



HydraFLOW

50 gpm max.

3000 psi max

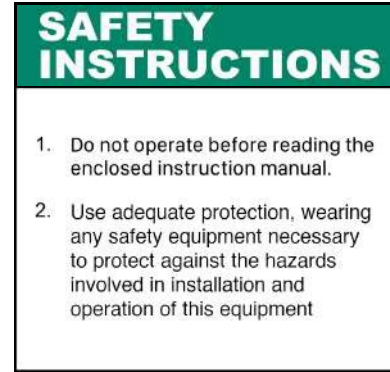


WARNING
DO NOT OPERATE
MACHINERY BEFORE
READING MANUAL FULLY

INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

PRGMAN-08
Version B
April, 2025

Warnings



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.

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Introduction

CONGRATULATIONS on your purchase of a new HydraFlow. Please examine the unit for shipping damage, and **if any damage is found, report it immediately to the carrier.** If unit is to be installed at a later date make sure it is stored in a clean, dry location.



Warning: Serious injury can result from operating or repairing the unit without reading the service manual and taking adequate safety precautions.

Safety Precautions

For equipment covered specifically or indirectly in this instruction book, it is important that all personnel observe safety precautions to minimize the chances of injury. Among many considerations, the following should be particularly noted:

- Rotating shafts can be dangerous. You can snag clothes, skin, hair, hands, etc. This can cause serious injury or death.
- Do not work under the vehicle when the engine is running.
- Do not work on the hydraulic system with the engine running or power take-off engaged.
- Do not engage or disengage driven equipment by hand from under the vehicle when the engine is running.
- PTO and driveshaft should have either a safety loop or guard installed.
- Install a support strap when servicing a drive shaft to prevent personal injury.
- Always use hose rated for hydraulic duty and at the correct pressure.
- A serious or fatal injury can occur...
 - If you fail to follow warning instructions.
 - If you lack proper training.
 - If you fail to follow proper installation and operating procedures.
 - If you do not use proper tools and safety equipment.
 - If you assemble hydraulic system components improperly.
 - If you use incompatible driveline components.
 - If you use worn out or damaged driveline components.
 - If you use driveline components in a non-approved application.
- This manual contains safety instructions. Read, understand, and follow this manual.
 - Get proper training.
 - Learn and follow safe operating procedures.
 - Use proper tools and safety equipment.
 - Use proper components in good condition.
 - Ensure connections exposed to the weather are sealing properly.

Installation



CAUTION: It is the installer's responsibility to ensure that the HydraFLOW 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).

Power Take-Off and Hydraulic Pump

- A. Mount the PTO as recommended by PTO manufacturer.
- B. If the system contains a direct mounted hydraulic pump, ensure the hydraulic pump is mounted to the PTO as recommended by PTO, hydraulic pump, and transmission manufacturers.
- C. Ensure ALL safety labels are installed per manufacturer guidelines.

Note: The standard filter supplied in the HydraFLOW is a 10 micron nominal. Contact Paragon Tank Truck Equipment for other filtration media options.

Please refer to your hydraulic pump installation manual for correct filtration and suction specifications.

Contact the engine manufacturer for the proper engine speed range that will reduce torsional vibration to a minimum and prevent premature hydraulic pump and PTO wear.

Mounting the HydraFLOW

- Drill 21/32" diameter holes in the appropriate location for mounting the unit as shown in **Fig. 4.**
- Use the fasteners in the hardware packet supplied by Paragon to mount the HydraFLOW.

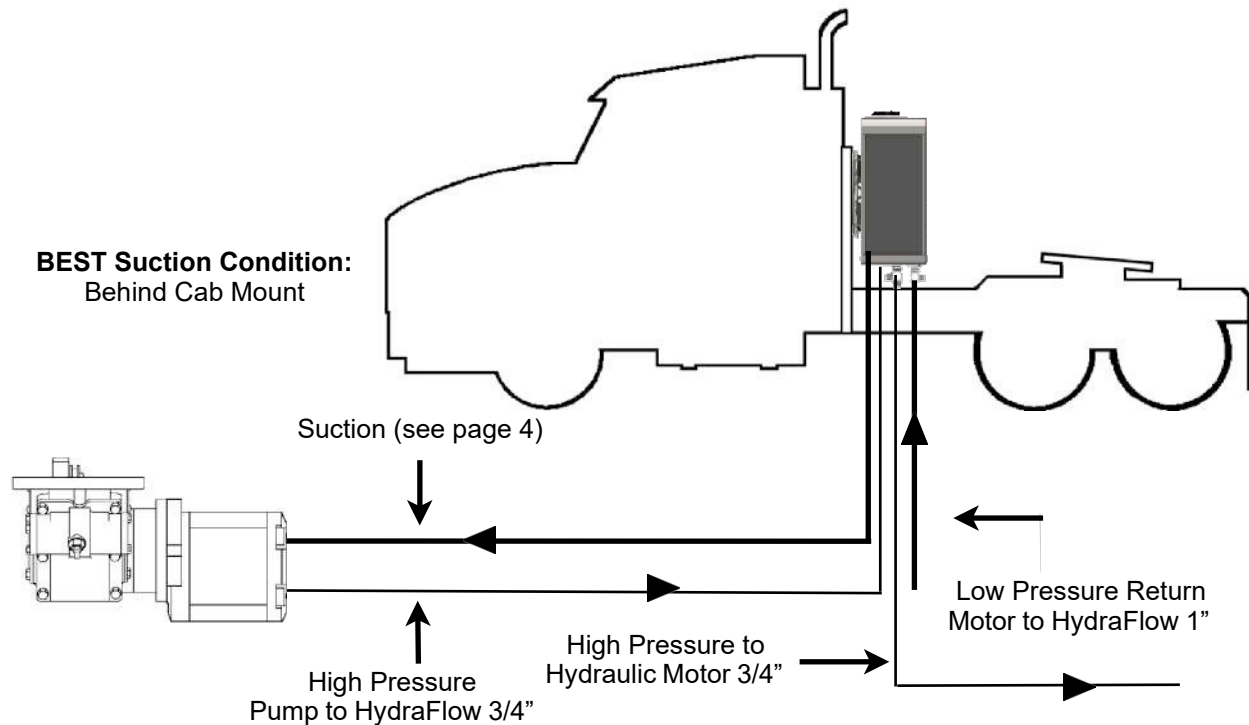
Hydraulic Hoses & Fittings

- **DO NOT** use thread tape or pipe dope on threaded connections, this will contaminate the hydraulic system.
- **ALL** HD model coolers have a 2" female National Pipe Thread connection located on the bottom of the cooler.
- **ALL** hydraulic hoses must be supported and not allowed to hang on the cooler connections.
- Use of Loctite 542 or equivalent is recommended for any National Pipe Thread (NPT) hydraulic connections.
- Hoses are customer supplied, fit according to the system drawings.
- High pressure hoses must have a pressure rating equal to or higher than the hydraulic system relief valve setting.
- The suction hose must be capable of operating in 28" Hg vacuum service.

Fig. 1

Suction Hose Chart	
GPM Flow	Hose Size
0-20	1-1/4"
20-25	1-1/2"
26-50	2"

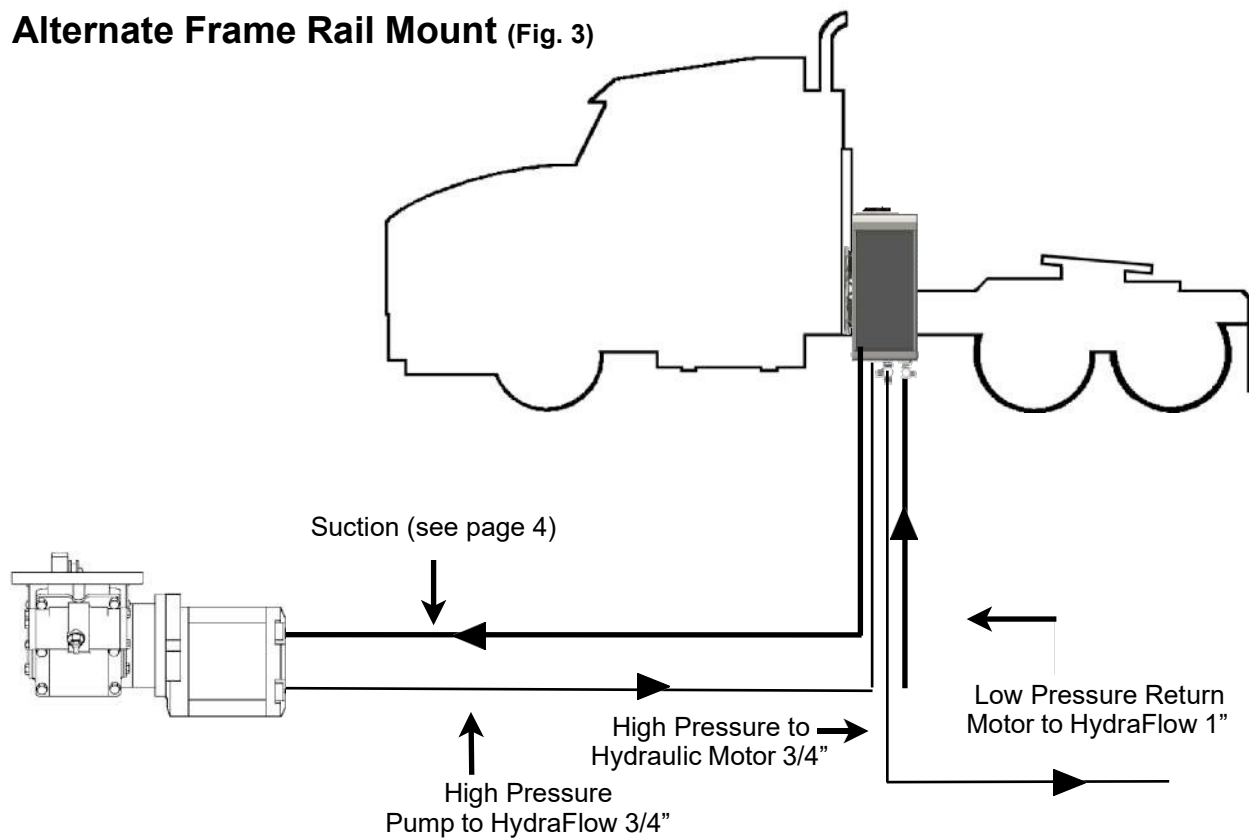
Preferred behind the cab mount (optimum suction conditions, Fig. 2)



Note:

- Review Hose Chart (Fig. 1) to ensure the correct suction hose sizing.
- For off road applications do not mount HydraFLOW directly to the frame rail. Behind the cab mount is recommended.
- See system circuit drawing for complete hydraulic plumbing.

Alternate Frame Rail Mount (Fig. 3)



Initial Start Up (Two People Required)

1. Remove the filler cap, filter and filter bowl.
2. Fill the HydraFLOW **1/2 full** with hydraulic lubricant.

NOTE: Paragon recommends an (ISO) 32 non-foaming hydraulic oil. (Example: Mobil SHC 630 Hydraulic Oil)
Use a paint filter as a strainer while filling to prevent foreign contaminants from entering the system.

3. Replace the fill cap.
4. Check all hoses and connections for no leaks.
5. Start the engine and engage the PTO and pump according to manufacturer recommendations.
6. Run for 3-5 seconds to eliminate air from the system.
7. Disengage the PTO and stop the engine.
8. Remove the fill cap and fill to the bottom of the sight glass (no oil should be in the top sight glass).
9. Replace the filter bowl, filter and fill cap.
10. Start the engine and slowly release the clutch.
11. While the engine is running, engage the PTO and pump according to manufacturer recommendations.
12. Check for leaks, disengage the PTO according to manufacturer recommendations and stop the engine.
13. Re-check the oil level.

Operation of System

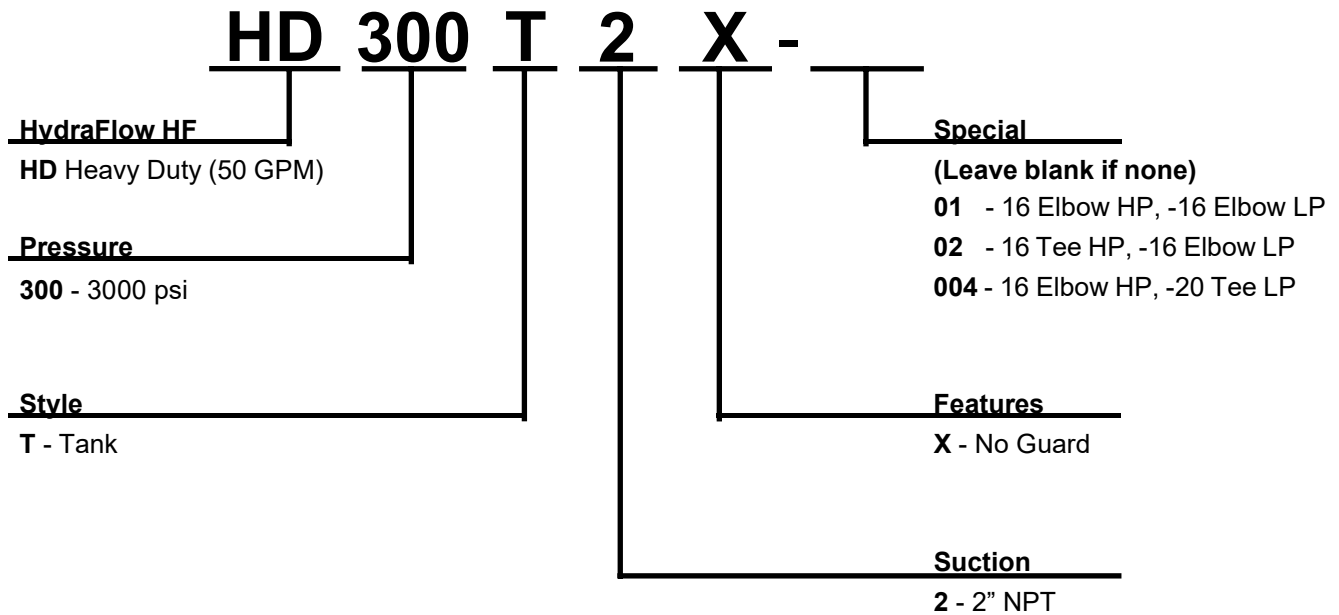
1. Check oil level in the HydraFLOW.
Correct oil level is the bottom sight glass completely full and the top sight glass completely empty when the unit is not operating.
2. Check fan and radiator for air flow. Clean or clear any obstructions as needed.
3. Ensure the parking brake is applied, control valves are in the neutral position.
4. Engage the PTO according to manufacturer recommendations.
NOTE: Oil level will drop in the sight glass when the system is in operation.
5. Operate valves slowly.
6. To shut down the system, put the valve in neutral (if available), disengage the PTO per manufacturer recommendations.

Maintenance

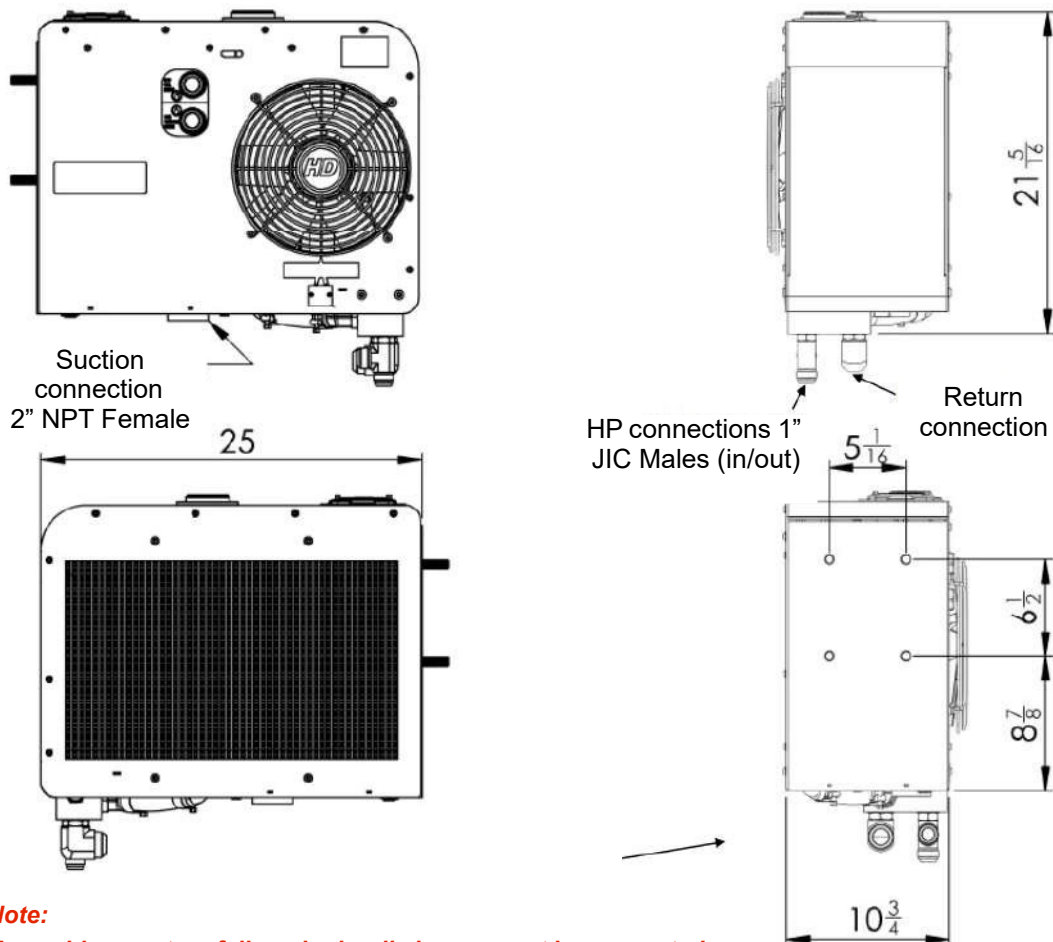
Daily	Check oil level before operating (the system must be off). Correct oil level is the bottom sight glass completely full and the top sight glass completely empty when the unit is <u>not</u> operating.
Weekly	Visually inspect the system each week. Check hoses, fittings, and mounting.
Every 3 Months	Change filter every 3 months.
Every 6 Months	Change oil and filter every 6 months.
	Grease PTO / Pump spline every 6 months.

Note: If the unit has a high duty cycle, an oil analysis program is recommended.

Model Number Construction



Overall Dimensions (Fig. 4)



Note:

To avoid premature failure, hydraulic hoses must be supported and not allowed to hang or pull on cooler connections.

Filter Breakdown



Diffuser Assy: 352-005 / 352-009 (lip)

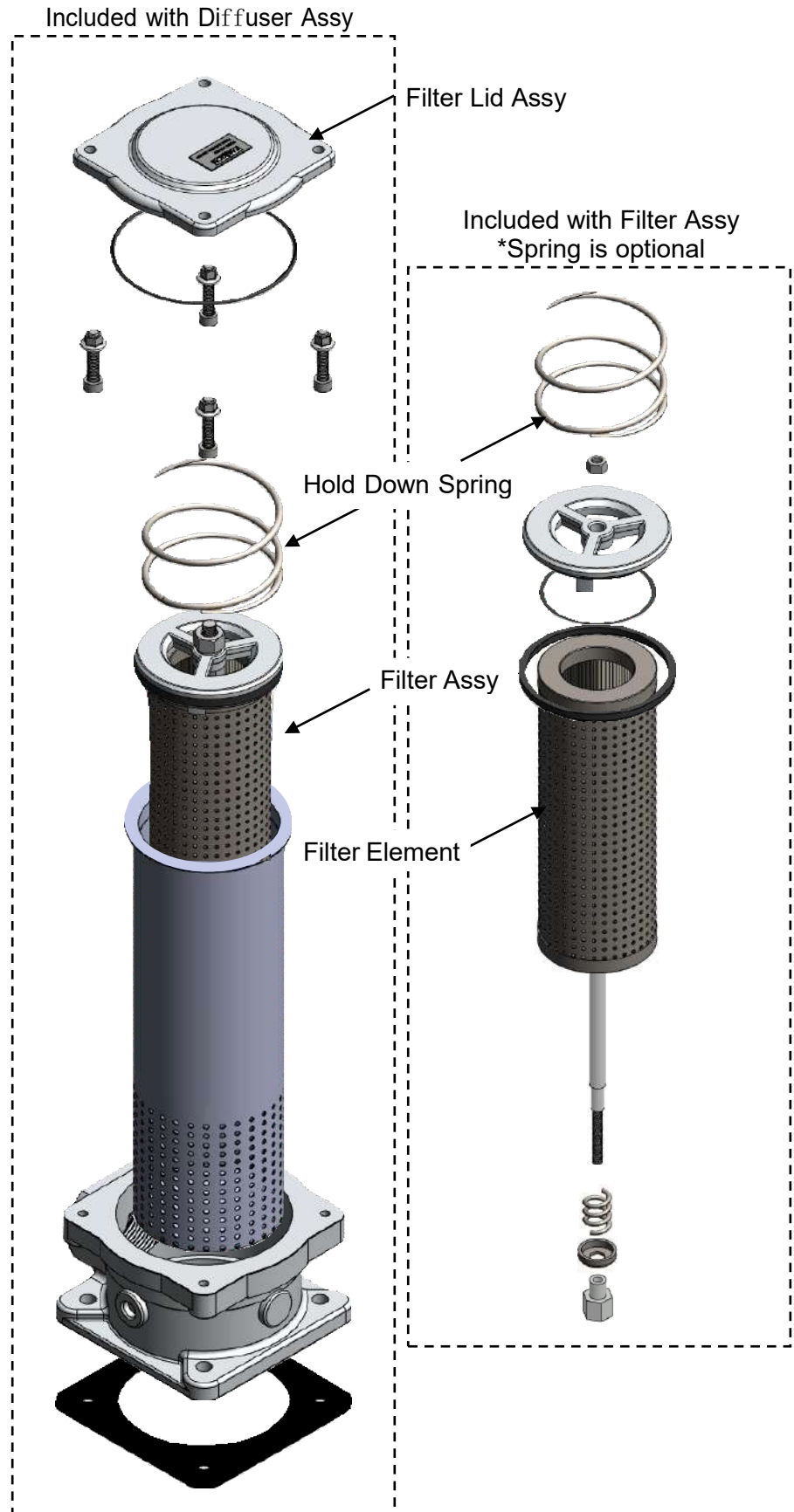
Filter Assy: 351-006

Filter Assy w/ Spring: 351-003

Filter Lid: 522-001

Hold Down Spring: 580-001

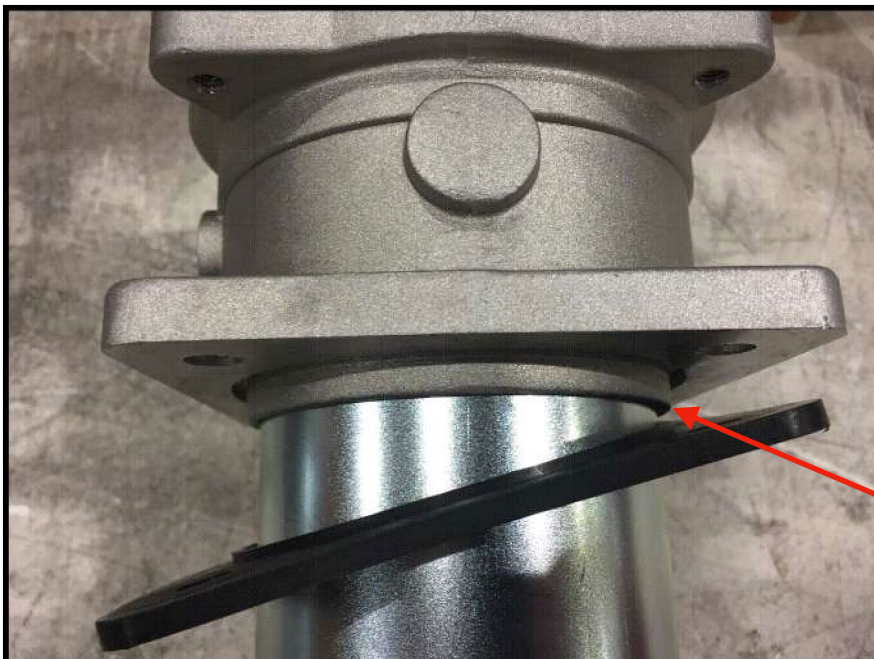
Filter Element: 350-000



Filter Head Options

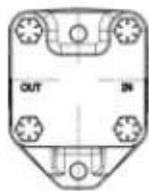


Filter Head without Lip
Part # 352-005

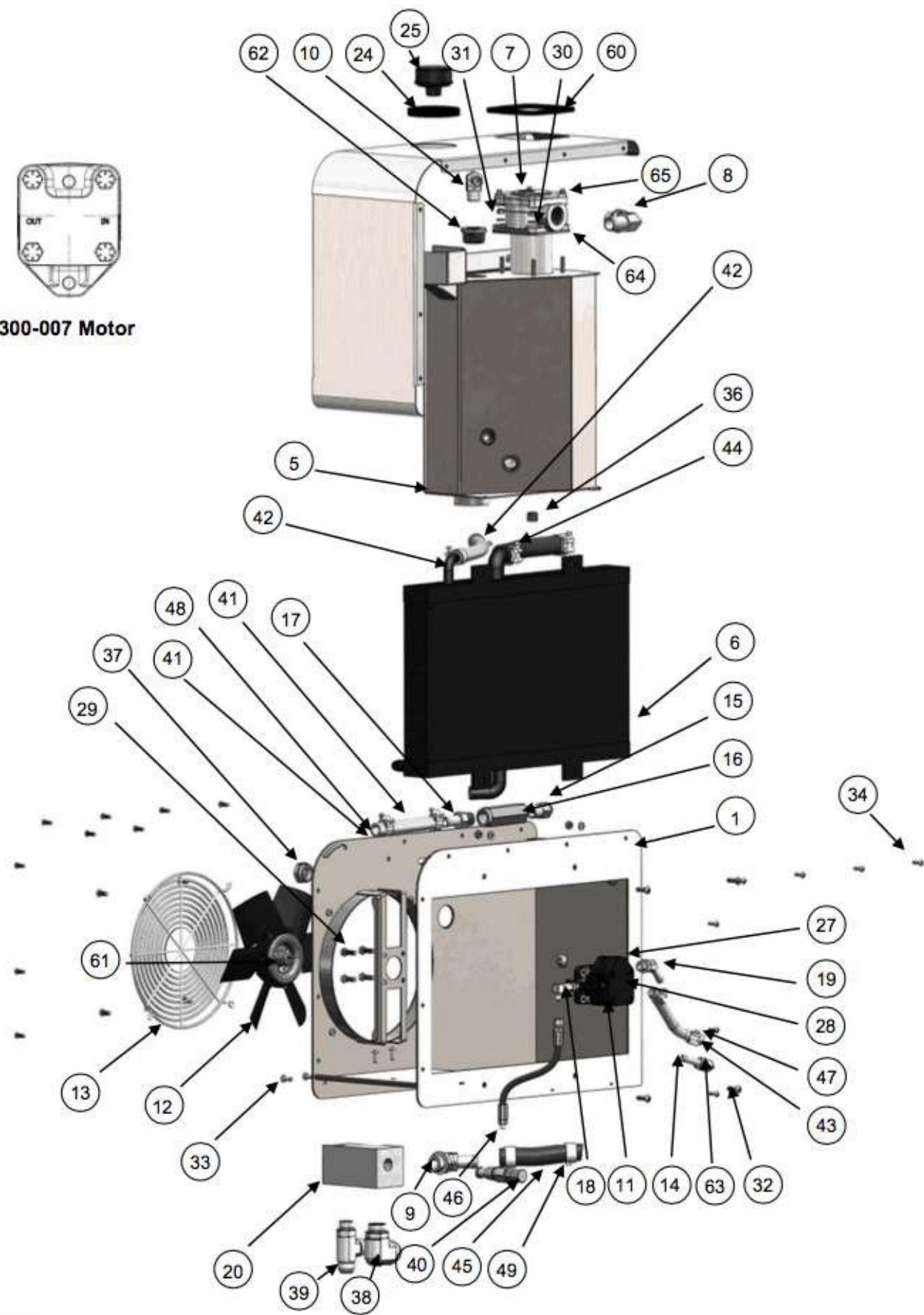


Filter Head with Lip
Part # 352-009

Parts List



300-007 Motor



Parts List

Item	Part Number	Description	QTY. STD	QTY. SQ. Filter
1	500-022	Frame - bolt-in tank	X	1
1	500-018	Frame - weld-in tank	1	X
5	500-026	Tank - bolt-in	X	1
6	370-000	Hyd. Heat Exchanger	1	1
7	352-001	Filter/Diffuser - 4 bolt (Round)	1	X
7	352-005	Filter/Diffuser - 4 bolt (Square)	X	1
8	-8522	Elbow 90 deg - SAE -16 x 1" barb	1	1
9	328-001	Elbow 45 deg - 16SAE x 16 barb	1	1
10	328-003	Elbow -12 barb x -NPTM	1	1
11	300-007	Fan Motor (new style) (Replaces 300-001)	1	1
12	507-000	Fan	1	1
13	524-000	Fan Guard	1	1
14	85219	Hose Barb 90 elbow -8 x -8 nptm plated	1	1
15	322-005	Hyd 45 elbow -12 NPTM x -12NPTM	1	1
16	335-002	Radiator Bypass Valve	1	1
17	85227	Barb to check valve 3/4" hose barb x 3/4" NPTM	1	1
18	322-027	Flow Control (for 300-007)	1	1
19	322-026	Fan Motor Flow Control Valve (for 300-001)	1	X
19	328-000	Hose Barb 45 elbow -8 barb x 6 SAE	1	1
20	362-001	Control Block - HD series (Pilot/Old)	1	X
20	362-003	Control Block - HD series Direct New (RDFA)	1	1
24	521-803	Grommet, Filler Cap	X	1
24	85241	Rubber U-Trim	Per Foot	X
25	359-002	Hyd Breather 1" NPT - Red Cap (standard)	1	1
25	359-004	Hyd Breather 1" NPT, 5 psi - Red Cap (Bulk Feed)	1	1
27	92354-0313	Washer - lock 5/16" s/s	4	8
28	85234	Nut - 5/16 s/s	4	8
28	85234	Nut - 5/16	4	8
28	85234	Nut - 5/16 plated	4	8
29	228-010	Screw Hex Head GR5 5/16" X 1" PLTD	4	4
30	296-004	Washer Flat Gr5 5/16" PI	1	4
31	284-026	Nut Hex 5/26-18 Nyloc PI	1	6

Parts List

Item	Part Number	Description	QTY. STD	QTY. SQ. Filter
32	214-013	Capscrew Button head 5/16 x 1" - S/S	1	4
33	214-012	Capscrew Button head 5/16 x 3/4" - S/S	1	8
34	85230	Screw 1/4-20 x 3/4" button head Allen s/s	18	17
36	90094-050	1/2" NPT plug	1	1
37	355-004	Hyd Sight Glass 1" NPTM w/ ball	1	2
38	322-015	Elbow 90 degree 16 - SAE x -20 JIC	1	1
39	320-015	Tee 16SAE x -15 JIC x -16 JIC	1	1
40	331-000	Relief Valve - 3000 psi (Pilot/Old)	1	X
40	331-001	Relief Valve - 3000 psi Direct New (RDFA)	1	1
41	85242-1	Hose 3/4" low pressure bypass (per foot)	Per Foot	Per Foot
42	85242-1	Hose 3/4" low pressure bypass (per foot)	Per Foot	Per Foot
43	85236	Hose fan motor return 1/2" (per foot)	Per Foot	Per Foot
44	360-001	Hose - rad out 1" (per foot)	1	1
45	360-000	Hose - rad in 1" (per foot)	1	1
46	361-000	Hose - fan motor feed	1	1
47	313-017	Hose Clamp T-Bolt -8 hose	2	2
48	313-018	T Clamps -12 Hose	4	4
49	313-019	T Clamps -16 hose	4	4
60	85241	Rubber U-Trim	Per Foot	X
60	521-804	Grommet, Square Filter	X	1
61	85258	E Clip 1/2"	2	2
62	335-001	Low Pressure Bypass Valve	1	1
63	85259	Nut, Seal 1/2" NPT	1	1
64	526-001	Gasket - Hydraflow Filter (Round)	1	X
65	85250	Filter Cap HD Hydraflow (Round)	1	X
-	350-000	Filter Element HD Hydraflow	1	1
-	526-021	Gasket HD bolt-in Tank	X	1

* Not shown in drawing

(QTY) Sub-assembly replacement part, or part not used in every model

^ Note: Filter assembly includes element, bowl, housing and all gaskets.

+ See Filter Head Options for identification

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.



Paragon Tank Truck Equipment

www.paragondirect.com



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