INSTRUCTIONS–PARTS LIST 307–075

GRACO

Rev. R
Supersedes N

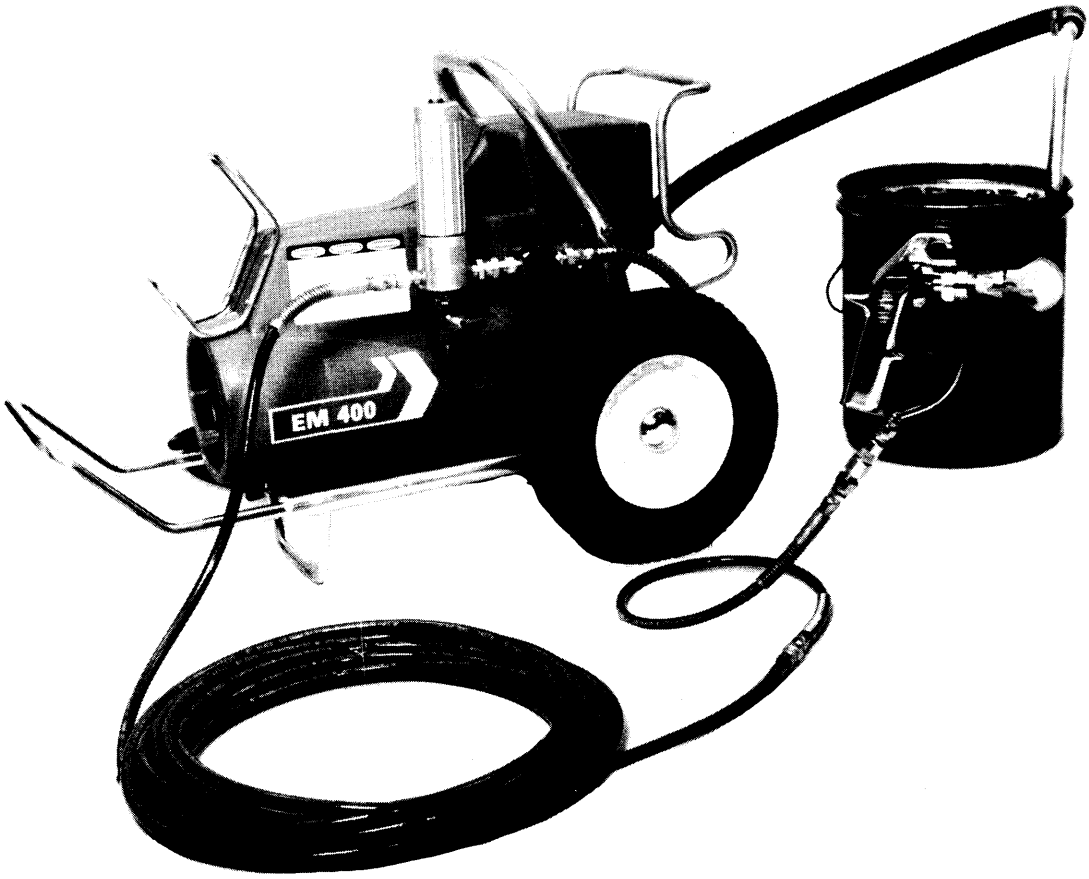
This manual contains important warnings and information.
READ AND RETAIN FOR REFERENCE

PORTABLE, ELECTRIC, AIRLESS PAINT SPRAYER

EM 400 Hydra-Spray ®

2700 psi (185 bar) Maximum Working Pressure

Model No. 226–400, Series L
Model No. 226–365, Series L



GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441

WARNING

HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY.

FOR PROFESSIONAL USE ONLY.

OBSERVE ALL WARNINGS.

Read and understand all instruction manuals before operating equipment.

INJECTION HAZARD

Fluids under high pressure from spray or leaks can penetrate the skin and cause extremely serious injury, including the need for amputation.

NEVER point the spray gun at anyone or any part of the body.

NEVER put hand or fingers over the spray tip.

NEVER try to stop or deflect leaks with your hand or body.

ALWAYS have the tip guard in place when spraying.

MEDICAL TREATMENT

If any fluid appears to penetrate your skin, get **EMERGENCY MEDICAL CARE AT ONCE. DO NOT TREAT AS A SIMPLE CUT.** Tell the doctor exactly what fluid was injected. For treatment instructions have your doctor call the **NATIONAL POISON CENTER NETWORK (412)681-6669**

SPRAY GUN SAFETY

When spray gun is not actually spraying, always set the gun safety latch in the closed or "SAFE" position, making the trigger inoperative.

DO NOT REMOVE OR MODIFY any part of the gun.

Check diffuser operation by using the lowest possible spray pressure with spray tip removed. Trigger gun and maintain firm metal to metal contact between gun and metal waste container. Fluid emitted should be diffused into an irregular stream.

CHECK OPERATION OF ALL GUN SAFETY DEVICES BEFORE EACH USE.

Always remove the tip from the gun to clean it.

Be very careful when removing the *spray tip or hose* from gun. A plugged line contains fluid under pressure. If tip or line is plugged, open the drain valve, *then loosen tip guard or hose coupling slightly* and relieve the pressure slowly before removing completely.

KEEP CLEAR OF MOVING PARTS

The electric motor has an overheating protection device which *automatically* restarts the motor when it cools. So, before examining or working on a motor which has stopped, shut off the unit, relieve pressure and pull out the electrical plug. This will avoid the hazard of the motor starting unexpectedly.

KEEP CLEAR of moving parts when unit is running; do not put your fingers into any openings in shield.

ALWAYS CHECK to be sure switch is OFF and all lines are clear of moving parts before plugging in the power cord.

ALWAYS unplug unit before removing shield for any reason.

SYSTEM PRESSURE

This unit develops 2750 psi (190 bar) fluid pressure at 100 cycles per minute. Always be sure that all components have a maximum working pressure rating at least as high.

NEVER leave a pressurized unit unattended.

DO NOT ABUSE HOSE: *Improper use or handling of hose could result in hose failure and possible personal injury or property damage.*

Handle and route hose carefully to avoid kinking, abrasion, cutting or exposure to temperatures above 180°F (82°C) or below -40°F (-40°C). Do not use hose to pull unit. Before each use, check entire hose for cuts, leaks, abrasion or bulging or cover or damage of movement of couplings. If any of these conditions exist, replace the hose immediately. *Never use tape or any device to attempt to mend the hose.*

Do not use chemicals or agents in the hose which are not compatible with nylon tube and urethane cover of the hose.

NEVER ATTEMPT TO RECOUPLE THE HOSE! Tighten all fluid connections securely before each use.

PREVENT STATIC SPARKING

Always be sure all equipment and objects being sprayed are properly grounded. The high velocity flow of fluid creates static electricity. Sparks may cause fire or explosion.

Use only conductive or grounded air and fluid hoses for airless applications. Be sure gun is grounded through hose connections.

Use only conductive or grounded fluid hoses for airless applications. Be sure that gun is grounded through hose connections.

Once each week, check electrical resistance of hose (when using multiple hose assemblies, check overall resistance). Overall (end to end) resistance of unpressurized hose must not exceed 29 megohms (max.) for any coupled length or combination of hose lengths. If hose exceeds these limits, replace it immediately.

Never exceed 500 ft (150 m) overall combined hose length.

This unit has a 3-prong grounding plug to protect you from electric shock. Be sure to plug the unit into a properly grounded outlet that will accept the 3-prong plug. *Do not remove the third prong.*

The green wire of electric cord is connected to the unit chassis and motor frame and the other two wires are connected to the switch motor for grounding continuity.

Plug into an outlet at least 20 ft (6m) from the area where you are spraying. If you use an extension cord, it must have 3 wires of at least 12 gauge (2.5 mm^2) and should not be over 100 ft (30.3 m) long.

When flushing equipment, remove spray tip, use the lowest possible pressure, and maintain firm metal to metal contact between gun and metal waste container. This reduces the chance of static sparking.

Follow the coating and solvent manufacturer's safety precautions and warnings.

USE EXTREME CARE WHEN SERVICING

Before removing any part for cleaning or servicing, always disconnect power source and carefully relieve fluid pressure by triggering spray gun, engaging trigger safety and any other equipment safety locks, and opening any drain or bleeder valves. Leave drain valve open during servicing. Remove tip from gun for cleaning.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards — particularly the General Standards, Part 1910, and the Construction Standards, Part 1926 — should be consulted in connection with your use of airless spray equipment.

OPERATION

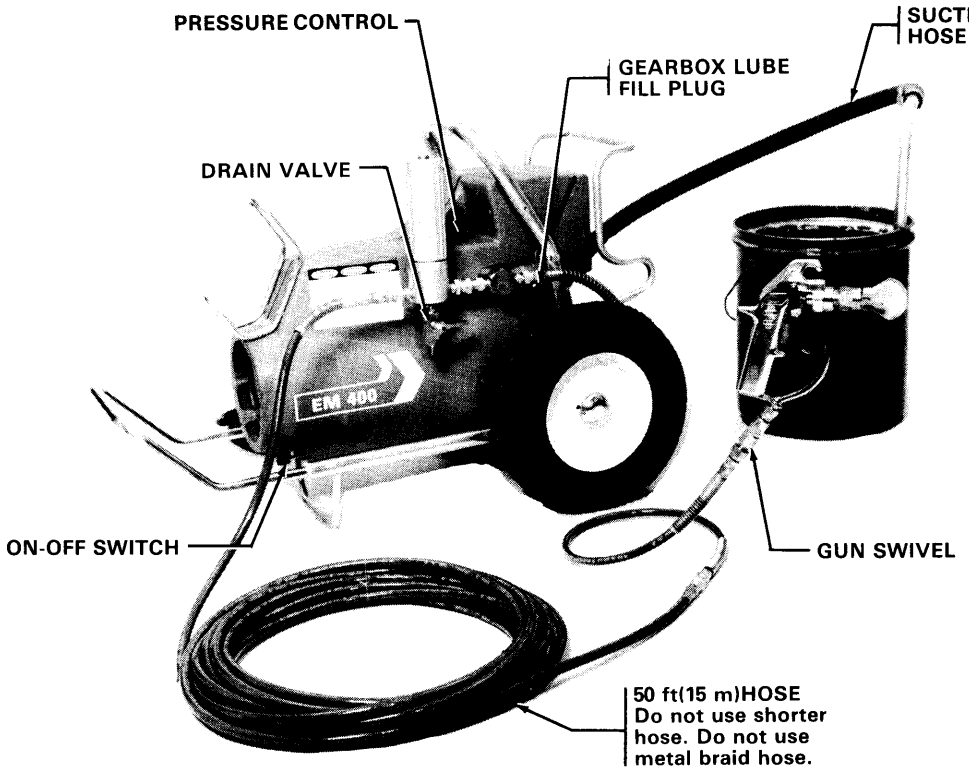


Fig 1

WARNING

Pressure Relief Procedure
System pressure must be relieved whenever you are done spraying and before servicing, cleaning or removing any parts to avoid possible injury from high pressure fluid in system.

Always follow this procedure: shut off unit, trigger spray gun, engage trigger safety, and slowly open drain valve. Leave drain valve open until you are ready to use unit again.

BEFORE INITIALLY PLUGGING IN power supply cord, do the following:

CHECK GEARBOX LUBE. Remove fill plug and see that lube level is up to fill plug. See Fig 1.

CAUTION

Use only Graco Gear Oil No. 208-230. DO NOT use hypoid grease. The gearbox holds 3 pt (1.4 liter).

CONNECT GUN. Remove plastic cap plug from filter and screw 50 ft (15 m) fluid hose into the 1/4 NPSM filter outlet. Then connect whip end hose between fluid hose and gun's inlet connection. Do not use thread sealer. Do not install spray tip yet; wait until after flushing unit.

CAUTION

Use at least 50 ft (15 m) of hose. Don't use metal braid hose.

LUBRICATE PRESSURE CONTROL PLUNGER. Put several drops of light machine oil on microswitch plunger once a week to lubricate and prevent material buildup. See WIRING DIAGRAM, page 7.

PRESET PRESSURE CONTROL. Turn pressure control knob to lowest setting. This shuts off electricity to motor. See Fig 1.

CHECK ELECTRIC SERVICE AND PLUG IN. Electric service must be 115V, 60 HzAC, 15 amp. Before you plug in cord, be sure circuit is correct.

WARNING

Be sure power supply cord is plugged into an electrical outlet at least 20 ft (6 m) from area where you are spraying.

Be sure ON-OFF switch is in OFF position (push in), then plug power cord into a properly grounded outlet.

Flush Oil Out Of Paint Pump
Flush out new unit with mineral spirits before pumping paint. This removes oil used for factory testing and rust prevention. Follow this procedure:

1. Pour half a gallon (2 liter) of mineral spirits into a bare metal pail. Put suction tube into pail.

2. Point spray gun (with no Reverse-A-Clean III spray tip installed yet) into a metal waste container and with a metal part of gun firmly touching the metal container, squeeze trigger. Now pull the switch out to ON position and turn pressure control wheel toward INCREASE until motor starts. Hold trigger fully open until clean solvent comes from nozzle, then release it. Keep gun aimed into pail until all fluid flow stops. Engage trigger safety. This procedure avoids splashing and static sparking.

3. Check all paint line fittings for leaks while system is pressurized. If there are any leaks, relieve pressure according to *Pressure Relief Procedure.* Then tighten fittings, start pump and recheck fittings to be sure all leaks have stopped.

4. Remove suction tube from solvent pail. Squeeze gun trigger to let pump force the solvent out of hose (don't let pump run dry for more than 1/2 minute), release trigger and engage trigger safety, then push switch into the OFF position.

5. Pull plug out of electrical outlet, put a can under filter drain valve and slowly open valve to release pressure. Unscrew filter bowl from the outlet filter and check to see that screen is clean. Reassemble bowl, hand tight only. See Fig 2.

6. If you are going to use latex paint or any other water base material, flush unit with water to completely remove mineral spirits.

Fill Wetcup
Pour Graco Throat Seal Liquid (TSL) supplied, into wetcup until 1/3 full. See Fig 3. Plug cord into outlet.

Mix Paint, Adjust Pressure and Spray
Prepare paint as instructed by manufacturer. Also see instruction manual 306-997.

Put paint suction tube into pail of paint. Do not install spray tip yet. Squeeze gun trigger, turn the unit on, and let it run until all air is forced out of system. To avoid introducing more air into the fluid line, always add paint to original pail rather than changing pails.

NOTE: If paint is thick and hard to prime, first remove strainer from suction tube, then prime unit with water or compatible solvent. When primed, turn unit OFF, plug immersed end of suction tube with one finger and transfer it into pail of thick paint. This keeps air out of pump for more positive priming. Replace strainer.

Unplug unit, relieve pressure acording to *Pressure Relief Procedure* on page 3, and install Reverse-A-Clean III spray housing with tip installed (see instruction manual 307-321) on gun. Adjust spray pressure to the lowest pressure needed for satisfactory operation and spray a test area to check spray pattern. Refer to instruction manual 306-997 for spraying technique. For further information on tip selection, see instruction manual 307-321.

Relieve pressure according to *Pressure Relief Procedure* on page 3 and clean out front of tip frequently during day's operation with a solvent soaked brush, to keep material from building up and clogging tip.

Cleaning A Clogged Tip
If spray tip clogs while spraying, release spray gun trigger and turn Reverse-A-Clean handle 180°. Disengage safety and trigger gun. Fluid pressure should force obstruction from spray tip. Release trigger, engage trigger safety, return handle to original position and resume spraying.

If fluid pressure fails to clear tip, see Reverse-A-Clean instruction manual No. 307-321

WARNING

NEVER hold your hand or a rag in front of spray tip when cleaning.

Always point the gun toward the ground or into a waste container.

Shutdown and Care Of Your Unit
Check packing nut/wet cup periodically and tighten only as necessary. Overtightening may cause binding and excessive packing wear.

Clean outlet filter often, and when storing unit. Flush all paint out of unit as instructed on page 3, on that last workday of week. If you are using paint that will dry overnight, flush daily at shutdown.

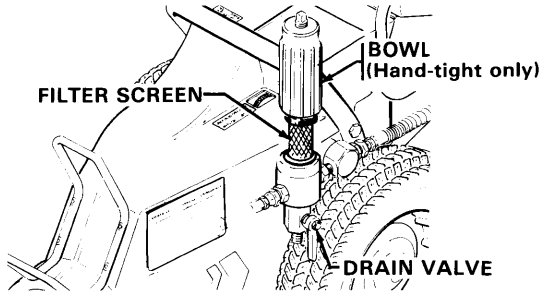


Fig 2

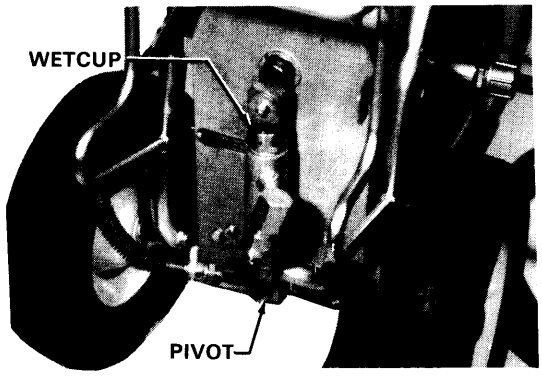


Fig 3

NOTE: If pump fails to shut off with solvent in it, intake valve may be obstructed. Relieve pressure according to *Pressure Relief Procedure* on page 3, remove and clean as instructed on page 6 and reassemble while parts are wet. Then finish flushing.

For very short shutoff periods, relieve pressure according to *Pressure Relief Procedure* on page 3, and leave suction tube in paint and clean spray tip. Follow safety procedure on page 2 when removing the tip.

Always wrap hose around hose brackets when storing unit, even if only overnight, to help protect hose from damage. Suction hose and tube can be routed around rear bracket and tube end slipped under front bracket.

Don't store unit with water in it. Even for overnight storage you should fill the unit with mineral spirits. This prevents rust and greatly extends the life of the unit.

CAUTION

To prevent stalling and possible stripping of gears, don't let water freeze in the pump in cold weather.

Before each use, squirt one drop of oil onto the lower pivot point of the pump. See Fig 3.

Periodically, or if motor overheats, unplug unit, relieve pressure according to *Pressure Relief Procedure*, remove shield and clean all paint and dirt off shield and motor. Change gearbox lube at least once a year. Gearcase holds 3 pt (1.4 liter). Don't use hypoid grease.

Once a month, lubricate needle bearing in displacement rod; use a grease gun to apply grease to grease fitting. See Fig 5.

SERVICE

Service instructions are given in the following paragraphs. Check everything in the chart before disassembling any part of the unit.

WARNING

Pressure Relief Procedure
System pressure must be relieved whenever you are done spraying and before servicing, cleaning or removing any parts to avoid possible injury from high pressure fluid in the system.

Always follow this procedure: shut off unit, trigger spray gun, engage trigger safety, and slowly open drain valve. Leave drain valve open until you are ready to use the unit again.

TROUBLESHOOTING

WHAT'S WRONG	WHAT TO DO
Electric motor won't run	Unit unplugged, or building circuit fuse blown (check, replace)
Electric motor stops while spraying	Electric motor burned out (replace)
Electric motor runs but output low on up stroke	Switch defective (replace yearly)
Electric motor runs but output low on down stroke	Overload switch has opened (unplug unit*, decrease pressure)
Electric motor runs but output low on both strokes	Pressure control plunger sticking (clean and lubricate, see page 3)
Electric motor runs, but no output	Pressure setting too low (increase)
Paint leaks into wet-cup	Outlet filter dirty or plugged (clean)
Excessive surge at spray gun	Tip or tip filter plugged (remove & clean)
Not enough paint pressure	Piston ball check not seating (service, see disp. pump service)
Tails or fingers in spray pattern	Piston packings worn or damaged (replace, see disp. pump service)
Paint runs or sags	Intake valve ball check not seating (service, see disp. pump service)
Spitting from spray gun	Displ. pump frozen or gear train damage (thaw**, replace)
Static sparking from spray gun	Throat packings worn or damaged (replace, see disp. pump service)
	Spray tip too big or worn (change tip see manual 307-321)
	Paint supply low or pail empty (fill)
	Unit or work not grounded (check, ground)
	Paint too viscous (thin)
	Wrong type hose (use minimum 50 ft (15 m) static free nylon hose only—wire braid hose unacceptable)
	Unit sucking air or gun needle not seating (tighten fittings, service gun — see manual 307-046)

*The electric motor has an overheating protector switch which automatically resets on cooling. If it opens, unplug unit and let it cool for 2 to 20 minutes. Also try to correct the cause of overheating. Always use the lowest pressure setting needed.

**Freezing results from failure to replace flushing water with mineral spirits solvent.

Service Displacement Pump (Repair Kit 208-940 available)

Before Disassembling
Flush if possible. Relieve pressure according to *Pressure Relief Procedure* and unplug unit. Remove the thumbnuts and raise the front hood of the shield.

Remove Pump
You must remove the pump for service. Disconnect the suction and outlet hoses. Remove the socket head screws, lockwashers, flat washers and thrust washers from the pivot shaft and crank. Be very careful to hold the pump as you slide it off the shafts, so you don't damage the needle bearings. See Fig 5.

Use repair kit no. 208-940 to repair the pump. Use all the parts in the kit, even if the old ones look good.

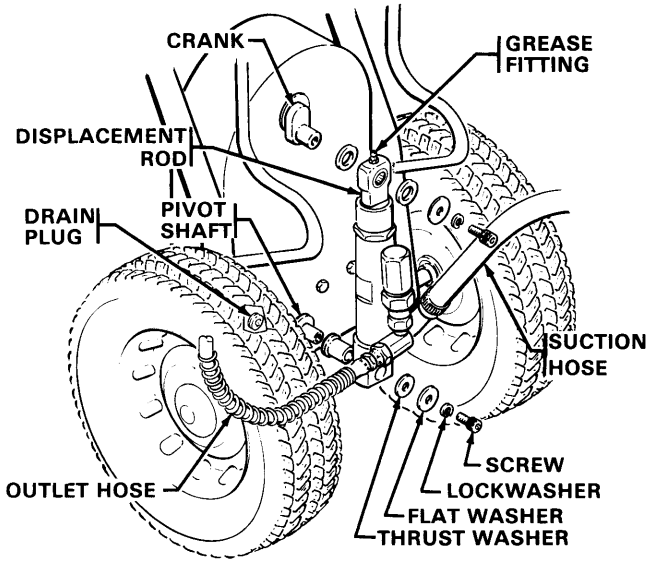


Fig 5

INTAKE VALVE

Screw the intake valve housing out of the displacement cylinder. Remove the ball stop pin, guide and ball. Clean and inspect. Reassemble, using new parts from the repair kit. Torque intake valve housing to 50 to 150 ft-lb (68-205 N·m) See Fig 6.

NOTE: You can test the intake valve by filling it with solvent and seeing if any leaks past the ball. It shouldn't leak. The valve must be clean for this test; any dirt will hold the ball off the seat and let solvent leak past.

Throat Packings, Displacement Rod and Piston

Screw the packing nut out of the pump throat. Carefully pull the displacement rod and piston out through the pump throat. Wrap the rod end with tape to protect the bearing and clamp securely in a vise. Screw the piston off the rod using a wrench on the hex of the piston (if it's too tight, heat it in boiling water to soften the locking compound). Remove the ball, glands and packings. Slide the throat packings and glands off the rod. Clean and inspect. Install repair kit parts. Be sure to put the "Teflon" and leather packings in the order shown. See Fig 6. Thoroughly clean and degrease the piston and rod, use locking compound and torque to 400-425 in-lb (45-48 N·m). If packing bulge makes it hard to insert the piston into the cylinder, loosen the piston one turn, insert into the cylinder and tighten the nut using a hex socket wrench from the intake end of the cylinder.

Bearings

Use an arbor press to remove and install bearings in the displacement rod end or intake valve housing. See Fig 6. When replacing displacement rod bearing be sure hole in bearing lines up with lubrication hole at the top of the rod. See Fig 6. Soak the bronze intake valve bearing in oil before installing. Grease the displacement rod bearing whenever the pump is removed.

Servicing Pressure Control

Shut off and unplug the unit, slowly open drain valve to release pressure and engage trigger safety. Loosen the thumbnuts, raise the front hood and slip the shield back. Disconnect the hoses and filter from the pressure control.

Replace Microswitch

Remove the switch housing cover and switch shield. Replace the switch yearly. Connect the wires as shown. Install the switch shield and screw the cover on snugly. See Fig 7.

Service Adjusting Mechanism

Loosen the setscrew, then screw out the plunger guide. See Fig 7. Remove the o-ring and backup ring. Clean and inspect the parts. The slightest nick or cut in the o-ring will lead to leakage. Scratches or burrs on the fluid sealing parts will lead to early failure of the o-ring. Replace as necessary. Reassemble carefully.

NOTE: If the spring or plunger are worn or damaged, replace the whole pressure control assembly, part no. 208-856.

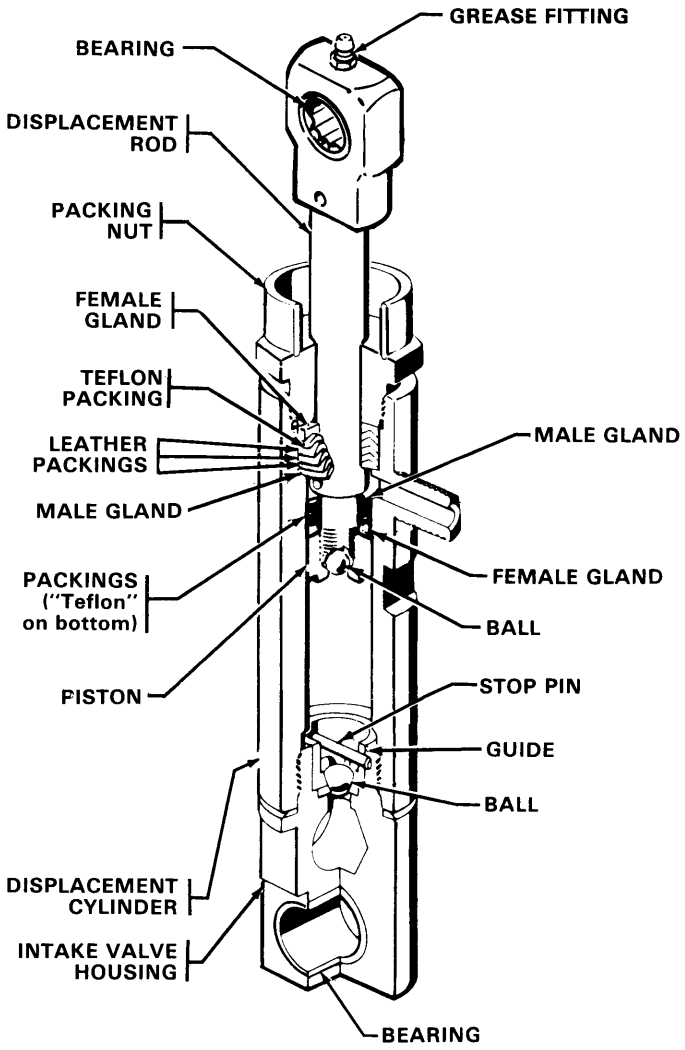


Fig 6

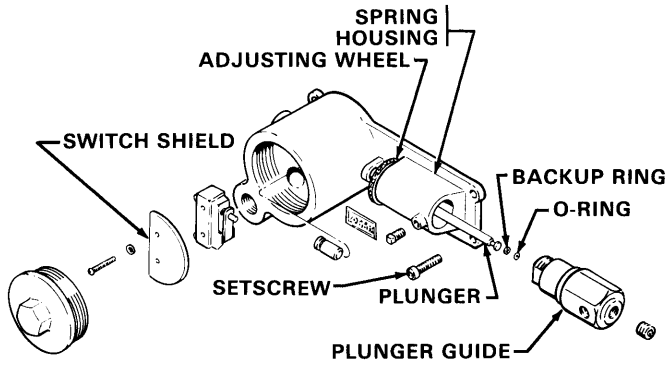
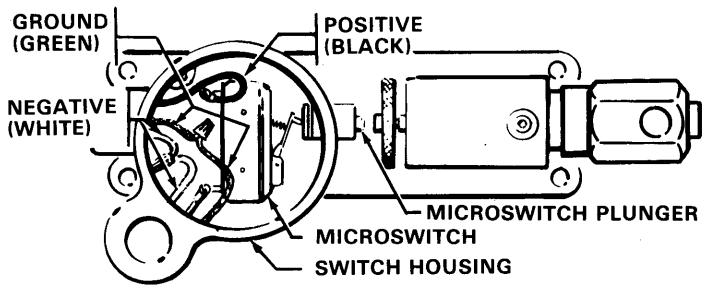


Fig 7

WIRING DIAGRAM



Servicing Motor and Gear Train

Remove Motor
Shut off and unplug the unit, open the drain valve to release the pressure and engage the trigger safety. Remove the thumbnuts, raise the front hood and slip the shield back. Disconnect the hoses from the displacement pump.

NOTE: Don't try to remove the motor from the gearcase cover. The service replacement motor includes a cover. These are matched parts, sold assembled only. The motor includes a new gear and bearings installed, and a new gasket. Order part no. 207-960.

Remove the gearcase drain plug. See Fig 5. Disconnect the conduit and wires from the pressure control to the motor. Remove the pressure control from the cover. Remove the wheels from the frame. Screw the 4 capscrews out of the pump side of the gearcase, below the drain plug. Screw out the 4 capscrews holding the gearbox to the frame. Remove the motor and gearbox from the frame and set up on 2 x 4's as shown. Remove the 18 gearcase cover capscrews. Carefully lift the motor and cover straight up off the gearcase. Discard the old gasket. See Fig 8.

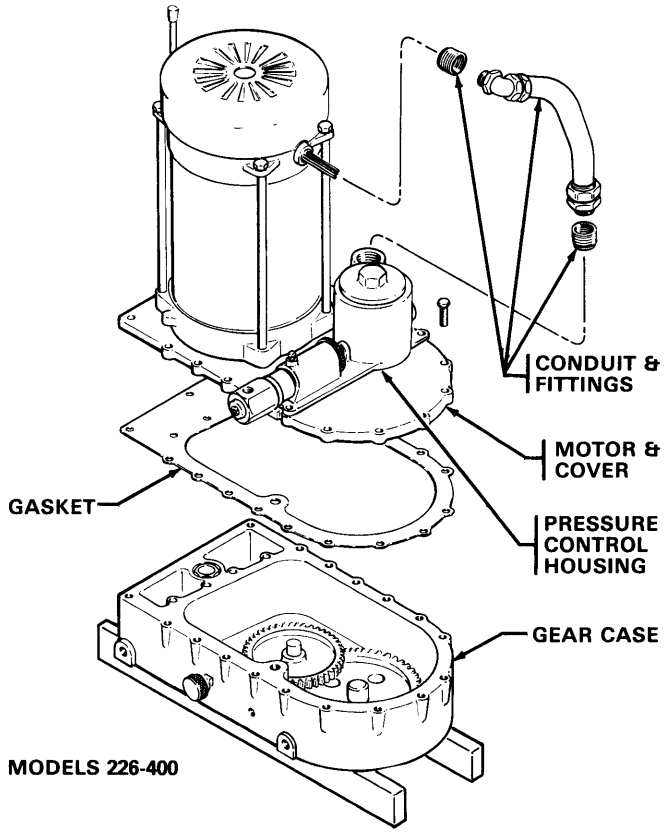
CAUTION

The loose gear cluster could stick in the cover. Don't let it drop.

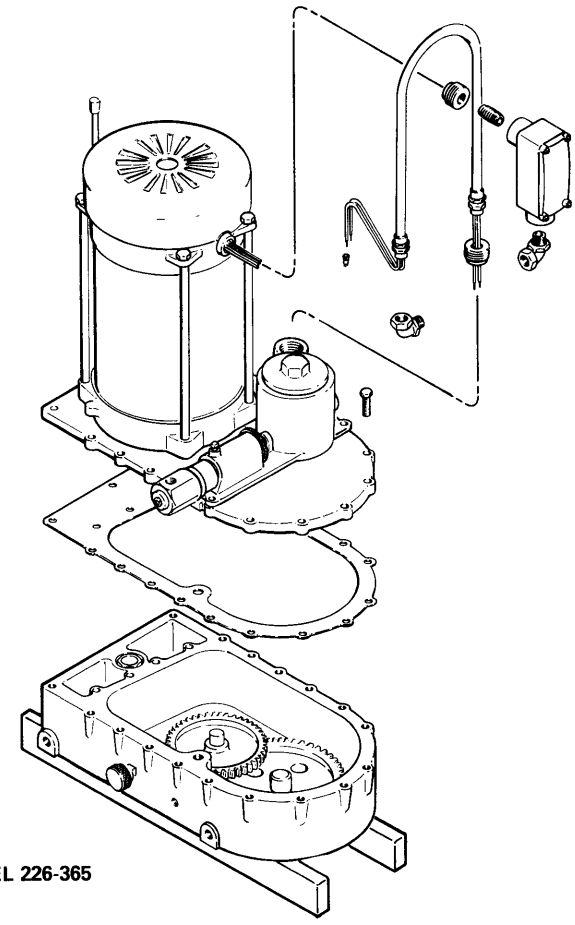
Install New Motor
Position the new gasket on the gearcase. The surface must be clean and free of nicks. Be sure the gears and washers are in place, then carefully lower the motor and cover into place, turning the crank slightly to help mesh the gears.

Continue reassembly by reversing the disassembly procedure. Replace gearcase drain plug and fill to the proper level with the proper type gearcase lube. Don't use hypoid grease. The gearcase holds 3 pt (1.4 liters).

To Install New Gear Train
Order part no. 208-030. Follow the procedure above for motor replacement; also remove the displacement pump, but don't disconnect the wires.



MODELS 226-400



MODEL 226-365

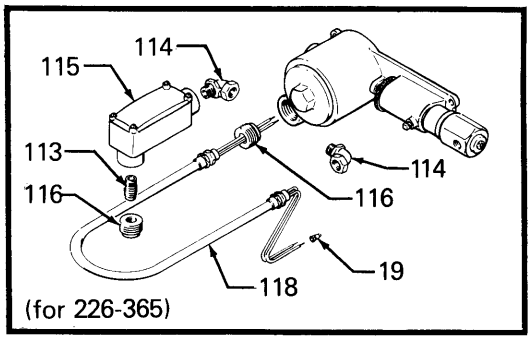
Fig 8

PARTS DRAWING

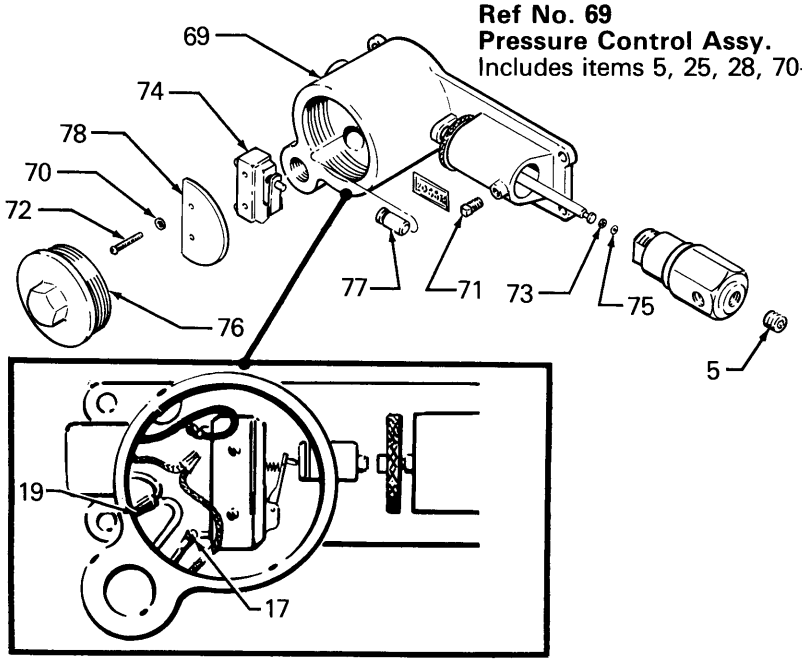
ELECTRIC "AIRLESS" PAINT SPRAYER

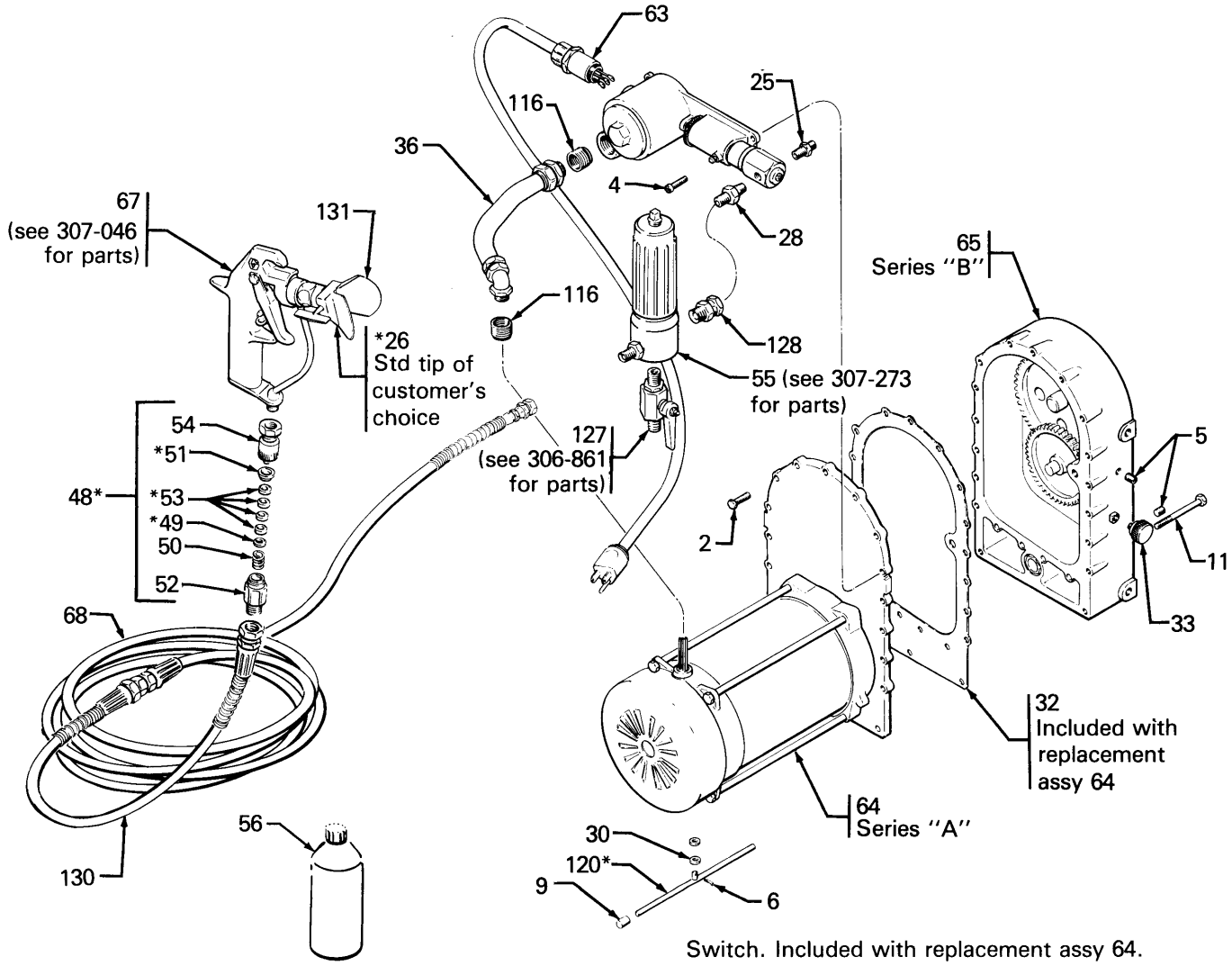
Model 226-400 Series "K"

Model 226-365 Series "L"
otherwise same 226-400



Ref No. 69
Pressure Control Assy.
Includes items 5, 25, 28, 70-78

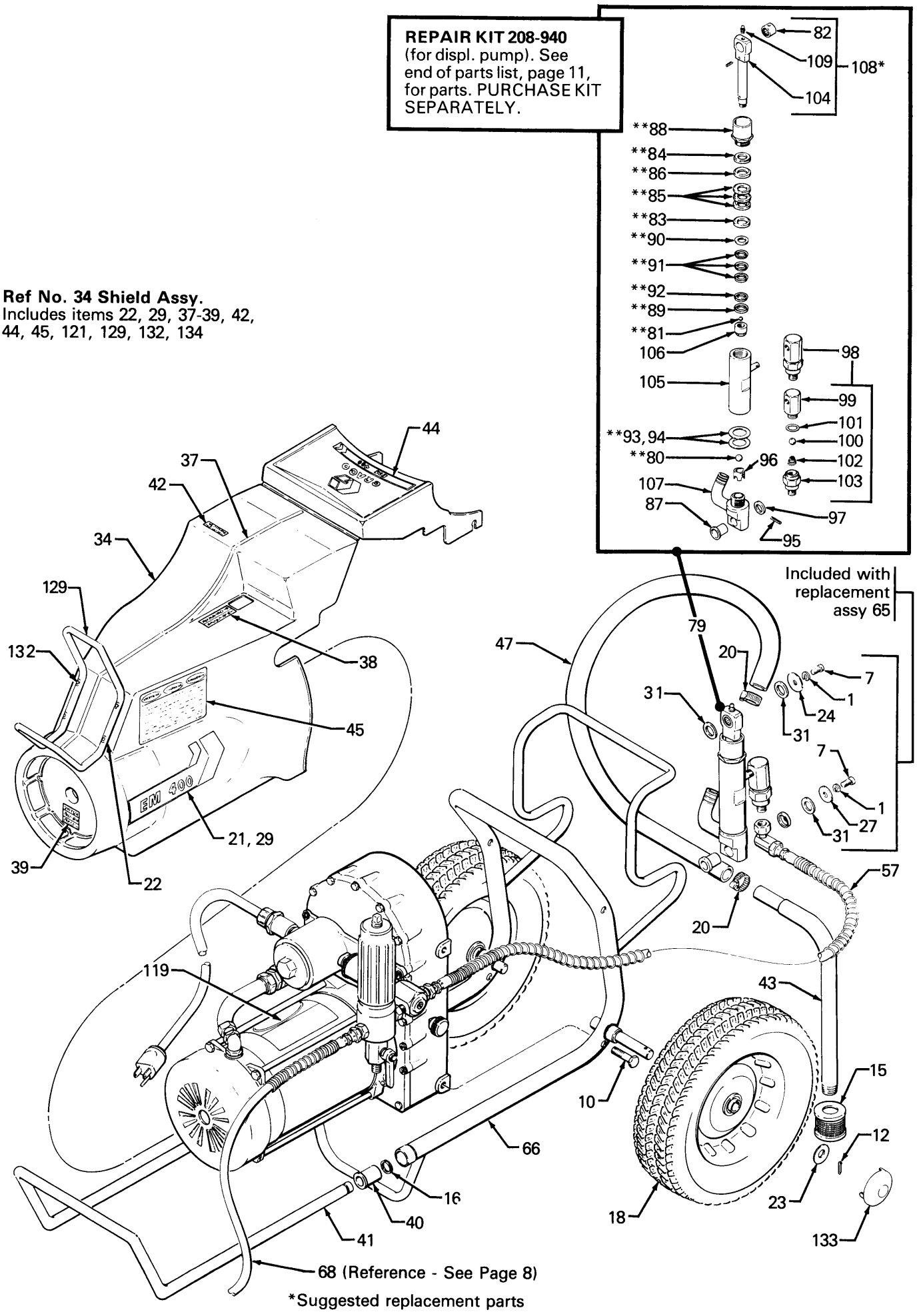




Switch. Included with replacement assy 64.

REPAIR KIT 208-940
(for displ. pump). See end of parts list, page 11, for parts. PURCHASE KIT SEPARATELY.

Ref No. 34 Shield Assy.
Includes items 22, 29, 37-39, 42, 44, 45, 121, 129, 132, 134



*Suggested replacement parts

PARTS LIST

Model 226-400 Series "K" — **PAINT SPRAYER includes items 1-4, 6-108, 119-121, 127-133 (includes 2 of item 19)**

REF NO.	PART NO.	DESCRIPTION	QTY
1	100-016	LOCKWASHER, spring; 1/4 screw sz	2
2	100-021	CAPSCREW, hex hd; 1/4-20 x 1"	9
3	100-055	SCREW, drive; type "U", No. 6 thd sz; 1/4 in. lg	2
4	100-643	SCREW, soc hd cap; 1/4-20 x 1"	9
5	100-721	PLUG, pipe; hdls; 1/4 npt	3
6	101-421	PIN, cotter; 1/16 in. dia, 3/8 in. lg	1
7	101-550	CAPSCREW, soc hd; 1/4-20 x 1/2	2
9	102-607	TIP, rubber; switch actuator	1
10	102-637	CAPSCREW, hex hd;3/8-16 thd, 1 1/2"lg	4
11	102-876	CAPSCREW, hex hd; 1/4-20 thd, 3" lg	4
12	101-545	PIN, cotter	2
15	102-952	STRAINER, inlet	1
16	103-117	RING, retaining	2
17	103-412	TERMINAL, wire;for No. 10 wire and No. 10 screw	1or2
18	174-063	WHEEL, semi-pneumatic	2
19	103-760	CONNECTOR, wire; pressure type, No. 12, 14, 16, 18 wire size	2or3
20	103-927	CLAMP, hose	2
21	172-412	PLATE, identification	1
	175-021	PLATE, identification	1
22	151-395	WASHER, flat	4
23	154-636	WASHER, flat	2
24	159-346	WASHER, flat	1
25	162-453	NIPPLE, short hex; 1/4-18 thd	1
26	*216-xxx	SPRAY TIP, cylinder; Reverse-A-Clean III, standard (customer's choice, see 307-321)	1
27	164-055	WASHER, spacer	1
28	165-198	NIPPLE, reducing; 3/8 to 1/4 npt	1
29	176-384	LABEL, identification	1
30	167-187	WASHER, flat	2
31	168-521	WASHER, thrust	3
32	168-531	GASKET, cover; gearcase	1
33	168-587	KNOB, shield	2
34	210-606	SHELD ASSEMBLY includes items 22 29, 37-39, 45, 121, 129, 132, 134	1
36	215-409	CONDUIT, flexible (for 226-400 only)	1
37	168-751	TRIM	1
38	168-758	DECAL, pressure control	1
39	168-759	DECAL, on-off switch	1
40	169-376	SLEEVE, handle	2
41	169-377	HANDLE	1
42	169-804	LABEL, patent	1
43	170-113	TUBE, suction	1
44	176-382	LABEL, identification; "EM 400"	1
45	*172-981	LABEL, warning	1
47	170-240	HOSE, suction; 3/4 in. ID	1
48	*204-940	SWIVEL ASSY,1/4 npt(mxf) incl. items 49-54	1
49	*150-516	. GLAND, male packing	1
50	150-522	. SPRING, compression	1
51	*157-894	. GLAND, female packing	1
52	157-898	. ADAPTER, male; 1/4 npt	1
53	*162-694	. PACKING, "v" leather	4
54	204-978	. ADAPTER, swivel; 1/4 npt(f)	1
55	214-570	PAINT FILTER(see 307-273 for parts)	1
56	206-994	THROAT SEAL LIQUID, 1 pint	1
57	214-638	PAINT HOSE ASSEMBLY, "Nylon"; static free; 1/4 in. ID, cpld 1/4 npsm swivel, 14 in.(355 mm)lg	1
62	207-909	ACTUATOR, switch	1
63	207-912	CORD SET(for 226-400 & 226- 365)	1
64	207-960	MOTOR & COVER ASSY (for Series"A" 226-400 & 226-365)incl. gasket, item 32	1

Model 226-365 Series "L" — **PAINT SPRAYER includes items 1-4, 6-12, 15-35, 37-133 (includes 3 of item 19 and 2 of item 17)**

REF NO.	PART NO.	DESCRIPTION	QTY
65	208-030	PUMP DRIVE ASSY(for 226-400 & Series "B"226-365 replaceable parts, includes items 1, 7, 11, 24, 27, 31, 32	1
66	214-905	FRAME	1
67	208-327	SPRAY GUN (for 226-365),see 307-046 for parts	1
	208-663	SPRAY GUN(for 226-400),see 307-046 for parts	1
68	210-541	HOSE, paint; "Nylon", static free,1/4 in. ID; cpld 1/4 npsm(f) swivel; 50 ft(15 m)lg	1
69	208-856	PRESSURE CONTROL ASSY, replaceable parts incl. items 5, 25, 28, 70-78	1
70	100-813	. WASHER, flat	2
71	100-110	. SETSCREW, sq hd, 1/4-20 thd; 7/8 in. long	1
72	102-271	. SCREW,rd hd mach; 6-63 thd;1" lg	2
73	102-888	. RING, backup; "Teflon"	1
74	103-740	. SWITCH, micro; 125 VAC, 20 amp	1
75	168-518	. PACKING, o-ring; viton	1
76	168-596	. CAP, control housing	1
77	170-790	. PLUNGER, switch	1
78	171-080	. SHIELD, switch	1
79	208-569	DISPLACEMENT PUMP ASSY Series"E"Includes items 80-108	1
80	**101-874	. BALL, steel; 1/2 in. dia	1
81	**101-956	. BALL, steel; 1/4 in. dia	1
82	*105-520	. BEARING, needle	1
83	**172-423	. GLAND, male	1
84	**172-424	. GLAND, female	1
85	**172-846	. PACKING, "v" leather	3
86	**172-871	. PACKING, "v"; "Teflon"	1
87	168-659	. BEARING, flanged sleeve	1
88	169-604	. NUT, packing	1
89	**169-605	. GLAND, female	1
90	**169-606	. GLAND, male	1
91	**169-607	. PACKING, "v" leather	3
92	**169-608	. PACKING, "v"; "Teflon"	1
93	**170-109	. WASHER, flat; aluminum	4
94	**170-110	. WASHER, flat; aluminum	4
95	170-111	. PIN, ball stop	1
96	170-112	. GUIDE, ball	1
97	170-259	. SPACER	1
98	208-109	. CHECK VALVE ,incl. items 99-103	1
99	208-108	. . VALVE HOUSING	1
100	101-874	. . BALL, 1/2 in. dia. stainless steel	1
101	166-702	. . O-RING, nitrile rubber	1
102	168-923	. . SPRING	1
103	168-935	. . ADAPTER, housing	1
104	208-576	. DISPLACEMENT ROD	1
105	208-371	. CYLINDER, displacement pump	1
106	208-567	. HOUSING, piston valve	1
107	208-568	. VALVE, intake	1
108	*208-574	. DISPLACEMENT ROD ASSY Includes items 82, 104, 109	1
109	100-846	. . FITTING, lubrication	1
113	100-122	NIPPLE, pipe; short,1/2 npt (for 226-365 only)	1
114	102-961	ELBOW, electrical; 90° (for 226-365 only)	2
115	103-032	BOX, junction(for 226-365 only)	1
116	104-212	BUSHING, reducer; 3/4 to 1/2 npt electrical	2
118	208-159	CABLE, electrical(for 226-365 only)	1
119	171-001	LABEL, warning	1
120	*104-343	SWITCH, rotary	1
121	176-250	LABEL, warning	1

REF NO.	PART NO.	DESCRIPTION	QTY
123	100-718	LOCKWASHER, internal shakeproof; no. 10 (for 226-365 only)	1
124	100-825	SCREW, rd hd mach; self tap, type "f"; 10-24 x 3/8" (for 226-365 only)	1
125	102-276	TERMINAL, forked; No. 12-10 AWG (for 226-365 only)	1
127	210-657	BALL VALVE ASSEMBLY, see 306-861 for parts	1
128	155-665	UNION, adapter;3/8 npt(m x f)swivel	1
129	176-370	BRACKET, hose	
130	214-701	HOSE, whip end;cpld 1/4 npt(m) x 1/4 npsm (f); 3/16 in. ID; static free; 36" (914 mm) long	1
131	216-001	KIT, spray tip	1
132	105-267	RIVET	4
133	104-811	CAP, hub	2
134	172-412	PLATE, ident(for 226-400 only)	1
	175-021	PLATE, ident(for 226-365 only)	1

**Recommended "tool box" spare parts. Keep on hand to reduce down time.*

***Supplied in repair kit.*

Order parts by name and number. Always give the model number and series letter of the assembly for which you are ordering.

208-940 REPAIR PARTS KIT

Consists of the following:

REF NO.	QTY.	REF NO.	QTY.
80	1	89	1
81	1	90	1
83	1	91	3
84	1	92	1
85	3	93	4
86	1	94	4

Also includes one tube of sealant, part no. 102-969.

210-037 REPAIR PARTS KIT

For 208-569 Displacement Pump. Includes displacement rod (ref no. 108) and piston housing (ref no. 106).

SERVICE INFORMATION

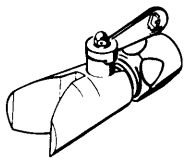
No part number changes were made in this revision.

Changes and additions made in the copy on page 2 reflect the current National Spray Equipment Manufacturers Association (NSEMA) warnings/preacutions.

Pressure Relief Procedure added to pages 3 and 5.

ACCESSORIES (Must be purchased separately)

SELECT-A-FAN (with tips)
3000 PSI (210 bar) MAXIMUM WORKING PRESSURE
206-310
Fits the fan pattern to both wide and narrow surfaces and clears tip stoppages.



GEAR OIL
208-230
1-quart (0.95 liter) lube oil for reduction gear drive. Gearcase capacity is 3 pints (1.4 liters).

THROAT SEAL LIQUID—TSL
Non-evaporation solvent for wet-cup.
206-995 1 quart (0.95 l) size
206-996 1 gallon (3.8 l) size

STATIC FREE NYLON HOSE
3000 PSI (210 bar) MAXIMUM WORKING PRESSURE

Part No.	ID	Length	Thd. Size
210-540	1/4"(6.4 mm)	25 ft(7.6 m)	1/4 npsm(f)
210-541	1/4"(6.4 mm)	50 ft(15.2 m)	1/4 npsm(f)
214-703	3/8"(9.5 mm)	25 ft(7.6 m)	3/8 npt(m)
214-705	3/8"(9.5 mm)	50 ft(15.2 m)	3/8 npt(m)
214-920	3/8"(9.5 mm)	100 ft(30.3 m)	3/8 npt (m)

(Use only in addition to standard 50 ft (1.5 m) hose).

Technical Data

Power requirements	120V, 60 HzAC, 1 phase, fused for 15 Amps
Electric motor	0.75 HP, 60 Cycle, 1725 RPM, single phase with automatic reset thermal overload and explosion-proof switch. UL listed.
Electric cord	No. 12 ga, 3 wire, use 12 ga. (minimum) three wire extension cord
Maximum working pressure	2700 psi (185 bar)
Max. delivery (continuous duty)	0.44 gpm (1.7 liter/min)
Cycles per minute	100
Outlet paint filter	60 mesh (250 micron) stainless steel screen, reusable. Has 3/8 npt(f) and 1/4 npt(f) outlets.
Wetted parts	Viton®, Nitralloy, Nylon, Rubber-impregnated Leather, Steel, Teflon®, Stainless steel

Manual Change Summary

This manual has been reactivated since it provides necessary information for some repair kits which are still available for the EM400 sprayer.

The Graco Warranty and Disclaimers

WARRANTY

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven defective, with the exception of defects in parts on the drive train/gear box on EM and GM sprayers or power train on EH and GH sprayers, which will be repaired or replaced for twenty-four months from the date of sale for Gas–Hydraulic (GH) and Gas-Mechanical (GM) sprayers and for thirty-six months from the date of sale for Electric-Mechanical (EM), Electric-Hydraulic (EH), 390st and 490st sprayers. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for, any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non–Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility with Graco equipment of structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claim. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor and transportation.

DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **including warranty of merchantability or warranty of fitness for a particular purpose,** and of any non–contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, switches, hose, etc.) are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

Sales Offices: Atlanta, Chicago, Dallas, Detroit, Los Angeles, Mt. Arlington (N.J.)
Foreign Offices: Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

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