Repair

GMAX™ II 3900/5900/7900
TexSpray™ 5900HD/7900HD
Airless Sprayers

- For Portable Airless Spraying of Architectural Coatings and Paints -

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

**IMPORTANT SAFETY INSTRUCTIONS**
Read all warnings and instructions in this manual. Save these instructions.

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### GMAX 3900

<table>
<thead>
<tr>
<th>Model</th>
<th>Hi-Boy Premium (QuikReel)</th>
<th>Hi-Boy Standard</th>
<th>Lo-Boy Premium (QuikReel)</th>
<th>Lo-Boy Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>248683</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>248684</td>
<td>✓</td>
<td></td>
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<tr>
<td>249335</td>
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<td></td>
<td></td>
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<tr>
<td>258731</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>258736</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GMAX 5900

<table>
<thead>
<tr>
<th>Model</th>
<th>Hi-Boy Premium (QuikReel)</th>
<th>Hi-Boy Standard</th>
<th>Lo-Boy Premium (QuikReel)</th>
<th>Lo-Boy Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>248687</td>
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<td></td>
<td></td>
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<tr>
<td>248688</td>
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<tr>
<td>258732</td>
<td>✓</td>
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<tr>
<td>258737</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TexSpray 5900 HD

<table>
<thead>
<tr>
<th>Model</th>
<th>Hi-Boy Premium (QuikReel)</th>
<th>Hi-Boy Standard</th>
<th>Lo-Boy Premium (QuikReel)</th>
<th>Lo-Boy Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>258734</td>
<td>✓</td>
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</table>

### GMAX 7900

<table>
<thead>
<tr>
<th>Model</th>
<th>Hi-Boy Premium (QuikReel)</th>
<th>Hi-Boy Standard</th>
<th>Lo-Boy Premium (QuikReel)</th>
<th>Lo-Boy Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>248700</td>
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</tr>
<tr>
<td>248701</td>
<td>✓</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>258733</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>258738</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GMAX 7900

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<tr>
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</thead>
<tbody>
<tr>
<td>258735</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Related Manuals:
Operation 3A0242
Parts 3A0244
Gun 311861

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PROVEN QUALITY. LEADING TECHNOLOGY.
## Warning

The following are general warnings related to the setup, use, maintenance and repair of this equipment. Additional, more specific, warnings may be found throughout the text of this manual, where applicable.

### FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- 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.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately**. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

### 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.

### 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.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.
### PRESSURIZED ALUMINUM PARTS HAZARD
Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

### SUCTION HAZARD
Powerful suction could cause serious injury.
- Never place hands near the pump fluid inlet when pump is operating or pressurized.

### CARBON MONOXIDE HAZARD
Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death.
- Do not operate in an enclosed area.

### 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 MSDS’s 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.

### BURN HAZARD
Equipment surfaces and fluid that’s heated can become very hot during operation. To avoid severe burns:
- Do not touch hot fluid or equipment.

### PERSONAL PROTECTIVE EQUIPMENT
You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This 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.

### CALIFORNIA PROPOSITION 65
The engine exhaust from this product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
Maintenance

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.

NOTE: 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 that all hose fittings are secure.

DAILY: Check gun safety for proper operation.

DAILY: Check pressure drain valve for proper operation.

DAILY: Check and fill the gas tank.

DAILY: 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 and pump corrosion.

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

Replacement elements can be purchased from your local HONDA dealer.

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.

Premium Sprayers Engine Oil Funnel:
Use the supplied engine oil funnel when draining oil.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E=XX</strong> is displayed</td>
<td>Fault condition exists.</td>
<td>Determine fault correction from table, page 14.</td>
</tr>
<tr>
<td>Engine will not start</td>
<td>Engine switch is OFF.</td>
<td>Turn engine switch ON.</td>
</tr>
<tr>
<td></td>
<td>Spark plug disconnected or damaged.</td>
<td>Connect spark plug cable or replace spark plug.</td>
</tr>
<tr>
<td></td>
<td>Engine is cold.</td>
<td>Use choke.</td>
</tr>
<tr>
<td></td>
<td>Fuel shut off lever is OFF.</td>
<td>Move lever to ON position.</td>
</tr>
<tr>
<td></td>
<td>Oil is seeping into combustion chamber.</td>
<td>Remove spark plug. Pull starter 3 to 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage.</td>
</tr>
<tr>
<td>False tripping of WatchDog system. <strong>EMPTY</strong> is displayed. Pump does not run.</td>
<td>Operating conditions out of WatchDog parameters.</td>
<td>Turn pressure down. Contact Graco Technical Assistance to adjust WatchDog parameters. Operate without WatchDog active (see Operation manual).</td>
</tr>
<tr>
<td></td>
<td>Pump output is low, page 6.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pump switch is OFF.</td>
<td>Turn pump switch ON.</td>
</tr>
<tr>
<td></td>
<td>Pressure setting too low.</td>
<td>Turn pressure adjusting knob clockwise to increase pressure.</td>
</tr>
<tr>
<td></td>
<td>Fluid filter is dirty.</td>
<td>Clean filter.</td>
</tr>
<tr>
<td></td>
<td>Tip or tip filter is clogged.</td>
<td>Clean tip or tip filter (see gun manual).</td>
</tr>
<tr>
<td></td>
<td>Displacement pump piston rod is stuck due to dried paint.</td>
<td>Repair pump (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Connecting rod is worn or damaged.</td>
<td>Replace connecting rod. Page 15.</td>
</tr>
<tr>
<td></td>
<td>Drive housing is worn or damaged.</td>
<td>Replace drive housing. Page 16.</td>
</tr>
<tr>
<td>Electrical power is not energizing clutch field.</td>
<td></td>
<td>Check wiring connections. Page 21.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With pump switch ON and pressure turned to MAXIMUM, use a test light to check for power between clutch test points on control board.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remove clutch wires from control board and measure resistance across clutch coil. At 70° F, the resistance must be between for 3900 - 1.2 + 0.2 Ω, for 5900/7900 1.7 ± 0.2 Ω; if not, replace pinion housing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have pressure control checked by authorized Graco dealer.</td>
</tr>
<tr>
<td></td>
<td>Clutch is worn, damaged, or incorrectly positioned.</td>
<td>Adjust or replace clutch. Page 19.</td>
</tr>
<tr>
<td></td>
<td>Pinion assembly is worn or damaged.</td>
<td>Repair or replace pinion assembly. Page 17.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Pump output is low</td>
<td>Strainer is clogged.</td>
<td>Clean strainer.</td>
</tr>
<tr>
<td></td>
<td>Piston ball is not seating.</td>
<td>Service piston ball (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Piston packings are worn or damaged.</td>
<td>Replace packings (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>O-ring in pump is worn or damaged.</td>
<td>Replace o-ring (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Intake valve ball is not seating properly.</td>
<td>Clean intake valve (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Intake valve ball is packed with material.</td>
<td>Clean intake valve (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Engine speed is too low.</td>
<td>Increase throttle setting (see operation manual).</td>
</tr>
<tr>
<td></td>
<td>Clutch is worn or damaged.</td>
<td>Adjust or replace clutch. Page 17.</td>
</tr>
<tr>
<td></td>
<td>Pressure setting is too low.</td>
<td>Increase pressure (see operation manual).</td>
</tr>
<tr>
<td></td>
<td>Fluid filter, tip filter or tip is clogged or dirty.</td>
<td>Clean filter (see gun manual).</td>
</tr>
<tr>
<td></td>
<td>Large pressure drop in hose with heavy materials.</td>
<td>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).</td>
</tr>
<tr>
<td>Excessive paint leakage into throat packing nut</td>
<td>Throat packing nut is loose.</td>
<td>Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.</td>
</tr>
<tr>
<td></td>
<td>Throat packings are worn or damaged.</td>
<td>Replace packings (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Displacement rod is worn or damaged.</td>
<td>Replace rod (see pump manual).</td>
</tr>
<tr>
<td>Fluid is spitting from gun</td>
<td>Air in pump or hose.</td>
<td>Check and tighten all fluid connections. Re-prime pump (see operation manual).</td>
</tr>
<tr>
<td></td>
<td>Tip is partially clogged.</td>
<td>Clear tip (see gun manual).</td>
</tr>
<tr>
<td></td>
<td>Fluid supply is low or empty.</td>
<td>Refill fluid supply. Prime pump (see operation manual). Check fluid supply often to prevent running pump dry.</td>
</tr>
<tr>
<td>Pump is difficult to prime</td>
<td>Air in pump or hose.</td>
<td>Check and tighten all fluid connections.</td>
</tr>
<tr>
<td></td>
<td>Intake valve is leaking.</td>
<td>Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.</td>
</tr>
<tr>
<td></td>
<td>Pump packings are worn.</td>
<td>Replace pump packings (see pump manual).</td>
</tr>
<tr>
<td></td>
<td>Paint is too thick.</td>
<td>Thin the paint according to the supplier’s recommendations.</td>
</tr>
<tr>
<td></td>
<td>Engine speed is too high.</td>
<td>Decrease throttle setting before priming pump (see operation manual).</td>
</tr>
<tr>
<td>Clutch squeaks each time clutch engages</td>
<td>Clutch surfaces are not matched to each other when new and may cause noise.</td>
<td>Clutch surfaces need to wear into each other. Noise will dissipate after a day of run time.</td>
</tr>
<tr>
<td>High engine speed at no load</td>
<td>Misadjusted throttle setting.</td>
<td>Reset throttle to 3300 engine rpm at no load.</td>
</tr>
<tr>
<td></td>
<td>Worn engine governor.</td>
<td>Replace or service engine governor.</td>
</tr>
<tr>
<td>Gallon counter not working</td>
<td>Bad sensor, broken or disconnected wire. Displaced or missing magnet.</td>
<td>Check connections. Replace sensor or wire. Reposition or replace magnet.</td>
</tr>
<tr>
<td>No display, sprayer operates</td>
<td>Display damaged or has bad connection.</td>
<td>Check connections. Replace display.</td>
</tr>
</tbody>
</table>
Fluid Pump Runs Constantly

1. Perform **Pressure Relief Procedure** (page 4), turn prime valve forward to SPRAY position, and turn power switch OFF.

2. Remove control box cover.

**Troubleshooting Procedure:**

With a pressure gauge plumbed into the paint hose, start the engine. Turn pump switch ON. Does sprayer exceed maximum pressure?

- **YES**
  - Disconnect clutch wires from control board (see diagram, page 12). Does the pump stop running?
    - **YES**
      - Make sure clutch wires are plugged in (see diagram, page 12). Do the clutch test points read 10-18 DC volts?
        - **YES**
          - Unplug transducer from control board.
            - **NO**
              - Replace the control board.
            - **YES**
              - Bad transducer. Replace and test with a new one.
        - **NO**
          - Check for a short from the two clutch wires to the frame. If shorted, repair or replace faulty wire.
    - **NO**
      - Pump problem. See the proper fluid pump manual for the sprayer for further troubleshooting procedures.

- **NO**
  - Mechanical problem in the clutch pinion assembly (clutch may be close to the rotor).
Control Board Malfunction

Troubleshooting Procedure
(see following page for actual steps):

Remove control box cover. Turn sprayer ON. Observe control board Green and Red LED lights.

<table>
<thead>
<tr>
<th>No light</th>
<th>Normal operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once</td>
<td></td>
</tr>
<tr>
<td>Red light on continuously</td>
<td>Control board commanding engine to run</td>
</tr>
<tr>
<td>Green light on continuously</td>
<td>WatchDog enabled</td>
</tr>
<tr>
<td>Flashing</td>
<td>See error code section for further troubleshooting</td>
</tr>
<tr>
<td>Red light on continuously with potentiometer OFF after a replacement board is installed</td>
<td>Model not selected</td>
</tr>
</tbody>
</table>

Go to step 1. Does switch test positive?

NO
Replace the switch.

YES

Go to step 2. Do you have proper engine voltage?

NO
Go to step 3. Is 1-3 Ohms reading present?

NO
Go to step 4. Is 10-12 VDC present?

NO
If low resistance is present in step 4, the problem is a shorted field. Replace pinion. If an open in the wiring is present, check pinion wiring connections.

YES
Mechanical problem. Repair or replace clutch/pinion assembly.

NO
Go to step 2. Does the clutch engage?

YES
Replace the control board.

NO
Replace the transducer.

NO
Go to step 5. Does the clutch engage?

YES
Connect a test transducer to the board. Does the clutch engage?

YES
Replace the potentiometer.

NO
Replace the transducer.

NO
Check wiring from J1 and J2 for proper connection. If proper connection is detected, repair or replace engine generator.

YES
Replace the switch.
Control Board Malfunction (Steps)

STEP 1.
Turn engine OFF and set meter to continuity.

STEP 2.
Turn engine ON. Set meter to AC volts and connect wires to control board.

STEP 3.
Leave engine running and turn switch ON. Turn potentiometer to high and set meter to DC volts.

STEP 4.
Turn engine OFF and unplug clutch wires. Set meter to Ohms.

STEP 5.
Turn engine ON and turn switch ON.
Convertible Electric Motor Will Not Run

Troubleshooting Procedure
(see following page for actual steps):

See Step 1. Is there over 100 AC volts? NO

See Step 2. Is there over 100 AC volts? NO

YES

Replace the power switch.

YES

Replace the power cord.

NO

YES

NO

YES

See engine test section.

See Step 3. Is there over 100 DC volts? NO

YES

See Step 4. Is there continuity through the thermal sensor? NO

YES

Replace engine control board.

If engine is hot, let cool and retest. If step 4 still shows an open, replace engine.
Convertible Electric Motor Will Not Run (Steps)

**STEP 1.**
Plug in cord and turn switch ON. Connect wires to control board and turn meter to AC volts.

**STEP 2.**
Plug in cord and turn switch ON. Connect wires to control board and turn meter to AC volts.

**STEP 3.**
Plug in cord and turn switch ON. Turn meter to DC volts.

**STEP 4.**
Check the engine thermal sensor (meter should read continuity). **Note:** engine should be cooled down. Turn meter to continuity test.
Convertible Electric Motor Runs - No AC Output to Sprayer Control Board

Troubleshooting Procedure (see following page for actual steps):

See step 1. Is there over 10-20 AC volts?

NO

YES

See the sprayer control board troubleshooting in this manual.

See step 2. Is there continuity?

NO

YES

See step 3. Is there continuity?

NO

YES

See step 4. Is there over 100 AC volts?

NO

YES

See step 5. Is there over 10-20 AC volts.

NO

YES

Replace cord jack.

Repair or replace the power cord.

Repair or replace wire splice(s) on the power cord wires.

Replace transformer.
Convertible Electric Motor Runs - No AC Output to Sprayer Control Board (Steps)

**STEP 1.**
Plug in cord and turn switch ON. Connect wires to transformer and power cord. Turn meter to AC volts.

**STEP 2.**
Check AC power cord for an open wire. Turn meter to continuity test. Meter should read continuity.

**STEP 3.**
Check AC power cord for an open wire. Turn meter to continuity test. Meter should read continuity.

**STEP 4.**
Plug in cord and turn switch ON. Partially connect wires to splice. Turn meter to AC volts.

**STEP 5.**
Plug in cord and turn switch ON. Partially connect wires to splice. Turn meter to AC volts.
### Digital Display Messages

Digital messages are not available on all sprayers
Blinking LED total count equals digital error code i.e., two blinks is the same as E=02

<table>
<thead>
<tr>
<th>DISPLAY*</th>
<th>SPRAYER OPERATION</th>
<th>INDICATION</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Display</td>
<td>Sprayer may be pressurized.</td>
<td>Loss of power or display not connected.</td>
<td>Check power source. Relieve pressure before repair or disassembly. Verify display is connected.</td>
</tr>
<tr>
<td>E:02</td>
<td>Sprayer is pressurized. Power is applied. (Pressure varies with size and pressure control setting).</td>
<td>Normal operation.</td>
<td>Spray</td>
</tr>
<tr>
<td>E:03</td>
<td>Sprayer stops. Engine is running.</td>
<td>Exceeded pressure limit.</td>
<td>1. Check fluid path for clogs, such as clogged filter. 2. Open prime valve and gun if running AutoClean. 3. Use Graco paint hose, 1/4 in. x 50 ft minimum. Smaller hose or metal braid hose may result in pressure spikes. 4. Replace transducer if fluid path is not clogged and proper hose is used.</td>
</tr>
<tr>
<td>E:05</td>
<td>Sprayer stops. Engine is running.</td>
<td>High clutch current.</td>
<td>1. Check wiring connections. 2. Measure: (1.2 + 0.2 \Omega) (GMAX II 3900); (1.7 + 0.2 \Omega) (GMAX II 5900/7900 &amp; TexSpray 7900HD) across clutch field at 70°F. 3. Replace clutch field assembly.</td>
</tr>
<tr>
<td>EMPTY (with constant green LED)</td>
<td>Sprayer stops. Engine is running.</td>
<td>Loss of paint to pump or severe pressure loss.</td>
<td>1. Check for empty paint condition, clogged inlet strainer, failed pump or severe leak. 2. Reduce pressure and turn pump switch OFF and ON to restart pump. 3. WatchDog function can be deactivated by turning WatchDog switch OFF.</td>
</tr>
<tr>
<td>E:07</td>
<td>Sprayer stops. Engine is running.</td>
<td>Pressure greater than 2000 psi (138 bar, 14 MPa) while in Flush Timer Mode.</td>
<td>1. Open prime valve and gun. 2. Verify no flow obstructions or clogged filter.</td>
</tr>
</tbody>
</table>

* Error codes also appear on control board as a blinking red LED. LED is an alternate to digital messages.

After a fault, follow these steps to restart sprayer:

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

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Bearing Housing and Connecting Rod

NOTE: The item numbers referenced are for the 5900 Hi-Boy models. The 3900, 7900 and all Lo-Boy models may have different item numbers. Use the 5900 Hi-Boy item number and part to find the corresponding alternate part and item number.

Removal

1. Relieve pressure; page 4.
2. Remove four screws (45) and front cover (44)
4. Remove four screws (41) and washers (42) from bearing housing (40).
5. Pull connecting rod (43) and lightly tap lower rear of bearing housing with plastic mallet to loosen from drive housing (33). Pull bearing housing and connecting rod assembly off drive housing.
6. Inspect crank (B) and connecting rod (43) for excessive wear and replace parts as needed.

Installation

1. Evenly lubricate inside of bronze bearing (C) in bearing housing (40) with high-quality motor oil. Liberally pack top roller bearing (E), lower bearing (D) inside connecting rod (43) with bearing grease.
2. Assemble connecting rod (43) to bearing housing (40). Rotate connecting rod to lowest position.
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 (33) with holes in bearing housing (40). Push bearing housing onto drive housing or tap into place with plastic mallet.
5. Install screws (41) and washers (42) in bearing housing. Torque evenly to note 3 value below.

NOTICE

DO NOT use bearing housing screws (41) to align or seat bearing housing with drive housing. Align these parts with locating pins, to avoid premature bearing wear.

GMAX II 3900: Torque to 200 in-lb (22.6 N•m)
GMAX II 5900: Torque to 25 ft-lb (34 N•m)
GMAX II 7900: Torque to 40 ft-lb (54 N•m)
TexSpray 5900HD: Torque to 40 ft-lb (54 N•m)
TexSpray 7900HD: Torque to 40 ft-lb (54 N•m)
Drive Housing

Removal

1. Relieve pressure; page 4.

2. Remove bearing housing. Refer to Bearing Housing and Connecting Rod, Removal, page 15.

3. Premium sprayers: Remove two screws (108) and gallon counter sensor (39).

4. Remove six screws (38).

5. Lightly tap around drive housing (33) to loosen drive housing. Pull drive housing straight off pinion housing. Be prepared to support combination gear (32) which may also come out.

Installation

1. Apply all grease supplied with replacement gear cluster to gear teeth and to areas called out by note 3.

2. Ensure thrust washers (30, 31; 5900/7900) (30, 31, 72; 3900) are on combination gear (32) and washers (33a, 33b) are on crankshaft of drive housing (33) as shown.

3. Clean mating surfaces of pinion and drive housings.

4. Align gears and push new drive housing straight onto pinion housing (29) and locating pins (B).

5. Install six screws (38).

6. Install gallon counter sensor (39) with two screws (108).


8. Install screws (38) in drive housing. Torque evenly to note 3 value below.


NOTICE

Premium models: Gallon counter sensor is connected to control board in pressure control. Pulling on the sensor wires could cause damage.

Thrust washers may stick to grease inside of drive housing. Do not lose or misplace.

GMAX II 3900: Torque to 140 ±10 in-lb (15.8 ±1.1 N•m)
GMAX II 5900: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
GMAX II 7900: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
Texspray 5900HD: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
Texspray 7900HD: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
Gallon counter sensor
Pack with grease 114819

Copper

Steel
Pinion Assembly/Clutch Armature Removal

Pinion Assembly

If pinion assembly (29) is not removed from clutch housing (19), do 1. through 3. Otherwise, start at 4.

1. Remove drive housing; page 16.

2. Disconnect clutch cable connectors from inside of pressure control.
   a. Remove two screws (71) and swing down cover (130a).
   b. Disconnect engine leads from board to engine.
   c. Remove strain reliefs 130r and 123.

3. Remove four screws (36) and pinion assembly (29).

4. Place pinion assembly (29) on bench with rotor side up.

5. Remove four screws (28) and lock washers (24). Install two screws in threaded holes (E) in rotor. Alternately tighten screws until rotor comes off.

6. Remove retaining ring (29b).

7. Turn pinion assembly over and tap pinion shaft (29a) out with plastic mallet.

Clutch Armature

8. Use an impact wrench or wedge something between clutch armature (25) and clutch housing to hold engine shaft during removal.

9. Remove four screws (23) and lock washers (24).

10. Remove armature.
Installation

**Clutch Armature**
1. Lay two stacks of two dimes on smooth bench surface.
2. Lay armature (25) on two stacks of dimes.
3. Press center of hub (26) down to bench surface.
4. Install armature (25) on engine drive shaft.
5. Install four screws (23) and lock washers (24) with torque of 125 in-lb.

**Pinion Assembly**
1. Check o-ring (29d) and replace if missing or damaged.
2. Tap pinion shaft (29a) in with plastic mallet.
3. Install retaining ring (29b) with beveled side facing up.
4. Place pinion assembly on bench with rotor side up.
5. Apply thread sealant to screws. Install four screws (28) and lock washers (24). Alternately torque screws to 125 in-lb until rotor is secure. Use threaded holes to hold rotor.
6. Install pinion assembly (29) with four screws (36) and washers (37).
7. Connect clutch cable connectors to inside of pressure control.

**Clamp Removal**

1. Remove engine.
2. Drain gasoline from tank according to Honda manual.
3. Tip engine on side so gas tank is down and air cleaner is up.
4. Loosen two screws (24) on clamp (22).
5. Push screwdriver into slot in clamp (22) and remove clamp.

**Clamp Installation**

1. Install engine shaft key (18).
2. Tap clamp (22) onto engine shaft (A). Maintain dimension shown note 2. Chamfer must face engine.

---

**Notes**
- 1.550 ± .010 in. (39.37 ± .25 mm) - GMAX 3900
- 2.612 ± .010 in. (66.34 ± .25 mm) - GMAX 5900 & 7900
- Torque to 125 ± .10 in-lb (14 ± 1.1 N·m)
- Chamfer this side
Clutch Housing

Removal

1. Remove four screws (20) and lock washers (21) which hold clutch housing (19) to engine.
2. Remove screw (35) from under mounting plate (D).
3. Pull off clutch housing (19).

Installation

1. Push on clutch housing (19).
2. Install four capscrews (20) and lock washers (21) and secure clutch housing (19) to engine. Torque to 200 in-lb (22.6 N·m).
3. Install screw (35) from beneath mounting plate (D). Torque to 26 ft-lb (35.2 N·m).
Engine

Removal

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

1. Remove Pinion Assembly/Clutch Armature/Clamp and Clutch Housing, as instructed on pages 17, and 18.
2. Disconnect all necessary wiring.
3. Remove two locknuts (17) and screws (16) from base of engine.
4. Lift engine carefully and place on work bench.

Installation

1. Lift engine carefully and place on cart.
2. Install two screws (16) in base of engine and secure with lock nuts (17). Torque to 26 ft-lb (22.6 N·m).
3. Connect all necessary wiring.
4. Install Pinion Assembly/Clutch Armature/Clamp and Clutch Housing, as instructed on pages 17, and 18.
Pressure Control

Pump ON/OFF Switch

Removal

1. Remove two screws (71) and swing down cover (130a).
2. Disconnect pump ON/OFF switch (130f) connector from control board.
3. Press in on two retaining tabs on each side of pump ON/OFF switch (130f) and remove switch from cover.

Installation

1. Install new pump ON/OFF switch (130f) so tabs of switch snap into place on inside of cover.
2. Connect pump ON/OFF switch connector to control board.
3. Swing up cover (130a) and secure with two screws (71).
Control Board

Removal

1. Remove two screws (71) and swing down cover (130a).
2. Remove strain relief bushings (130r and 123).
3. Disconnect at control board (130b):
   - Lead from potentiometer (130d)
   - Lead from transducer (66)
   - Lead from WatchDog switch (130g)
   - Lead from pump ON/OFF switch (130f)
   - Lead from gallon counter sensor (39)
   - Display connector (130m)
   - Engine, ground and clutch wires
4. Remove four screws (130c) and control board (130b).

Installation

1. Install control board (130b) with four screws (130c).
2. Connect engine wires to control board (130b).
3. Connect at control board (130b):
   - Ground and clutch wires
   - Display connector (130m)
   - Lead from gallon counter sensor (39)
   - Lead from pump ON/OFF switch (130f)
   - Lead from WatchDog switch (130g)
   - Lead from transducer (66)
   - Lead from potentiometer (130d)
4. Install new strain relief bushings (123 and 130r).
5. Swing up cover (130a) and secure with two screws (71).

Pressure Control Transducer

Removal

1. Remove two screws (71) and swing down cover (130a).
2. Disconnect transducer (66) lead from control board (130b).
3. Pull transducer connector through rubber grommet (113).

Installation

1. Install o-ring (67) and pressure control transducer (66) in filter housing (72). Torque to 35 - 45 ft-lb.
2. Install transducer connector and rubber grommet in control housing.
3. Connect transducer (66) lead to control board (130b).
4. Swing up cover (130a) and secure with two screws (71).

Pressure Adjust Potentiometer

Removal

1. Remove two screws (71) and swing down cover (130a).
2. Disconnect potentiometer (130d) lead from control board (130b).
3. Loosen set screws on potentiometer knob (130h) and remove knob, shaft nut, lock washer and potentiometer (130d).
4. Remove shaft spacer (130e) from potentiometer.

Installation

1. Install shaft spacer (130e) on potentiometer (130d).
2. Install potentiometer, shaft nut, lock washer and potentiometer knob (130h).
   a. Turn potentiometer shaft clockwise to internal stop. Assemble potentiometer knob (130h) to strike pin on cover (130a).
   b. After adjustment of step a., tighten both set screws in knob 1/4 to 3/8 turn after contact with shaft.
3. Connect potentiometer lead to control board (130b).
4. Swing up cover (130a) and secure with two screws (71).

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. Stop pump with piston rod in its lowest position.
4. Separate drain hose from sprayer.
5. Disconnect material hose from pump.
7. Ratchet open pump door.
   a. Ratchet pump door forward.
   b. Twist latch u-bolt out of pump door recess.
   c. Place u-bolt on pump door outer edge.
   d. If pump door is stuck, do steps e., f. and 8., otherwise go to step 9.
   e. Twist latch u-bolt back from pump door outer edge
f. Place u-bolt on pump door protrusion

8. Ratchet pump door forward.

9. Open pump door.

10. Pull out pump pin and place in pin holder

**Installation**

1. Adjust piston rod with pin holder to pull out piston rod. Tap piston rod on hard surface to push in piston rod.

2. Push pump collar flush with bearing housing ledge to be able to close pump door.

3. Slide pump into connecting rod. Push pump pin until it is fully retained. **NOTE:** Pin will snap into position.

4. Close pump door and rotate latch into position. Do not tighten latch.
5. Rotate pump to align with material hose. Connect material hose and hand tighten to 70 in-lb.

6. Tighten latch and rotate latch lock into locked position.

7. Attach drain hose to sprayer.

8. Fill pump with Graco TSL until fluid flows onto top of seal.
Hose Reel

Removal

Be sure to keep your head clear of hose reel while winding up hose.

1. Remove hose fitting from swivel cap and completely remove hose.

2. Remove cap from swivel.

3. Remove E-clip from swivel shaft.

4. Remove swivel cap.

5. Remove snap ring.

6. Remove hose reel.
Installation

1. Grease shaft.

2. Make sure two washers and wave spring are on hub before hose reel is installed.

3. Install hose reel onto frame. Place C-clamp on reel and frame to allow snap ring to fit into place. Install snap ring.

4. Install swivel cap.

5. Install E-clip.

6. Install hose to hose cap. Make sure to route hose through side arm of hose reel.

7. Wrap up hose. Make sure hose is routed through hose guide.
Pivot Replacement

Removal

2. Remove rigid fluid tube from swivel shaft.
3. Remove two screws on pivot plate (A), swivel shaft (B) if necessary, and remove coupling (C) from swivel shaft.
4. Remove swivel shaft (B).

Installation

1. Install swivel shaft (B).
2. Install pivot plate (A) on pivot and tighten two screws on pivot plate.
3. Replace coupling (C).
4. Replace rigid fluid tube to swivel shaft if it was removed.
5. Replace **Hose Reel**, page 27.
# Technical Data

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>ANSI Power Rating @ 3600 rpm</th>
<th>Horsepower (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honda GX120 Engine</td>
<td>4.0</td>
<td>(3.0 kW)</td>
</tr>
<tr>
<td>Honda GX160 Engine</td>
<td>5.5</td>
<td>(4.1 kW)</td>
</tr>
<tr>
<td>Honda GX 200 Engine</td>
<td>6.5</td>
<td>(4.8 kW)</td>
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</table>

Maximum working pressure: 3300 psi (228 bar, 22.8 MPa)

Noise Level:

<table>
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<tr>
<th>Type</th>
<th>Sound power (dBA)</th>
<th>per ISO 3744</th>
<th>Sound pressure (dBA)</th>
<th>measured at 3.1 feet (1 m)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>105</td>
<td></td>
<td>96</td>
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Maximum delivery rating:

<table>
<thead>
<tr>
<th>Model</th>
<th>Delivery Rate</th>
</tr>
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<tbody>
<tr>
<td>3900</td>
<td>1.25 gpm (4.73 liter/min)</td>
</tr>
<tr>
<td>5900/5900HD</td>
<td>1.60 gpm (6.06 liter/min)</td>
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<tr>
<td>7900</td>
<td>2.20 gpm (8.33 liter/min)</td>
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</tbody>
</table>

Maximum tip size:

<table>
<thead>
<tr>
<th>Model</th>
<th>Tip Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>3900</td>
<td>1 gun with 0.036 in. tip</td>
</tr>
<tr>
<td></td>
<td>2 guns with 0.023 in. tip</td>
</tr>
<tr>
<td></td>
<td>3 guns with 0.018 in. tip</td>
</tr>
<tr>
<td>5900/5900HD</td>
<td>1 gun with 0.043 in. tip</td>
</tr>
<tr>
<td></td>
<td>2 guns with 0.029 in. tip</td>
</tr>
<tr>
<td></td>
<td>3 guns with 0.023 in. tip</td>
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<tr>
<td></td>
<td>4 guns with 0.019 in. tip</td>
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<tr>
<td>7900</td>
<td>1 gun with 0.048 in. tip</td>
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<td>2 guns with 0.035 in. tip</td>
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<tr>
<td></td>
<td>3 guns with 0.027 in. tip</td>
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<tr>
<td></td>
<td>4 guns with 0.023 in. tip</td>
</tr>
</tbody>
</table>

Inlet paint strainer: 12 mesh (893 micron) stainless steel screen, reusable

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

Pump inlet size: 1-5/16–12 UN-2A

Fluid outlet size: 3900/5900: ¼ npsm from fluid filter

Fluid outlet size: 7900: 3/8 npsm from fluid filter

Wetted parts: zinc-plated carbon steel, PTFE, nylon, polyurethane, UHMW polyethylene, fluoroelastomer, acetal, leather, aluminum, tungsten carbide, nickel- and zinc-plated carbon steel, stainless steel, chrome plating
## Dimensions

<table>
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<tr>
<th>Sprayer (no hose and gun)</th>
<th>Weight lb (kg)</th>
<th>Height in. (cm)</th>
<th>Width in. (cm)</th>
<th>Length in. (cm)</th>
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</thead>
<tbody>
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<td>3900</td>
<td>109 (50)</td>
<td>31.5 (80.0)</td>
<td>22.25 (56.5)</td>
<td>32.0 (81.3)</td>
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<tr>
<td>5900</td>
<td>139 (64)</td>
<td>32.25 (81.9)</td>
<td>24.5 (62.2)</td>
<td>32.25 (81.9)</td>
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<tr>
<td>7900</td>
<td>146 (67)</td>
<td>32.25 (81.9)</td>
<td>24.5 (62.2)</td>
<td>33.0 (83.8)</td>
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<tr>
<td>TexSpray 7900HD</td>
<td>157 (71)</td>
<td>32.25 (81.9)</td>
<td>24.5 (62.2)</td>
<td>33.0 (83.8)</td>
</tr>
</tbody>
</table>
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