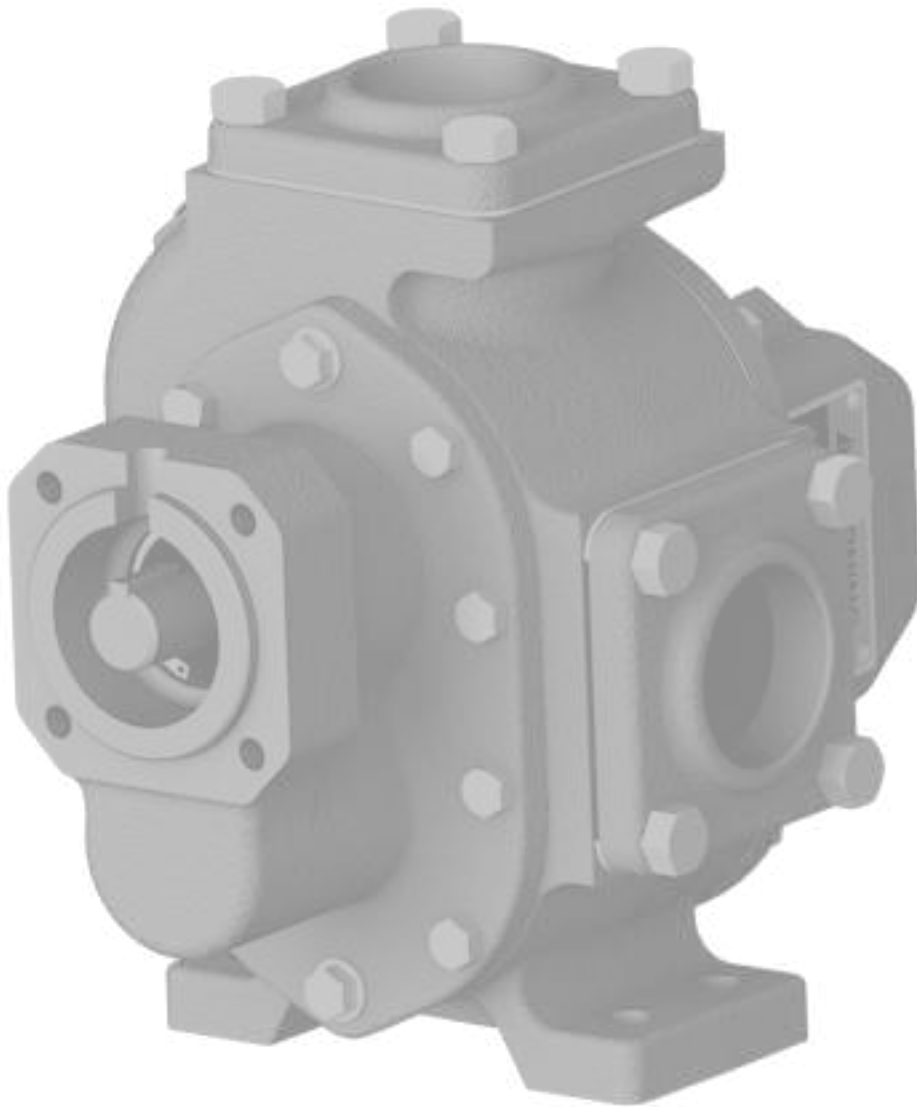


Installation and Operation Manual



G-Series Gear Pump

Models:
G125



Congratulations
on your new Paragon purchase

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Safety Notice

This manual is designed to be read to its entirety prior to installation or operation of this product.

Do NOT install or operate prior to reading this manual completely - injury or property damage can occur.

Use adequate protection and safety equipment while performing the steps indicated in this manual.

Protect against hazards involved during the installation and operation of this equipment.

Failure to read this manual completely or heed these warnings could result in serious bodily injury or loss of life.

For equipment covered specifically or indirectly in this operation manual, it is important that all personnel observe the appropriate safety precautions to minimize the chances of injury.

DO NOT....

- Attempt to install equipment with the truck engine running
- Allow the truck engine to be started while personnel are under the vehicle or working on any equipment
- Place any body part over any pneumatic (or hydraulic) leak or outlet while the equipment is in operation
- Engage or disengage driven equipment by hand from under the vehicle while the engine is running
- Use tools or equipment that are in poor or non-working condition
- Remove, obscure, cover, or paint over any warning labels

DO....

- Read and Understand all original equipment manufacturer's manuals prior to installation or operation of any equipment
- Follow all safety rules and regulations as they apply to the equipment provided
- Immobilize truck wheels with suitable chocks before working under the truck
- Block any raised equipment before working on or under the equipment
- Obtain proper training on tools and equipment that are required
- Ensure all tools and components are in good working condition
- Use all tools and equipment for its intended purpose only
- Repair any leaks promptly
- Remain a safe distance away from any moving components during operation

Warnings

 **DANGER**



Keep body and clothing away from drive shaft

SAFETY INSTRUCTIONS

1. Do not operate before reading the enclosed instruction manual.
2. Use adequate protection, wearing any safety equipment necessary to protect against the hazards involved in installation and operation of this equipment

 **WARNING**



HIGH PRESSURE OIL. May cause severe injury. disconnect power, lower load, and relieve pressure before servicing hydraulic system.

 **WARNING**



Do not touch hot surfaces

 **WARNING**




Keep body and clothing away from machine openings

 **WARNING**



Hearing and Eye Protection Required

NOTICE

 **WARNING:** Warning Instructions listed on this page must be reviewed by **ALL** operators.

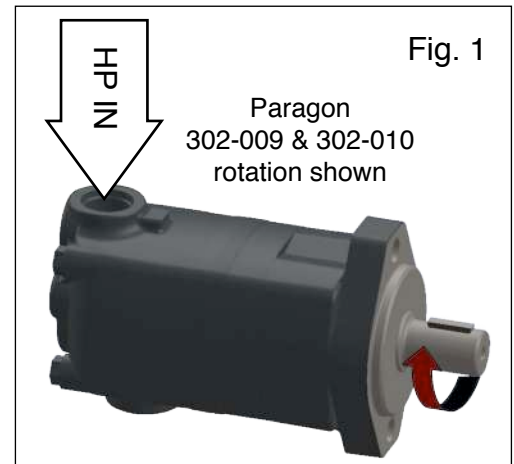
Safety instruction tags were attached to your unit prior to shipment. **DO NOT** remove, paint over or obscure in any manner. Failure to heed these warnings could result in serious bodily injury to the personnel operating and maintaining this equipment.

Initial Installation Considerations

Note: These are general guidelines and do not cover all possible situations. It is the responsibility of the system integrator to apply this product properly.

Hydraulic Motor Orientation Considerations

- The G125 is a hydraulic driven gear pump and is not intended for use with a driveline. (See pg 11 for hydraulic trunk specifications)
- Hydraulic motor orientation must be checked prior to operation to ensure the correct pump rotation for the internal relief valve. (Fig. 1 & Fig. 3)
- Refer to Manufacturer's owners manual for specifications regarding the hydraulic motors. Ensure the hydraulic relief valve setting does not exceed the hydraulic motor limitations.



Hydraulic Hoses & Fitting Considerations

- **DO NOT** use thread tape or pipe dope on threaded connections, this will contaminate the hydraulic system. Use a hydraulic sealant (Loctite number 545 or similar) as required.
- Hydraulic hoses are customer supplied, and will need to be measured to fit per application. Pre-plan hydraulic hose routing to minimize sharp bend radii, avoid surface contact, and to allow for flex during operation.
- High pressure hoses must have a pressure rating equal or higher than the hydraulic system relief valve setting.
- Hydraulic Hoses must be supported and not allowed to hang or pull on equipment

Piping Considerations

- Inlet pipe should be as large in diameter, short in length, and straight as possible to minimize suction pressure losses. Excessive restrictions at the inlet can cause cavitation, resulting in poor performance, noise, vibration, or pump damage.
- Slope the inlet plumbing appropriately to avoid air pockets.
- Plumbing weight, misalignment with the ports, or thermal expansion can exert excessive force on the pump. Plumbing must be properly supported and aligned with expansion joints, if required, to minimize these forces.
- To prevent over pressure situations, install a relief valve as close to the pump outlet as possible. Install the relief valve before any shut-off valves.

Initial Installation Considerations / Continued

Mounting Considerations

- Mount the unit on a rigid, heavy base to provide support and absorb shock. The base should be designed for rigidity across a flat even surface.
- Mounting kits are available with directional control valve mounting and ball valve mounting. (Fig. 2)
- Positioning the product pump lower to the ground will assist with suction conditions and decrease the risk of cavitation.

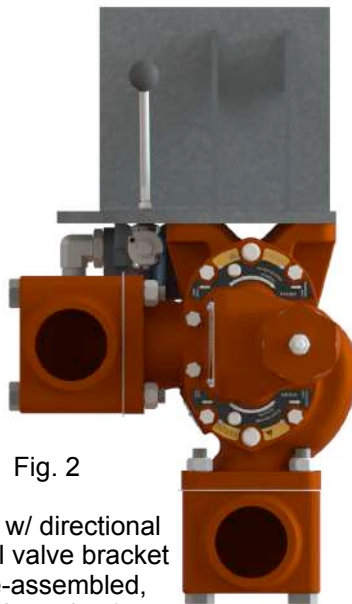
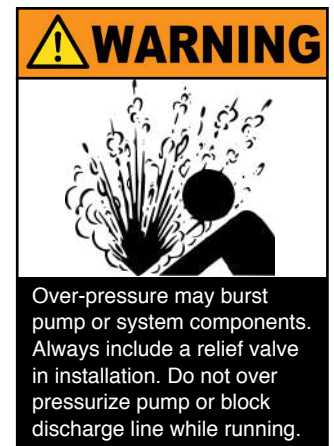


Fig. 2

G125 w/ directional
control valve bracket
(pre-assembled,
RH rotation)



Maximum Pump Ratings

Pressure

125 psi [8.5 bar] (STD 80 psi)

Speed

750 rpm (MAX)

Temperature

250°F [121°C] (MAX)

Flow Rate

125 gpm (1,000 SSU @ 750 rpm) [473.2 lpm] (MAX)

Viscosity Capabilities

250,000 SSU [56,000 cP] (MAX)

Power Input Requirements

11.5 BHP [8.58 KW]

Pre-Operation Checks

- Ensure hydraulic motor mating surfaces are clean and free from debris
- Check hydraulic motor rotation.(Fig. 1)
- All hydraulic hoses are installed according to manufacturer specifications and supported properly.
- G125 Pump mounting feet are flat against the mounting surface.
- Ensure the Relief Valve is closest to the discharge port for protected operation.

NOTE: While in reverse operation, the discharge circuit will be unprotected, possible over-pressurization can occur.

- G125 relief valve is adjusted appropriately (100 psi from factory, +/- ~5 psi per full turn).
- All piping is securely mounted and supported.
- Check to ensure the pump will turn.

NOTE: The G125 pump must be rotated at least once a week for 3 seconds, use of a lubricating oil (WD-40) is recommended if the pump is not going to be put in use.

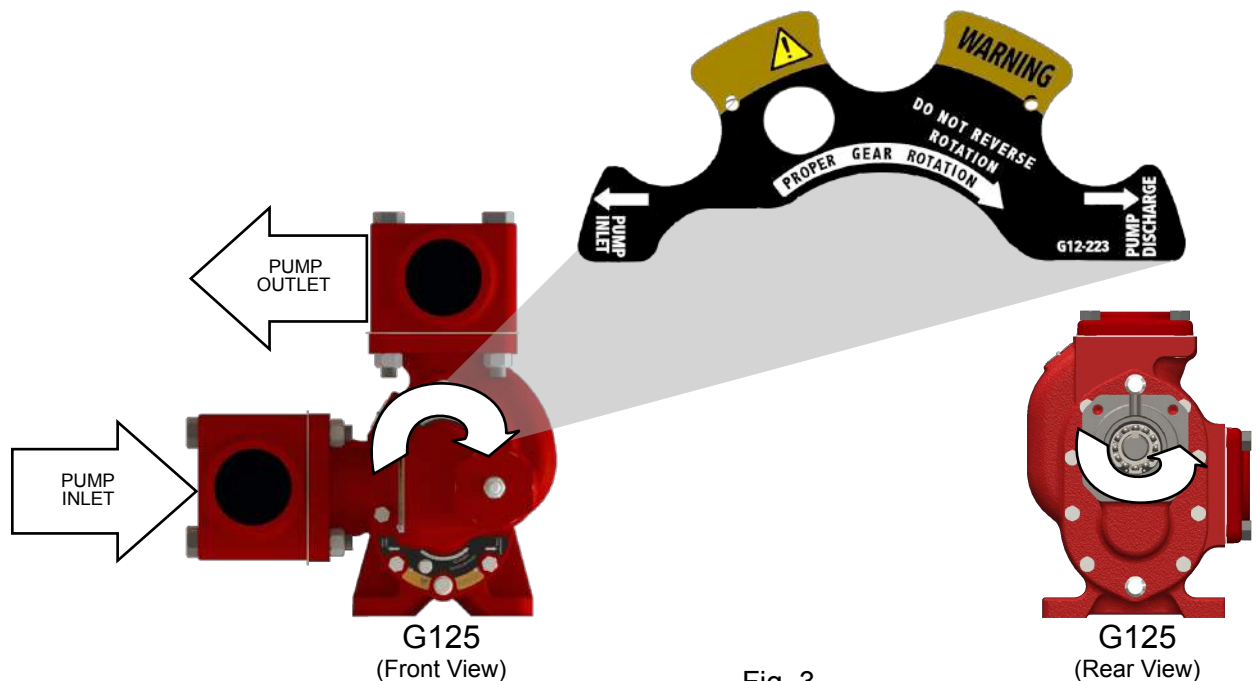


Fig. 3
(LH Rotation shown above)

Relief Valve Adjustment

Factory Relief Valve Settings for the G125

The Factory Setting for the Chemical Pump Relief valve is as follows

Product Pump	Factory Relief Valve Setting
G125-1A	80 PSI
G125-1B	100 PSI

Determine Pressure limits for G125

Identify Spec # located on the ID Plate of G125 at the bottom left corner, the last 2 digits identify the pressure limits of the Relief Valve Spring 1A or 1B as shown in picture below.

Spring Limits:
1A = 20-80 PSI
1B = 81-125 PSI



Note: Pressure should NOT be set below or above the limits of the spring shown.

CAUTION: DO NOT adjust the pressure rating or tamper with the chemical pump while it is in operation.

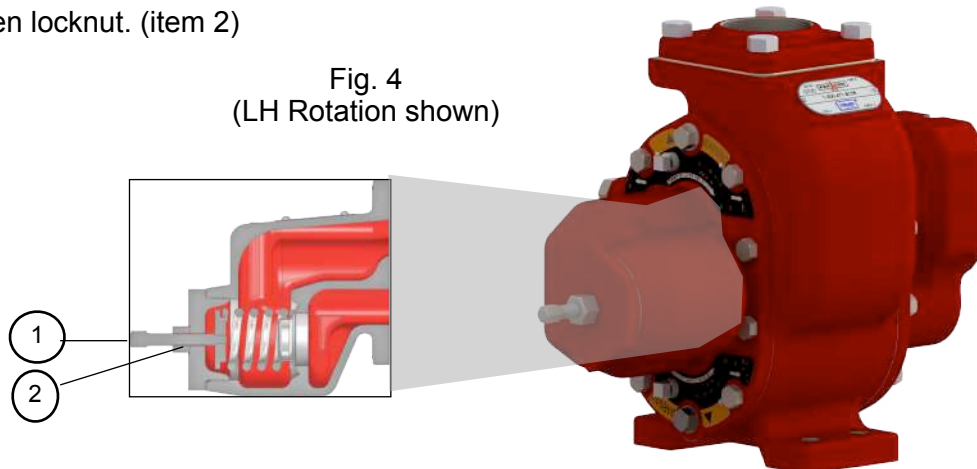
Setting the G125 Pump Relief Valve (Fig. 4)

1. Loosen locknut (item 2).

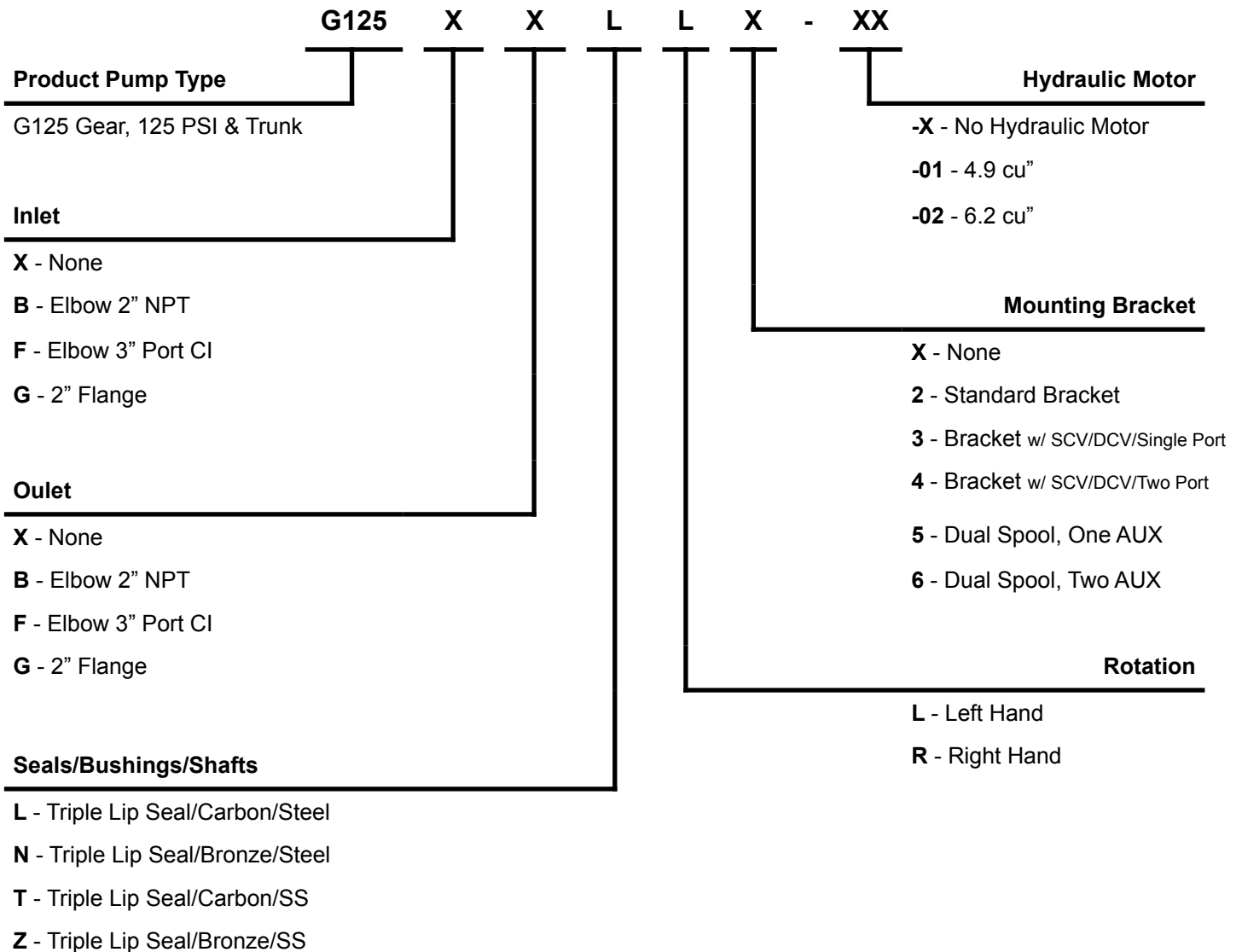
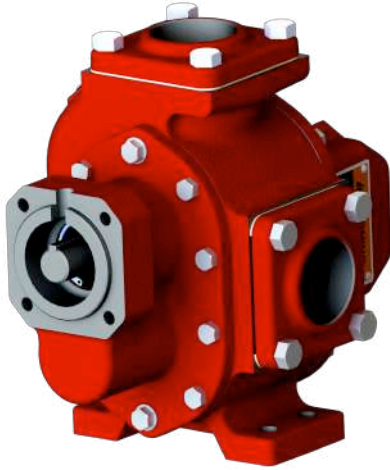
Note: Each full turn on the adjustment screw is approximately a 5 psi change in relief pressure.

- To increase the pressure setting - turn Adjusting Screw (item 1) clockwise.
- To decrease the pressure setting - turn Adjusting Screw (item 1) counterclockwise.

2. Re-tighten locknut. (item 2)

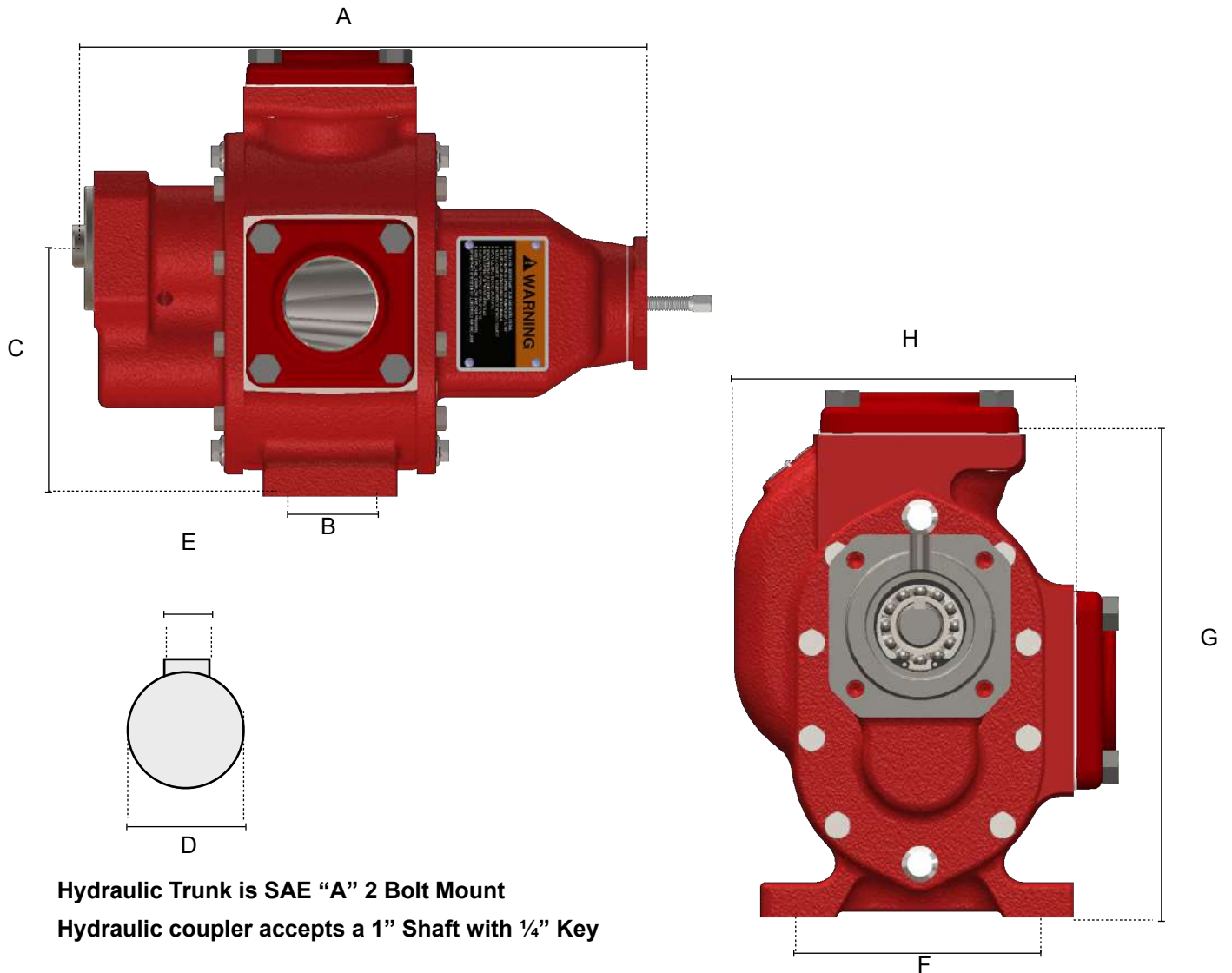


Model Number Construction

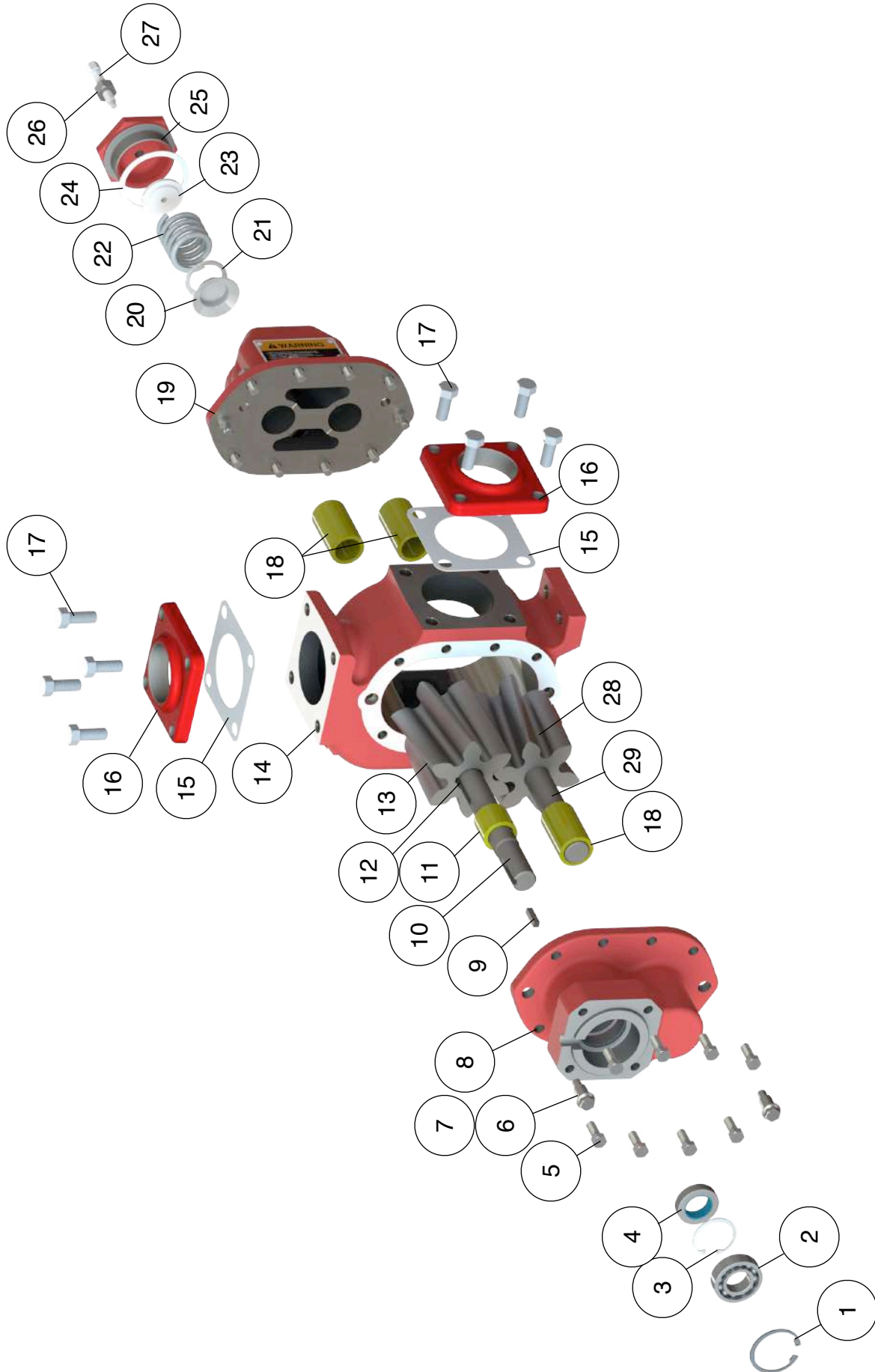


Dimensions

Model		A	B	C	D	E	F	G	H	Port Size	Approx. Weight (No Flanges, Steel Shaft)
G 125	in.	14 ¹⁵ / ₁₆ " (17 ⁵ / ₈ " w/ Trunk)	1 ¹ / ₂ "	6 ⁷ / ₁₆ "	1"	¹ / ₄ "	5 ¹ / ₂ "	10 ⁵ / ₈ "	7 ¹¹ / ₁₆ "	3" w/o Flange	90 lbs
	mm	379 (447.30 w/ Trunk)	38.1	163.58	25.4	6.35	139.7	269.75	194.82	76.2 w/o Flange	40.82 Kg



Component Breakdown



Component Breakdown/Continued

Item	Part #	Description	Qty
1	297-001	Outer Bearing Retainer	1
2	510-005	Ball Bearing	1
3	297-000	Inner Bearing Retainer	1
4	555-005	Triple Lip Shaft Seal	1
5	192-003	Hex Head Cap Screw	16
6	228-031	Washer Head Cap Screw	4
7	274-001	Hollow Dowel Pin	4
8	501-008	Back Plate	1
9	298-003	Outer Shaft Key	1
10	503-002	Drive Shaft (Steel)	1
10	503-003	Drive Shaft (Stainless Steel)	1
11	536-003	Short Bushing (Bronze)	1
11	536-004	Short Bushing (Carbon)	1
12	298-002	Inner Shaft Key	1
13	529-002	Drive Gear	1
14	500-031	Pump Body	1
15	526-027	Flange Gasket	2
16	509-020	2" NPT Port Flange	2
17	228-070	Hex Head Cap Screw	8
18	536-005	Long Bushing (Bronze)	3
18	536-006	Long Bushing (Carbon)	3
19	501-009	Face Plate	1
20	581-019	Relief Valve Poppet	1
21	581-020	Relief Valve Adapter	1
22	580-012	Relief Valve Spring (80-125 psi, STD)	1
22	580-013	Relief Valve Spring (20-80 psi)	1
23	581-021	Relief Valve Spring Guide	1
24	581-022	Relief Valve Cap Gasket	1
25	581-023	Relief Valve Cap	1
26	581-024	RV Locknut and Seal	1
27	581-018	Adjusting Screw	1
28	529-001	Idler Gear	1
29	503-001	Idler Shaft (Stainless Steel)	1
29	503-004	Idler Shaft (Steel)	1
*30	526-026	Body Gasket	2
*31	509-023	3" NPT Elbow	2
*32	228-070	Short Elbow Hex Cap Screw	4
*33	228-084	Long Elbow Hex Cap Screw	4
*34	323-007	Case Drain Pipe Plug	2
*35	302-009	4.9cu" Hydraulic Motor	1
*35	302-010	6.2cu" Hydraulic Motor	1
*36	505-005	Hydraulic Trunk and Rigid Coupling	1

*Items not shown on breakdown

Repair Kit	Pump #	Description
621-044	606-054	Carbon Bushings / Stainless Steel Shafts / Triple Lip Seal
621-046	606-055	Bronze Bushings / Stainless Steel Shafts / Triple Lip Seal
621-045	606-056	Carbon Bushings / Steel Shafts / Triple Lip Seal
621-047	606-057	Bronze Bushings / Steel Shafts / Triple Lip Seal

Replacement Parts

Back Plate Assemblies

Includes: (1) Back Plate, (1) Short Bushing, (1) Long Bushing

Part#	Description
501-006	Back Plate Assembly w/ Bronze Bushings
501-007	Back Plate Assembly w/ Carbon Bushings

Face Plate Assemblies w/ Relief Valve

Includes the following: (1) Face Plate, (2) Long Bushings, complete relief valve assembly

Part#	Description
581-014	Face Plate Assembly w/ Bronze Bushings, 80-125 psi RV
581-015	Face Plate Assembly w/ Bronze Bushings, 20-80 psi RV
581-016	Face Plate Assembly w/ Carbon Bushings, 80-125 psi RV
581-017	Face Plate Assembly w/ Carbon Bushings, 20-80 psi RV

Replacement Pumps

Standard pumps (all LH Rotation, 125 psi R/V, no flanges)

Part#	Description
G125GGTLX-XX	Stainless Steel Shafts, Carbon Bushings, 2" port
G125GGZLX-XX	Stainless Steel Shafts, Bronze Bushings, 2" port
G125GGLLX-XX	Steel Shafts, Carbon Bushings, 2" port
G125GGNLX-XX	Steel Shafts, Bronze Bushings, 2" port
G125FFTLX-XX	Stainless Steel Shafts, Carbon Bushings, 3" port
G125FFZLX-XX	Stainless Steel Shafts, Bronze Bushings, 3" port
G125FFLLX-XX	Steel Shafts, Carbon Bushings, 3" port
G125FFNLX-XX	Steel Shafts, Bronze Bushings, 3" port

Warranty

Subject to the terms and conditions hereinafter set forth in General Terms of Sale, Paragon Tank Truck Equipment LLC (the Seller) warrants products and parts of its manufacture, when shipped and its work (including installation and start-up) when performed, will be of good quality and will be free from defects in material and workmanship. This warranty applies only to Seller's equipment, under use and service of products, for a period as stated in the table below. Due to the varying condition of installation and operation, all performance claims are subject to a plus or minus 5% variation. (Non-standard materials are subject to a plus or minus 10% variation)

THIS WARRANTY EXTENDS ONLY TO BUYER AND/OR ORIGINAL END USER, AND IN NO EVENT SHALL THE SELLER BE LIABLE FOR THE PROPERTY DAMAGE SUSTAINED BY A PERSON DESIGNED BY THE LAW OF ANY JURISDICTION AS A THIRD PARTY BENEFICIARY OF THIS WARRANTY OR ANY OTHER WARRANTY HELD TO SURVIVE SELLER'S DISCLAIMER.

All accessories furnished by seller but manufactured by others bear only that manufacturer's standard warranty.

All claims for defective products, parts, or work under this warranty must be made in writing immediately upon discovery and, in any event within one year from the date of the shipment of the applicable item and all claims for defective work must be made in writing immediately upon discovery and in any event within one year from date of completion thereof by Seller. Unless done with prior written consent of Seller, any repairs, alterations, or disassembly of Seller's equipment shall void warranty. Installation and transportation costs are not included and defective items must be held for Seller's inspection and returned to Seller's ex works upon request.

THERE ARE NO WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE.

After Buyer's submission of claim as provided above and its approval, Seller shall either repair or replace its product, part, or work at the original ex works point of shipment, or refund an equitable portion of the purchase price.

The products and parts sold hereunder are not warranted for operation with erosive or corrosive materials or those which may lead to build up of materials within the product supplied, nor those which are incompatible with the materials of construction. The Buyer shall have no claim whatsoever and no product or part shall be deemed to be defective by reason of failure to resist erosive or corrosive action nor for problems resulting from build-up of material within the unit nor for problems due to incompatibility with the materials of construction.

Product Type	Warranty Duration
New	18 months from date of shipment, or 12 months after initial startup date, whichever occurs first.
Remanufactured	12 months from date of shipment.
Repair	12 month from date of shipment, or remaining warranty period, whichever occurs first.

Any improper use, operation beyond capacity, substitute of parts not approved by Seller, or any alteration or repair by others in such manner as in Seller's judgement affects the product materially and adversely shall void this warranty.

No employee or representative of Seller other than an Officer of the Company is authorized to change this warranty in any way or grant other warranty. Any such change by an Officer of the Company must be in writing.

The foregoing is Seller's only obligation and buyer's only remedy for breach of warranty, and except for gross negligence, willful misconduct and remedies permitted under the General Terms of Sale in the sections on **CONTRACT PERFORMANCE, INSPECTION AND ACCEPTANCE**, and the **PATENTS CLAUSE** hereof, the forgoing is **BUYER'S ONLY REMEDY HEREUNDER BY WAY OF BREACH OF CONTRACT TORT OR OTHERWISE, WITHOUT REGARD TO WORK WHETHER ANY DEFECT WAS DISCOVERED OR LATENT AT THE TIME OF DELIVERY OF THE PRODUCT OR WORK.** In no event shall Buyer be entitled to incidental or consequential damages. Any action for breach of this agreement must commence within one year after the cause of action has occurred.

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