

Repair Instructions and Parts List **309901G**

ALLPRO[®] Manufactured by **ASIM[®]** **Mach 5400** **Airless Paint Sprayer**

– *For portable spray application of architectural paints and coatings* –



Important Safety Instructions

Read all warnings and instructions in this manual.
Save these instructions.

Model 246795 Series A, B, C

3000 psi (20.7 MPa, 207 bar) Maximum Working Pressure



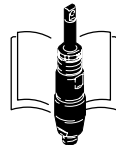
Related manuals



..... 309900



..... 309646

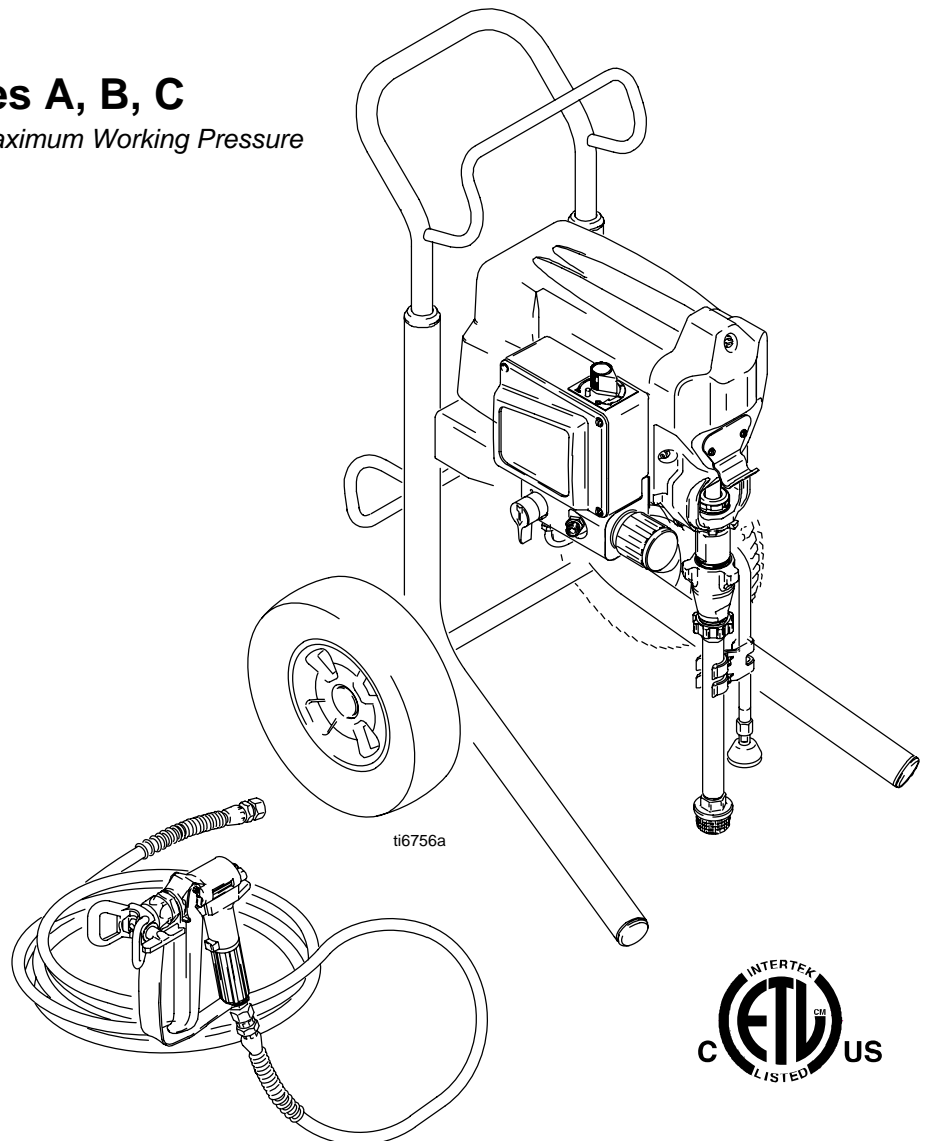


..... 309060

Series A, B

..... 311062

Series C



Specifications

This equipment is not intended for use with flammable or combustible materials used in places such as cabinet shops or other “factory” or fixed locations. If you intend to use this equipment in this type of application, you must comply with NFPA 33 and OSHA requirements for the use of flammable and combustible materials.

Warnings

Warning Symbol



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




Caution Symbol



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

The following are general Warnings related to the safe setup, use, grounding, maintenance and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.

! WARNING

	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Keep a fire extinguisher in the work area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop clothes (potential static arc). • Sprayer generates sparks. When flammable liquid is used in or near sprayer or for flushing or cleaning, keep sprayer at least 20 ft (6 m) away from explosive vapors. • Do not clean with materials having flash points lower than 70°F (21°C). Use water-based materials or mineral spirits type material only. For complete information about your fluid, request the MSDS from the fluid distributor or retailer. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. • Ground equipment and conductive objects in work area. Read Grounding instructions. • If there is static sparking or you feel a shock, stop operating immediately. Do not use equipment until you identify and correct the problem.
	<p>ELECTRIC SHOCK HAZARD</p> <p>Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power cord before servicing equipment. • Use only grounded electrical outlets • Use only 3-wire extension cords. • Do not expose to rain. Store indoors. • Ensure ground prongs are intact on sprayer and extension cords.
	<p>SKIN INJECTION HAZARD</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. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point gun at anyone or 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. • Engage trigger lock when not spraying. • Follow Pressure Relief Procedure in this manual, when you stop spraying and before cleaning, checking or servicing equipment.

WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. Read **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. Read **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from the fluid distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine replacement parts only.
- Do not alter or modify equipment.
- 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 overbend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.
- **WARNING:** Do not operate the unit when fatigued or under the influence of drugs or alcohol.



PRESSURIZED ALUMINUM PARTS HAZARD

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious injury and/or substantial property damage.



TOXIC FLUID HAZARD

Toxic fluid 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 all applicable guidelines.

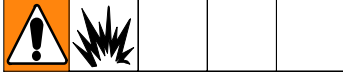


PERSONAL PROTECTIVE EQUIPMENT

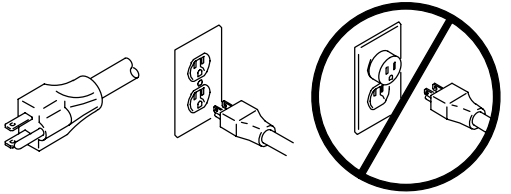
You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes, but is not limited to:

- Protective eye wear.
- Clothing and respirator as recommended by the fluid and solvent manufacturer.
- Gloves.
- Hearing protection.

Grounding and Electric Requirements

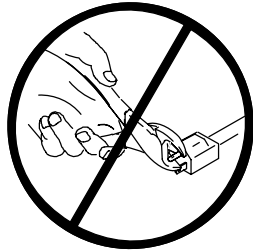


The sprayer must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.



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- **The sprayer requires** a 120V AC, 60 Hz, 15A circuit with grounding receptacle. Never use an outlet that is not grounded or an adapter.



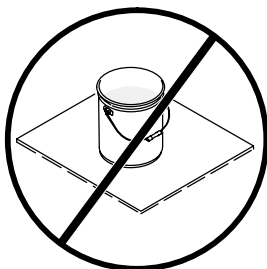
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- Do not use the sprayer if the electrical cord has a damaged ground prong. Only use an extension cord with an undamaged, 3-prong plug.
- **Recommended extension cords** for use with this sprayer:
 - 25 ft (7.6 m) 18 AWG
 - 50 ft (15.2 m) 16 AWG
 - 100 ft (30.5 m) 14 AWG
 - 150 ft (45.7 m) 12 AWG

Smaller gauge or longer extension cords may reduce sprayer performance.

- **Ground sprayer gun** through connection to a properly grounded fluid hose and pump.

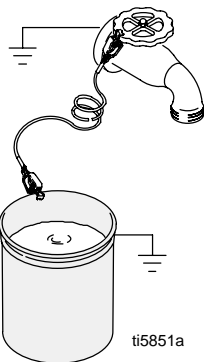
- **Ground fluid supply container.** Follow local code.



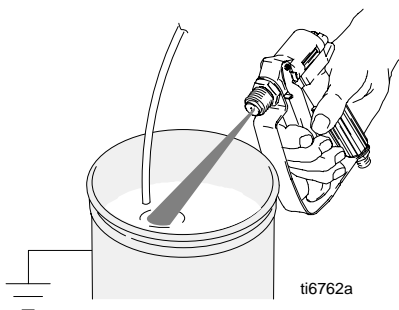
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- **Ground solvent pails used when flushing.** Follow local code. Use only conductive, metal pails, placed on a grounded surface such as concrete. Do not place the pail on a non-conductive surface such as paper or cardboard, which interrupts the grounding continuity.

Grounding and Electric Requirements



- **Ground the metal pail** by clamping one end of ground wire to pail and the other end to ground, such as a water pipe.



- **Maintain grounding continuity** when flushing or relieving pressure by holding metal part of spray gun firmly to side of a grounded metal pail, then trigger gun.

Thermal Overload



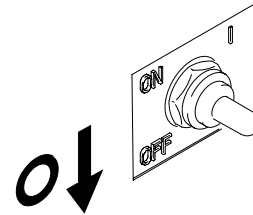
To reduce risk of injury from motor starting unexpectedly when it cools, always turn power switch OFF if motor shuts down.

- Motor has a thermal overload switch to shut itself down if overheated.

Pressure Relief Procedure



Follow Pressure Relief Procedure when you stop spraying and before cleaning, checking, servicing or transporting equipment. **Read Injection Hazard Warning**, page 3.

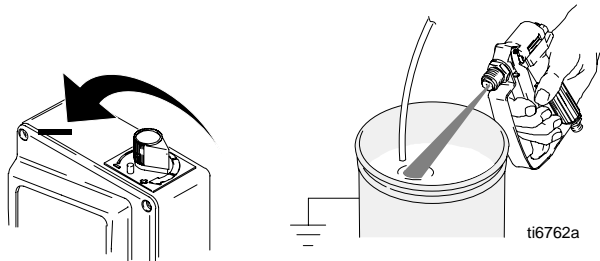


1. Turn power switch OFF and unplug power cord.

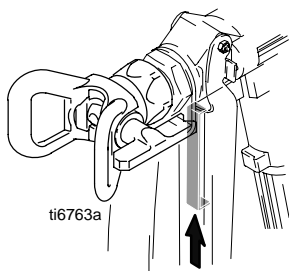


PRIME

2. Turn Spray-Prime/Drain valve to PRIME/DRAIN to relieve pressure.



3. Turn pressure to lowest setting. Hold metal part of gun firmly to a grounded metal pail. Trigger gun to relieve pressure.



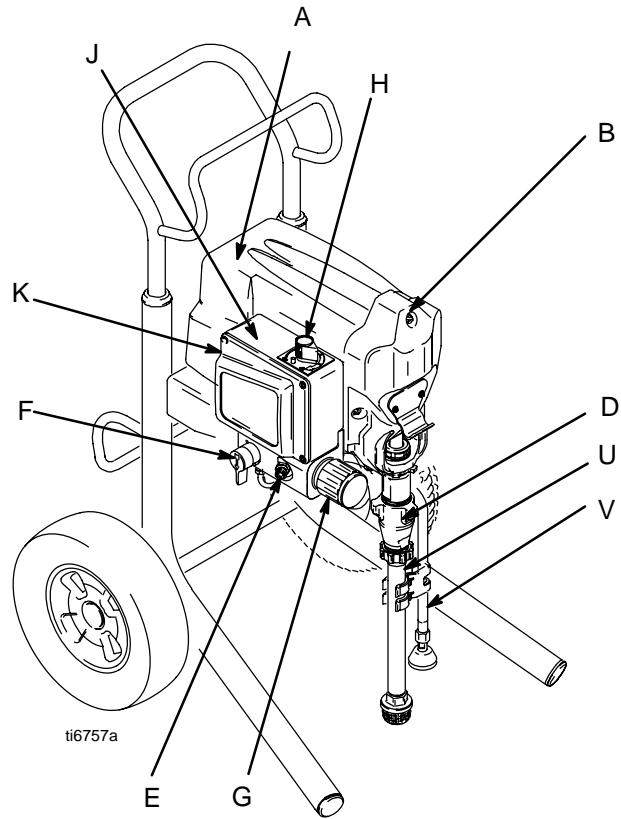
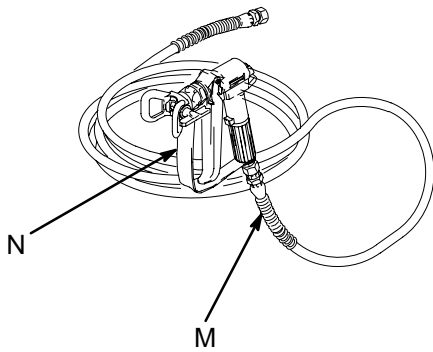
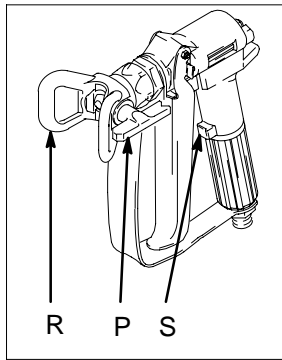
4. Set trigger safety ON.



PRIME

- Leave Spray-Prime/Drain valve in PRIME/DRAIN position until you are ready to spray again.
- *If you suspect the spray tip is clogged or that pressure has not been fully relieved after following the above steps, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually. Then loosen completely. Clear hose or tip obstruction.*

Component Identification and Function



A	Motor	DC motor, permanent magnet, fan cooled
B	Drive Assembly	Transfers power from DC motor to displacement pump
D	Displacement Pump	Transfers fluid to be sprayed from source through spray gun
E	Fluid Outlet	Spray gun is connected here
F	Prime Valve	Used to prime and drain sprayer (also relieves fluid outlet pressure) when open
G	Fluid Filter	Final filter of fluid to spray gun
H	Pressure Adjusting Knob	Controls fluid outlet pressure
J	Pressure Control	Controls motor speed to maintain fluid outlet pressure at displacement pump outlet. Works with pressure adjusting knob.
K	ON/OFF Switch	Power switch that controls main power to sprayer
M	50 ft (15 m) Main Hose	1/4 in. ID, grounded, nylon hose with spring guards on both ends
N	Spray Gun	High pressure spray gun with gun safety latch
P	Spray Tip	Uses high pressure fluid to clear tip clogs without removing tip from spray gun
R	Reversible Tip Guard	Tip guard reduces risk of injection injury
S	Gun Safety Lock	Gun safety latch prevents accidental triggering of spray gun
U	Suction Hose	Transfers fluid to be sprayed from source to pump
V	Drain Tube	Fluid outlet used to drain and prime the sprayer

Maintenance

Daily:

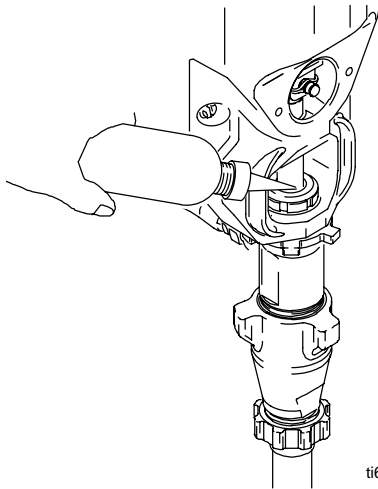
1. Inspect, clean and replace as needed
 - Manifold filter, gun filter and inlet stainer.
 - Wet cup for leakage, tighten if needed.
 - Gun trigger safety.
 - Tip wear, replace if necessary.
 - Electric cord and plug.
2. Fill throat packing nut with ASM packing seal to prevent premature packing wear.
Do this each time you spray.

Weekly:

- Check tightness of wet cup.
- Inspect all high pressure paint hoses.

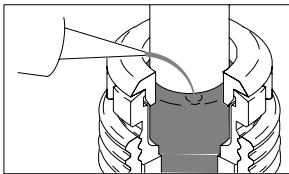
Annually:

- Schedule maintenance check at an authorized ASM repair center.



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Approximate Fill Level



General Repair Information

CAUTION

To reduce risk of pressure control malfunction:

- Use needle nose pliers to disconnect wire. Never pull on wire, pull on connector.
- Mate wire connectors properly. Center flat blade of insulated male connector in female connector.
- Route wires carefully to avoid interference with other connections of pressure control. Do not pinch wires between cover and control box.

1. **Keep all screws, nuts, washers, gaskets, and electrical fittings** removed during repair procedures. These parts are not normally provided with replacement assemblies.



2. **Test repair** after problem is corrected.

3. If **sprayer does not operate properly**, review repair procedure to verify procedure was done correctly. If necessary, see Troubleshooting Guide, pages 12 – 16, for other possible solutions.



CAUTION

Do not run sprayer dry for more than 30 seconds to avoid damaging pump packings.

4. **Install motor shroud before operation** of sprayer and replace if damaged. Motor shroud prevents overheating, and protects operator from possible electrical shock by touching terminals of capacitor. It can also reduce risk of burns, fire or explosion; see preceding **WARNING**.

Troubleshooting



MOTOR WON'T OPERATE

TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
Basic Fluid Pressure Problems	1. Pressure control knob setting. Motor will not run if at minimum setting (fully counterclockwise).	1. Slowly increase pressure setting to see if motor starts.
	2. Spray tip or fluid filter may be clogged.	2. Relieve pressure and clear clog or clean filter; refer to separate gun or tip instruction manual.
Basic Mechanical Problems	1. Pressure control knob setting.	1. Motor stops running when pressure setting is reached.
	2. Pump (13) for frozen or hardened paint.	2. Thaw sprayer if water or water-based paint has frozen in sprayer. Place sprayer in warm area to thaw. Do not start sprayer until thawed completely. If paint hardened (dried) in sprayer, replace pump packings. (Displacement Pump Replacement , page 25.)
	2. Displacement pump connecting rod pin (9a). Pin must be completely pushed into connecting rod (9) and retaining spring (9b) must be firmly in groove of pump pin. See Fig. 6.	2. Push pin into place and secure with spring retainer.
	3. Motor (1). Remove drive housing assembly (10). See page 23. Try to rotate fan by hand.	3. Replace motor (1) if fan won't turn. See page 24.
Basic Electrical Problems	1. Motor control board. Board shuts down and displays error code.	1. Motor Control Board Diagnostics, page 20.
	2. Electrical supply. Meter must read 85–130 Vac for 100–120 Vac models.	2. Reset building circuit breaker; replace building fuse. Try another outlet.
	3. Extension cord. Check extension cord continuity with volt meter.	3. Replace extension cord.
	4. Sprayer power supply cord (29). Inspect for damage such as broken insulation or wires.	4. Replace power supply cord.

Troubleshooting

MOTOR WON'T OPERATE (Continued)

TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
Basic Electrical Problems (continued)	5. That motor leads are securely fastened and properly mated.	5. Replace loose terminals; crimp to leads. Be sure terminals are firmly connected. Clean circuit board terminals. Securely re-connect leads.
	6. For loose motor brush lead connections and terminals. See page 17.	6. Tighten terminal screws. Replace brushes if leads are damaged. See page 17.
	7. Brush length which must be 1/2 in. minimum. See page 17. NOTE: Brushes do not wear at the same rate on both sides of motor. Check both brushes.	7. Replace brushes. See page 17.
	8. For broken or misaligned motor brush springs. Rolled portion of spring must rest squarely on top of brush. See page 17.	8. Replace spring if broken. Realign spring with brush. See page 17.
	9. Motor brushes may be binding in brush holders. See page 17.	9. Clean brush holders. Remove carbon with small cleaning brush. Align brush leads with slot in brush holder to assure free vertical brush movement.
	10. Motor armature commutator for burn spots, gouges and extreme roughness. See page 17.	10. Remove motor and have motor shop resurface commutator if possible, page 24.
	11. Motor armature for shorts using armature tester (growler) or perform spin test. See page 17.	11. Replace motor, page 24.
Refer to wiring diagram on page 26, to identify test points (TP).	1. Power supply cord (29). Connect volt meter between TP1 (neutral) and TP2 (L2, 120 Vac). Plug in sprayer. Meter must read 85–130 Vac for 100–120 Vac models. Unplug sprayer2	1. Replace power supply cord.
	2. ON/OFF switch (23). Connect volt meter between L1 or L and L2 or N terminal on ON/OFF switch. Plug in sprayer and turn ON. Meter must read 85–130 Vac for 100–120 Vac models.	2. Replace ON/OFF switch, page 19.
	3. Motor thermal cutoff switch. Turn sprayer OFF. Check for continuity between TO1 and TO2 with ohmmeter.	3. If thermal switch is open (no continuity), allow motor to cool. If switch remains open after motor cools, replace motor. If thermal switch closes after motor cools, correct cause of overheating.
	4. All terminals for damage or loose fit.	4. Replace damaged terminals and reconnect securely.

Troubleshooting

LOW OR FLUCTUATING OUTPUT

TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
Low Output	1. For worn spray tip.	1. Follow Pressure Relief Procedure , then replace tip. See your separate gun or tip manual.
	2. Verify pump does not continue to stroke when gun trigger is released.	2. Service pump, page 25.
	3. Filter clogged (If optional filter is installed).	3. Relieve pressure. Check and clean filter.
	4. Prime valve leaking.	4. Relieve pressure. Repair prime valve.
	5. Suction hose connections.	5. Tighten any loose connections.
	6. Electrical supply with volt meter. Meter must read 85–130 Vac for 100–120 Vac models. Low voltages reduce sprayer performance.	6. Reset building circuit breaker; replace building fuse. Repair electrical outlet or try another outlet.
	7. Extension cord size and length; must be at least 12 gauge wire and no longer than 300 ft. Longer cord lengths reduce sprayer performance.	7. Replace with a correct, grounded extension cord.
	8. Leads from motor to pressure control circuit board (35) for damaged or loose wires or connectors. Inspect wiring insulation and terminals for signs of overheating.	8. Be sure male terminal blades are centered and firmly connected to female terminals. Replace any loose terminal or damaged wiring. Securely reconnect terminals.
	9. For loose motor brush leads and terminals, page 17.	9. Tighten terminal screws. Replace brushes if leads are damaged, page 17.
	10. For worn motor brushes which must be 1/2 in. minimum, page 17.	10. Replace brushes, page 17.
	11. For broken and misaligned motor brush springs. Rolled portion of spring must rest squarely on top of brush.	11. Replace spring if broken. Realign spring with brush, page 17.
	12. Motor brushes for binding in brush holders, page 17.	12. Clean brush holders, remove carbon dust with small cleaning brush. Align brush lead with slot in brush holder to assure free vertical brush movement.
	13. Low stall pressure.	13. Do either or both: a. Turn pressure control knob fully clockwise. Make sure pressure control knob is properly installed to allow full clockwise position. b. Try a new transducer.
	14. Motor armature for shorts by using an armature tester (growler) or perform spin test, page 17.	14. Replace motor, page 24.

Troubleshooting

LOW OR FLUCTUATING OUTPUT

TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
Motor runs and pump strokes	1. Paint supply.	1. Refill and reprime pump.
	2. Intake strainer clogged.	2. Remove and clean, then reinstall.
	3. Suction tube or fittings loose.	3. Tighten; use thread sealant or sealing tape on threads if necessary.
	4. To see if intake valve ball and piston ball are seating properly, page 25.	4. Remove intake valve and clean. Check balls and seats for nicks; replace if necessary, page 25. Strain paint before using to remove particles that could clog pump.
	5. Leaking around throat packing nut which may indicate worn or damaged packings, page 25.	5. Replace packings, page 25. Also check piston valve seat for hardened paint or nicks and replace if necessary. Tighten packing nut/wet-cup.
	6. Pump rod damage.	6. Repair pump, page 25.
	7. Capacitor failure. Visually inspect capacitor near terminals. Ensure that orange safety relief plug is intact.	7. Replace capacitor.
Motor runs but pump does not stroke	1. Displacement pump pin (9a) (damaged or missing), page 25.	1. Replace pump pin if missing. Be sure retainer spring (9b) is fully in groove all around connecting rod, page 25.
	2. Connecting rod assembly (9) for damage, page 23.	2. Replace connecting rod assembly, page 23.
	3. Gears or drive housing, page 23.	3. Inspect drive housing assembly and gears for damage and replace if necessary, page 23.

Troubleshooting

MOTOR IS HOT AND RUNS INTERMITTENTLY

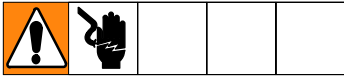
TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
Motor is hot and runs intermittently.	1. Determine if sprayer was operated at high pressure with small tips, which causes low motor RPM and excessive heat build up.	1. Decrease pressure setting or increase tip size.
	2. Be sure ambient temperature where sprayer is located is no more than 90°F and sprayer is not located in direct sun.	2. Move sprayer to shaded, cooler area if possible.

ELECTRICAL SHORT

TYPE OF PROBLEM	WHAT TO CHECK <i>If check is OK, go to next check</i>	WHAT TO DO <i>When check is not OK refer to this column</i>
<p>Building circuit breaker opens as soon as sprayer switch is turned on.</p> <p>CAUTION Any short in any part of the motor power circuit will cause the control circuit to inhibit sprayer operation. Correctly diagnose and repair all shorts before checking and replacing control board.</p>	1. All electrical wiring for damaged insulation, and all terminals for loose fit or damage. Also wires between pressure control and motor. See page 24.	1. Repair or replace any damaged wiring or terminals. Securely reconnect all wires.
	2. For missing inspection plate gasket (see page 24), bent terminal forks or other metal to metal contact points which could cause a short.	2. Correct faulty conditions.
	3. Motor armature for shorts. Use an armature tester (growler) or perform spin test, page 17. Inspect windings for burns.	3. Replace motor, page 24.
	4. Motor control board (35) by performing motor control board diagnostics, page 20. If diagnostics indicate, substitute with a good board. CAUTION: Do not perform this check until motor armature is determined to be good. A bad motor armature can burn out a good board.	4. Replace with a new pressure control board (35), page 20.
Building circuit breaker opens as soon as sprayer is plugged into outlet and sprayer is NOT turned on.	1. Basic Electrical Problems, page 12.	1. Perform necessary procedures.
	2. ON/OFF switch (23), page 19. <i>Be sure sprayer is unplugged!</i> Disconnect wires from switch. Check switch with ohmmeter. Reading must be infinity with ON/OFF switch OFF, and zero with switch ON.	2. Replace ON/OFF switch, page 19
	3. For damaged or pinched wires in pressure control, page 20.	3. Replace damaged parts, page 20.
Sprayer quits after sprayer operates for 5 to 10 minutes.	1. Basic Electrical Problems, page 12.	1. Perform necessary procedures.
	2. Electrical supply with volt meter. Meter must read 85–130 Vac for 100–120 Vac models.	2. If voltage is too high, do not operate sprayer until corrected.
	3. Tightness of pump packing nut. Over tightening tightens packings on rod, restricts pump action, and damages packings.	3. Loosen packing nut. Check for leaking around throat. Replace pump packings, if necessary, page 25.

Spin Test

Setup



To check armature, motor winding and brush electrical continuity:



1. Remove drive housing, page 23.
2. Fig. 1. Remove pressure control cover (39). Disconnect motor leads (F) and (G).
3. Fig. 2. Remove motor shroud (74).

Armature Short Circuit Test

Quickly turn motor fan by hand. If no electrical shorts, motor coasts two or three revolutions before complete stop. If motor does not spin freely, armature is shorted. Replace motor, page 24.

Armature, Brushes, and Motor Wiring Open Circuit Test (Continuity)

1. Connect red and black motor leads together with test lead. Turn motor fan by hand at about two revolutions per second.
2. If uneven or no resistance, check for: broken brush springs, brush leads, motor leads; loose brush terminal screws, motor lead terminals; worn brushes. Repair as needed.
3. If still uneven or no resistance, replace motor, page 24.

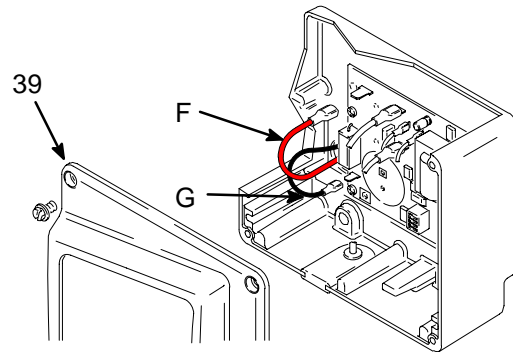


Fig. 1

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Motor Brush Replacement

Motor Brush Removal

Replace brushes worn to less than 1/2 in. Check both sides. Brush Repair Kit 243215.



1. Read General Repair Information, page 11.
1. Fig. 2. Remove four screws (22) and motor shroud (74).
2. Pry off two brush caps (A). Tag locations of red (+) and black (-) motor leads.
3. Fig. 3. Remove screw (C) and discard brush (B) for motor with capacitor attached. Remove brush lead from control box for motor without capacitor attached.

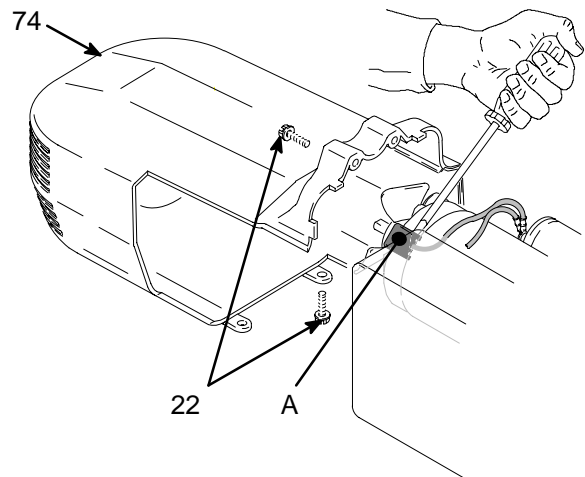


Fig. 2

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(Continued on page 18)

Motor Brush Replacement

- Fig. 3. Insert brush (B). Push clip (A) until it snaps into place and secures brush.

CAUTION

When installing brushes, follow all steps carefully to avoid damaging parts.

- Fig. 3. Install red (+) and black (-) motor leads according to tags. Install brush lead end with screw (C) to motor-mounted capacitor or route lead into control box and connect to board.

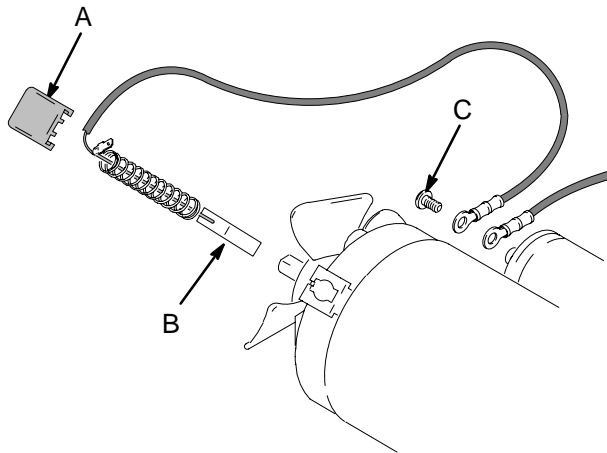


Fig. 3

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- Inspect commutator for excessive pitting, burning or gouging. A black color on commutator is normal. Have commutator resurfaced by a motor repair shop if brushes wear too fast.
- Test brushes.
 - Remove pump (13); Displacement Pump Replacement, page 25.
 - With sprayer OFF, turn pressure control knob fully counterclockwise to minimum pressure. Plug in sprayer.
 - Turn sprayer ON. Slowly increase pressure until motor is at full speed.
- Break in brushes.
 - Operate sprayer 1 hour with no load.
 - Install pump (13), Displacement Pump Replacement, page 25.

On/Off Switch Replacement

Removal



1. Fig. 4. Remove four screws (18) and pressure control cover (39).
2. Disconnect two wires (A) from ON/OFF switch (23).
3. Remove toggle boot (25) and locking ring (24). Remove ON/OFF switch (23).

Installation

1. Install new ON/OFF switch (23). Install locking ring (24) and toggle boot (25).
2. Connect two wires (A) to ON/OFF switch.
3. Install pressure control cover (39) with four screws (18).

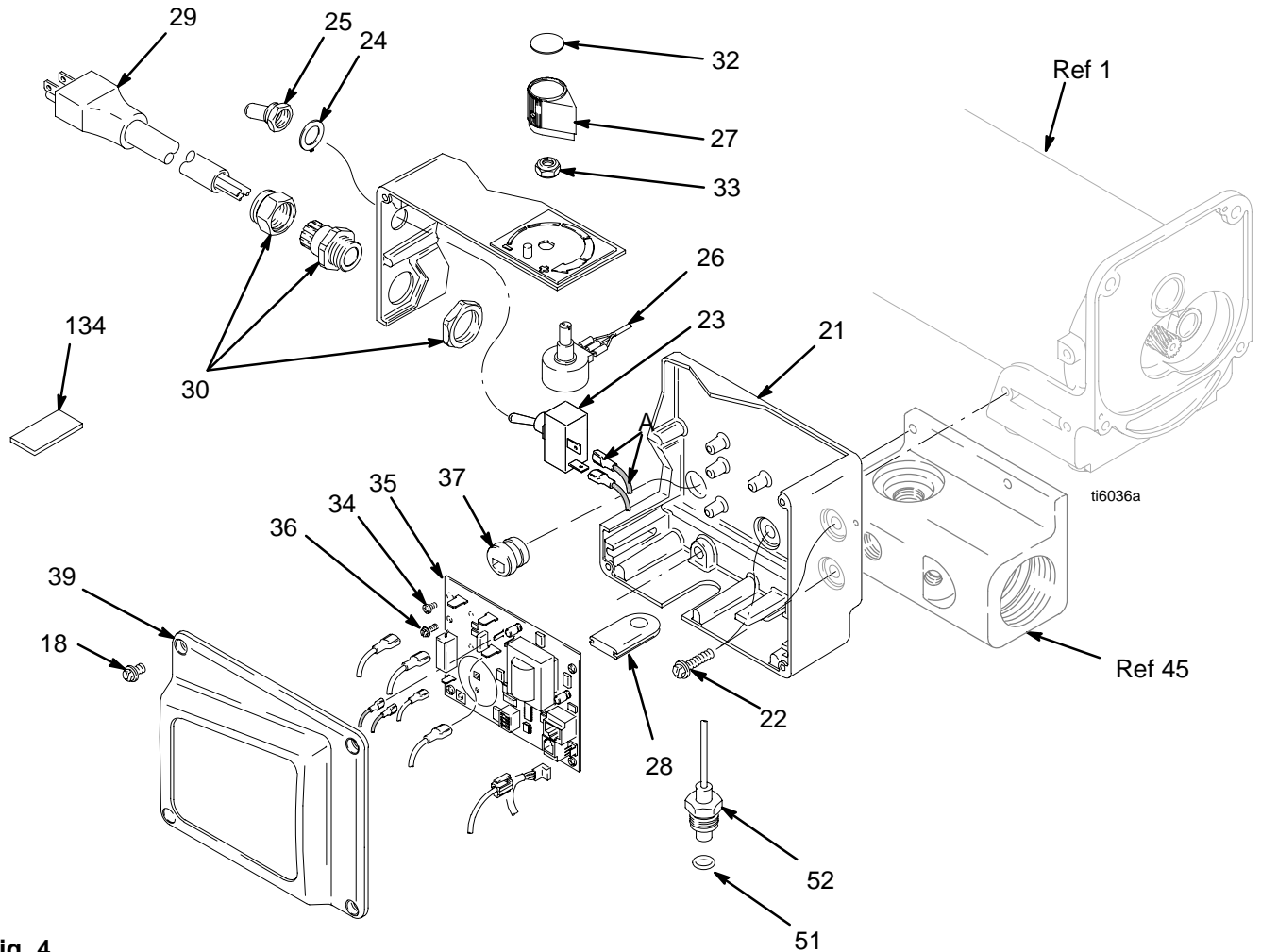


Fig. 4

Pressure Control Repair

Motor Control Board Diagnostics

Note: Keep a new transducer on hand to use for test.

1. Remove four screws (18) and cover (39).
2. Turn ON/OFF switch ON.
3. Observe LED operation and reference following table:

CAUTION
Do not allow sprayer to develop fluid pressure without transducer installed. Leave drain valve open if test transducer is used.



LED BLINKS	SPRAYER OPERATION	INDICATES	WHAT TO DO
Once	Sprayer runs	Normal operation	Do nothing
Once and stays ON	Sprayer shuts down and LED stays ON	Motor open circuit or bad control board	Check motor brushes and armature. If OK, replace motor control board.
Two times repeatedly	Sprayer shuts down and LED continues to blink two times repeatedly	Run away pressure. Pressure greater than 4500 psi (310 bar, 31 MPa).	Replace motor control board. See following Motor Control Board procedure.
Three times repeatedly	Sprayer shuts down and LED continues to blink three times repeatedly	Pressure transducer is faulty or missing	Check transducer connection. Open drain valve. Substitute new transducer for transducer in sprayer. If sprayer runs, replace transducer.
Four times repeatedly	Sprayer shuts down and LED continues to blink four times repeatedly	Line voltage is too high	Check for voltage supply problems
Five times repeatedly	Sprayer shuts down and LED continues to blink five times repeatedly	Too much current	Check for locked rotor, shorted wiring or motor. Repair or replace failed parts.
Six times repeatedly	Sprayer shuts down and LED continues to blink six times repeatedly	Motor thermal switch open circuit	Check for binding in pump or drive. Check for bad motor.

Pressure Control Repair

Motor Control Board

Removal

Refer to Fig. 4.



1. Remove four screws (18) and cover (39).
2. Disconnect at motor control board (35):
 - Four motor leads: two yellow, black (–) and red (+).
 - Two line voltage leads.
 - Lead (D) from potentiometer.
 - Lead (E) from transducer.
3. Remove five screws (36) and circuit board (35).

Installation

4. Fig. 4. Install motor control board (35) with five screws (36).
5. Connect to motor control board (35):
 - Lead (E) to transducer.
 - Lead (D) to potentiometer.
 - Two line voltage leads.
 - Four motor leads: two yellow, black (–) and red (+).
6. Install cover (39) with four screws (18).

Pressure Control Repair

Pressure Control Transducer

Removal

Refer to Fig. 4.



1. Remove four screws (18) and cover (39).
2. Disconnect lead (E) from motor control board (35).
3. Remove two screws (22) and filter housing (45).
4. Thread transducer lead plastic connector down through transducer grommet (28).
5. Remove pressure control transducer (52) and packing o-ring (51) from filter housing.

Installation

1. Install packing o-ring (51) and pressure control transducer (52) in filter housing (45). Torque to 30–35 ft-lb.
2. Thread transducer lead plastic connector up through transducer grommet (28).
3. Install filter housing (45) with two screws (22).
4. Connect lead (E) to motor control board (35).
5. Install cover (39) with four screws (18).

Pressure Adjust Potentiometer

Removal

Refer to Fig. 4.



1. Remove four screws (18) and cover (39).
2. Disconnect all leads from motor control board (35).
3. Remove five screws (36) and board (35).
4. Remove potentiometer knob (27), sealing shaft nut (33) and pressure adjust potentiometer (26).

Installation

1. Install pressure adjust potentiometer (26), sealing shaft nut (33) and potentiometer knob (27).
 - a. Turn potentiometer fully clockwise.
 - b. Install knob at full clockwise position.
2. Install board (35) with five screws (36).
3. Connect all leads to motor control board (35).
4. Install cover (39) with four screws (18).

Drive Housing Replacement

CAUTION

Do not drop gear cluster (7) when removing drive housing (10). Gear cluster may stay engaged in motor front end bell or drive housing.

Disassembly



1. Remove pump (13), Displacement Pump Replacement, page 25.
2. Fig. 5. Remove two screws (22). Tip sprayer up. Remove two screws (22) and remove shroud (74).
3. Remove two front screws (22).

4. Remove two back screws (22).
5. Pull drive housing (10) off of motor (1).

Assembly

1. Push drive housing (10) onto motor (1)
2. Install two front screws (22).
3. Install two back screws (22).
4. Fig. 5. Install shroud (74) with two screw (22). Tip sprayer up. Install two screws (22).
5. Install pump (13) Displacement Pump Replacement, page 17.
6. Install new access cover (10a) with two screws (10b).

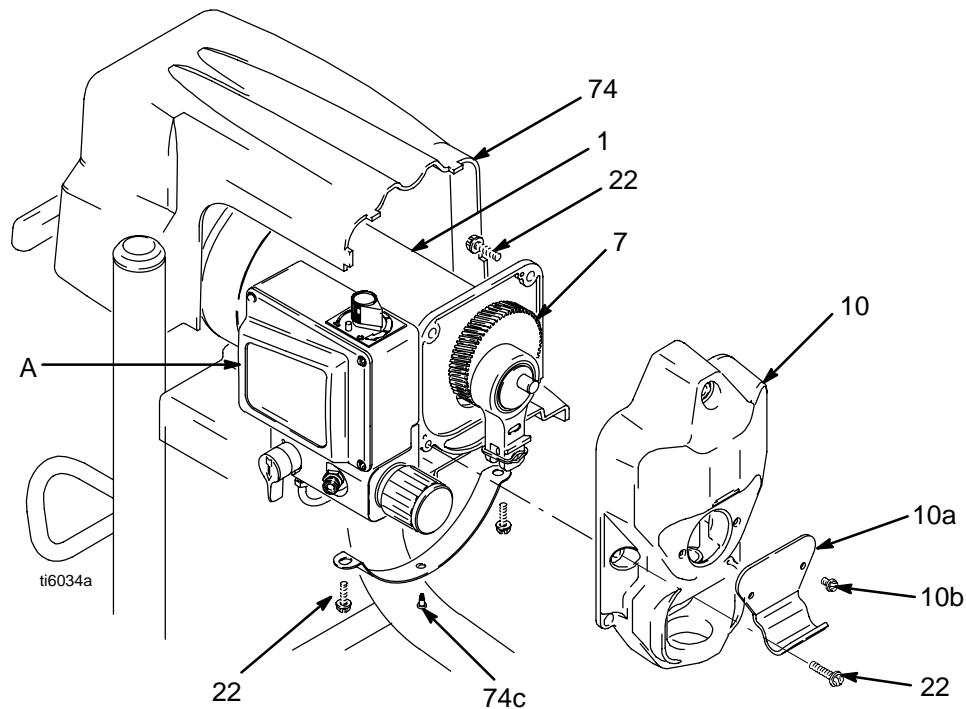
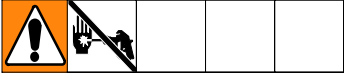


Fig. 5

Motor Replacement

Disassembly



1. Remove pump (13), Displacement Pump Replacement, page 25.

CAUTION

Do not drop gear cluster (7) when removing drive housing (10). Gear cluster may stay engaged in motor front end bell or drive housing.

2. Remove drive housing (10), Drive Housing Replacement, page 23.
3. Remove four screws (18) and cover (39), Fig. 4, page 19.
4. Disconnect all leads from board (35). Remove five screws (36) and board.
5. Remove strain relief (37) and motor fan (2), page 26.
6. Remove three screws (22) behind board and remove control housing (21), Fig. 4, page 19.
7. Remove four screws (22) and motor (1) from frame (63).

Assembly

1. Install new motor (1) on frame (63) with four screws (22).
2. Install control housing (21) with three screws (22).
3. Install strain relief (37) and motor fan (2), page 26.
4. Install board (35) with five screws (36), Fig. 4, page 19. Connect all leads to board (35).
5. Install drive housing (10), Drive Housing Replacement, page 23.
6. Install pump (13), Displacement Pump Replacement, page 25.

Displacement Pump Replacement

Removal

1. Flush pump (13).



2. Fig. 6. Loosen two screws (10b) and rotate cover (10a).

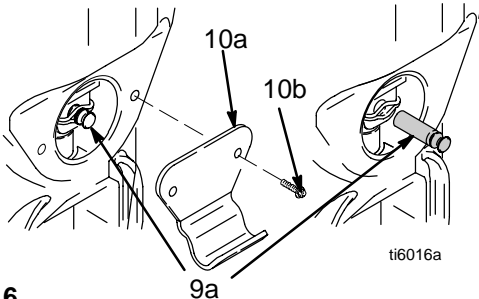


Fig. 6

3. Cycle pump until pump pin (9a) is in position to be removed. Remove pump pin (9a).
4. Fig. 7. Remove suction tube (78) and hose (19).
5. Loosen pump jam nut (12). Unscrew pump.

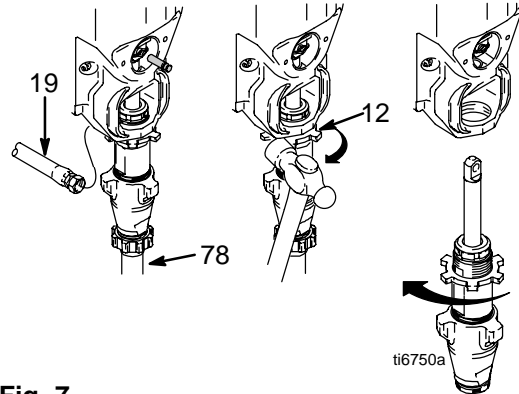


Fig. 7

Installation

CAUTION

If the pump locknut loosens during operation, the threads of the drive housing will be damaged.

1. Fig. 8. Extend pump piston rod fully. Apply grease to top of pump rod at (A) or inside connecting rod.

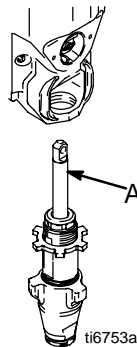


Fig. 8

6. Fig. 9. Screw jam nut (12) up onto pump until nut stops. Tighten jam nut by hand, then tap 1/8 to 1/4 turn with a 20 oz (maximum) hammer to approximately 75 +/- 5 ft-lb (102 N-m).

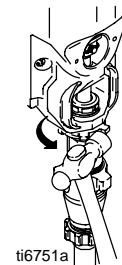


Fig. 9

7. Fig. 10. Fill packing nut with ASM packing seal until fluid flows onto top of seal.

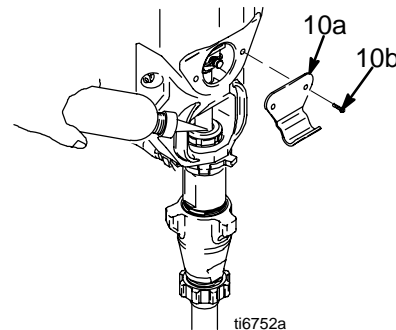


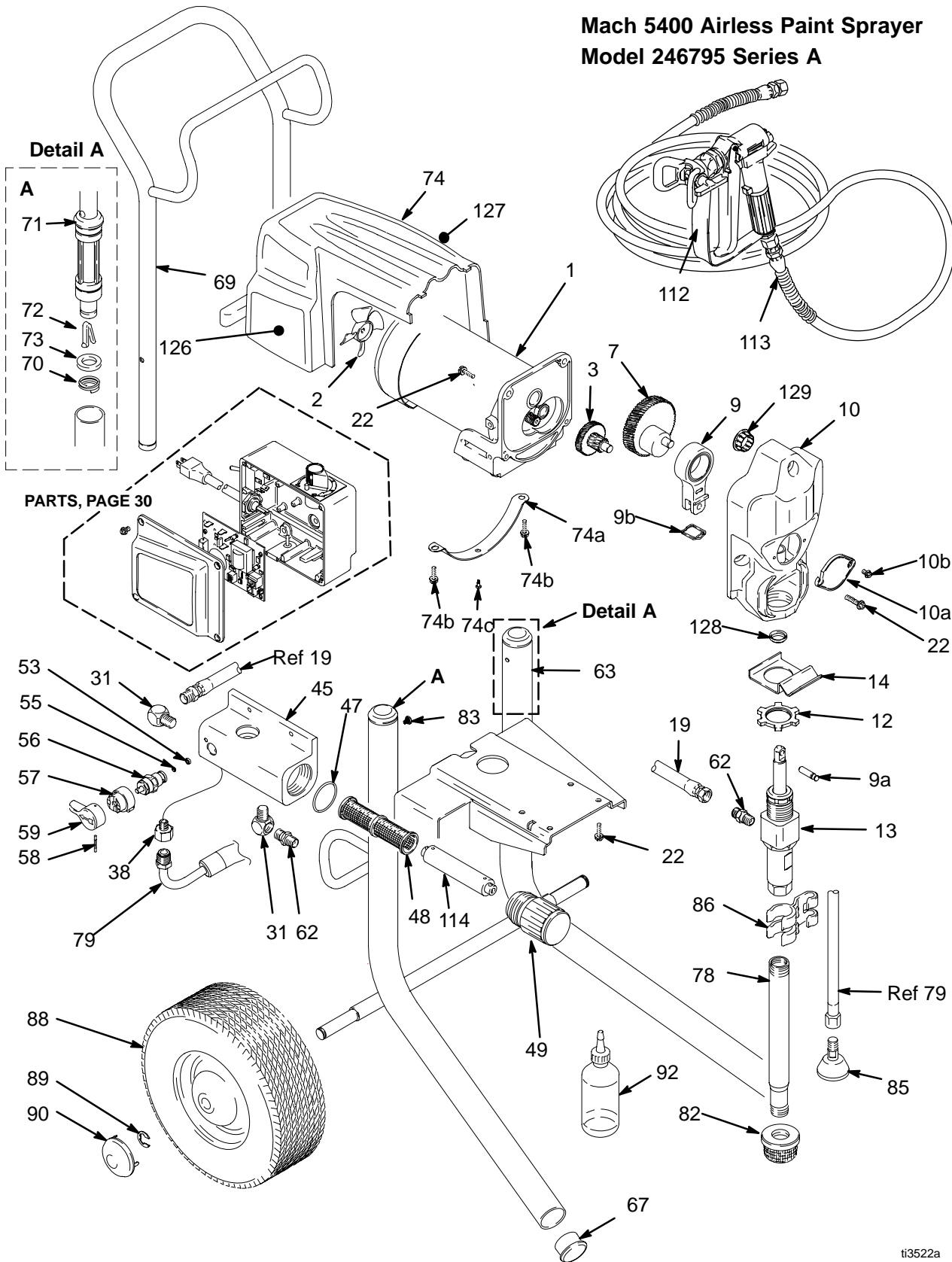
Fig. 10

2. Fig. 6. Install pump pin (9a). Verify retainer spring is in groove of pump pin.
3. Push pump up until pump threads engage.
4. Screw in pump until threads are flush with drive housing opening. Align pump outlet to back.
5. Fig. 7. Install suction tube (78) and hose (19).

8. Fig. 6. rotate cover (10a); tighten screws (10b).

Parts Drawing

Mach 5400 Airless Paint Sprayer
Model 246795 Series A



ti3522a

Parts List - Sprayer

Mach 5400 Airless Paint Sprayer

Model 246795 Series A

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1	242012*	MOTOR, 120 Vac	1	73	183350	WASHER	2
2	115525	BLADE, fan motor	1	74	287159	SHROUD, motor	1
3	243219	GEAR, combination	1			includes 74a, 74b, 74c, 126 and 127	
7	243218	CRANK SHAFT	1	74a	195159	BRACKET, shroud	1
9	243221	CONNECTING ROD	1	74b	114531	SCREW, slot hd, hex, washer hd	2
		includes 9a and 9b		74c	115843	SCREW, mach, pnhd, self-drill	1
9a	195175	PIN, pump	1	78	198973	TUBE, suction, intake	1
9b	195512	RETAINER, pin	1	79	244042	HOSE, drain,	1
10	243220	DRIVE HOUSING	1			includes 85, and 86	
		includes 10a and 10b		82	187190	STRAINER	1
10a	195099	COVER	1	83	109032	SCREW, pan hd	4
10b	115492	SCREW	6	85	241920	DEFLECTOR, threaded	1
12	195150	NUT, jam, pump	1	86	195696	CLIP, spring	1
13	243187	PUMP	1	88	106062	WHEEL, semi-pneumatic	2
14	195497	HOOK, pail	1	89	101242	RING, retaining, external	2
19	241926	HOSE, coupled, high pressure	1	90	104811	CAP, hub	2
22	115495	SCREW, slot hd, hex, washer hd	13	92	206994	FLUID, TSL, 8 oz	
31	195847	ELBOW, 90° street	2	105	111483	CLAMP, cable	1
38	116150	FITTING, adapter	1	106	103473	STRAP, tie, wire	1
45	195157	HOUSING, filter	1	112	246841	GUN, spray, Mustang 4	
47	104361	O-RING	1	113	116986	HOSE, coupled, 1/4" x 50" (hi-performance)	
48	245527†	FILTER, fluid, 60 mesh	1				
49	195139	CAP, filter	1	114	196773	FILTER INSERT	1
53	111699	GASKET, seat, valve	1	123	15C596▲	LABEL	1
55	187615	VALVE, seat	1	124	195711▲	LABEL	1
56	235014	ASSY, drain valve includes 53 and 55	1	125	15C597▲	LABEL, Identification	1
				126	195833▲	LABEL, WARNING	1
57	224807	ASSY, cam, drain valve	1	127	195805▲	LABEL, DANGER	1
58	111600	PIN, grooved	1	128	115491	WIPER, rod	1
59	187625	HANDLE, valve, drain	1	129	115979	PLUG	1
62	162453	NIPPLE, 1/4 npt(m) x 1/4 npsm	2				
63	241867	FRAME, cart	1				
67	108691	PLUG, tubing	2				
69	239998	HANDLE, cart	1				
70	110243	RING, retaining	2				
71	192027	SLEEVE, cart	2				
72	111590	BUTTON, snap	2				

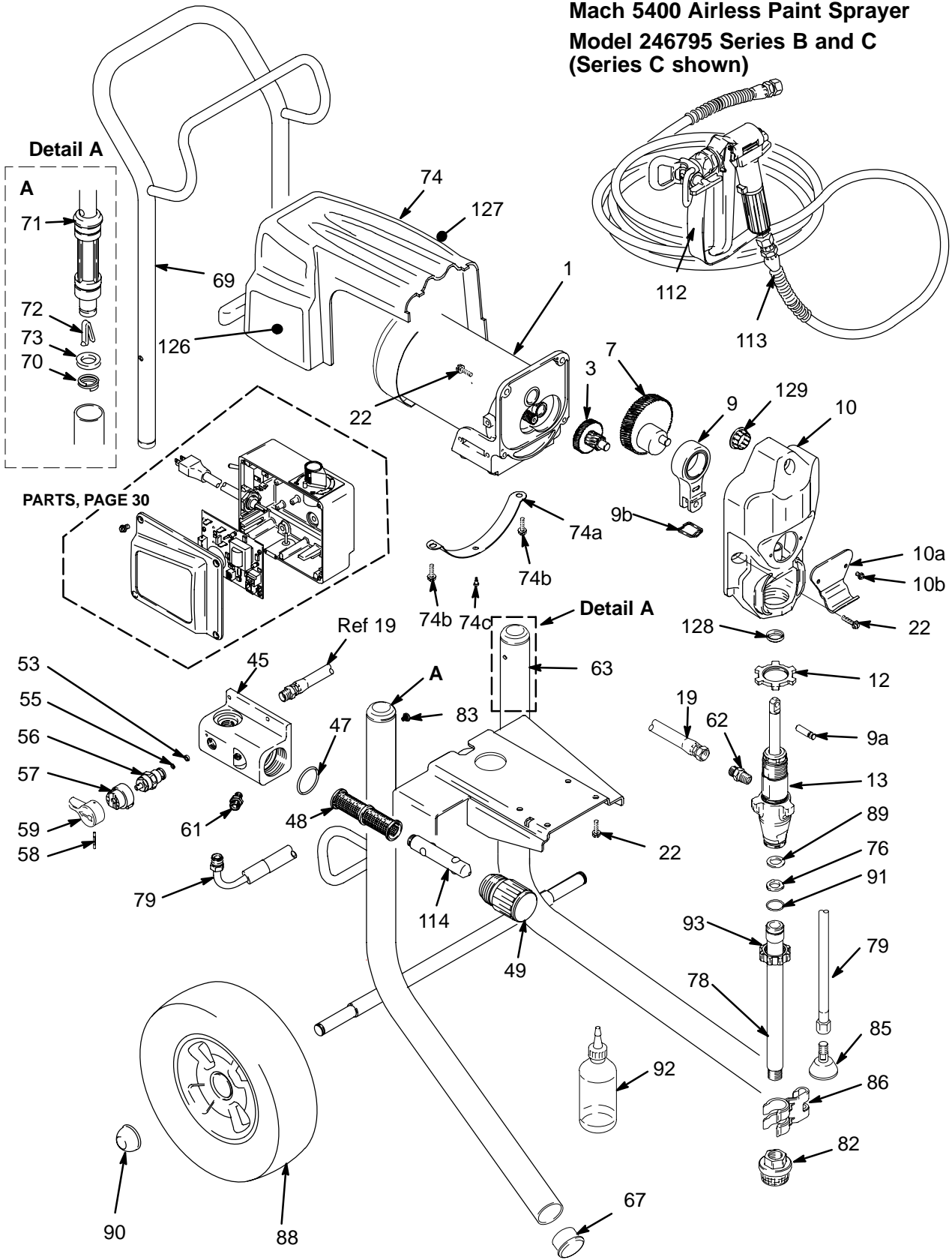
▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

* Motor Brush Kit 236967 is available

† Other filters available: 245528, 100 mesh; 245526, 200 mesh

Parts Drawing

Mach 5400 Airless Paint Sprayer
Model 246795 Series B and C
(Series C shown)



Parts List - Sprayer

Mach 5400 A irless Paint Sprayer

Model 246795 Series B and C

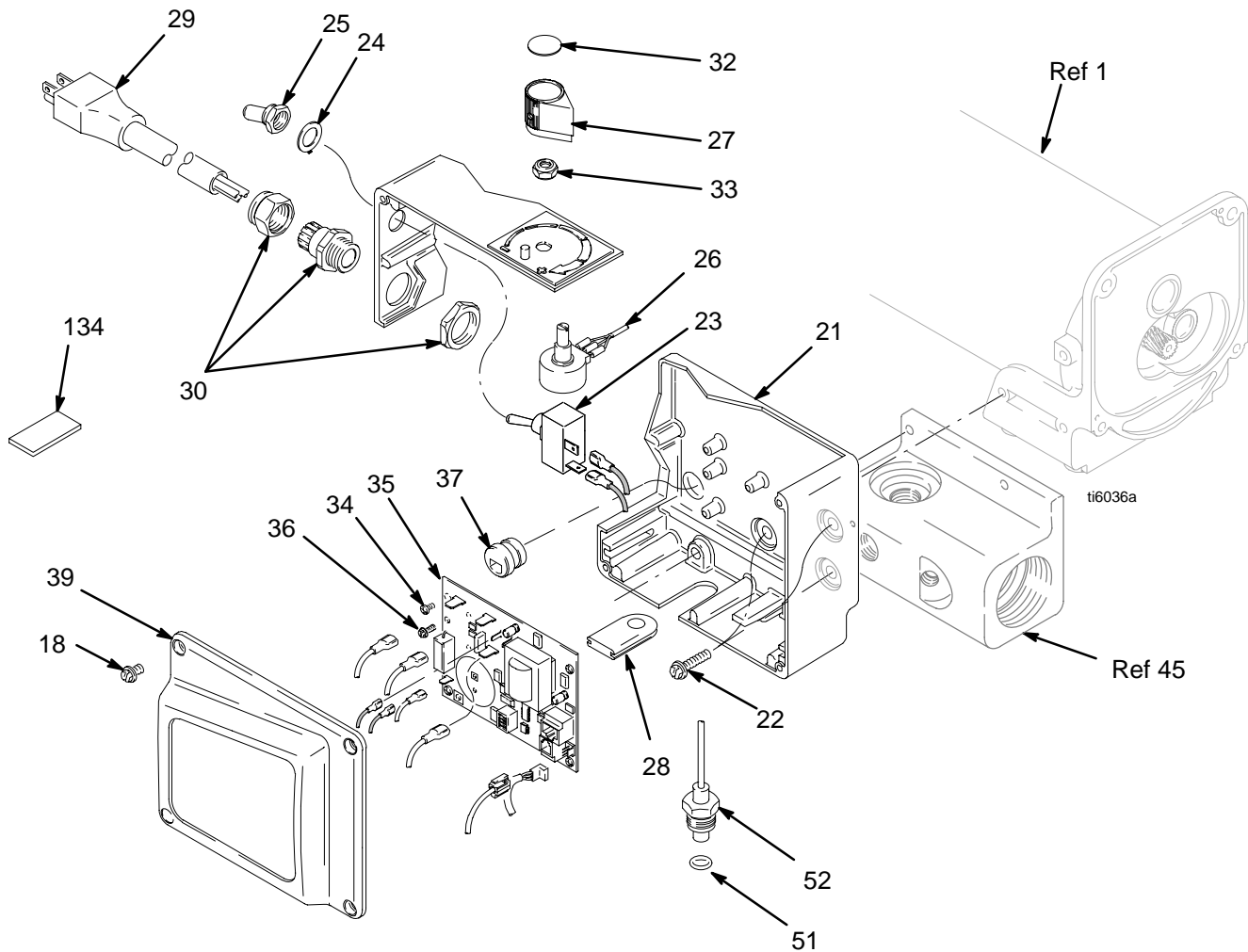
REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1	242012*	MOTOR, 120 Vac	1	74b	114531	SCREW, slot hd, hex, washer hd	2
3	243219	GEAR, combination	1	74c	115843	SCREW, mach, pnhd, self-drill	1
7	243218	CRANK SHAFT	1	76	15B652	WASHER, suction (series C)	
9	243221	CONNECTING ROD	1	78		TUBE, suction, intake	1
		includes 9a and 9b			15E290	Series B	
9a	195175	PIN, pump	1		15F551	Series C	
9b	195512	RETAINER, pin	1	79	244240	HOSE, drain,	1
10	243220	DRIVE HOUSING	1			includes 85, and 86	
		includes 10a and 10b		82		STRAINER	1
10a	15E286	HOOK, pail	1		235004	Series B	
10b	115492	SCREW	6		246385	Series C	
12	195150	NUT, jam, pump	1	83	109032	SCREW, pan hd	4
13		PUMP	1	85	241920	DEFLECTOR, threaded	1
	243187	Series B		86	195696	CLIP, spring	1
	287658	Series C		88	119451	WHEEL, semi-pneumatic	2
19	15C709	HOSE, coupled, high pressure	1	89	115099	WASHER, garden hose (series C)	1
22	115495	SCREW, slot hd, hex, washer hd	13	90	119452	CAP, hub	2
45	15E180	HOUSING, filter	1	91	103413	O-RING (series C)	1
47	104361	O-RING	1	92	206994	FLUID, TSL, 8 oz	
48	243080†	FILTER, fluid, 60 mesh	1	93	15E813	NUT, intake tube (series C)	1
49	15E289	CAP, filter	1	105	111483	CLAMP, cable	1
53	111699	GASKET, seat, valve	1	106	103473	STRAP, tie, wire	1
55	187615	VALVE, seat	1	112	A1248239	GUN, spray, Mustang 4	
56	235014	ASSY, drain valve	1	113	116986	HOSE, coupled, 1/4" x 50"	
		includes 53 and 55				(hi-performance)	
57	224807	ASSY, cam, drain valve	1	114	15E288	FILTER INSERT	1
58	111600	PIN, grooved	1	123	15C596▲	LABEL	1
59	187625	HANDLE, valve, drain	1	124	195711▲	LABEL	1
61	15E539	NIPPLE, 1/4 npsm x 1/8 npt	1	125	15C597▲	LABEL, Identification	1
62	162453	NIPPLE, 1/4 npt(m) x 1/4 npsm	1	126	195833▲	LABEL, WARNING	1
63	241867	FRAME, cart	1	127	195805▲	LABEL, DANGER	1
67	108691	PLUG, tubing	2	128	115491	WIPER, rod	1
69	239998	HANDLE, cart	1	129	115979	PLUG	1
70	110243	RING, retaining	2				
71	192027	SLEEVE, cart	2				
72	111590	BUTTON, snap	2				
73	183350	WASHER	2				
74	287159	SHROUD, motor	1				
		includes 74a, 74b, 74c, 126 and 127					
74a	195159	BRACKET, shroud	1				

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

* Motor Brush Kit 236967 is available

† Other filters available: 243081, 100 mesh; 243226, 200 mesh

Parts Drawing

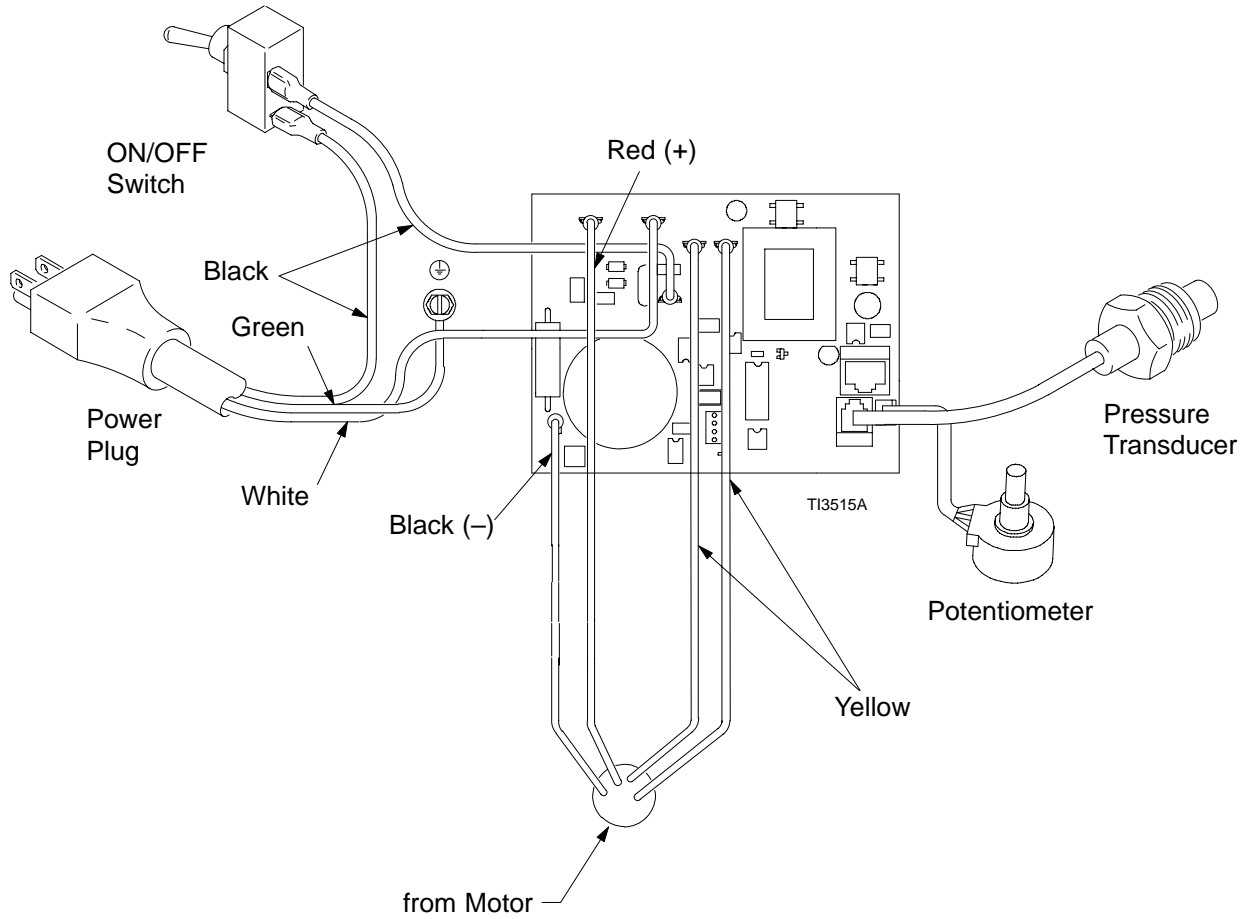


Parts List – Sprayer

Mach 5400 Airless Paint Sprayer Model 246795

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
18	115492	SCREW, slot hd, hex, washer hd	4	32	15A356	LABEL, control	1
21	276539	HOUSING, control	1	33	112382	NUT, shaft, sealing	1
22	115495	SCREW, slot hd, hex, washer hd	5	34	115498	SCREW, slot hd, hex, washer hd	1
23	195429	SWITCH, toggle	1	35	241990	BOARD, control	1
24	15A435	RING, locking	1	36	115494	SCREW, 6-32 X 1/2, TAPTITE	5
25	195428	BOOT, toggle	1	37	115756	BUSHING, strain relief	1
26	236352	POTENTIOMETER, adjust, pressure	1	39	198935	CONTROL, cover	1
27	116167	KNOB, potentiometer	1	51	111457	O-RING	1
28	195423	GROMMET, transducer	1	52	243222	TRANSDUCER, pressure control	1
29	241874	CORD SET, power	1			includes 51	
30	114421	BUSHING, strain relief	1	60	195866	WIRE, jumper	1

Wiring Diagram



Technical Data

100–120V, Ø, A, Hz	Generator Minimum W	Motor HP (W)	Cycles per gallon (liter)	Maximum Delivery gpm (lpm)	Maximum Tip size	Fluid Outlet npsm
1, 15, 50/60	3000	7/8 (653)	680 (180)	0.38 (1.25)	0.019	1/4 in.

Basic Sprayer Wetted Parts:
 zinc-plated carbon steel, polyurethane, polyethylene,
 stainless steel, PTFE, Delrin®, chrome plating, leather,
 V-Max™ UHMWPE, aluminum, stainless steel,
 tungsten carbide

NOTE: Delrin® is a registered trademark of the DuPont Co.

Dimensions

Weight lb (kg)	Height in. (cm)	Length in. (cm)	Width in. (cm)
76.5 (28.55)	32.0 (81.28)	24.0 (60.96)	22.0 (55.88)

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