

# 1:1 Extruder

310726 rev.D

## ***Supply, Metering and Dispense System for 5 Gallon (20 Liter) Pails.***

### **Part No. 965119**

1:1 Extruder President® Check-Mate® 200 System, carbon steel

### **Part No. 570135**

1:1 Extruder President® Check-Mate® 200 System, stainless steel

*2000 psi (14 MPa, 140 bar) Pump Maximum Working Pressure*

*90 psi (621 kPa, 6.3 bar) Pump Maximum Air Inlet Pressure*

*150 psi (1 MPa, 10 bar) Ram Maximum Air Inlet Pressure*



#### **Important Safety Instructions**

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

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PROVEN QUALITY. LEADING TECHNOLOGY.

# Warnings

The following warnings include general safety information for this equipment. More specific warnings are in the text where applicable.

 <b>WARNING</b>	
 	<b>SKIN INJECTION HAZARD</b> 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> <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>
  	<b>FIRE AND EXPLOSION HAZARD</b> Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion: <ul style="list-style-type: none"> <li>Use equipment only in well ventilated area.</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>
	<b>EQUIPMENT MISUSE HAZARD</b> Misuse can cause death or serious injury. <ul style="list-style-type: none"> <li>Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings.</li> <li>Check equipment daily. Repair or replace worn or damaged parts immediately.</li> <li>Do not alter or modify equipment.</li> <li>For professional use only.</li> <li>Use equipment only for its intended purpose. Call your Graco distributor for information.</li> <li>Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>Do not use hoses to pull equipment.</li> <li>Comply with all applicable safety regulations.</li> </ul>
	<b>MOVING PARTS HAZARD</b> Moving parts can pinch or amputate fingers and other body parts. <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>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>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>

# Grounding

**WARNING**



Your system must be grounded. Read warnings, page 2.

**Pump:** use ground wire and clamp. Loosen grounding lug locknut (A) and washer (B). Insert 12 gauge minimum ground wire end (D) into lug slot (C) and tighten locknut securely. Connect ground clamp to a true earth ground.

**Air and fluid hoses:** use only electrically conductive hoses. Check electrical resistance of hoses once a week. Refer to the hose tag or contact supplier for maximum resistance limits. If total resistance to ground exceeds limits, replace hose immediately.

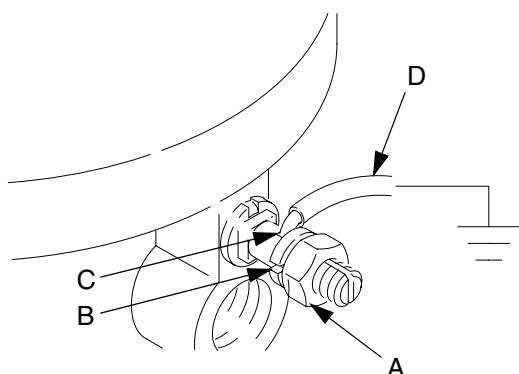


FIG. 1

**Air compressor:** follow manufacturer's recommendations.

**Spray gun / Dispense valve:** ground through connection to a properly grounded fluid hose and pump.

**Fluid supply container:** follow local code.


**Object being sprayed:** follow local code.

**Solvent pails used when flushing:** follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

**To maintain grounding continuity when flushing or relieving pressure:** hold metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.

## Operation


**WARNING**



Keep your fingers, hands, and tools away from the priming piston and the air motor piston during operation and whenever the pump air and fluid pressure is not fully relieved. The pump priming piston extends below the foot valve during operation and could pinch or amputate your fingers or hands as it moves up into the cylinder.

Be sure all moving part shields are installed and safety devices are operating properly before each use.

**WARNING**





Tighten all fluid connections securely before each use. High pressure fluid can dislodge a loose coupling or allow high pressure spray to be emitted from the coupling.

**CAUTION**

**Never operate one pump alone.** Do not disconnect one pump or allow a pump to run out of material. The system is designed to have both pumps run together. Running one pump alone puts too much stress on the hardware that connects the air motor to the displacement pumps and could cause the hardware to fracture.

## Pressure Relief Procedure


**WARNING**


Follow **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment. Read warnings, page 2.

1. Engage trigger lock.
2. Turn off air to the pump air motor.
3. Disengage the trigger lock.
4. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the trigger lock.
6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to dispense again.
7. If you suspect the spray tip or hose is 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. Clear hose or tip obstruction.

## Initial Startup

1. Connect a 1/2 in. (12.7 mm) air hose to the main air inlet connection.
2. Connect the dispense valve kit.
3. Raise the pneumatic ram:
  - a. Turn the ram control to UP.
  - b. Turn the ram air regulator up until the pumps begin to rise.

4. Open a pail of component A and B. Place the pails in their proper spots on the frame assembly pail levellers. Hook the pail handles over the nearby frame bolts.
5. Open the pail ram plate vent valves.
6. Stand clear of the pumps. Turn the ram control to DOWN. When the ram plates enter the pails and material comes out the vents, close the vent valves. Set the ram down pressure to at least 50 psi (345 kPa, 3.4 bar). More pressure can be used for high viscosity materials.
7. Remove the mixer if one is installed.
8. Open the outlet valves on the hoses.
9. Set the President air motor regulator to 40 psi (276 kPa, 2.8 bar). Slowly open the pump control air valve just until the pumps start moving. (Some air will escape while the valve is partially open.) When the pumps are primed and filling the hoses, the pump control air valve can be fully opened. When both materials are coming through the outlets free of test oil, close the dispense valve.

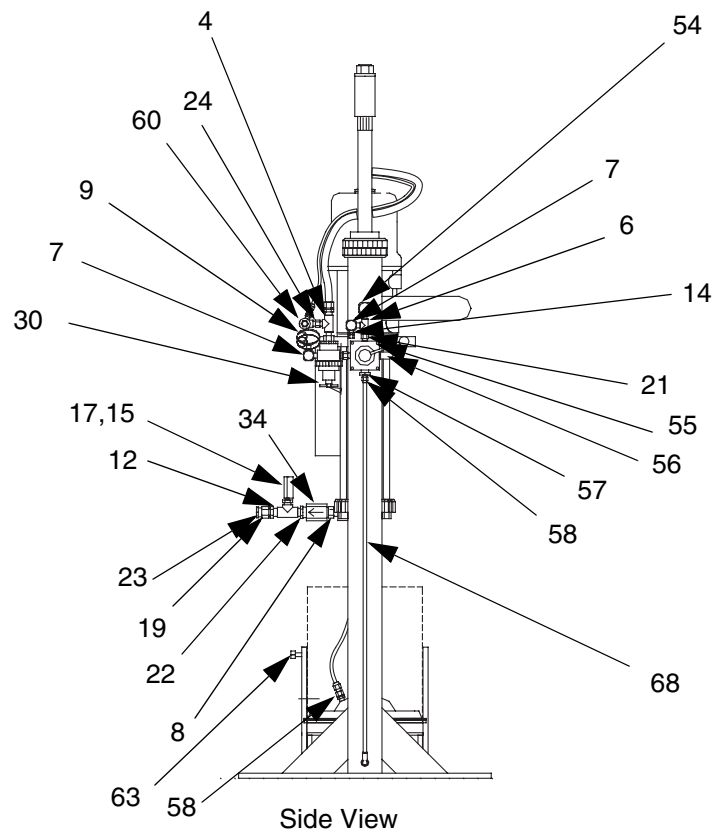
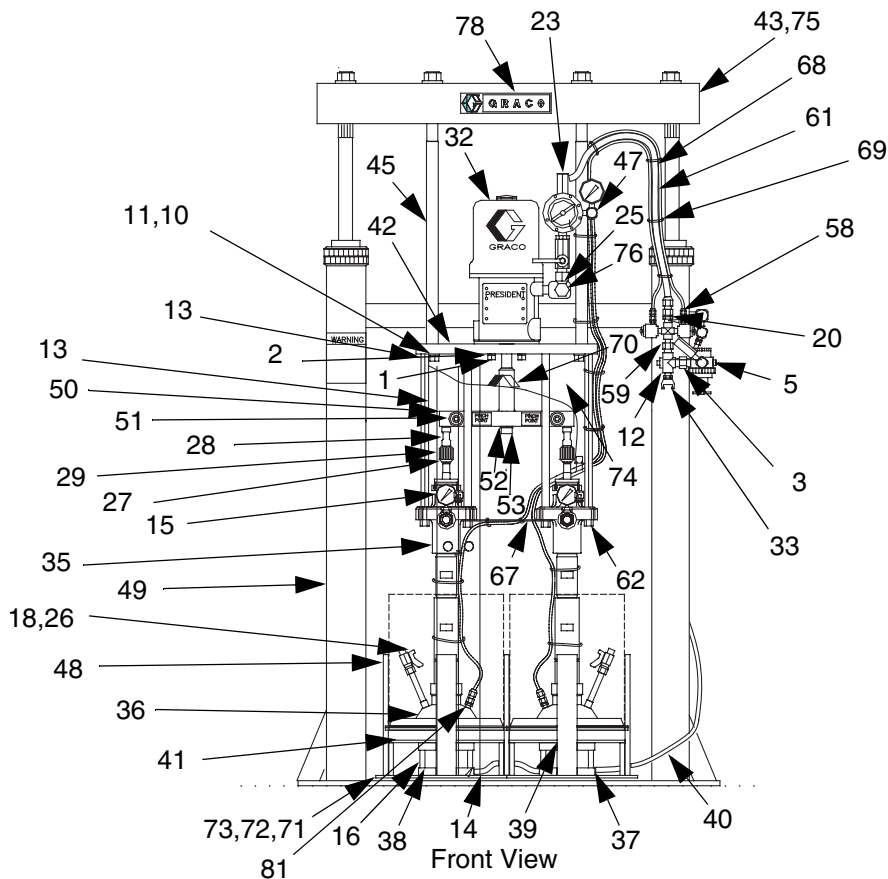
## Dispensing Mixed Material

1. Install a mixer on the outlet valve.
2. Set pump motor valve to the ON position.
3. Open dispense valve. Adjust President air motor regulator from 40–120 psi (0.28–0.8 MPa, 2.8–8 bar) to obtain desired flow rate.

## Shutdown

When you are done dispensing, remove the disposable mixer, and wipe off the outlet. Depending on what type of material you are dispensing, it may be better to leave the mixer on until the next time you use the equipment, or it may be necessary to not only wipe off the outlet but to seal it from air. Part No. 551327 plastic disposable caps are available for this purpose.

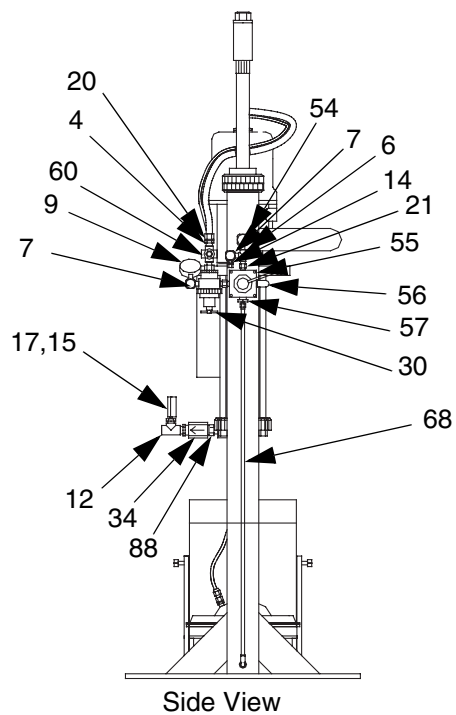
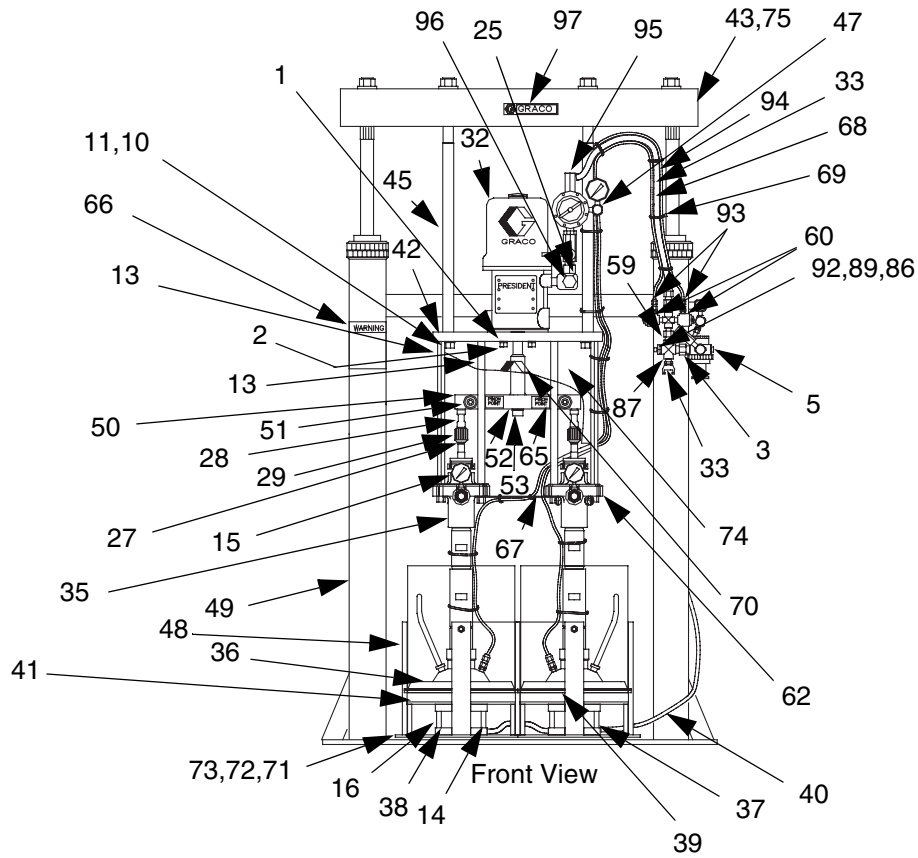
# Part No. 965119



# Part No. 965119

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	100060	SCREW, cap hex head	3	43	167646	BEAM, ram	1
2	100018	WASHER, lock spring	3	45	624913	ROD, tie ram 1:1 extruder	2
3	100122	NIPPLE, close	1	47	902413	KIT, repair	1
4	113264	CROSS, pipe	1	48	947917	FRAME, pail locator	1
5	100361	PLUG, pipe	1	49	954419	RAM, 55 gal, bare 3 in. pneumatic	1
6	104984	TEE, pipe	2	50	948617	YOKE, extruder 1:1	1
7	100840	ELBOW, street	2	51	513649	BEARING, cam follower	2
8	100896	FITTING, bushing pipe	2	52	100128	WASHER, lock	1
9	100960	GAUGE, press air	1	53	513623	SCREW, cap socket HD	1
10	101533	WASHER, spring lock	6	54	162667	FITTING, elbow street	1
11	101535	NUT, full hex	6	55	513004	VALVE, directional air 1/4 in. NPT	1
12	103475	TEE, pipe	3	56	512910	MUFFLER, polyethylene 1/4 in. NPT	1
13	625077	ROD, tie 1:1 extruder	6	57	113034	FITTING, tube	1
14	101959	ELBOW, cprsn male	2	58	205437	COUPLING, hose	4
15	102814	GAUGE, press fluid	2	59	162449	FITTING, nipple reducing	1
16	104594	SCREW, cap	8	60	206727	VALVE, release air	2
17	100206	BUSHING, pipe	2	61	061132	HOSE, nylon	20
18	208391	VALVE, ball	2	62	109209	NUT, lock hex	6
19	156684	UNION, adapter	2	63	100101	SCREW, cap hex head	2
20	156823	UNION, swivel	1	67	624944	SPACER, pump	1
21	156971	NIPPLE, short	2	68	208048	HOSE, coupled 61089	1
22	157191	FITTING, adapter (1/2 NPT x 3/4 NPT)	2	69	102478	STRAP, tie wiring	10
23	158212	BUSHING	3	70	166361	EMBLEM, Graco	1
25	158683	FITTING, elbow 90°	1	71	100004	SCREW, cap hex head	4
26	100195	NIPPLE, pipe	2	72	100731	WASHER	4
27	184100	NUT, coupling	2	73	100133	WASHER, lock	4
28	184160	ROD, adapter	2	74	625286	SHIELD, yoke 1:2 extruder	1
29	184131	COLLAR, coupling	4	75	189559	CAP, end	2
30	171937	REGULATOR, air	1	76	155470	UNION, swivel 90°	1
31	206995	FLUID, TSL 1 qt.	1	77	184119	WRENCH, packing nut	1
32	207352	MOTOR, Air pres	1	78	165188	EMBLEM, Graco	1
33	511174	FITTING, airline	1	81	100451	COUPLING	2
34	235497	VALVE, check	2	<b>Repair Parts</b>			
35	222771	PUMP, shovel	2	207385	Motor Seal Kit		
36	222812	PLATE, wiper, 5 gallon	2	222785	Throat Packing Kit (UHMW & PTFE)		
37	502524	FITTING, connector tube	1	222786	Throat Packing Kit (PTFE)		
38	512004	CYLINDER, air/ 2" stroke	2	222784	Pump Seal Kit (Less Throat)		
39	512171	SCREW, machine, socket HD	2	184101	Replacement Rod		
40	590385	TUBE, poly-flo	10	184106	Replacement Cylinder		
41	623533	PLATE, pail/ram	2	222798	Inlet Seat Kit (Seat & O-ring)		
42	624909	PLATE, tie 1:1 Extrud. Checkmate	1				

# Part No. 570135





# Part No. 570135

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	100060	SCREW, cap hex head	3	52	100128	WASHER, lock	1
2	100018	WASHER, lock spring	3	53	513623	SCREW, cap socket HD	1
3	100122	NIPPLE, close	1	54	162667	FITTING, elbow street	1
4	113264	CROSS, pipe	1	55	513004	VALVE, directional air 1/4 in. NPT	1
5	100361	PLUG, pipe	1	56	512910	MUFFLER, polyethylene 1/4 in. NPT	1
6	104984	TEE, pipe	1	57	100030	BUSHING	1
7	100840	ELBOW, street	6	59	162449	FITTING, nipple reducing	1
9	100960	GAUGE, press air	1	60	206727	VALVE, release air	2
10	101533	WASHER, spring lock	6	62	109209	NUT, lock hex	6
11	101535	NUT, full hex	6	65	180233	LABEL, warning	4
12	502570	FITTING, tee 1/2 NPT	2	66	513106	LABEL, warning	1
13	625077	ROD, tie 1:1 extruder	2	67	624944	SPACER, pump	1
14	101959	ELBOW, cprsn male	2	68	208048	HOSE, coupled 61089	1
15	513432	GAUGE, press fluid SST	2	69	102478	STRAP, tie wiring	10
16	104594	SCREW, cap	8	70	166361	EMBLEM, Graco	1
17	102022	BUSHING, pipe	2	71	100004	SCREW, cap hex head	4
20	156823	UNION, swivel	1	72	100731	WASHER	4
21	156971	NIPPLE, short	2	73	100133	WASHER, lock	4
25	158683	FITTING, elbow 90°	1	74	625286	SHIELD, yoke 1:1 extruder	1
27	184100	NUT, coupling	2	75	189559	CAP, end	2
28	184160	ROD, adapter	2	86	104165	FITTING, tube	10
29	184131	COLLAR, coupling	4	87	C20432	FITTING, cross pipe	1
30	171937	REGULATOR, air	1	88	552049	COUPLING, 1/2 in. NPT SST	2
31	206995	FLUID, TSL 1 qt. (not shown)	1	89	100206	BUSHING, pipe	1
32	207352	MOTOR, Air pres	1	92	111697	PLUG, pipe	1
33	511174	FITTING, airline	2	93	104172	FITTING, tube	2
34	501603	VALVE, check 1/2 in. NPT SST	2	94	590332	TUBE, poly-flo5/32ID x 1/4OD	15
35	222814	PUMP, shovel SST	2	95	158212	BUSHING	1
36	222909	PLATE, wiper, 5 gallon	2	96	155470	UNION, swivel 90°	1
37	502524	FITTING, connector tube	1	97	165188	EMBLEM, Graco	1
38	512004	CYLINDER, air/ 2 in. stroke	2	98	184119	WRENCH, packing nut (not shown)	1
39	512171	SCREW, machine, socket HD	2				
40	590385	TUBE, poly-flo	10				
41	623533	PLATE, pail/ram	2				
42	624909	PLATE, tie 1:1 Extrud. Checkmate	1				
43	167646	BEAM, ram	1				
45	624913	ROD, tie ram 1:1 extruder	2				
47	902413	KIT, repair	1				
48	947917	FRAME, pail locator	1				
49	954419	RAM, 55 gal, bare 3 in. pneumatic	1				
50	948617	YOKE, extruder 1:1	1				
51	513649	BEARING, cam follower	2				

## Repair Parts

207385	Motor Seal Kit
222785	Throat Packing Kit (UHMW & PTFE)
222786	Throat Packing Kit (PTFE)
222784	Pump Seal Kit (Less Throat)
184101	Replacement Rod
184106	Replacement Cylinder
222798	Inlet Seat Kit (Seat & O-ring)

# Technical Specifications

## Part No. 570135

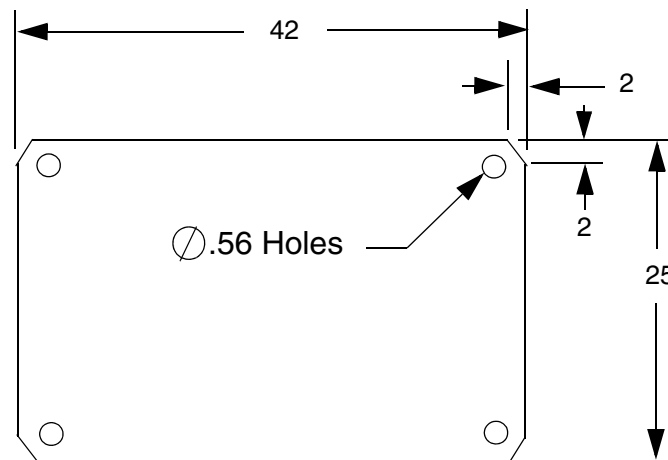
Mix ratio by volume . . . . .	1:1
Pressure Ratio (Fluid/Air) . . . . .	22:1
Volume Output per cycle . . . . .	2.9 fl. oz.
Air Motor Diameter. . . . .	Ø4.25
Air Consumption. . . . .	10 cfm
Air Inlet . . . . .	1/2 npsm(f)
Fluid Outlets . . . . .	1/2 or 3/8 npt(f)
Wetted Parts . . . . .	Stainless Steel, PTFE, UHMW Polyethylene
Maximum Air Working Pressure . . . . .	90 psi (6.3 bar, .63 mPa)
Maximum Temperature . . . . .	Ambient
Maximum Fluid Working Pressure . . . . .	2000 psi (140 bar, 14.0 mPa)
Weight . . . . .	500 lbs (227 kg)

## Part No. 965119

Mix Ratio by Volume . . . . .	1:1
Pressure Ratio (fluid/air) . . . . .	22:1
Volume Output per cycle . . . . .	2.9 fl. oz.
Air Motor Diameter. . . . .	Ø4.25
Air Consumption. . . . .	10 cfm
Air Inlet. . . . .	1/2 npsm(f)
Fluid Outlets . . . . .	1/2 or 3/8 npt(f)
Wetted Parts . . . . .	Carbon Steel, Stainless Steel, Duc- tile Iron, Zinc and Nickel Plating, PTFE, UHMW Polyethylene
Maximum Air Working Pressure . . . . .	90 psi (6.3 bar, .63 mPa)
Maximum Temperature . . . . .	Ambient
Maximum Fluid Working Pressure . . . . .	2000 psi (140 bar, 14.0 mPa)
Weight . . . . .	500 lbs (227 kg)

# Mounting Footprint

Part No. 570135 and 965119



# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. 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 general wear and tear, or 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 of Graco equipment with 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 claimed defect. 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.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

**GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO.** These items sold, but not manufactured by Graco (such as electric motors, 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.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## **FOR GRACO CANADA CUSTOMERS**

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

# Graco Information

**TO PLACE AN ORDER**, contact your Graco distributor, or call to identify the nearest distributor.

**Phone:** 612-623-6921 or **Toll Free:** 1-800-328-0211 **Fax:** 612-387-3505.

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

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