

# Stainless Steel 1000cc Lower

311716C  
ENG

Designed for low to medium pressure, medium volume circulation of finishing materials.  
For professional use only.

Not approved to European explosive atmosphere requirements.



### Important Safety Instructions

Read all warnings and instructions in your 1000cc Dura-Flo Pump manual 311833. Save these instructions.

### Model 253596, Series A

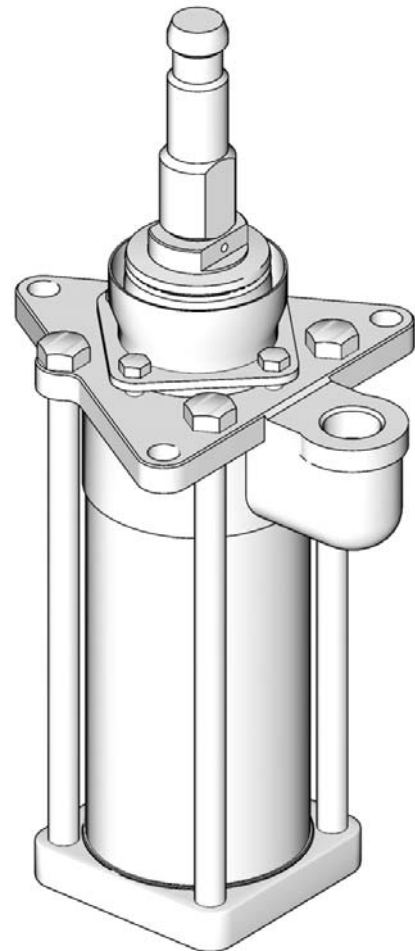
Stainless Steel

660 psi (4.55 MPa, 45.5 bar) Maximum Working Pressure

Patent Pending

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# 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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <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 all equipment in the 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> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <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. For complete information about your material, request MSDS forms from distributor or retailer.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>

 **WARNING**
**MOVING PARTS HAZARD**

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.

**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 MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Always wear impervious gloves when spraying or cleaning equipment.

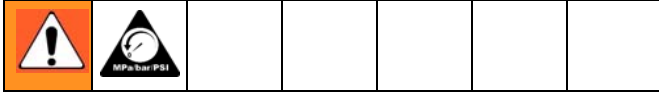
**PERSONAL PROTECTIVE EQUIPMENT**

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:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

# Operation

## Pressure Relief Procedure



1. Engage trigger lock.
2. *Air-Powered Pumps only:* Close the bleed-type master air valve.  
  
*Hydraulic-Powered Pumps only:* Close the hydraulic supply line valve first, then the return line valve.
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 spray 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.

### CAUTION

*Hydraulic-Powered Pumps only:* When shutting down the hydraulic system, always shut off the hydraulic supply line shutoff valve first, and then the return line shutoff valve to prevent overpressurizing the motor or its seals. When starting the hydraulic system, open the return line shutoff valve first.

# Repair



- To service the pump assembly, see manual 311833.
- To service the air motor, see manual 311238.

## Before you start

- Have all the necessary repair parts on hand. Recommended spare parts are shown in the parts list, for example (1†).
- A packing repair kit (207349) is available for the lower. Use all the new parts in the kit for the best results. Kit parts are indicated with an asterisk, for example, (8\*).
- Always replace the glands when replacing the packings, whether or not you use a repair kit.
- Use a compatible solvent to clean parts. Inspect parts for wear or damage and replace parts as needed. Scoring or irregular surfaces of the displacement rod or polished inner wall of the cylinder causes premature packing wear and leaking. Check these parts by rubbing a finger on the surface and by holding the parts up to the light at a slight angle.
- Use light, water-proof grease wherever lubrication is indicated.

## Disassembly



- Flush the pump, if possible. Relieve the pressure, see Pressure Relief Procedure on page 4.
- Disconnect the hoses from the lower and plug the ends to prevent fluid contamination.
- Remove the pump from its mounting and place it in a vise by clamping the intake valve housing (18).
- Disconnect the lower from the motor as explained in your separate pump manual.
- Pull the pump away from the motor.
- Remove the screws (5) from the packing retainer (2). Remove the packing retainer.
- Screw the tie bolts (4) out of the intake housing (18).
- Pull the outlet housing (19) off the cylinder (17†).
- Remove the bearing (8\*), female gland (12\*), v-packings (22\*), and male gland (11\*) from the outlet housing (19).
- Remove the displacement rod (1†) from the cylinder (17†). Remove the cylinder. Inspect the outer surface of the displacement rod and the inner surface of the cylinder for scoring or damage.
- Remove the intake valve housing (18) from the vise, remove the pin (6†), plate (16\*), and o-ring (21\*). Inspect the seat (14) in place.
- Place the displacement rod assembly in a vise, holding it by the flats. Use a 2-1/2 in. hex wrench to remove the valve seat (13). Remove the bearing (9\*), packing (10\*), plate (15\*), and o-ring (20\*). If the rod needs replacing, remove one cotter pin (3†) and pull the stop pin (7) out.
- Clean all parts thoroughly, replace worn or damaged parts. Lubricate all parts before reassembling.

## Reassembly

- One at a time, install the following parts in the outlet housing (19): the male gland (11\*), five PTFE v-packings (22\*) installed so the lips of the v-packings face down in the throat, the female gland (12\*), and the bearing (8\*). Maintain a 0.020-0.050 in. (0.508-1.27 mm) gap in the bearing seam. Install the packing retainer (2) and loosely install the screws (5).
- Place the displacement rod (1†) in a vise, holding it by the flats.
  - Install the stop pin (7) into the displacement rod (1†) and secure with the cotter pins (3†).
  - Place the packing (1†) and bearing (9\*) on the displacement rod.
  - Install the valve plate (15\*) into the displacement rod (1).

## Repair

- d. Place the o-ring (20\*) onto the valve seat (13).
  - e. Use a 2-1/2 in. hex wrench to install the valve seat (13) into the displacement rod (1†).
  - f. Remove the displacement rod assembly from the vise and set it aside.
3. Place the intake valve housing (18) in a vise.
    - a. Place the o-ring (21\*) around the intake valve housing (18).
    - b. Install the valve plate (16\*) rounded side up.
    - c. Install the pin (6†) in the housing (18).
    - d. Leave the intake valve housing (18) in the vise.
4. Place the cylinder (17†) on the intake valve housing (18).
  5. Lubricate the displacement rod assembly and slide it into the cylinder (17†).
  6. Place the o-ring (21\*) on the outlet housing (19). Set the outlet housing onto the cylinder (17†), aligning the four holes in the housing with the holes in the intake housing (18).
  7. Place the packing retainer (2) onto the cylinder.
  8. Install the tie bolts (4) through the outlet housing (19). Torque the bolts to 57-64 ft-lb (77-85 N•m).

See pump assembly manual 311833, for further information.

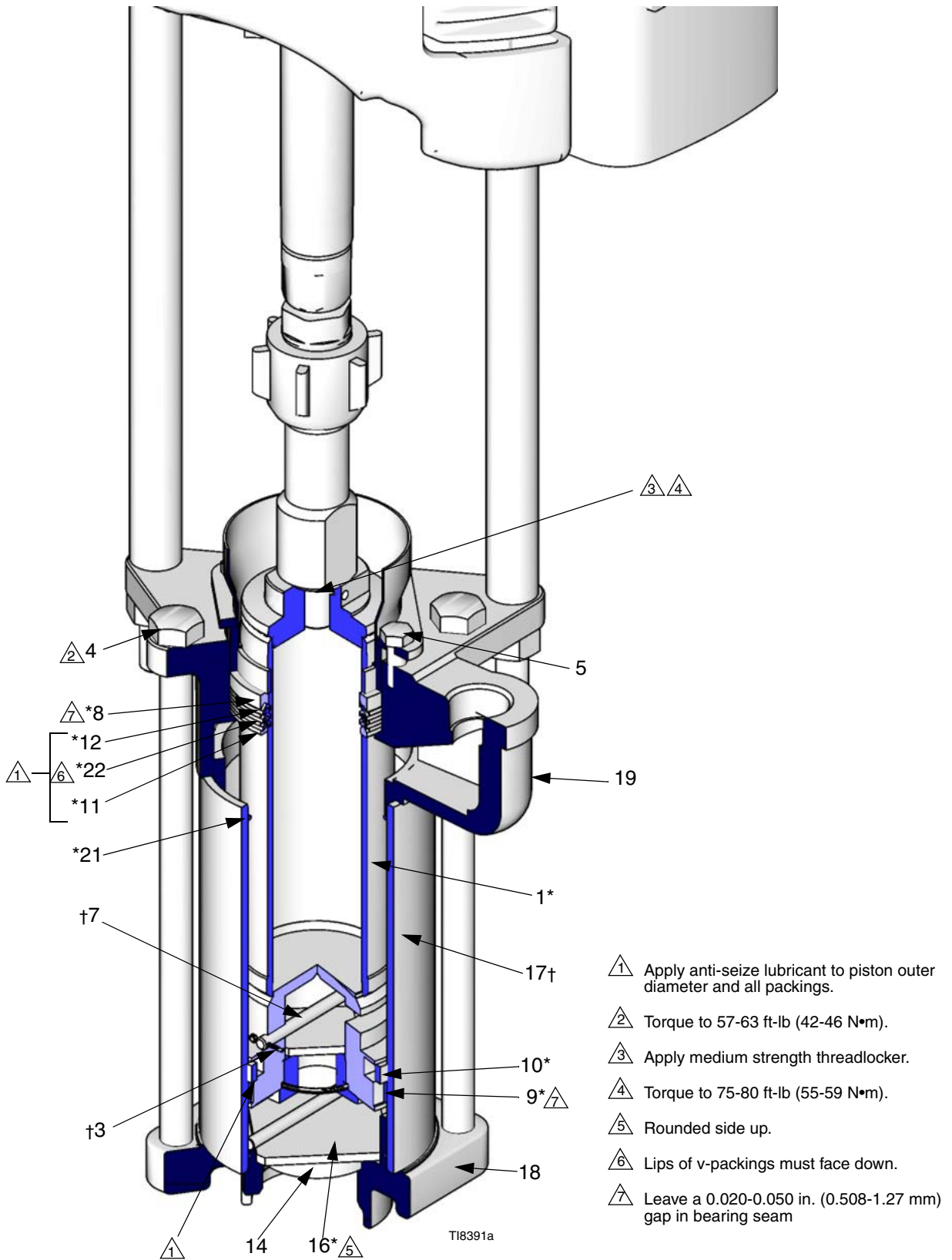
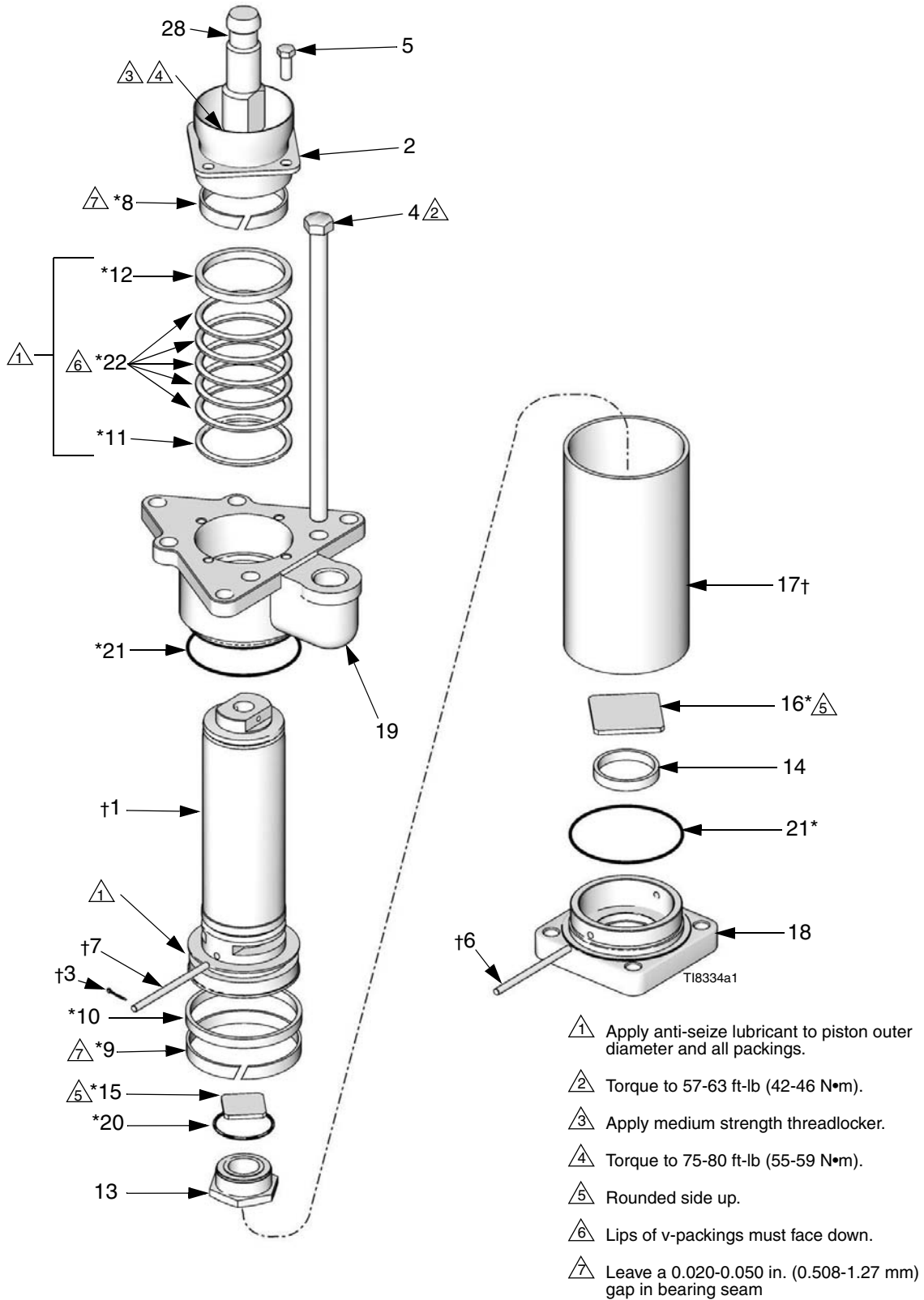


FIG. 1

# Parts





**Part 253596, Stainless Steel Lower**

Ref.	Part	Description	Qty
1†	206451	PISTON, displacement	1
2	207171	RETAINER, assy, bearing	1
3†	100063	PIN, cotter	2
4	102215	SCREW, cap, hex hd	4
5	102471	SCREW, cap, hex hd	4
6†	166053	PIN, str hdls	1
7	166054	PIN, str hdls	1
8*	166055	BEARING, shaft	1
9*	166056	BEARING, piston	1
10*	166057	SEAL, piston	1
11*	166061	GLAND, pkg male	1
12*	166062	GLAND, pkg female	1
13	166063	SEAT, valve	1
14	166064	SEAT, valve	1
15*	166065	PLATE, valve	1
16*	166066	PLATE, valve	1
17†	166067	CYLINDER, pump	1
18	166068	HOUSING, valve, intake	1
19	15J781	HOUSING, outlet, pump	1
20*	166073	PACKING, o-ring	1
21*	166074	PACKING, o-ring	2
22*	166075	V-PACKING, PTFE	5
23▲	172478	TAG, warning	1
28	15H773	ADAPTER	1

\* Included in Repair Kit 207349.

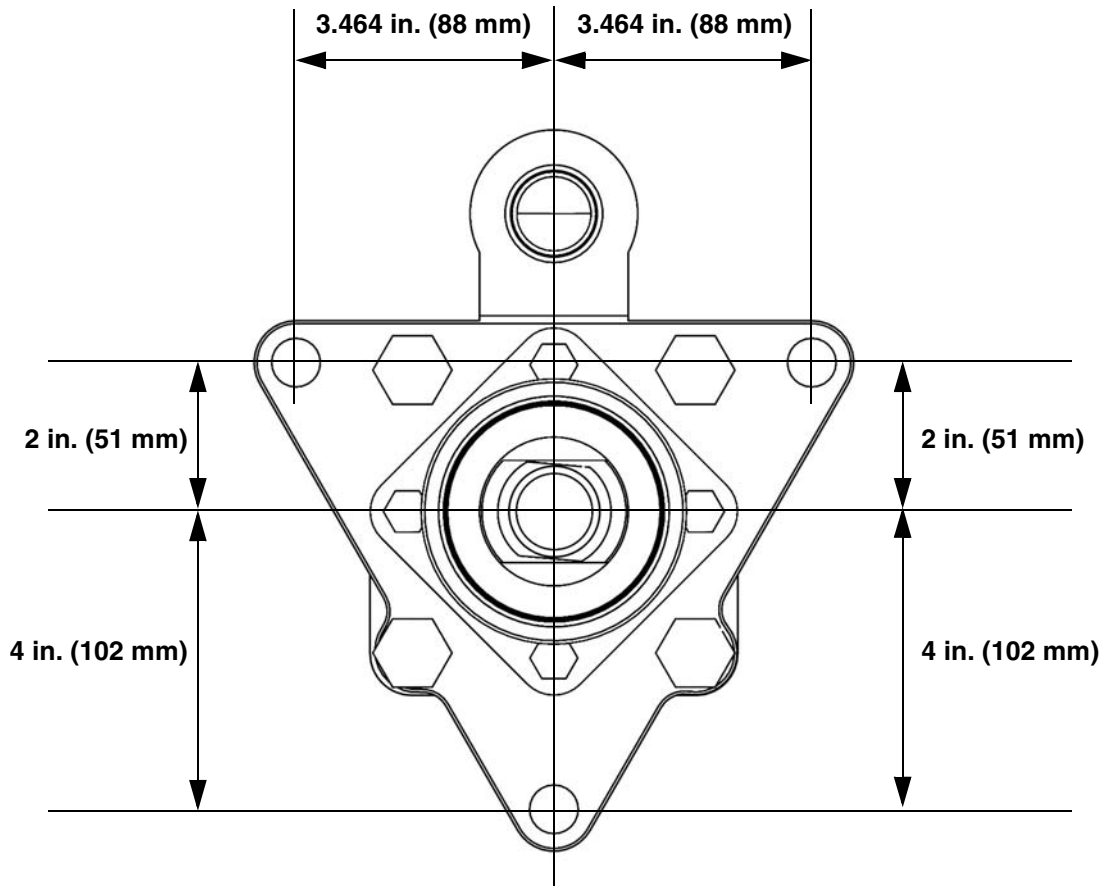
† Recommended spare parts. Keep these spare parts on hand to reduce down-time.

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

## Technical Data

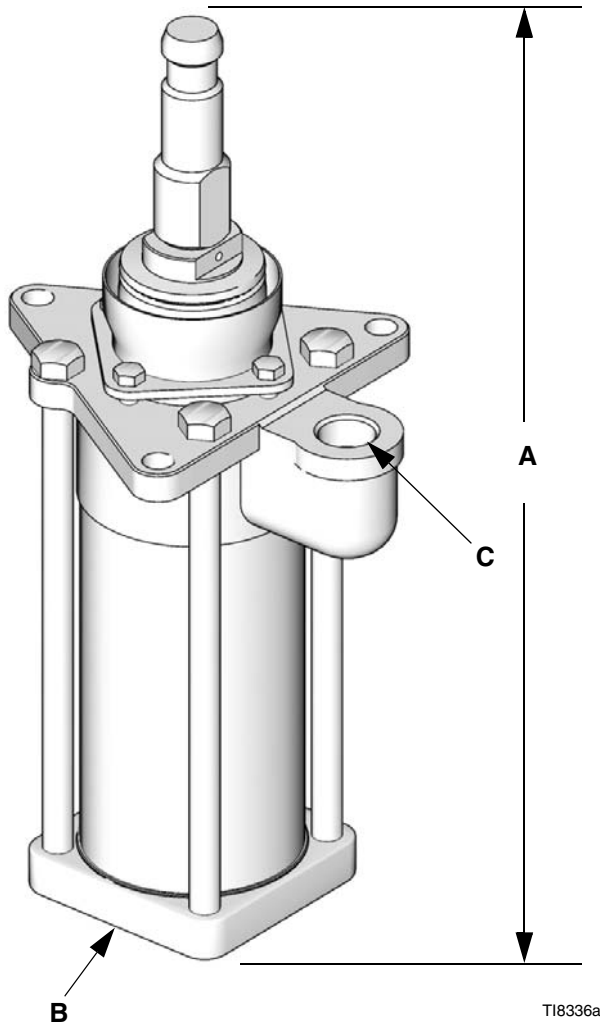
Maximum Fluid Working Pressure . . . . . 660 psi (4.55 MPa, 45.5 bar)  
Wetted parts. . . . . 303 and 304 Grades Stainless Steel, PTFE, Carbon-filled PTFE

## Outlet Housing Mounting Hole Layout



TI11491a

# Dimensions



<b>A</b> <b>(Height)</b> in. (mm)	<b>B</b> <b>(Inlet)</b>	<b>C</b> <b>(Outlet)</b>	<b>Weight</b> <b>(approx)</b> lb (kg)
18.5 (470)	2 in. npt(f)	1 in. npt(f)	50 (22.5)

# 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](http://www.graco.com).

**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.  
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Original instructions. This manual contains English. MM 311716

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