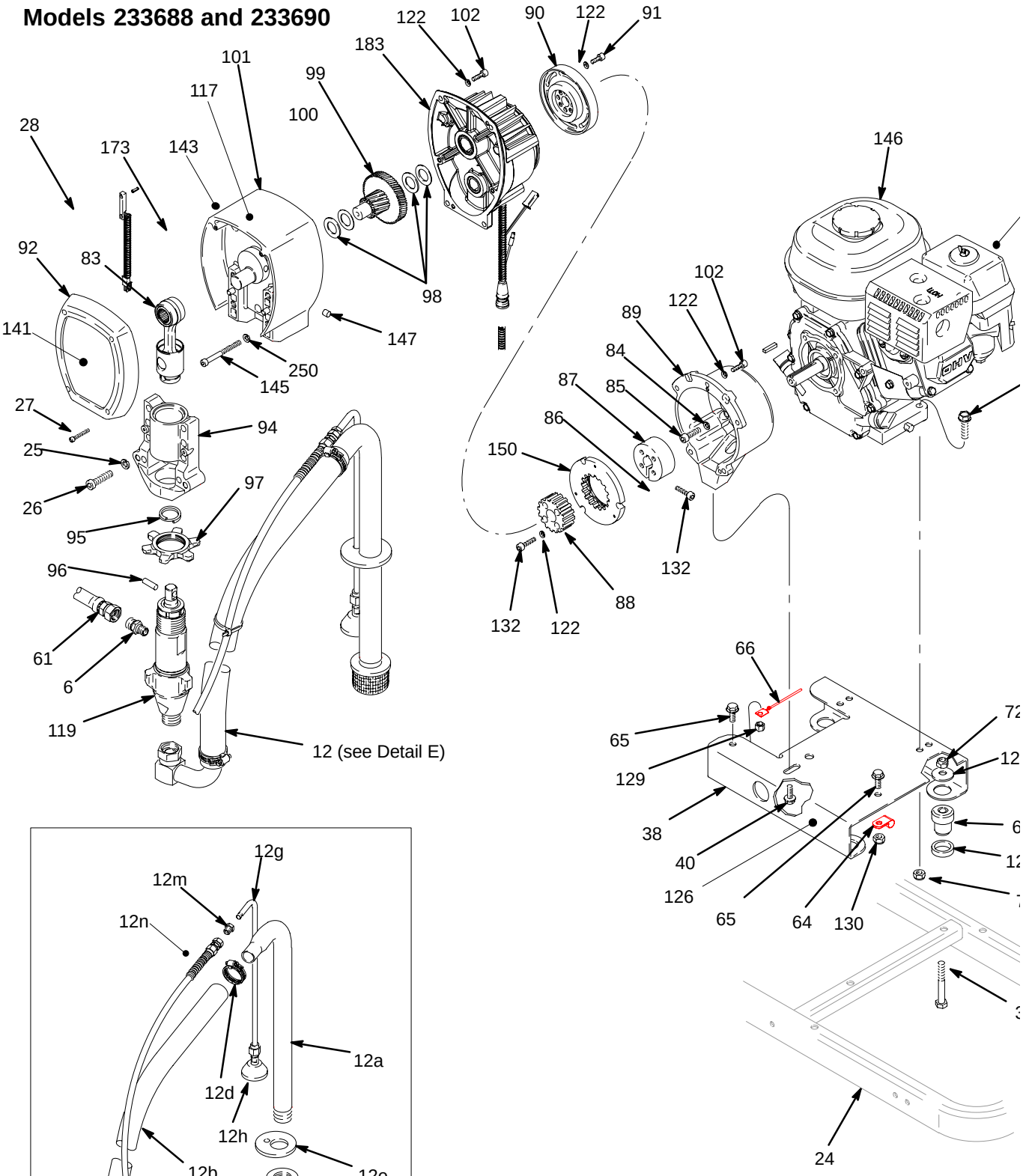
ti1938a

Parts – LineLazer III

Ref. No.	Part No.	Description	Qty.
6	196176	ADAPTER, nipple	2
7	114271	STRAP, retaining	1
9	114808	CAP, vinyl	1
13	245798	HOSE, 1/4 in. X 7 ft	2
15	178342	CLIP, spring	6
18	186620	LABEL, symbol, ground	1
42	245224	HANDLE, linelazer	1
46	114659	GRIP, handle	2
51	245225	HOSE, 3/8 in. X 50 ft	1
52	241005	COVER, pail	1
54	198612	BRACKET, sensor, distance	1
57	245734	KIT, repair, wheel, LineLazer includes 82	1
58	245597	SENSOR, distance, includes 54, 64,162, 188	1
62	112405	NUT, lock	3
64	108868	CLAMP, wire	3
66	240999	CONDUCTOR, ground	1
67	114653	SCREW, cap, flange hd	1
68	100731	WASHER	4
69	186812	CHAIN, ground 3.5 hp	1
70	111194	SCREW, cap flang hd	6
72	101566	NUT, lock	12
74	114648	CAP, dust	2
75	186821	LABEL, warning	2
80	114690	STRAP	2
82	111020	WHEEL, pneumatic	1
129	110838	NUT, lock	5
130	111040	NUT, lock, insert, nylock, 5/16	5
131	110837	SCREW, flange, hex	7
134	237686	CLAMP, grounding assy	1
137	193405	AXLE	1
140	115077	PAIL, plastic	1
161	194310	LEVER, actuator	1
162	112798	SCREW, thread forming, hex hd	2
166	241445	CABLE	1
167	245246	FRAME, linestriper	1
172	198931	BEARING	1
177	198930	ROD, brake	1
188	116287	WASHER, sst, external, starwasher	1
194	198891	BRACKET, mounting,	1
202	195134	SPACER, ball, guide	1
222	113961	SCREW, cap, hex hd	1

Parts – LineLazer III

Models 233688 and 233690



Sheet 3 of 6

ti1942a

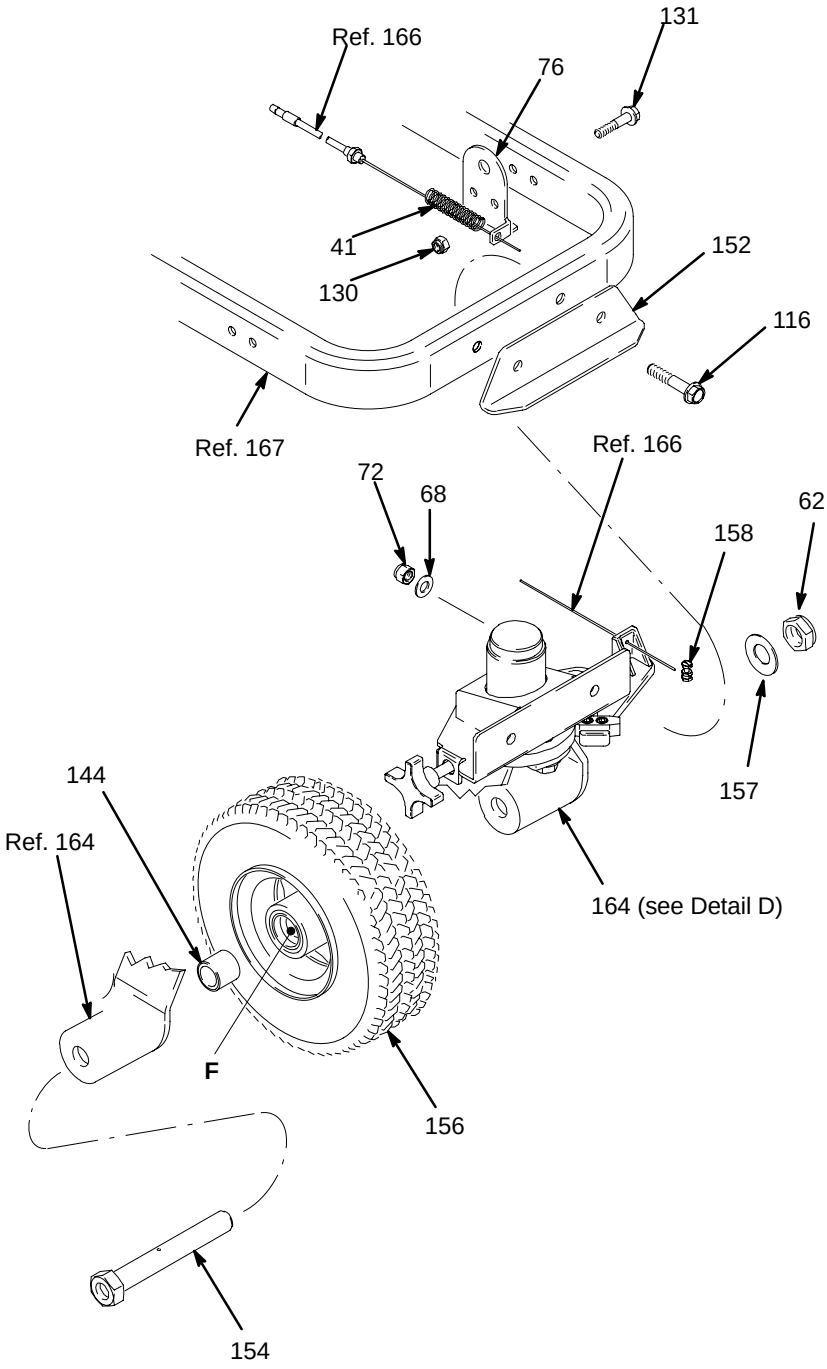
Parts – LineLazer III

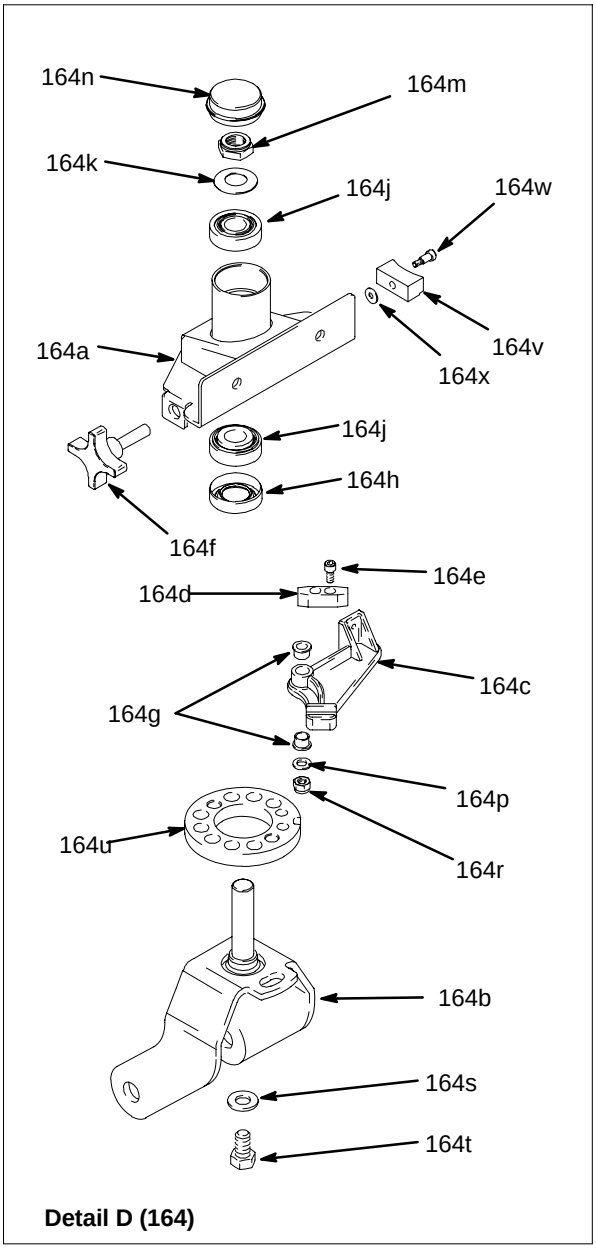
Ref. No.	Part No.	Description	Qty.
6	196176	ADAPTER, nipple	2
12	245730	HOSE, suction and drain (includes 12a–12n)	1
12a	170957	TUBE, suction	1
12b	185381	HOSE	1
12c	110194	SWIVEL, 180°	1
12d	101818	CLAMP, hose	1
12e	193711	GASKET, pail	1
12f	181072	STRAINER	1
12g	245731	TUBE, drain (includes diffuser)	1
12h		DIFFUSER	1
12j	245798	HOSE, coupled, 1/4 in. x 7 ft	1
12k	114958	STRAP, tie	2
12m	196180	BUSHING	1
12n▲	195119	LABEL, warning	1
25	106115	WASHER, lock spring (hi-collar)	4
26		SCREW, cap, socket hd	
	107210	(3900)	4
	114666	(5900)	4
27		SCREW, self tap, fil hd	4
	114418	(3900)	4
	114818	(5900)	4
28	116806	SWITCH, reed	1
37	106212	SCREW, cap, hex hd	4
38	193677	PLATE, mounting	1
40	113802	SCREW, hex hd, flanged	1
61	245797	HOSE, 3/8 in. X 3 ft	1
63	195515	DAMPENER, motor mount	4
64	108868	CLAMP, wire	3
65	110963	SCREW, cap, flng hd	2
66	240999	CONDUCTOR, ground	1
72	101566	NUT, lock	12
83		ROD, connecting	
	241008	(3900)	1
	241012	(5900)	1
84		WASHER, lock, spring	
	104008	(3900)	4
	100214	(5900)	4
85		SCREW, cap, sch	
	109031	(3900)	4
	108842	(5900)	4
86	183401	KEY, parallel	1
87	193680	COLLAR, shaft	1
88		HUB, armature (see 229)	1
89		HOUSING, clutch	
	193540	(3900)	1
	193531	(5900)	1
90		ROTOR, clutch (see 229)	1
91	101682	SCREW, cap, sch	4
92		COVER, housing	
	179899	(3900)	1
	241308	(5900)	1
94	240523	HOUSING, bearing (3900)	1
	241015	HOUSING, bearing (5900)	1
95		SPRING, retaining	
	176817	(3900)	1
	183169	(5900)	1
96		PIN, str, hdls	
	176818	(3900)	1
	183210	(5900)	1
97	192723	NUT, retaining (3900)	1
	193031	NUT, retaining (5900)	1
98		WASHER, thrust	
	114672	WASHER, thrust (3900)	3
	114672	WASHER, thrust (5900)	2
99	241439	GEAR, combination (3900)	1
	241440	GEAR, combination (5900)	1
100	114699	WASHER, thrust	1
101		HOUSING, drive, includes 28, 147, 173	
	245442	(3900)	1
	245443	(5900)	1
		(includes 28, 117, 143, 147, 173)	
102	100644	SCREW, cap, sch	9
117▲	290228	LABEL, caution	1
119		PUMP, displacement	
	244197	(3900)	1
	244224	(5900)	1
		Manual 309277	
120	195516	SPACER	4
122	105510	WASHER, lock, spring (hi–collar)	19
127	108851	WASHER, plain	4
129	110838	NUT, lock	5
130	111040	NUT, lock, insert, nylock, 5/16	5
132	108803	SCREW, hex, socket head	6
141		LABEL, front	
	198605	(3900)	1
	198883	(5900)	1
143▲	194125	LABEL, danger, English	1
145		SCREW, cap, soc. hd	
	107218	(3900)	2
	114686	(5900)	2
250		WASHER	
	105510	(3900)	2
	104008	(5900)	2
146		ENGINE, gasoline	
	108879	(3900)	1
	114530	(5900)	1
147	116618	MAGNET	1
150		ARMATURE, clutch, 4 in.(see 229)	1
173	116838	PIN, spring	2
183		HOUSING, pinion	
	245715	(3900)	1
	245834	(5900)	1
229		KIT, clutch	
	241109	(3900)	1
	241113	(5900)	1
		includes 88, 90, 91, 122, 132, 150	

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts – LineLazer III

Models 233688 and 233690





Detail D (164)

ti1940a

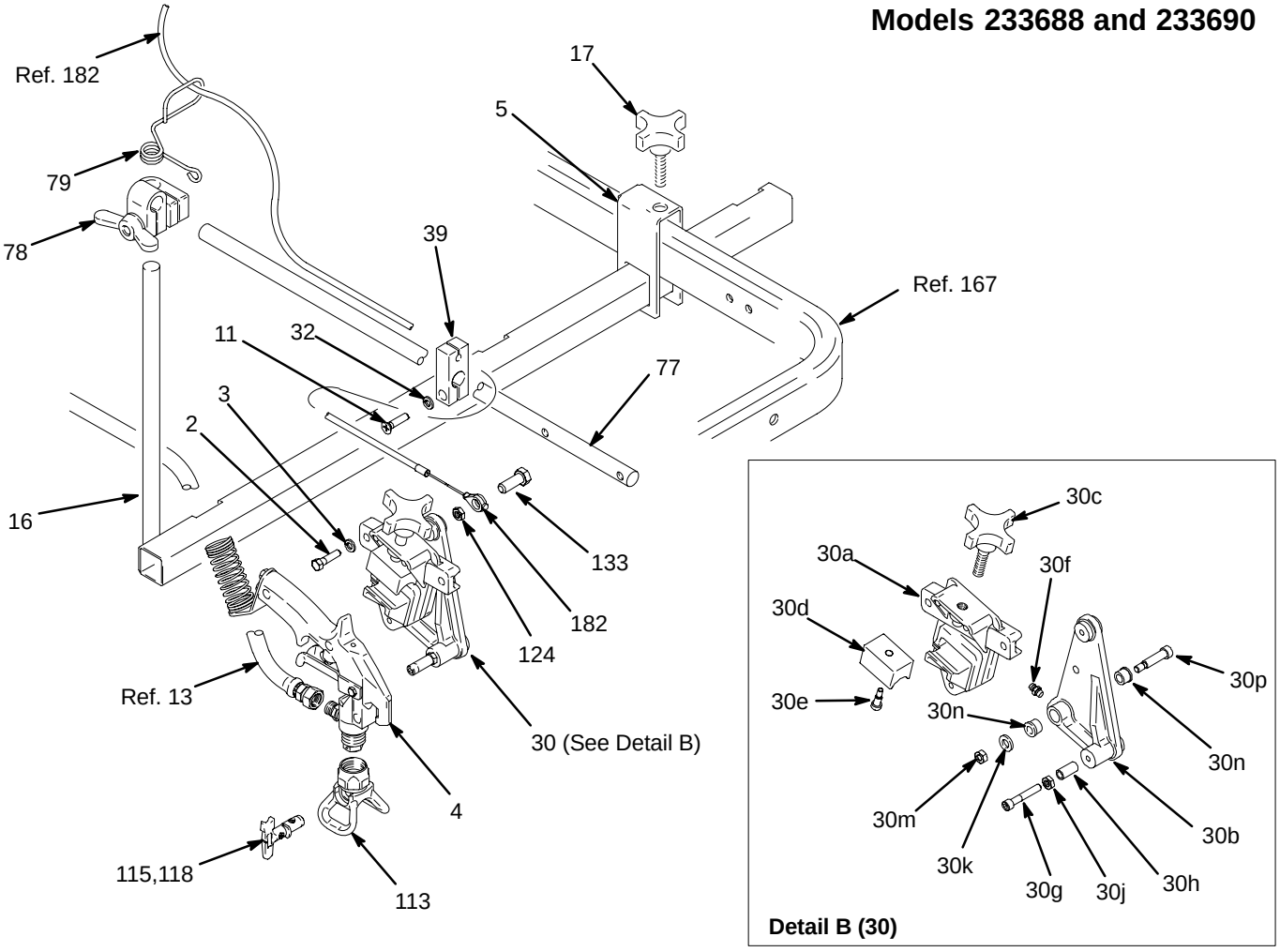
Sheet 4 of 6

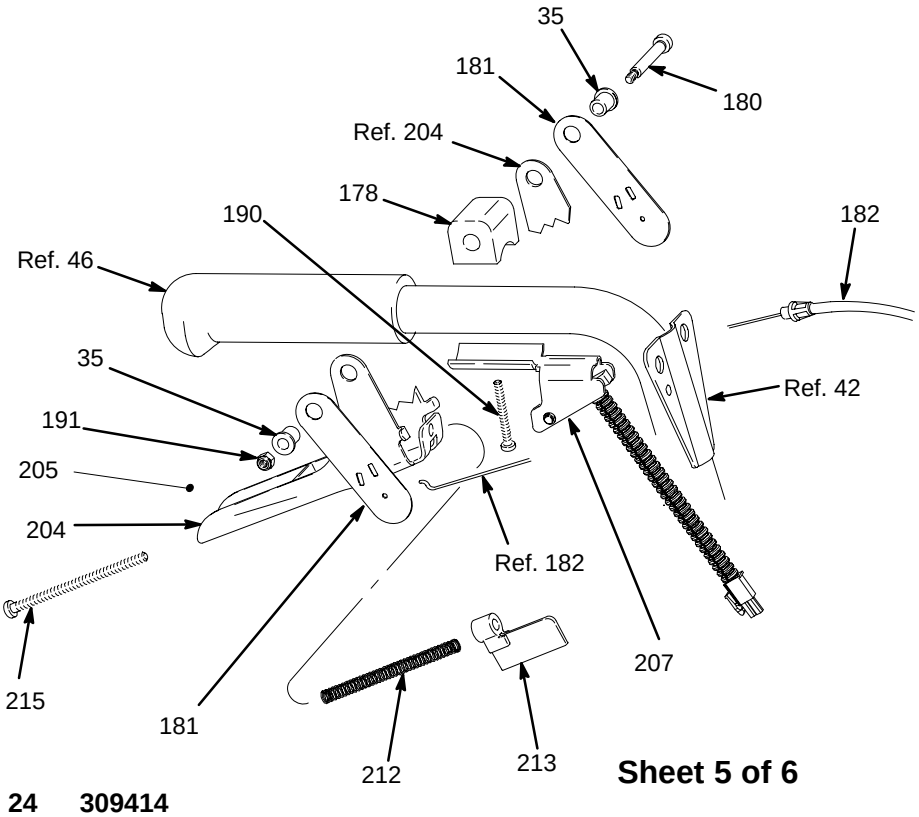
Parts – LineLazer III

Ref. No.	Part No.	Description	Qty.
41	114682	SPRING, compression	1
62	112405	NUT, lock	3
68	100731	WASHER	4
72	101566	NUT, lock	12
76	193665	BRACKET, cable	1
116	114982	SCREW, cap, flng hd	2
131	110837	SCREW, flange, hex	7
144	193658	SPACER, seal	2
152	240991	BRACKET, caster, front	1
154	113471	SCREW, cap, hex hd	1
156	114549	WHEEL, pneumatic	1
157	112825	SPRING, belleville	1
158	114802	STOP, wire	1
164	241105	CASTER, swivel	1
164a	240940	KIT, repair, bracket, hub includes 164j (2), 164h	1
164b	240942	SHAFT, fork	1
164c	193528	ARM, detent	1
164d	193662	PIN, locking, tapered	1
164e	110754	SCREW, cap, soc hd	1
164f	181818	KNOB, pronged	1
164g	114548	BEARING, bronze	1
164h	113484	SEAL, grease	1
164j	113485	BEARING, cup/cone	2
164k	112825	SPRING, Belleville	1
164m	112405	NUT, lock	1
164n	114648	CAP, dust	1
164p	107194	WASHER, plain	1
164r	108000	NUT, lock	1
164s	113962	WASHER, hardened	1
164t	114681	SCREW, cap, hex hd	1
164u	198606	DISK, adjuster	1
164v	193661	JAW	1
164w	108483	SCREW, shoulder, soc hd	1
164x	112776	WASHER, plain	1

Parts – LineLazer III

Models 233688 and 233690





ti1939a

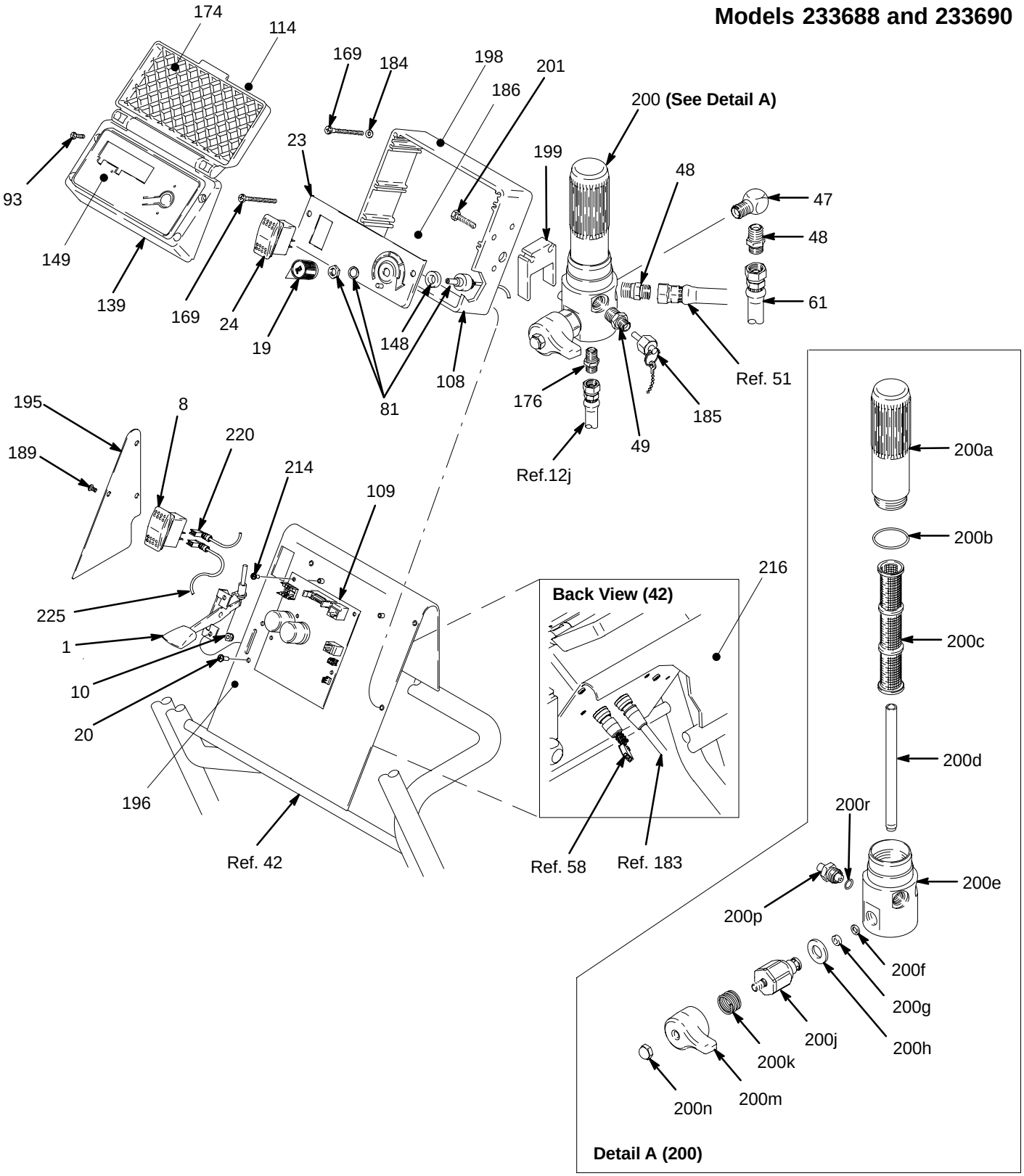
Sheet 5 of 6

Parts – LineLazer III

Ref. No.	Part No.	Description	Qty.
2	100021	SCREW, cap hex hd	2
3	100016	WASHER, lock	2
4	243284	GUN, flex, basic	1
		Manual 309093	
5	240780	BRACKET, arm, gun	2
11	100101	SCREW, cap, hex hd	1
16	224052	BRACKET, support gun	1
17	108471	KNOB, pronged	2
30	241001	HOLDER, gun	1
30a	188452	HOLDER, gun	1
30b	186747	LEVER, actuator	1
30c	181818	KNOB, pronged	1
30d	181795	JAW, clamped	1
30e	108483	SCREW, shoulder, sch	1
30f	100846	FITTING, lubrication	1
30g	107445	SCREW, cap	1
30h	108535	BEARING, sleeve	1
30j	101345	NUT, hex, jam	1
30k	110755	WASHER, plain	1
30m	100015	NUT, hex MSCR	1
30n	111016	BEARING, flange	2
30p	111045	SCREW, shoulder	1
32	100133	WASHER, lock	1
35	111017	BEARING, flange	2
39	186699	BLOCK, mounting, cable	1
77	181734	ARM, support	1
78	114029	CLAMP, swivel, adjustable	1
79	188135	GUIDE, cable	1
113	243161	GUARD, RAC 5	1
115	286517	TIP, spray, RAC–5	1
118	LL5319	TIP, spray, RAC 5, striping	1
124	101345	NUT, hex, jam	1
133	111230	SCREW, mach, flhd	1
178	198896	BLOCK, mounting (mach)	1
180	116941	SCREW, shoulder, socket head	1
181	198895	PLATE, lever, pivot	2
182	245732	KIT, cable	1
190	116973	SCREW, #10 taptite phil	1
191	116969	NUT, lock	1
204	245733	TRIGGER,	1
		includes 205, 212, 213, 215	
205	15A644	LABEL, trigger	1
207	245713	BRACKET, sensor and magnet	1
212	117269	SPRING	1
213	117268	BRACKET, interrupter	1
215	112381	SCREW, mach, pan hd	1

Parts – LineLazer III

Models 233688 and 233690



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Parts – LineLazer III

Ref. No.	Part No.	Description	Qty.
1	114955	CONTROL, throttle	1
8	114954	SWITCH, rocker	1
10	109466	NUT, lock, hex	2
19	116167	KNOB, potentiometer	1
20	112380	SCREW, mach, pan hd	2
23	198553	PANEL, control	1
24	116752	SWITCH, rocker	1
47	196179	FITTING, elbow, street	1
48	196178	ADAPTER, nipple	2
49	196177	ADAPTER, nipple	1
61	245797	HOSE, 3/8 in. X 3 ft	1
81	241443	POTENTIOMETER	1
93	116252	SCREW, #8 taptite phil	4
108	198602	BOX, control	1
109	245512	BOARD, control, linelazer	1
114	196670	LABEL, crtl box cover	1
139	245791	KIT, display, includes 93, 114, 149, 174	1
148	198650	SPACER, shaft	1
149	198648	LABEL, LCD	1
169	114393	SCREW, mach, pan hd	4
174	198649	LABEL, LCD instructional	1
176	196181	FITTING, nipple	1
184	116876	WASHER, flat	2
185	245441	PLUG, packless	1
186	198999	LABEL, instruction	1
189	100035	SCREW, mach, pnh	3
195	198942	PLATE, side	1
196▲	15A245	LABEL, warning	1
198▲	189246	LABEL, warning	1
199	198684	SPACER, base	1
200	245515	FILTER, assembly	1
200a	196675	BOWL, FILTER	1
200b	104361	O-RING	1
200c	244067	FILTER, fluid	1
200d	196786	TUBE, diffuser	1
200e	245796	HOUSING, filter, 3/8 npt	1
200f	193710	SEAL, valve	1
200g	193709	SEAT, valve	1
200h	114797	GASKET	1
200j	245103*	VALVE	1
200k	114708	SPRING, compression	1
200m	194102	HANDLE, valve	1
200n	114688	NUT, cap, hex hd	1
200p	243222	TRANSDUCER includes 200p	1
200r	111457	SEAL	1
201	117232	SCREW, cap, hex hd	3
214	114331	SCREW, mach, pnh, sems	6
216	15A621	LABEL, identification	1
220	198975	WIRE, ground	1
225	15A670	CONDUCTOR, electrical	1

* Drain valve replacement kit 245103 includes 200f, g, h, k, m, n

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Pressure Control Wiring Diagram

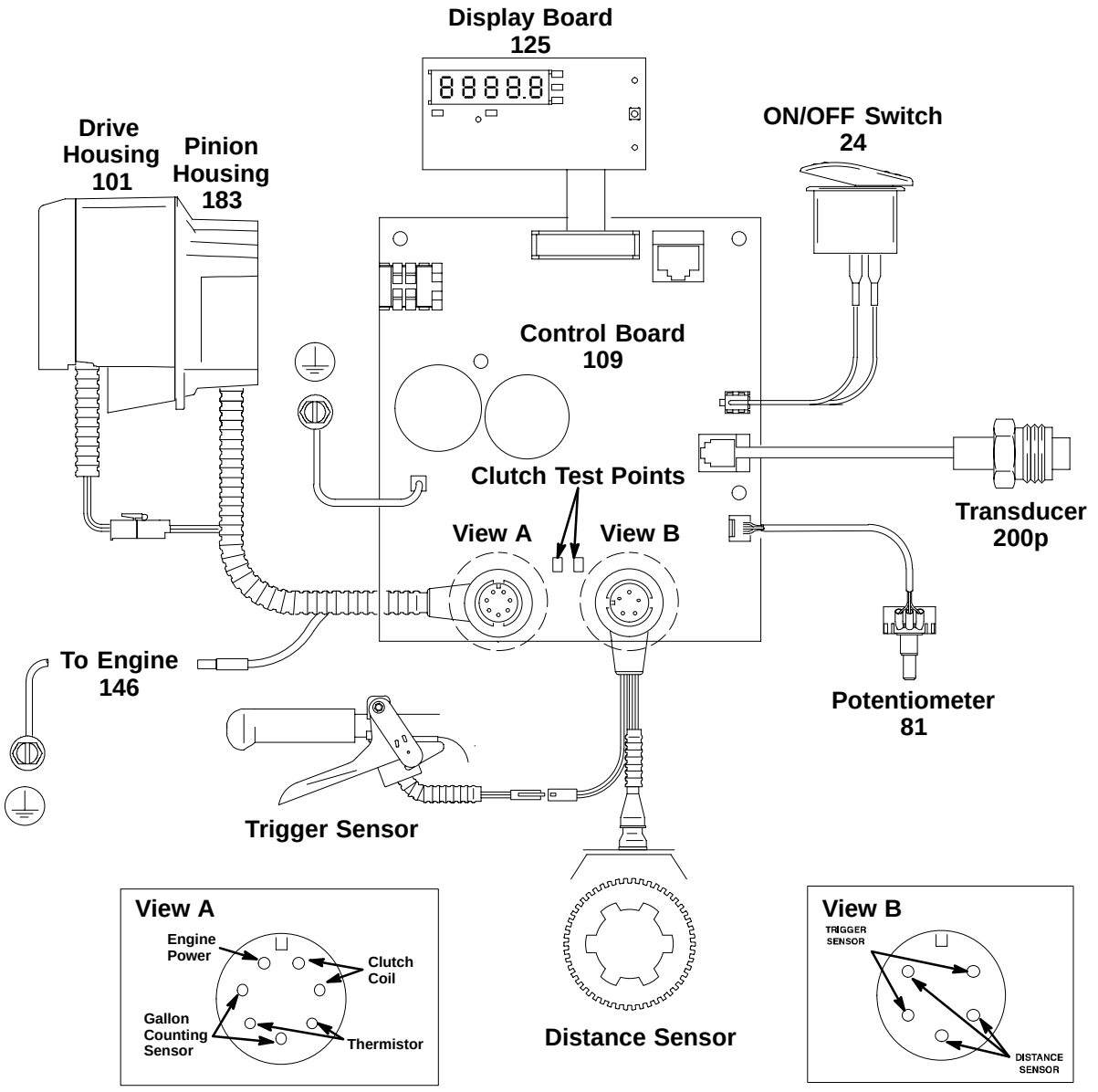

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Fig. 14

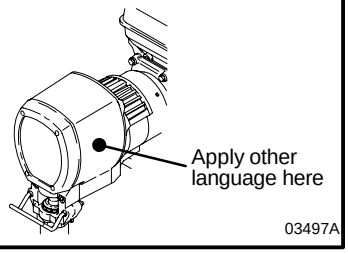
Accessories

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.

French	**194931**
Spanish	**194932**
German	**194933**
Greek	**194934**
Korean	**194935**
English	**194125**



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 (228 bar, 22.8 MPa)

Noise Level
- Sound power . . . . . 105 dBa per ISO 3744
- Sound pressure . . . . . 96 dBa measured at 3.1 feet (1 m)

Maximum delivery
- LineLazer III 3900 . . . . . 1.15 gpm (4.4 liter/min)
- LineLazer III 5900 . . . . . 1.5 gpm (5.7 liter/min)

Maximum tip size
- LineLazer III 3900 . . . . . 1 gun with 0. 034 in. tip
2 guns with 0.024 in. tip
- LineLazer III 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 . . . . . nickel–plated carbon steel, PTFE, Nylon, polyurethane, UHMW polyethylene, Viton®, Delrin®, leather, tungsten carbide, stainless steel, chrome plating

NOTE: Delrin® and Viton® are trademarks of the DuPont Company.

Dimensions

LineLazer III 3900

Model 233688, 233664 Striper

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 233689, 233694 Striper 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 III 5900

Model 233690, 233627 Striper

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 233691, 233695 Striper 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 Standard 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.

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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

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