

LineLazer V 250SPS and 250DC Self-Propelled Line Striper

3A3394H
EN

**For the application of line striping materials.
For professional use only. For outdoor use only.
Not for use in explosive atmospheres or hazardous locations.**

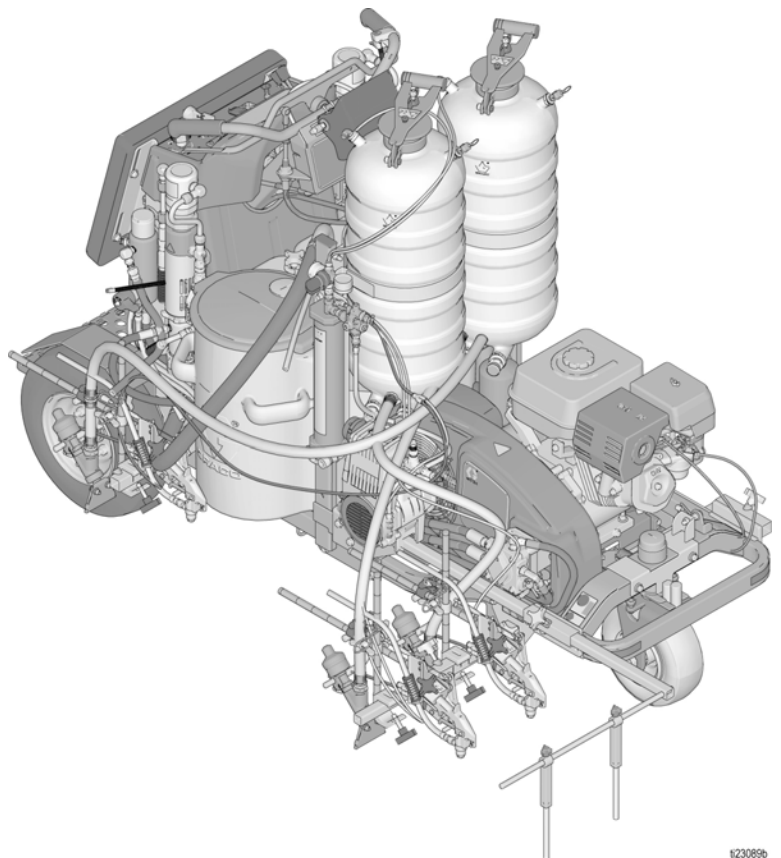
Maximum Operating Speed: 10 mph (16 kph)
Maximum Operating Pressure: 3300 psi (22.8 MPa, 228 bar)



IMPORTANT SAFETY INSTRUCTIONS

Read all warnings and instructions in this manual and in related manuals.
Be familiar with the controls and the proper usage of the equipment.
Save these instructions.

Model	Guns	Pressurized Bead System	Description
17H471	2	No	LLV 250DC
17H472	3	No	LLV 250DC
17H473	2	Yes - 2 Tank	LLV 250DC
25P365	2	Yes - 2 Tank	LLV 250DC
17H474	3	Yes - 2 Tank	LLV 250DC
17H466	1	No	LLV 250SPS
17H467	2	No	LLV 250SPS
17H468	1	Yes - 1 Tank	LLV 250SPS
17J951	2	Yes - 1 Tank	LLV 250SPS
17H469	2	Yes - 2 Tank	LLV 250SPS



Related Manuals:	
3A3393	Operation
311254	Gun
309277	Pump
3A3428	Auto-Layout Applications Methods
332230	Pressurized Bead System (PBS)
3A6981	Steering Cable Replacement

*Use only genuine Graco replacement parts.
The use of non-Graco replacement parts may void warranty.*

Contents

Warnings	3	Front Wheel Replacement	39
Component Identification (LLV 250DC Shown) ..	7	Removal	39
Component Identification (Controls)	8	Installation	39
Grounding Procedure		Parking Brake Service	40
(For Flammable Materials Only)	9	Removal	40
Pressure Relief Procedure	9	Installation	40
Ground Drive Belt Replacement	10	Rear Wheel and Wheel Motors	41
Removal	10	Rear Wheel Removal	41
Installation	10	Rear Wheel Installation	41
Oil Reservoir Belt Replacement	11	Wheel Motor Removal	41
Removal	11	Wheel Motor Installation	42
Installation	11	Wheel Sensor Replacement	42
Hydraulic System Purging	12	Recycling and Disposal	44
Ground Drive Pump Replacement	14	Rechargeable Battery Disposal	44
Removal	14	End of Product Life	44
Installation	14	Troubleshooting	45
Oil Reservoir Pump Replacement	15	General	45
Removal	15	Parts	50
Installation	16	Parts List	51
Hydraulic Gun Manifold Replacement	18	Parts	52
Removal	18	Parts List	53
Installation	19	Parts (24U235 Control Panel)	54
Paint Pump Replacement	21	Parts List	55
Removal	21	Parts	56
Installation	21	Parts List	57
Hydraulic Motor Replacement	22	Parts	58
Removal	22	Parts List	59
Installation	22	Parts (Front Wheel)	60
Clutch Replacement	23	Series A	60
Removal	23	Series B	60
Installation	24	Parts List - Series A	61
Engine Replacement	26	Parts List - Series B	61
Removal	26	Parts (Gun Mount)	62
Installation	27	Parts List	63
Touch-Pad Display	28	Parts	64
Control Board Replacement	29	Parts List	65
Removal	29	Parts (Pump)	66
Installation	30	Parts List (Pump)	67
Battery Replacement	32	Wiring Diagram	68
Removal	32	Wiring Parts List	69
Installation	32	Hydraulic Diagram	70
Fuse Replacement	33	Hydraulic Parts List	71
Forward/Reverse Cable Replacement	34	California Proposition 65	72
Removal	34	Graco Standard Warranty	73
Installation	35		
Steering Cable Replacement	36		
Removal	36		
Installation	38		

Battery Replacement



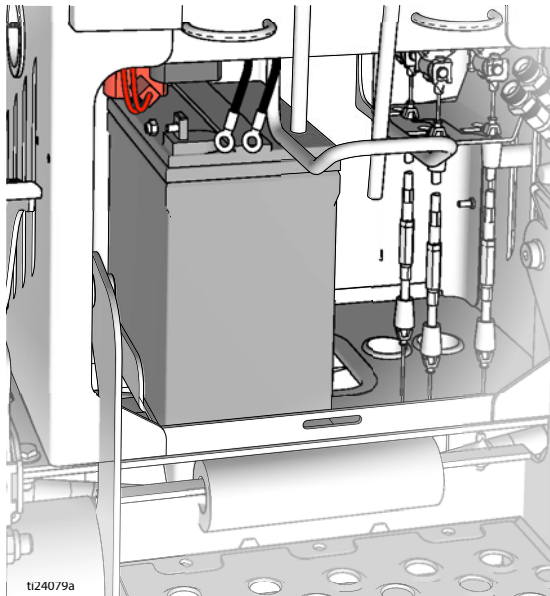
Removal

1. Battery may be removed from the back of the unit by sliding it out above the operator platform.
2. Loosen straps and move coiled hoses above the operators platform.
3. Loosen hold down strap from battery.

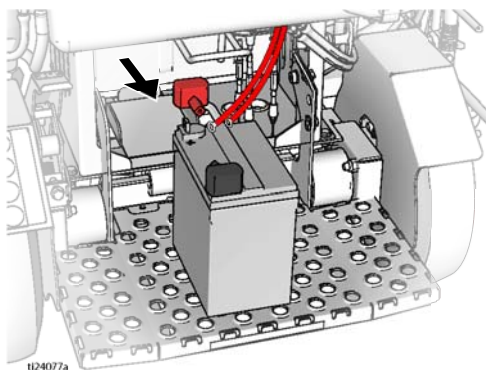
NOTICE

To reduce the risk of battery damage and shorts, always disconnect NEGATIVE (black wire) first.

4. Disconnect two black wires from battery.



5. Lift battery and slide it back onto the platform. Disconnect two red wires from battery.



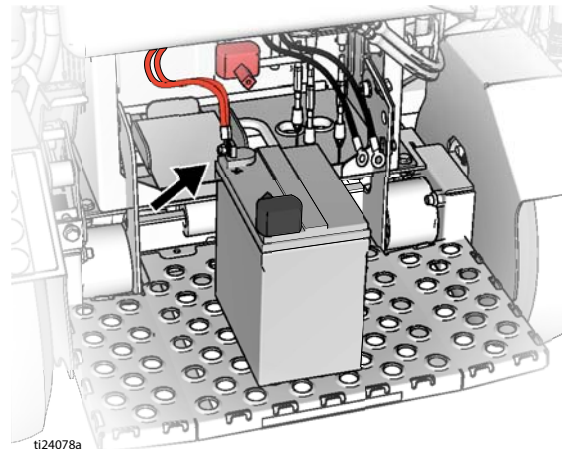
6. Remove battery.

Installation

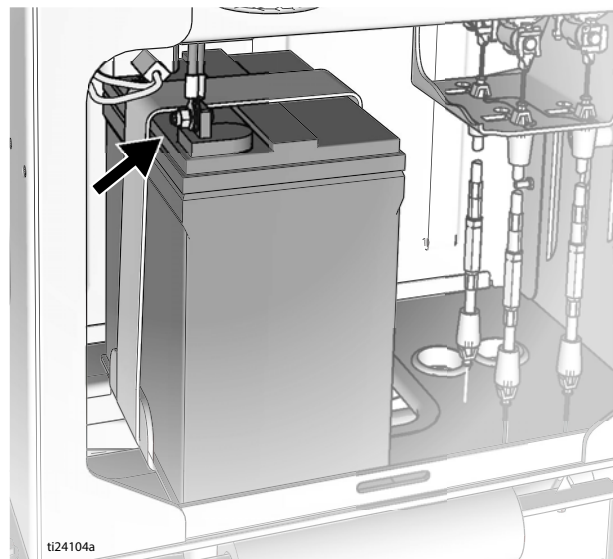
NOTICE

To reduce the risk of battery damage and shorts, always connect NEGATIVE (black wire) last.

1. Place battery on operator platform. Connect two red wires to positive (+) post of the battery.



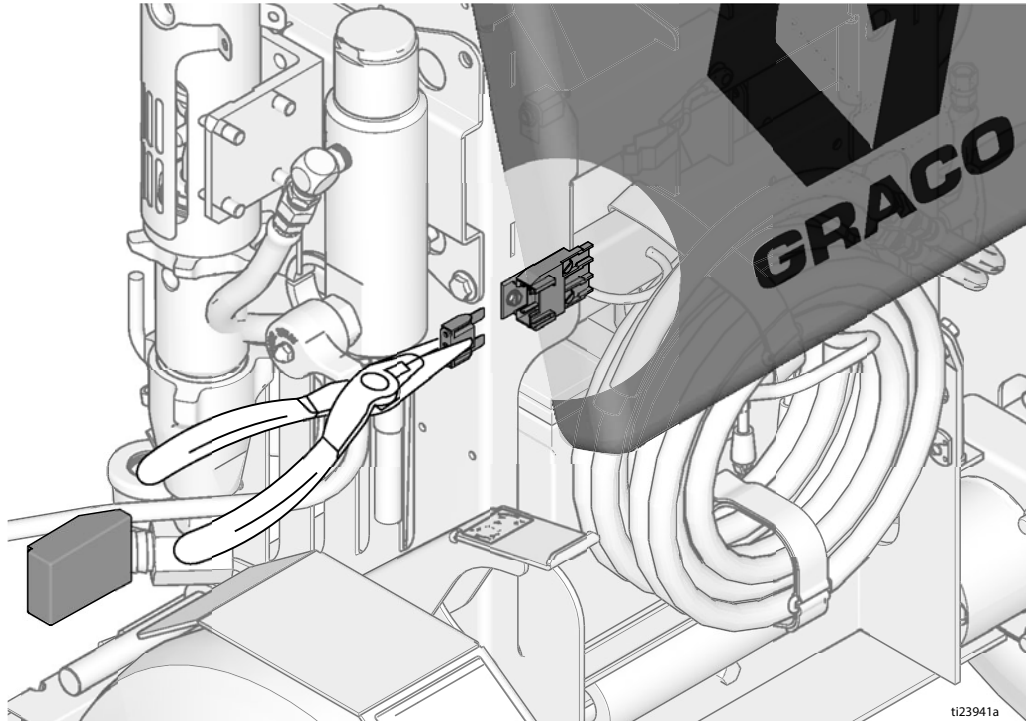
2. Pickup and slide battery into mounting position. Install battery hold down strap.
3. Connect two black wires to negative (-) post of the battery.



4. Place coiled paint hoses over bracket and secure with straps.

Fuse Replacement

1. Remove fuse cover.
2. Use needle-nose pliers to remove old fuse and inspect it for an open circuit.
3. If fuse is open, a wire has shorted to the frame or auxiliary lighting requires too much power. Check wiring or reduce auxiliary lighting before replacing fuse.
4. Use needle-nose pliers to install new fuse.
5. Replace cover.

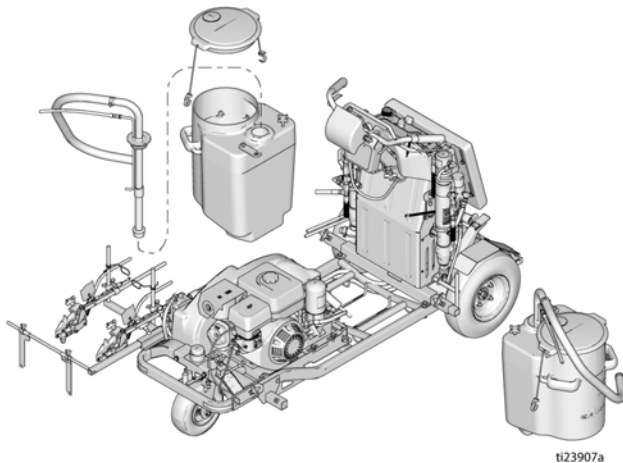


Forward/Reverse Cable Replacement

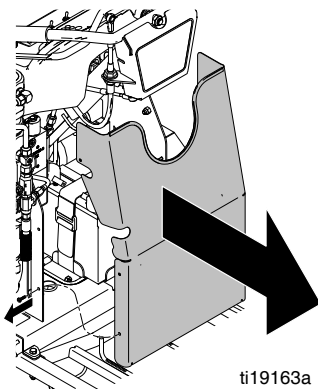


Removal

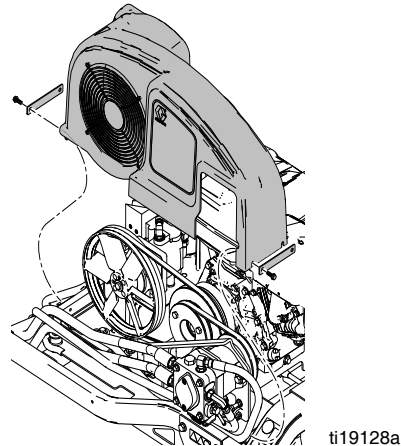
1. If equipped with a Pressurized Bead System, remove pressurized bead tanks and compressor. See Pressurized Bead System manual 332230.
2. Remove tank lids and siphon tubes.



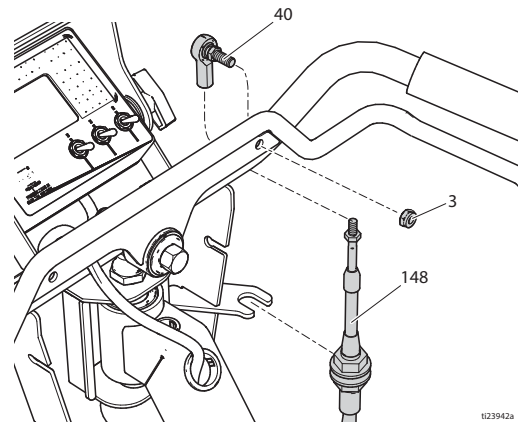
3. Remove tanks from unit.
4. Remove six screws and front shield from unit.



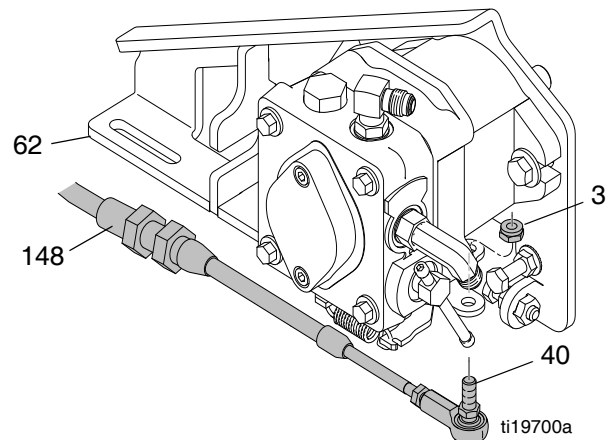
5. Loosen four screws and remove belt cover.



6. At the handlebar, remove locknut (3) and ball joint (40) from handlebar forward/reverse lever. Remove ball joint (40) from cable (148) and save if not replacing. Loosen two nuts on cable (148) and remove from bracket.



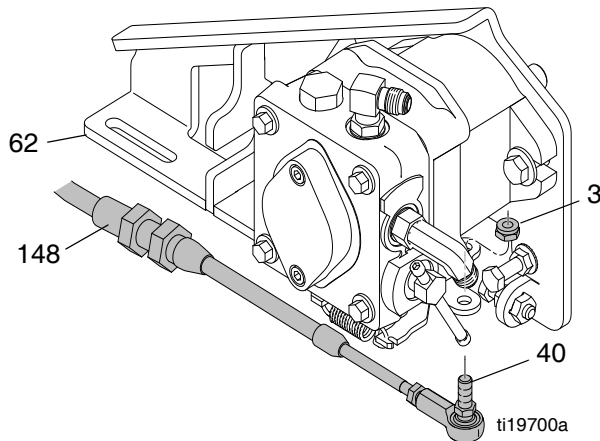
7. At the ground drive pump, remove locknut (3) and ball joint (40) from ground drive pump. Remove ball joint from cable and save if not replacing. Loosen two nuts on cable (148) and remove from bracket (62).



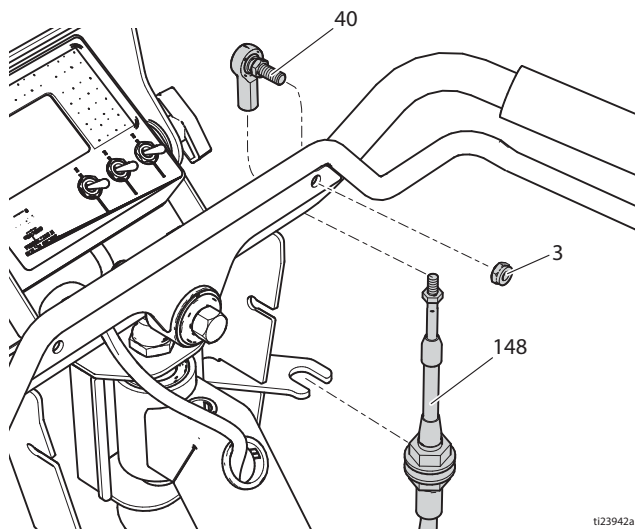
8. Install new cable (148) as old cable is removed to follow same route through frame.

Installation

1. Install new cable (148) by following same route as old cable is being removed.
2. At ground drive pump bracket (62), install cable (148) in bracket slot and tighten two nuts. Install ball joint (40) onto cable and attach ball joint (40) to ground drive pump with locknut (3).



3. Install cable (148) into handlebar bracket and tighten two nuts. Install ball joint (40) onto cable. Install ball joint into handlebar forward/reverse lever and tighten locknut (3).



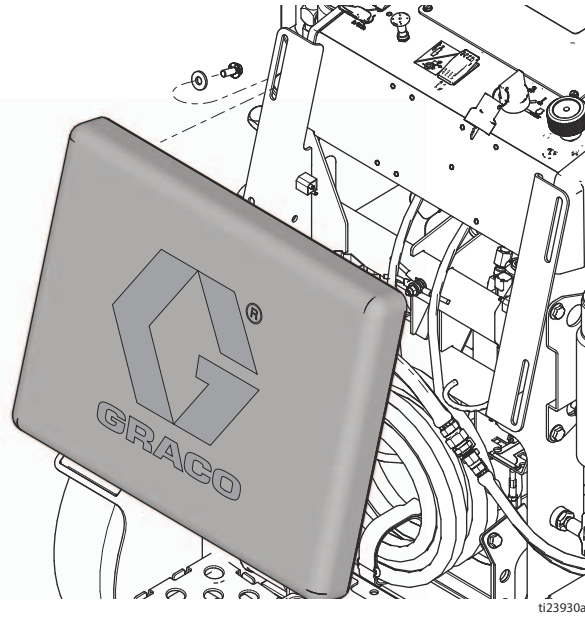
4. Verify that the handlebar forward/reverse lever does not touch handlebar grips. Adjust cable and ball joints if needed.
5. Install belt cover and tighten four screws.
6. Install front shield onto unit and tighten the six screws.
7. Install tanks onto unit.
8. Install siphon tubes and tank lids.
9. If equipped with a Pressurized Bead System, install pressurized bead tanks and compressor. See Pressurized Bead System manual 332230.

Steering Cable Replacement

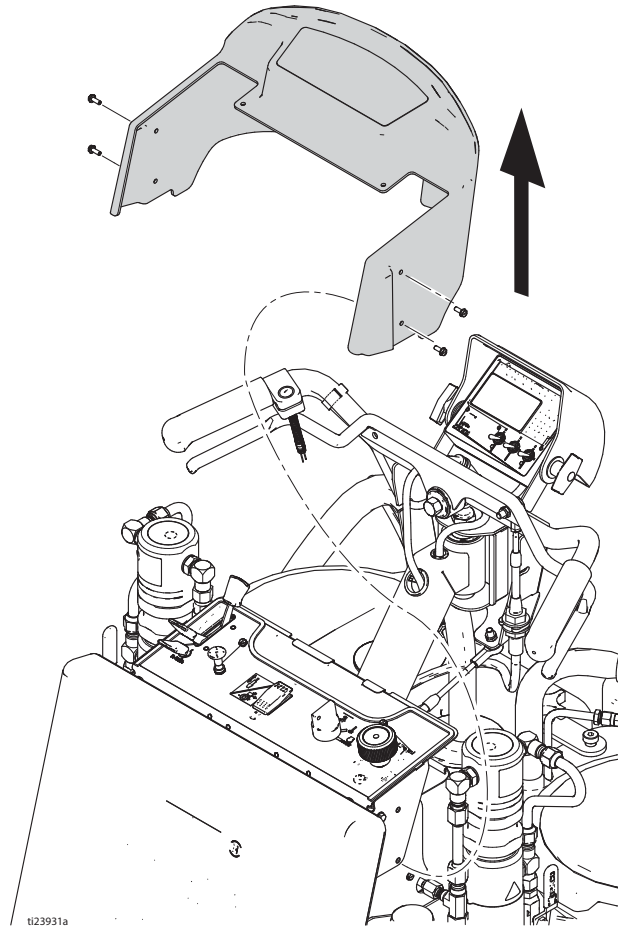


Removal

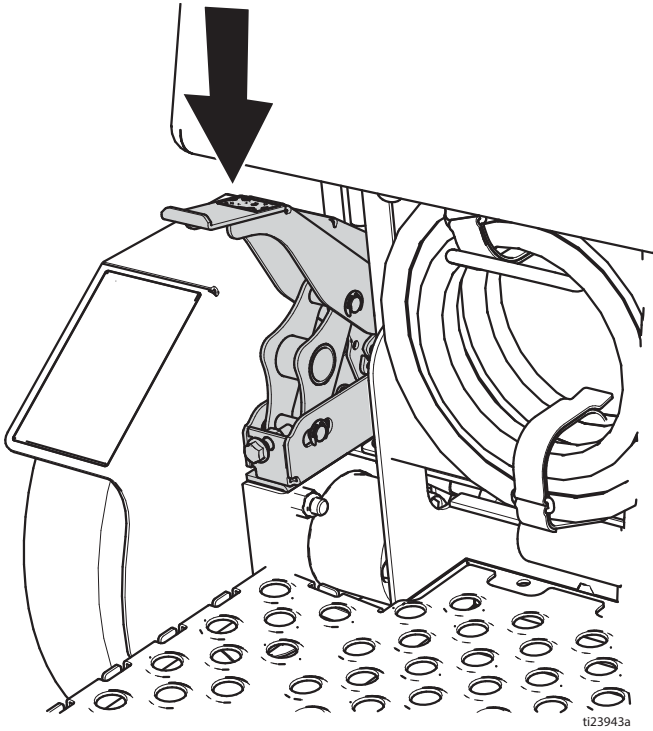
1. Loosen four screws and remove pad.



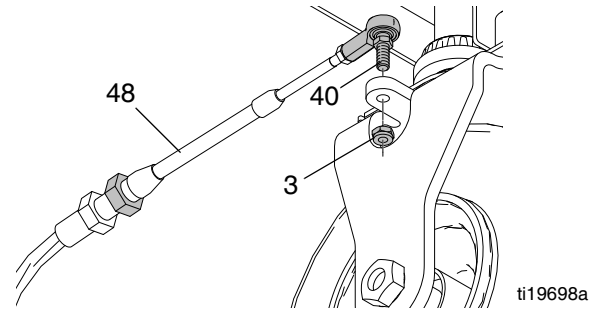
2. Remove six screws and control shroud.



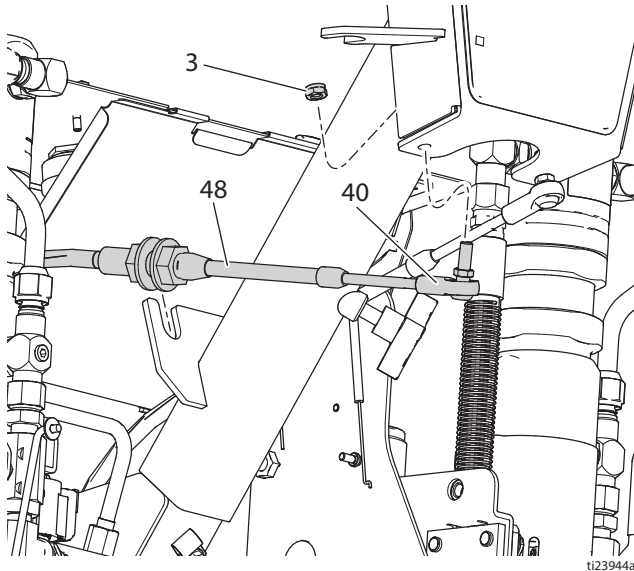
3. Apply parking brake. Raise front wheel off the ground and support frame on two jack stands.



5. On front wheel fork, remove locknut (3) and ball joint (40) from fork. Remove ball joint (40) from cable (48) and save if not replacing. Loosen two nuts on cable (48) and remove from bracket.



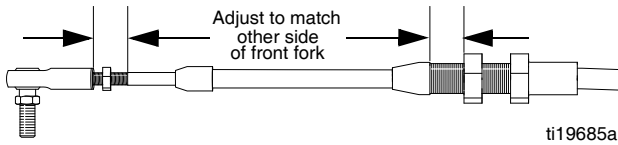
4. At the handlebar, remove locknut (3) and ball joint (40) from handlebar. Remove ball joint (40) from cable (48) and save if not replacing. Loosen two nuts on cable (48) and remove from bracket.



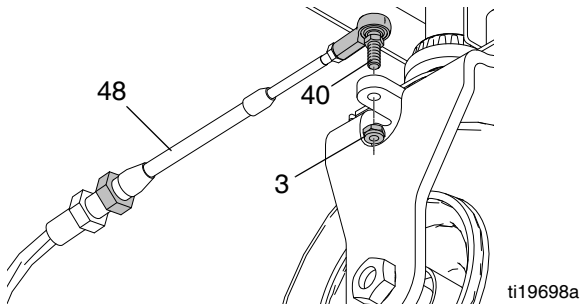
6. Note position of cable (48) and cut off all cable ties that retain cable to frame. Install new cable as old cable is removed to follow same route through frame.

Installation

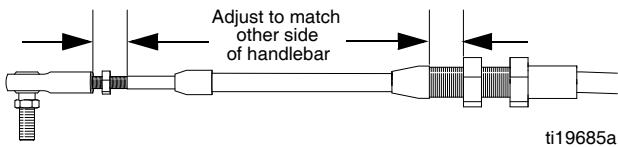
1. Install new cable (48) by following same route as old cable is being removed.
2. At front wheel, adjust front nut on cable (48) to match the threads on the other side of front fork. Install cable (48) into frame bracket and tighten rear nut.



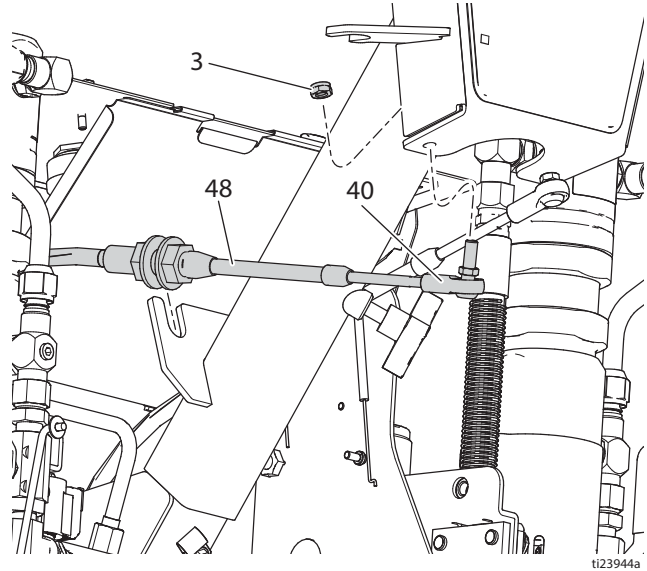
3. Install ball joint (40) onto cable (48) and match threads on other side of front fork. Install ball joint (40) into fork and tighten locknut (3).



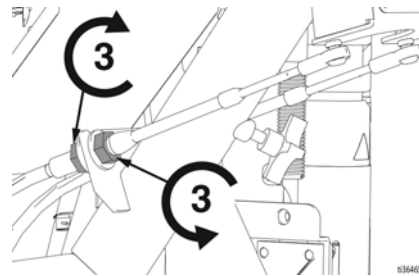
4. At handlebar, adjust front nut on cable (48) to match threads on other side of handlebar. Install cable (48) into bracket and tighten rear nut.



5. Install ball joint (40) onto cable (48) and match threads on other side of handlebar. Install ball joint (40) into handlebar and tighten locknut (3).



6. Verify that handlebar is aligned straight with frame. If misaligned, adjust nuts on cable (48) to straighten handlebar to frame.
7. At handlebar, loosen front nut on each cable (48) by three full rotations. Tighten rear nut on both cables three full rotations. Verify both front and rear nuts are tight against bracket.



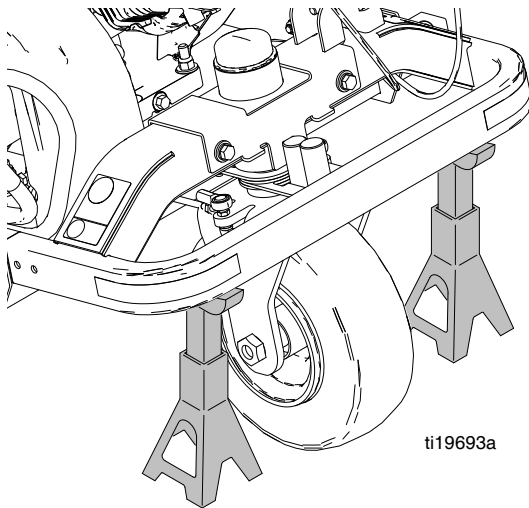
8. Verify that front wheel self-centers and that steering is tight and responsive. Ball joint (40) should rotate easily on the ball. If needed, remove ball joint from fork and adjust ball joint on cable (48).
9. Install pad and tighten four screws.
10. Remove jack stands and test drive sprayer to check steering. Adjust if needed. Install cable ties in locations noted in step 6 of Removal.
11. Verify straight line tracking and adjust if necessary (see Operation manual).
12. Install control shroud and tighten six screws.

Front Wheel Replacement

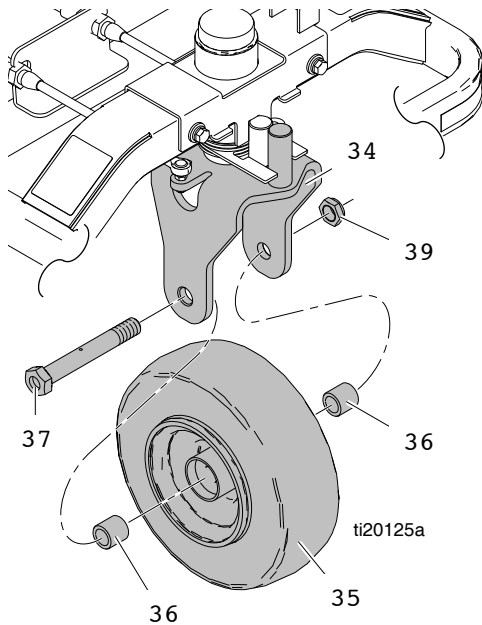


Removal

1. Apply parking brake. Raise front wheel off ground and support frame on two jack stands.



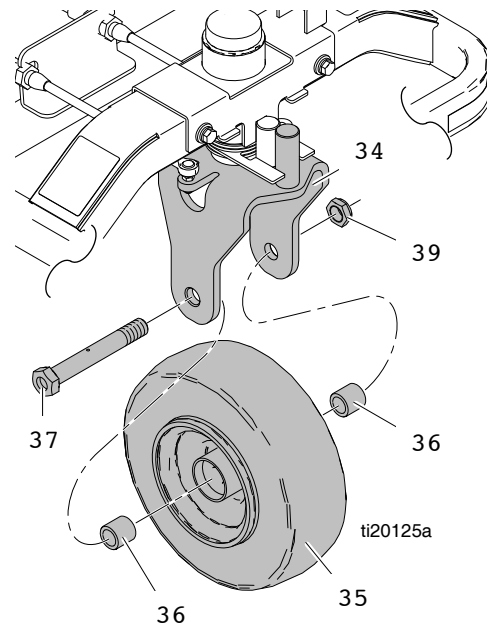
2. Remove locknut (39) from axle bolt (37) and remove axle bolt (37) from fork (34).



3. Remove two spacers (36) and wheel (35) from fork (34).

Installation

1. Insert two spacers (36) into wheel (35) and slide into fork (34).



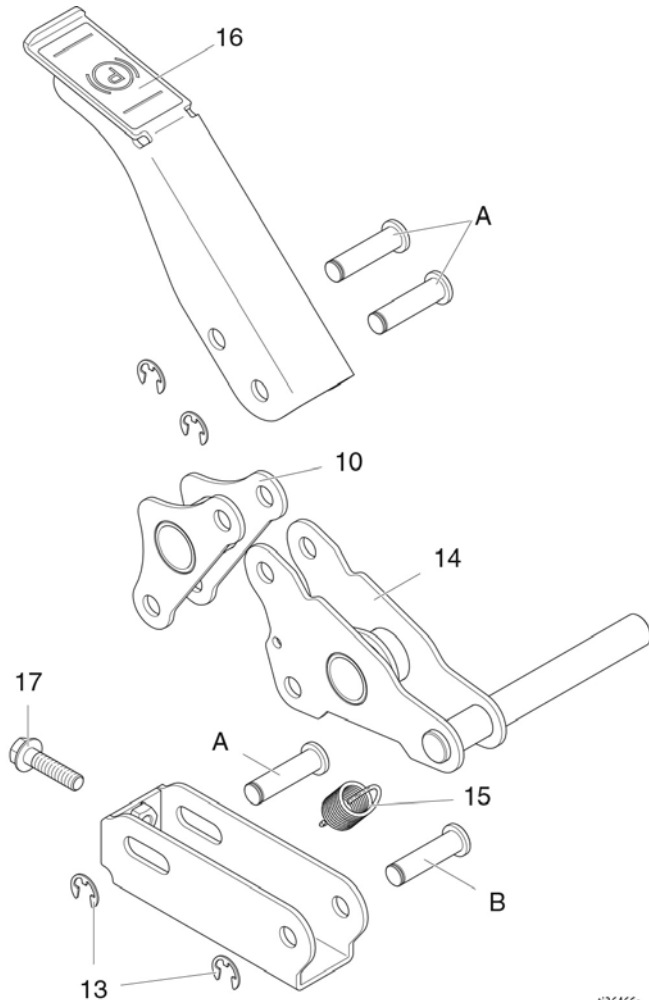
2. Insert axle bolt (37) through fork (34), spacers (36) and wheel (35).
3. Tighten locknut (39) onto axle bolt (37).
NOTE: When properly tightened, the wheel should not wobble to the left or right and should stop coasting quickly.
4. Remove jack stands and test drive sprayer to verify straight line tracking. Adjust if necessary (see Operation manual).

Parking Brake Service



Removal

1. Remove tire, wheel hub, and fender. See, **Wheel Motor Removal**, page 41.
2. Remove clips (13) from three pins (A). Remove pins and levers.
3. Use screwdriver to remove spring (15). Remove clip (13) and pin (B).
4. Replace damaged or worn parts.



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Installation

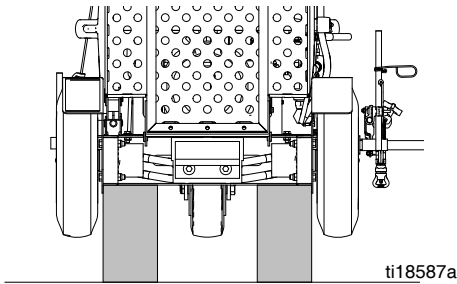
1. Install lever (14) with pin (B) and clip (13).
2. Use screwdriver to install spring (15).
3. Install levers (10, 16) with three pins (A) and clips (13).
4. Install fender, wheel hub, and tire. See, **Wheel Motor Removal**, page 41.
5. Adjust screw (17) to hold tire when brake lever (16) is depressed.

Rear Wheel and Wheel Motors

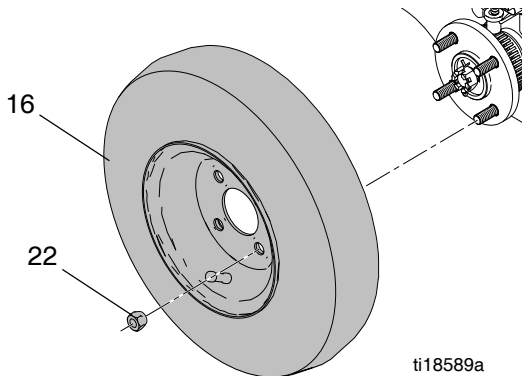


Rear Wheel Removal

1. Set LineStriper on blocks so wheels are off ground.

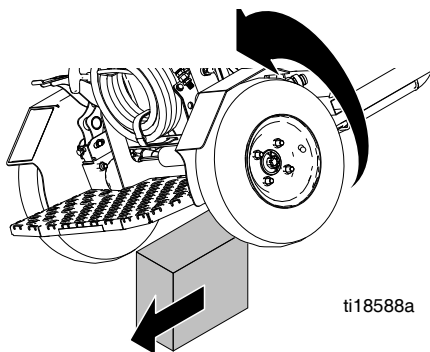


2. Remove four lug nuts (22) and wheel (16).



Rear Wheel Installation

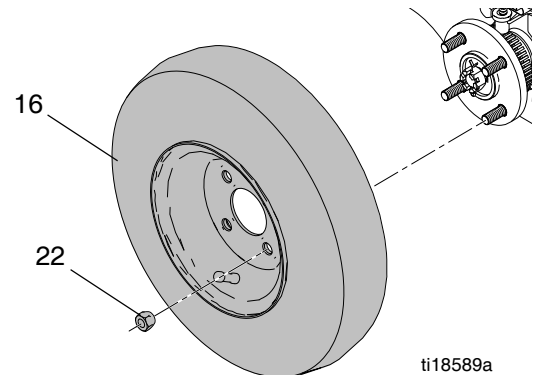
1. Replace wheel and install lug nuts. Alternately tighten lug nuts opposite of each other.
2. Tilt LineStriper on side and remove blocks.



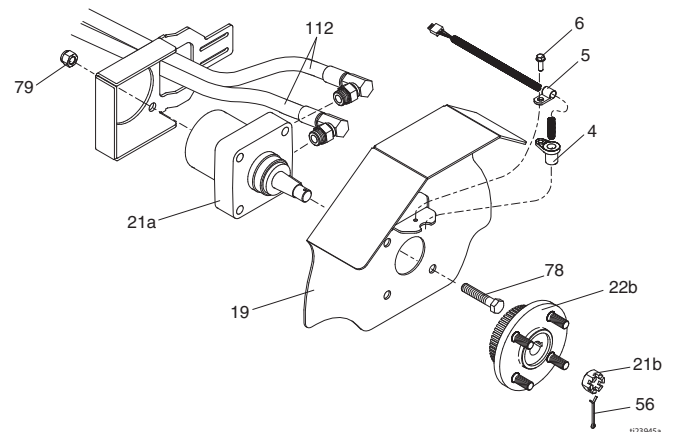
3. Inflate rear tires to 55 +/- 5 psi (380 +/- 34 kPa).

Wheel Motor Removal

1. Place jack under frame near wheel and raise jack.
2. Remove four lug nuts (22) and wheel (16).



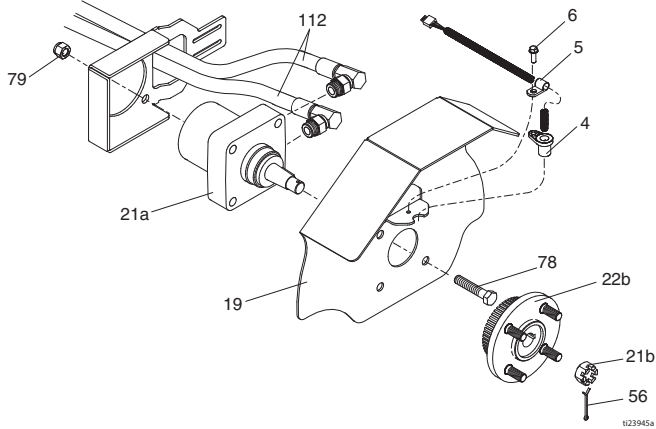
3. Remove pin (56), castle nut (21b) and wheel hub (22b). Wheel hub may require a wheel puller; not supplied by Graco.



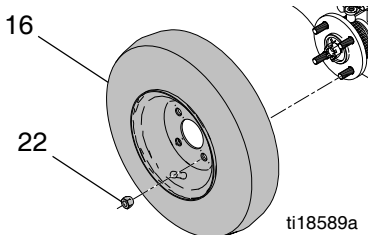
4. Remove screw (6) and distance sensor (4) with clamp (5).
5. Remove four bolts (78), lock nuts (79) from fender (19).
6. Disconnect two hydraulic hoses (112) from wheel motor (21a) and remove wheel motor.

Wheel Motor Installation

1. Connect two hydraulic hoses (112) to wheel motor (21a) and insert wheel motor (21a) into frame (1).
2. Install wheel motor (21a) and fender (19) with four bolts (78) and lock nuts (79).
3. Install distance sensor (4) and clamp (5) with screw (6) on to fender (19).



4. Install wheel hub (22b), castle nut (21b), and pin (56).
5. Install wheel (16) and four lug nuts (22). Alternately tighten lug nuts opposite each other.

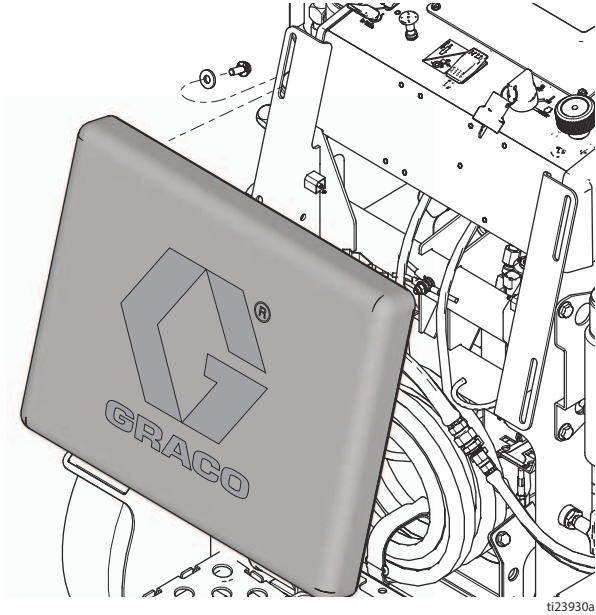


6. Purge hydraulic system. See **Hydraulic System Purging**, page 12.

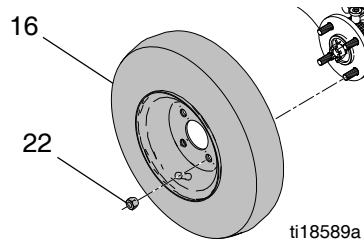
Wheel Sensor Replacement

Removal

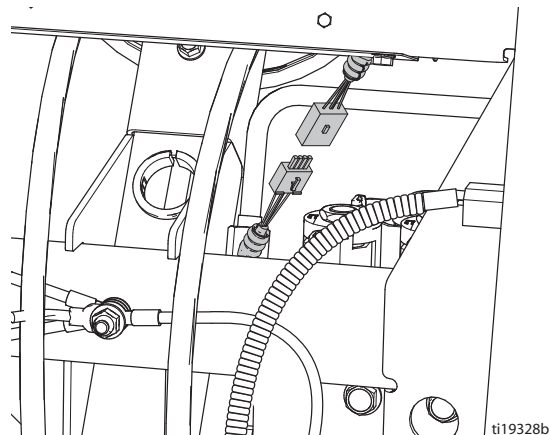
1. Loosen four screws and remove pad.



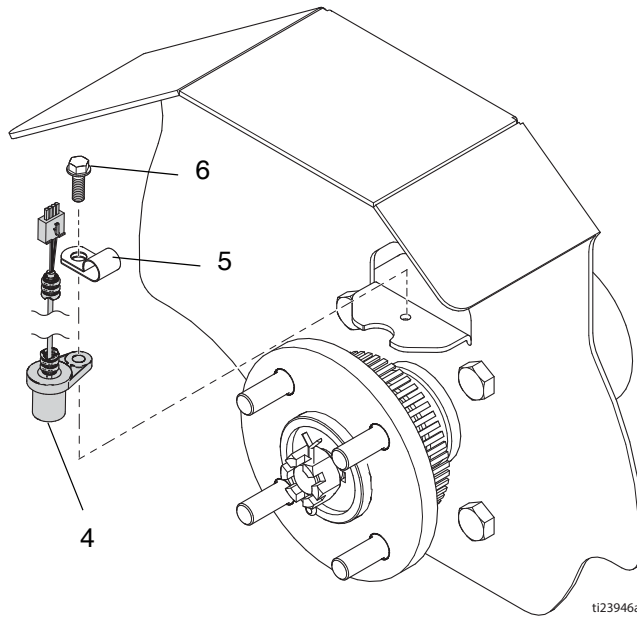
2. Place jack under frame on the side opposite of the brake and raise jack.
3. Remove four lug nuts (22) and wheel (16).



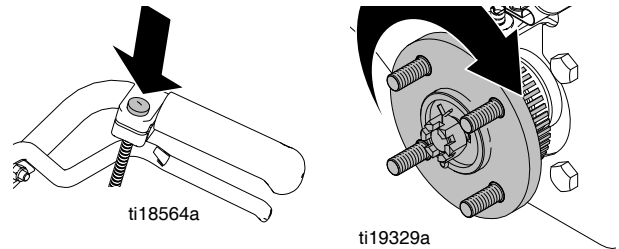
4. Disconnect wheel sensor connector from wire harness.



- Use wrench to remove screw (6), clamp (5), and wheel sensor (4).

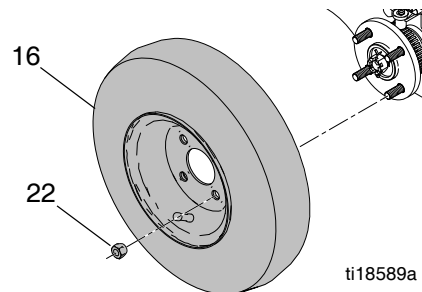


- Press gun trigger control button and rotate hub by hand exactly three turns.



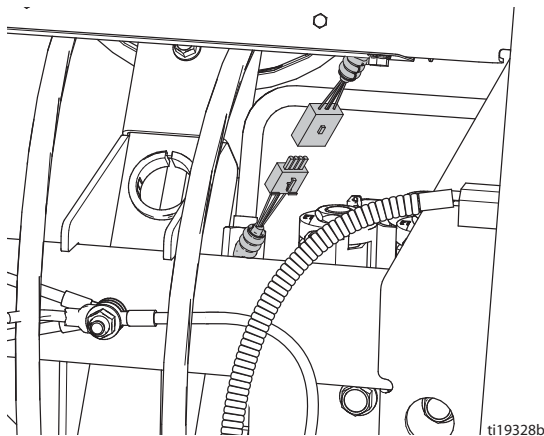
NOTE: Sensor is working properly if the measure display reads 12.3 to 12.7 ft (3.75 to 3.87 m).



- Install wheel (16) and four lug nuts (22).



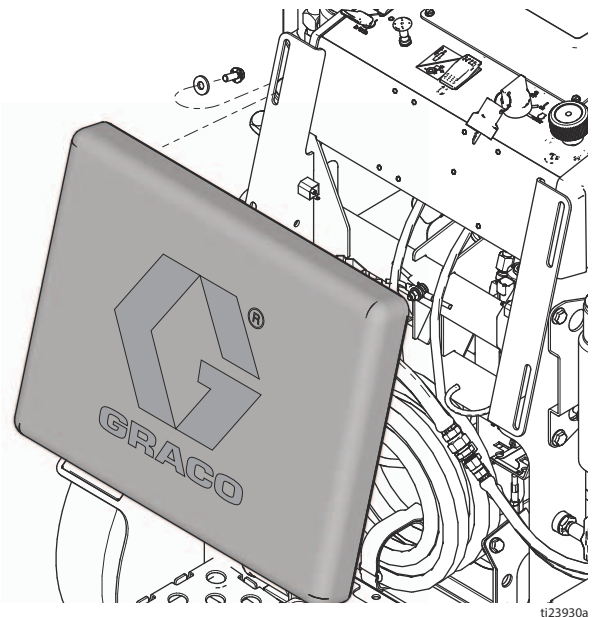
Installation

- Install wheel sensor (4) and clamp (5) with screw (6). See **Removal** step 5.
- Connect wheel sensor connector to wire harness.



- Verify sensor is working by turning on the main power switch and press   to display the **MEASURE** screen.

- Lower jack.
- Install pad and tighten four screws.

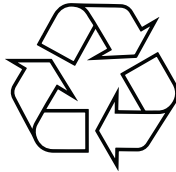


- Calibrate sprayer. See Operation manual.

Recycling and Disposal


Rechargeable Battery Disposal

Do not place batteries in the trash. Recycle batteries according to local regulations. In the USA and Canada, call 1-800-822-8837 to find recycling locations or go to www.call2recycle.org.

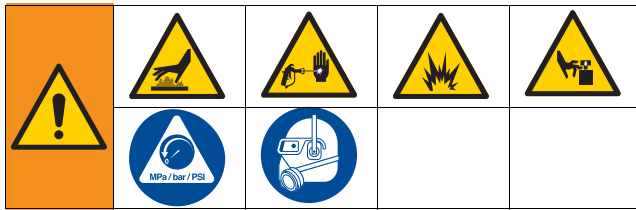


End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**, page 9.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of batteries or electronic components with household or commercial waste.

- Deliver remaining product to a recycling facility.

Troubleshooting



General

Problem	Cause	Solution
Engine will not crank	Battery is discharged.	Turn key switch to ON. Choke engine and pull recoil starter rope.
	Key switch is defective.	Replace key switch.
	Main wire harness is defective.	Replace wire harness, see Notes , page 49.
Engine cranks slow	Excessive hydraulic load. Engine clutch switch is on.	Turn engine clutch switch OFF.
Engine will not start	Engine is out of gas.	Refill gas tank. See engine manual.
	Fuel shut-off lever is OFF.	Move fuel shut-off lever to ON position.
	Engine oil level is low.	Check oil level and add oil if necessary. See engine manual.
	Engine is cold.	Use engine choke.
	Spark plug cable is disconnected or damaged.	Connect spark plug cable or replace spark plug cable.
	Key switch is defective.	Replace key switch.
High engine speed at no load	Main wire harness is disconnected or defective.	Reconnect or replace main wire harness
	Improperly adjusted high speed setting.	Reset high speed to 3600 - 3700 engine rpm at no load.
Machine will not drive	Worn engine governor.	Adjust or replace engine governor.
	Engine clutch switch is OFF.	Turn engine clutch switch ON.
	Hydrostatic drive bypass valve is open.	Close wheel motor bypass valve to engage drive. See Operation manual
	Hydraulic fluid is low.	Shut off striper and add fluid*.
	Drive cable is disconnected or broken.	Reconnect or replace cable.
	Clutch wire harness is disconnected or broken.	Reconnect or replace harness as necessary.
	Clutch does not work.	Replace clutch.
	Ground drive belt is worn or broken.	Adjust or replace ground drive belt.
	Ground Drive Pump is worn or not working.	Replace ground drive pump.
Wheel motor(s) worn or not working.	Replace wheel motor.	

Problem	Cause	Solution
Engine operates, but displacement pump does not operate	Engine clutch switch is OFF.	Turn engine clutch switch ON.
	Pump ball valve is OFF.	Turn pump ball valve ON.
	Pressure setting is too low.	Turn pressure adjusting knob clockwise to increase pressure. See Operation manual.
	Prime/drain valve is closed and system is pressurized.	Open prime/drain valve.
	Hydraulic fluid too low.	Shut off sprayer. Add fluid*.
	Oil reservoir belt is worn, broken, or off the pulley.	Replace oil reservoir belt, see Oil Reservoir Belt Replacement , page 11.
	Tip is clogged.	Reverse tip to clean. See Operation manual.
	Displacement pump piston rod is stuck due to dried paint.	Repair pump. See Pump manual.
	Hydraulic motor not shifting.	Set pump valve OFF. Turn pressure down. Turn engine OFF. Pry rod up or down until hydraulic motor shifts.
Displacement pump operates, but output is low on upstroke	Piston ball is not seating.	Service piston ball. See Pump manual.
	Piston packings are worn or damaged.	Replace packings. See Pump manual.
Displacement pump operates but output is low on downstroke and/or on both sides	Suction tube strainer is clogged.	Clean strainer.
	Suction tube air leak.	Tighten suction tube.
	Pressure setting is too low.	Increase pressure. See Operation manual.
	Fluid filter or tip is clogged or dirty.	Clean filter and tip. See Operation manual or gun manual.
	Engine speed is too low.	Increase throttle setting. See Operation manual.
	Intake valve ball is packed with material or is not seating properly.	Clean intake valve. See Pump manual.
	Pump packings are worn or damaged.	Replace pump packings. See Pump 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 x 1/4 in. hose significantly reduces performance of sprayer. Use 3/8 in. hose for optimum performance.
	Oil reservoir hydraulic filter is dirty or clogged.	Change hydraulic filter and hydraulic oil.
	Intake line to pump inlet is not tight.	Tighten intake line to pump inlet.
Pump is difficult to prime	Hydraulic motor is worn or damaged.	Bring sprayer to Graco distributor for repair.
	Suction tube strainer is clogged.	Clean strainer
	Suction tube air leak.	Tighten suction tube
	Drain line to paint hopper is clogged.	Clean drain line
	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 Pump manual.
	Paint is too thick.	Thin the paint according to supplier recommendations.
Engine speed is too high.	Decrease throttle setting before priming pump. See Operation manual.	

Problem	Cause	Solution
Low stall or run pressure shown on display	Pressure setting too low.	Turn pressure adjusting knob clockwise to increase pressure. See Operation manual.
	New pump or new packings.	Pump break-in period takes up to 100 gallons of material.
	Faulty transducer.	Replace transducer.
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. See Pump manual.
	Displacement rod is worn or damaged.	Replace rod. See Pump manual.
Fluid is spitting from gun	Air in pump or hose.	Check and tighten all fluid connections. Reprime pump. See Operation manual.
	Tip is partially clogged.	Clear tip. See Gun manual.
	Fluid supply is low or empty.	Refill fluid supply. Prime pump. See Operation manual. Check fluid supply often to prevent running pump dry.
Excessive leakage around hydraulic motor piston rod wiper	Piston rod seal worn or damaged.	Replace hydraulic motor piston rod wiper and seal.
Sprayer overheats	Paint buildup on hydraulic components.	Clean hydraulic components.
	Hydraulic oil level is low.	Fill with hydraulic oil. See Operation manual.
Excessive hydraulic pump noise	Low hydraulic fluid level.	Shut off sprayer. Add fluid*.
	Pulleys loose on hydraulic pumps.	Remove belt guard. Check and tighten loose pulley.
Display does not turn on	Key switch is not turned on.	Turn key switch to ON position.
	Main fuse is blown.	Replace fuse. See Fuse Replacement , page 33.
	Cable between display and main board is disconnected or damaged.	Reconnect or replace cable.
	Display board failure.	Replace display board.
Gallon (liter) counter not adding fluid volume	Fluid pressure not high enough.	Must be over 800 psi (55 bar) for counter to add.
	Broken or disconnected pump counter wire, both pumps.	Check wires and connections. Replace any broken wires.
	Missing or damaged magnet, both pumps.	Reposition or replace magnet on pump, see Parts manual (Pump parts) for magnet location.
	Bad sensor, both pumps.	Replace sensor. See Hydraulic Motor Replacement , page 22.
Distance not adding properly (MEASURE mode will be inaccurate and speed will be wrong)	Machine not calibrated.	Perform calibration procedure. See Operation manual.
	Rear tire pressure is too low or too high.	Adjust tire pressure to 55 +/- 5 psi (380 +/- 34 kPa).
	Gear teeth missing or damaged (right side when standing on platform).	Replace distance gear/wheel hub. See Rear Wheel and Wheel Motors , page 41.
	Distance sensor is loose or broken.	Reconnect or replace sensor. See Wheel Sensor Replacement , page 42.
Mils not calculating or calculates wrong	Distance sensor.	See "Distance not adding properly".
	Gallon counter.	See "Gallon (liter) counter not adding fluid volume".
	Line width not entered.	Set line width for each gun. See Operation manual.
	Bad or damaged display board.	Replace display board.

Problem	Cause	Solution
Pressure control knob does not rotate	Knob is jammed.	Pull back cover where remote cable connects to hydraulic pump and turn counter-clockwise (ccw) until free.
Pressure control knob rotates freely with no pressure change	Set screw at hydraulic pump connection is loose.	Remove cover and adjust cable. See Oil Reservoir Pump Replacement , page 15, step 4.
	Remote cable is broken or disconnected.	Replace or reconnect cable. See Oil Reservoir Pump Replacement , page 15, step 4.
Gun does not trigger	Engine clutch switch is not turned ON.	Turn engine clutch switch ON.
	Gun selector switch is OFF.	Turn gun selector switch ON.
	Display is in AUTO MODE and speed is less than 0.7 mph (1.1 kph).	Increase ground speed to be greater than 0.7 mph (1.1 kph).
	System pressure is too low.	Increase fluid pressure up to at least 1000 psi.
	Gun cable is disconnected or broken.	Reconnect or replace cable.
	Disconnected or broken wires from control board to solenoid.	Reconnect or replace wires.
Gun triggering is slow	Gun cable is pinched or kinked.	Change gun cable routing or replace cable.
	System pressure is too low.	Increase fluid pressure up to at least 1000 psi.
AUTO Mode		
Line spacing is not accurate	Wrong line pattern loaded	Reload the correct pattern.
	Machine not calibrated	Perform calibration routine (see Operation manual).
Gun does not trigger	See Gun does not trigger , page 48.	
PARKING LAYOUT Mode		
Gun does not apply dots	Gun selector switch is OFF	Turn gun selector switch ON.
	Dot size setting is too small	Increase dot size.
	Pressure is too low	Increase pressure to 1000 psi.

* Use only Graco approved hydraulic fluid 169236 (5 gallons / 18.9 liter) or 207428 (1 gallon / 3.8 liter)

