

## Airless Sprayers

312586B

- For portable spray applications of architectural paints and coatings -

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



### Important Safety Instructions

**Read all warnings and instructions.** Save these instructions. Contact ASM Customer Service or your local ASM distributor to obtain a manual in your language.

### Related Manuals



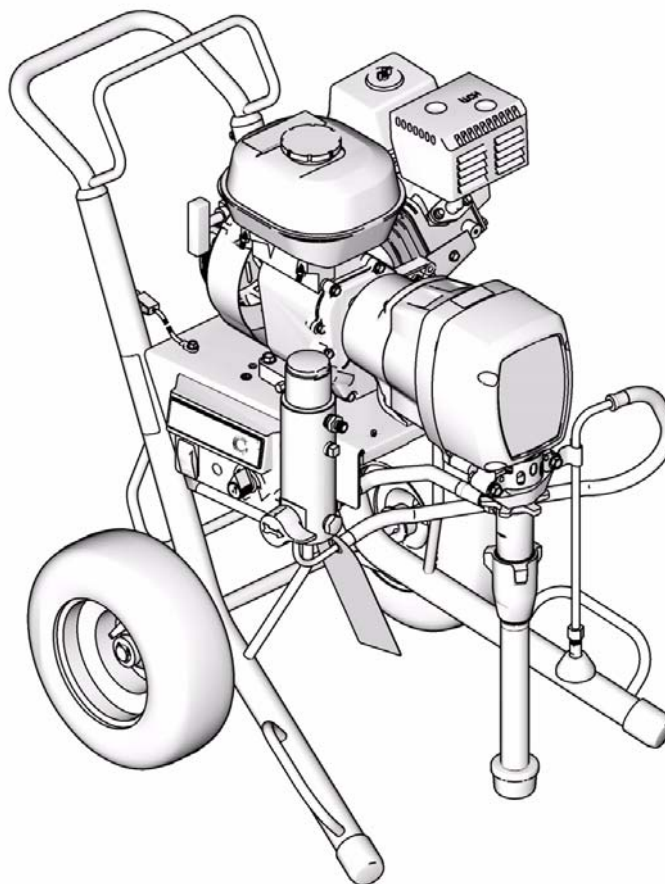
312576



312363 (English)  
312364 (Spanish)  
312365 (French)



310643





ASM Zip-Spray™ 3600G Plus: 247560

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# Manual Conventions


WARNING



Hazard Symbol

**WARNING:** a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Warnings in the instructions usually include a symbol indicating the hazard. Read the general **Warnings** section for additional safety information.






<b>CAUTION</b>
<p><b>CAUTION:</b> a potentially hazardous situation which, if not avoided, may result in property damage or destruction of equipment.</p>










## Note

 Additional helpful information.

## Warning

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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• 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.</li> <li>• When flammable liquid is sprayed or used for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground equipment and conductive objects in work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> </ul>
	<p><b>SKIN INJECTION HAZARD</b></p> <p>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. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>
	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in this manual. Disconnect power or air supply.</li> </ul>

 <b>WARNING</b>	
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. Read <b>Technical Data</b> in all equipment manuals.</li> <li>Use fluids and solvents that are compatible with equipment wetted parts. Read <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.</li> <li>Check equipment daily. Repair or replace worn or damaged parts immediately with genuine ASM replacement parts only.</li> <li>Do not alter or modify equipment.</li> <li>Use equipment only for its intended purpose. Call your ASM distributor for information.</li> <li>Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>Do not kink or overbend hoses or use hoses to pull equipment.</li> <li>Comply with all applicable safety regulations.</li> <li>Keep children and animals away from work area.</li> <li>Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.</p>
	<p><b>SUCTION HAZARD</b></p> <p>Never place hands near the pump fluid inlet when pump is operating or pressurized. Powerful suction could cause serious injury.</p>
	<p><b>CARBON MONOXIDE HAZARD</b></p> <p>Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death. Do not operate in an enclosed area.</p>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.</p>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>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, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>Protective eyewear</li> <li>Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>Gloves</li> <li>Hearing protection</li> </ul>
	<p><b>RECOIL HAZARD</b></p> <p>Brace yourself; gun may recoil when triggered and cause you to fall, which could cause serious injury.</p>

# 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.*

### CAUTION

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

**DAILY:** Check engine oil level and fill as necessary.

**DAILY:** Check hose for wear and damage.

**DAILY:** Check 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 ASM Packing Seal in displacement pump packing nut. Fill nut, if necessary. Keep ASM Packing Seal 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.

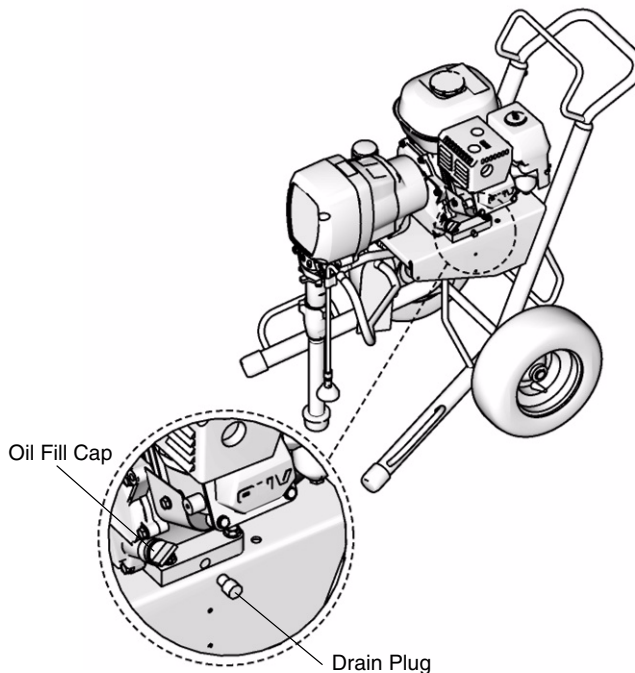
**WEEKLY:** Remove engine air filter cover and clean element. Replace element, if necessary. If operating in an unusually dusty environment: check filter daily and replace, if necessary.

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.



# Troubleshooting

Problem	Cause	Solution
Blinking LED	Fault condition exists	Determine fault correction from table, page 15.
Engine will not start	Engine switch is OFF	Turn engine switch ON
	Engine is out of gasoline	Refill gas tank. Honda Engines Owner's Manual.
	Engine oil level is low	Try to start engine. Replenish oil, if necessary. Honda Engines Owner's Manual.
	Spark plug is disconnected or damaged	Connect spark plug cable or replace spark plug
	Cold engine	Use choke
	Fuel shutoff lever is OFF	Move lever to ON position
	Oil is seeping into combustion chamber	Remove spark plug. Pull starter 3 to 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage
Engine operates, but displacement pump does not operate	Blinking LED displayed	Reference Pressure Control repair, page 13.
	Pump switch is OFF	Turn pump switch ON
	Pressure setting too low	Turn pressure adjusting knob clockwise to increase pressure.
	Fluid filter (41) is dirty	Clean filter. Page 20.
	Tip or tip filter is clogged	Clean tip or tip filter. Manual 312363.
	Displacement pump piston rod is stuck due to dried paint	Repair pump. Manual 310643.
	Connecting rod is worn or damaged	Replace connecting rod. Page 8.
	Drive housing is worn or damaged	Replace drive housing. Page 9.
	Electrical power is not energizing clutch field	<p>Check wiring connections. Page 12.</p> <p>Reference <b>Error Code</b>. Page 15.</p> <p>Reference wiring diagram. Page 21.</p> <p>With pump switch ON and pressure turned to MAXIMUM, use a test light to check for power between clutch test points on control board.</p> <p>Remove clutch wires from control board and measure resistance across clutch coil. At 70° F, the resistance must be between 1.2 +0.2Ω; if not, replace pinion housing.</p> <p>Have pressure control checked by authorized ASM dealer</p>
	Clutch is worn, damaged, or incorrectly positioned	Adjust or replace clutch. Page 10.
Pinion assembly is worn or damaged	Repair or replace pinion assembly. Page 10.	

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Pump output is low	Strainer (27) is clogged	Clean strainer.
	Piston ball is not seating	Service piston ball. Manual 310643.
	Piston packings are worn or damaged	Replace packings. Manual 310643.
	O-ring in pump is worn or damaged	Replace o-ring. Manual 310643.
	Intake valve ball is not seating properly	Clean intake valve. Manual 310643.
	Intake valve ball is packed with material	Clean intake valve. Manual 310643.
	Engine speed is too low	Increase throttle setting. Manual 312576.
	Clutch is worn or damaged	Adjust or replace clutch. Page 10.
	Pressure setting is too low	Increase pressure. Manual 312576.
	Fluid filter (41), tip filter or tip is clogged or dirty	Clean filter. Manual 312576 or 312363.
	Large pressure drop in hose with heavy materials	Use larger diameter hose and/or reduce overall length of hose. Use of more than 100 ft of 1/4 in. hose significantly reduces performance of sprayer. Use 3/8 in. hose for optimum performance (50 ft minimum).
Excessive paint leakage into throat packing nut	Throat packing nut is loose	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
	Throat packings are worn or damaged	Replace packings. Manual 310643.
	Displacement rod is worn or damaged	Replace rod. Manual 310643.
Fluid is spitting from gun	Air in pump or hose	Check and tighten all fluid connections. Reprime pump. Manual 312576.
	Tip is partially clogged	Clear tip. Manual 312363.
	Fluid supply is low or empty	Refill fluid supply. Prime pump. Manual 312576. Check fluid supply often to prevent running pump dry.
Pump is difficult to prime	Air in pump or hose	Check and tighten all fluid connections.  Reduce engine speed and cycle pump as slowly as possible during priming.
	Intake valve is leaking	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.
	Pump packings are worn	Replace pump packings. Manual 310643.
	Paint is too thick	Thin the paint according to the supplier's recommendations
	Engine speed is too high	Decrease throttle setting before priming pump. Manual 312576.
Clutch squeaks each time clutch engages	Clutch surfaces are not matched to each other when new and may cause noise	Clutch surfaces need to wear into each other. Noise will dissipate after a day of run time.
High engine speed at no load	Misadjusted throttle setting	Reset throttle to 3300 engine rpm at no load.
	Worn engine governor	Replace or service engine governor
Gallon counter not working	Bad sensor, broken or disconnected wire. Displaced or missing magnet.	Check connections. Replace sensor or wire. Reposition or replace magnet.
No display, sprayer operates	Display damaged or has bad connection	Check connections. Replace display.

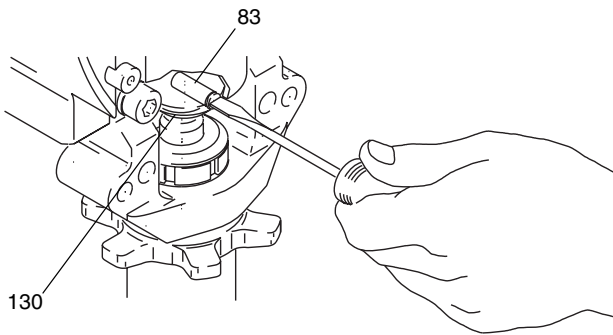


# Bearing Housing and Connecting Rod

## Removal



1. Relieve pressure, page 5.
2. Remove four screws (18) and front cover (17).
3. Unscrew suction tube (85) from pump, hold wrench on pump intake valve (A) to keep pump from loosening.
4. Disconnect pump outlet hose (128) from displacement pump outlet nipple (95).
5. Remove two screws (7), pump rod shield (87) and hose clip (89).



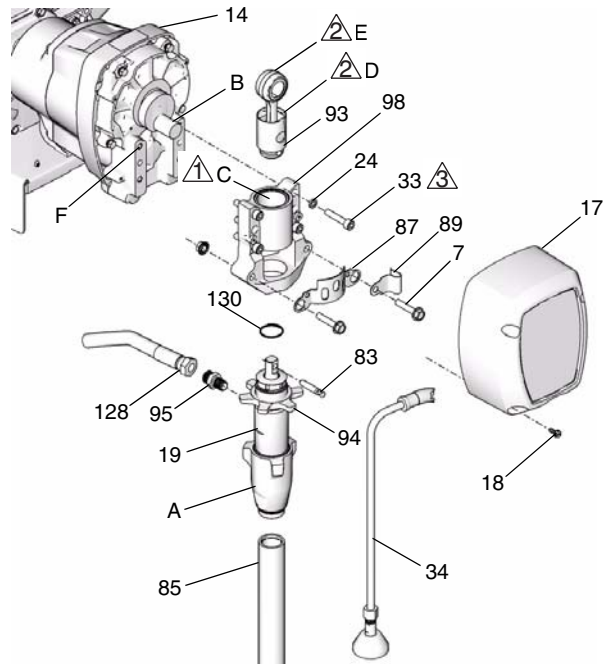
6. Use screwdriver to push up retaining spring (130) at top of pump. Push out pin (83).
7. Loosen retaining nut (94). Unscrew and remove displacement pump (19).
8. Remove four screws (33) and lockwashers (24) from bearing housing (98).
9. Pull connecting rod (93) and lightly tap lower rear of bearing housing (98) with plastic mallet to loosen from drive housing (14). Pull bearing housing and connecting rod assembly (93) off drive housing.
10. Inspect crank (B) for excessive wear and replace parts as needed.

2. Assemble connecting rod (93) and bearing housing (98).
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 (14) with holes in bearing housing (98). Push bearing housing onto drive housing or tap into place with plastic mallet.

### CAUTION

DO NOT use bearing housing screws (33) to align or seat bearing housing with drive housing. Align these parts with locating pins, to avoid premature bearing wear.

5. Install screws (33) and lockwashers (24) on bearing housing. Torque evenly to note 3 value in illustration below.
6. Install pump. Refer to **Displacement Pump, Installation**, page 16.



- Oil
- Pack with bearing grease 114819
- Torque to 200 in. lb (22.6 N•m)

## Installation

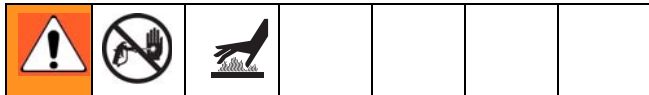
1. Evenly lubricate inside of bronze bearing (C) in bearing housing (98) with high-quality motor oil. Liberally pack top roller bearing (E), lower bearing (D) inside connecting rod assembly (93) with bearing grease.

7. Install hose clip (89), pump shield (87) and two screws (7).
8. Connect pump outlet hose (128) to displacement pump outlet nipple (95).
9. Install suction tube (85) to pump (19).
10. Install front cover (17) and four screws (18).



# Drive Housing

## Removal



1. Relieve pressure; page 5.
2. Remove bearing housing. Refer to **Bearing Housing and Connecting Rod, Removal**, page 8.

### CAUTION

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

3. Remove six screws (16).
4. Lightly tap around drive housing (14) to loosen drive housing. Pull drive housing straight off pinion housing. Be prepared to support combination gear (53) which may also come out.

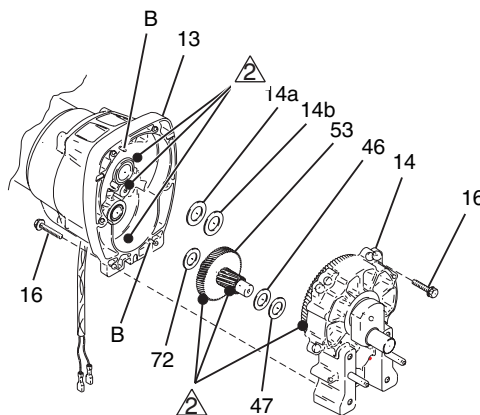
## Installation

1. Apply all grease supplied with replacement gear cluster to gear teeth and to areas called out by note 2.
2. Ensure thrust washers (46, 47, 72) are on combination gear (53) and washers (14a, 14b) are on crankshaft of drive housing (14) as shown.
3. Clean mating surfaces of pinion and drive housings.
4. Align gears and push new drive housing straight onto pinion housing (13) and locating pins (B).
5. Install six screws (16).
6. Install bearing housing. Refer to **Bearing Housing and Connecting Rod, Installation**, page 8.

### CAUTION

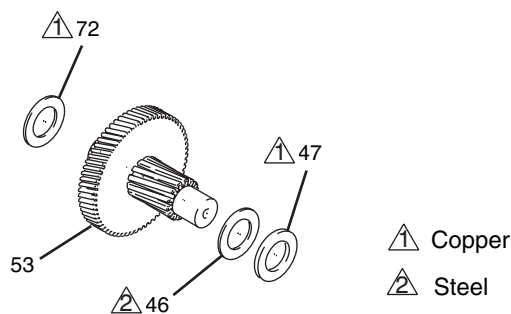
DO NOT use drive housing screws (16) to align or seat drive housing with pinion housing. Align these parts with locating pins, to avoid premature bearing wear.

7. Install screws (16) in drive housing. Torque evenly to note 1 value.
8. Install pump. Refer to **Displacement Pump, Installation**, page 16.



⚠ Torque to 140 ±10 in-lb (15.8 ±1.1N.m)

⚠ Pack with grease 114819

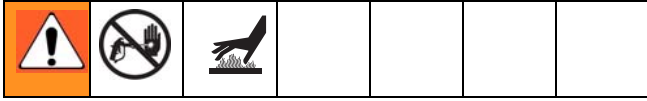


# Pinion Assembly/Clutch Armature/Clamp

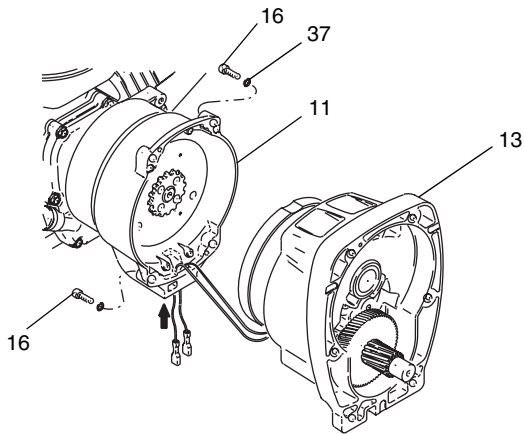
## Pinion Assembly/Clutch Armature Removal

### Pinion Assembly

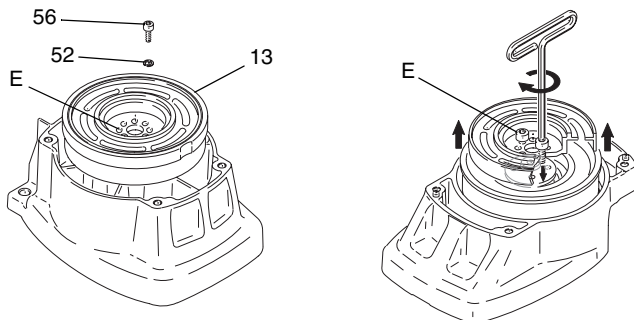
If pinion assembly (13) is not removed from clutch housing (11), do 1. through 3. Otherwise, start at 4.



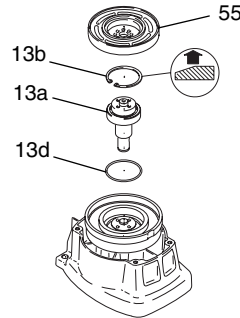
1. Remove drive housing; page 9.
2. Disconnect clutch cable connectors from inside of pressure control (see page 13).
  - a. Remove two screws (115) and swing down cover (113a).
  - b. Disconnect engine leads from board to engine.
  - c. Remove strain reliefs (113r) and (125).
3. Remove four screws (16) and pinion assembly (13).



4. Place pinion assembly (13) on bench with rotor side up.
5. Remove four screws (56) and lock washers (52). Install two screws in threaded holes (E) in rotor. Alternately tighten screws until rotor comes off.

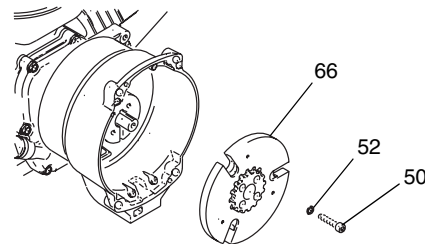


6. Remove retaining ring (13b).
7. Turn pinion assembly over and tap pinion shaft (13a) out with plastic mallet.



### Clutch Armature

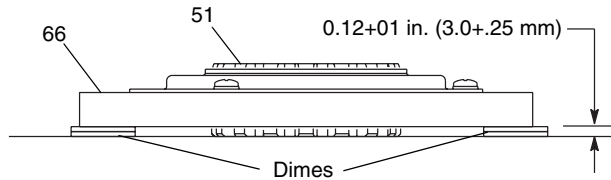
8. Use an impact wrench or wedge something between clutch armature (66) and clutch housing to hold engine shaft during removal.
9. Remove four screws (50) and lock washers (52).
10. Remove armature.



## Installation

### Clutch Armature

1. Lay two stacks of two dimes on smooth bench surface.
2. Lay armature (66) on two stacks of dimes.
3. Press center of hub (51) down to bench surface.



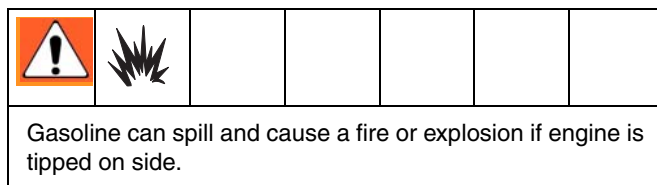
4. Install armature (66) on engine drive shaft.
5. Install four screws (50) and lock washers (52) with torque of 125 in-lb.

### Pinion Assembly

6. Check o-ring (13d) and replace if missing or damaged.
7. Tap pinion shaft (13a) in with plastic mallet.
8. Install retaining ring (13b) with beveled side facing up.
9. Place pinion assembly on bench with rotor side up.
10. Apply Loctite® to screws. Install four screws (56) and lock washers (52). Alternately torque screws to 125 in-lb until rotor is secure. Use threaded holes to hold rotor.
11. Install pinion assembly (13) with four screws (16).
12. Connect clutch cable connectors to inside of pressure control.

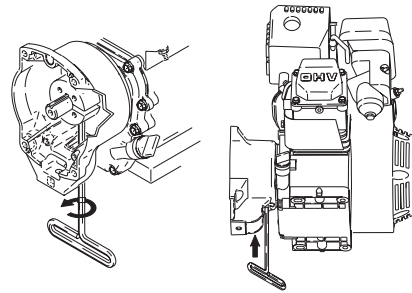
## Clamp Removal

1. Do **Engine Removal** (see page 12).



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 (52) on clamp (12).

5. Push screwdriver into slot in clamp (12) and remove clamp.



## Clamp Installation

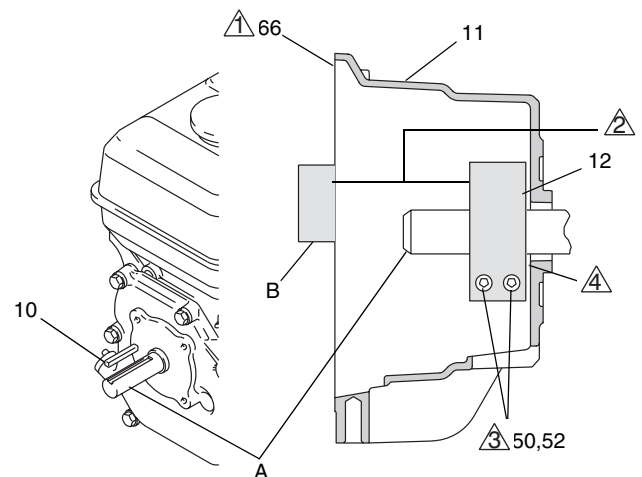
1. Install engine shaft key (10).
2. Tap clamp (12) onto engine shaft (A). Maintain dimension shown note 2. Chamfer must face engine.
3. Check dimension: Place rigid, straight steel bar (B) across face of clutch housing (11). Use accurate measuring device to measure distance between bar and face of clamp. Adjust clamp as necessary. Torque two screws (52) to 125 ±10 in-lb (14 ±1.1 N·m).

Face of clutch housing

1.550 ± .010 in. (39.37 ± .25 mm)

Torque to 125 ±.10 in-lb (14 ±1.1 N·m)

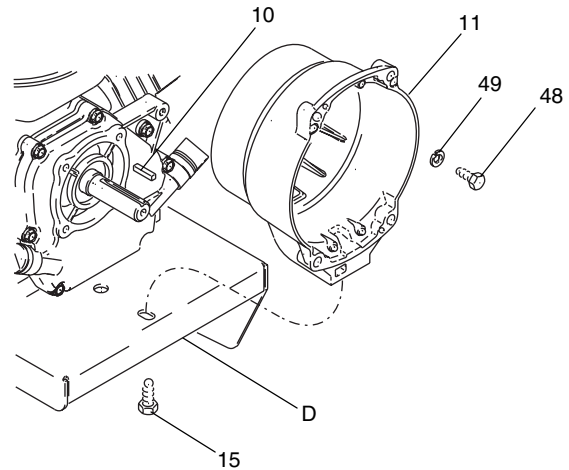
Chamfer this side



# Clutch Housing

## Removal

1. Remove four screws (48) and lock washers (49) which hold clutch housing (11) to engine.
2. Remove screw (15) from under mounting plate (D).
3. Pull off clutch housing (11).



## Installation

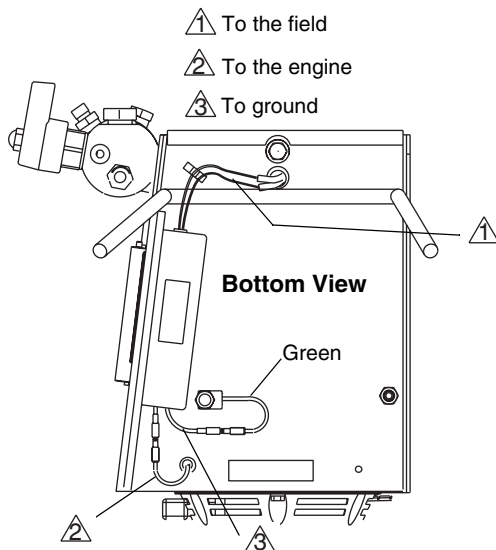
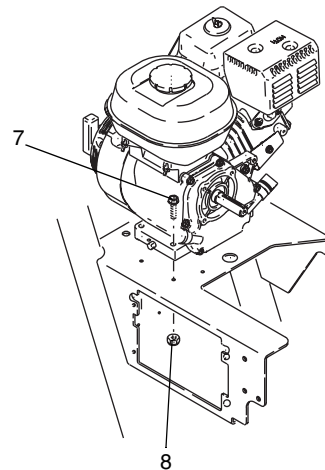
1. Push on clutch housing (11).
2. Install four capscrews (48) and lock washers (21) and secure clutch housing (11) to engine. Torque to 200 in-lb (22.6 N·m).
3. Install screw (15) from beneath mounting plate (D). Torque to 26 ft-lb (35.2 N·m).

# 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 9, 10 and 11.
2. Disconnect all necessary wiring.
3. Remove two locknuts (8) and screws (7) from base of engine.
4. Lift engine carefully and place on work bench.



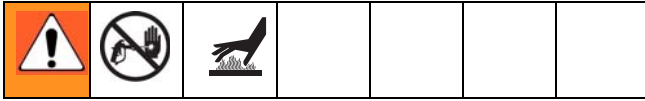
## Installation

1. Lift engine carefully and place on cart.
2. Install two screws (7) in base of engine and secure with locknuts (8). 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 9 and 10 and 11.

# Pressure Control

## Pump ON/OFF Switch

### Removal

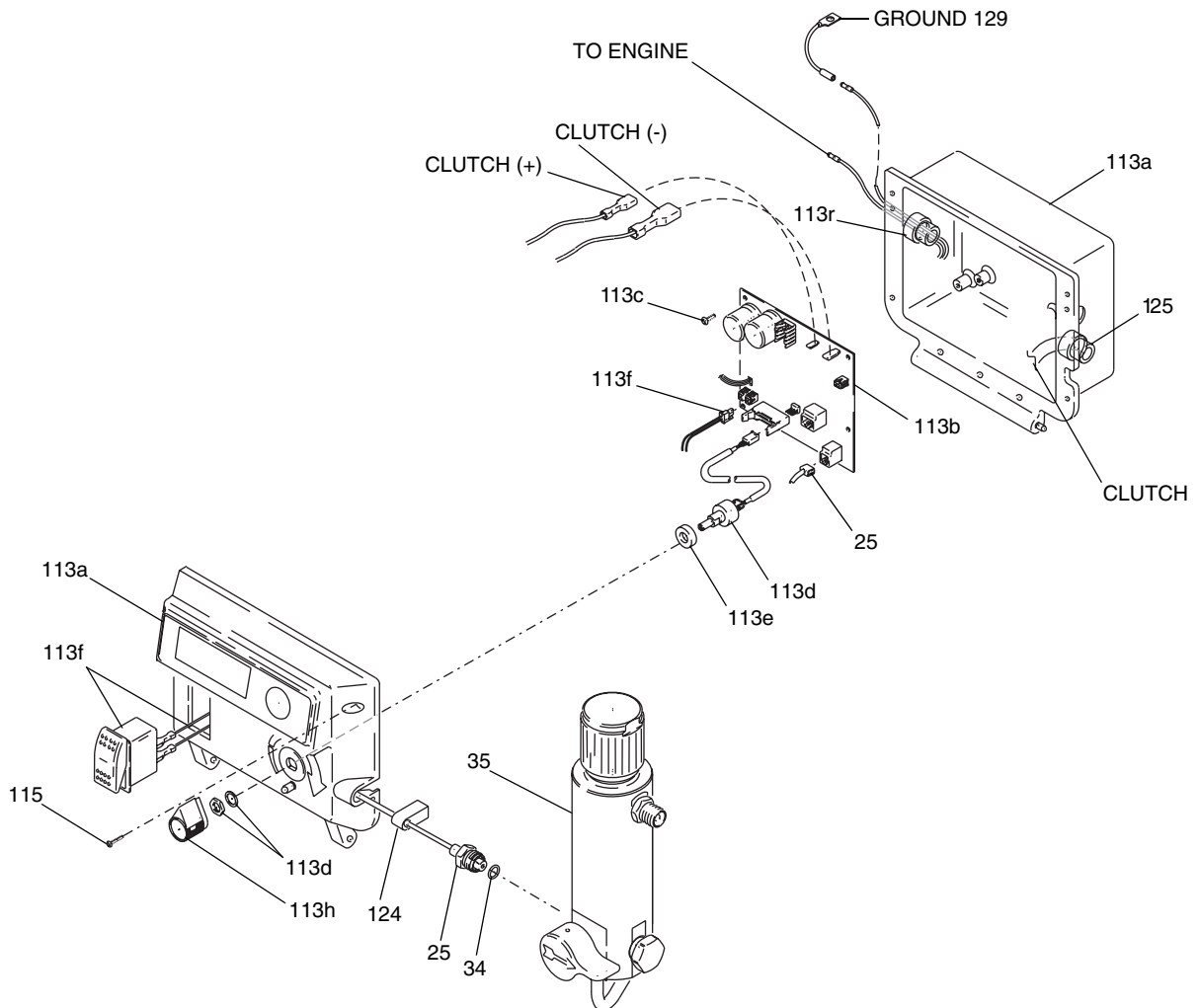


1. Remove two screws (115) and swing down cover (113a).
2. Disconnect pump ON/OFF switch (113f) connector from control board.

3. Press in on two retaining tabs on each side of pump ON/OFF switch (113f) and remove switch from cover.

### Installation

1. Install new pump ON/OFF switch (113f) 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 (113a) and secure with two screws (115).



## Control Board

### Removal



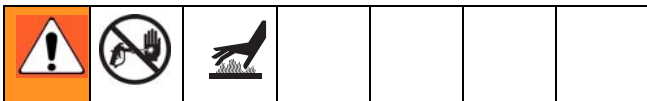
1. Remove two screws (115) and swing down cover (113a)
2. Remove strain relief bushings (113r and 125).
3. Disconnect at control board (113b):
  - Lead from potentiometer (113d)
  - Lead from transducer (25)
  - Lead from pump ON/OFF switch (113f)
  - Engine, ground and clutch wires
4. Remove four screws (113c) and control board (113b).

### Installation

1. Install control board (113b) with four screws (113c).
2. Connect engine wires to control board (113b).
3. Connect at control board (113b):
  - Ground and clutch wires
  - Lead from pump ON/OFF switch (113f)
  - Lead from transducer (25)
  - Lead from potentiometer (113d)
4. Install new strain relief bushings (125 and 113r).
5. Swing up cover (113a) and secure with two screws (115).

## Pressure Control Transducer

### Removal



1. Remove two screws (115) and swing down cover (113a)
2. Disconnect transducer (25) lead from control board (113b).
3. Pull transducer connector through rubber grommet (124).

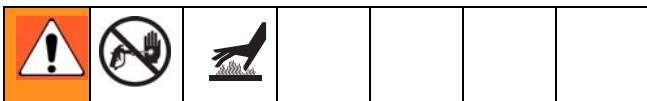
4. Remove pressure control transducer (25) and o-ring (34) from filter housing (35).

### Installation

1. Install o-ring (34) and pressure control transducer (25) in filter housing (35). Torque to 35 - 45 ft-lb.
2. Install transducer connector and rubber grommet in control housing.
3. Connect transducer (25) lead to control board (113b).
4. Swing up cover (113a) and secure with two screws (115).

## Pressure Adjust Potentiometer

### Removal

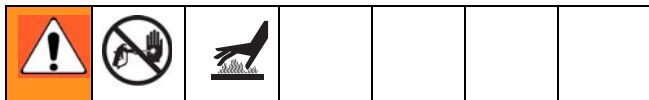


1. Remove two screws (115) and swing down cover (113a)
2. Disconnect potentiometer (113d) lead from control board (113b).
3. Loosen set screws on potentiometer knob (113h) and remove knob, shaft nut, lock washer and potentiometer (113d).
4. Remove shaft spacer (113e) from potentiometer.

### Installation

1. Install shaft spacer (113e) on potentiometer (113d).
2. Install potentiometer, shaft nut, lock washer and potentiometer knob (113h).
3. Turn potentiometer shaft clockwise to internal stop. Assemble potentiometer knob (113h) to strike pin on cover (113a).
4. After adjustment of step a., tighten both set screws in knob 1/4 to 3/8 turn after contact with shaft.
5. Connect potentiometer lead to control board (113b).
6. Swing up cover (113a) and secure with two screws (115).

## Error Codes



- Digital messages are not available on all sprayers
- Blinking LED total count equals error code

CONTROL BOARD STATUS LIGHT	SPRAYER OPERATION	INDICATION	ACTION
Blinks 2X repeatedly	Sprayer stops. Engine is running.	Exceeded pressure limit	<ol style="list-style-type: none"> <li>1 Check fluid path for clogs, such as clogged filter.</li> <li>2 Use ASM paint hose, 1/4 in. x 50 ft minimum. Smaller hose or metal braid hose may result in pressure spikes.</li> <li>3 Replace transducer if fluid path is not clogged and proper hose is used.</li> </ol>
Blinks 3X repeatedly	Sprayer stops. Engine is running.	Pressure transducer faulty, bad connection or broken wire	<ol style="list-style-type: none"> <li>1 Check transducer connection.</li> <li>2 Disconnect and reconnect transducer plug to ensure good connection with control board socket.</li> <li>3 Open prime valve. Replace sprayer transducer with known good transducer and run sprayer. Replace transducer if sprayer runs or control board if sprayer does not run.</li> </ol>
Blinks 6X repeatedly	Sprayer stops. Engine is running.	High clutch current	<ol style="list-style-type: none"> <li>1 Check wiring connections.</li> <li>2 Measure: 1.2 +0.2Ω across clutch field at 70°F.</li> <li>3 Replace clutch field assembly.</li> </ol>

\* Error codes appear on control board as a blinking red LED.

- 1 Remove two screws (115) and swing down cover (113a).
- 2 Start engine. Blink count is the error code.

After a fault, follow these steps to restart sprayer:

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



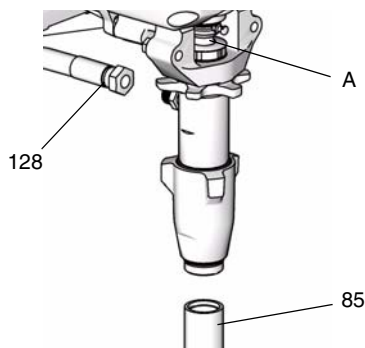
# Displacement Pump

## Removal

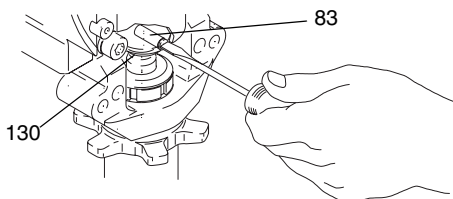
1. Flush pump.



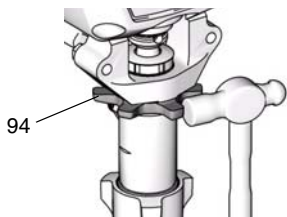
2. Relieve pressure, page 5.
3. Cycle pump piston rod (A) to lowest position.
4. Remove suction tube (85) and hose (128).



5. Use screwdriver to push retaining spring (130) up and push out pin (83).

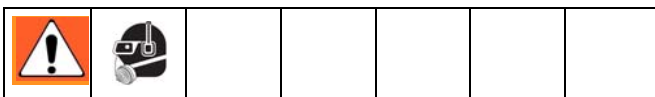


6. Loosen locknut (94) by hitting firmly with a 20 oz (maximum) hammer. Unscrew pump.



## Repair

See manual 310643 for pump repair instructions.

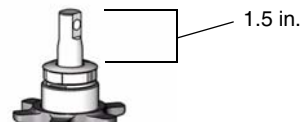


If pin works loose, parts could break off due to force of pumping action. Parts could project through the air and result in serious injury or property damage. Make sure pin and retaining spring are properly installed.

### CAUTION

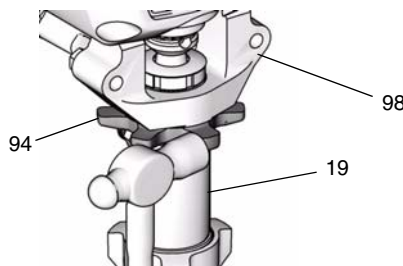
If pump locknut loosens during operation, the threads of the bearing housing will be damaged. Make sure locknut is properly tightened.

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

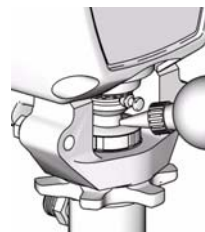


2. Push pin (83) into hole. Push retaining spring (130) into groove around connecting rod.

Screw jam nut (94) down onto pump until nut stops. Screw pump (19) up into bearing housing (98) until it is stopped by jam nut. Back off pump and jam nut by hand, then tap 1/8 to 1/4 turn with a 20 oz (maximum) hammer to approximately 75 +/- 5 ft-lb (102 N•m).



3. Fill packing nut with ASM TSL until fluid flows onto top of seal.



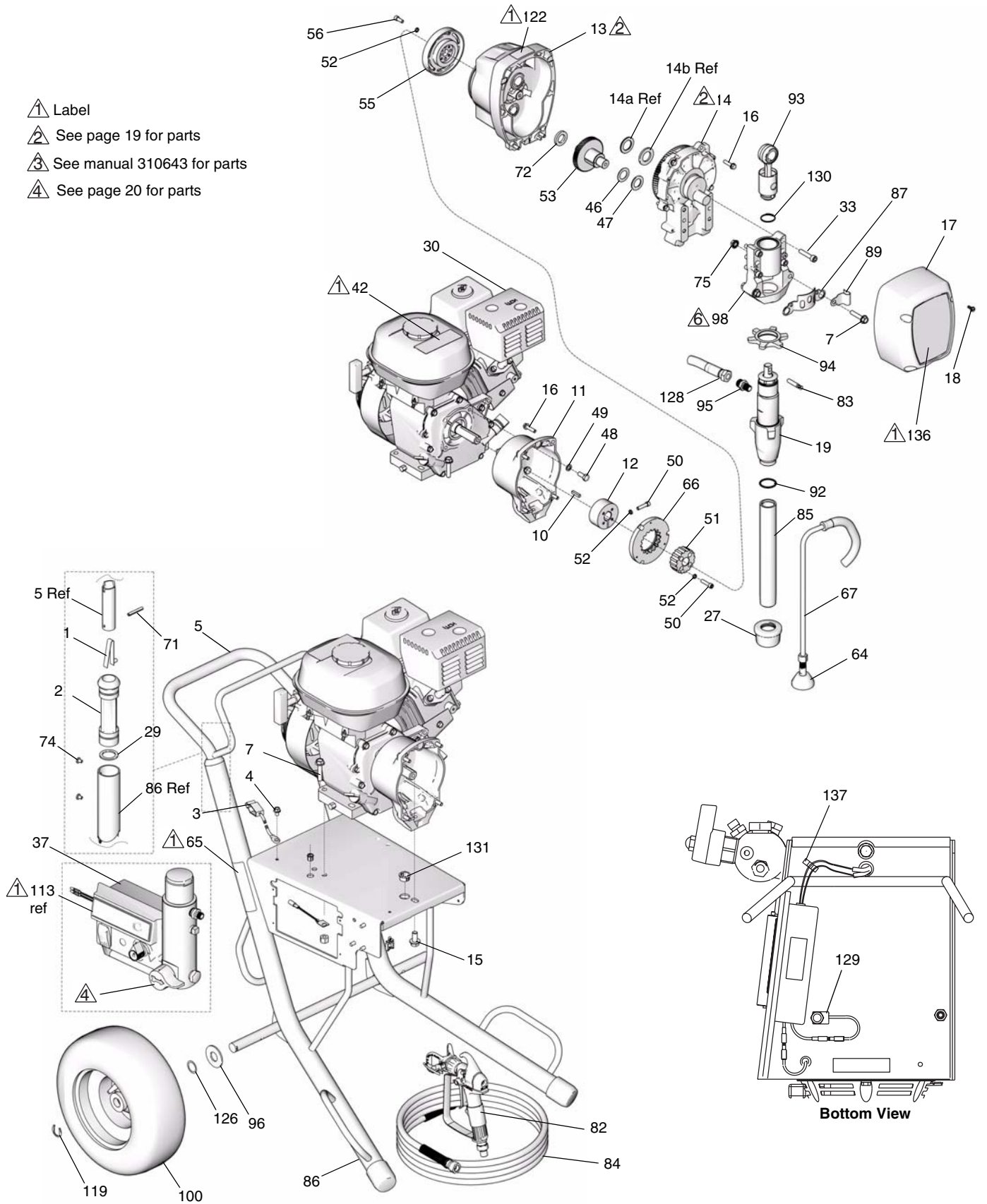
# Parts

▲ Label

▲ See page 19 for parts

▲ See manual 310643 for parts

▲ See page 20 for parts



## Parts List

Ref	Part	Description	Qty	Ref	Part	Description	Qty
				57	245651	FLUID, starter kit (not shown)	1
				64	241920	DEFLECTOR, threaded	1
1	112827	BUTTON, snap	2	65▲	15F638	LABEL, danger, English	1
2	192027	SLEEVE, cart	2	66†		ARMATURE, clutch, 4in.	1
3	237686	WIRE, ground assembly w/ clamp	1	67	243993	HOSE, drain	1
4	112798	SCREW, thread forming, hex hd	1	69	109032	SCREW, mach, pnh	4
5	245245	HANDLE, cart	1	71	108068	PIN, spring straight	2
6	15C871	CAP, leg	2	72	15F250	WASHER, thrust	1
7	110837	SCREW, flange, hex	2	74	100020	WASHER, lock	4
8	110838	NUT, lock	2	82	289316	GUN, contractor	1
10	183401	KEY, parallel	1	83	15F855	PIN, pump (3900)	1
11	15R114	HOUSING, clutch, mach	1	84	HSE1450	HOSE, cpld, 1/4 in. x 50 ft	1
12	193680	COLLAR, shaft	1	85	15E807	TUBE, intake	1
13	289595	HOUSING, pinion	1	86	287411	FRAME, cart	1
14	289594	HOUSING, drive	1	92	118494	O-RING	1
15	112395	SCREW, cap, flnghd	1	93	287719	ROD, connecting	1
16	119426	SCREW, hex washer hd	10	94	192723	NUT, retaining	1
17	277031	COVER, front, includes 45	1	95	196176	FITTING, pump	1
18	118444	SCREW, mach hex wash hd	4	96	156306	WASHER, flat	2
19	255968	PUMP, displacement (includes 95)	1	98	249623	HOUSING, bearing	1
27	181072	STRAINER, (1-11 1/2 npsm)	1	100	119420	WHEEL, pneumatic	2
29	183350	WASHER	2	101	113161	SCREW, flange, hex hd	3
30	108879	ENGINE, gas, 120cc	1	113	289384	BOX, control	1
33	113467	SCREW, cap, socket hd	4	119	15E891	CLIP, retaining	2
36	114678	BUSHING, strain relief	1	122	290228	LABEL, caution	1
37	15R256	LABEL, identification	1	126	116038	WASHER, wave spring	2
42▲	194126	LABEL, warning	1	128	198847	HOSE, coupled	1
43	195119	LABEL, warning	1	129	119579	CONDUCTOR, ground	1
46	114699	WASHER, thrust (steel)	1	130	119676	SPRING, retaining	1
47	114672	WASHER, thrust (brass)	1	131	119569	BUSHING, strain relief	1
48	108842	SCREW, cap, hex hd	4	136	15R255	LABEL, identification	1
49	100214	WASHER, lock	4	137	114687	CLIP, RETAINER	1
50†	108803	SCREW, hex, socket head	6				
51†		HUB, armature	1	▲	<i>Replacement Danger and Warning labels, tags, and cards are available at no cost.</i>		
52†	105510	WASHER, lock, spring (hi-collar)	10	†	Included in Clutch Replacement Kit 241109		
53	287653	GEAR, combination	1				
55†		ROTOR, clutch, 4 in.	1				
56†	101682	SCREW, cap, sch	4				

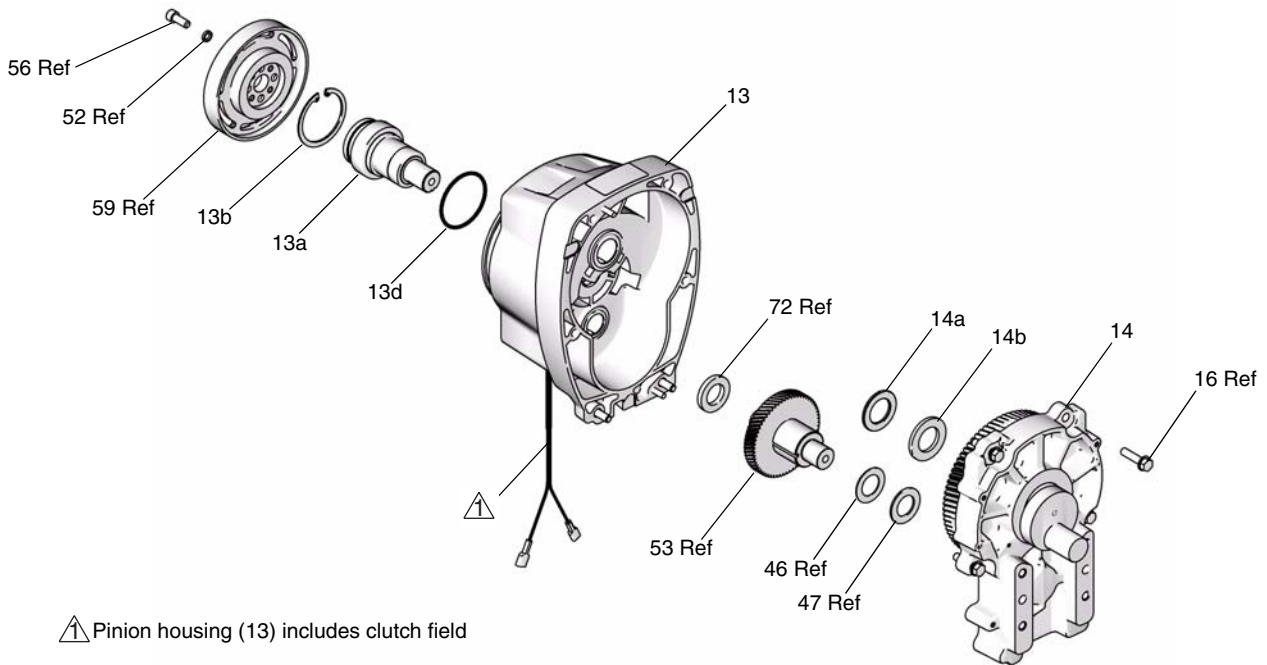
# Parts Drawing and List - Pinion Housing, Drive Housing

## Ref 13: Pinion Housing 289595

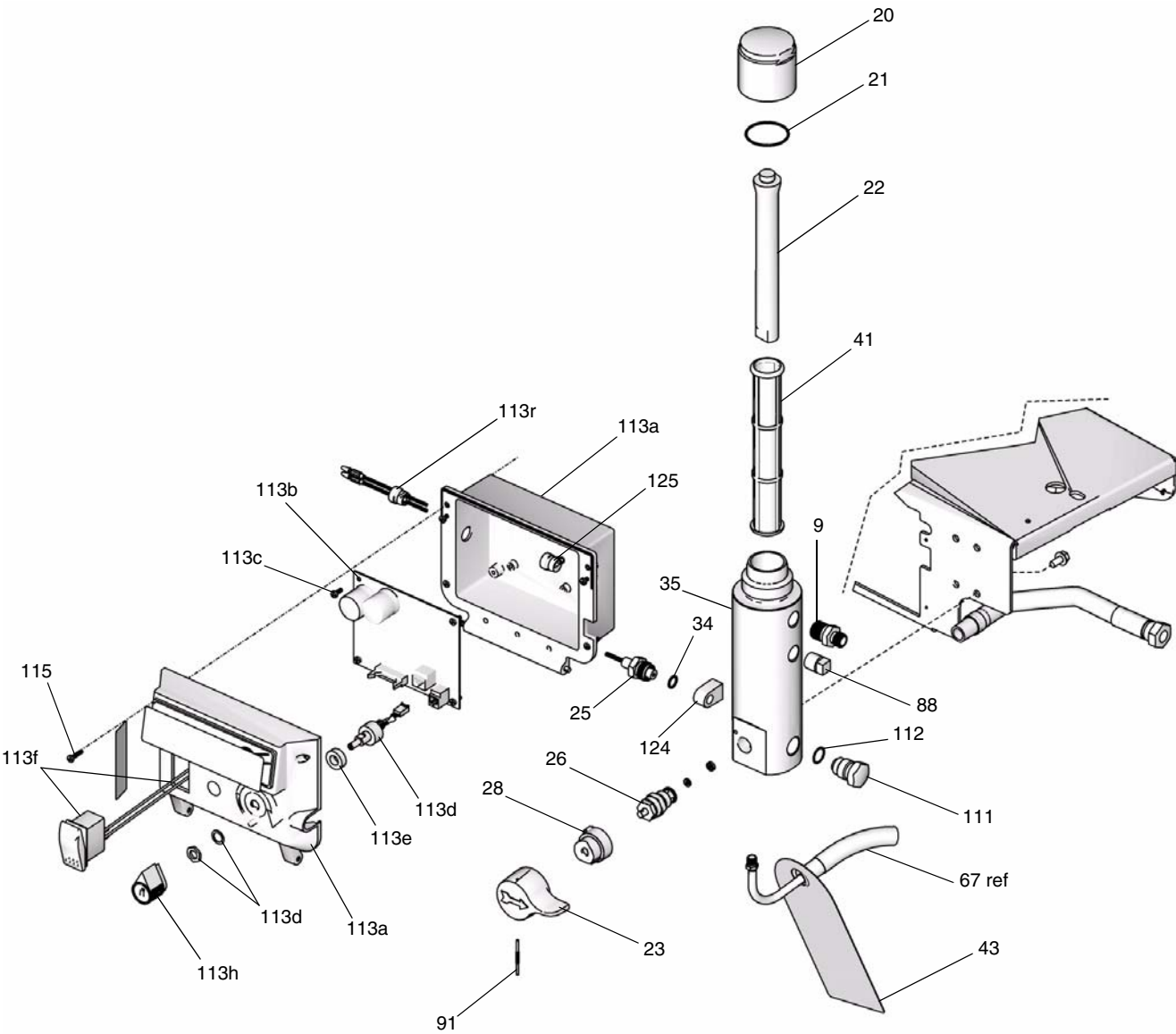
Ref	Part	Description	Qty
13	289596	KIT, repair, field	1
13a	287525	GEAR, driving, first	1
13b	113094	RING, retaining, large	1
13c	105489	PIN, dowel	2
13d	165295	O-RING	1
14a	116191	WASHER, thrust, steel	1

## Ref 14: Drive Housing 289594

Ref	Part	Description	Qty
14	289594	DRIVE HOUSING	1
14a	116191	WASHER, thrust, steel	1
14b	107089	WASHER, thrust, brass	1



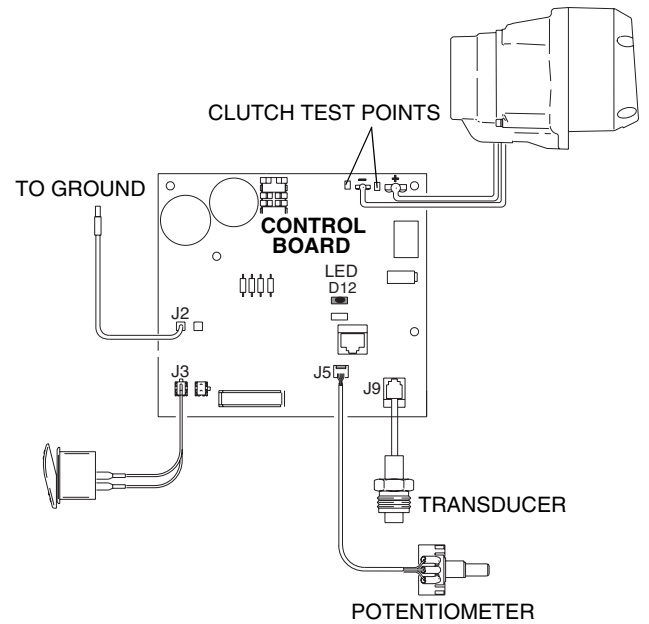
Pressure Control and Filter Parts Drawing



**Pressure Control and Filter Parts List**

REF	PART	DESCRIPTION	QTY
	287510	Filter Replacement Kit	
9	164672	ADAPTER	1
20★	15C765	CAP, filter	1
21★	117285	O-RING	1
22★	15C766	TUBE, diffusion	1
23★	15C780	HANDLE	1
25★	243222	TRANSDUCER, pressure contl	1
26★‡	235014	VALVE, drain, replacement kit	1
28★	224807	BASE, valve	1
34★	111457	O-RING	1
35	15E284	HOUSING, filter	1
41★	244067	FILTER, fluid	1
88★	104813	PLUG, pipe	1
91★	15C972	PIN, grooved	1
111	248314	PLUG (includes 112)	1
112	15D541	O-RING	1
113		<b>CONTROL BOX</b>	
113a	289547	BOX, standard	1
113b	287516	CONTROL, board	1
113c	117317	SCREW, pan head	4
113d	241443	POTENTIOMETER	1
113e	198650	SPACER, shaft	1
113f	116752	SWITCH, rocker	1
113h	116167	KNOB, potentiometer	1
113r	119545	BUSHING, strain relief	1
115	116585	SCREW, mach, pnh, sems	6
124	15E925	GASKET, TRANSDUCER	1
125	119545	BUSHING, strain, relief	1
161	289603	CONTROL, standard, complete (includes 113a-113r)	1

★ Included in Filter Replacement Kit 287510  
 ‡ Included in Drain Valve Replacement Kit 235014



## Technical Data

Honda GX120 Engine	
ANSI Power Rating @ 3600 rpm	4.0 Horsepower (3.0 kW)
Maximum working pressure	3300 psi (228 bar, 22.8 MPa)
Noise Level	
Sound power per ISO 3744	105 dBa
Sound pressure measured at 3.1 feet (1 m)	96 dBa
Maximum delivery rating	1.25 gpm (4.73 lpm)
Maximum tip size	1 gun with 0.036 in. tip 2 guns with 0.023 in. tip 3 guns with 0.018 in. tip
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:	¼ 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 (no hose and gun)

Weight lb (kg)	Height in. (cm)	Width in. (cm)	Length in. (cm)
107 (49)	31.5 (80.0)	22.25 (56.5)	32.0 (81.3)





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