



HydraFLOW

25 gpm max.

3000 psi max



WARNING
DO NOT OPERATE
MACHINERY BEFORE
READING MANUAL FULLY

INSTALLATION, OPERATION, AND MAINTENANCE MANUAL



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.

⚠ ADVERTENCIA

PRESIÓN ALTA DE ACEITE.
 Puedo causar lesiones graves. Desconectar la energía, bajar la carga y descargar la presión antes de dar servicio al sistema hidráulico.



⚠ WARNING

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

⚠ WARNING

Keep body and clothing away from machine openings

⚠ CAUTION

Do not touch hot surfaces

⚠ WARNING

Hearing Protection Required

NOTICE

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.



Table of Contents

Section	Page
Safety Instructions & Warning Tags	2
Safety Precautions	3
Introduction	4
Mounting HydraFlow	5
Start-Up, Operation, & Maintenance	6
Outline Drawing	7
Parts List	8-11
Warranty	12

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 particularly be 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 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.
- If power take off and/or shaft are still exposed after installation, install a guard.
- 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 lack proper training
 - if you fail to follow proper procedures
 - if you do not use proper tools and safety equipment
 - if you assemble hydraulic system components improperly
 - if you use incompatible drive line components
 - if you use worn-out or damaged drive line components
 - if you use drive line 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



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.

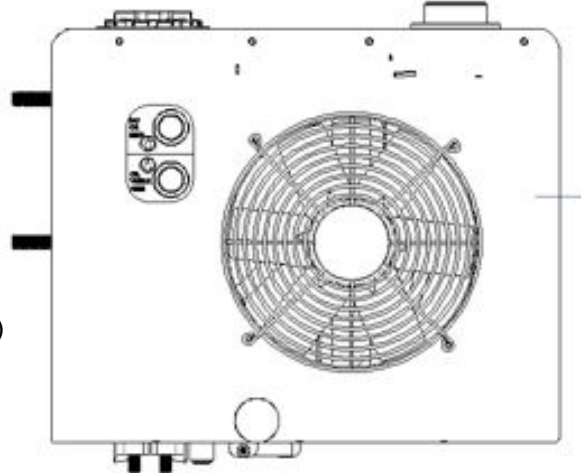


Warning: Serious injury can result from operating or repairing the unit without reading the service manual and taking adequate safety precautions.

Installation

Power Take off & Hydraulic Pump

- Mount PTO, adjust backlash as recommended by PTO Manufacturer.
- Ensure female spline of PTO has anti-seize compound installed by PTO Manufacturer.
- Mount hydraulic pump to PTO, brace (4 point brace) and support if needed (over 40lbs), as recommended by PTO Manufacturer.



Note:

Please refer to your hydraulic pump installation manual for correct filtration and suction specifications. The standard filter supplied in the HydraFlow is a 10 micron nominal suitable for gear equipment. Contact factory for other filtration media.

Note:

To avoid premature spline wear of the pump and PTO from torsional vibration, contact the engine manufacturer for the proper engine speed that will reduce torsional vibration to a minimum based on application.

Mounting HydraFlow

- Drill 21/32" diameter holes as shown on page 7.
- Use the cap screws, washers, and nuts supplied to mount the HydraFlow.
- Use Code 61 Gasket (P/N: 526-003).
- If HydraFlow needs to be spaced out from the frame rail, see page 11 for recommended bracket.



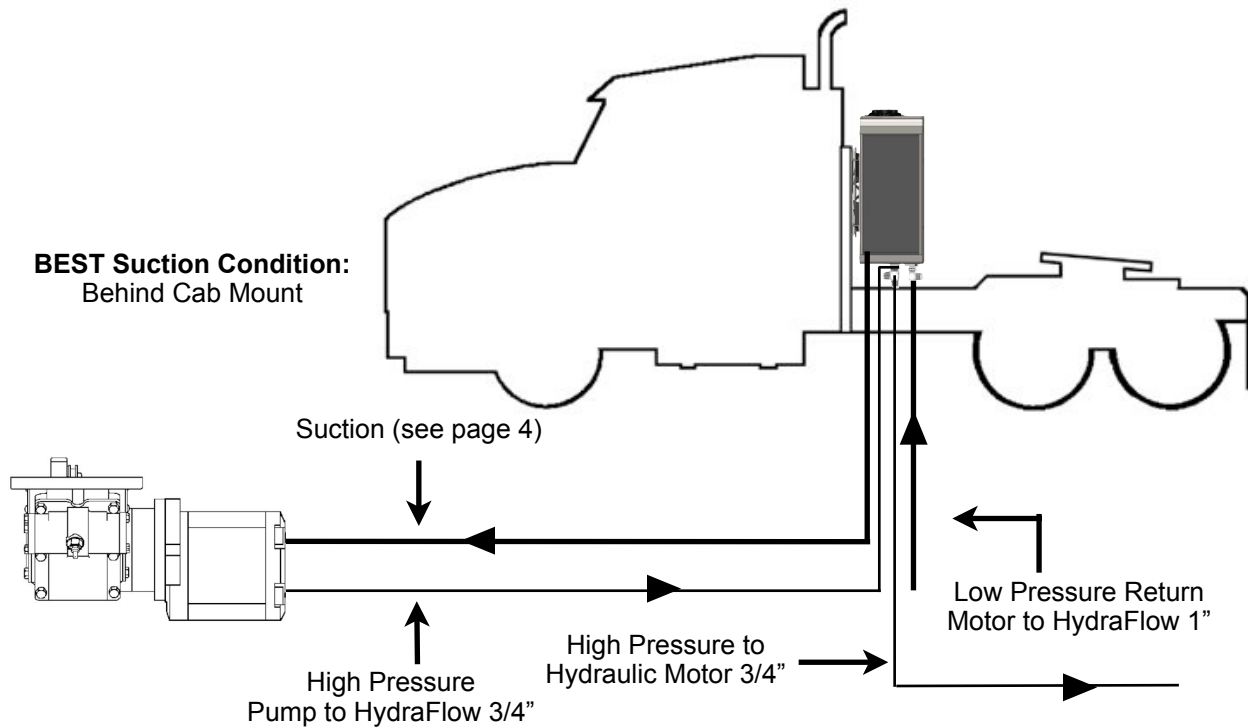
Hydraulic Hoses & Fittings.

- Do not use thread tape or pipe dope on threaded connection as this will contaminate the hydraulic system.
- All hoses are customer supplied. Fit all hoses according to system drawings.
- High pressure hoses must have a pressure rating equal or higher than the hydraulic system relief valve setting.
- The suction hose must be capable of operating in 28" Hg vacuum service.
- Gasket must be attached to four bolt flange before installing the suction connection.

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



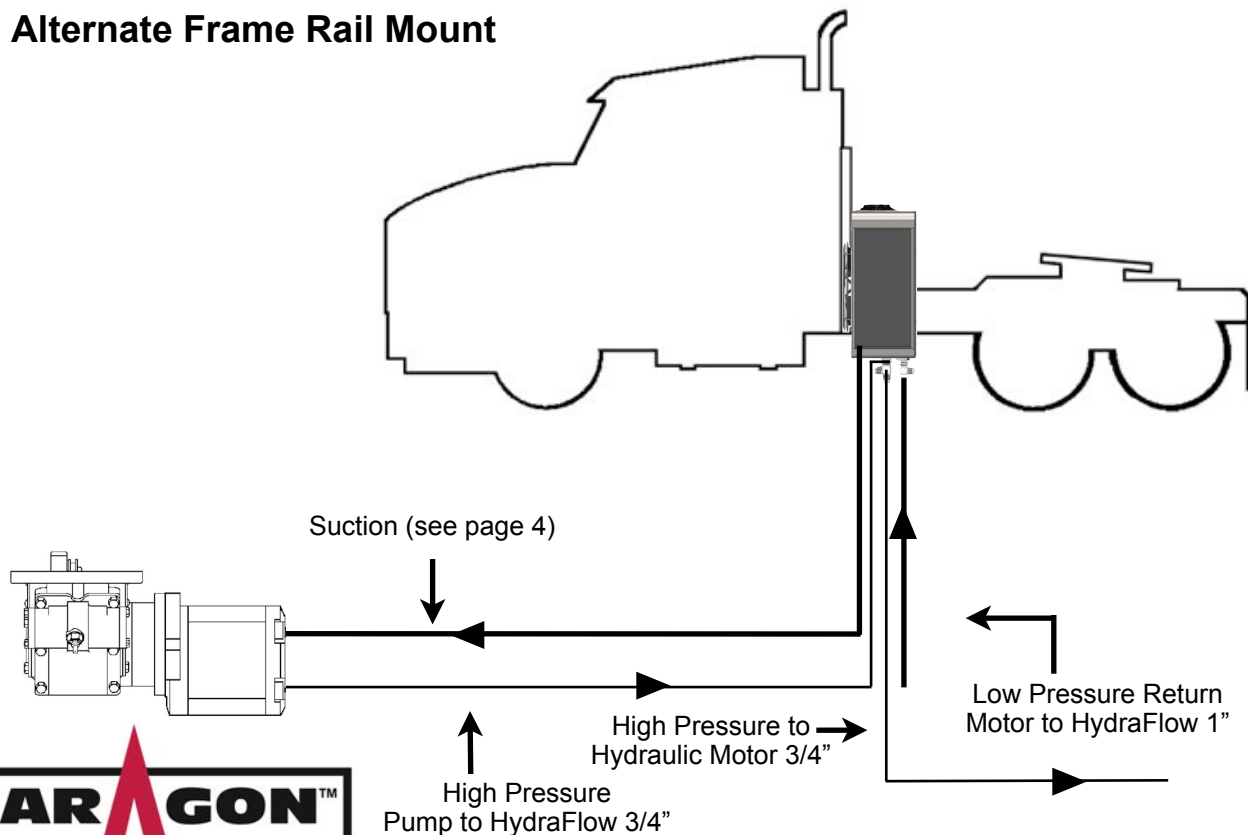
Preferred behind the cab mount (optimum suction conditions)



Note:

- Review *Hose Chart* on page 4 to insure the correct suction hose sizing.
- For off road applications do not mount Hydraflow directly to the frame rail. Behind the cab mount is recommended. Behind the cab mounting bracket is part number 508-016.
- See system circuit drawing for complete hydraulic plumbing.
- If Hydraflow is to be spaced off of the frame rail, refer to page 11 for recommended bracket.

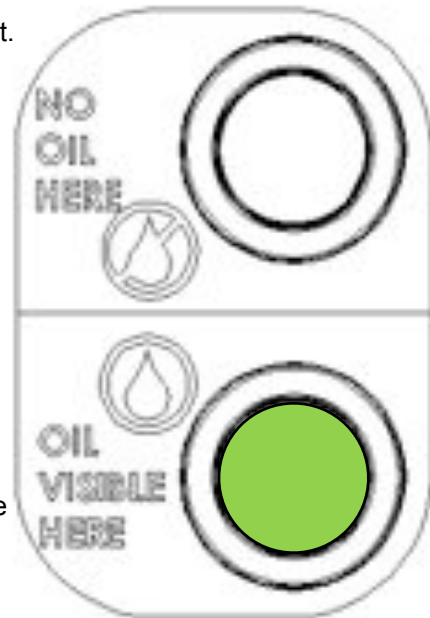
Alternate Frame Rail Mount



(800) 471-8769

Initial Start Up (Two People are Required).

1. Remove **RED** filler cap.
2. Fill Hydraflow to top of lower sight glass with hydraulic lubricant.
Note:
 - a. **Paragon recommends an (ISO) 32 non-foaming hydraulic oil.**
(Example: Shell Tellus T32 Hydraulic Oil)
 - b. **Use a paint filter as a strainer while filling.**
3. Replace **RED** filler cap.
4. Check all hoses and connections for no leaks.
5. Start engine and **slowly** release the clutch, engage the PTO and pump.
6. Run for 30 seconds to eliminate air from the system.
7. Disengage PTO, stop engine.
8. Remove **RED** filler cap and fill so as the bottom sight glass is completely full and no oil is visible in the top sight glass replace filler cap
9. Start engine and slowly release the clutch, while engine is running engage the PTO and pump.
10. Check for leaks, disengage PTO and stop engine.



Operation of System

1. Check oil level in the Hydraflow. Correct oil level is: bottom sight glass completely full, top sight glass completely empty when the unit is not operating.
2. Verify cooler radiator is clean and free of any obstruction.
3. Ensure parking brake is applied, control valves are in the neutral position.
4. Engage PTO per manufactures instructions.
Note:
Oil level will drop in the sight glass when the system is in operation.
5. Operate valves slowly.
6. To shut down system put valve in neutral (if available), disengage PTO per Manufacturer's instruction.

Maintenance

Daily	Check oil level before operating (the system must be off). Correct oil level is bottom sight glass completely full, top sight glass completely empty
Weekly	Visually inspect the system each week. Check hoses, fittings and mounting.
Every 3 Months	Change filter every 3 months.
	Grease PTO / Pump spline every 3 months.
Every 6 Months	Change oil and filter every 6 months.

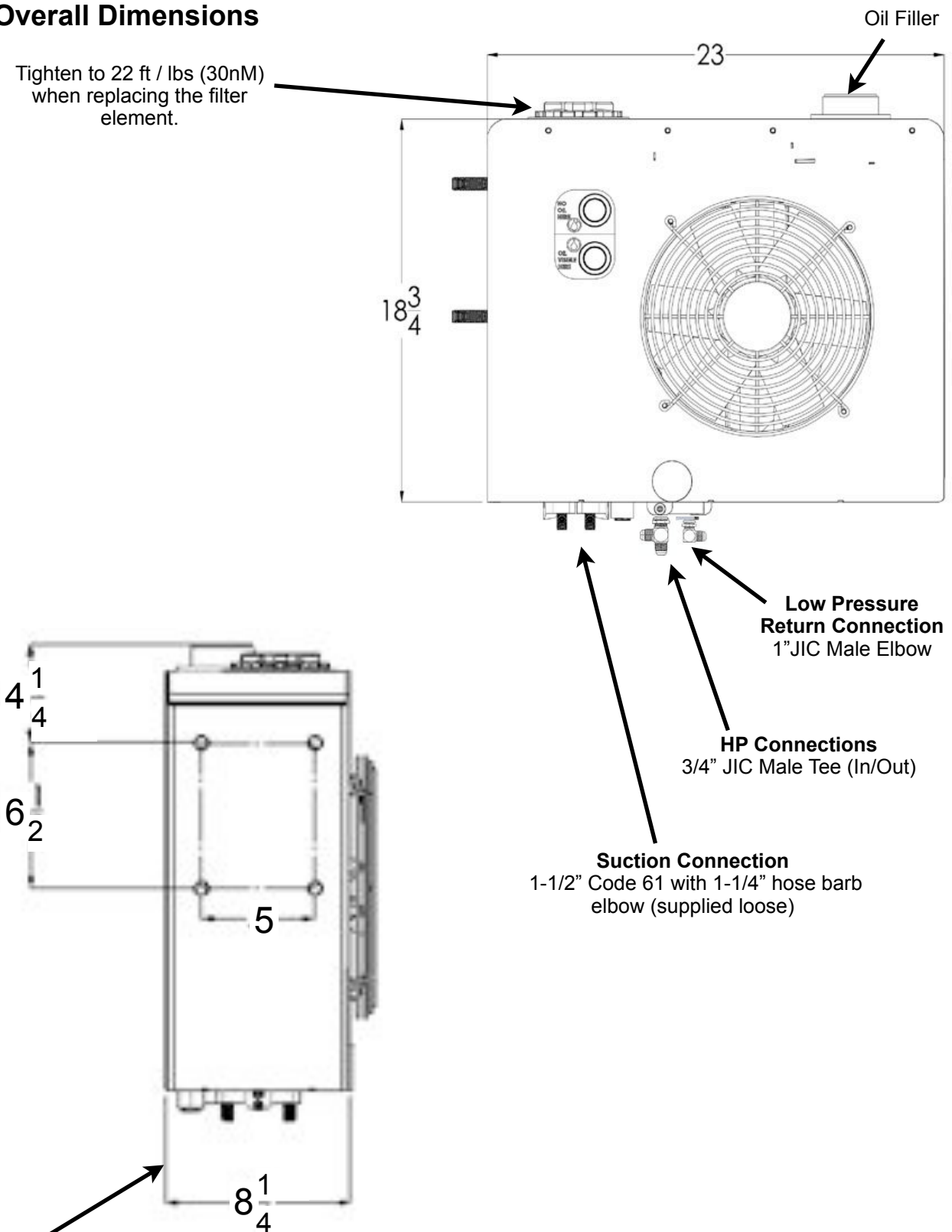
Note:

If Unit has a high duty cycle, an oil analysis program is recommended.



Overall Dimensions

Tighten to 22 ft / lbs (30nM)
when replacing the filter
element.

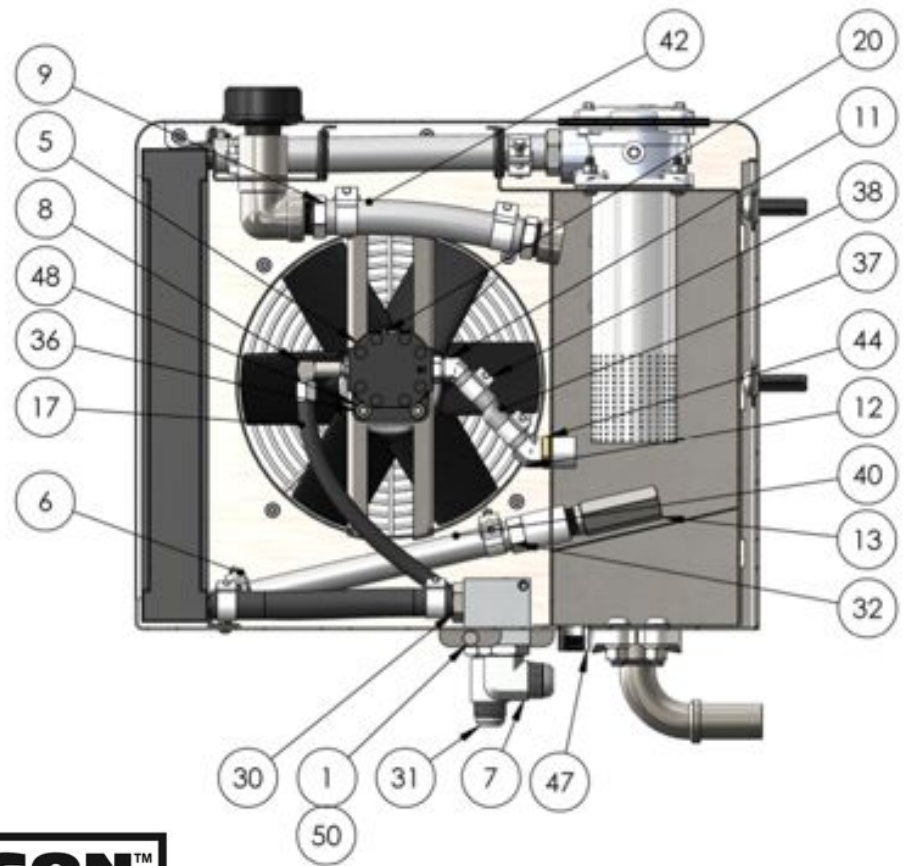
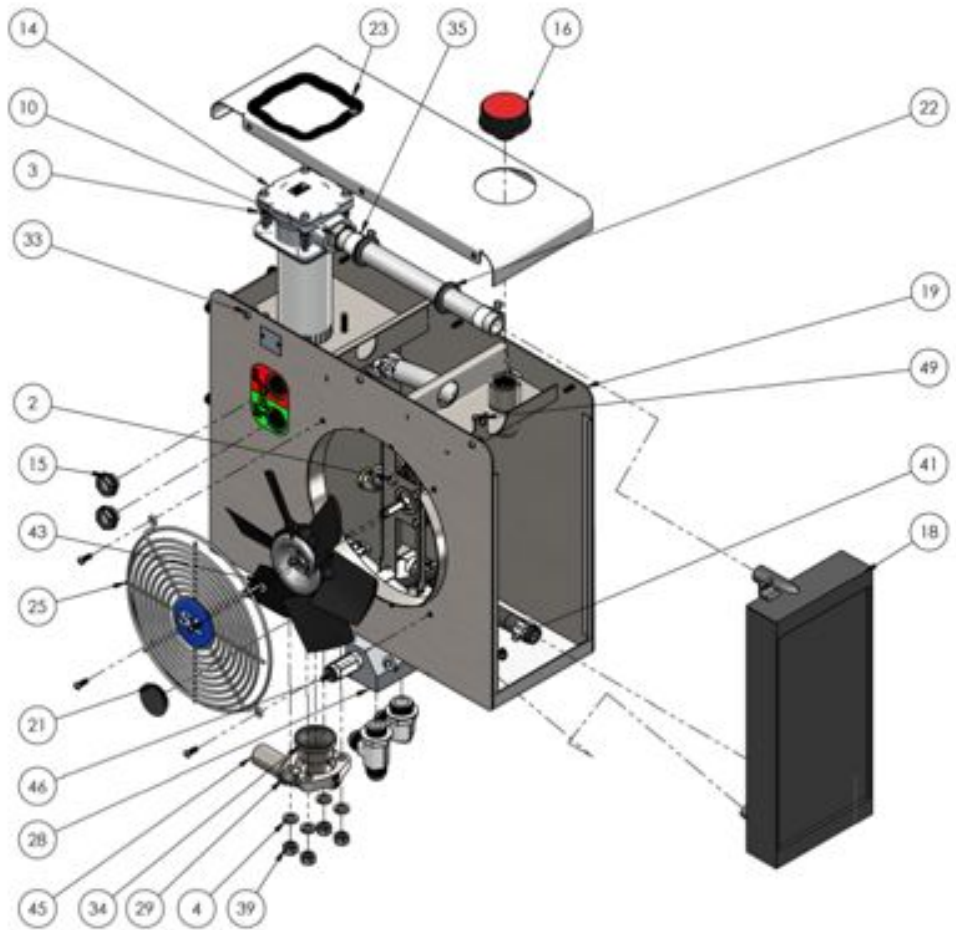


Note:

Provide adequate support for hoses at this location. Do not let hoses hang loose, premature hose failure will occur.



(800) 471-8769



(800) 471-8769

Parts List

Item	Part Number	Description	QTY. STD	QTY. SQ. Filter
1	214-012	Capscrew Button Head 5/16 X 3/4" - S/S	2	2
2	228-010	Capscrew Hex HD Gr5 5/16" X 1" PI	4	4
3	284-026	Nut Hex 5/16-18 Nyloc PI	4	4
4	294-010	Washer Lock Gr5 1/2" PI	4	4
5	300-001	Hyd Fan Motor - HD/SL Hydraflow	1	X
5	300-007	Hyd Mtr Fan - HD/SL Hydraflow (New Style)	X	1
6	313-018	Hyd "T" Clamp Heavy Duty -12 hose	4	4
7	322-021	Hyd Elbow -16 SAE x -16 JICM	1	1
8	322-027	Hyd Fan Flow control - SL Hydraflow	1	1
9	327-001	Hyd Hose Barb Straight -16 x -16 NPTM	2	2
10	327-011	Hyd Hose Barb Straight -16 x -16 SAE	1	1
11	328-000	Hyd Hose Barb Elbow -8 x -6 SAE 45 degree	1	1
12	329-001	Hyd Hose Barb Elbow -8 x -8 MNPT 45 degree	1	1
13	335-000	Hyd Check Valve 3/4" NPT - Radiator	1	1
14^	352-002	Hyd Filter/diffuser, 4 bolt SAE 16 port - SL	1	X
14^	352-003	Hyd Filter/diffuser, 4 bolt SAE 16 port - HF(Square)	X	1
15	355-004	Hyd Sight Glass 1" NPTM with ball	2	2
16	359-002	Hyd Breather - 1" NPT - Red Cap	1	1
17	361-001	Hyd Hose Fan Motor Feed - Hydraflow SL	1	1
18	370-002	Hyd Heat Exchanger - Hydraflow SL	1	1
19	500-020	Body Mainframe Hydraflow SL	1	X
19	500-010	Body Mainframe Hydraflow SL - Sq filter	X	1
20	507-000	Fan - HD/SL Hydraflow	1	1
21	521-800	Grommet, 1-1/4" Blank - Hydraflow SL	1	1
22	521-801	Grommet, 1-1/4" Open - Hydraflow SL	1	1
23	521-804	Grommet, Square Filter - HF Hydraflow	X	1
23	521-802	Grommet, Filter - H/HD/SL Hydraflow	1	X
24	521-803	Grommet, Filler - HF/SL Hydraflow	1	1
25	524-000	Guard, S/S - Hydraflow Fan HD/SL	1	1
26*	526-003	Gasket, 1-1/2" - Buna 70 Duro 1/16" CD61	1	1
28	85209-1	Hyd Control Block-HF/ SL Series	1	1

*Not shown in drawing

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

^Note: Filter Assembly includes Element, Bowl, Housing, and all Gaskets



Parts List (Cont.)

Item	Part#	Description	QTY. STD	QTY. SQ. Filter
29	85213	Flange Split Half 24CD61	2	2
30	85221	Hyd Hose Barb -12 x 12 SAE	1	1
31	85222	Hyd Tee 12 SAE x 12 JICM x 12 JICM	1	1
32	85227	Hose Barb -12 x -12 NPTM	1	1
33	85230	Screw 1/4-20 x 3/4" Button HD Allen s/	12	12
34	85232	O ring -24 Code 61 225 NBR	1	1
35	85233	Hose Clamp S/S 1.06" TO 1.5" Heavy Duty	5	X
35	313-021	Hyd "T" Clamp Heavy Duty -16 hose (HF/SL)	X	4
36	85234	Nut 5/16" plated	4	4
37	85236	Hyd Hose Fan Motor Return 1/2"x4 3/4 OAL	1	1
38	85237	Clamp,HSE 1/2" Heavy Duty	2	X
38	313-017	Hyd "T" Clamp Heavy Duty -8 hose	X	2
39	85239	Nut Hex GR5 1/2" Zinc Plated	4	4
40	85242-1	Hose 3/4" (per foot)	PER FOOT	PER FOOT
41	85243-1	Hose Block /Rad 11"	PER FOOT	PER FOOT
42	85244	Hose FLT/RAD 1" BL x 10" OAL	PER FOOT	PER FOOT
43	85258	Retaining ring 1/2" - Fan Motor	2	2
44	85259	Nut, Seal 1/2" NPT	1	1
45	85261	Hyd Hose Barb 90 degree -20 x - 24 CD 61	(1)	(1)
45	329-000	Hyd Hose Barb Elbow -20 x -24 Cd61 45 degree	(1)	(1)
46	85304	Relief Valve HF/H/300 Hydraflow - 3000 psi	(1)	(1)
46	85257	Relief valve Hydraflow - 2500 psi	(1)	(1)
47	90094-050	Plug Pipe 1/2" Soc Stl	1	1
48	90191-031	Washer, lock 5/16" Plated	4	4
49	92354-0253	Washer, Lock 1/4 SST	2	2
50	92354-0313	Washer, Lock 5/16 SST	8	8
51*	350-001	Hyd Filter Element Bare - HF/SL Hydraflow	1	1
52*	522-001	Cap - Hydraflow HF w/ oring (Square Cap bolt on)	X	1
53*	85250	Filter Cap - Hydraflow Std/HD/SL	1	X
54*	521-002	O-Ring - Filter Cap HF Hydraflow Hex Head	X	1
55*	580-001	Spring - Hydraflow HF (Square Cap)	X	1
56*	508-043	Bracket - Mounting Extension - SL Hydraflow	(1)	(1)



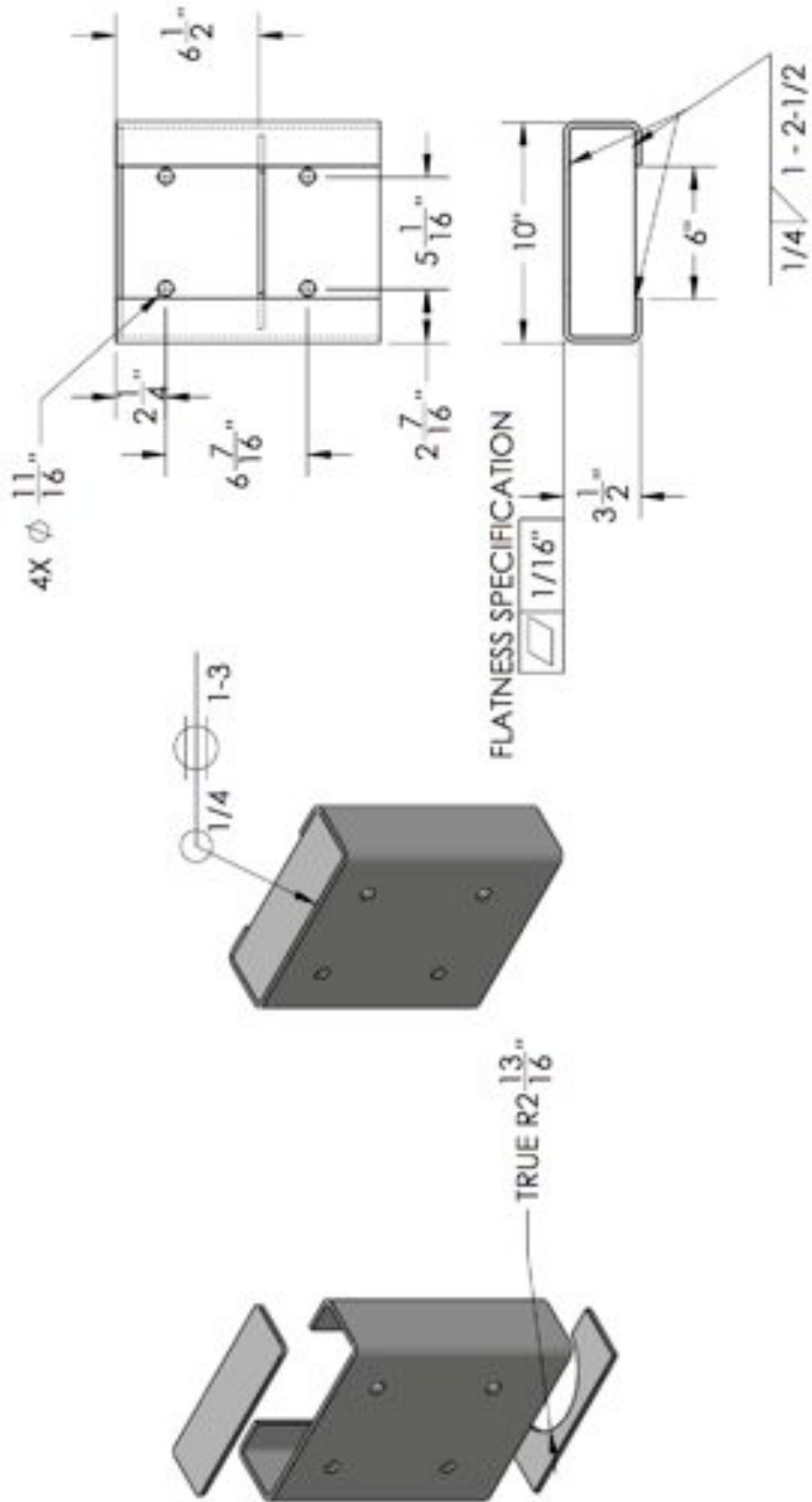
*Not shown in drawing
(QTY) Sub-assembly replacement part, or part not used on every model
^Note: Filter Assembly includes Element, Bowl, Housing, and all Gaskets



(800) 471-8769

Recommended Frame Rail Bracket for SL Series HydraFlow

Part Number	Description
508-043	Bracket - Mounting Extension - SL HydraFlow



WARRANTY – HYDRAFLOW

Subject to the terms and conditions hereinafter set forth and set forth in General Terms of Sale, Paragon Tank Truck Equipment LLC (the seller) warrants products and parts of its manufacture, when shipped, 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 in accordance with seller's written instructions, recommendations and ratings for installation, operating, maintenance and service of products, for a period as stated in the table below.

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

Product Type	Warranty Duration
New	18 months from date of shipment, or 12 months after initial startup date, whichever occurs first

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 (1) year from date of 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 (1) 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 point 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 a claim as provided above and its approval, Seller shall at its option 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 material or those which may lead to build up of material 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.

Any improper use, operation beyond capacity, substitution of parts not approved by Seller, or any alteration or repair by others in such manner as in Seller's judgment 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 any 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 no event shall Buyer be entitled to incidental or consequential damages. Any action for breach of this agreement must commence within one (1) year after the cause of action has occurred.



(800) 471-8769

Paragon Tank Truck Equipment
2111 US Hwy 411 NE, PO Box 200277, Cartersville, Georgia
USA 30120
Tel 770.387.3820, 800.471.8769, Fax 770.387.3824
www.hydraflow.biz