Instructions

e-Xtreme® Z60 Electric Driver

3A6919A

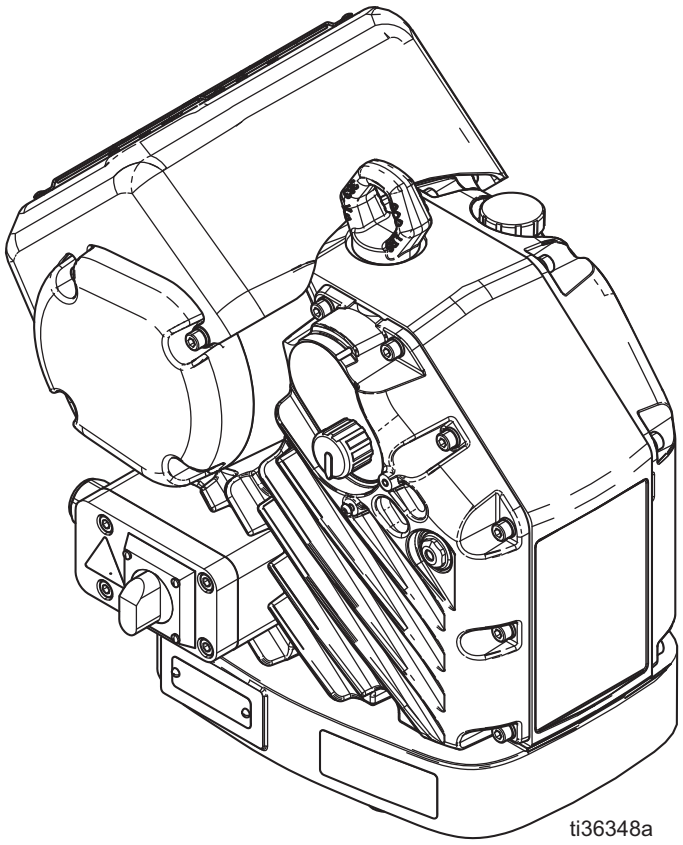
EN

Electric driver for application of protective coatings. For professional use only.
Not approved for use in explosive atmospheres or hazardous locations.

Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Save these instructions.

Model 25P238



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Contents

Related Manuals

Manuals are available at www.graco.com.

Component manuals in English:

Part	Description
3A6917	e-Xtreme Z60 Sprayer Manual

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING


ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Connect only to grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.
- Wait five minutes after disconnecting power cord before servicing.




FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

⚠ WARNING

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

⚠ WARNING

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

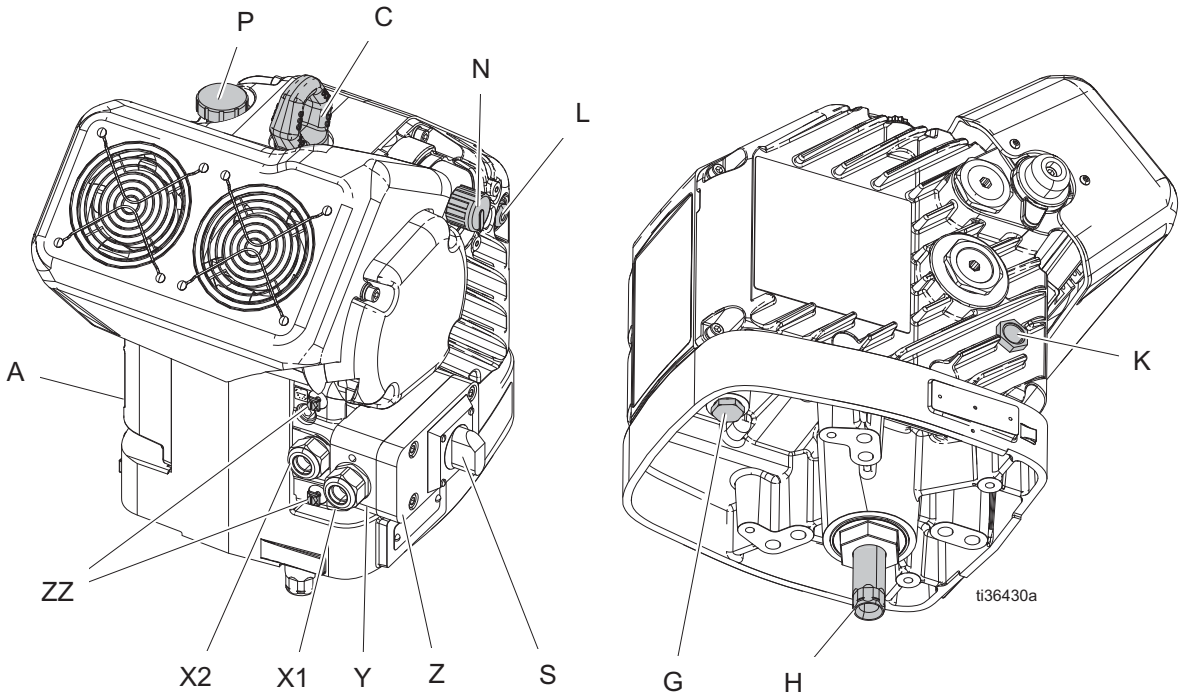
- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

Component Identification



Ref.	Description
A	Driver
C	Lift Ring
G	Oil Drain Plug
H	Driver Output Shaft
K	Oil Sight Glass
L	Status Indicator Light (LED)
N	Pressure Control Knob

Ref.	Description
*P	Oil Fill Cap (vented)
S	Power Switch (Lock-out tag-out equipped)
Y	Electrical Junction Box
Z	Electrical Junction Box Cover
ZZ	Ground Screws
X1	Cord Grip (for Power Cord)
X2	Cord Grip (for Fan Cable)

* The driver ships pre-filled with oil from the factory. The temporary unvented cap is for shipping purposes only and must be replaced with the supplied vented cap before use.

Installation

Improper wiring may cause electric shock or other serious injury. All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

Power Supply Requirements

See **Table 1** for power supply requirements. The system requires a dedicated circuit protected with a circuit breaker.

Table 1: Power Supply Specifications

Voltage	Phase	Hz	Current
200-240 VAC	1	50/60	15 A

Select the minimum cord wire gauge based on length according to the table below:

Length	Gauge	mm^2
50 ft (15.24 m)	12 AWG	3.31
100 ft (30.48 m)	10 AWG	5.26
200 ft (60.96 m)	6 AWG	13.29
300 ft (91.44 m)	4 AWG	21.14

Connect Power Cord

1. Cut power cord wires to the following lengths:
   - Ground wire - 6.5 inches (16.5 cm)
   - Power wires - 3.0 inches (7.6 cm)
   - Add ferrules as necessary. See FIG. 1.

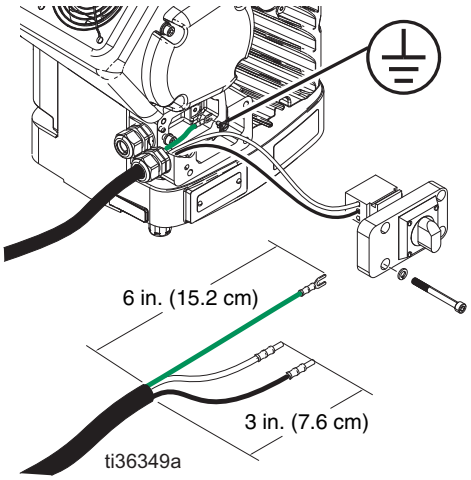


FIG. 1: Power Cord

2. Bring cord to unit and remove four screws to separate junction box cover (Z) with power switch (S) from junction box (Y). See FIG. 2.

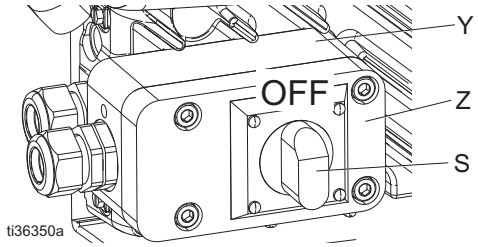


FIG. 2: Power Switch

3. With junction box cover (Z) and power switch (S) detached from machine, wires inside junction will appear as below.

   NOTE: The two fan harness wires will be installed in disconnect block (J) in both 1L1 and 3L2 terminals.

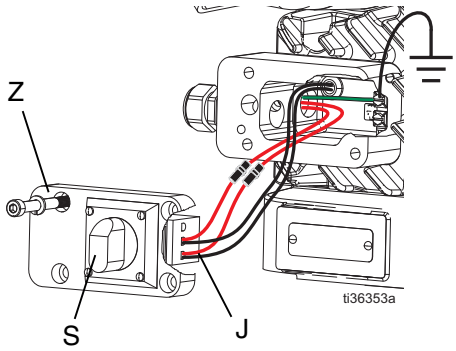


FIG. 3: Grounding Wire

4. Insert power cord (from step 1) through cord grip (X1) and into junction box (Y). Attach the power cord ground wire to the lower ground terminal inside junction box (Y).

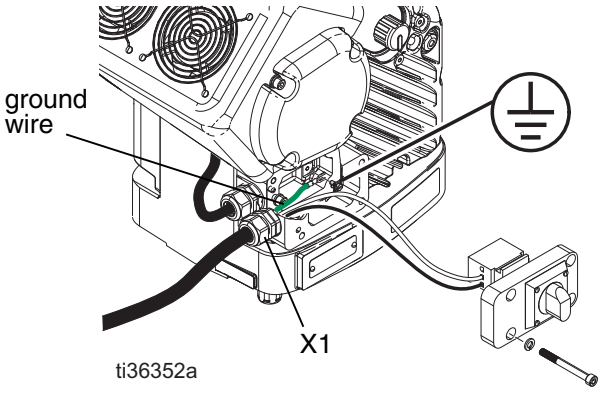


FIG. 4: Junction Box Connections

5. Power wires should be installed into 2T1 and 4T2 terminals. See **Wiring Diagrams** on page 24.

   NOTE: The upper ground screw is used by the fan wire harness and should not be used for both connections.

6. Place fan wires and other power wires into open area on either side of disconnect block (J) as space permits. Reinstall junction box cover (Z).

NOTICE

If wires get pinched when the screws are tightened, damage will occur. Make sure all wires are routed correctly before installation.

7. Replace junction box screws and washers removed in step 2 and tighten cord grip (X1) to securely hold power cord in junction box (Y). See FIG. 5.

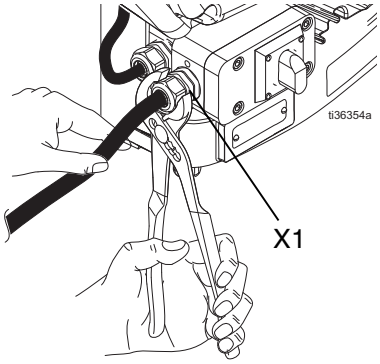


FIG. 5: Junction Box Screws and Strain Relief Cord Grip

Grounding

The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

Driver: The driver is grounded through the power cord.

Install Vented Oil Cap Before Using Equipment

The driver gear-box is shipped from the factory pre-filled with oil. The temporary unvented cap (PX) prevents oil leaks during shipment. This temporary cap must be replaced with the vented oil cap (P), supplied with the equipment, before use.

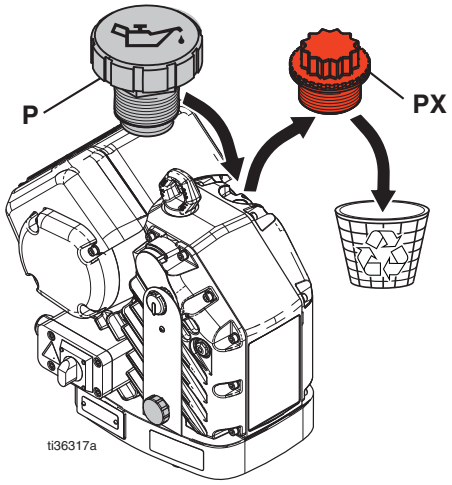


FIG. 6: Unvented and Vented Oil Caps

Operation

Startup

1. Perform **Installation** procedures starting on page 7.
2. Turn the pressure control knob (N) fully counterclockwise to 0.
3. Connect the power cord to a power supply.
4. Turn the power switch (S) ON.
5. Check that the status indicator (L) is on and not flashing.

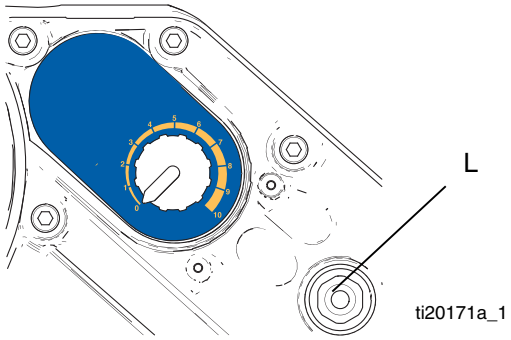


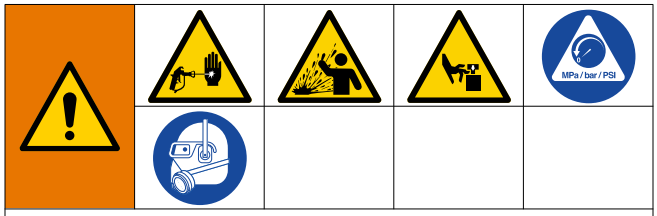
FIG. 7: Status Indicator Light

Shutdown

To shut down the sprayer, perform the **Pressure Relief Procedure** on page 9.

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Pull pressure control knob (N) out and turn counterclockwise until it stops. Push the knob in to lock.
2. Disconnect the power cord from the power supply.
3. Relieve all fluid pressure as explained in your separate sprayer manual.

Driver Operation

Pressure Control

The driver will adjust the speed to maintain a constant fluid pressure.

1. Pull the pressure control knob (N) out to set.
2. Turn the knob clockwise to increase the pressure, or counter-clockwise to decrease the pressure. Push the knob to lock.

Maintenance

NOTICE

Do not open/remove gear cover. The gear side is not intended to be serviced. Opening the gear cover may alter the factory set bearing pre-load and may reduce the product life.

Preventative Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventative maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

Change the Oil

NOTICE

Only use oil with Graco part number 16W645. Any other oil may not lubricate properly and can cause damage to the drive train.

NOTE: Change the oil after a break-in period of 200,000 to 300,000 cycles. After the break-in period, change the oil once per year.

1. Place a minimum 2 quart (1.9 liter) container under the oil drain port. Remove the oil drain plug (15). Allow all oil to drain from the driver.

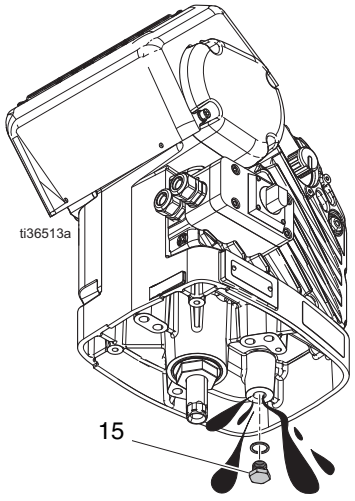


FIG. 8: Oil Drain Plug

2. Reinstall the oil drain plug (15). Torque to 18-23 ft-lb (25-30 N•m).

NOTICE

Do not over-torque. The drain plug can become stripped and damaged.

3. Open the fill cap (P) and add Graco Part 16W645 ISO 220 silicone-free synthetic EP gear oil. Check the oil level in the sight glass (K). (See FIG. 9.) Fill until the oil level is near the halfway point of the sight glass. The oil capacity is approximately 1.0 - 1.2 quarts (0.9 - 1.1 liters). **Do not overfill.**

4. Reinstall the oil fill cap (P).

Check Oil Level

Check the oil level in sight glass (K). (See FIG. 9.) The oil level should be near the halfway point of the sight glass when the sprayer is not running. If oil is low, open oil fill cap (P) and add Graco Part No. 16W645 ISO 220 silicone-free synthetic EP gear oil. See FIG. 9.

The oil capacity is approximately 1.0 - 1.2 quarts (0.9 - 1.1 liters). **Do not overfill.**

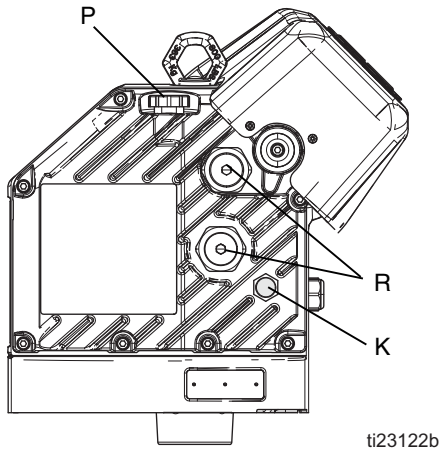


FIG. 9: Sight Glass and Oil Fill Cap

Bearing Pre-Load

See FIG. 9. The bearing pre-loads (R) are factory set and are not user adjustable. Do not adjust the bearing pre-loads.

Troubleshooting

Error Code Troubleshooting

Error codes can take two forms:

- Alarm: Alerts you to the cause of the alarm and shuts down the driver.
- Deviation: Alerts you to the problem, but the driver may continue to run past the set limits until the system absolute limits are reached.

NOTE: The blink code is displayed using the status indicator (L) on the driver. The blink code given below indicates the sequence. For example, blink code 2 indicates two blinks, a pause, and then repeats.

NOTE: To clear an error code, cycle power by turning the power switch (S) to the OFF position for at least 30 seconds before turning back ON.

Standby Mode

When slow blinking is displayed, the driver has entered Standby Mode. When the driver is on and pressurized but the pump has not moved any material, the driver will enter Standby Mode.

Standby Mode will be exited when:

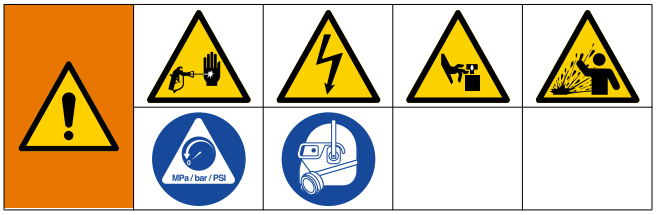
- Material starts to dispense and causes the pump to move, OR
- The pressure control knob (N) is adjusted, OR
- The power switch (S) is cycled OFF and ON

Error Codes Table

Blink Code	Error Type	Troubleshooting Steps
1	Alarm	**Pump Diving** The pump is diving rapidly. A pressure imbalance between the up and down stroke of the pump is causing the pump to dive with excessive speed. • Pump diving may occur when the pump runs out material while spraying at high pressure. • Verify that material is being properly fed to the pump. • Pressure from the hose could flow back into the pump on the down stroke. • Verify that the check valve is installed and is properly working.
2	Alarm	**Voltage Too Low** • Verify that line voltage is within the range specified in **Technical Specifications**, page 26. • Use the recommended cord in Power Supply Requirements listed in the Driver Installation manual. • Cycle power and check status indicator (L) to see if the error is still active.
3	Alarm	**Voltage Too High** • Verify that line voltage is within the range specified in **Technical Specifications**, page 26. • Cycle power and check status indicator (L) to see if the error is still active.

Blink Code	Error Type	Troubleshooting Steps
4	Deviation	**High Temperature** The temperature of the system is near the maximum operation temperature. The performance has been reduced to prevent the driver from completely shutting down. • Check fan operation. Clean the fan and driver housing. • Reduce pressure, duty cycle, or gun tip size. • Move the unit to a cooler location.
5	Deviation	**Low Temperature** Warm equipment.
6	Alarm	**Motor Temperature Fault** Motor is running too hot. Allow unit to cool. • Check fan operation. Clean overspray buildup from the fan and driver housing. • Reduce pressure, duty cycle, or gun tip size. • Move the unit to a cooler location.
7	Alarm	**Board Temperature Fault** The control board is running too hot. Allow the unit to cool. • Check fan operation. Clean overspray buildup from the fan and driver housing. • Reduce pressure, duty cycle, or gun tip size. • Move the unit to a cooler location.
8	Alarm	**Encoder Calibration Error** • Cycle power and check status indicator (L) to see if the error is still active. • Calibrate the encoder (this code will blink if calibration is in progress).
9	Alarm	**Encoder Error** • Cycle power and check the status indicator (L) to see if the error is still active. • Verify that the encoder cable (EE) is connected securely (see **Wiring Diagrams**, page 24). • The encoder may need replacement.
10	Alarm	**Software Versions Do Not Match** • See the system manual for software token part number. • Obtain software update token and follow Software Update procedure.
11	Alarm	**Circuit Board Communication Failure** Cycle power and check status indicator (L) to see if the error is still active.
12	Alarm	**Internal Circuit Board Hardware Failure** Cycle power and check status indicator (L) to see if the error is still active.
13, 14	Alarm	**Internal Software Error** Cycle power and check status indicator (L) to see if the error is still active.
Slow Blink	Deviation	See **Standby Mode**, page 11.

Repair



Replace Shaft Bearing Assembly 25C164

1. Stop pump at the top of its stroke. Shut off and remove power to driver.
2. Follow the **Pressure Relief Procedure** on page 9.
3. Disconnect the lower from the driver. See your sprayer manual.
4. Drain oil from driver. See **Change the Oil**, page 10.
5. Reinstall oil drain plug (25). Torque to 18-23 ft-lb (25-30 N•m).

NOTICE

Do not over-torque. The drain plug can become stripped and damaged.

6. Unscrew shaft bearing assembly (19) from driver. See **Parts**, page 21.
7. Install new shaft bearing assembly. Torque to 175-200 ft-lb (240-280 N•m).
8. Fill with oil. See **Change the Oil**, page 10.
9. Reconnect lower to driver (see your sprayer manual).

Replace Fan Fuses

1. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect unit from power source.
3. Remove four screws (91) and remove junction box cover (89) from driver to gain access to the disconnect block (7). Gently pull out fuse holders.
4. Unscrew fuse holder, remove old fuse, and replace with new fuse (Graco part number 116682) (5 mm x 20 mm, 500 mA, 250V, Slow Blow). Reconnect fuse holder and tighten.

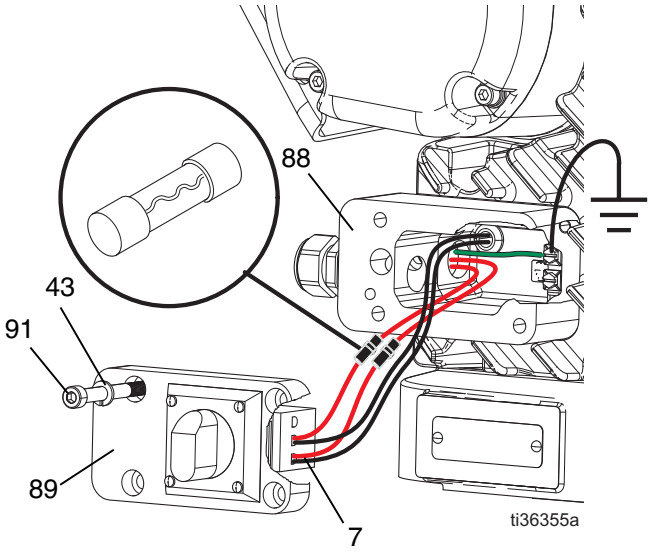


FIG. 10: Fuse Location

5. Repeat step 4 with second fuse.
6. Tuck wires back into junction box (88) and reinstall junction box cover (89) with four screws (91) and washers (43).

NOTICE

If wires get pinched when the screws are tightened, damage will occur. Make sure all wires are routed correctly before installation.

Disconnect Fan Wires

1. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect unit from power source.
3. Remove four screws (91) and remove junction box cover (89) from driver to gain access to the disconnect block (7). See FIG. 10.
4. Loosen terminal screws for 1L1 and 3L2 and gently remove wires from each location.

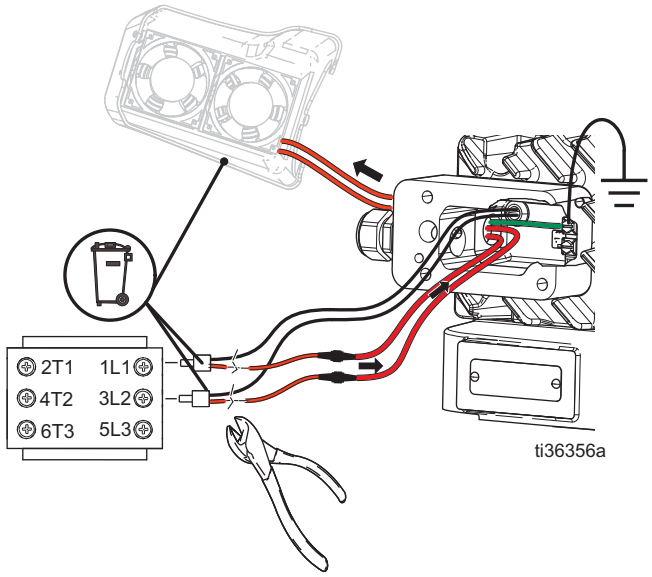


FIG. 11: Remove Wires

5. Use a wire cutter to cut ferrule tips from fan wires and motor power wires close to ferrules.

   NOTE: Do not cut the tip off of the ground wire. See FIG. 11.

6. Remove the upper grounding screw (201) and disconnect green fan ground wire.

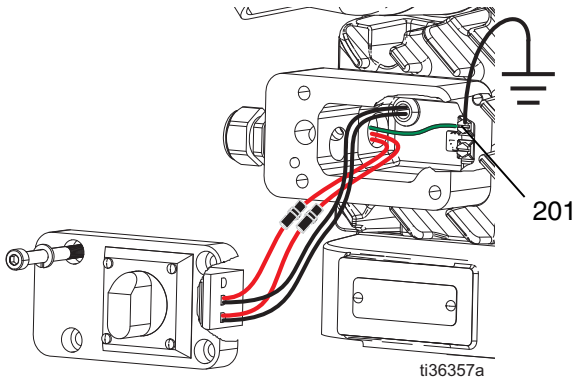


FIG. 12: Fan Grounding Screw

7. Loosen fan wire harness cord grip (89) attached to driver and pull out fan wire harness.

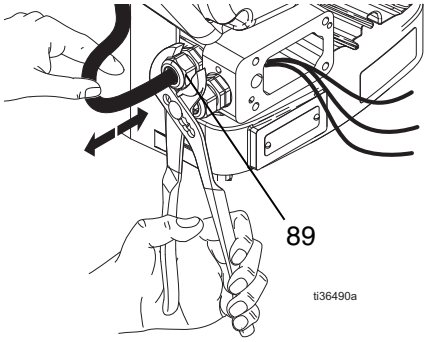


FIG. 13: Remove Fan Wires

Replace Fan Shroud (24V224)

1. Follow **Disconnect Fan Wires** on page 14.

2. Remove screws (56, 24) that attach the fan assembly to driver and pull up on end farthest from junction box. Slide assembly toward junction box to remove.

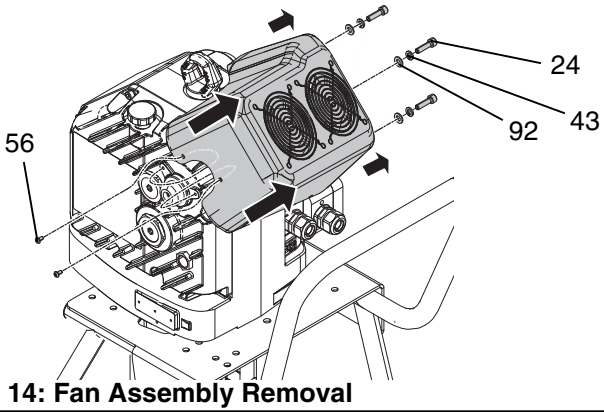


FIG. 14: Fan Assembly Removal

3. Install new fan assembly. To reattach the fan assembly, slide cover into slots for tabs located on junction box side and gently push down far end (see FIG. 14 on page 15).

4. Follow **Reinstall Fan Wires** on page 15.

Reinstall Fan Wires

1. Route wires through fan cord grip (89) attached to driver (see FIG. 13 on page 15).

2. Reattach the ground wire to the upper grounding screw. Tighten ground screw. See FIG. 3 on page 7.

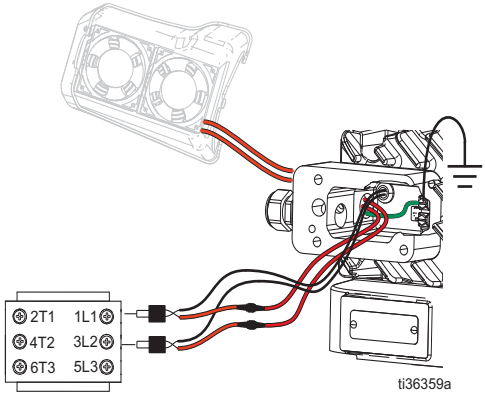


FIG. 15: Attach Grounding Screw

3. Use a ferrule to connect each fan wire to one of two wires coming out of the electronics cover (3) and crimp ferrule with a crimp tool. Then attach one wire set into the disconnect block (7) terminals 1L1 and the other wire into location 3L2. See FIG. 15 on page 15.

4. Tuck wires back into junction box (88) and reinstall junction box cover (89) with four screws (91) and washers (19).

NOTICE

If wires get pinched when the screws are tightened, damage will occur. Make sure all wires are routed correctly before installation.

5. Tighten fan cord grip (89) (see FIG. 13 on page 15).

Replace Electronics Cover

Removal

1. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect unit from power source.
3. Remove the lower from the sprayer (see the Sprayer manual). **NOTE:** This is required to complete the calibration procedure (page 18).
4. Follow **Disconnect Fan Wires** on page 14.
5. Remove lower ground screw and power cord ground wire, then remove the box sleeve mounting screw (126) and box sleeve (88).

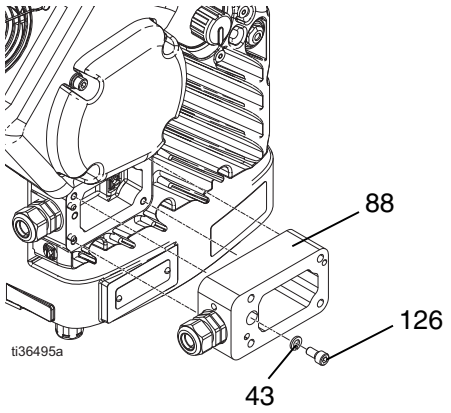


FIG. 16: Junction Box Sleeve

6. Remove 12 screws (24) and washers (43) from electronics cover (3).

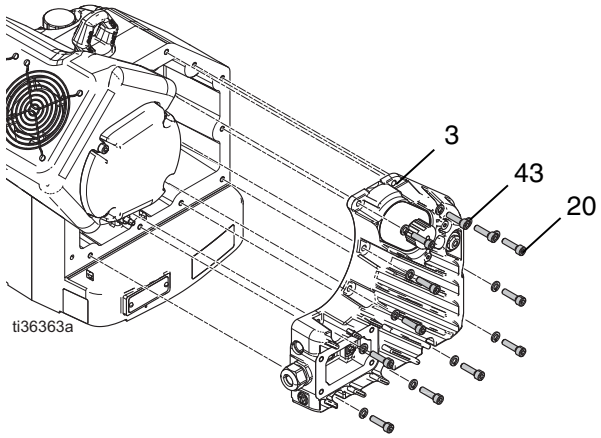


FIG. 17: Electronics Cover Removal

7. Carefully separate the electronics cover (3) from the driver, then disconnect the wires.

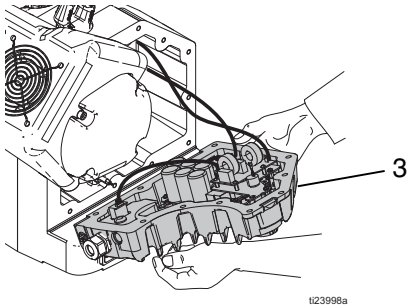


FIG. 18: Remove Electronics Cover

NOTICE

All wires must be disconnected before the cover is completely removed. Hold the cover in place while disconnecting wires or let the cover rest on a work surface to avoid damaging the wires and connections.

8. Pull wire connectors down, out of the harness clip and disconnect the motor power and motor temperature wires (M).

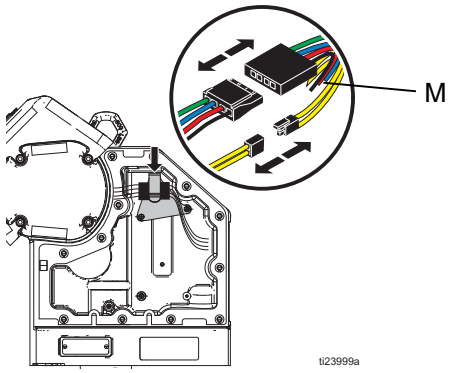


FIG. 19: Motor Wires

9. Disconnect the stroke position sensor wire (29).

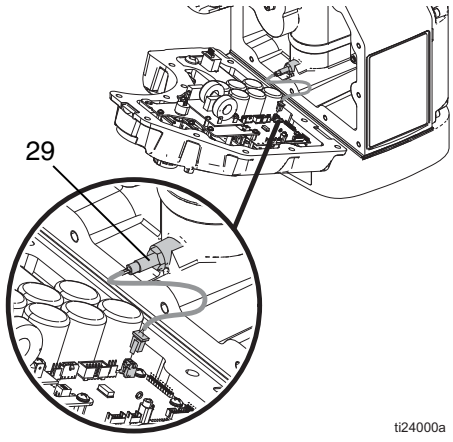


FIG. 20: Stroke Position Wire

10. Disconnect encoder cable (E).

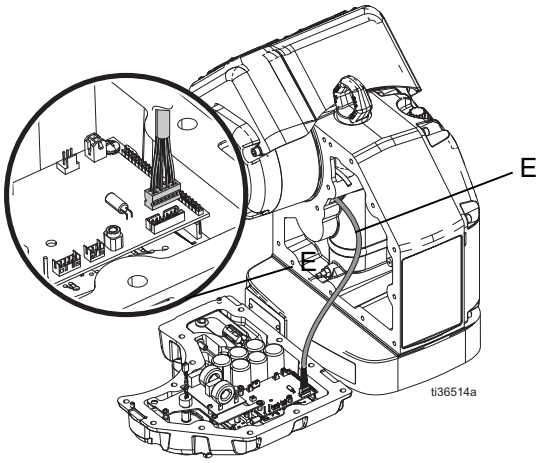


FIG. 21: Encoder Cable

11. Disconnect the token cable (86).

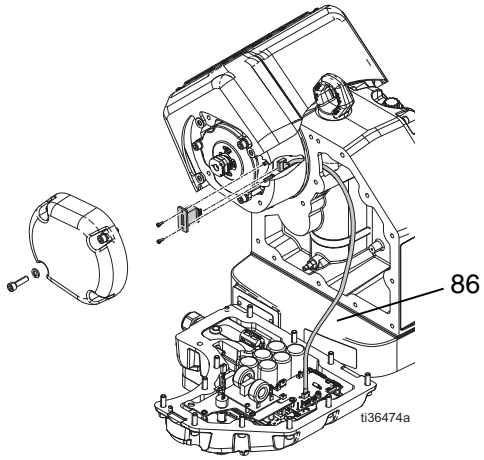


FIG. 22: Token Cable

Installation

1. Reconnect all wires:
   - Motor power and motor temperature sensor. See FIG. 19 on page 16.
   - Token cable (86). See FIG. 22 on page 17.
   - Encoder cable (E). See FIG. 21 on page 17.
   - Stroke position sensor wire (29). See FIG. 20 on page 16.
2. Install electronics cover (3), 12 washers (4), 12 screws (24) and torque to 15-20 ft-lb (20-27 N•m). See FIG. 17, page 16.

NOTICE

If wires get pinched when the cover screws are tightened, damage will occur. Make sure all wires are positioned inside the cover before installation.

3. Follow **Reinstall Fan Wires** on page 15.
4. Follow **Connect Power Cord** on page 7.
5. Connect power cord to power supply.
6. Engage power.

Calibration

NOTE: The lower must be removed from the driver in order to calibrate the driver correctly. The calibration stroke length is longer than the operating stroke. Leaving the lower attached will cause the driver rod to contact the lower rod and it will not calibrate correctly.

1. Cycle power to the driver by first turning the power switch (S) to OFF, and then to ON again.
2. Wait for the status indicator LED (L) to turn on solid or start blinking.
3. Within 30 seconds, rapidly turn the pressure control knob (N) back and forth from 0 to 10 at least five times and then set the knob back to 0. If the status indicator LED (L) was solid before, it will begin blinking an encoder calibration error (code 8) during the calibration process.

- The driver output shaft (H) will run up and down slowly over the course of several minutes.
- Midway through the auto-calibration process, the driver output shaft (H) will pause as it moves to the next step.
- The driver output shaft (H) will move up and down faster 5-6 times.

4. Ensure the auto-calibration process is complete before continuing. Wait for the LED to stop blinking.

Repair Token Cable

1. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect unit from power source.
3. Remove 12 screws (24) and washers from electronics cover (3). See FIG. 17, page 16. **NOTE:** The junction box does not need to be removed or disassembled.
4. Carefully remove electronics cover (3). See FIG. 18, page 16.

NOTICE

Hold the cover in place while disconnecting the token cable or let the cover rest on a work surface to avoid damaging the wires and connections.

5. Check the token wire (T) connections. Replace the wire if it is damaged. **NOTE:** Make sure the token wire connection is positioned with the wires facing the bottom of the sprayer.

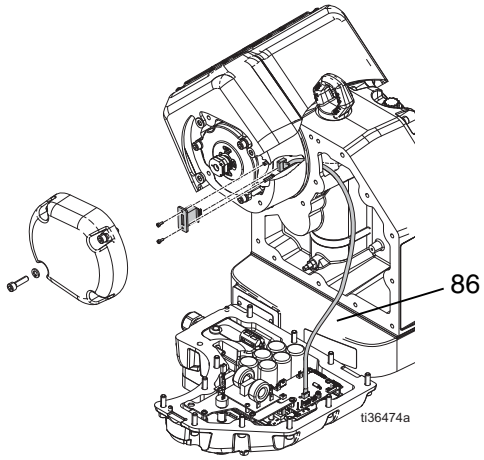


FIG. 23: Token Cable

6. Install the electronics cover (3) and tighten 12 screws (24) and washers (43). Torque to 15-20 ft-lb (20-27 N•m).

NOTICE

If wires get pinched when the cover screws are tightened, damage will occur. Make sure all wires are positioned inside the cover before installation.

Software Update Procedure

1. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect unit from power source.
3. Remove screws (56, 24) that attach the fan assembly to the driver and pull up on the end farthest from the junction box. Slide the assembly toward the junction box to remove.

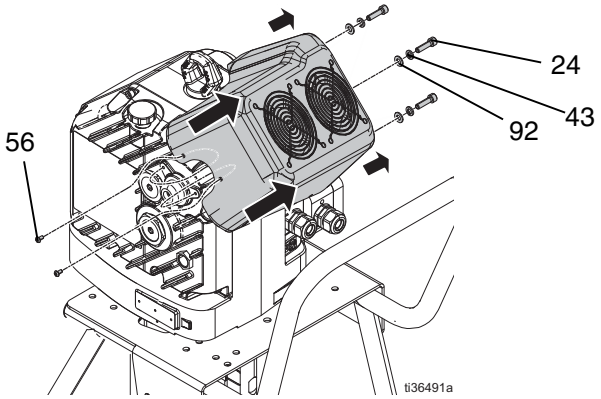


FIG. 24: Fan Removal

4. Use a 6 mm Allen wrench to remove the last bolt (24) and washer (43) from the motor cover.

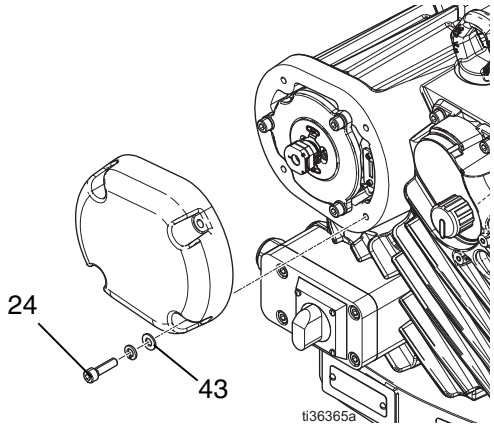


FIG. 25: Motor Cover Removal

5. Insert and press the token (98) firmly into the token connector slot. **NOTE:** The token requires no specific orientation.

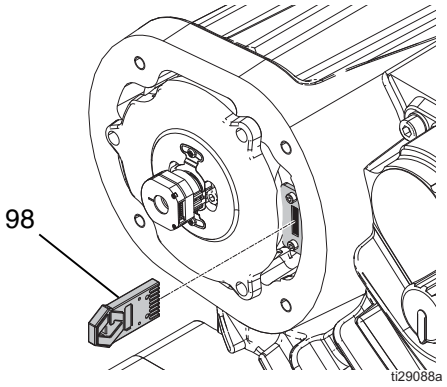


FIG. 26: Insert Token

6. Reinstall the motor cover and fan assembly.
7. Apply power and turn the disconnect switch ON.
8. Monitor the Status Indicator Light (L) for the status of the software update.
   a. The Status Indicator Light will blink slowly for a few seconds and then rapidly for several seconds.
   b. Once the update is complete, the unit will power up and flash out the software version. Three numbers will be flashed out to convey the software version in the format of x.yy.zzz. For example:
   “flash-pause-flash-flash-pause-flash-pause” would indicate that software version is 1.02.001 installed.
9. The unit will flash out the software version every time the unit is powered up while the software token is present.

   NOTE: The token can remain in place even after the software has been updated.
10. The latest software version for each system can be found at Technical Support at www.graco.com under the “FAQ” section.

Parts

Electric Driver

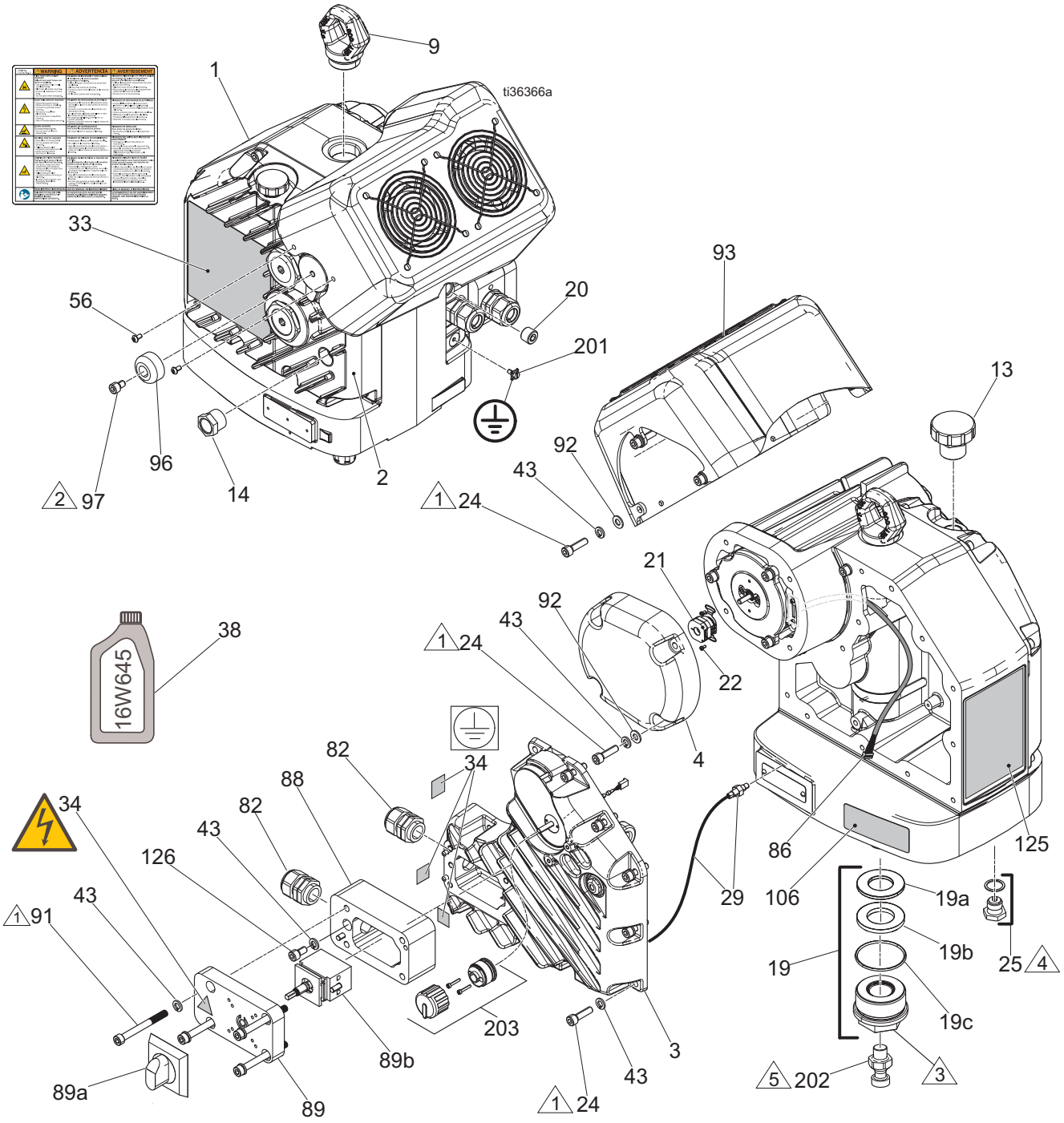


FIG. 27: Electric Driver Parts

Parts List - Electric Driver (25P238)

Ref.	Part	Description	Qty.
1	- - - - -	HOUSING, main	1
2	- - - - -	COVER, gear	1
3*	25P237	COVER, electronics, assy, Z60	1
4	- - - - -	COVER, motor, machining	1
9	15F931	RING, lift, sst 1 9/16 thrd	1
13	15H525	CAP, fill	1
14	24E315	SIGHT GLASS, oil	1
19	25C164	BEARING, shaft, assy	1
19a	25C162	WASHER, support	1
19b	25C163	BUMPER, lower	1
19c	25C165	O-RING, (2-pack)	1
20	555448	PLUG, stl 3/8 pipe hex soc	1
21	25C169	ENCODER, with cable assy (includes Ref. 22, qty. 2)	1
22	- - - - -	SCREW, mach, pn hd, #4-40 unc x 0.25 in. long	2
24	109114	SCREW, cap, sch, M8 x 1.25-30 mm	27
25	15H432	PLUG, oil drain	1
29	24W120	SENSOR, stroke position	1
33▲	17J476	LABEL, safety, warning	1
34▲	16T764	LABEL, warning	1
38★	16W645	LUBRICANT, oil, gear	0.3
43	104572	WASHER, lock spring	32
56	124165	SCREW, bhcs, M5-0.8 x 10, ss	2
82	121171	GRIP, cord, .35-.63, 3/4	2
86	16Y491	CABLE, token	1
88	25C171	SLEEVE, junction box	1
89	25C172	COVER, juction box, assembly (includes Ref. 34)	1
89a	17H229	KNOB, without threaded collar	1
89b	123970	SWITCH, disconnect block	1
91	25C170	SCREW, shc, M8 x 1.25 x 80	4
92	108788	WASHER, flat	4
93	24V224	COVER, fan, assembly, with wire harness (includes Ref. 24, 43, 56, 92, 94)	1
94	- - - - -	FERRULE, 16 gauge twin wire (see **Wiring Diagrams**, page 24)	2
96	127721	KNOB, impact control, preventer	1
97	127463	SCREW, cap, socket head, M5 x 1.25-12 mm	1
98	18A844	SOFTWARE, token, upgrade (not shown)	1
106	17G768	LABEL, instruction, error code	1
107	102478	STRAP, tie wiring (see **Wiring Diagrams**, page 24)	2
125	- - - - -	LABEL, product, e-xtreme, Z60	1
126	115264	SCREW, cap, socket head, M8 x 1.25-16 mm	1
201	116343	GROUND SCREW, M5 x 0.8-12mm	4
202	15H392	ADAPTER, rod, xtreme	1
203	16U113	KNOB, assembly	1

** 25P237 KIT, electronics, cover (includes 20, 24 (12x), 34, 43 (13x), 82, 94 (2x), 107, 126)*

★ *The driver gear-box is shipped from the factory pre-filled with oil. Additional oil must be purchased separately.*

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

Part Specifications:

Ref.	Instruction
1	Torque to 20 N•m (15 ft-lb).
2	Apply serviceable medium thread locker, then torque to 5 N•m (4 ft-lb).
3	Apply grease, then torque to 275 N•m (200 ft-lb)
4	Torque to 25 N•m (18 ft-lb)
5	Apply serviceable medium thread locker, then torque to 200 N•m (150 ft-lb).

Mounting Hole Pattern

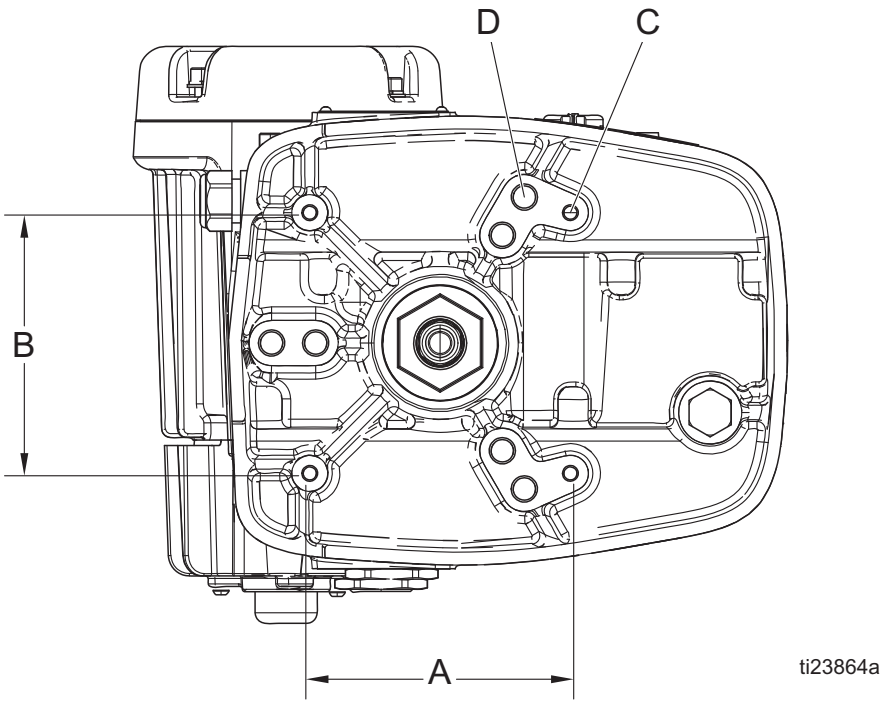


FIG. 28: Mounting Hole Pattern

A	B	C	D
6.186 in. (157 mm)	6.186 in. (157 mm)	Four 3/8-16 Mounting Holes	Six 5/8-11 Tie Rod Holes: 8 in. (203 mm) x 120° bolt circle OR 5.9 in. (150 mm) x 120° bolt circle

Wiring Diagrams

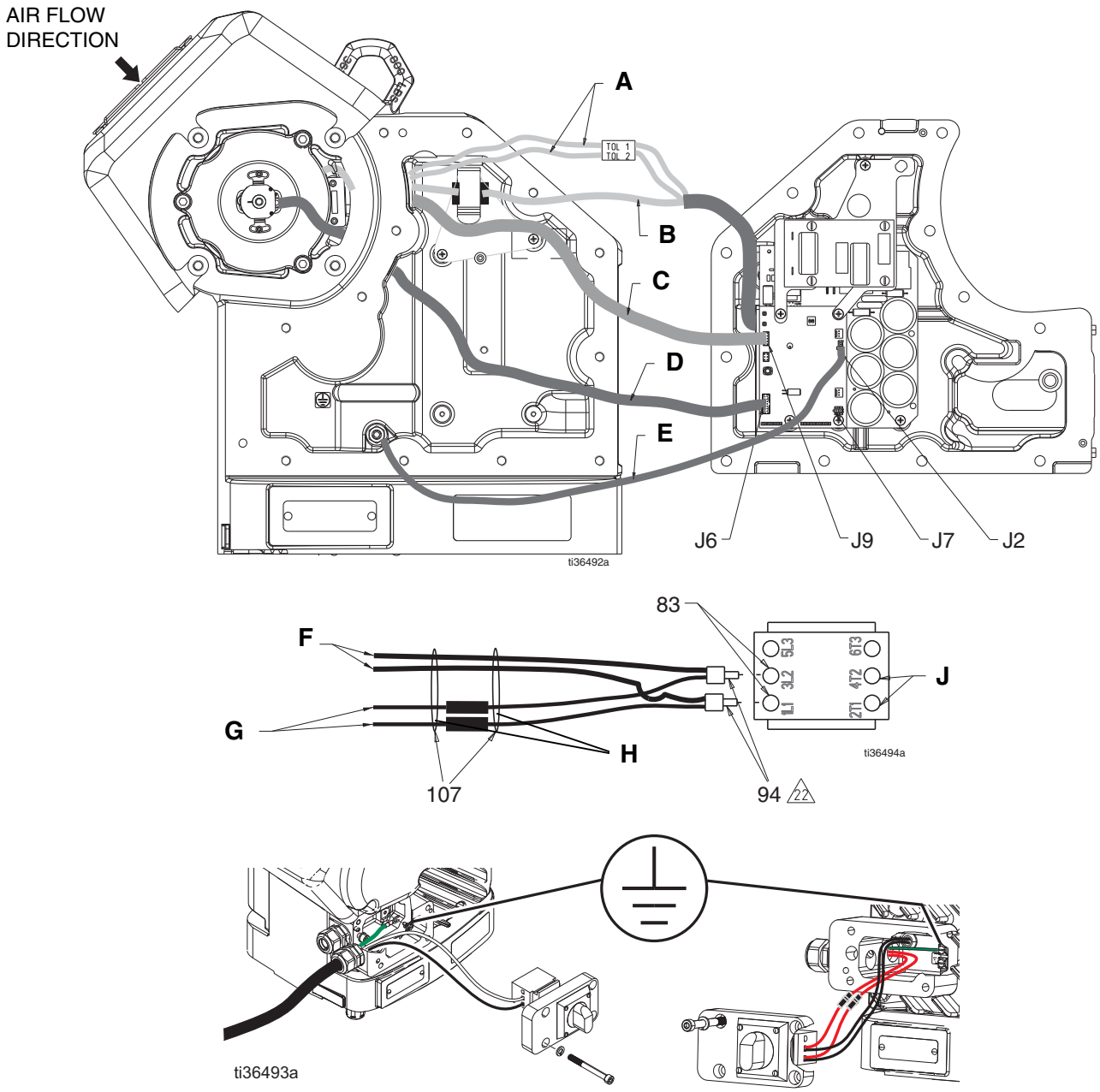
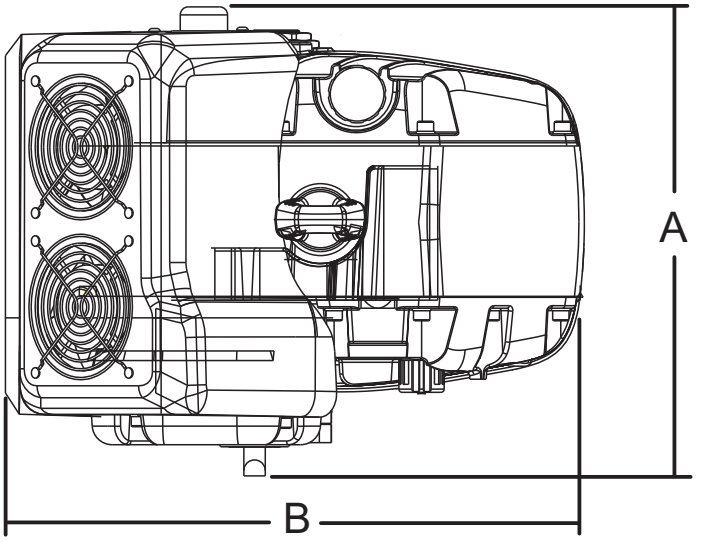


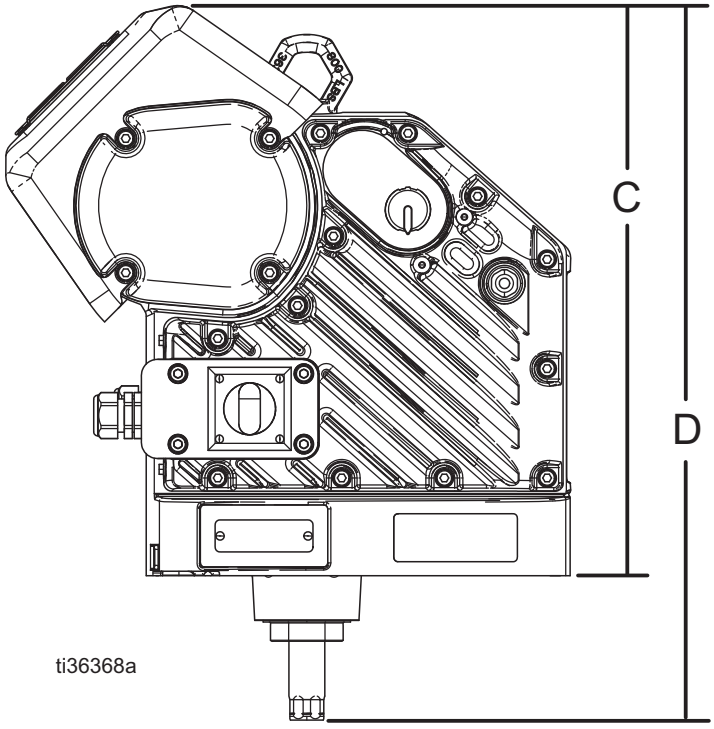
FIG. 29: Wiring Diagram

Ref.	Description
A	Motor temperature sensor wires
B	Motor wires
C	Token cable
D	Encoder cable

Ref.	Description
E	Stroke position sensor wire
F	Circuit board power wires
G	Fan power wires
H	Fan fuse holders
J	Incoming power

Dimensions





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Driver Dimensions		
A	Width	15.3 in. (38.8 cm)
B	Depth	18.3 in. (46.5 cm)
C	Mounted Height	18.3 in. (46.5 cm)
D	Total Height	21.5 in. (54.6 cm)

Technical Specifications

e-Xtreme Z60 Electric Driver		
	US	**Metric**
Maximum continuous cycle rate (To prevent premature pump wear, do NOT exceed maximum recommended speed of fluid pump)	40 cycles per minute	
Weight	115 lb	52 kg
Operating temperature range	23° to 120° F	-5° to 50° C
Input voltage	200-240 VAC, single phase, 50/60 Hz	
Input current	15A maximum	
Power inlet port size	3/4-14 npt (female)	
Minimum recommended generator size	5 kW	
Oil capacity†	1.5 quarts	1.4 liters
Oil specification†	Graco part number 16W645 ISO 220 silicone-free synthetic EP gear oil†	
Maximum dynamic force	4650 lbf	21 kN
Sound Emissions for Normal Operation (<20 cpm)		
Sound Pressure*	<80 dBA	
*measured 3.28 feet (1 meter) from equipment, ISO-9614-2.		

† *The driver gear-box is shipped from the factory pre-filled with oil. Additional moil must be purchased separately.*

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