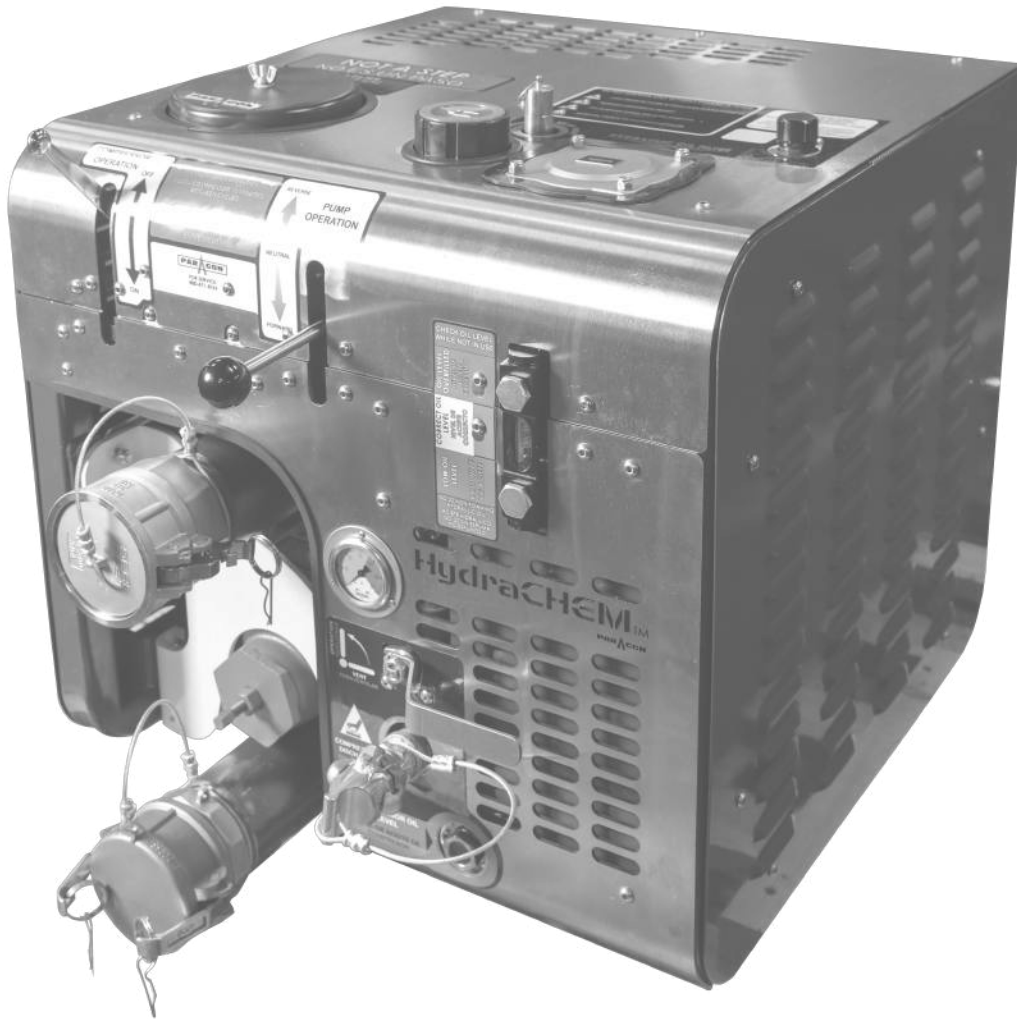


Installation and Operation Manual



HydraCHEM™
180

Models:
HydraCHEM 180



PRGMAN-06
Version: B
April, 2025

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 risk of injury.

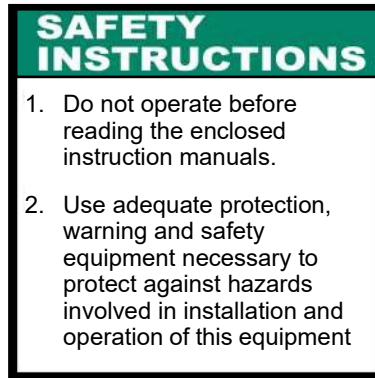
DO NOT....

- 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 manufacturers manuals before installation or operation of any equipment installed in the HydraCHEM
- Follow all safety rules and regulations as it applies 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

Safety Notice



NOTICE

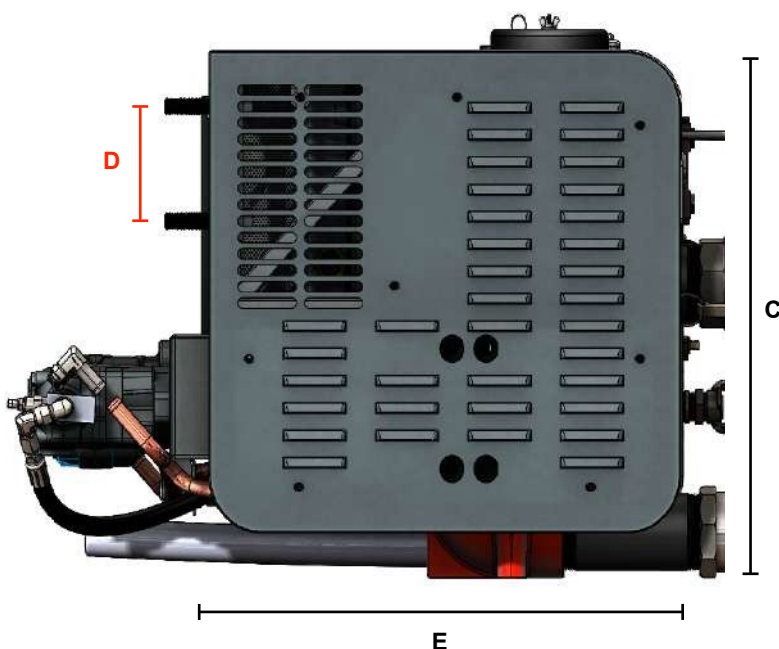
- Safety instruction tags and labels were attached to your unit prior to shipment. **DO NOT** remove, obscure, or cover in any manner
- Failure to heed these warnings could result in serious bodily injury to personnel operating or maintaining this equipment.

Pre-Installation Checklist

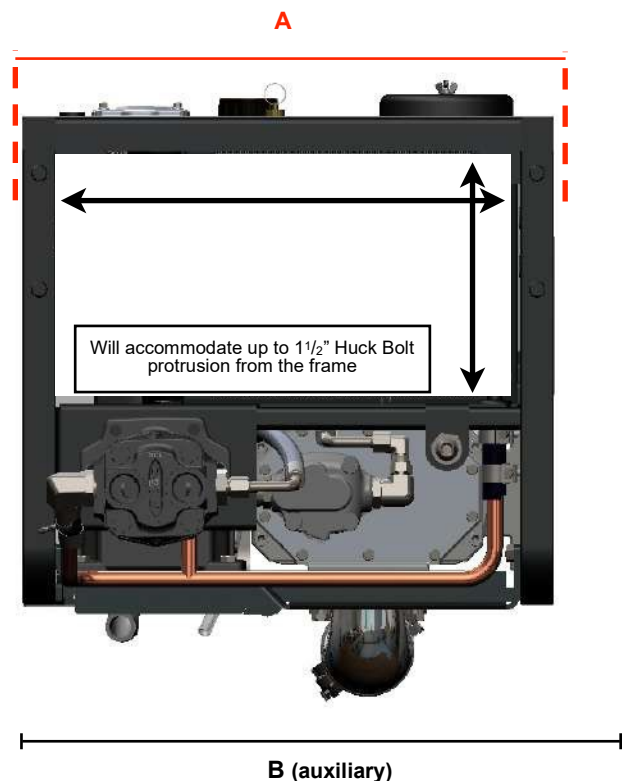
CAUTION: It is the installer's responsibility to ensure that the HydraCHEM is mounted in a location providing proper clearance from any heat source(s).
Paragon recommends 12" from any exhaust opening, 6" from any other heat source(s).

- ☐ Verify no signs of damage to any equipment prior to installation
- ☐ Verify correct Power Take-Off matches paperwork.
- ☐ Verify correct Hydraulic Pump matches paperwork
- ☐ Shell Tellus S2 V 32 Non-Foaming Oil.
(volume is dependent on installation location, typically 5~6 gallons)
- ☐ Pre-plan hydraulic hose routing prior to installation to prevent complications during the installation process.
- ☐ HydraCHEM Unit
 - Check orientation and frame rail space prior to installation (Fig. 1 & Fig. 5)
 - Stand off mounting brackets are available for additional clearances.
 - The HydraCHEM will accommodate up to 1-1/2" Huck bolt protrusion between the mounting areas.

Dimensions					
Model	A	B	C	D	E
HydraCHEM 180	24½"	27¾"	25⅞"	5¼"	24⅜"



(Fig. 1)



Initial Installation

Power Take Off & Hydraulic Pump

- Mount Power Take-Off, and brace hydraulic pump per manufacturers instructions.
- Mount hydraulic pump to Power Take-Off unit using the fasteners supplied by manufacturer.
- See PTO owner's manual for additional items.

Mounting the HydraCHEM

Note: Position in a location where all panels can be removed for service.

1. Drill $\frac{13}{16}$ " diameter holes.

The template is located in the shipping carton. (Fig. 2)



(Fig. 2)

2. Lift only by indicated balance points. (Fig. 3)

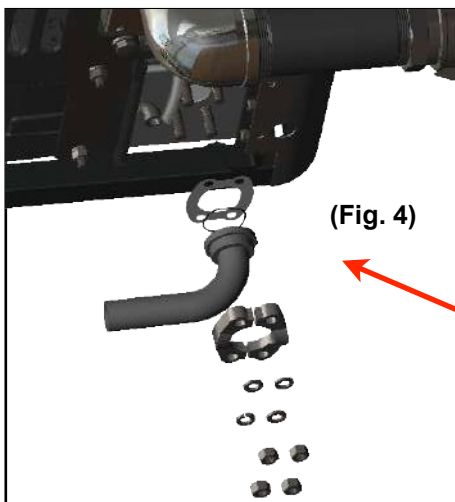
3. Use the (4) $\frac{3}{4}$ " flat washers and (4) $\frac{3}{4}$ " x 10 Nylock nuts supplied to mount the HydraCHEM.

Torque to 120 ft-lbs

4. Use Code 61 Gasket (P/N: 526-003) in combination with suction connection fitting and hardware provided. (Fig. 4)



(Fig. 3)



(Fig. 4)

**Do Not use power tools
to tighten suction fitting.**

DO NOT exceed 55 ft-lbs of Torque

MUST be torqued evenly

Initial Installation (continued)

Hydraulic Hoses & Fittings

1. DO NOT use thread tape or pipe dope on hydraulic NPT connections; this will contaminate the hydraulic system. Use a hydraulic sealant for all NPT connections (Loctite number 545 or similar).
2. High Pressure and Suction hoses are customer supplied, and will need to be measured to fit according to system drawings and installation locations
3. High pressure hoses must have a pressure rating equal or higher than the hydraulic system relief valve setting of 2500 psi (3000 psi for Auxiliary units)
4. The suction hose must be capable of operating in 28" Hg vacuum service and routed below the hydraulic motors (Fig. 5)
5. Ensure Code 61 Gasket (P/N: 526-003, Fig. 4) is installed in combination with suction connection fitting and hardware provided before installing the suction hose.
6. Ensure all hydraulic hoses are properly supported and are not allowed to pull or hang from fitting connection points.

Note: T-bolt style clamps are recommended for Suction Hose to Code 61 connection.

Note: Always double check Power Take-Off / Hydraulic Pump manuals for rotation to determine suction and pressure port location.

Orientation

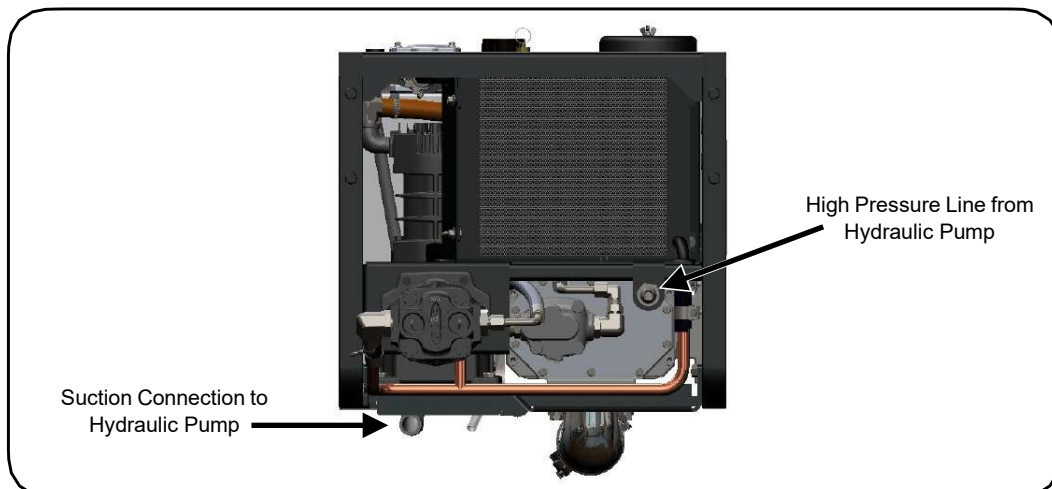
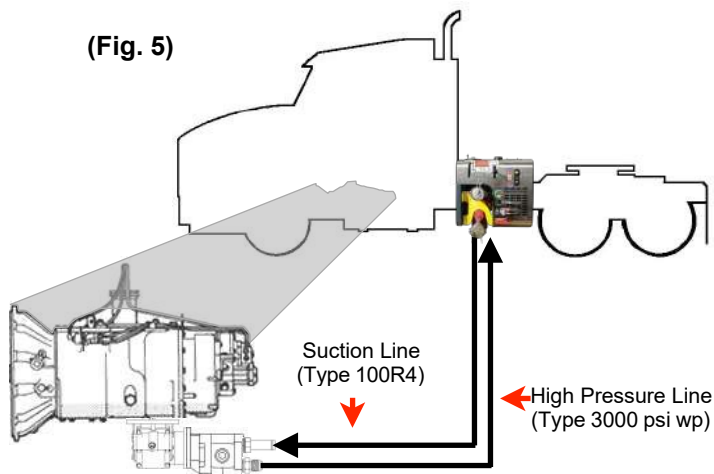
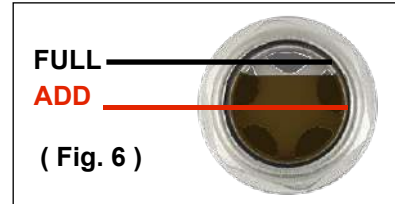
- Ensure all hoses are supported and the suction line is routed below the hydraulic motors.
- Ensure that the suction hose is not in contact with items that could cause chafing.

CAUTION: DO NOT Allow hydraulic hoses to rest on the hydraulic motors as this can cause damage to hoses over time

Initial Start Up

Pre-Initial Start Up

- ☐ Check the P40 oil level after installation and before bleeding the hydraulic system. (Fig. 6)
- ☐ Ensure the air lever is in the “Vent” position.
- ☐ Ensure the compressor operation lever is in the “Off” position.
- ☐ Ensure all grommets are in place.
- ☐ Ensure all covers are in place prior to operation.
- ☐ Ensure all panel fasteners are in place.
- ☐ Ensure the hydraulic control handle is in the neutral position.
- ☐ Ensure the compressor operation handle is in “off” position.
- ☐ If equipped, ensure the auxiliary operation control is in the “HydraCHEM” position.
- ☐ Ensure all dust caps/plugs are in place.
- ☐ Double check all filter caps and fill caps to ensure they are tight.



Initial Start Up (continued)

Bleeding the Hydraulic System

1. Ensure all cover panels are installed and the hydraulic hoses are connected.
2. Remove red hydraulic fill cap. (See Fig. 7)
3. Use Shell Tellus S2 V 32 (or equivalent ISO 32) non-foaming hydraulic oil.
4. Fill HydraCHEM with hydraulic fluid until sight glass reaches half way if equipped with a level gauge, if equipped with two sight glasses, the bottom sight glass must be completely full and the top must be empty.
It is recommended that the oil be filtered while being added (a clean paint filter will suffice).
5. Replace fill cap.
6. Ensure the HydraCHEM pump operation handle is in neutral, the air compressor operation handle is in “off” position and the auxiliary control is in the “HydraCHEM” position.
7. Check all hoses and connections for leaks, installation must be free from leaks before continuing
8. Start the truck engine.
9. Engage the PTO. (See PTO Owner’s Manual)
10. Run for 2 - 3 seconds to eliminate air from the system.
11. Remove dust caps from the chemical pump and slowly engage the chemical pump to remove air from this circuit, do not run for longer than 15 seconds dry.
Note: If equipped with gear pump, introducing WD-40, vegetable oil, or similar lubricants into the inlet will prevent dry running the pump during the bleeding process.
Note: Ensure lubricant used is chemically compatible with the type of service the unit will be performing in the future.
12. Remove Universal Pneumatic Connector (Chicago Fitting) Plug and slowly engage the compressor to operation mode.
13. Run for 5-10 seconds to eliminate air from the system and return the compressor operation lever and the chemical pump control to the “Off” position.
14. Disengage PTO. (See PTO Owner’s Manual)
15. Check hydraulic fluid level; return to correct oil level as noted in step 4 (repeat steps 9-14 as needed).
16. If equipped, engage the Auxiliary circuit and operate all control circuits one at a time until air has been removed.
Note: Take all safety precautions as specified by the equipment manufacturer.
17. Perform a final check for any signs of leakage.
18. Verify oil level is correct as per step 4.
19. Unit is ready for service.

Initial Start Up (continued)

(Fig. 7)



Initial Start Up (continued)

Setting the Chemical Pump Relief Valve

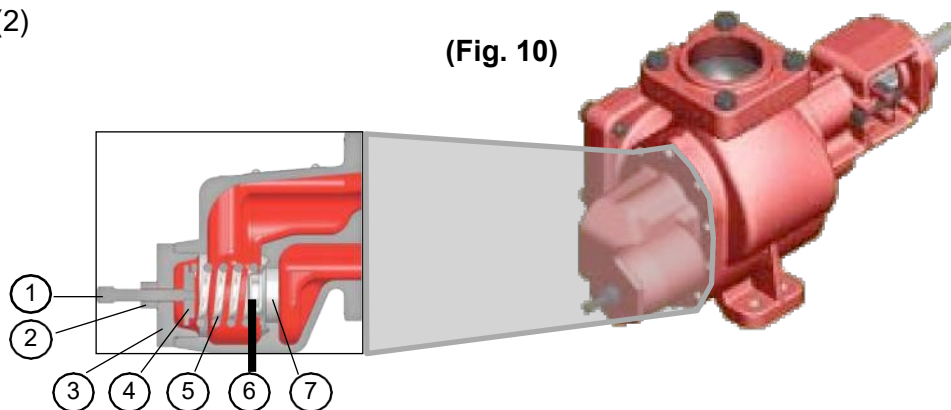
Product Pump	Factory Relief Valve Setting
G150	100 PSI

If the above pressures are incorrect for your application, follow the directions below to alter the delivery Relief Valve pressure.

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

G150 Pump Adjustable Relief Valve Only (Fig. 10)

1. Loosen locknut (item 2).
 - 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. (2)



Operation

Before operation:

- Ensure all controls are in “NEUTRAL” and/or “OFF” positions.
- Air Control Valve is in “VENT” position.
- Ensure the truck is running.

1. Engage the PTO according to the manufacturer's directions.
2. Set the engine speed for the desired application.
3. Connect all chemical hoses, air lines, and hydraulic trailer lines per your company's procedures.
 - To operate the HydraCHEM Chemical Pump:
 - Slowly move the handle to the correct position desired, the controls are variable speed.
 - To operate the HydraCHEM Air Compressor:
 - Slowly move the proper control handle to the fully open position until it reaches its travel stop.

Note: Do not force the handle beyond its limitations - throttle stop is preset at the factory (travel distance may vary).

 - Slowly close the Air Control Valve to begin generating tank pressure.

Note: The Chemical Pump and Air Compressor can be operated simultaneously.

4. When desired function is complete:
 - Return all controls to “NEUTRAL” and/or “OFF” positions
5. Select new function or continue to shut down the hydraulic system.
6. Disconnect and store chemical hoses, air lines and hydraulic trailer lines per company handling procedures.
7. Disengage the PTO according to the manufacturer's directions.

Performance Specifications

	Vane Pump	G-Series Pump		Lobe Pump
	VP150 Pump	G125	G150	RTPe Series
Max Flow Rates	157 GPM	128 GPM	165 GPM*	198 GPM*
Max Operating Temperature	300 F	250 F	250 F	230 F
Max Differential Pressure	125 PSI	125 PSI	125 PSI	145 PSI
*GPM Flow Rates can vary, depending on viscosity and unloading conditions				

Compressor	
25 PSI	36 PSI
35 CFM	29 CFM
105 GPM	67 GPM

Maintenance Schedule

After use, cleaning and lubrication are required to prevent pump components from seizing.

See product pump manual for proper clean out procedures.

It is recommended that all product pumps are cleaned at a tank wash station after each use.

If equipped with a gear pump: To lubricate the product pump, remove both inlet and outlet dust covers, spray an aerosol lubricant into the pump inlet while in operation, and watch for vapors on the outlet side of the pump.

NOTE: Always check chemical compatibility before introducing the lubricant.

Continue for 30 seconds or until vapors are seen exiting the outlet.

Interval	Item
Daily	P40 Air Compressor Check Oil level before operating the compressor (see Fig. 6) Hydraulic System Check Oil level before operation. ** Correct level is to the center of the sight glass when hydraulic system is cold, and not in operation.
Weekly	Product Pump Must be operated for 15 seconds and lubricated (G150 only) Product Pump Visually inspect the system. (Pump connections and mounting bolts)
3 Months	General Inspect hydraulic motor couplings for damage, replace as needed Hydraulic System Change Hydraulic Oil Filter ** An oil analysis is recommended to determine the lifetime of the oil remaining
6 Months	P40 Air Compressor Change Oil Change Air Filter Element Hydraulic System Change Hydraulic Oil ** An oil analysis is recommended to determine the lifetime of the oil remaining Power Take-Off Unit Grease the Power Take-Off / Hydraulic Pump Splines
Yearly	General Inspect Chemical Pump for wear (replace components as needed) Inspect Hydraulic Pump splines for wear P40 Air Compressor Change Relief Valve

Service Items

(Fig. 11)

6 month maintenance kit: Part # 621-032

Includes:

- P40 Air Filter Element
- P40 Oil (1 qt.)
- Hydraulic Filter Element

**P40 Oil Fill Cap
Part # 522-008**

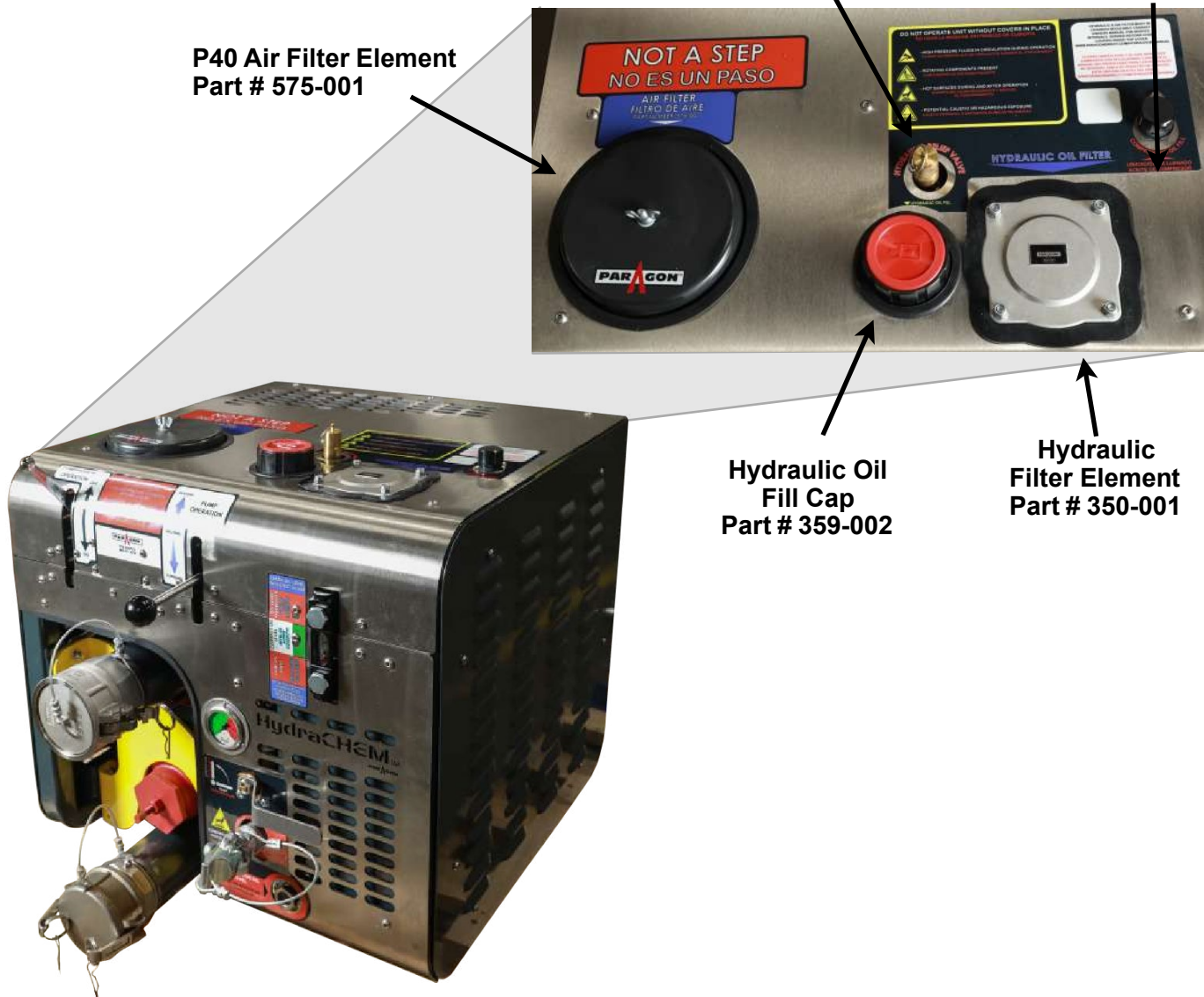
**P40 Oil
Part # 409-003**

**P40 Air Filter Element
Part # 575-001**

Pneumatic Relief Valve

**Hydraulic Oil
Fill Cap
Part # 359-002**

**Hydraulic
Filter Element
Part # 350-001**



Warranty Statement

PGWAR-1-100
Date Issued: 05/01/2025

GENERAL PROVISIONS AND LIMITATIONS

Paragon Tank Truck Equipment LLC (the "Company") warrants to each original retail purchaser ("Purchaser") of its products from the Company or its authorized distributor that such products are, at the time of delivery to the Purchaser, made with good material and workmanship. No warranty is made with respect to:

1. Any product which has been repaired or altered in such a way, in the Company's judgment, as to affect the product adversely.
2. Any product which has, in the Company's judgment, been subject to negligence, accident, improper storage, or improper installation or application.
3. Any product which has not been operated or maintained in accordance with the recommendations of the Company.
4. Components or accessories manufactured, warranted and serviced by others.
5. Any reconditioned or prior owned product.

Claims for items described in (4) above should be submitted directly to the manufacturer.

WARRANTY PERIOD

The Company's obligation under this warranty is limited to repairing or, at its option, replacing, during normal business hours at an authorized service facility of the Company, any part which in its judgment proved not to be as warranted within the applicable Warranty Period as follows.

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, or 12 months after initial startup date, whichever occurs first.
Repair	12 months from date of shipment, or remaining warranty period, whichever is greater.

All product furnished by seller but manufactured by others bear only that manufacturer's standard warranty. Replacement parts not specifically called out in an above table are warranted for 90 days from shipment. Any disassembly or partial disassembly of any of the package components, or failure to return these "unopened" per Company instructions, will be cause for denial of warranty.

The Company reserves the right to withdraw the Warranty where evidence indicates application outside the stated performance area, or where there is evidence of abuse.

LABOR TRANSPORTATION AND INSPECTION

The Company will provide labor, by Company representative or authorized service personnel, for repair or replacement of any product or part thereof which in the Company's judgment is proved not to be as warranted. Labor shall be limited to the amount specified in the Company's labor rate schedule and would expressly exclude labor for the removal and reinstallation of the Paragon product from the customer's equipment.

Labor costs in excess of the Company rate schedules caused by, but not limited to, location or inaccessibility of equipment, or labor provided by unauthorized service personnel is not provided by this warranty.

All costs of transportation of product, labor or parts claimed not to be as warranted and, of repaired or replacement parts to or from such service facilities shall be borne by the Purchaser. The Company may require the return of any part claimed not to be as warranted to one of its facilities as designated by the Company, transportation prepaid by Purchaser, to establish a claim under this warranty.

If a warrantable complaint occurs within 90 days from shipment:

1. Freight will be reimbursed for both the replacement item and the returned suspect part (if Requested by Paragon). This allowance will cover only transportation via Paragon selected most economical method within the continental United States, Canada and Mexico. Premium transportation and/or handling charges will not be covered or pro-rated.
2. Concerning distributors in Canada & Mexico, reimbursement for duty and brokerage fees at actual cost that cannot be recovered from Customs Officials, but not to exceed 20% of the distributor net price, will be allowed for warrantable complaints within 90 days.
3. Copies of relative invoices must be provided with the submission of the claim to be considered.

Replacement materials provided under the terms of the warranty are warranted for the remainder of the Warranty Period of the product upon which installed to the same extent as if such parts were original components.

DISCLAIMER

THE FOREGOING WARRANTY IS EXCLUSIVE AND IT IS EXPRESSLY AGREED THAT, EXCEPT AS TO TITLE, THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY.

THE REMEDY PROVIDED UNDER THIS WARRANTY SHALL BE THE SOLE, EXCLUSIVE AND ONLY REMEDY AVAILABLE TO THE PURCHASER AND IN NO CASE SHALL THE COMPANY BE SUBJECT TO ANY OTHER OBLIGATIONS OR LIABILITIES. UNDER NO CIRCUMSTANCES SHALL THE COMPANY BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, LOSSES OR DELAYS HOWSOEVER CAUSED.

No statement, representation, agreement, or understanding, oral or written, made by any agent, distributor, representative, or employee of the Company which is not contained in this Warranty will be binding upon the Company unless made in writing and executed by an officer of the Company.

This warranty shall not be effective as to any claim which is not presented within 30 days after the date upon which the product is claimed not to have been as warranted. Any action for breach of this warranty must be commenced within one year after the date upon which the cause of the action occurred.

Any adjustment made pursuant to this warranty shall not be construed as an admission by the Company that any product was not as warranted.

[illegible]

Additional Notes



Paragon Tank Truck Equipment

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