

INSTRUCTIONS - PARTS LIST

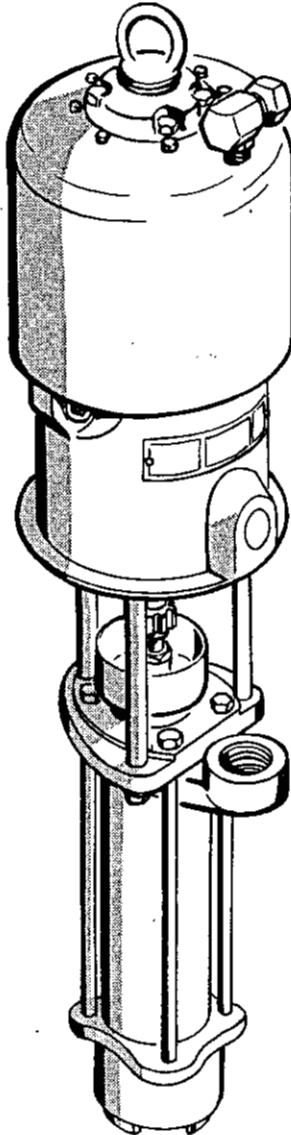
KEEP
FOR
REFERENCE



306-971

SEPT. 1969

Supersedes APRIL 1968



KING 20 :1 RATIO PUMP WITH DOUBLE BALL-CHECKS*

Model 207-567

Large air motor provides high volume delivery with slow cycling -- less down-time for maintenance.

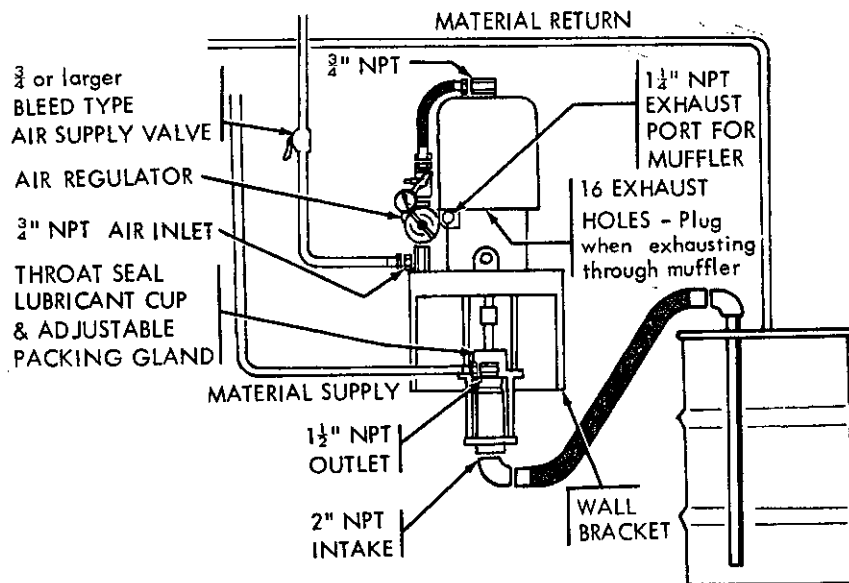
Divorced design prevents fouling of air motor with material being pumped.

Has hardened chrome alloy ball-checks with nitralloy seats.

Air motor has plugged exhaust port -- exhaust air can be routed to outside area or a muffler installed.

TECHNICAL DATA on back -- ACCESSORIES on page 4

*For low to medium viscosity liquids (water to molasses) and where delivery needs are greater than can be supplied by a 20:1 Bulldog pump.



INSTALLATION

MOUNTING

The dimensional drawing on the back page gives measurements needed for installing pump on a custom designed mounting. Accessory wall bracket and air regulator is shown on page 4. Use $\frac{3}{8}$ in. bolts, lockwashers and nuts to attach pump firmly to mounting.

Connect an air supply hose of at least $\frac{3}{4}$ in. ID to $\frac{3}{4}$ NPT (F) air inlet union. Connect your material hose to pump's $\frac{1}{2}$ in NPT(F) outlet. Connect material supply line to the 2 in. NPT(F) intake of pump. If you want to route exhaust air to outside area, remove exhaust port plug and connect exhaust to hose. Exhaust port size is $\frac{1}{2}$ in. NPT. Plug the 16 exhaust holes in base with $\frac{1}{2}$ in. selftapping screws, $\frac{1}{2}$ in. long.

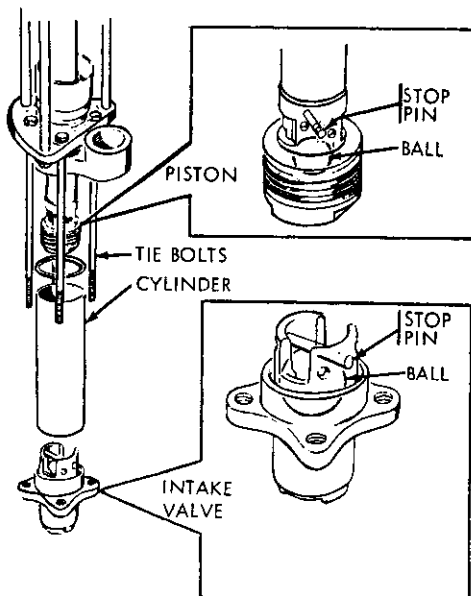
OPERATION

STARTING THE PUMP & PRIMING LINES

Set air supply pressure at about 40 psig and partially open air valve until pump is running slowly. Open material dispensing valve until lines are primed and all air is forced out. Close dispensing valve -- pump will stop. Pour Graco Throat Seal Lubricant (TSL) or other material compatible solvent into lubricant cup until level is about $\frac{1}{2}$ in. from the top of the cup.

Open air supply valve all the way and set air regulator to give the pressure you need. Pump will start when dispensing valve is opened; stop when it is closed.

ADJUSTING CHECK-BALL TRAVEL



The intake and piston check-valves are set for mid-range ball travel at the factory. For low viscosity liquids, decrease check-ball travel. For high viscosity liquids increase check-ball travel. To adjust, screw the four tie bolts out of the intake housing and remove housing and displacement cylinder. Move the ball stop pins in piston and intake valve to lower holes to decrease travel or to the higher holes to increase travel.

CAUTION: Use a torque wrench to tighten the tie bolts when reassembling pump. Tighten bolts evenly to 60 ft. lbs. torque.

Check packing nut tightness regularly. Keep it tight enough to stop leakage--no tighter. Use the spanner wrench supplied, or a $\frac{3}{8}$ in. dia rod to tighten. If material starts leaking into lubricant cup, replace throat packings immediately to prevent possible costly damage to other pump parts.

Don't run the pump if empty and don't leave it shut down. Either flush and leave filled with solvent or prime with material. Be sure all air is purged out. Flush as often as necessary. Don't let material dry or harden inside of the pump.

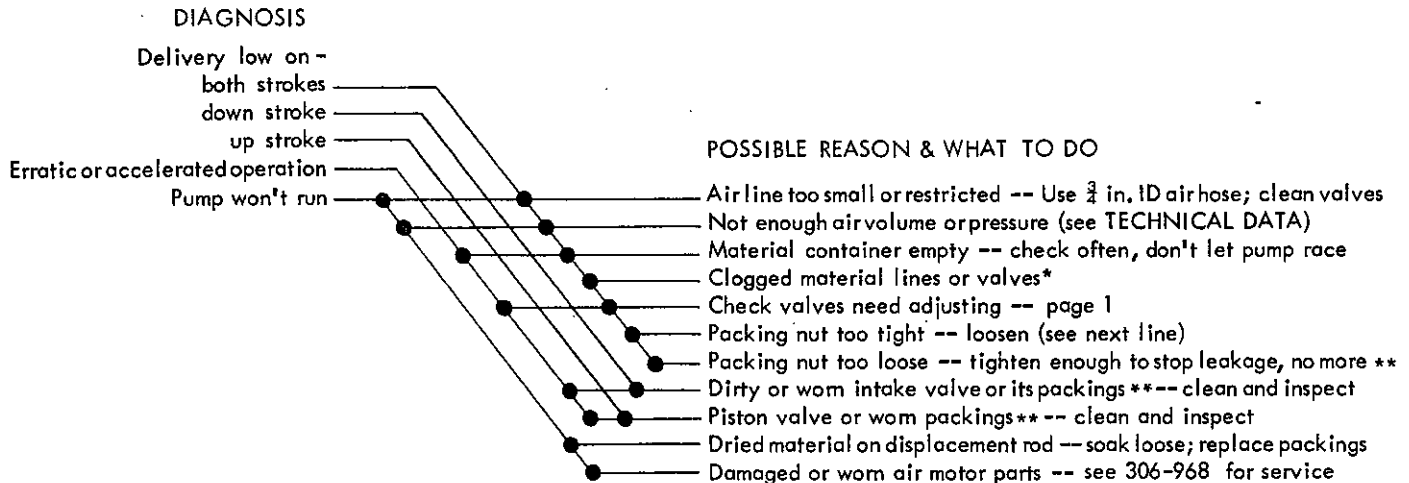
LUBRICATION AND CARE

Lubricate the air motor daily. Turn air off, relieve pressures, disconnect air supply hose and squirt about 15 drops of light high grade oil into inlet union. Connect air hose and turn air on to blow oil into the motor. For automatic lubrication, install the accessory Graco air line lubricator shown on page 4. Adjust lubricator so that about a drop every minutes goes through the sightglass.

Always stop the pump at the bottom of its stroke, when shutting down for the day, to prevent material from drying on displacement rod. Check the lubricant cup often and keep it filled with Graco TSL or other compatible solvent.

SERVICE

TROUBLE SHOOTING CHART



*Relieve pressures, disconnect material hose and turn air on. If pump starts, lines or equipment are clogged.

**Replace packings promptly to prevent possible costly damage.

CLEANING & REPAIRING

(Repair Kit 207-729 available)

NOTE This manual covers service instructions for the displacement pump only. Service instructions for the air motor are given in separate manual 306-968.

Relieve pressures, disconnect hoses and remove pump from mounting. Remove the three tie rod nuts, screw coupling nut off air piston rod and pull displacement pump off tie rods. Remove the cotter pin in disp. rod, loosen locknut and screw connecting rod out of displacement rod. Remove the four tie bolts, pull displacement cylinder off piston and pull intake valve out of cylinder.

Loosen the throat packing nut and pull displacement rod out of outlet housing with piston. Remove the ball stop pin, hold displacement rod with $\frac{1}{2}$ in. dia. rod through large holes and screw ball seat out of displacement rod. Remove glands, packings, backup washer and ball. Remove ball stop pin from intake valve and dump the ball out of housing.

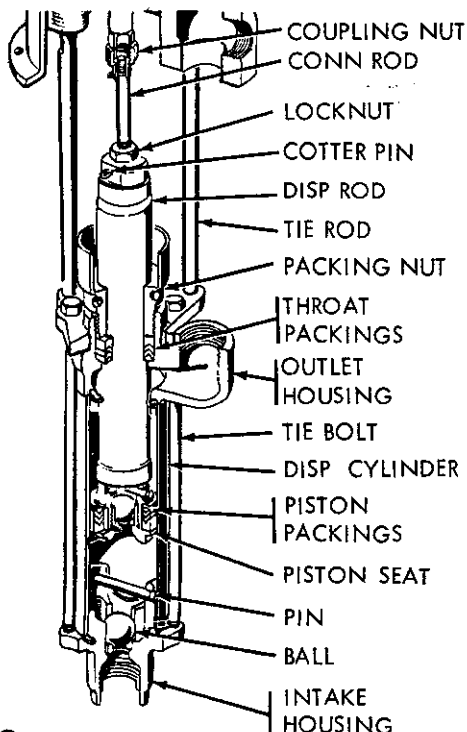
Screw packing nut out of outlet housing and remove glands and packings. Clean all parts with solvent and blow dry with air. Inspect for wear or damage. Check inside wall of cylinder and polished surface of disp rod for nicks, marks or scratches. Inspect valve seat for nicks.

Reassemble displacement pump using new parts as necessary. If the pump has been in service for a long time, use all new packings and glands. Leave throat packing nut loose. Assemble outlet housing, cylinder and intake valve, then install the four tie bolts hand tight. Use a torque wrench and tighten the bolts to 60 ft. lbs. torque.

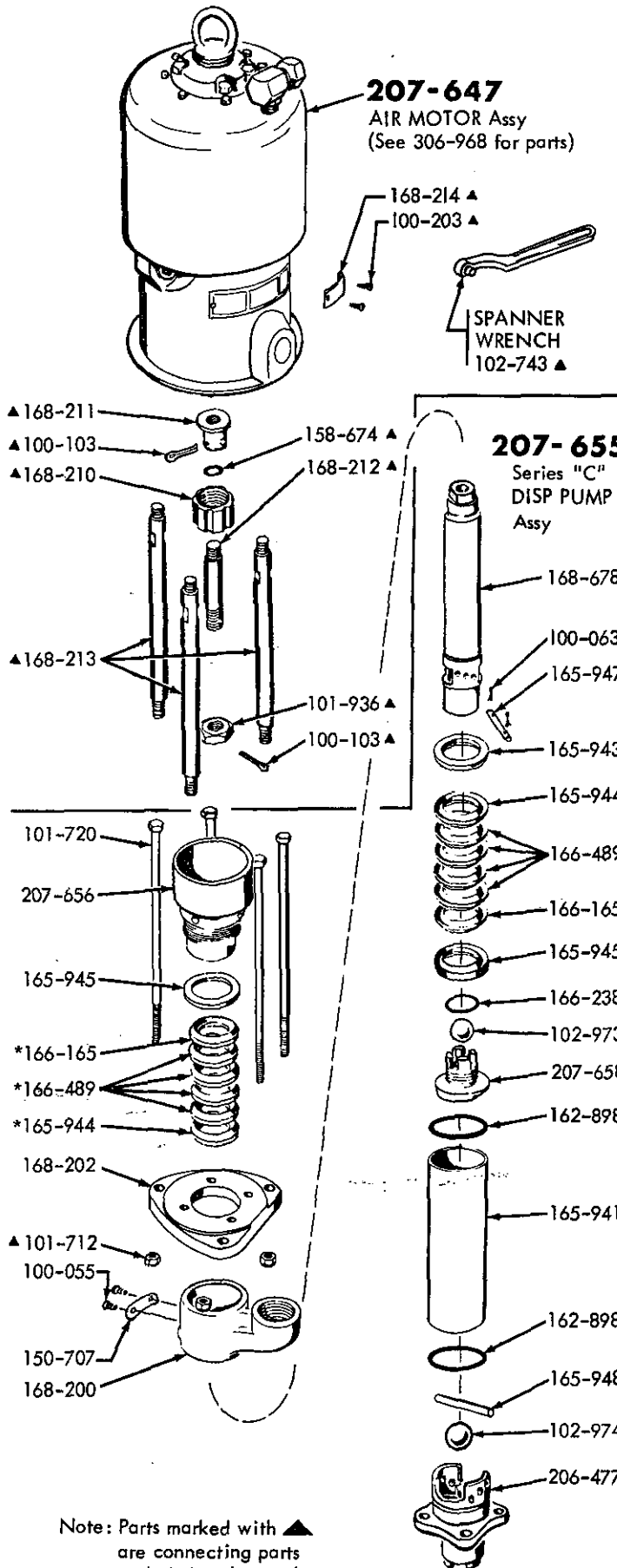
Connect the displacement pump to the air motor -- be sure tie rods are tightened firmly into air motor base. Connect air supply and run pump slowly to be sure it operates smoothly.

Remount pump and prime it, then tighten packing nut just tight enough to stop leakage -- no tighter.

NOTE Tighten the tie rod nuts to 40-50 foot lbs of torque.



**Model 207-567
20:1 RATIO KING PUMP**



Note: Parts marked with ▲ are connecting parts included with complete pump only.

PARTS LIST

PART NO.	DESCRIPTION	QTY
100-055	SCREW, drive; type "u"; No. 6 size; 1/2 long	2
*100-063	PIN, cotter; 1/16 dia; 1/2 long	2
100-103	PIN, cotter; 1/8 dia; 1 1/2 long	2
100-203	SCREW, self tap; type "z"; No. 4 size; 5/16 lg	2
101-712	NUT, lock; nylon insert; 5/8-11 thread size	3
101-720	BOLT, mach; hex hd; 5/8-11 thd size; 1 1/4" long	4
101-936	NUT, jam; hex; 3/4-10 thd size	1
102-743	WRENCH, spanner	1
*102-973	BALL; stainless steel; 1 1/2" dia	1
*102-974	BALL; stainless steel; 2" dia	1
150-707	PLATE, Model and Series(displacement pump)	1
158-674	SEAL, o-ring; buna-N	1
*162-898	GASKET, copper	2
165-941	CYLINDER, displacement	1
165-943	RETAINER, packing	1
*165-944	GLAND, packing; male	2
*165-945	GLAND, packing; female	2
*165-947	PIN, ball stop; piston	1
165-948	PIN, ball stop; intake	1
*166-165	PACKING, vee; 'PTFE'	2
*166-238	SEAL, o-ring; nitrile rubber	1
*166-489	PACKING, vee; leather	8
168-200	HOUSING, outlet	1
168-202	PLATE, tie	1
168-210	NUT, shouldered; 1 1/2-12 thread size	1
168-211	COUPLING, conn rod	1
168-212	CONN ROD, pump	1
168-213	ROD, tie	3
168-214	PLATE, designation; model & ratio:(complete pump)	1
168-678	DISPLACEMENT ROD	1
206-477	INTAKE VALVE HOUSING	1
207-647	Series " " KING AIR MOTOR Assy (see 306-968 for parts)	1
207-655	Series " " DISPLACEMENT PUMP Assy	1
207-656	PACKING NUT W/ LUBRICANT CUP	1
207-658	PISTON VALVE SEAT	1

*** SUGGESTED REPLACEMENT PARTS**

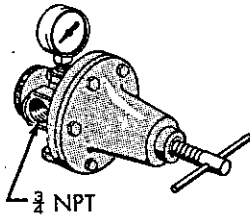
Order parts by number and name. Also give series letter and model number for which parts are ordered. Call or write your Graco distributor, nearest Graco factory branch or service depot for parts or service.

207-729 Repair Kit
(must be purchased separately)

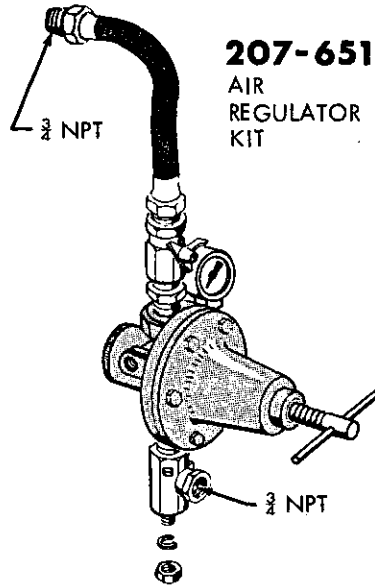
Part No.	Qty.	Part No.	Qty.
100-063	1	166-165	2
162-898	2	166-238	1
165-944	2	166-489	8
165-945	2		

ACCESSORIES (MUST BE PURCHASED SEPARATELY)

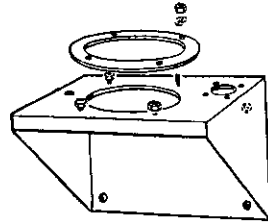
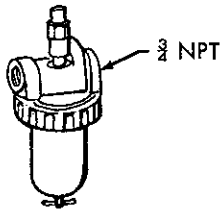
207-756
AIR REGULATOR
AND GAUGE



207-651
AIR
REGULATOR
KIT

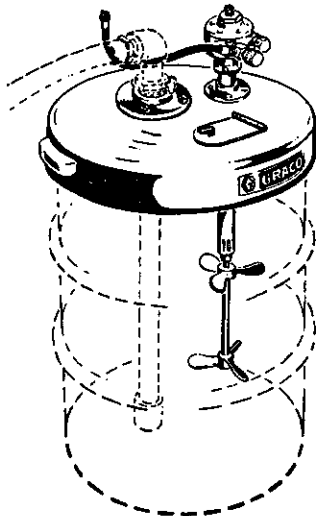


207-725
AIR LINE
LUBRICATOR

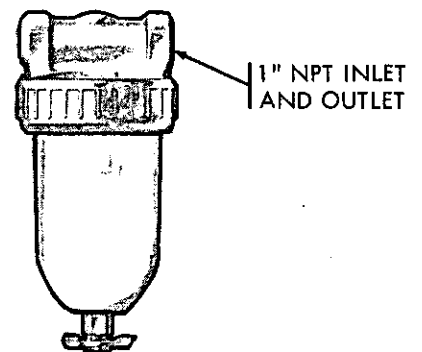


206-221
WALL MOUNTING
BRACKET

Model **207-199**
COVER & AGITATOR

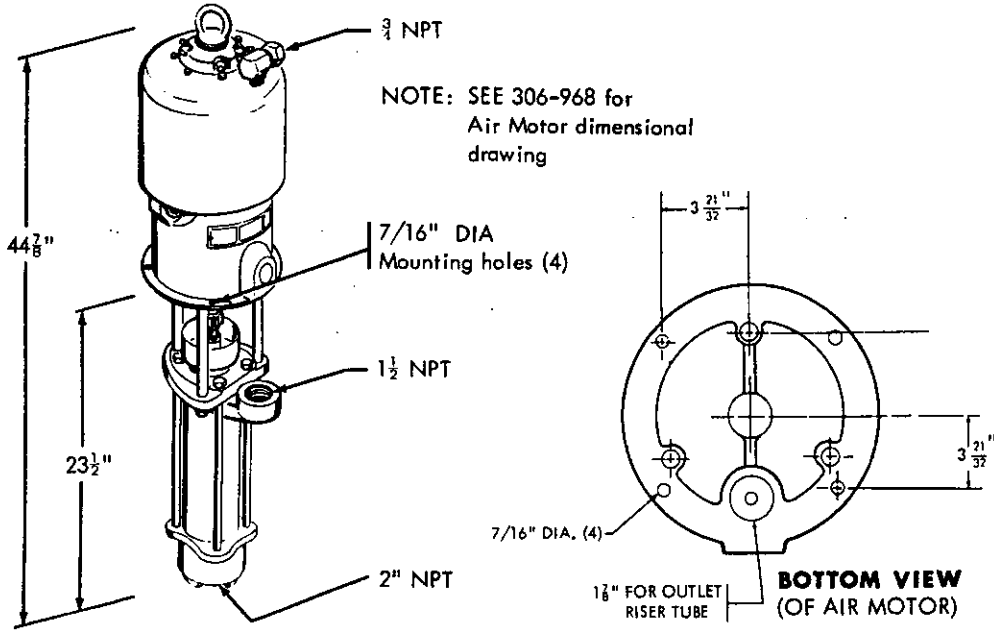


206-245
AIR LINE FILTER



TECHNICAL DATA

Air operating range Air volume needed Max. material pressure Cycles per gallon Recommended max. speed Air inlet size Wetted parts	40 psi (min.) to 90 psi (max.) Rule of thumb: At 70 psi 1 cfm/gal delivery multiplied by 20. 1800 psi with max. 90 psi air pressure 7 50 cycles per minute $\frac{3}{4}$ " NPT (F) Steel; Nitralloy; Tungsten Carbide; Copper; Impregnated Leather; PTFE ; 440 Stainless Steel
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SERVICE INFORMATION

Listed below by the number of the assembly changed are OLD and NEW parts

ASSEMBLY CHANGED	PART DESIGNATION	PART NO.	NAME
207-655	OLD	101-178	Ball
DISPL PUMP	NEW	102-973	Ball
Series to "C"	OLD	101-718	Ball
	NEW	102-974	Ball
	OLD	207-657	Displ Rod
	NEW	168-678	Displ Rod

INTERCHANGEABILITY NOTE: NEW parts replace OLD parts listed directly above them.

THE GRACO WARRANTY

Based on the logical assumption that manufacturing and material deficiencies will manifest themselves within twelve months' time, Graco Inc. warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship under normal use and service. Scope of this warranty extends to the original purchaser for a period of 12 months from the date of purchase and is applicable only when the equipment is installed and operated in accordance with factory recommendations. The warranty does not extend to damage or wear caused by misuse, abrasion, corrosion, negligence, accident, faulty installation or tampering in a manner to impair its normal operation.

In the event the equipment supplied by Graco Inc. is found to be defective within the above-stated 12-month period, Graco Inc. will repair or replace free of charge such defective parts if rendered prepaid to the factory or to an authorized Graco service agency and is found by Graco Inc.'s inspection to be truly defective in workmanship or material. In the event said material is deemed defective in workmanship or material it will be corrected and shipped transportation prepaid within the continental U.S. If inspection of any such equipment by Graco Inc. does not disclose any defect in workmanship or material, repairs will be made at a reasonable charge. Purchased assemblies which are incorporated into Graco equipment, carry the manufacturer's regular warranty.

The foregoing warranties are exclusive, and are in lieu of all other warranties (whether written, oral or implied) including warranty of merchantability in other respects than expressly set forth above and warranty of fitness for a particular purpose. Except as herein provided, every form of liability for direct or consequential damages or loss is expressly excluded and denied.



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