Installation and Operation Manual

P657

Truck Blower

PARAGON®

PRGMAN-05
Version: A
January 25, 2024

Safety Precautions

- 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 a shaft (with or without a guard) when the engine is running.
- **Do not** engage or disengage driven equipment by hand from under the vehicle when the engine is running.
- In order to avoid becoming entangled, install the power take off and/or shaft behind the frame rail, tanks, battery box, etc.
- If power take off and/or shaft are still exposed after installation, install a guard.
- Use provided drive shaft flange set screws and apply “Loctite® 243” or equivalent.
- Install a support strap when servicing a drive shaft to prevent personal injury.

A serious or fatal injury can occur. . .

- If you lack proper training.
- If you fail to follow proper precautions.
- If you do not use proper tools and safety equipment.
- If you assemble drive shaft components improperly.
- If you use incompatible drive shaft components.
- If you use worn-out or damaged drive shaft components.
- If you use drive shaft 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.

Safety Notice

Table of Contents

P657 Blower Specifications

Airflow	Max Operating Pressure	Max Vacuum	RPM Range	Weight
221-604 CFM	18 PSI (20 PSI intermittent)	17 inHg	1000-2000 RPM	297

Note:
Reduce the maximum operating pressure by 1 PSI for each 2000 feet of altitude above sea level.
(Example: at an altitude of 4000 feet, the max operating pressure of the blower will decrease by 2 PSI)

(Fig. 1)

PTO Speed RPM	Pressure								Vacuum					
	12 PSIG		16 PSIG		18 PSIG		20 PSIG		12 inHg		15 inHg		17 inHg	
	CFM	HP	CFM	HP	CFM	HP	CFM	HP	CFM	HP	CFM	HP	CFM	HP
1000	246	19							247	10	222	12		
1100	282	21	265*	28					283	11	258	13		
1200	318	23	301*	31	293*	34			319	12	294	14		
1300	354	25	337	33	329	37	321*	41	355	14	330	17	310*	19
1400	390	27	372	36	365	40	357*	45	390	14	365	17	346*	19
1500	425	29	408	39	400	43	393*	48	426	14	401	18	328*	20
1600	461	31	444	41	436	46	429*	51	462	15	437	19	418*	22
1700	497	33	480	44	472	49	465*	55	498	16	473	20	453*	23
1800	533	35	516	47	508	52	500*	58	534	17	509	22	489*	24
1900	569	37	551	49	544	55	536*	61	569	18	544	23	525*	26
2000	604	40	587	52	579	58	572*	65	605	19	580	24	561*	27

***Intermittent operation only**

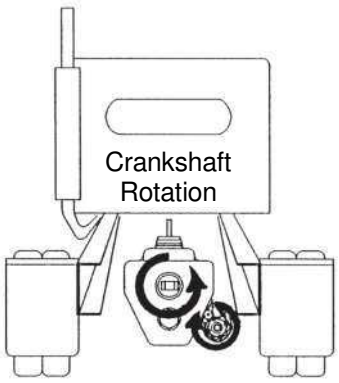
Mounting the P657 Blower

Power Take Off

- PTO Horsepower and torque rating must be adequate for desired blower RPM and pressure demand.
  (See P657 Blower Specifications Fig.1, Page 4)
- Select proper ratio for the desired engine speed and correct blower input shaft speed.
  (Engine RPM x PTO ratio = Blower RPM. Blower RPM 1000 min, 2000 max)
- Verify PTO rotation *(See Fig.2)*.

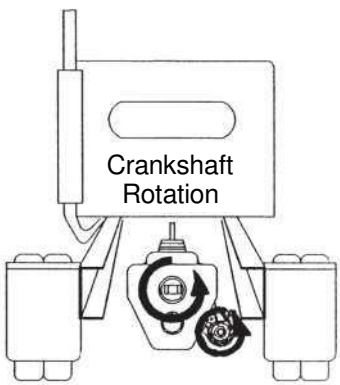
(Fig. 2)

Typical Eaton Transmission



Clockwise PTO Rotation
Opposite: Opposite of the crankshaft rotation

Typical DT-12 Transmission



Counter Clockwise PTO Rotation
Crank: Engine crankshaft rotation

Blower Orientation *(See Fig. 3-Page 6)*

- Determine the desired blower orientation prior to mounting.

Note:
Blower should be mounted on the same side of the truck as the PTO Location to keep drive shaft angles to a minimum.

- Ensure sight glasses, melt plugs, magnetic plugs, and breathers are in the correct positions prior to mounting.

Note:
Melt plugs are left-hand threads. One plug must be on the discharge side of the blower.

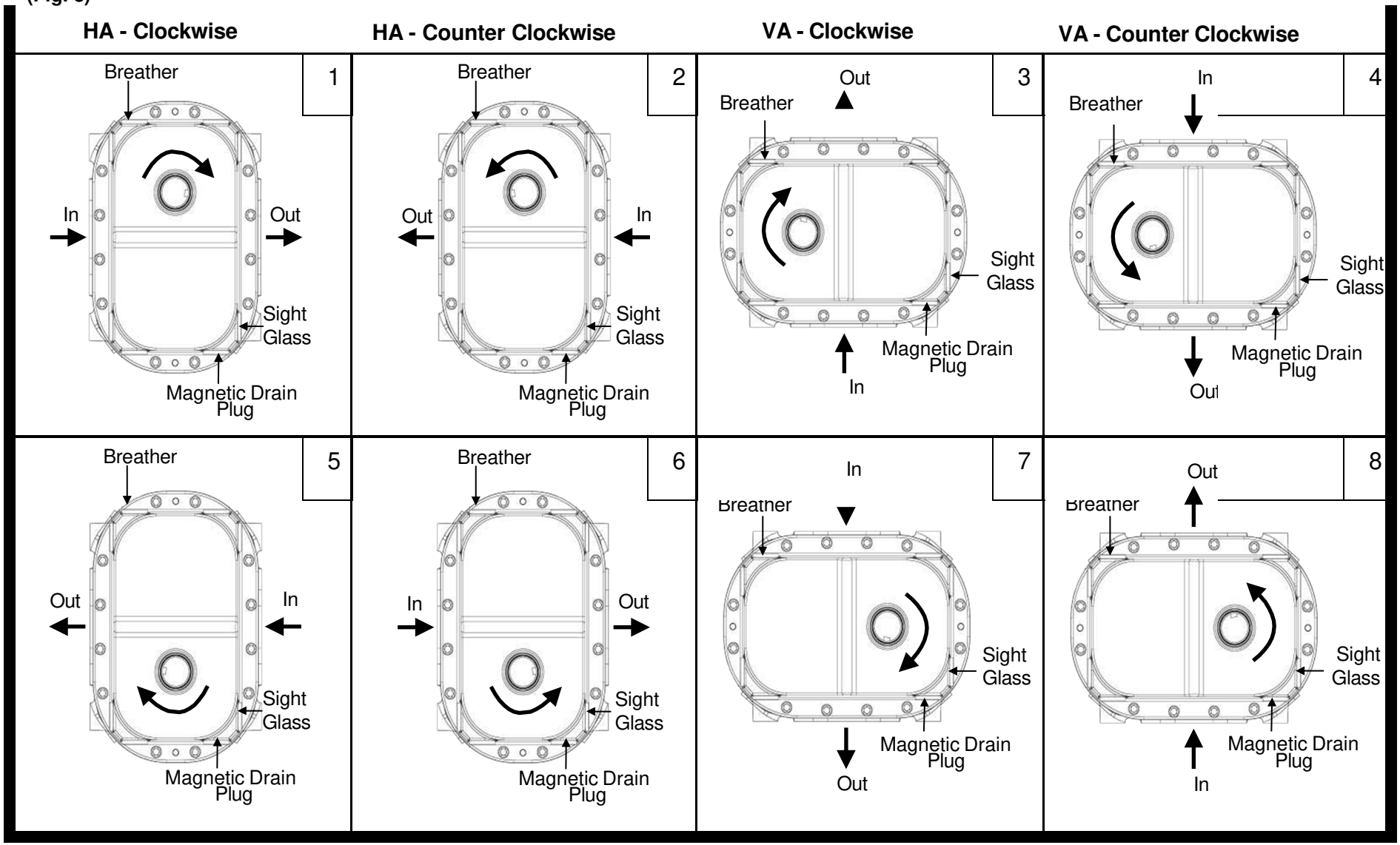
- Sight glass should **ALWAYS** be on the lower side opening, closest to the frame rail.
- The magnetic drain plug should **ALWAYS** be installed pointing down.
- The breathers should **ALWAYS** be installed on the top of the oil tanks, shielded from elements.

Note:
Remote breather kits are available for harsh environments.

(Fig. 3)

Horizontal Airflow - HA

Vertical Airflow - VA



All sight glasses, magnetic drain plugs, and breathers are shown for driver side installation; reverse sight glass locations for passenger side installation.

Mounting Bracket Requirements

- The use of Paragon brackets is recommended.
- Should be strong enough to support the P657, accessories, and torque required.
- Must allow minimum of 3/4” clearance between the blower and frame rail to prevent damage to the blower.
- Use Qty (4), 5/8” diameter bolts to mount the P657 Mounting Bracket to the tractor frame rail.

Drive Shaft Installation

Caution **Drive shaft and other components may shift with changes in suspension.**

- Paragon strongly recommends consultation with a local drive shaft specialist **PRIOR** to drilling the tractor frame rail.
- At a minimum a drive shaft specialist should verify the following:
  - Required length meets industry standards for safe operation at the desired rpm.
  - Drive shaft is capable of operations for the required rpm.
  - Equipment slopes are correct to minimize torsional vibrations.
  - Confirm the drive shaft working angles are within industry specifications for safe operation(*See Fig.4).*
- A minimum 3” diameter DOM Tubing x 0.083 wall thickness be used for P657 Blower applications.
- That each drive shaft section has a “U” bolt hanger bracket for safety *(See Fig.5, Page 8)*.
- A minimum Drive Shaft critical speed of 2000 rpm.

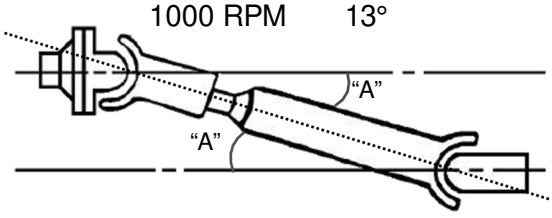
Determine Blower Mounting Slope

- Attach mounting bracket to the blower.
- Torque mounting bolts to the required torque (77 lbs·ft)
- Clamp the blower in place on the frame rail while supporting the equipment from underneath.
- Contact a drive shaft specialist.

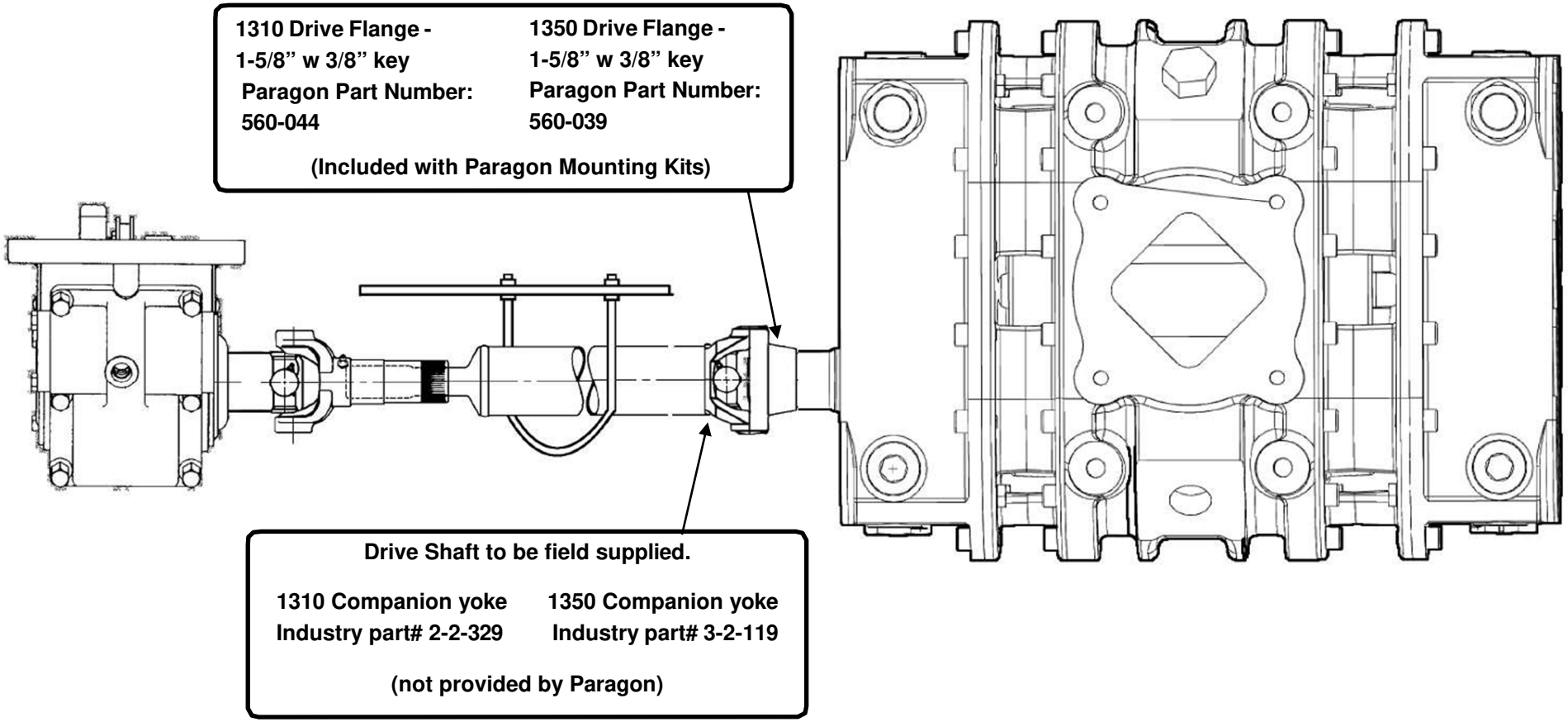
(Fig. 4)

Maximum Drive Shaft Working Angles

Speed	Angle “A”
2000 RPM	8°
1800 RPM	9.5°
1500 RPM	11.5°
1000 RPM	13°



(Fig. 5)



Suction (Inlet) Equipment

- Ensure the Inlet flange is torqued to 30 lb/ft.
- Ensure the Air Filter is sized for the correct airflow (CFMs) operating range of the blower.
- Ensure the Air Filter is mounted as far from any heat sources as possible.


Caution ***An undersized filter will cause damage to the equipment (overheating)***


Caution ***The filter should not exceed 17 inches of water restriction.***

- Ensure a Vacuum Relief Valve is used if any equipment will be used for vacuum duty of any kind.
  - Ensure Vacuum Relief Valve is sized for the correct CFM.
  - Ensure Vacuum Relief Valve rating does not exceed 15 inHg.
  - A Vacuum Relief Valve should be positioned between the filter outlet and P657 Inlet Flange.


Caution **If operating under vacuum a Vacuum Relief Valve should be installed.**

- Inlet Pipework should be free of weld beads, foreign metal, and debris before installing.
- For vacuum applications all rubber elbows must have reinforcement to prevent collapsing during normal operations.

Delivery Discharge Pipework

- Ensure Discharge Flange is torqued to 30 lb/ft when installed.
- Ensure all delivery pipework is free from weld beads, foreign metal, and debris.
- Ensure all pipework components are capable of withstanding discharge temperatures and pressures.
- Ensure the Pressure Relief Valve is mounted as close as possible to the blower discharge.

Note:
Pressure Relief Valves need to be checked weekly and replaced periodically; these must be placed in a serviceable location.

- If a Silencer or Check Valve is installed, ensure it is sized for the proper CFM range.
- Ensure these are mounted downstream of the Pressure Relief Valves.

Note:
Check Valves will protect the equipment from back flow of product. These must be inspected and replaced periodically.

ECM/TCM Programming

- Paragon recommends that a factory dealer/technician program your tractor for optimal ECM/TCM performance.
- Ensure the engine range RPM is programmed within the operational limits of the P657 Blower.
- Ensure the engine RPM ramp up rate, after PTO engagement, is set for no more than 100 rpm per second.
- Ensure the torque output settings are correct for the equipment operation parameters.

Note:
For more available options regarding ECM/TCM programming, please contact your local chassis dealer.

Pre-Start Up

- Engine is off and keys are not in the ignition.
- Ensure all connections are supported.
- Ensure the Camlock (discharge) connection is venting to atmosphere.
- Ensure the air filter is properly installed and free of contaminates.
- Ensure the P657 can be turned by hand.
- Ensure all equipment supplied labels are installed.
- Ensure all fasteners are installed and torqued properly.
- Ensure ECM parameters are properly set (if applicable).
- Ensure oil level is correct (see page 12 for details).

Blower Operation

- Inspect blower mounting, drive shaft, P.T.O. and air filter for integrity.
- Remove camlock dust cap and connect the hot air hose.
- Follow trailer manufacturer's recommendation regarding hose connections and proper valve operation.
- Slowly engage P.T.O. with engine at idle as per PTO manufacturer's recommendations.
- Bring engine RPM up to operating speed and engage preprogrammed RPM.
- Unload trailer as per trailer manufacturer's recommendation.
- While discharging, visually check blower for vibration, mechanical noise, or excessive heat.
- If blower relief valve or melt plug is activated, reduce the line pressure to 0 psi.
  - Shut down the P657 by disengaging the PTO, shut off the engine, and check for blockages
- Disengage P.T.O. according to manufacturer's instructions, shut off engine.
- Disconnect blower hose and replace camlock dust cap.

Caution **The blower and accessories will become hot enough to cause skin burns on contact.**

Warning **Rotating machinery is dangerous.**

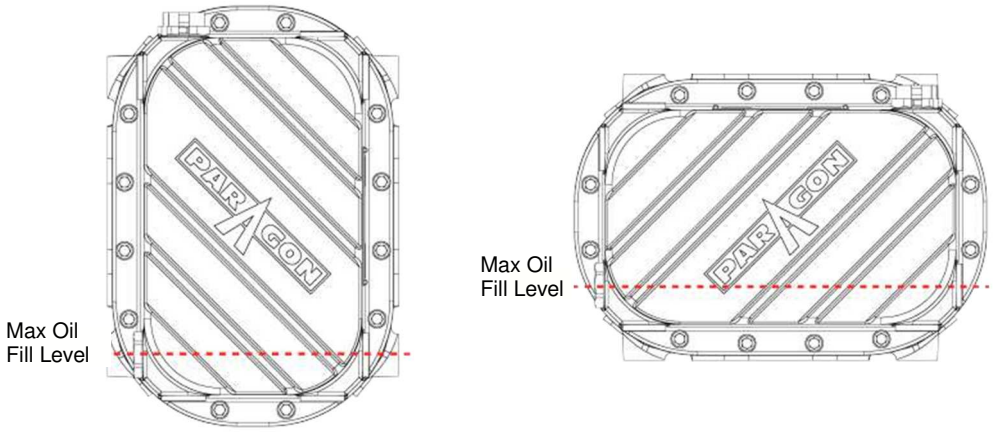
Warning **Always wear ear protection when in close proximity to blower.**

Lubrication Instructions

- Use Paragon Lobe Blower Oil (part number: 409-007).

Note:
Front oil tank will fill slower than the rear tank. Allow oil to settle after it begins to show in the sight glass.

(Fig. 6)



Sight Glass Filling Instructions


Correct Level


Over filled


Under Filled

Oil Capacity	Horizontal Air Flow (Standard Mount)	Vertical Air Flow
Drive End (Front Cover) **Non-Drive End (Rear Cover)**	15 oz (0.5 qt.) 25 oz (0.8 qt.)	28 oz. (0.9 qt.) 48 oz. (1.5 qt.)


Caution **Mixing or incorrect oil can result in gear and bearing failure.**

Preventative Maintenance

- A proper maintenance program will keep your P657 blower in top running condition. A newly installed P657 blower should be checked frequently during the first month of operation. **Use only Paragon Blower Oil.** Check oil levels and add as needed.
- An oil analysis program is recommended.
  - In the absence of an oil analysis program, change oil in both tanks every 500 hours.

Note:
Correct Oil Level is 1/2 to 7/8 full on the sight glass (See Fig. 6-Page 12). Air bubble must be visible at the top of sight glass.

Daily

1. Check and maintain oil levels, add oil as necessary.
2. Check Air Filter restriction indicator.

Weekly

1. Check and maintain oil levels, add oil as necessary.
2. Check Air Filter restriction indicator.

Monthly

1. Inspect the entire system for leaks.
2. Inspect condition of oil and change if necessary.

Semi-Annually

1. Inspect the PTO components.
2. Use an oil analysis program.

Safety Checklist

Complete prior to blower operation

Truck #_____

Transmission#_____

P.T.O.#_____

P.T.O. Ratio _____

Blower model # P657 Blower

Blower serial # _____

Date_____

Inspected by_____

☐ Read and understand Installation Manual.

☐ The following have been verified before installing the PTO:

- ☐ PTO model # matches packaged model #.
- ☐ PTO mounting flange is correct for desired P657 mounting location.
- ☐ PTO ratio has been verified.
- ☐ PTO torque capabilities are acceptable for blower operation.
- ☐ PTO rotation is correct for desired P657 orientation.

☐ PTO is mounted per manufacturer's recommendation.

☐ Transmission has been filled to the proper oil level as required by the manufacturer.

☐ The Blower can be rotated by hand without lobes touching or clashing.

☐ Drive shaft is installed correctly.

☐ Provided drive shaft flange set screws have been installed with "Loctite® 243" or equivalent.

☐ Air Inlet is installed as far away from heat sources as possible.

☐ All bolt torques have been verified.

☐ All supplied warning labels have been installed.

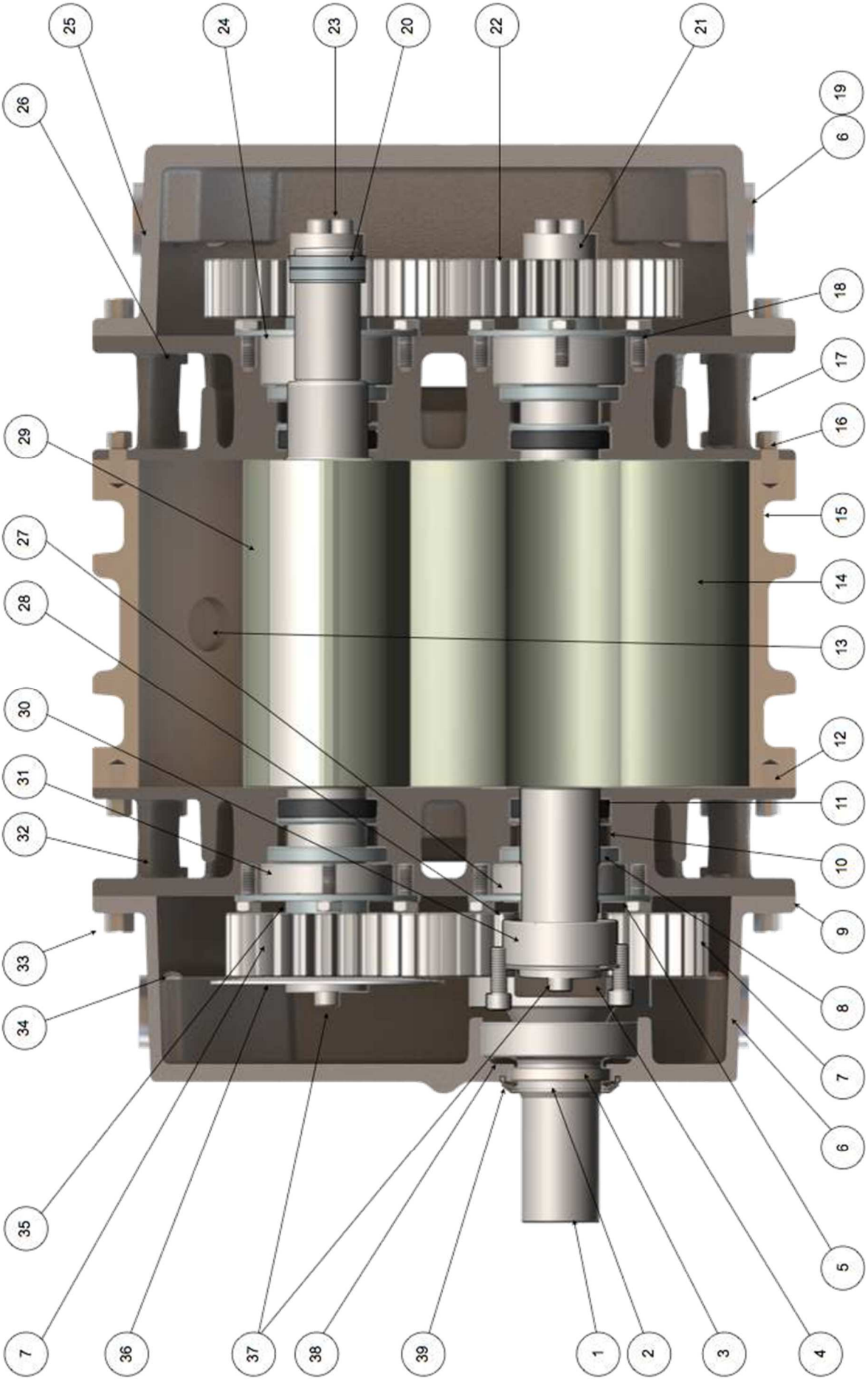
☐ The correct Relief Valve has been installed properly.

☐ Melt Plug is installed on the discharge side of the blower.

☐ Sight glasses and magnetic drain plug can be seen to identify oil level in P657 oil tanks after installation.

☐ Breathers are installed in the proper location.

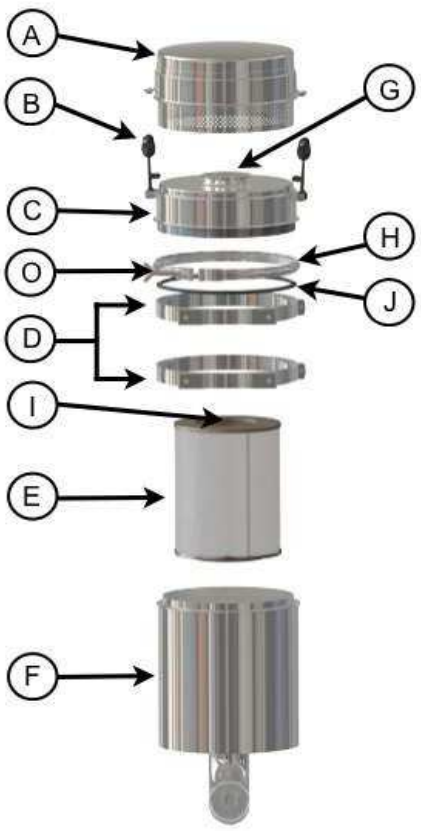
☐ P657 front and rear oil tanks are filled to the proper levels (1/2 to 7/8 full).



P657 Blower Spare Parts

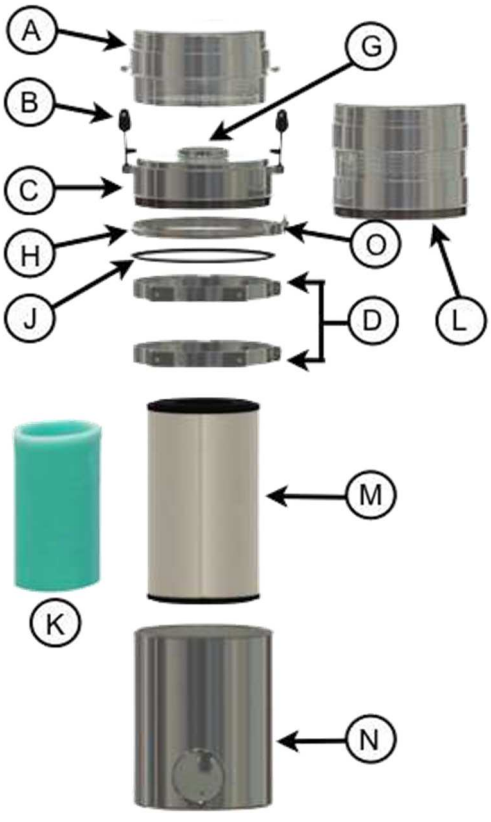
Item	Part#	Description	Qty
1	503-005	P657 Shaft Drive	1
2	571-023	Spacer	1
3	555-007	Oil Seal, Shaft	1
4	296-021	Washer, Rotor	2
5	128-008	Capscrew	16
6	141-001	Plug, Magnetic	2
7	529-004	Step Up Gear Set	1
8	555-008	Tank/Sideplate Oil Seal	4
9	523-037	Blower DE Cover	1
10	297-003	Ring, Internal Snap Retaining Lab Seal	4
11	556-038	Labyrinth Seal	4
12	274-002	Dowel Pin	6
13	543-003	Melt Plug	2
14	502-007	Blower Driven Rotor	1
15	500-035	Body	1
16	224-006	Capscrew	32
17	501-010	Sideplate, Blower NDE	1
18	582-018	Bearing Retainer	4
19	323-005	Hyd. Plug	10
20	582-020	Retainer - Inner Lock Ring	4
21	582-019	Retainer Bushing	2
22	529-003	Timing Gear Set	1
23	124-027	Capscrew	10
24	510-006	Double Row Bearing	2
25	523-036	Blower NDE Cover	1
26	228-030	Capscrew	8
27	571-022	Drive Gear Spacer	1
28	582-022	Spiral Ring Retainer	2
29	502-006	Blower Drive Rotor	1
30	510-007	Bearing, Double Row, Step Up	1
31	512-003	Bearing, Rolling	2
32	501-011	Blower DE Sideplate	1
33	224-014	Capscrew	24
34	527-030	Oil Deflector	4
35	571-021	Bearing Spacer	3
36	527-025	Slinger, Blower	1
37	124-008	Socket Capscrew	2
38	512-004	Roller Bearing	1
39	558-002	Seal, Gamma Rotary w/ Labyrinth P657 Drive Shaft	1
40	198-000	Key, Parallel Small Gear **(Not Shown)**	1
41	174-004	Spring Pin **(Not Shown)**	1
42	192-000	Rivet **(Not Shown)**	4
43	See 543-003	Blank Plug - Lefthand **(Not Shown)**	2
44	355-008	Hyd Sight Glass **(Not Shown)**	2
45	409-007	Oil, Quart **(Not Shown)**	3
46	526-037	Bonded Sealing Washer**(Not Shown)**	16
47	613-001	Hyd Breather Assembly	2

P657 Air Filter Assembly - Spare Parts



Item	P/N	Description	Qty
A	576-009	Cap Assembly	1
B	576-012	Rubber Flex Latch	2
C	576-010	Head Assembly- P657/CDL9/CDL12/ Latches	1
D	612-043	Kit, Bracket (set of 2) -S/S Air Filter Mounting	1
E	575-005	Filter Element - CDL9/CDL12/P657 *For Filter Assembly 625-003	1
F	576-007	Body-CDL9/CDL12/ P657	1
G	533-045	Camlock 4” Male	1
H	576-008	Clamp Assembly ⅜” *Includes Wingnut (Item O)	1
I	284-019	Wing Nut, filter element - P657/CDL9/CDL12 (Not Shown)	1
J	526-000	Gasket	1
O	184-004	SS hex body for Filter Band Clamp	1

Item	P/N	Description	Qty
A	576-009	Cap Assembly (PSI/VAC)	1
B	576-012	Rubber Flex Latch	2
C	576-010	Head Assembly - P657/Latches	1
D	612-043	Kit, Bracket (set of 2) - S/S Air Filter Mounting	1
G	533-045	Camlock 4” male	1
H	576-008	Clamp Assembly ⅜” ***Includes Wingnut (Item O)**	1
J	526-000	Gasket	1
K	575-007	Filter Sock for 573-003 Element *Installs on the inside of the filter element	1
L	576-013	Cap Assembly (PSI only)	1
M	573-003	Filter Element - P657 *For Filter Assembly 625-006 & 625-002	1
N	576-006	Body - P657 Side Outlet	1
	576-018	Body - P657 Side Outlet w/ Gauge **(PSI/VAC only)**	1
O	184-004	SS hex body for Filter Band Clamp	1

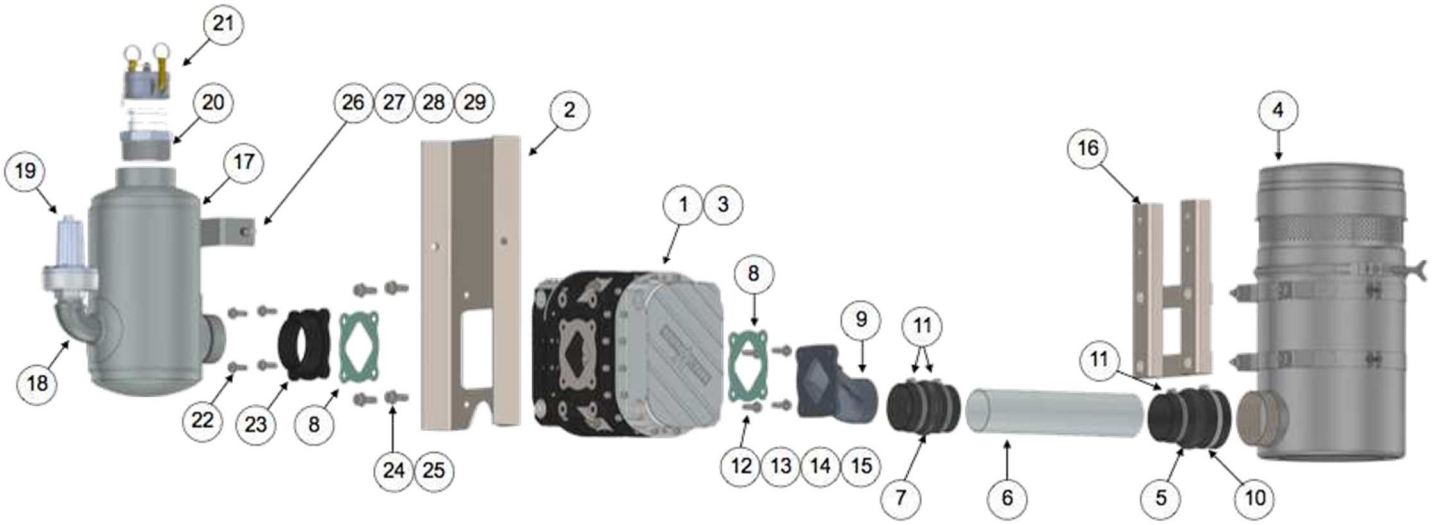


Vertical (VA) Airflow Diagram

#	P/N	Description	Qty
1	601-014	P657 Blower	1
2	508-109	VA Bracket	1
3	508-110	VA Blower Mounting Strap	2
4	560-044	P657 Drive Flange 1310 Series	1
5	228-093	P657 Blower Mount Bolts	4
6	296-014	Flat Washer	6
7	294-011	Lock Washer	6
8	284-015	Hex Nut	2
9	228-052	Capscrew	4
10	296-022	Flat Washer	4
11	294-009	Lock Washer	4
12	284-009	Nyloc Hex nut	4
13	625-003	Filter Assy S/S PSI/VAC 4” Bottom Outlet	1
14	587-018	Hose, Hump - 4”	1
15	526-036	Gasket, Delivery, Suction - P657	1
16	509-034	Flange, Suction Alum, P657	1
17	224-023	Capscrew- Socket Head	4

#	P/N	Description	Qty
18	296-012	Flat Washer	4
19	291-002	Hose Clamp, Worm	2
20	563-002	Muffler, 4” TTMA X 4” FNPT - Steel	1
21	533-005	Elbow, 2” Street - Galvanized	1
22	610-012	Relief Valve, 2” NMPT - 16 psi	1
22	610-013	Relief Valve, 2” NMPT - 18 psi	1
23	509-033	Flange, Discharge Cast Iron P657 VA	1
24	526-036	Gasket, Delivery, Suction - P657	1
25	526-011	Gasket, 4” TTMA	1
26	567-002	Camlock 3” Maie X 4” MNPT - Alum	1
26	533-045	Camlock 4” Male X 4” MNPT - Alum	1
27	565-001	Camlock Dust Cap 3” - Alum	1
27	565-002	Camlock Dust Cap 4” - Alum	1
28	224-023	Capscrew- Socket Head	4
29	296-011	Flat Washer	4
30	228-105	Capscrew - Hex Head	8
31	284-008	Hex Nut	8
32	296-008	Flat Washer	8

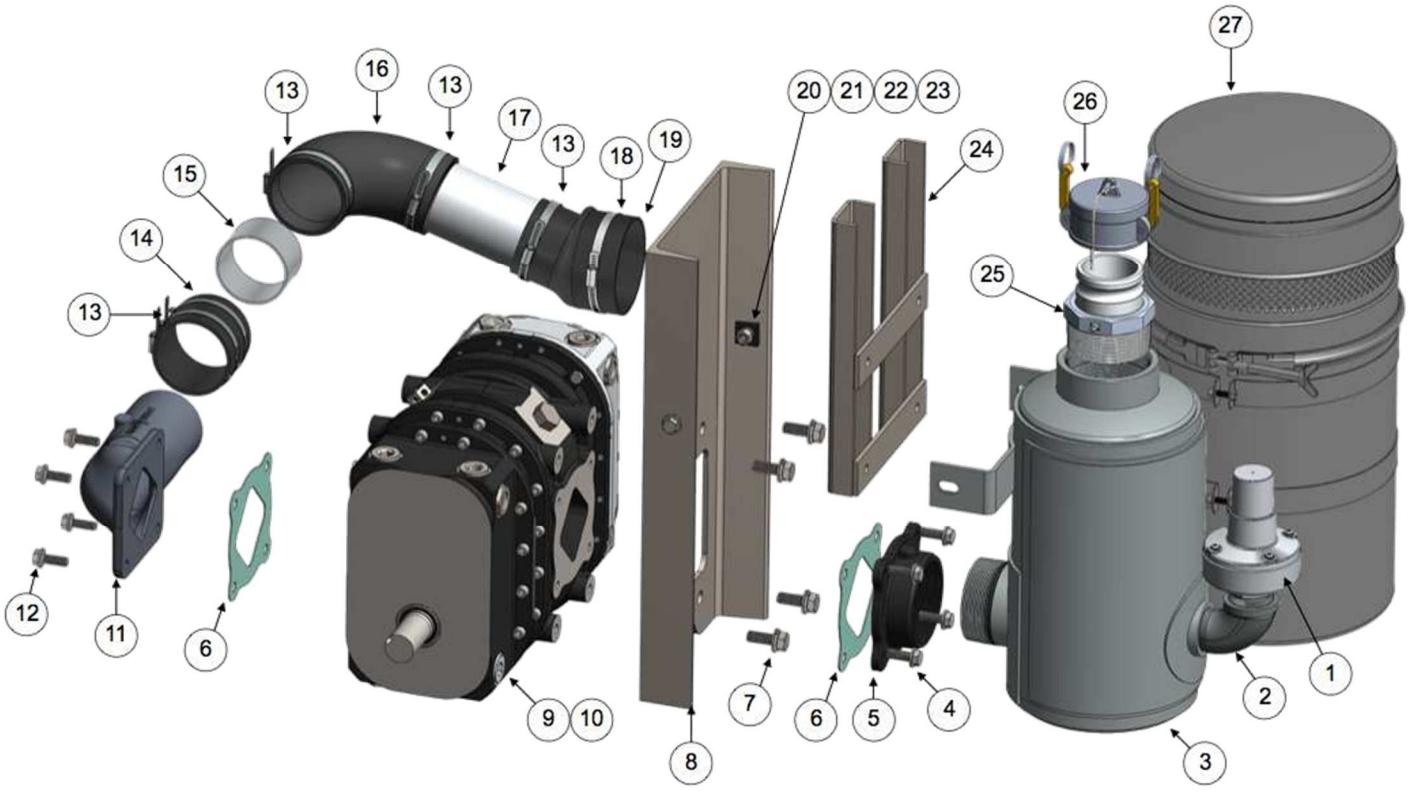
Horizontal Airflow (HA) Diagram



#	P/N	Description	Qty
1	601-012	P657 Blower, with 3 Qts of Oil	1
2	508-107	HA Blower Bracket - P657 (Straight)	1
2	508-113	HA Blower Bracket - P657 Drivers Side	1
2	508-114	HA Blower Bracket - P657 Pass. Side	1
3	560-044	P657 Drive Flange 1310 Series (not shown)	1
4	625-006	Air Filter Assy S/S - P657 PSI Only 5” Side outlet	1
4	625-002	Air Filter Assy S/S - P657 PSI/Vac 5” Side outlet	1
4	625-026	Air Filter Assy S/S - P657 PSI/Vac 5” Side outle, with Vaccuum Gauge	1
5	587-000	Hose, Hump 5” X 4”	1
6	588-010	Tube, 4” od X 24” long	1
7	587-018	Hose, Hump 4”	1
8	526-036	Gasket, Delivery, Suction - P657	1
9	509-032	Flange, Suction Alum - P657 HA	1
10	291-012	Hose Clamp 4” - 6”	1

#	P/N	Description	Qty
11	291-002	Hose Clamp 3” - 5”	3
12	228-052	Capscrew - Hex Head	4
13	296-022	Flat Washer	4
14	294-009	Lock Washer	4
15	284-009	Nyloc Hex Nut	4
16	623-022	Air Filter Mounting Kit	1
17	563-000	Muffler, 4” MNPT X 4” FNPTSteel	1
17	563-007	Muffler, 4” MNPT X 4” FNPT Steel w Temp. Gauge (not for food grade or sensitive products)	1
17	563-001	Muffler, 4” MNPT X 4” FNPT Stainless Steel	1
17	563-002	Muffler, 4” MNPT X 4” FNPT Stainless Steel w Temp. Gauge	1
18	533-005	Elbow, 2” Street - Galvanized	1
19	610-012	Relief Valve, 2” NMPT - 16 psi	1
19	610-013	Relief Valve, 2” NMPT - 18 psi	1

Horizontal Adjacent Airflow (HAA) Diagram



#	P/N	Description	Qty
1	610-012	Relief Valve 2” MNPT - 16 psi	1
1	610-013	Relief Valve 2” MNPT - 18 psi	1
2	533-005	Elbow, 2” Street	1
3	563-007	Muffler - Steel w Temp. Gauge	1
3	563-001	Muffler w/ Bracket - Stainless Steel	1
3	563-002	Muffler - Stainless Steel w/ Temp. Gauge	1
3	563-000	Muffler w/ Bracket - Steel	1
4	224-023	Capscrew - Socket Head	4
5	509-031	Discharge Flange	1
6	526-036	Flange Gasket	1
7	228-093	Capscrew - Hex Head	4
7	294-011	Lock Washer	4
8	508-107	Mounting Bracket (Straight)	1
8	508-113	Mounting Bracket - Driver Side	1
8	508-114	Mounting Bracket - Passenger Side	1
9	601-012	P657 Blower	1
10	560-044	Drive Flange	1
11	509-034	Suction Flange	1
12	224-023	Capscrew - Socket Head	4

#	P/N	Description	Qty
12	228-012	Capscrew - Hex Head	4
13	291-002	4” Hose Clamp	5
14	587-019	Hose, 3-1/2" long x 4" ID - EPDM	1
15	588-012	P657 HAA Tube - Aluminum	1
16	533-019	4” Rubber Elbow	1
17	588-011	P657 HAA Tube - Aluminum	1
18	291-012	5” Hose Clamp	1
19	587-000	Hump Hose 5” x 4”	1
20	284-000	Hex Nut	2
21	228-074	Capscrew - Hex Head	2
22	293-004	Beveled Washer	2
23	294-010	Lock Washer	2
24	623-022	Mounting Kit	1
25	567-002	Camlock 3”	1
25	533-045	Camlock 4”	1
26	565-001	Camlock Dust Cap 3”	1
26	565-002	Camlock Dust Cap 4”	1
27	625-006	Bare Filter Assembly	1

WARRANTY - TRUCK BLOWERS

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 manufacturer, 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 performances 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 inspection and warranty. Installation and transportation costs are not included and defective items must be held for Seller's inspection and 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
Remanufactured	12 months from date of shipment, or 12 months after initial startup date, whichever occurs
Repair	12 months from date of shipment, or remaining warranty period, whichever is greater

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 commerce within one year after the cause of action has occurred.

Paragon Tank Truck Equipment LLC.
www.paragondirect.com