

Modu-Flo[®] Pumps

332042D

EN

For dispensing a specific volume of lubricant. For use with Graco Modu-Flo manifold packages. For professional use only.

Part No.:

Pneumatic - 563304, 563306, 563308, 563347, 563348, 563351, 563353, 563354

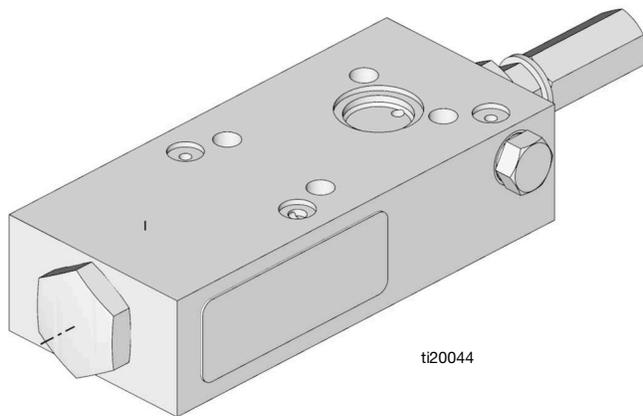
Hydraulic - 563305, 563307, 563345

See page 2 for model information, including maximum working pressure.

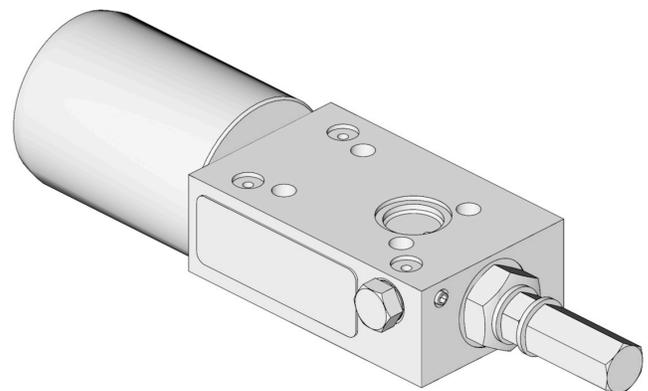


Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Save all instructions.



Hydraulic Pump



Pneumatic Pump

Models

Part No.	Model	Actuation	Pump Ratio	Air or Hydraulic Motor Action*	Output Displacement Range cu.in. (cm ³) per stroke	Max. Cycles per Minute**	Approx. Weight, lb (kg)	Input Operating Volume per Full stroke/cycle cu.in. (cm ³)***	Input Air/ Hydraulic Pressure PSI (bar)		Max. Fluid Output Pressure PSI (bar)
									Min.	Max.	
563304	AL-5M	Pneumatic	30:1	Single	0.010 to 0.030	30	3.75	1.06 (17.4)	40 (2.76)	150 (10.3)	3000 (206.8)
				Double	(0.164 to 0.492)	60	(1.7)	2.09 (34.3)			
563306	AL-25M	Pneumatic	30:1	Single	0.030 to 0.120	30	4.75	4.20 (68.8)	40 (2.76)	150 (10.3)	3000 (206.8)
				Double	(0.492 to 1.966)	60	(2.15)	8.28 (135.7)			
563308	AL-50M	Pneumatic	30:1	Single	0.060 to 0.240	30	6.5	8.40 (137.6)	40 (2.76)	150 (10.3)	3000 (206.8)
				Double	(0.983 to 3.933)	60	(2.9)	16.56 (271.4)			
563305	HLJ-5M	Hydraulic	5.5:1	Double	0.010 to 0.030 (0.164 to 0.492)	100	3.375 (1.53)	0.35 (5.7)	200 (13.8)	2000 (138)	3000 (206.8)
563307	HLJ-25M	Hydraulic	5.5:1	Double	0.030 to 0.120 (0.492 to 1.966)	50	5.5 (2.49)	1.38 (22.6)	200 (13.8)	2000 (138)	3000 (206.8)
563345	HLJ-5X	Hydraulic	2.2:1	Double	0.030 to 0.092 (0.492 to 1.51)	50	3.375 (1.53)	0.28 (4.7)	200 (13.8)	3000 (207)	3000 (206.8)
563351	ALJ-5M	Pneumatic	30:1	Double	0.010 to 0.030 (0.164 to 0.492)	60	3.75 (1.7)	2.09 (34.4)	40 (2.76)	150 (10.3)	3000 (206.8)
563348	ALJ-25M	Pneumatic	30:1	Double	0.030 to 0.120 (0.492 to 1.966)	60	4.75 (2.15)	4.2 (68.8)	40 (2.76)	150 (10.3)	3000 (206.8)
563347	ALJ-50M	Pneumatic	30:1	Double	0.060 to 0.240 (0.983 to 3.933)	60	6.5 (2.9)	16.56 (271.4)	40 (2.76)	150 (10.3)	3000 (206.8)
563353	AL-5M Fixed Output	Pneumatic	30:1	Single	Fixed at 0.030 (0.492)	30	3.75 (1.7)	1.06 (17.4)	40 (2.76)	150 (10.3)	3000 (206.8)
				Double		60		2.09 (34.3)			
563354	AL-25M Fixed Output	Pneumatic	30:1	Single	Fixed at 0.120 (0.492)	30	4.75 (2.15)	4.2 (68.8)	40 (2.76)	150 (10.3)	3000 (206.8)
				Double		60		8.28 (135.7)			

*Refers to motor action, not lube piston action: all lube pistons are single-acting

**Do not exceed 10 cpm with grease (3 seconds on, 3 seconds off)

***Pneumatic or hydraulic cylinder displacement volume at maximum output setting

General Information

- AL or models may be single or double acting.
- ALJ and HLJ refer to double acting motors.
 - Double acting air motors require 4-way air valve.
 - All hydraulic models are double acting.
- All models have single acting lube piston.
- All models are designed to mount directly to either a pump-to-reservoir manifold or a pump-to-wall manifold.
 - See manual 313830 for information on manifolds.

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
    	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, 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 dispensing device at anyone or at any part of the body. • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.

WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Notes** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Notes** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- 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 over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Installation

Component Identification

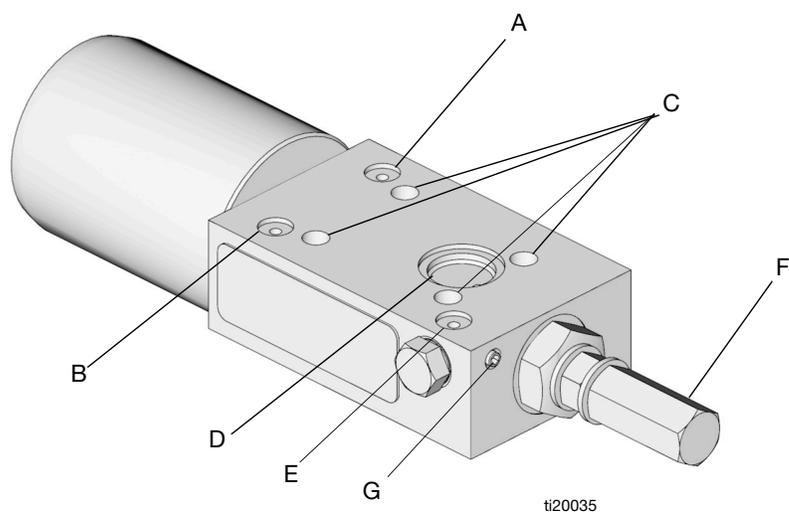


FIG. 1

Key:

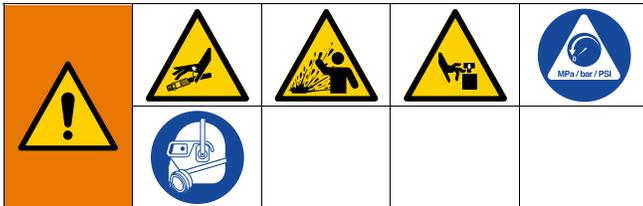
- A Single Acting (S.A.) Port
- B Double Acting (D.A.) Port
- C Mounting Holes
- D Lube Inlet Port
- E Lube Outlet Port
- F Adjustment Cover
- G Bleed Screw

Installation

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

1. Disable the pump's pneumatic or hydraulic supply.
2. Slowly loosen output connection fitting.

Bleeding Air

After assembly, disassembly and reassembly, it may be necessary to bleed air from the pump. Follow the procedure below:

1. After reinstalling the pump, cycle the pump a few times. This should bleed out the air.
2. If cycling the pump does not bleed out the air, loosen the bleed screw (29). Cycle the pump a few times.

NOTE: Do not remove the ball (28) or bleed screw (29).

3. Re-tighten the bleed screw (29).
4. Operate the pump as usual.

Output Adjustment Procedure



Reference numbers used in the following procedure refer to the **Parts** table, page 8.

1. Follow the **Pressure Relief Procedure**, page 6.
2. Remove adjustment screw cap (12) and gasket (8) from adjustment screw (11), holding jam nut (9) with a wrench if necessary (FIG. 2).

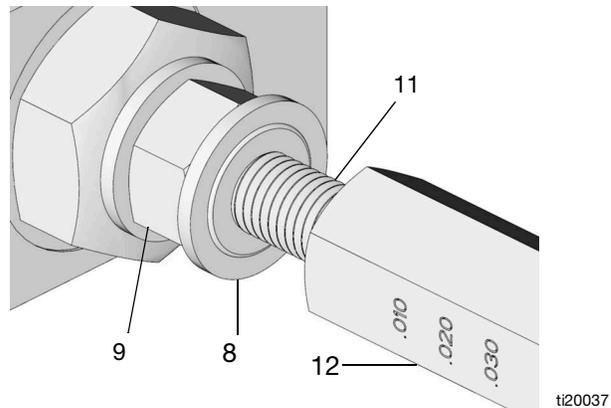


FIG. 2

3. Place the adjustment screw cap (12) against the jam nut (9) and use the stamped numbers on the cap (cu. in. per stroke) to determine how much adjustment is needed.
4. Loosen jam nut (9) and use a flat screwdriver to turn adjustment screw (11). Turn adjustment screw in for less output and turn out for more output (FIG. 3).

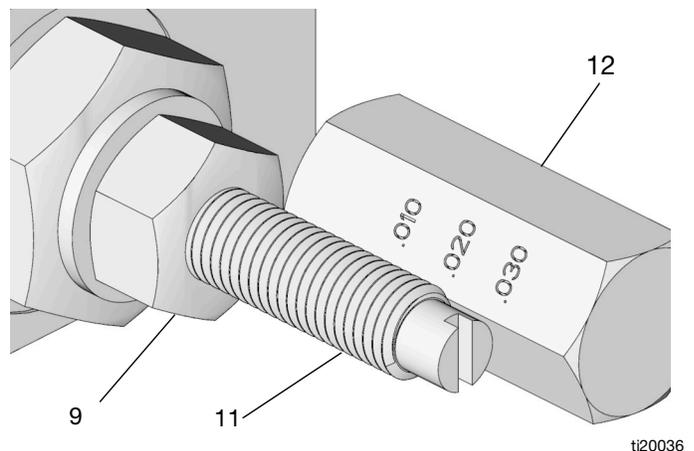


FIG. 3 AL-5 model shown

5. Tighten jam nut (9) and install gasket (8) and adjustment screw cap (12) over the adjustment screw (11).

Troubleshooting



1. Follow **Pressure Relief Procedure**, page 6, before checking or repairing gun.

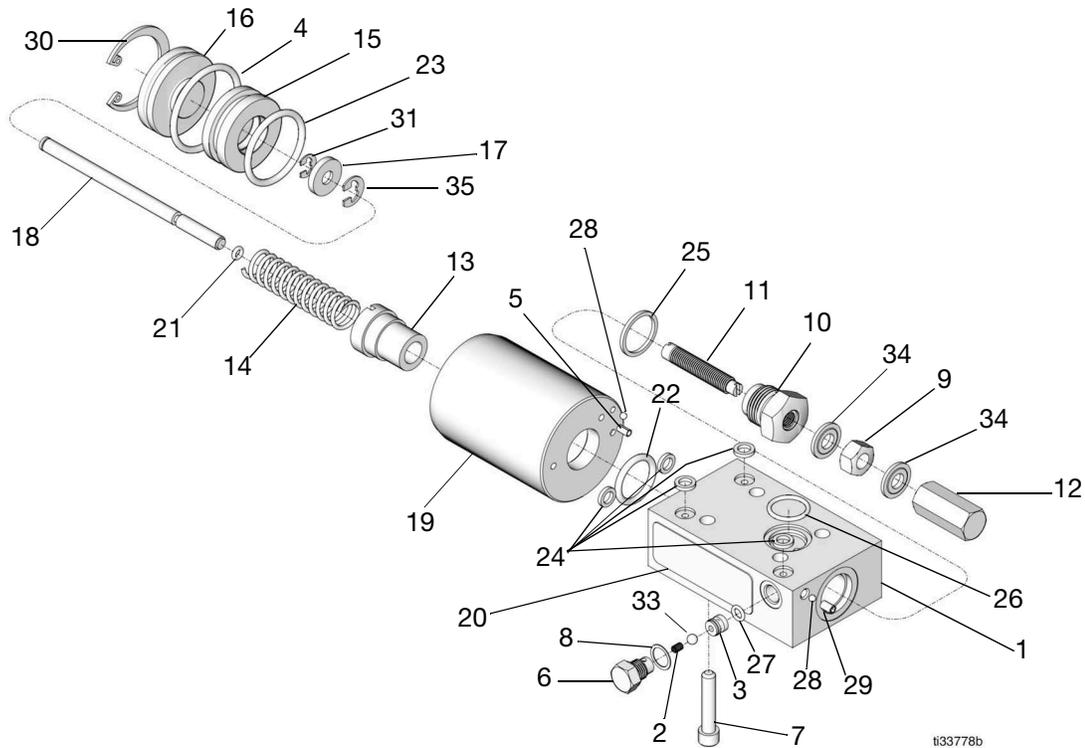
Reference numbers used in the following procedure refer to the **Parts** table, pages 8, 10, or 11.

Problem	Cause	Solution
Inconsistent Pump Output	Air and/or lubricant leak between the pump and the manifold	<ol style="list-style-type: none"> 1. Check four socket head screws (7) to make sure they are tight. Torque to 60 to 70 in.lbs. (6.77 to 7.90 N•m). Loose screws could allow air and/or lubricant to leak between the pump and the manifold. 1. Check for leakage past gasket (8). Replace gasket if required.
	Jam nut is loose	<p>Check jam nut (9) to make sure it is tight against adjustment screw body (10).</p> <p>If the jam nut is loose, the adjustment screw (11) could rotate and cause the pump output to change. This condition could also result in either lubricant leakage or air infiltrating the lubricant.</p>
Irregular Lubricant Flow	Air trapped in pump/system	<ol style="list-style-type: none"> 1. Cycle the pump a few times. This should bleed out the air. 2. If cycling the pump does not bleed out the air, loosen the bleed screw (29). Cycle the pump a few times. NOTE: Do not remove the ball (28) or bleed screw (29). 3. Re-tighten the bleed screw (29).

Parts



Pneumatic Pump



t133778b

Part No./Description

Ref. Part	Description	Qty.	Ref. Part	Description	Qty.
563304	PUMP ASSEMBLY, AL-5M		11	557589 SCREW, adjustment, AL-5M	1
563306	PUMP ASSEMBLY, AL-25M		15R126	SCREW, adjustment, AL-25M	1
563308	PUMP ASSEMBLY, AL-50M		560740	SCREW, adjustment, AL-50M	1
1*	BODY, pump	1	12	560737 CAP, adjustment screw, AL-5M	1
2	*** SPRING, check valve	1	560738	CAP, adjustment screw, AL-25M	1
3	** SEAT, check valve	1	560739	CAP, adjustment screw, AL-50M	1
4	** O-RING	1	13	15M726 RETAINER, air cylinder	1
5	** PIN, 1/8" dia x 1/4 lg	1	14	*** SPRING, piston return	1
6	557617 SCREW, check valve enclosure	1	15	557563 PISTON, air, AL-5M	1
7	103345 SCREW, socket-head, 1/4-20 x 1-1/4	4	557567	PISTON, air, AL-25M	1
8	** GASKET	1	557570	PISTON, air, AL-50M	1
9	* NUT, jam, hexagon, 5/16-24	1	16	557562 CAP, cylinder, AL-5M	1
	* NUT, jam, hexagon, 7/16-20	1	557566	CAP, cylinder, AL-25M	1
	* NUT, jam, hexagon, 1/2-20	1	557569	CAP, cylinder, AL-50M	1
10	560741 BODY, adjustment screw, AL-5M	1	17	560728 RETAINER, spring, AL-5M	1
	15R127 BODY, adjustment screw, AL-25M	1	560727	RETAINER, spring, AL-25M	1
	557592 BODY, adjustment screw, AL-50M	1	560721	RETAINER, spring, AL-50M	1
			18*	PISTON, lube	1

Ref.	Part	Description	Qty.
19	560708	CYLINDER, air, AL-5M	1
	557565	CYLINDER, air, AL-25M	1
	560723	CYLINDER, air, AL-50M	1
20*		LABEL, name serial	1
21	✿★◆	O-RING	1
22	✿★◆	O-RING	1
23	✿★◆	O-RING	1
24	✿★◆	O-RING	5
25	✿★◆	O-RING	1
26	✿★◆	O-RING	1
27	✿★◆	O-RING	1
28	✿★◆	BALL, sst 1/8" dia	2
29	✿★◆	SCREW, bleed, 10-32" x 1/4"	1
30	✿★◆	RING, retainer	1
31	✿★◆	RING, retainer	1
33	✿★◆	BALL, check, chrome stl, 3/16" dia	1
34	✿	SEAL, washer, 5/16-24 thd	2
	★	SEAL, washer, 7/16-20 thd	2
	◆	SEAL, washer, 1/2-20 thd	2
35	✿★◆	RING, retainer	1
✿	563902	REPAIR KIT, AL-5M, includes 2 - 5, 8, 9, 14, 21 - 31, 33 - 35	1
★	563903	REPAIR KIT, AL-25M, includes 2 - 5, 8, 9, 14, 21 - 31, 33 - 35	1
◆	563904	REPAIR KIT, AL-50M, includes 2 - 5, 8, 9, 14, 21 - 31, 33 - 35	1

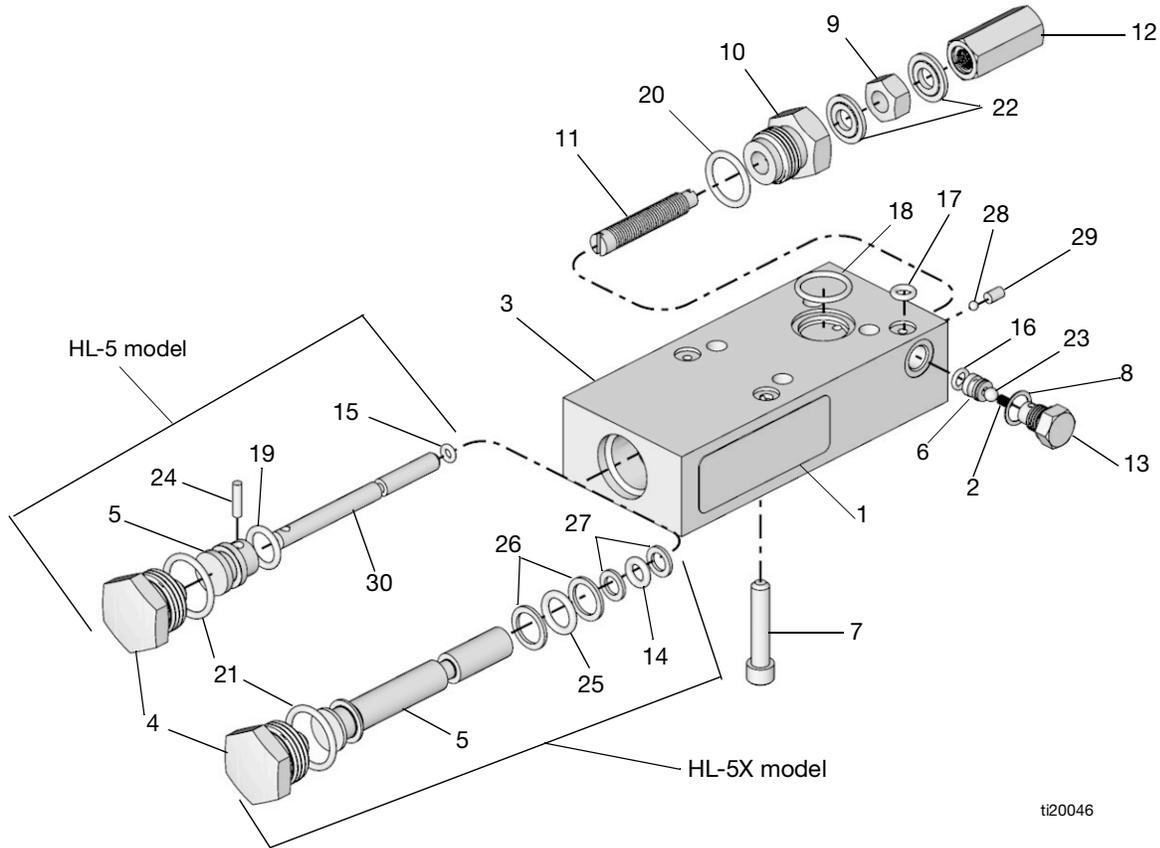
✿ Parts included in Kit 563902 (purchase separately)

★ Parts included in Kit 563903 (purchase separately)

◆ Parts included in Kit 563904 (purchase separately)

* Not available as replacement part

Hydraulic Pump (HLJ-5M and HLJ-5X)



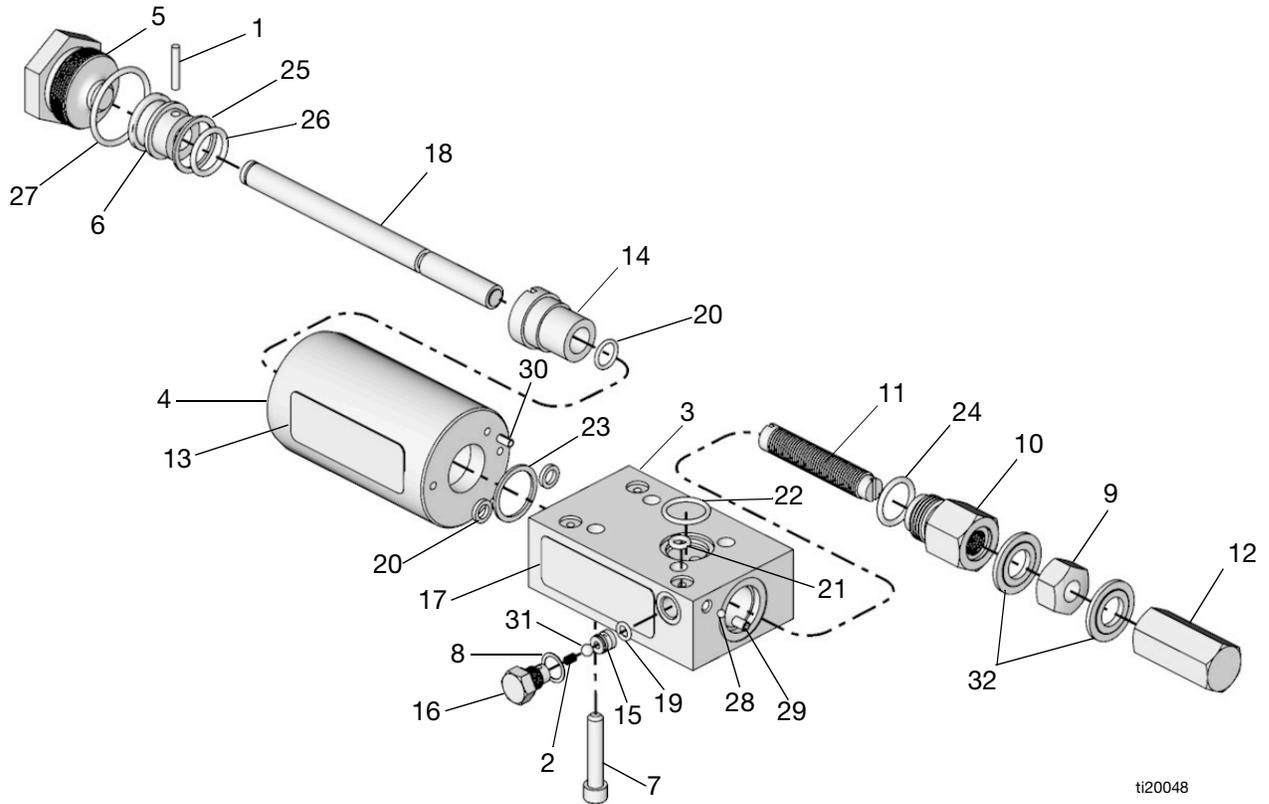
t120046

Part No./Description

Ref. Part	Description	Qty.	Ref. Part	Description	Qty.
563305	PUMP ASSEMBLY, HLJ-5M		19	❖ O-RING	1
563345	PUMP ASSEMBLY, HLJ-5X		20	❖❖ O-RING	1
1*	LABEL, name serial	1	21	❖❖ O-RING	1
2	❖❖ SPRING, check valve modu-flo	1	22	❖❖ SEAL, washer, 5/16-24	2
3*	BODY, pump	1	23	❖❖ BALL, check, chrome stl 3/16" dia	1
4	560711 PLUG, end	1	24	❖ PIN, 1/8" dia grv type	1
5*	PISTON, hydraulic	1	25	❖ O-RING	1
6	❖❖ SEAT, check valve	1	26	❖ RING, back up	2
7	103345 SCREW, cap sch	4	27	❖ RING, back up	2
8	❖❖ GASKET, copper	1	28	❖❖ BALL, sst 1/8" dia	1
9	556379 NUT, 5/16-24 heavy hex hd	1	29	❖❖ SCREW, bleed, 10-32" x 1/4"	1
10	560741 BODY, adjustment	1	30	PISTON, lube	1
11	557589 SCREW, adjustment	1			
12	560737 CAP, adjustment screw, HLJ-5M	1			
	560756 CAP, adjustment screw, HLJ-5X	1			
13	❖❖ SCREW, check valve enclosure	1			
14	❖ O-RING	1			
15	❖ O-RING	1			
16	❖❖ O-RING	1			
17	❖❖ O-RING	3			
18	❖❖ O-RING	1			

❖ Parts included in Kit 563905 (purchase separately).
❖❖ Parts included in Kit 563925 (purchase separately).
* Not available as replacement parts

Hydraulic Pump (HLJ-25M)



ti20048

Part No./Description

Part	Description	Qty.	Part	Description	Qty.
563307	PUMP ASSEMBLY, HLJ-25M	20	❖	O-RING	1
1	❖ PIN	1	21	❖ O-RING	5
2	❖ SPRING, check valve	1	22	❖ O-RING	1
3*	BODY, pump	1	23	❖ O-RING	1
4	557568 CYLINDER, hydraulic	1	24	❖ O-RING	1
5	560716 PLUG, end	1	25	❖ RING, backup	2
6	560717 PISTON, hydraulic	1	26	❖ O-RING	1
7	103345 SCREW, cap sch	4	27	❖ O-RING	1
8	❖ GASKET, copper md	1	28	❖ BALL, sst 1/8" dia	1
9	❖ NUT, 7/16-20 heavy hex	1	29	❖ SCREW, bleed, 10-32 x 1/4 soc cup	1
10	15R127 BODY, adjusting	1	30	❖ PIN, 1/8" dia x 1/4 lg	1
11	15R126 SCREW, adjusting	1	31	❖ BALL, check, chrome stl 3/16" dia	1
12	560738 CAP, screw adjustment	1	32	❖ SEAL, washer, 7/16-20 thd	2
13▲	557588 LABEL, caution	1			
14	560718 RETAINER, cylinder	1			
15	❖ SEAT, check valve	1			
16	557617 SCREW, check valve enclosure	1			
17*	LABEL, name serial	1			
18*	PISTON, lube	1			
19	❖ O-RING	1			

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

❖ Parts included in Kit 563906 (purchase separately).

* Not available as replacement parts.

Technical Specifications

Modu-Flo		
	US	Metric
Pressure		
Air Pressure	40 - 150 psi	0.276 MPa (2.76 bar) - 1 MPa (10.3 bar)
Hydraulic Pressure	200 - 2000 psi	1.38 MPa (13.8 bar) - 13.8 MPa (138 bar)
Lube to Air Pressure Ratio	30:1	
Lube to Hydraulic Pressure Ratio		
HLJ-5M and HLJ-25M	5.5:1	
HJ-5X	2.2:1	
Materials		
Lubricating Fluid	Oil or grease up to NLGI-2	
Wetted Parts	Steel, Copper, Nitrile, PTFE	

California Proposition 65

 **WARNING:** This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65warnings.ca.gov.

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.

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Graco Information

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

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

Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

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Original instructions. This manual contains English. MM332042

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

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