Repair/Parts

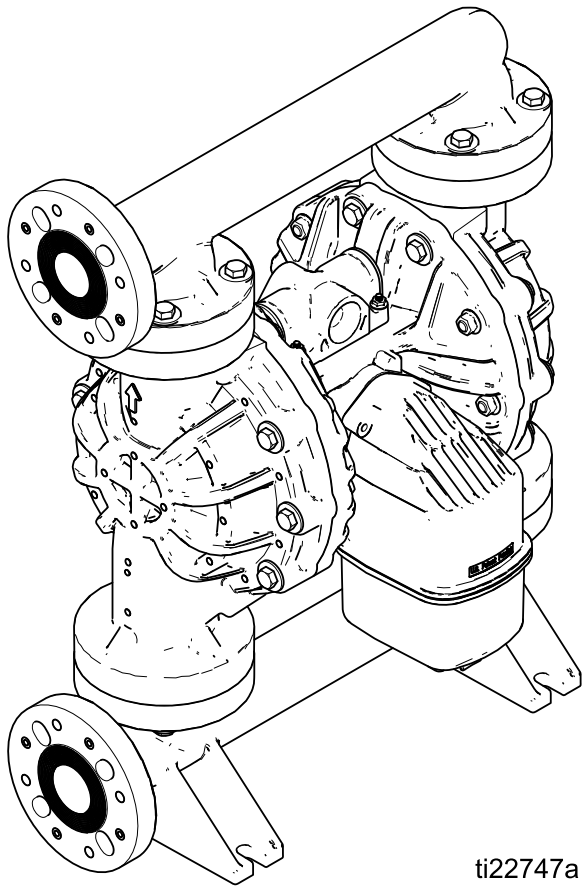
Husky™ 15120 Air-Operated Diaphragm Pump

3A2889G
EN

Polypropylene or PVDF pumps for fluid transfer applications, including high viscosity materials. For professional use only.
Not for use in European explosive atmosphere locations.

Important Safety Instructions
Read all warnings and instructions in this manual.
Save these instructions.

Maximum Working Pressure: 125 psi
(0.86 MPa, 8.6 bar)



ti22747a

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

Warnings 3
Ordering Information 6
Related Manuals 6
Configuration Number Matrix 7
Troubleshooting 8
Repair 10
- Pressure Relief Procedure 10
- Replace Complete Air Valve 10
- Replace Seals or Rebuild Air Valve 11
- Check Valve Repair 13
- Diaphragm and Center Section Repair 14

Torque Instructions 18
Parts 19
Accessories 31
Technical Data 32
Graco Standard Husky Pump Warranty 34

goind.com.au

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.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are antistatic or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.
- Route exhaust away from all ignition sources. If diaphragm ruptures, fluid may be exhausted with air.

Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion:

- Clean plastic parts only in well ventilated area.
- Do not clean with a dry cloth.
- Do not operate electrostatic guns in equipment work area.

PRESSURIZED EQUIPMENT HAZARD

Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow the **Pressure Relief Procedure** when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

goind.com.au

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 **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- 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.

THERMAL EXPANSION HAZARD

Fluids subjected to heat in confined spaces, including hoses, can create a rapid rise in pressure due to the thermal expansion. Over-pressurization can result in equipment rupture and serious injury.

- Open a valve to relieve the fluid expansion during heating.
- Replace hoses proactively at regular intervals based on your operating conditions.

PLASTIC PARTS CLEANING SOLVENT HAZARD

Many solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage.

- Use only compatible water-based solvents to clean plastic structural or pressure-containing parts.
- See **Technical Data** in this and all other equipment instruction manuals. Read fluid and solvent manufacturer's MSDSs and recommendations.

going.com.au

⚠ WARNING

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDSs to know the specific hazards of the fluids you are using.
- Route exhaust away from work area. If diaphragm ruptures, fluid may be exhausted into the air.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

BURN HAZARD

Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

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. This 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.

goind.com.au

Ordering Information

To Find Your Nearest Distributor

1. Visit www.graco.com.
2. Click on **Where to Buy** and use the **Distributor Locator.**

To Specify the Configuration of a New Pump

Please call your distributor.

OR

Use the **Online Husky Selector Tool** on the **Process Equipment** page at **www.graco.com.**

To Order Replacement Parts

Please call your distributor.

Distributor Note

1. To find part numbers for new pumps or kits, use the **Online Husky Selector Tool**.
2. To find part numbers for replacement parts:
   a. Use the configuration number from the ID plate on the pump. If you only have the Graco 6–digit part number, use the selector tool to find the corresponding configuration number.
   b. Use the Configuration Number Matrix on the next page to understand which parts are described by each digit.
   c. Refer to the main Parts illustration and to the Parts/Kits Quick Reference. Follow the page references on these two pages for further ordering information, as needed.
3. Please call Graco Customer Service to order.

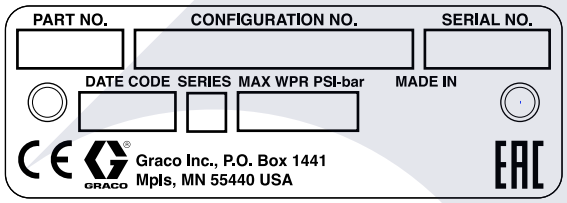
Related Manuals

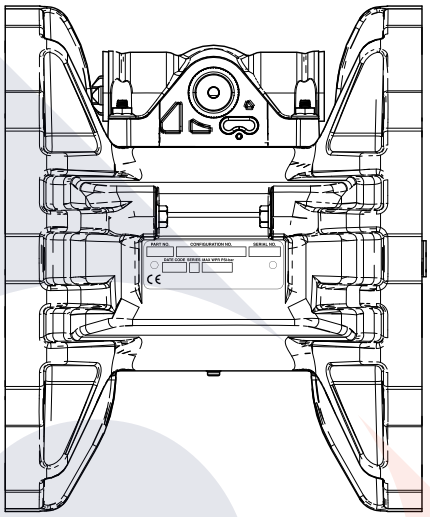
Manual Number	Title
3A2888	Husky 15120 Air-Operated Diaphragm Pump, Operation

goind.com.au

Configuration Number Matrix

Check the identification plate (ID) for the Configuration Number of your pump. Use the following matrix to define the components of your pump.





ti23919a

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

15120	P	P	P01A	P1	PP	PT	FK	PT
Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals

Pump	Fluid Section Material		Drive Type		Center Section and Air Valve Material		For Use With	Fluid Covers and Manifolds	
15120	P	Polypropy-lene	P	Pneumatic	P01A	Polypropylene	Standard Diaphragms	P1	Polypropylene, Center Flange, ANSI/DIN
15120	F	PVDF			P01G	Polypropylene	Overmolded Diaphragms	P2	Polypropylene, End Flange, ANSI/DIN
								F2	PVDF, End Flange, ANSI/DIN

Seat Material		Ball Material		Diaphragm Material		Manifold and Seat Seal Material	
PP	Polypropylene	FK	FKM	FK	FKM	PT	PTFE
PV	PVDF	PT	PTFE	PO	PTFE/EPDM Overmolded		
SP	Santoprene	SP	Santoprene	PT	PTFE/Santoprene 2–Piece		
SS	Stainless Steel			SP	Santoprene		

Troubleshooting

Problem	Cause	Solution
Pump cycles but will not prime.	Pump is running too fast, causing cavitation before prime.	Reduce air inlet pressure.
	Check valve ball severely worn or wedged in seat or manifold.	Replace ball and seat.
	Seat severely worn.	Replace ball and seat.
	Outlet or inlet clogged.	Unclog.
	Inlet or outlet valve closed.	Open.
	Inlet fittings or manifolds loose.	Tighten.
	Manifold o-rings damaged.	Replace o-rings.
Pump cycles at stall or fails to hold pressure at stall.	Worn check valve balls, seats, or o-rings.	Replace.
Pump will not cycle, or cycles once and stops.	Air valve is stuck or dirty.	Disassemble and clean air valve. Use filtered air.
	Check valve ball severely worn and wedged in seat or manifold.	Replace ball and seat.
	Pilot valve worn, damaged, or plugged.	Replace pilot valve.
	Air valve gasket damaged.	Replace gasket.
	Dispensing valve clogged.	Relieve pressure and clear valve.
Pump operates erratically.	Clogged suction line.	Inspect; clear.
	Sticky or leaking check valve balls.	Clean or replace..
	Diaphragm (or backup) ruptured.	Replace.
	Restricted exhaust.	Remove restriction.
	Pilot valves damaged or worn.	Replace pilot valves.
	Air valve damaged.	Replace air valve.
	Air valve gasket damaged.	Replace air valve gasket.
	Air supply erratic.	Repair air supply.
	Exhaust muffler icing.	Use drier air supply.

Problem	Cause	Solution
Air bubbles in fluid.	Suction line is loose.	Tighten.
	Diaphragm (or backup) ruptured.	Replace.
	Loose manifolds, damaged seats or o-rings.	Tighten manifold bolts or replace seats or o-rings.
	Pump cavitation.	Reduce pump speed or suction lift.
	Loose diaphragm shaft bolt.	Tighten.
Exhaust air contains fluid being pumped.	Diaphragm (or backup) ruptured.	Replace.
	Loose diaphragm shaft bolt.	Tighten or replace.
Moisture in exhaust air.	High inlet air humidity.	Use drier air supply.
Pump exhausts excessive air at stall.	Worn air valve cup or plate.	Replace cup and plate.
	Damaged air valve gasket.	Replace gasket.
	Damaged pilot valve.	Replace pilot valves.
	Worn shaft seals or bearings.	Replace shaft seals or bearings.
Pump leaks air externally.	Air valve or fluid cover screws loose.	Tighten.
	Diaphragm damaged.	Replace diaphragm.
	Air valve gasket damaged.	Replace gasket.
Pump leaks fluid externally from joints.	Loose manifold screws or fluid cover screws.	Tighten manifold screws or fluid cover screws.
	Manifold o-rings worn out.	Replace o-rings.

goind.com.au

Repair

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

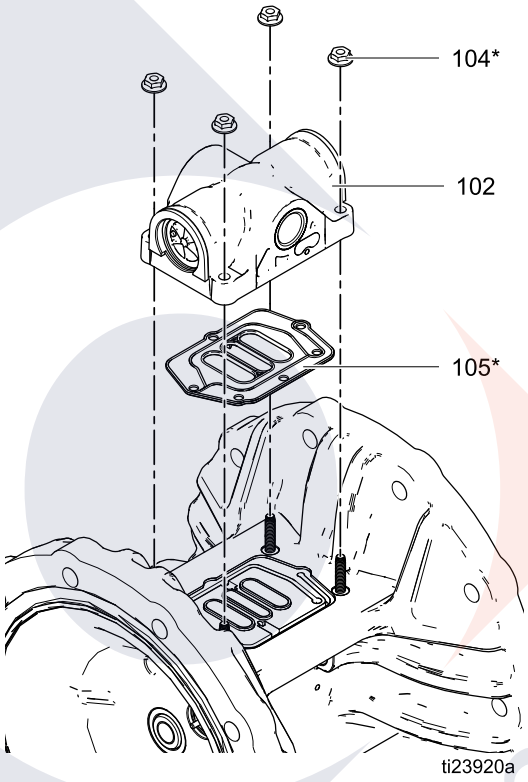
This equipment stays pressurized until pressure is relieved manually. To help prevent serious injury from pressurized fluid, such as splashing in the eyes or on skin, follow the Pressure Relief Procedure when you stop pumping and before you clean, check, or service the equipment.

1. Shut off the air supply to the pump.
2. Open the dispensing valve, if used.
3. Open the fluid drain valve to relieve fluid pressure. Have a container ready to catch the drainage.

Replace Complete Air Valve

Follow these instructions to install Air Valve Replacement Kit 24B773.

1. Stop the pump. Follow the Pressure Relief Procedure, page 10.
2. Disconnect the air line to the motor.
3. Remove nuts (104). Remove the air valve (102) and gasket (105).
4. Align the new air valve gasket (105*) on the center housing, then attach the new air valve. Follow the Torque Instructions, page 18.
5. Reconnect the air line to the motor.



goind.com.au

Replace Seals or Rebuild Air Valve

Follow these instructions to service the air valve with one of the available repair kits. Air Valve Seal Kit parts are marked with a †. Air Valve Repair Kit parts are marked with a ♦. Air Valve End Cap Kit parts are marked with a ‡.

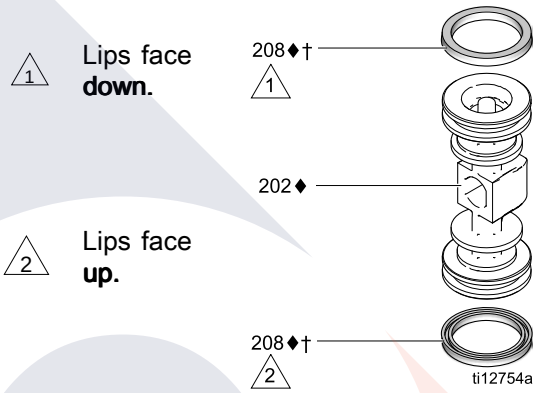
Disassemble the Air Valve

1. Perform steps 1-3 under Replace Complete Air Valve, page 10.
2. Use a T10 Torx screwdriver to remove two screws (209). Remove the valve plate (205), cup assembly (212-214), spring (211), and detent assembly (203).
3. Pull the cup (213) off of the base (212). Remove the o-ring (214) from the cup.
4. Remove the retaining ring (210) from each end of the air valve. Use the piston (202) to push the end cap (207) out of one end. Remove the u-cup seal (208) from the piston. Pull the piston out of the end and remove the other u-cup seal (208). Remove the other end cap (207) and the end cap o-rings (206).
5. Remove the detent cam (204) from the air valve housing (201).

Reassemble the Air Valve

NOTE: Apply lithium-based grease when instructed to grease. Order Graco PN 111920.

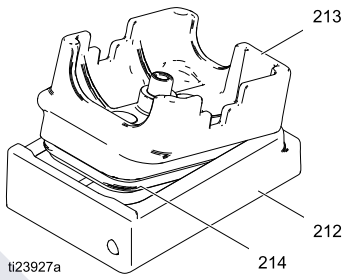
1. Use all parts in the repair kits. Clean other parts and inspect for damage. Replace as needed.
2. Grease the detent cam (204♦) and install into housing (201).
3. Grease the u-cups (208♦†) and install on the piston with lips facing toward the center of the piston.



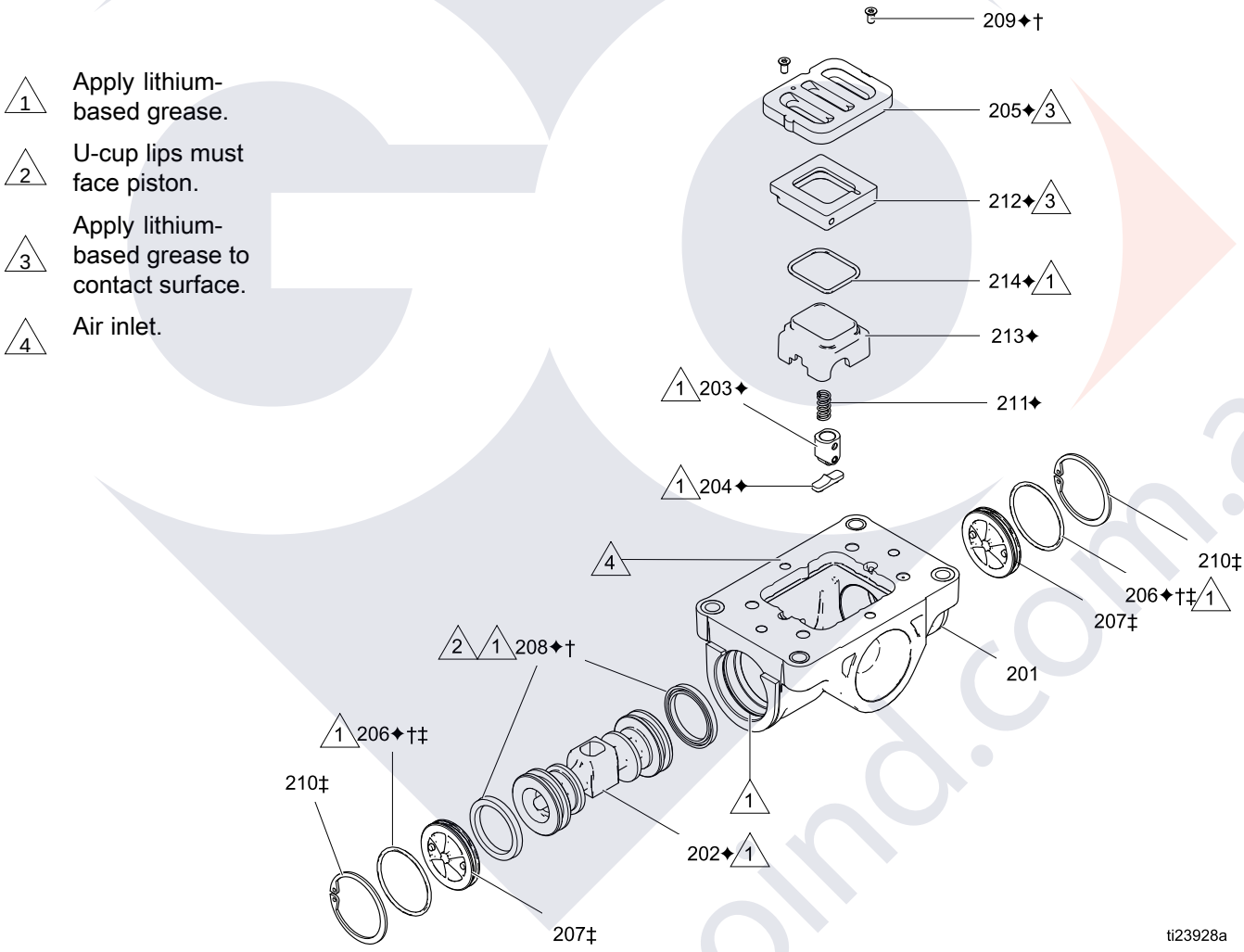
4. Grease both ends of the piston (202♦) and the housing bore. Install the piston in the housing (201), with the flat side toward the cup (213♦). Be careful not to tear u-cups (208♦†) when sliding piston into housing.
5. Grease new o-rings (206♦†‡) and install on the end caps (207‡). Install the end caps into the housing.
6. Install a retaining ring (210‡) on each end to hold end caps in place.

goind.com.au

7. Grease and install the detent assembly (203♦) into the piston. Install the o-ring (214♦) on the cup (213♦). Apply a light film of grease to the outside surface of the o-ring and the inside mating surface of the base (212♦). Orient the end of the base that has a magnet toward the end of the cup that has the larger cutout. Engage the opposite end of the parts. Leave the end with the magnet free. Tilt the base toward the cup and fully engage the parts, using care so that the o-ring remains in place. Install the spring (211♦) onto the protrusion on the cup. Align the magnet in the base with the air inlet and install the cup assembly.



8. Grease the cup side and install the valve plate (205♦). Align the small hole in the plate with the air inlet. Tighten the screws (209♦†) to hold it in place.



Check Valve Repair

NOTE: Kits are available for new check valve balls and seats in a range of materials. See page 27 to order kits in the material(s) desired. O-ring and fastener kits also are available.

NOTE: To ensure proper seating of the check balls, always replace the seats when replacing the balls. Also, replace the o-rings every time the manifold is removed.

Disassemble the Check Valve

1. Follow the Pressure Relief Procedure, page 10. Disconnect all hoses.
2. Remove the pump from its mounting.
3. **NOTE:** Use hand tools until thread-locking adhesive patch releases. Use a 17 mm (11/16 in) socket wrench to remove the manifold fasteners (5), then remove the manifold (3).
4. Remove the o-rings (9), seats (7), and balls (8).
5. Turn the pump over and remove the inlet manifold (4).
6. Remove the o-rings (9), seats (7), and balls (8).

Reassemble the Check Valve

1. Clean all parts and inspect for wear or damage. Replace parts as needed.
2. Reassemble in the reverse order, following all notes in the illustration. Put the inlet manifold on first. Be sure the ball checks (7-9) and manifolds (3, 4) are assembled **exactly** as shown. The ball must seat on the chamfered side of the seat. The arrows (A) on the fluid covers (2) **must** point toward the outlet manifold (3).

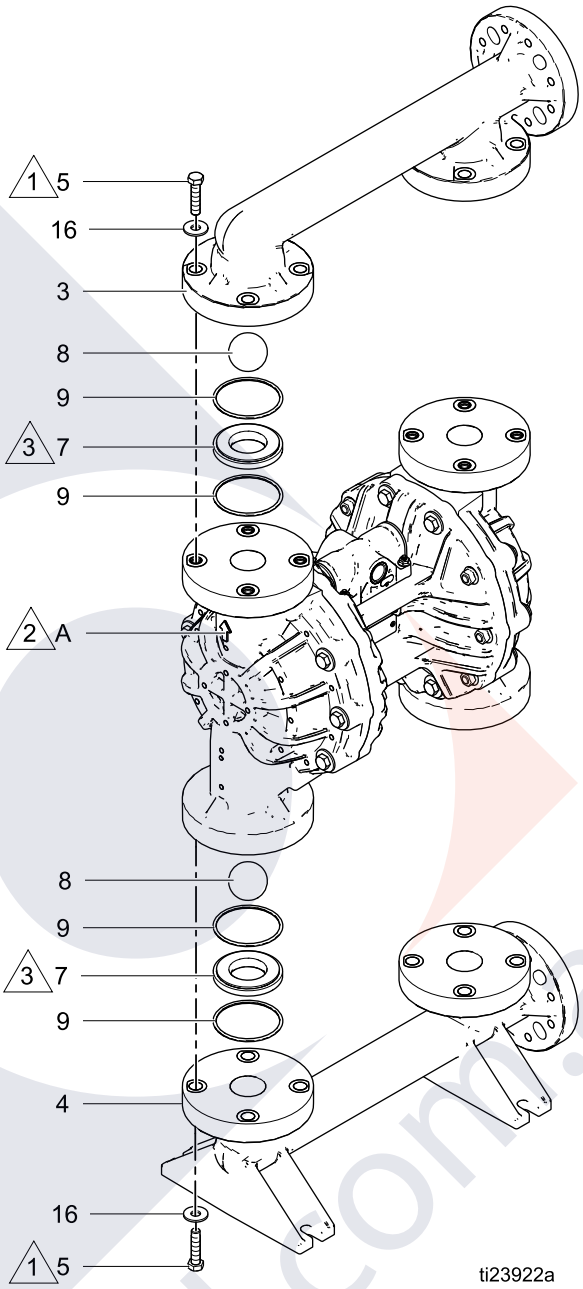


Figure 1 Check valve assembly

1 Torque to 190 to 200 in-lb (21 to 25 N·m). Follow torque sequence. See Torque Instructions, page 18.

2 Arrow (A) must point toward outlet manifold

3 The chamfered side of the seat must face the ball.

Diaphragm and Center Section Repair

NOTE: Diaphragm kits are available in a range of materials and styles. See pages 28 – 29. A Center Rebuild Kit also is available. See page 23. Parts included in the Center Rebuild Kit are marked with an *. For best results, use all kit parts.

Disassemble the Diaphragm and Center Section

1. Follow the Pressure Relief Procedure, page 10.
2. Remove the manifolds and disassemble the ball check valves as explained in Check Valve Repair, page 13.

   NOTE: You may wish to remove the inner fluid cover bolts (5) as you remove each manifold, for convenience.

3. **Overmolded Diaphragms (PO models)**

   a. Orient the pump so one of the fluid covers (2) faces up. Use a 17 mm socket wrench to remove the fluid cover bolts (5, 6), then pull the fluid cover up off the pump.

   b. The exposed diaphragm (12) will screw off by hand. The shaft will either release and come off with this diaphragm, or remain attached to the other diaphragm. If the diaphragm shaft bolt (14) remains attached to the shaft (108), remove it. Remove the air side diaphragm plate (11) and washer (17).

   c. Turn the pump over and remove the other fluid cover. Remove the diaphragm (and the shaft, if necessary).

   d. If the shaft is still attached to either diaphragm, grasp the diaphragm firmly and use a wrench on the flats of the shaft to remove. Also remove the air side diaphragm plate (11) and washer (17). Continue with Step 5.

4. **All Other Diaphragms**

   a. Orient the pump so one of the fluid covers faces up. Use a 17 mm socket wrench to remove the fluid cover screws (5, 6), then pull the fluid cover (2) up off the pump. Turn the pump over and remove the other fluid cover.

   b. Hold the hex of one fluid side diaphragm plate (15) with a 1–1/2 socket or box end wrench. Use another wrench (same size) on the hex of the other plate to remove. Then remove all parts of each diaphragm assembly.

5. Inspect the diaphragm shaft (108) for wear or scratches. If it is damaged, inspect the bearings (107) in place. If they are damaged, use a bearing puller to remove them.

   NOTE: Do not remove undamaged bearings.

6. Use an o-ring pick to remove the u-cup packings (106) from the center housing. Bearings (107) can remain in place.
7. If necessary, use a socket wrench to remove the pilot valves (111).
8. Remove the pilot valve cartridges only if necessary due to a known or suspected problem. **After removing pilot valves,** use a hex to remove the cartridges (109), then remove cartridge o-rings (110). If stripped, use two screwdrivers to screw out the cartridge.

   NOTE: Do not remove undamaged pilot valve cartridges.

goind.com.au

Reassemble the Diaphragm and Center Section

Follow all notes in the illustration. These notes contain **important** information.

NOTE: Apply lithium-based grease whenever instructed to grease.

1. Clean all parts and inspect for wear or damage. Replace parts as needed.
2. If removed, grease and install the new pilot valve cartridges (109), cartridge o-rings (110), and retaining rings (113).

   NOTE: Cartridges (109) *must* be installed before pilot valves (111).
3. Grease and install the pilot valves (111). Torque to 20-25 in.-lb (2-3 N•m), at 110 rpm. Do not over-torque.
4. Grease and install the diaphragm shaft u-cup packings (106) so the lips face **out** of the housing.
5. If removed, insert the new bearings (107) into the center housing. Use a press or a block and rubber mallet to press-fit the bearing so it is flat with the surface of the center housing.
6. **Overmolded Diaphragms (PO)**

   a. Clamp the shaft flats in a vise.

   b. If diaphragm setscrew comes loose or is replaced, apply permanent (red) thread locker to diaphragm side threads. Screw into diaphragm until tight.

   c. Assemble the air side plate (11) and washer (17) onto the diaphragm. The rounded side of the plate must face the diaphragm.

   d. Apply primer and medium-strength (blue) thread locker to the threads of the diaphragm assembly. Screw the assembly into the shaft as tight as possible by hand.

   e. Grease the shaft u-cups (106*) and the length and ends of the diaphragm shaft (108*). Slide the shaft into the housing.

   f. Reattach one fluid cover (3). Arrow (A) must point toward the air valve. See Torque Instructions, page 18.

   g. Repeat Steps b-d for the other diaphragm assembly and install on the exposed end of the shaft.

   h. Tighten by hand as much as possible. Go to Step 8.
7. **All Other Diaphragms**

   a. Assemble the diaphragm (12), the backup diaphragm (13, if present), the air side diaphragm plate (11), and the washer (17) on the fluid side plate (10) exactly as shown.

   b. Apply primer and medium-strength (blue) thread locker to the threads of the screw on the fluid side plate. Screw the assembly into the shaft hand-tight.

   c. Grease the shaft u-cups (106*) and the length and ends of the diaphragm shaft (108*). Slide the shaft into the housing.

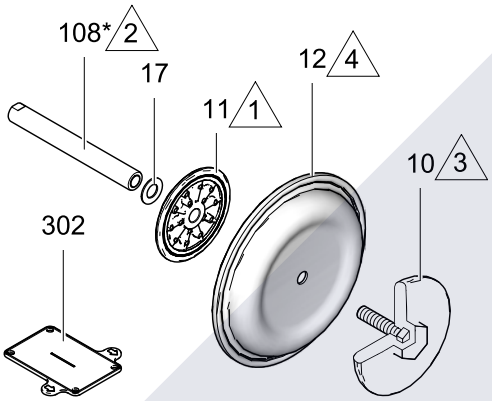
   d. Repeat for the other diaphragm assembly and install on the exposed end of the shaft.

   e. Hold one of the plates with a wrench, and torque the other plate to 65–70 ft-lb (88–95 N•m) at 100 rpm maximum. Do not over-torque.

   f. Reattach one fluid cover (3). Arrow (A) must point toward the air valve. See Torque Instructions, page 18.

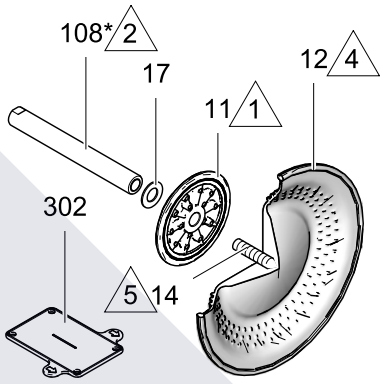
goind.com.au

SP and FK Models



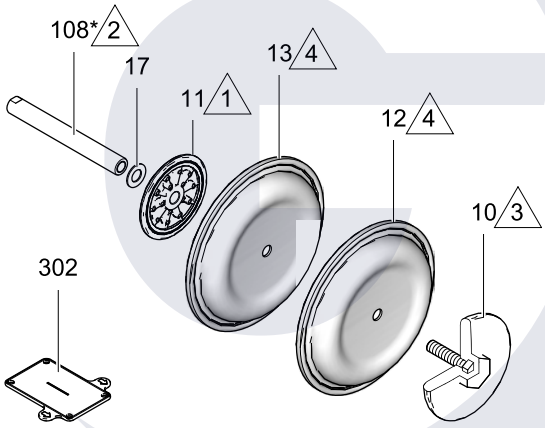
ti24028a

PO Models



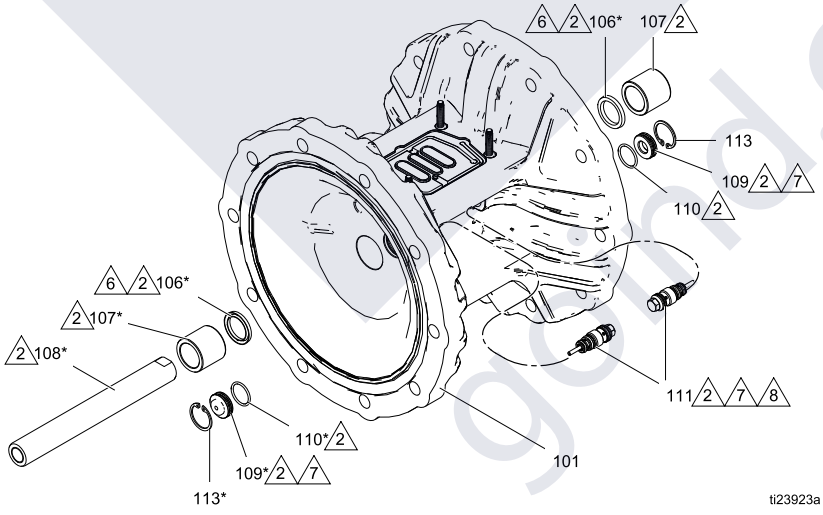
ti24029a

PT Models



ti24027a

1. Rounded side faces diaphragm
2. Apply lithium based grease.
3. Apply primer and medium-strength (blue) thread locker. Torque to 65-70 ft-lb (88–95 N•m).
4. AIR SIDE markings on diaphragm must face center housing.
5. If screw comes loose or is replaced, apply permanent (red) thread locker to diaphragm side threads. Apply primer and medium-strength (blue) thread locker to shaft side threads.
6. Lips must face out of housing.
7. Cartridges (109) must be installed before pilot valves (111).
8. Torque to 20-25 in.-lb (2-3 N•m).



ti23923a

8. To ensure proper seating and extend diaphragm life, apply air pressure to the pump prior to attaching the second fluid cover.

   a. Place the supplied tool (302) where the air valve gasket (105) normally goes. Arrows (A) must face toward the fluid cover that is already attached.

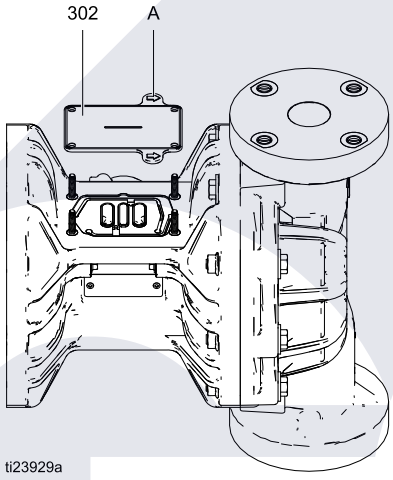


Figure 2 Fluid cover tool

   b. Reattach the air valve.

   c. Supply a minimum of 20 psi (0.14 MPa, 1.4 bar) air pressure to the air valve. Shop air may be used. The diaphragm will shift so the second fluid cover will seat properly. Keep air pressure on until the second fluid cover is attached.

   d. Attach the second fluid cover (3). See Torque Instructions, page 18.

   e. Remove the air valve and the tool (302), replace the gasket (105), and reattach the air valve. See Torque Instructions, page 18.

      NOTE: If you are replacing the diaphragms but not the air valve, you must remove the air valve and gasket, put the tool in place of the gasket, and put the air valve back on to get the air pressure needed for proper installation of the second fluid cover. Remember to remove the tool and replace the gasket when finished.

   f. Reassemble the ball check valves and manifolds as explained in Check Valve Repair, page 13.

goind.com.au

Torque Instructions

If fluid cover or manifold fasteners have been loosened, it is important to torque them using the following procedure to improve sealing.

NOTE: Fluid cover and manifold fasteners have a thread-locking adhesive patch applied to the threads. If this patch is excessively worn, the fasteners may loosen during operation. Replace screws with new ones or apply medium-strength (blue) Loctite or equivalent to the threads.

NOTE: Always completely torque fluid covers before torquing manifolds.

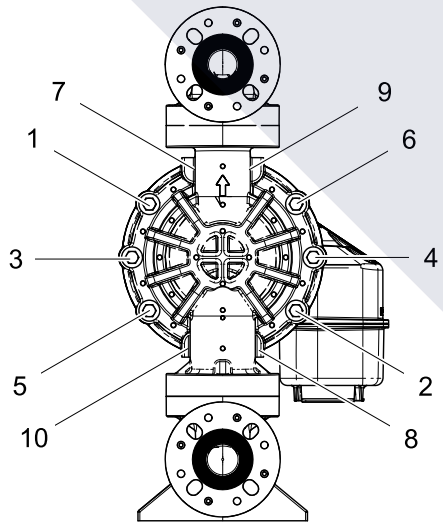
1. Start all fluid cover screws a few turns. Then, turn down each screw just until head contacts cover.
2. Turn each screw by 1/2 turn or less working in a crisscross pattern to specified torque.
3. Repeat for manifolds.

   Fluid cover and manifold fasteners: 190 to 220 in-lb (21 to 25 Nm)
4. Retorque the air valve fasteners in a crisscross pattern to the specified torque.

   Air valve fasteners: 45 to 55 in-lb (5 to 6 Nm)
5. Retorque the pilot valves to the specified torque. **Do not overtorque.**

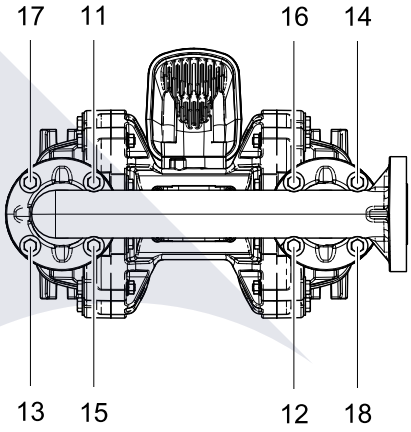
   Pilot valves: 20 to 25 in-lb (2 to 3 Nm)

Fluid Cover Screws



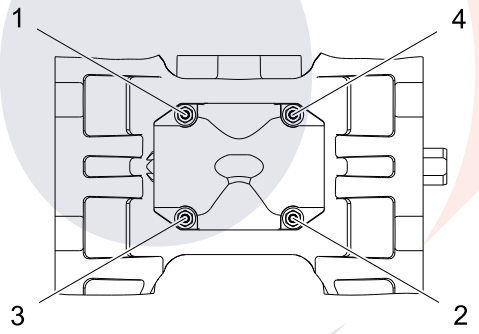
ti22752a

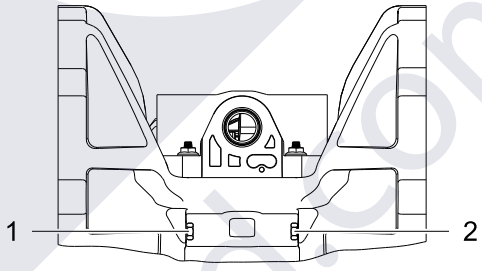
Inlet and Outlet Manifold Screws



ti22753a

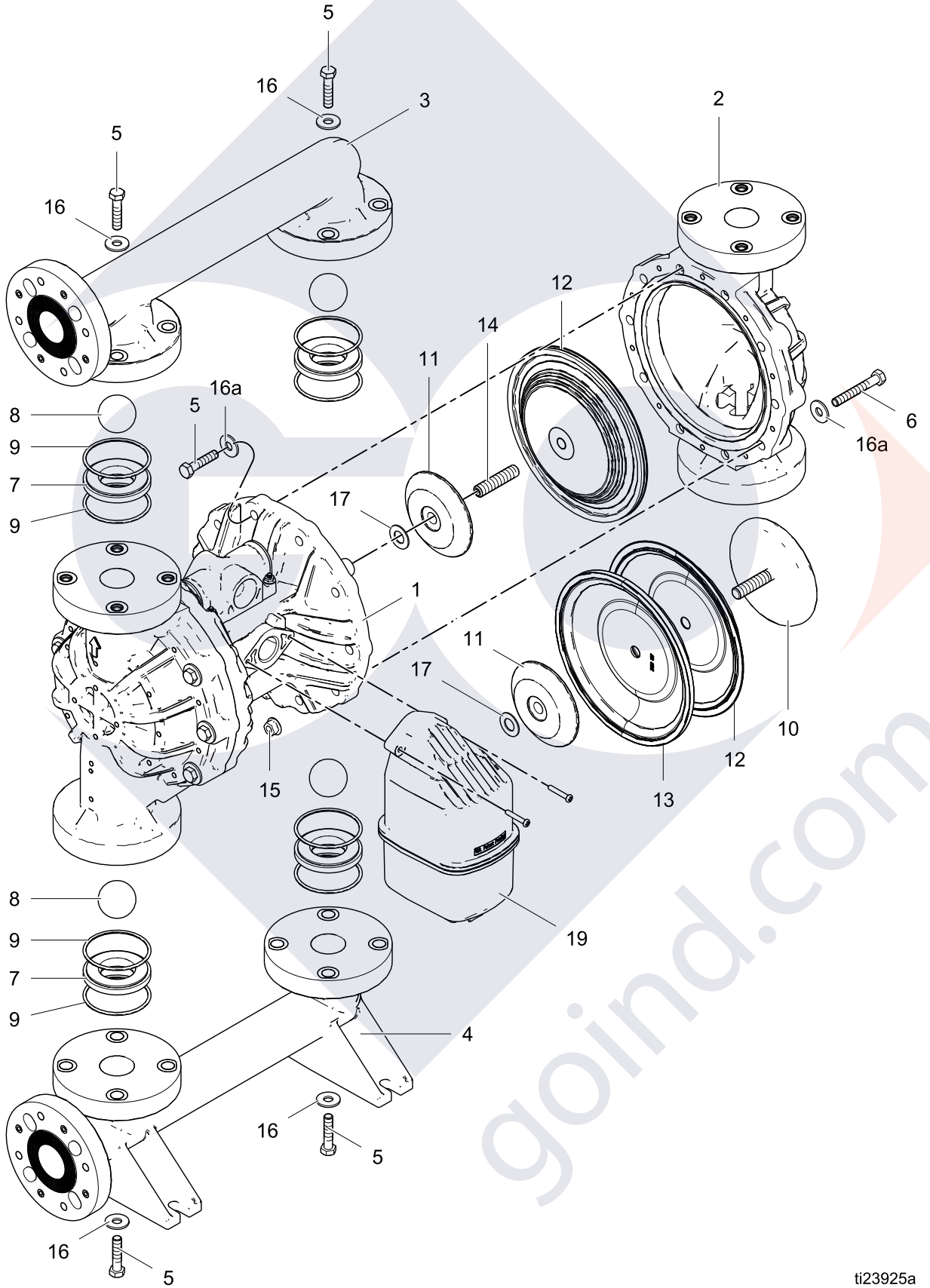
Air Valve Screws and Pilot Valves





ti21912a

Parts



goind.com.au

ti23925a

Parts/Kits Quick Reference

Use this table as a quick reference for parts/kits. Go to the pages indicated in the table for a full description of kit contents.

Ref.	Part/Kit	Description	Qty.
1	24X348	Center Housing Kit; Polypropylene	1
102	24B773	Air Valve; *see page 24*	1
2		Fluid Cover Kits; *see page 26*	2
	24W210	Polypropylene	
	24W216	PVDF	
3		Outlet Manifold Kits; *see page 26*	1
	24W232	Polypropylene, center flange	
	24W214	Polypropylene, end flange	
	24W265	PVDF, end flange	
4		Inlet Manifold Kits; *see page 26*	1
	24W264	Polypropylene, center flange	
	24W215	Polypropylene, end flange	
	24W266	PVDF, end flange	
5	24W213	Manifold Fastener Kit; *see page 26*	2
6	24W211	Fluid Cover Fastener Kit; *see page 26*	2
7		Seats; 4-pack, *see page 27*	1
	24W225	Polypropylene	
	24W223	PVDF	
	24W226	Santoprene	
	24W227	Stainless Steel	
8		BALLS, valve, check; 4–pack; *see page 27*	1
	24W230	FKM	
	24W228	PTFE	
	24W229	Santoprene	
9	24W212	O-RING, seat; 8–pack, *see page 30*	1

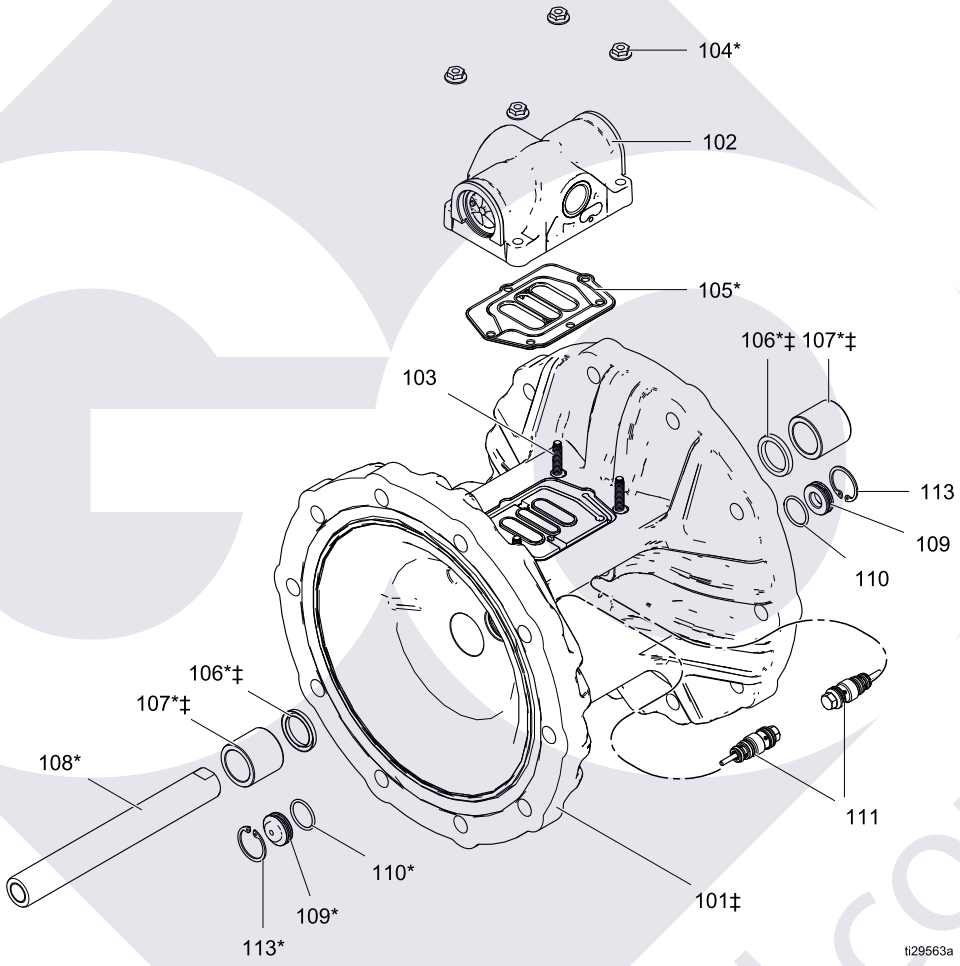
Ref.	Part/Kit	Description	Qty.
10		Fluid Side Diaphragm Plate; *see page 29*	2
	24W221	Polypropylene	
	24W222	PVDF	
11	24W231	Air Side Diaphragm Plate; includes washer (Ref. 17); *see page 29*	2
12		Diaphragm Kits; 2–pack, *see pages 28 to 29*	1
	24W219	FKM Fluoroelastomer, 1–piece, bolt-through	
	24W218	Santoprene , 1–piece, bolt-through	
	24W217	PTFE/EPDM Overmolded; includes screw (Ref. 14)	
	24W220	PTFE/Santoprene 2-Piece, bolt-through; includes backup diaphragm (Ref. 13)	
13	— — —	DIAPHRAGM, backup, Santoprene	1
14	— — —	SCREW, set; included with PO diaphragms (Ref. 12).	
15	— — —	NUT, included with Ref. 6	16
16	— — —	WASHER, 0.16 (4 mm) thick, black	16
16a	— — —	WASHER, 0.09 (2.4 mm) thick	20
17	— — —	WASHER, included with Ref. 11	1
18	188621▲	LABEL, warning	1
19	24P932	Muffler; includes o-ring and mounting hardware	1
20	16X034▲	TAG, torque instructions	1
21	198382▲	LABEL, warning, multilingual	1

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

Center Section

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT



Ref	Description	Qty	Ref	Description	Qty
101‡	HOUSING, center	1	108*	SHAFT, center	1
102	VALVE, air, *see page 24*	1	109*	CARTRIDGE, pilot receiver	2
103	SCREW, hi-lo stud	4	110*	O-RING, Buna-N	2
104*	NUT, hex, flange, serrated	4	111*	VALVE, pilot, assembly	2
105*	GASKET, air valve	1	112*	LUBRICANT	1
106*‡	U-CUP, center shaft	2	113*	RING, retaining	2
107*‡	BEARING, shaft	2			

* *Included in Center Section Rebuild Kit.*

‡ *Included in Center Housing Kit*

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	**P01A**	P1	PP	PT	FK	PT

Center Section Rebuild Kits (*)	
P01A with 2–Piece diaphragms (**PT**) or standard diaphragms (**SP, FK**)	24W206
PO1G with overmolded diaphragms (**PO**)	24W207

Kits include:

- 1 center shaft (108)
- 4 hex nuts, serrated (104)
- 2 center shaft bearings (107)
- 2 center shaft u-cups (106)
- 1 air valve gasket (105)
- 8 seat o-rings (9)
- 2 pilot valves (111)
- 2 pilot valve receiver cartridges (109)
- 2 retaining rings (113)
- 2 receiver cartridge o-rings (110)
- 1 grease packet (112)

Pilot Valve Assembly Kit	
All models	24V823

Kit includes:

- 2 pilot valves (111)
- 2 pilot valve receiver cartridges (109)
- 2 receiver cartridge o-rings (110)
- 1 grease packet (112)
- 2 retaining rings (113)

Center Shaft Kits (*)	
P01A with 2–Piece diaphragms (**PT**) or standard diaphragms (**SP, FK**)	24W208
PO1G with overmolded diaphragms (**PO**)	24W209

Kits include:

- 2 center shaft u-cups (106)
- 1 center shaft (108)
- 2 center shaft bearings (107)
- 1 grease packet (112)

Center Shaft Bearing Kit	
All models	24B658

Kit includes:

- 2 center shaft u-cups (106)
- 2 center shaft bearings (107)
- 1 grease packet (112)

Center Housing Kit (‡)	
All models	24X348

Kit includes:

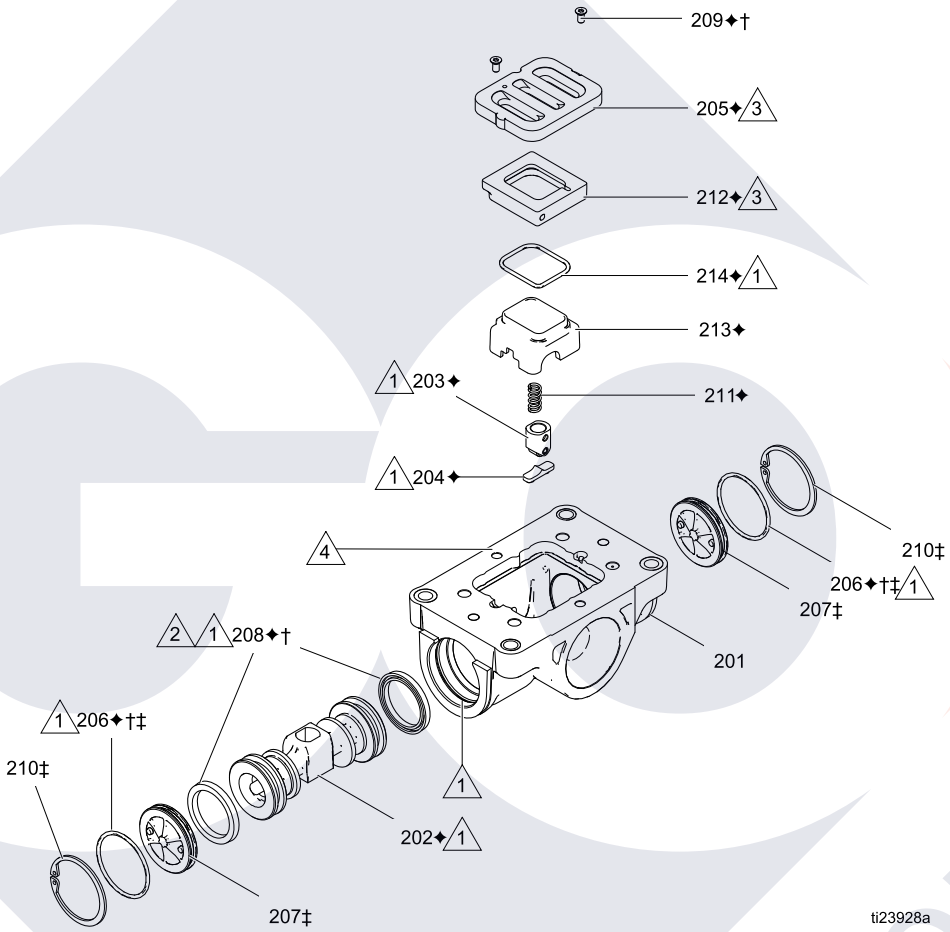
- 2 center shaft u-cups (106)
- 2 center shaft bearings (107)
- 1 center housing (101)

going.com.au

Air Valve

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT



Ref	Description	Qty
201	HOUSING, not sold separately	1
202✦	PISTON	1
203✦	PISTON ASSEMBLY, detent	1
204✦	CAM, detent	1
205✦	PLATE, air valve	1
206✦†‡	O-RING	2
207‡	CAP, end	2
208✦†	U-CUP	2
209✦†	SCREW, #4, thread forming	2
210‡	RETAINING RING	2
211✦	SPRING, detent	1
212✦	BASE, cup	1
213✦	CUP	1
214✦	O-RING, cup	1

✦ *Parts included in Air Valve Repair Kit.*

‡ *Parts included in Air Valve End Cap Kit.*

† *Parts included in Air Valve Seals Kit..*

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	**P01A**	P1	PP	PT	FK	PT

† Air Valve Seals Kit	
All models	24B769

Kit includes:

- 2 end cap o-rings (206)
- 2 piston u-cups (208)
- 2 screws, M3, shorter (not used)
- 2 screws, #4, longer (209)
- 1 air valve gasket (105)
- 1 grease packet (112)
- 1 solenoid release button o-ring (not shown), used only with optional DataTrak kit.

✦ Air Valve Repair Kit	
All models	24B768

Kit includes:

- 1 air valve piston (202)
- 1 detent piston assembly (203)
- 1 detent cam (204)
- 1 air valve plate (205)
- 2 end cap o-rings (206)
- 2 piston u-cups (208)
- 2 screws, M3, shorter (not used)
- 2 screws, #4, longer (209)
- 1 detent spring (211)
- 1 air cup base (212)
- 1 air cup (213)
- 1 air cup o-ring (214)
- 1 solenoid release button o-ring (not shown), used only with optional DataTrak kit.
- 1 air valve gasket (105)
- 1 grease packet (112)

Air Valve Replacement Kit	
All models	24B773

Kits include:

- 1 air valve assembly (102)
- 1 air valve gasket (105)
- 4 hex nuts (104)

‡ Air Valve End Cap Kit	
All models	24C053

Kit includes:

- 2 end caps (207)
- 2 retaining rings (210)
- 2 o-rings (206)
- 1 grease packet (112)

NOTE: If you have the optional DataTrak on your pump, see Accessories, page 31, for Air Valve Replacement kits.

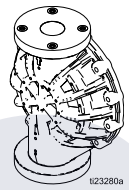
goind.com.au

Fluid Covers and Manifolds

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

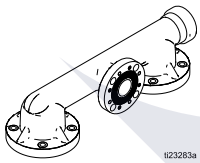
Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT

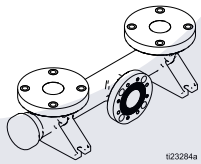
Fluid Cover Kits			
Polypropylene		PVDF	
P1, P2	24W210	F2	24W216



Kits include 1 fluid cover (2)

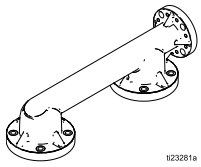
Center Manifold Kits (Polypropylene Only)		
P1	Outlet (3)	Inlet (4)
	24W232	24W264





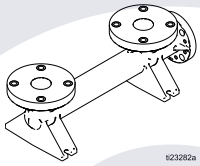
Kits include 1 manifold, 8 washers (16)

End Outlet Manifold Kits			
Polypropylene		PVDF	
P2	24W214	F2	24W265



Kits include 1 manifold (3), 8 washers (16)

End Inlet Manifold Kits			
Polypropylene		PVDF	
P2	24W215	F2	24W266



Kits include 1 manifold (4), 8 washers (16)

Fluid Cover Fastener Kits	
All Models	24W211

Kit includes:

- 6 bolts (6), hex head, stainless steel, M10 x 1.5 x 70 mm (2.76 in)
- 4 bolts (5), hex head, stainless steel, M10 x 1.5 x 45 mm (1.77 in.)
- 12 washers (16a)
- 6 nuts (15), hex, flange, M10

Manifold Fastener Kits	
All Models	24W213

Kit includes:

- 8 bolts (5), hex head, stainless steel, M10 x 1.5 x 45 mm (1.77 in.)
- 8 washers (16)

goind.com.au

Seats and Check Balls

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT

Seat Kits	
PP	24W225
SS	24W227
SP	24W226
PV	24W223

Kits include:

- 4 seats (7), material indicated in table.

NOTE: O-rings are sold separately. See **Manifold Seals, page 30.**

Ball Kits	
FK	D0B080
PT	D0B010
SP	D0B060

Kits include:

- 4 balls (8), material indicated in table.

NOTE: O-rings are sold separately. See **Manifold Seals, page 30.**

goind.com.au

Diaphragms

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

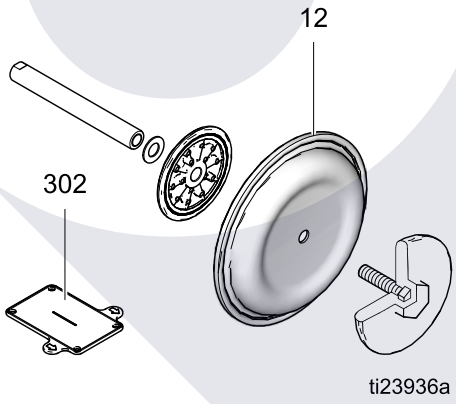
Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT

1–Piece Bolt-Through Diaphragm Kits	
SP	24W218
FK	24W219

Kits include:

- 2 diaphragms (12), material indicated in table
- 1 diaphragm install tool (302)
- 1 packet anaerobic adhesive

NOTE: Fluid and Air plates are sold separately. The shaft is part of the Center Section Rebuild Kit (24W206) or the Center Shaft Kit (24W208). See Center Section.

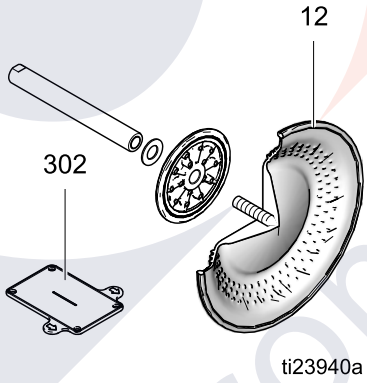


Overmolded Diaphragm Kit	
PO	24W217

Kits include:

- 2 overmolded diaphragms (12), material indicated in table.
- 2 diaphragm set screws, stainless steel (14)
- 1 diaphragm install tool (302)
- 1 packet anaerobic adhesive

NOTE: Air plates are sold separately. The shaft is part of the Center Section Rebuild Kit (24W207) or the Center Shaft Kit (24W209). See Center Section.



goind.com.au

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

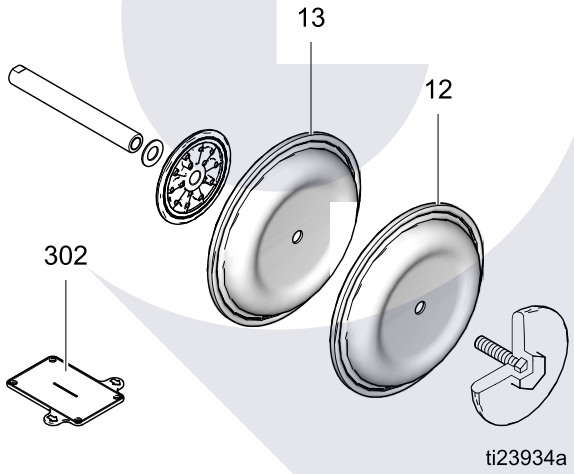
Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	**FK**	PT

2-Piece Bolt-Through Diaphragm Kit	
PT	24W220

Kits include:

- 2 diaphragms (12), PTFE
- 2 backup diaphragms (13), Santoprene
- 1 diaphragm install tool (302)
- 1 packet anaerobic adhesive

NOTE: Fluid and Air plates are sold separately. The shaft is part of the Center Section Rebuild Kit (24W206) or the Center Shaft Kit (24W208). See Center Section.



Fluid Plate Kits	
P1, P2	24W221
F2	24W222

Kits include:

- 1 fluid side diaphragm plate (10), includes shaft bolt
- 1 packet anaerobic adhesive

Air Plate Kits	
All Models	24W231

Kits include:

- 1 air side plate (11)
- 1 washer (17)

goind.com.au

Seats, Check Balls, and Diaphragm Kits

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT

Kit	Part	Qty.
25A864 (PP, PT, PT)	SEAT, polypropylene	4
	BALL, PTFE	4
	O-RING, PTFE	8
	DIAPHRAGM, PTFE	2
	DIAPHRAGM, Santoprene	2
	ADHESIVE	1
	TOOL, install	1
25A865 (SP, SP,SP)	SEAT, Santoprene	4
	BALL, Santoprene	4
	O-RING, PTFE	8
	ADHESIVE	1
	DIAPHRAGM, Santoprene	2
	TOOL, install	1

Kit	Part	Qty.
25A866 (PP, PT, PO)	SEAT, polypropylene	4
	BALL, PTFE	4
	SETSCREW	2
	O-RING, PTFE	8
	ADHESIVE	2
	DIAPHRAGM, overmolded, PTFE	2
	TOOL, install	1

goind.com.au

Manifold Seals

Sample Configuration Number: 15120P-PP01AP1PPPTFKPT

Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals
15120	P	P	P01A	P1	PP	PT	FK	PT

Manifold O-Ring Kits	
All Models	24W212

Kits include:

- 8 o-rings (9), PTFE

goind.com.au

Accessories

Muffler 111897
Legacy or remote exhaust muffler option.

NOTE: See DataTrak Manual 313840 for:

- Pulse Count Conversion Kit 24B794
- DataTrak Conversion Kits 24B784
- All other data monitoring parts, including reed switches and solenoids.

Replacement Air Valve Kit 24B774, Polypropylene, DataTrak Compatible
Kit includes nuts, valve, and gasket.

goind.com.au

Technical Data

Husky 15120 Diaphragm Pump		
	US	**Metric**
Maximum fluid working pressure	125 psi	0.86 MPa, 8.6 bar
Air pressure operating range	20 to 125 psi	0.14 to 0.86 MPa, 1.4 to 8.6 bar
Air inlet size	1/2 in. (npt(f)	
Air exhaust size	1 in.	
Fluid inlet and outlet size (ANSI/DIN flange)	1.5 in	38 mm
Maximum suction lift (reduced if balls don't seat well due to damaged balls or seats, lightweight balls, or extreme speed of cycling)	Wet: 31 ft Dry: 16 ft	Wet: 9.4 m Dry: 4.9 m
Maximum size pumpable solids	1/4 in.	6.3 mm
Minimum ambient air temperature for operation and storage. **NOTE:** Exposure to extreme low temperatures may result in damage to plastic parts.	32° F	0° C
Air Consumption	43 scfm at 70 psi, 60 gpm	1.2 m^3/min at 0.48 MPa, 4.8 bar, 227 lpm
Maximum Air Consumption	85 scfm	2.4 m^3/min
Noise (dBa) Sound power measured per ISO-9614–2. Sound pressure was tested 3.28 ft (1 m) from equipment.		
Sound Power	90.9 at 70 psi and 50 cpm 102.1 at 100 psi and full flow	90.9 at 4.8 bar and 50 cpm 102.1 at 7.0 bar and full flow
Sound Pressure	83.6 at 70 psi and 50 cpm 95.7 at 100 psi and full flow	83.6 at 4.8 bar and 50 cpm 95.7 at 7.0 bar and full flow
Fluid flow per cycle		
1–piece bolt-through diaphragms	0.63 gallons	2.4 liters
2–piece bolt-through diaphragms	0.66 gallons	2.5 liters
Overmolded diaphragms	0.59 gallons	2.3 liters
Maximum free-flow delivery		
1–piece bolt-through diaphragms	122 gpm	462 lpm
2–piece bolt-through diaphragms	120 gpm	454 lpm
Overmolded diaphragms	115 gpm	435 lpm

Maximum pump speed		
1–piece bolt-through diaphragms	192 cycles per minute	
2–piece bolt-through diaphragms	183 cycles per minute	
Overmolded diaphragms	195 cycles per minute	
Weight		
Polypropylene	57 lb	25.9 kg
PVDF	74 lb	33.6 kg
Wetted Parts		
Wetted parts include material(s) chosen for seat, ball, and diaphragm options, **plus the pump's material of construction: Polypropylene or PVDF**		
Non-wetted external parts	stainless steel, polypropylene	

Fluid Temperature Range

Diaphragm/Ball/Seat Material	US		Metric	
	Polypropylene Pump	PVDF Pump	Polypropylene Pump	PVDF Pump
FKM Fluoroelastomer	32° to 150°F	32° to 225°F	0° to 66°C	0° to 107°C
Polypropylene	32° to 150°F	32° to 150°F	0° to 66°C	0° to 66°C
PTFE overmolded diaphragm	32° to 150°F	32° to 180°F	0° to 66°C	0° to 82°C
PTFE check balls	32° to 150°F	32° to 220°F	0° to 66°C	0° to 104°C
PVDF	32° to 150°F	32° to 225°F	0° to 66°C	0° to 107°C
Santoprene	32° to 150°F	32° to 180°F	0° to 66°C	0° to 82°C
2–piece PTFE/Santoprene diaphragm	32° to 150°F	32° to 180°F	0° to 66°C	0° to 82°C

goind.com.au

Graco Standard Husky Pump 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

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: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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.
Original Instructions. This manual contains English. MM 3A2888

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA
Copyright 2014, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com