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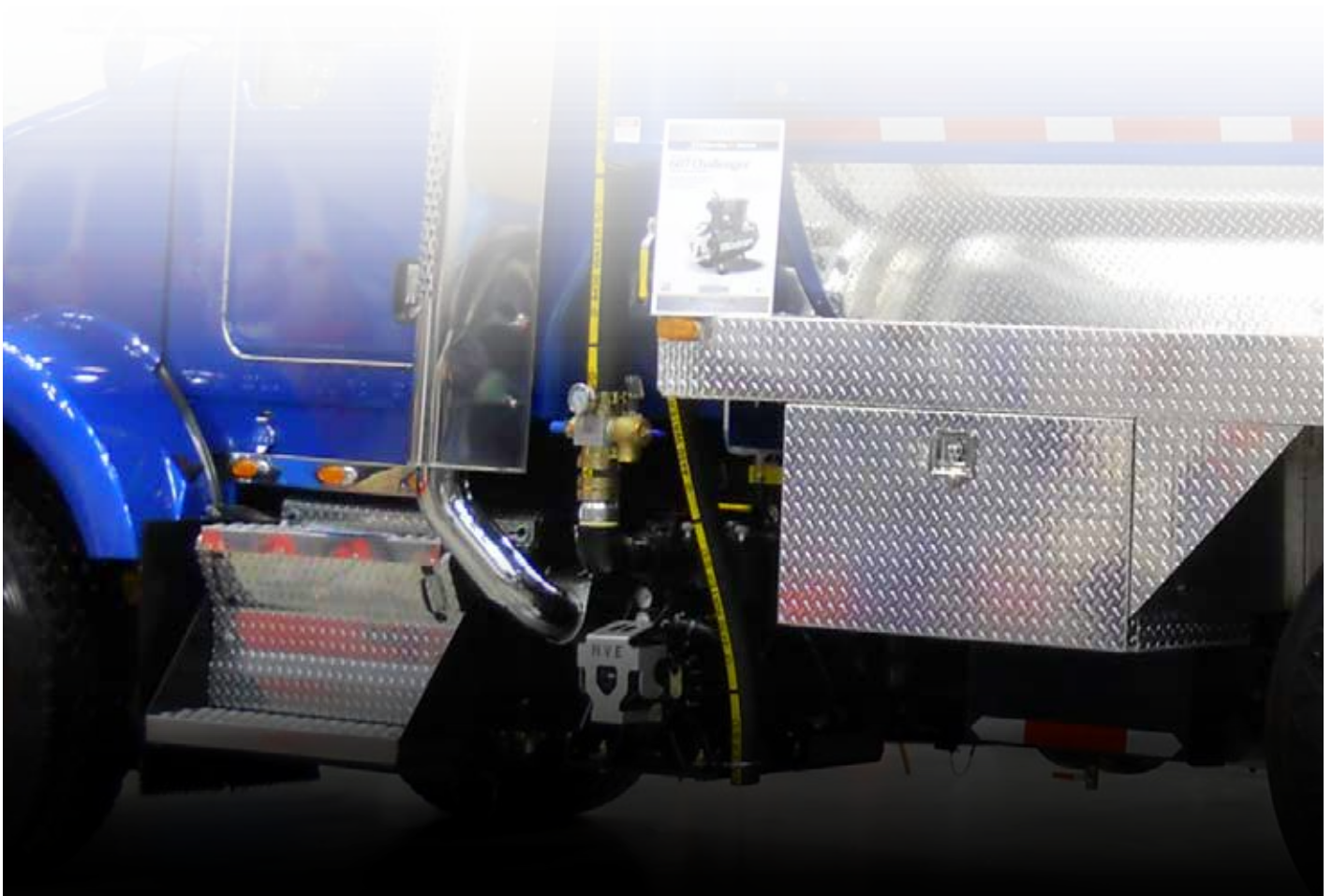
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NVE

HEAVY-DUTY
607 Challenger

Heavy-Duty Vacuum Pumps & Packages

Designed and Manufactured for Extended Operations in Severe Conditions | Fan or Liquid-Cooled



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607 Challenger Series - Fan Cooled or Liquid Cooled

Our Challenger Series pumps are designed and built with the customer in mind – resulting in dependable, high performing pumps that are easy to install, operate and service. As the only industrial grade rotary vane vacuum pump designed, built and supported in the USA we are committed to also being the best pump period. Therefore each Challenger series vacuum pump features:

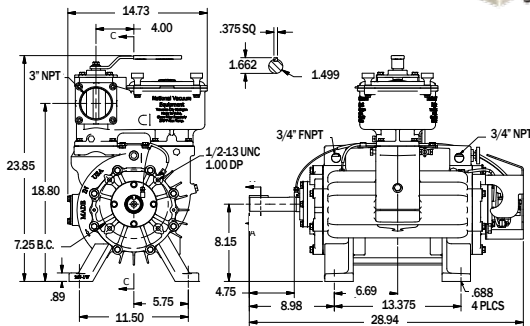
- Superior cooling for extended operations in severe conditions.
- Proven crash protection allowing all major components to survive a catastrophic failure.
- Oversized heavy duty roller bearings allowing more drive options.
- Precision pinned endplates for exact reassembly alignment.
- High strength castings poured in the USA.
- High temp Teflon oil lines allowing visual oil flow inspection.
- Remote mount 5 quart see through oil tank for constant oil level monitoring.
- Four point automatic lubrication system.
- Liquid or fan cooled versions of each model.
- Multiple drive options (gearbox, belt, hydraulic, direct).
- Integral, easily accessible final filter.
- Vane flush port with valve.
- Vane wear inspection port.
- Thermometer to monitor exhaust temperature.
- Vacuum/pressure change over valve.
- Flanged vacuum/pressure ports.
- Available in right hand or left hand rotation.
- Built in one way flow valve eliminates back spin.
- **Replacement parts always available.**

Challenger Series

VACUUM PUMPS & BLOWERS

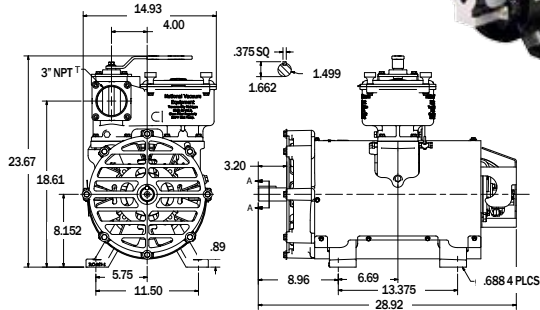
607 Challenger Liquid Cooled

Dimensions: 14.73" W x 28.94" L x 23.85" H
Plumbs directly into truck cooling system.
Great for cold weather operation.



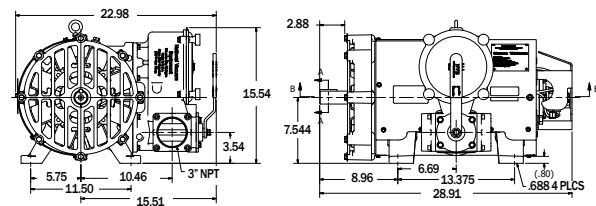
607 Challenger Fan Cooled

Dimensions: 14.93" W x 28.92" L x 23.67" H
Rugged steel fan and no coolant lines to run.



607SV Challenger Fan Cooled

Dimensions: 22.98" W x 28.91" L x 15.54" H
Side mounted changeover valve with final filter for easy access. Designed for factory trailer mount.



607 Challenger Specifications

Porting Size Flanged NPT	3"
Maximum Air Flow-CFM	357
Maximum Intermittent Vacuum	28" hg
Maximum Intermittent Pressure	30 psi

Maximum 1500 RPM Intermittent operation only

RPM		Pressure (PSI)				Free flow		Vacuum (inches of Mercury)				
		20	15	10	5	0	5	10	15	20	25	27
1500	Hp.	34	32	29	27	23	23	22	21	20	19	19
	CFM	282	291	301	331	357	348	338	331	310	282	244
1250	Hp.	29	27	24	23	20	20	19	16	15	14	14
	CFM	229	237	244	269	290	282	275	269	252	229	198
1000	Hp.	25	23	20	18	15	15	14	14	13	12	12
	CFM	178	184	190	209	226	220	214	209	196	178	155

The maximum allowable operating vacuum will vary depending on R.P.M., ambient temperature, altitude and time running. The basic principle to keep in mind is - faster R.P.M., higher air temperature and longer run time all equal more heat in the pump. When installing an NVE 607 we recommend a normal R.P.M. of 1250. Exhaust gas temperatures read on the supplied thermometer **must not** exceed 375 degrees F.

607 Challenger Series Packages

Check out our competent design and engineering staff, our state of the art fabrication facility and quality powder coat painting capabilities all wrapped up in our unique pump packages. Each package is built around our quality Challenger vacuum pumps. These rugged and functional packages are designed to reduce installation time, ensure appropriate sized drive systems and vacuum system components, and provide accessible maintenance points. If you don't see what you are looking for, be sure to contact your NVE representative... *We Can Do That!*

Packages are available in a variety of different setups including clockwise (CW) and counter-clockwise (CCW) rotations. See the package selection guide in the pump section of our catalog. ***Vacuum pump included with packages.***

Hydraulic Motor Drive

- Heavy-duty automatic alignment bracket
- SAE 2 and 4 bolt flange
- Coupler set
- Properly sized hydraulic motor



Pump Stand Complete

- 400 series three-shaft gearbox accommodates CW and CCW rotation
- Coupler set with shear protection
- Rugged 3/8" construction, powder coat painted pump bracket
- Easy-align, adjustable gearbox bracket



607 Muffler Pak

All features included in the Standard Mounting Pak plus:

- Compact design square oil catch muffler
 - Effective baffle system
 - Stainless steel mesh filter
 - Drain valve
 - Exhaust deflector (other exhaust fittings available)
- All elbows, fittings and high temp hoses are factory connected
- Right-hand or left-hand muffler location available



607 Max Pak

All features included in the Muffler Pak plus:

- High efficiency aluminum moisture trap
 - Accessible 6" stainless steel float ball
 - BUNA positive shut-off ball seat
 - 2" lever drain valve
 - Blind intake flange standard (other fittings available)
- Vacuum/pressure relief valve and gauge



Side Frame Mount Belt and Pulley Drive Package

- Rugged, 3/8" steel construction mounting frame with powder coat finish
- Robust 1 3/4" CNC machined jack shaft
- Belt guard with expanded metal window to allow fan cooled pump some breathing room
- Intuitive belt tensioning system decreases installation time
- 3" of adjustable in slot travel for pump and jack shaft mount
- Heavy duty 1 3/4" pillow block bearings, 4 BX belts and 6" pulleys provided in an easy to service configuration
- Auxiliary gravity fed 5 quart oil tank provided to allow for a visual indication of oil tank level



Top Frame Mount Belt and Pulley Drive Package

All the features of the Side Mount Belt Drive plus:

- U-bolts and mounting brackets provided for custom fit to your truck
- Mounting bracket that includes 12" oil catch muffler with drain valve and remote oil tank



607 Liquid Cooled Belt Drive Kubota Engine Package

- Rugged, low-profile frame for belly-mount applications
- 44.2 HP Kubota power unit with tachometer and LOFA control panel
- 23 gallon fuel tank
- High efficiency oil catch muffler
- Vacuum pressure relief manifold and gauge
- Powder coat painted and factory assembled



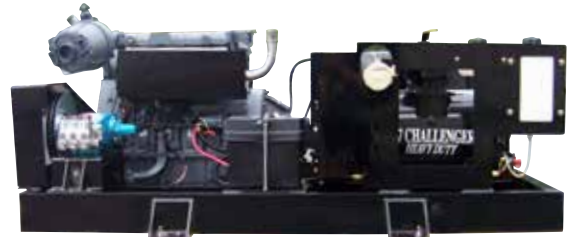
607 Belt Drive Deutz Engine Package

- Rugged, low-profile frame for belly-mount applications
- 45.6 HP Deutz power unit with tachometer and LOFA control panel
- 23 gallon fuel tank
- High efficiency oil catch muffler
- Vacuum pressure relief manifold and gauge
- Powder coat painted and factory assembled



607 Belt Drive Deutz Engine w/Pressure Washer Package

- Rugged, low-profile frame for belly-mount applications
- 60.6 HP Deutz power unit with tachometer and LOFA control panel
- 23 gallon fuel tank
- High efficiency oil catch muffler
- Vacuum pressure relief manifold and gauge
- Powder coat painted and factory assembled
- CAT pressure washer



System Requirements

Moisture Trap - Minimum 10 gallon capacity Moisture Trap (a larger trap may be required depending on volatility of product being pumped) which we provide in carbon steel, stainless steel or aluminum, and either horizontal or vertical orientation.

Oil Catch Muffler - 12" Diameter vertical. Our muffler features a serviceable pleated stainless steel filter element to protect the pump during pressure cycles.

Final Filter - 12" in line filter or integral final filter.

Primary Shutoff - Minimum 8" cage with 6" ball.

Challenger Series

VACUUM PUMPS & BLOWERS

DISTRIBUTED BY:

For over 25 years NVE has been providing quality vacuum system components to the liquid waste markets. From design, to development to product support, NVE IS the industry leader.

In addition to our team of engineers and highly qualified support staff, NVE has a state of the art machine shop, fabrication shop, and powder coat paint facility housed in two plants in Traverse City, Michigan. We also have a warehouse and sales support facility in Fayetteville Arkansas.

For questions and additional information please contact your dealer or NVE direct at 800.253.5500.

Thank you,

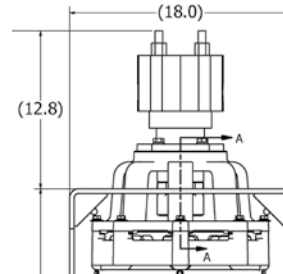
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607 CHALLENGER SERIES PACKAGE GUIDE

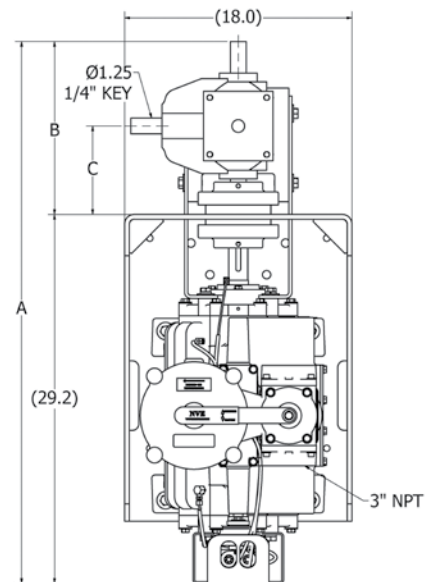
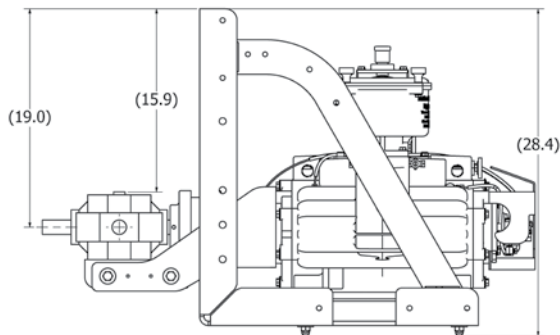
HYDRAULIC MOTOR DRIVE

Part Number	Product Description
❑ 117-607-HYD-FD	607 Fan Cooled W/Hydraulic Drive - CW
❑ 117-607-HYD-FS	607 Fan Cooled W/Hydraulic Drive - CCW
❑ 117-607-HYD-LD	607 Liquid Cooled W/Hydraulic Drive - CW
❑ 117-607-HYD-LS	607 Liquid Cooled W/Hydraulic Drive - CCW
❑ 117-607-HYD-AFS	607 Side Valve Fan Cooled W/Hydraulic Drive - CCW



PUMP STAND COMPLETE

Part Number	Product Description
❑ 117-607-001-FD	607 Fan Cooled W/Pump Stand - CW
❑ 117-607-001-FS	607 Fan Cooled W/Pump Stand - CCW
❑ 117-607-001-LD	607 Liquid Cooled W/Pump Stand - CW
❑ 117-607-001-LS	607 Liquid Cooled W/Pump Stand - CCW
❑ 117-607-001H-FD	607 Fan Cooled W/Pump Stand Hydraulic Drive - CW
❑ 117-607-001H-FS	607 Fan Cooled W/Pump Stand Hydraulic Drive - CCW
❑ 117-607-001H-LD	607 Liquid Cooled W/Pump Stand Hydraulic Drive - CW
❑ 117-607-001H-LS	607 Liquid Cooled W/Pump Stand Hydraulic Drive - CCW



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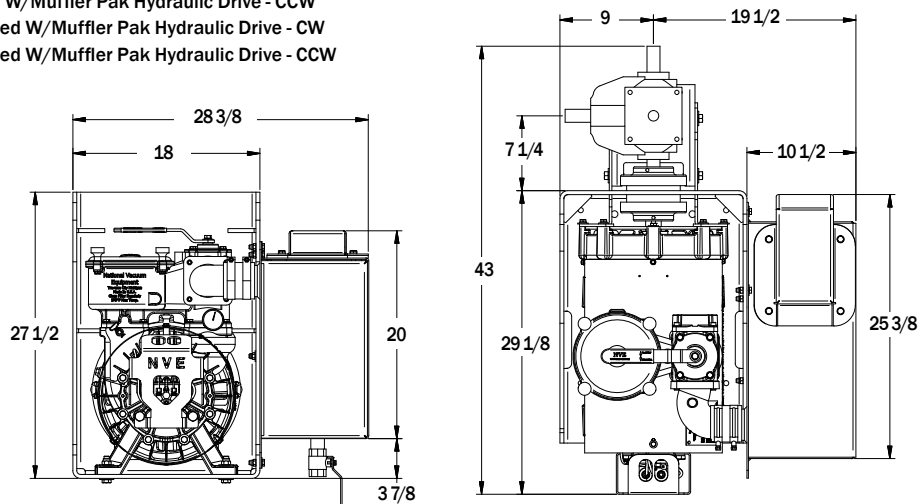
607 CHALLENGER SERIES PACKAGE GUIDE - CONTINUED

607 MUFFLER PAK

Part Number	Product Description
❑ 117-607-MUF-FD	607 Fan Cooled W/Muffler Pak - CW
❑ 117-607-MUF-FS	607 Fan Cooled W/Muffler Pak - CCW
❑ 117-607-MUF-LD	607 Liquid Cooled W/Muffler Pak - CW
❑ 117-607-MUF-LS	607 Liquid Cooled W/Muffler Pak - CCW
❑ 117-607-MUF-FDH	607 Fan Cooled W/Muffler Pak Hydraulic Drive - CW
❑ 117-607-MUF-FSH	607 Fan Cooled W/Muffler Pak Hydraulic Drive - CCW
❑ 117-607-MUF-LDH	607 Liquid Cooled W/Muffler Pak Hydraulic Drive - CW
❑ 117-607-MUF-LSH	607 Liquid Cooled W/Muffler Pak Hydraulic Drive - CCW

All elbows, fittings and high temp hoses are factory connected.
Choose right or left hand muffler location.

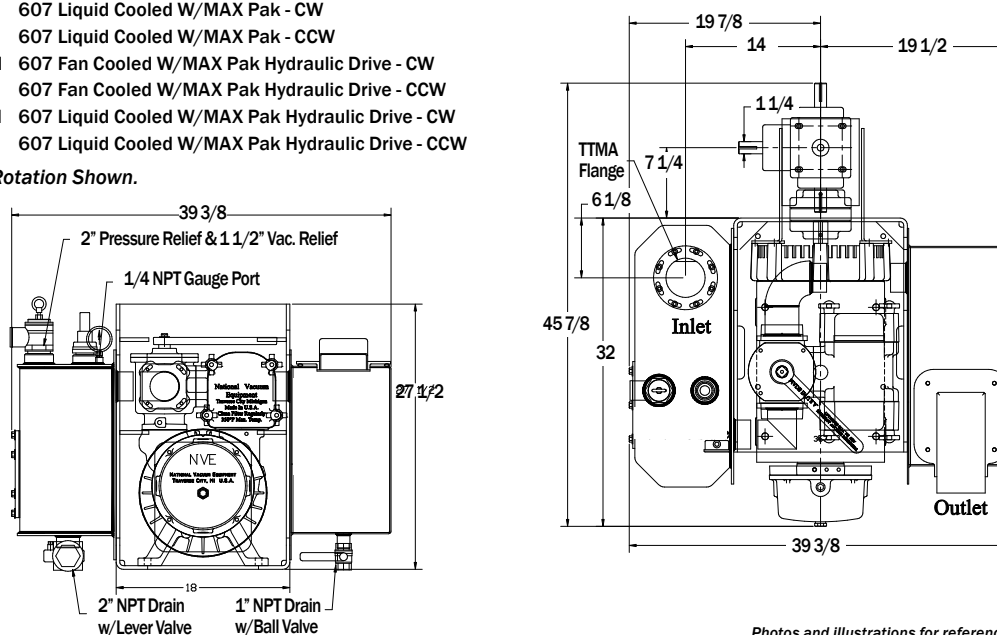
Clockwise Rotation Shown.



607 MAX PAK

Part Number	Product Description
❑ 117-607-MAX-FD	607 Fan Cooled W/MAX Pak - CW
❑ 117-607-MAX-FS	607 Fan Cooled W/MAX Pak - CCW
❑ 117-607-MAX-LD	607 Liquid Cooled W/MAX Pak - CW
❑ 117-607-MAX-LS	607 Liquid Cooled W/MAX Pak - CCW
❑ 117-607-MAX-FDH	607 Fan Cooled W/MAX Pak Hydraulic Drive - CW
❑ 117-607-MAX-FSH	607 Fan Cooled W/MAX Pak Hydraulic Drive - CCW
❑ 117-607-MAX-LDH	607 Liquid Cooled W/MAX Pak Hydraulic Drive - CW
❑ 117-607-MAX-LSH	607 Liquid Cooled W/MAX Pak Hydraulic Drive - CCW

Counter Clockwise Rotation Shown.



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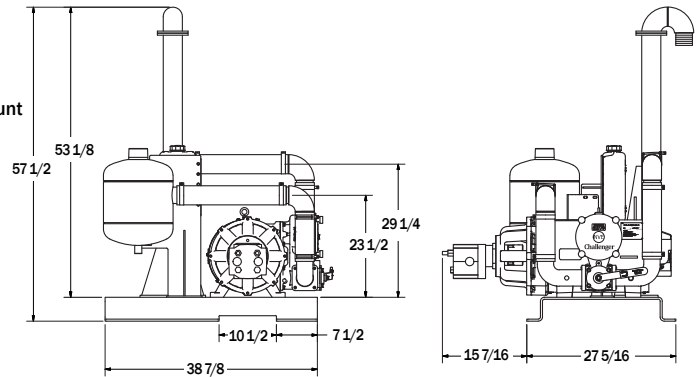
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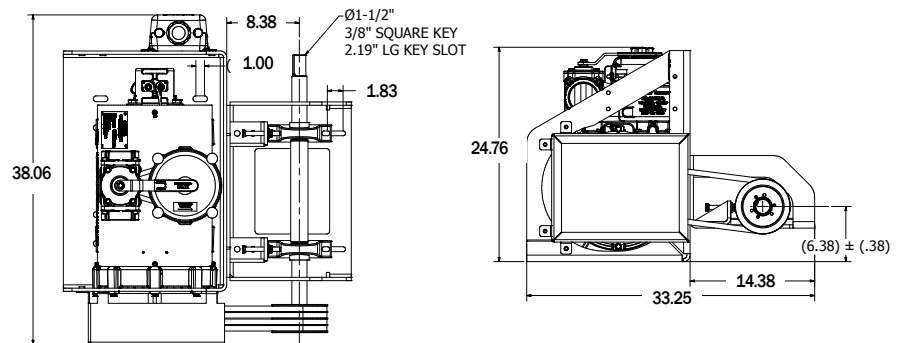
607 SIDE VALVE TOP MOUNT HYDRAULIC DRIVE PACKAGE

- | Part Number | Product Description |
|------------------|---|
| ❑ 117-607-TM-AFS | 607 Side Valve Fan Cooled W/Top Mount Hydraulic Drive Package - CCW |



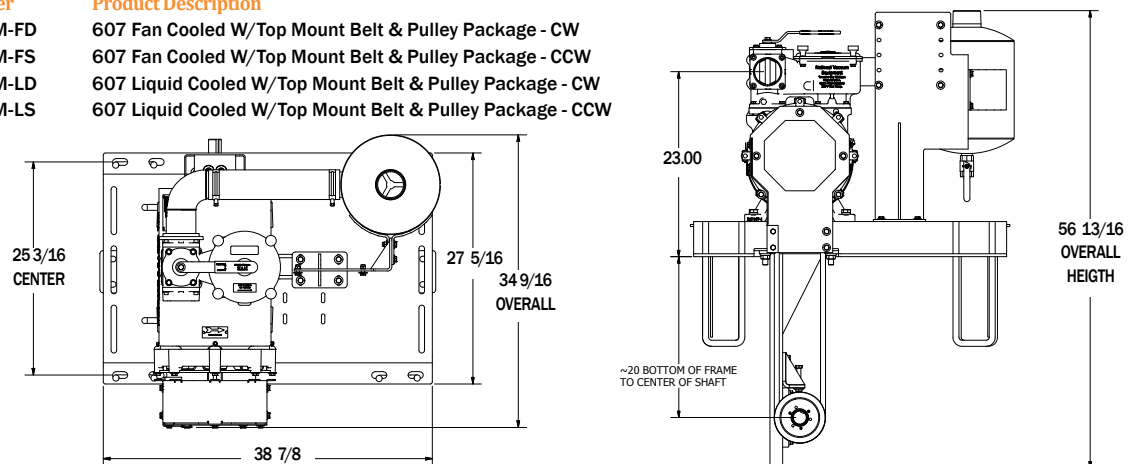
607 SIDE FRAME MOUNT BELT & PULLEY DRIVE PACKAGE

- | Part Number | Product Description |
|-----------------|--|
| ❑ 117-607-SM-FD | 607 Fan Cooled W/Side Mount Belt & Pulley Package - CW |
| ❑ 117-607-SM-FS | 607 Fan Cooled W/Side Mount Belt & Pulley Package - CCW |
| ❑ 117-607-SM-LD | 607 Liquid Cooled W/Side Mount Belt & Pulley Package - CW |
| ❑ 117-607-SM-LS | 607 Liquid Cooled W/Side Mount Belt & Pulley Package - CCW |



607 TOP FRAME MOUNT BELT & PULLEY DRIVE PACKAGE

- | Part Number | Product Description |
|-----------------|---|
| ❑ 117-607-TM-FD | 607 Fan Cooled W/Top Mount Belt & Pulley Package - CW |
| ❑ 117-607-TM-FS | 607 Fan Cooled W/Top Mount Belt & Pulley Package - CCW |
| ❑ 117-607-TM-LD | 607 Liquid Cooled W/Top Mount Belt & Pulley Package - CW |
| ❑ 117-607-TM-LS | 607 Liquid Cooled W/Top Mount Belt & Pulley Package - CCW |



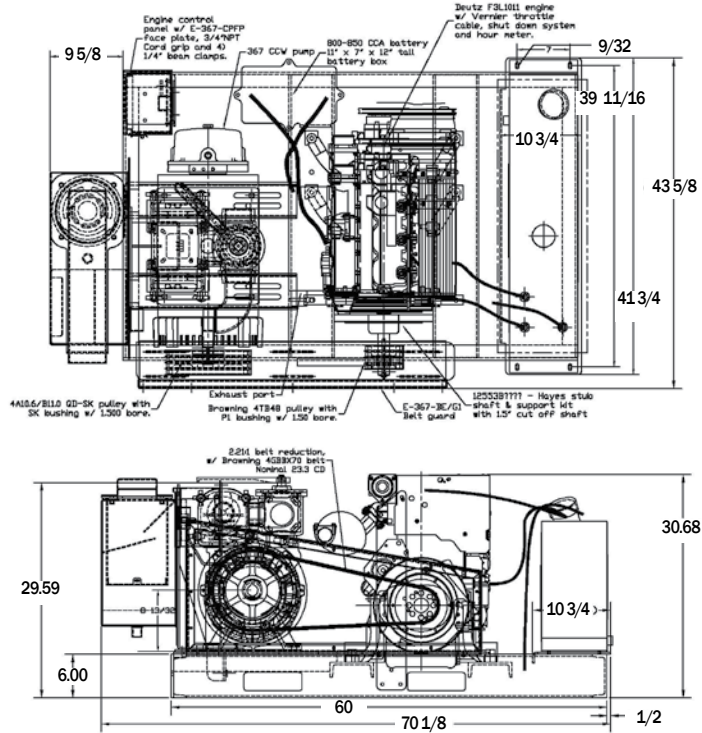
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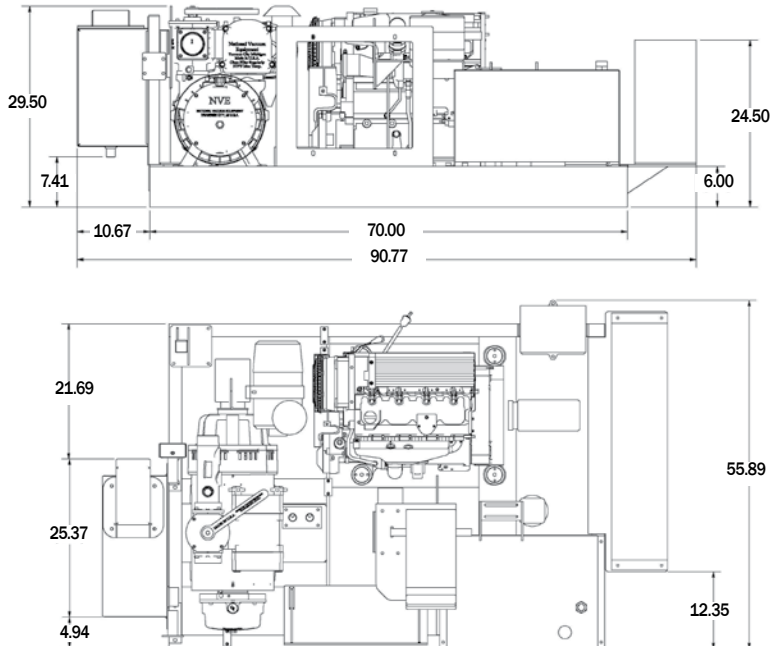
607 BELT DRIVE DEUTZ ENGINE DRIVE PACKAGE ALSO AVAILABLE WITH KUBOTA ENGINE

- | Part Number | Product Description |
|-----------------|---|
| 117-EDR-607 | 607 Fan Cooled Belt Driven Engine Drive W/45.6 HP Deutz - CCW |
| 117-EDR-607-LIQ | 607 Liquid Cooled Belt Driven Engine Drive W/44.2 HP Kubota - CCW |



607 BELT DRIVE DEUTZ ENGINE DRIVE PACKAGE W/PRESSURE WASHER

- | Part Number | Product Description |
|---------------|---|
| 117-EDR-607-2 | 607 Fan Cooled W/60.6 HP Deutz Engine Drive & Pressure Washer - CCW |



Photos and illustrations for references only.

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607 Challenger | Vacuum Pumps

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
NVE 607 Challenger - Fan Cooled CW	100-607-FD	390
NVE 607 Challenger - Fan Cooled CCW	100-607-FS	
NVE 607 Challenger - Liquid Cooled CW	100-607-LD	398
NVE 607 Challenger - Liquid Cooled CCW	100-607-LS	
NVE 607 SV Challenger - Fan Cooled CCW	100-607A-FS	390



607 Challenger | Repair Kits and Maintenance Items

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Repair Kit - NVE 607	115-607-0	6.8
Repair Kit - NVE 607 (Less Bearings)	115-607-0B	4.2
<i>Comes with or without bearings and includes the seals, gaskets, and vanes.</i>		
Tool Kit - NVE Challenger Pumps	120-OT	4.3
<i>The Tool kit makes it easier to rebuild the Challenger vacuum pumps, comes with: Seal driver, Reamer, (2) T-Handles, and (2) shims.</i>		
Essential Black Box - Pump Tool Kit	120-OT15	21

The Essential Black Box - Complete pump tool kit makes it easier to rebuild the Challenger vacuum pumps and comes with: Heavy Duty Carrying Case, Vacuum/Pressure Testing Gauge, Reamer, Infrared Thermometer, Laser Tachometer, 607 & 866 Seal Drivers with Handles, (4) T-Handles, Coupler Alignment Tools, 607 & 866 Shaft Alignment Tools and (2) Shims. And to keep you up to date our USB drive filled with the latest technical information, training videos and more.

Remote Oil Tank Kit for 607 & 866	320-081	1.8
Diesel Flush Kit	320-081-002	1.9
Oil Line Kit - Plastic 367 3 Port	320-081-001	.55
Oil Line Kit - 4 Port 607/866	320-081-003	---

Alignment Tool	370-006-367	3.5
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Alignment tool helps you align the gearbox up with the vacuum pump.

NVE Challenger Pump Oil - ISO 68	150-220-VPOIL	7.5
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The NVE Challenger Pump Oil is ISO 68 Turbine oil. This oil is recommended to keep your vacuum pump lubricated properly. Sold by the case. 6 gallons in each case.



VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

607 | Hydraulic Motor Drive

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Fan Cooled W/Hydraulic Drive - CW	117-607-HYD-FD	463
607 Fan Cooled W/Hydraulic Drive - CCW	117-607-HYD-FS	463
607 Side Valve Fan Cooled W/Hydraulic Drive - CCW	117-607-HYD-AFS	463
607 Liquid Cooled W/Hydraulic Drive - CW	117-607-HYD-LD	471
607 Liquid Cooled W/Hydraulic Drive - CCW	117-607-HYD-LS	471



607 | Pump Stand Complete

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Pump Stand - Fan Cooled - CW	117-607-001-FD	560
607 Pump Stand - Fan Cooled - CCW	116-607-001-FS	560
607 Pump Stand - Liquid Cooled - CW	117-607-001-LD	568
607 Pump Stand - Liquid Cooled - CCW	117-607-001-LS	568
607 Pump Stand - Fan Cooled W/Hydraulic Drive - CW	117-607-001H-FD	633
607 Pump Stand - Fan Cooled W/Hydraulic Drive - CCW	117-607-001H-FS	633
607 Pump Stand - Liquid Cooled W/Hydraulic Drive - CW	117-607-001H-LD	641
607 Pump Stand - Liquid Cooled W/Hydraulic Drive - CCW	117-607-001H-LS	641



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VACUUM PUMPS & BLOWERS

VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

607 | Muffler Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Muffler Pak Fan Cooled - CW	117-607-MUF-FD	644
607 Muffler Pak Fan Cooled - CCW	117-607-MUF-FS	644
607 Muffler Pak Liquid Cooled - CW	117-607-MUF-LD	652
607 Muffler Pak Liquid Cooled - CCW	117-607-MUF-LS	652
607 Muffler Pak Fan Cooled W/Hydraulic Drive - CW	117-607-MUF-FDH	690
607 Muffler Pak Fan Cooled W/Hydraulic Drive - CCW	117-607-MUF-FSH	690
607 Muffler Pak Liquid Cooled W/Hydraulic Drive - CW	117-607-MUF-LDH	698
607 Muffler Pak Liquid Cooled W/Hydraulic Drive - CCW	117-607-MUF-LSH	698



607 | MAX Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 MAX Pak Fan Cooled - CW	117-607-MAX-FD	713
607 MAX Pak Fan Cooled - CCW	117-607-MAX-FS	713
607 MAX Pak Liquid Cooled - CW	117-607-MAX-LD	792
607 MAX Pak Liquid Cooled - CCW	117-607-MAX-LS	792
607 MAX Pak Fan Cooled W/Hydraulic Drive - CW	117-607-MAX-FDH	785
607 MAX Pak Fan Cooled W/Hydraulic Drive - CCW	117-607-MAX-FSH	785
607 MAX Pak Liquid Cooled Hydraulic - CW	117-607-MAX-LDH	865
607 MAX Pak Liquid Cooled Hydraulic - CCW	117-607-MAX-LSH	865



VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

607 | Side Valve Top Mount Hydraulic Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Side Valve Top Mount Hydraulic Drive Package	117-607A-TM-FSH	810



607 | Side Frame Mount Belt & Pulley Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Fan Cooled W/Side Mount Belt & Pulley Package - CW	117-607-SM-FD	654
607 Fan Cooled W/Side Mount Belt & Pulley Package - CCW	117-607-SM-FS	654
607 Liquid Cooled W/Side Mount Belt & Pulley Package - CW	117-607-SM-LD	662
607 Liquid Cooled W/Side Mount Belt & Pulley Package - CCW	117-607-SM-LS	662



607 | Top Frame Mount Belt & Pulley Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Fan Cooled W/Top Mount Belt & Pulley Package - CW	117-607-TM-FD	805
607 Fan Cooled W/Top Mount Belt & Pulley Package - CCW	117-607-TM-FS	805
607 Liquid Cooled W/Top Mount Belt & Pulley Package - CW	117-607-TM-LD	813
607 Liquid Cooled W/Top Mount Belt & Pulley Package - CCW	117-607-TM-LS	813



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VACUUM PUMPS & BLOWERS

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All elbows, fittings and high temp hoses are factory connected.

607 | Belt Driven Deutz Engine Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Fan Cooled Belt Driven Engine Drive W/45.6 HP Deutz Package - CCW	117-EDR-607	1701



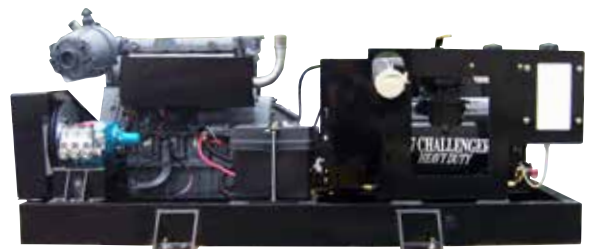
607 | Liquid Cooled Belt Drive Kubota Engine Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Liquid Cooled Belt Driven Engine Drive W/44.2 HP Kubota Package - CCW	117-EDR-607-LIQ	---



607 | Belt Driven Deutz Engine Drive w/Pressure Washer

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
607 Fan Cooled Belt Driven Engine Drive W/60.6 HP Deutz & Pressure Washer Package	117-EDR-607-2	---



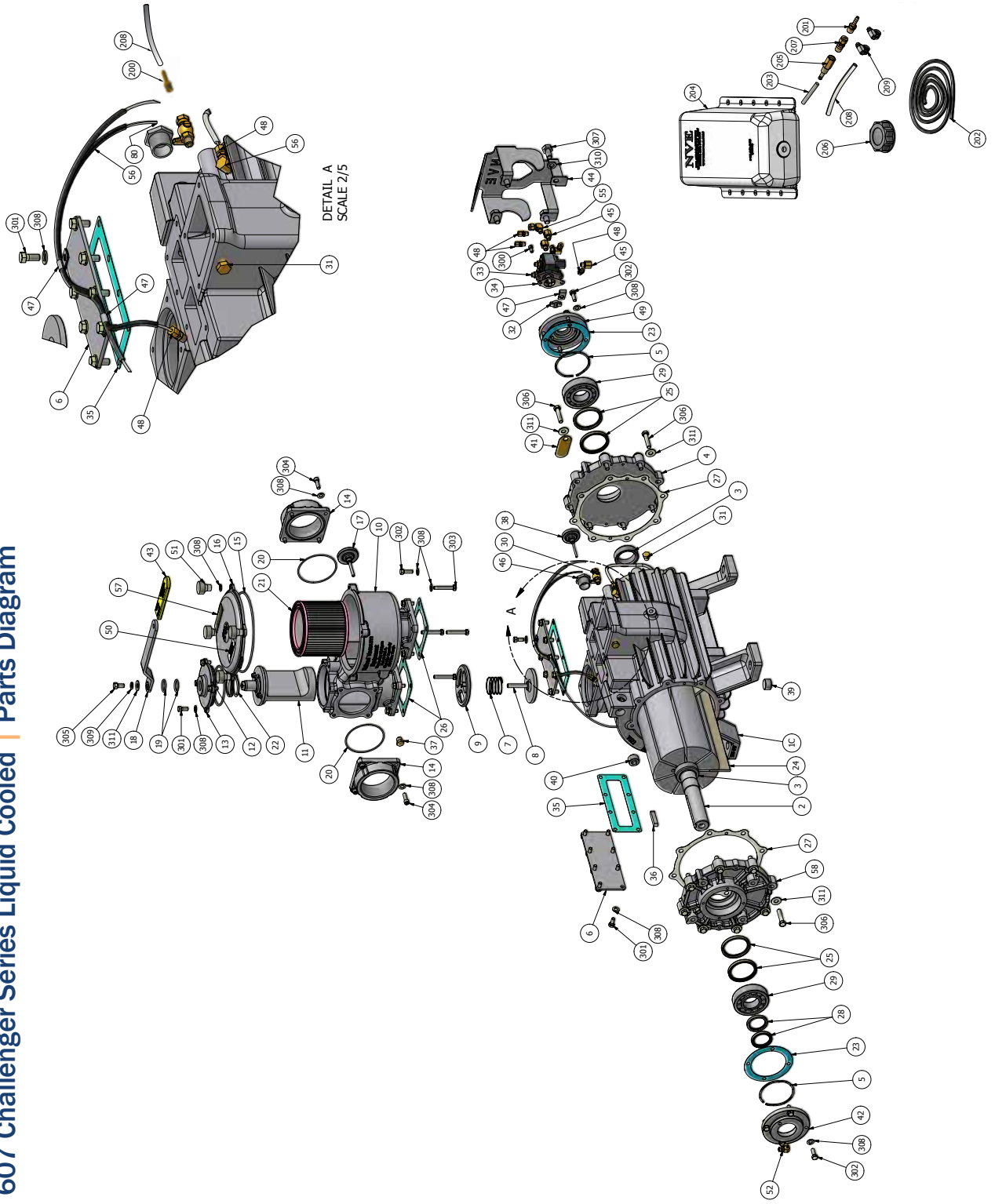
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Challenger Series

VACUUM PUMPS & BLOWERS

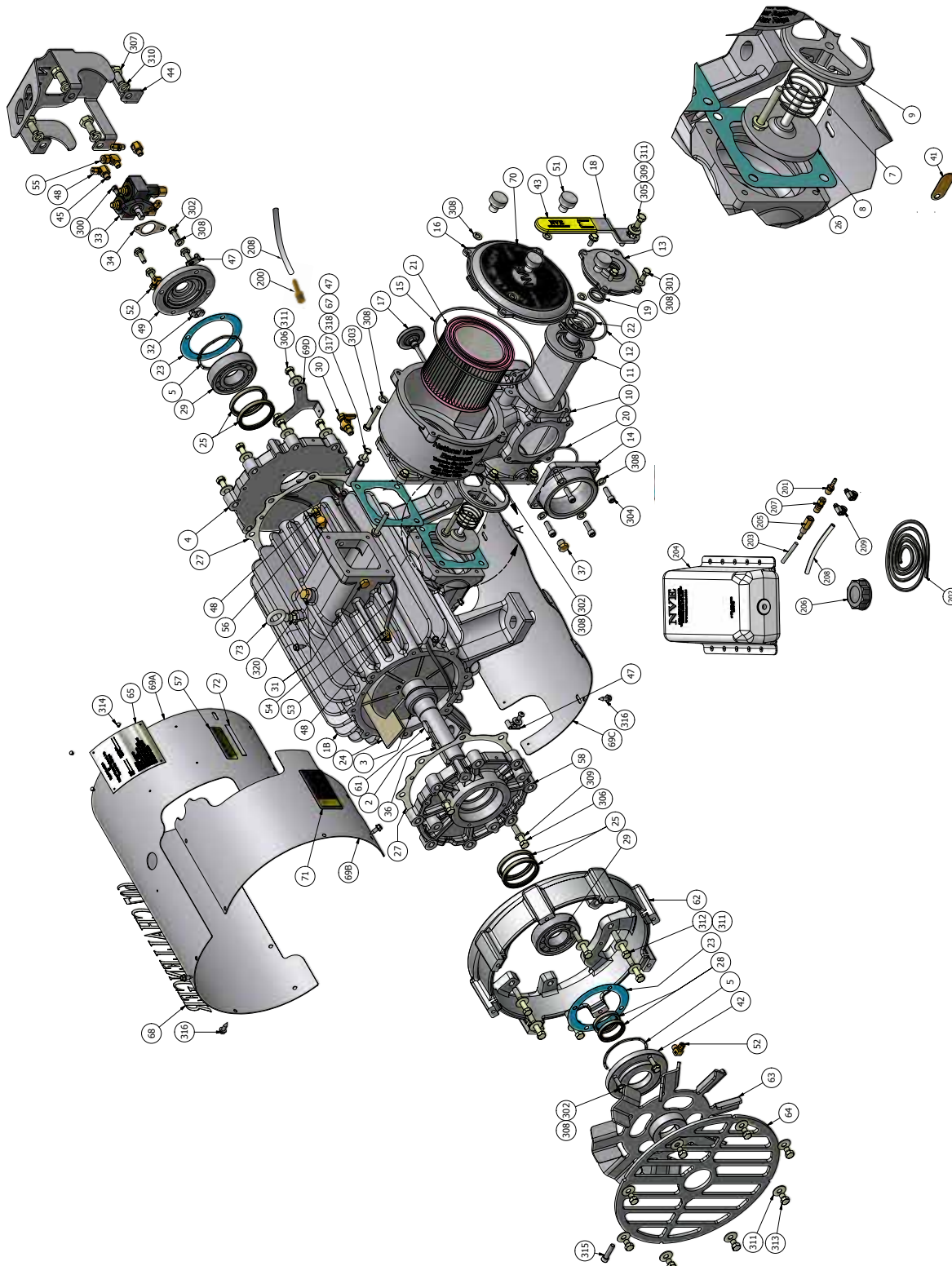
607 Challenger Series Liquid Cooled | Parts Diagram



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607 SV Challenger Series Fan Cooled | Parts Diagram



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VACUUM PUMPS & BLOWERS

607 Challenger Series | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1A	1	120-001-367	HOUSING, 367 PINNED ENDPLATE	138
1B	1	120-001-607A	HOUSING, 607A MACHINED	147.83
1C	1	120-001-367-L	HOUSING, 367 WATER COOLED	165
2	1	120-005-367	ROTOR, HVY DTY 360 SLOTTING	128
3	2	120-009-367	SEAL SLEEVE, 360HD & 367	0.39
4	1	120-003-003 120-003-002	ENDPLATE, CCW MACHINED 607 (CW PUMP) ENDPLATE, CW MACHINED 607 (CCW PUMP)	11.97
5	2	120-045-001	SPRING, WAVE WIRE 3.50"	0.01
6	2	120-021-367	COVER PLATE, 367 WATER JACKET	1.13
7	1	120-046-367	SPRING, CHECK VALVE 367	0.01
8	1	120-041-367	POPPET, 3" CHECK VALVE	0.90
9	1	120-042-367	RETAINER RING, 3" (360 & 367)	0.65
10	1	120-320-001	HOUSING, FILTER-INTEGRAL	28
11	1	120-062-001	PLUG, 4-WAY, 607	4.40
12	1	120-064-003	O-RING, 2-240 VITON	0.01
13	1	120-065-002	TOWER, 3" RM MACHINED	1.54
14	2	120-063-367	FLANGE, 3" NPT	2.82
15	1	120-064-004	O-RING, 2-265 VITON	0.01
16	1	120-310-001	COVER, FILTER 607/866	4.40
17	1	120-220	THERMOMETER, 50- 400 DEG, 2" FACE, 2.5" STEM, 1/4" - 18NPT	0.20
18	1	120-060-001	HANDLE, 367 GEN 2	0.83
19	2	120-064-002	O-RING, 2-214 VITON	0.01
20	2	120-064-001	O-RING, 2-154 VITON	0.01
21	1	120-314-001	FILTER ELEMENT, 60 MESH	0.08
22	1	120-045	4-WAY FV SPRING (COMPRESSED)	0.15
23	2	120-055-367	GASKET, FRONT BEARING COVER	0.01
24	7	120-007-367	VANE: 350, 360 & 367	0.35
25	4	120-018-367	SEAL, 60X72X8 VITON SGL LIP	0.05
26	2	120-039-367	GASKET, FLANGE INT/EXH	0.01
27	2	120-004-367	GASKET, 367 END PLATE	0.01
28	2	120-053	SEAL, 40X52X7 VITON	0.01
29	2	120-019-367	BEARING, NJ 308 L1308B	1.58
30	1	120-102	VALVE, DRAIN 1/8" NPT	0.05
31	2	120-058	PLUG, BRASS 1/8" NPT, HEX HD.	0.04
32	1	320-LF8	DRIVE TAB	0.03
33	1	320-LW32BD 320-LW32BS	OIL PUMP, 4 PORT (CW PUMP) OIL PUMP, 4 PORT (CCW PUMP)	2.32
34	1	320-R31	GASKET, OIL PUMP	0.01
35	2	120-022-367	GASKET, 367/506 COVER PLATE	0.01
36	1	120-006	KEY, 3/8" X3/8" X 2	0.08
37	1	120-059	PLUG, BRASS 1/4" NPT, HEX HD.	0.05

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607 Challenger Series | Parts List *Continued*

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
38	1	120-220-1	1/8" NPT THERMOMETER 220 F	0.15
39	1	120-047-1	DRAIN PLUG, 3/4" NPT MAGNETIC	0.12
40	1	120-047	DRAIN PLUG, 3/4" NPT	0.10
41	1	120-107	TAG, SERIAL NUMBER, BRASS	0.01
42	1	120-054-001	BEARING COVER, 367P	1.99
43	1	120-060-002	GRIP, HANDLE W/ LOGO	0.01
44	1	120-079-001	GUARD, OIL PUMP 607 POWDERCOAT	3.40
45	5	320-408-001	ADAPTER, ELBOW 1/8 BSPTM-NTPF	0.05
46	1	120-049	BUSHING, 3/4"NPTX1/8"NPT	0.19
47	3 4	320-409-003	P-CLIP, OIL LINE 1/4" X 5/16 (100-607-FD, 100-607-FS, 100-607A-FS & 100-607-LD) P-CLIP, OIL LINE 1/4" X 5/16 (100-607-LS)	0.01
48	6	320-408-004	FITTING, STRT 1/8 NPT-TUBE	0.05
49	1	120-054-002	BEARING COVER, OIL PUMP 607	1.85
50	1	120-101-367-D 120-101-367-S	DECAL, RPM-CW 607 DECAL, RPM-CCW 607	.01
51	4	120-312-002	KNOB, 5/16-18UNC	0.60
52	2	320-408-005	FITTING, ELBOW 1/8 NPT-TUBE	0.05
53	8'	320-407-001	TUBE, 1/8" OD PFA	.01
54	7'	320-409-002	OIL LINE PROTECTOR, 1/4" FIBERGLASS	.01
55	1	310-LP5	1/4" HOSE BARB X 1/8" NPT STRAIGHT	.01
56	1	320-408-002	ADAPTER, ELBOW 1/8 MNPT-FNPT	0.05
57	1	120-103-367	DECAL, IMPORTANT 375F	0.01
58	1	120-003-002 120-003-003	ENDPLATE, CW MACHINED 607 (CW PUMP) ENDPLATE, CCW MACHINED 607 (CCW PUMP)	11.97
59	1	120-071-367-D 120-071-367-S	SHROUD, 367 TOP CW SHROUD, 367 TOP CCW	8.89
60	1	120-070-367	SHROUD, LOWER, 367	3.25
61	1	120-076	KEY, 3/8" X 3/8" X 1"	0.04
62	1	120-074-001	FAN SHROUD, 367 SHORT	8.37
63	1	120-083-002 120-083-001	FAN ASSY, CW 607 FAN ASSY, CWC 607	4.40
64	1	120-073	FAN GUARD, 367, 460, 466 & 506	1.42
65	1	120-105	TAG, LARGE, NVE SERIAL NUMBER	0.02
66	1	120-106-367-D	PLATE, CW	0.04
67	1	120-077-367	SHROUD SUPPORT, 360 & 367	0.05
68	1	120-100-607	DECAL, 607 CHALLENGER HD	0.00
69	1	120-071-607A-S	TIN KIT, 607A	12.33
69A	1	120-071-607A-S-1	TIN, UPPER 1 CCW - 607A	7.10
69B	1	120-071-607A-S-2	TIN, UPPER 2 CCW - 607A	2.17
69C	1	120-071-607A-S-3	SHROUD, LOWER, 607A	2.96
69D	1	120-071-607A-S-4	BRACKET, 607A TINS	0.10
70	1	120-100-607A	DECAL, 607 SIDE MOUNT	0.01
71	1	120-101-607A-S	DECAL, WARNING 607A	0.00
72	1	120-101-001	DECAL, NATVAC.COM	0.00

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Challenger Series

VACUUM PUMPS & BLOWERS

607 Challenger Series | Parts List Continued

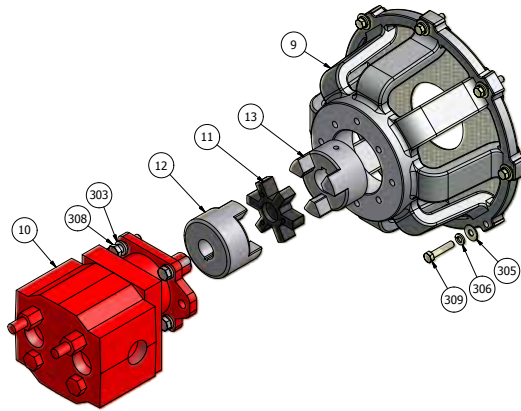
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
73	1	120-351-001	LIFT EYE, 3/8-16 PLATED	0.15
74	1	120-104-367	DECAL, WARNING-GUARDS	0.00
200	1	310-LP5	HOSE BARB TO MALE PIPE	0.01
201	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
202	5	320-407-003	OIL LINE, BLK 1/4" ID 30R7	---
203	1	320-083-009	OIL TANK FILTER, 100 MESH	---
204	1	320-082-001	OIL TANK, 5QT, W/LOGO	1.65
205	1	320-083-010	FILTER FITTING, OIL TANK 1/4 NPT	.107
206	1	320-083-002	CAP, OIL TANK, BLACK 2 1/4"	.1016
207	1	320-408-010	FITTING, 1/4" TUBE X 1/4" MNPT	---
208	1	320-R102-6IN	OIL LINE, 3/8" X 1/4" ID X 6" LG	.05
209	2	416-025-1WC	CLAMP, WORM, .250" DIA	---
300	2	SHCS - 1/4-20 UNC X 0.50	SHCS - 1/4-20 UNC X 0.50	---
301	4	HHCS - 5/16-18 UNC X 0.75	HHCS - 5/16-18 UNC X 0.75	---
302	16	HHCS - 5/16-18 UNC X 1	HHCS - 5/16-18 UNC X 1	---
303	4	HHCS - 5/16-18 UNC X 2 FT	HHCS - 5/16-18 UNC X 2 FULL THREAD	---
304	8	SHCS - 5/16-18 UNC X 1	SHCS - 5/16-18 UNC X 1	---
305	1	HHCS - 3/8-16 UNC x 0.75	HHCS - 3/8-16 UNC X 0.75	---
306	10	HHCS - 3/8-16 UNC X 1.75	HHCS - 3/8-16 UNC X 1.75	---
307	4	HHCS - 1/2-13 UNC X 1.00	HHCS - 1/2-13 UNC X 1.00	---
308	36	LW - 5/16	LOCK WASHER, 5/16	---
309	3	LW - 3/8	LOCK WASHER, 3/8"	---
310	4	LW - 1/2	LOCK WASHER, 1/2	---
311	23	FW - 3/8	FLAT WASHER, 3/8"	---
312	6	HHCS - 3/8-16 UNC X 2.25	HHCS - 3/8-16 UNC X 2.25	---
313	8	HHCS - 3/8-16 UNC X 0.50	HHCS - 3/8-16 UNC X 0.50	---
314	4	RVT 1/8 D X 1/8L	BLIND RIVET, 1/8 DIA X 1/8 GRIP, ALUM	---
315	1	SHCS - 5/16-24 UNF X 1.25	SHCS - 5/16-24 UNF X 1.25	---
316	14	TAPSCR - 1/4-14 X 0.75	HEX HEAD SELF TAPPING SCREW 1/4-14	---
317	1	HHCS 1/4-20 UNC X 2.75	HHCS 1/4-20 UNC X 2.75	---
318	2	FW - 1/4 USS	FLAT WASHER - 1/4" USS	---
319	1	BHCS - 1/4-20 UNC X 0.50	BHCS - 1/4-20 UNC X 0.50	---
320	1	HEX NUT - 3/8 UNC	HEX NUT - 3/8 UNC	---

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607 Hydraulic Motor Drive | Parts Diagram



607 Hydraulic Motor Drive | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
9	1	120-400-001	HYDRAULIC ADAPTER 607, ASSY	16.00
10	1	440-2000-367	HYDRAULIC MOTOR, 2 1/2 GEAR	55.75
11	1	424-150-S	SPIDER, LOVEJOY 150, EPDM	0.21
12	1	424-150-125-HYD	COUPLER FLANGE, LOVEJOY 1.25" X 5/16 KEY	3.96
13	1	424-150-150	COUPLER FLANGE, LOVEJOY 1.50" X 3/8 KEY	3.64
305	8	FW - 3/8 USS	FLAT WASHER - 3/8 USS	0.01
306	8	LW - 3/8	LOCK WASHER, 3/8"	0.01
308	4	ANSI B18.2.1 - 1/2-13 UNC - 1.75	HEX CAP SCREW	0.14
309	8	HHCS - 3/8-16 UNC X 1.75	HHCS - 3/8-16 UNC X 1.75	0.08

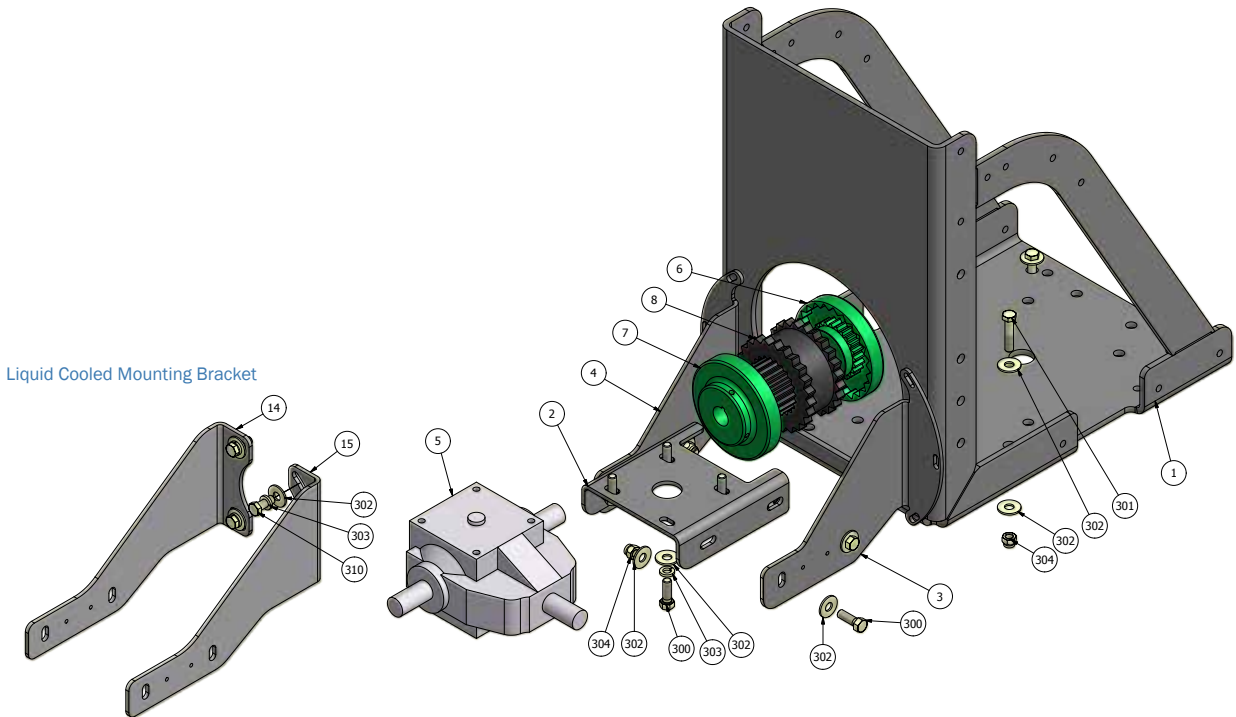
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607 Pump Stand Complete | Parts Diagram

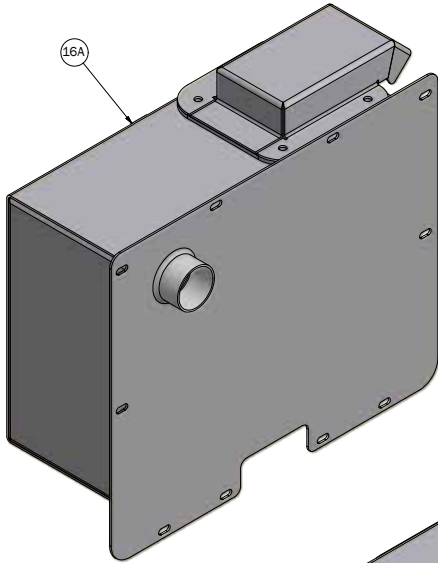


607 Pump Stand Complete | Parts List

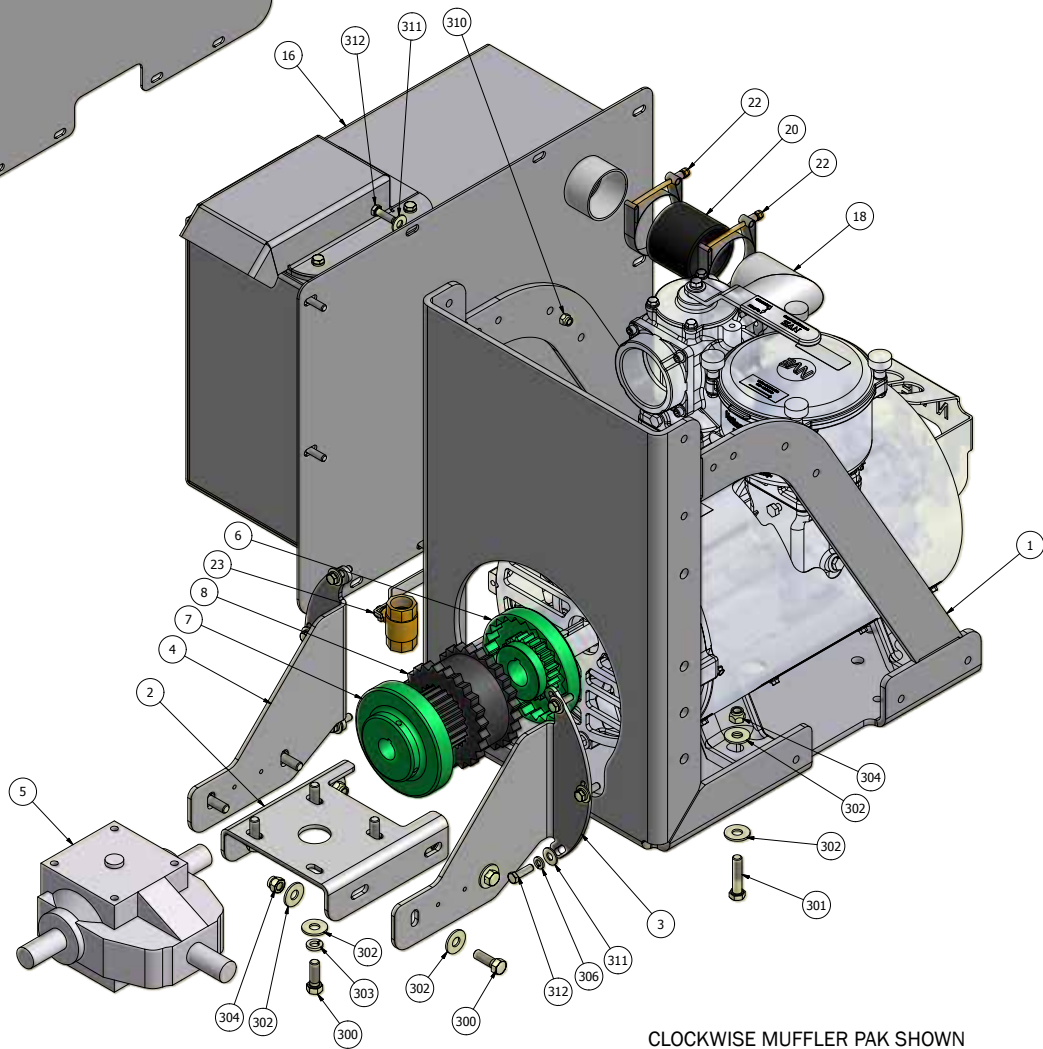
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-367-PS1	PUMP STAND, 367	126
2	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7.00
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6.00
4	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6.00
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-009-150	COUPLER FLANGE, 9S X 1 1/2"	7.80
7	1	424-009-125	COUPLER FLANGE, 9S X 1 1/4"	8.01
8	1	424-009-JE	COUPLER SLEEVE, 9JE EPDM	1.95
14	1	280-401-001	GEARBOX BRKT, LH LIQ	5.60
15	1	280-401-002	GEARBOX BRKT, RH LIQ	5.60
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	0.13
301	4	HHCS - 1/2-13 UNC - 2.25	HEX CAP SCREW	0.17
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	0.04
303	4	LW - 1/2	LOCK WASHER, 1/2	0.02
304	4	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	0.05
310	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	0.11

NOTE: Item numbers 300 and above are listed for reference only.

607 Muffler Pak | Parts Diagram



OIL CATCH MUFFLER FOR
607 COUNTER CLOCKWISE
ROTATION



CLOCKWISE MUFFLER PAK SHOWN

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Challenger Series

VACUUM PUMPS & BLOWERS

607 Muffler Pak | Parts List

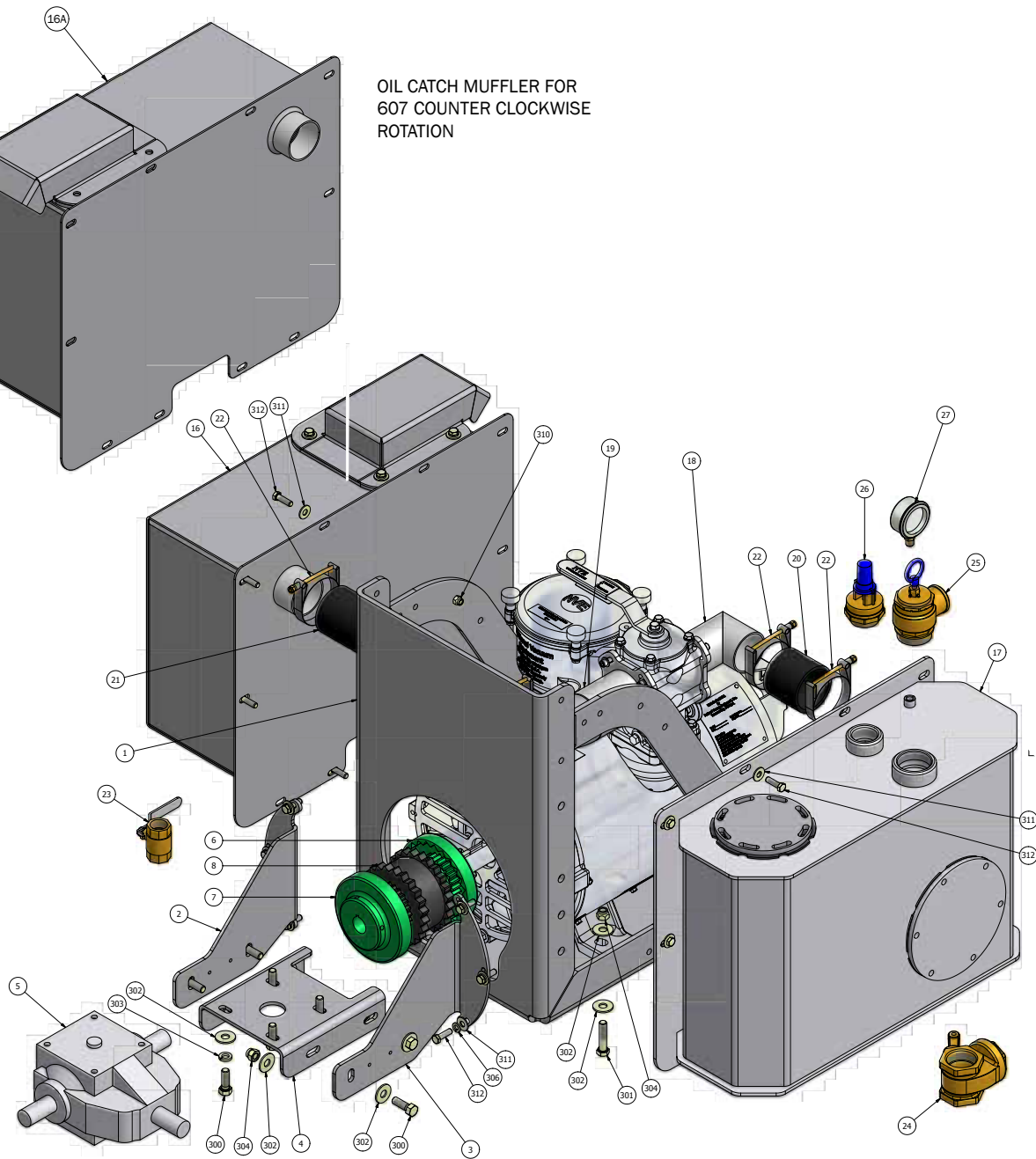
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-367-PS1	PUMP STAND, 607	126
2	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6
4	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-009-150	COUPLER FLANGE, 9S X 1 1/2	7.8
7	1	424-009-125	COUPLER FLANGE, 9S X 1 1/4	8.01
8	1	424-009-JE	COUPLER SLEEVE, 9JE EPDM	1.95
16 16A	1	214-001-3R (607CW MAX) 214-001-3L (607CCW MAX)	OCM, BOLT ON, 3" RH SQUARE OCM, BOLT ON, 3" LH SQUARE	---
18	1	124-607-STE	ELBOW, SHORT, 3" 607 4-WAY, 3" TUBE	3.15
20	1	426-300-TAR	HOSE, 3" TAR & ASPHALT, 3" LG	.16
22	2	426-3875-TBC	CLAMP, T-BOLT 3.875"	1
23	1	288-100	BALL VALVE, 2" IPT	
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
301	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25" LG	---
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	---
303	4	LW 1/2	LOCK WASHER, 1/2	---
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
306	6	LW - 3/8	LOCK WASHER, 3/8"	---
310	6	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
311	13	FW - 3/8	FLAT WASHER, 3/8"	---
312	12	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---

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607 Max Pak | Parts Diagram



OIL CATCH MUFFLER FOR
607 COUNTER CLOCKWISE
ROTATION

COUNTER CLOCKWISE MAX PAK SHOWN

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Challenger Series

VACUUM PUMPS & BLOWERS

607 Max Pak | Parts List

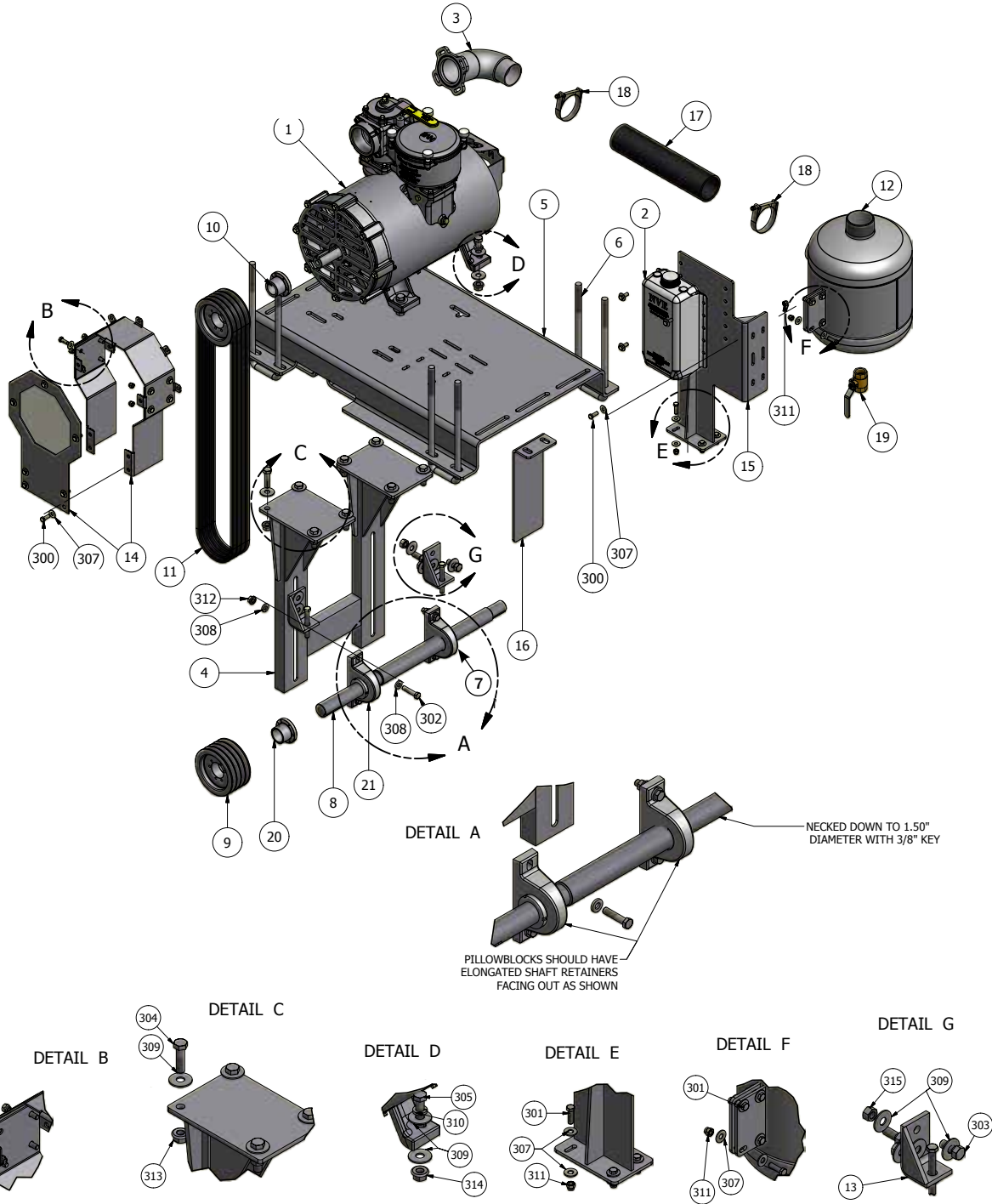
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-367-PS1	PUMP STAND, 607	126
2	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6
4	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-009-150	COUPLER FLANGE, 9S X 1 1/2"	7.8
7	1	424-009-125	COUPLER FLANGE, 9S X 1 1/4"	8.01
8	1	424-009-JE	COUPLER SLEEVE, 9JE EPDM	1.95
16 16A	1	214-001-3R (607CW MAX) 214-001-3L (607CCW MAX)	OCM, BOLT IB, 3" RH SQUARE OCM, BOLT IB, 3" LH SQUARE	---
17	1	218-001-3R (607CW MAX) 218-001-3L (607CCW MAX)	MT, BOLT ON, 3" RH, ALU MT, BOLT ON, 3" LH, ALU	64
18	1	124-607-STE	ELBOW, SHORT, 3" 4-WAY, 3" TUBE	3.15
19	1	124-607-LTE	ELBOW, LONG, 3" 4-WAY, 3" TUBE	8
20	1	426-300-TAR	HT&A HOSE, 3" ID, 3" LG	1.75
21	1	426-300-TAR	HT&A HOSE, 3" ID, 9" LG	
22	4	426-3875-TBC	CLAMP, T-BOLT 3.875"	.16
23	1	288-100	DRAIN VALVE, BRASS, 1" IPS	1
24	1	362-301-2	LEVER VALVE, 2"	3.5
25	1	364-306-2	PRESSURE RELIEF, 2"	2.4
26	1	366-150	VACUUM RELIEF, 1 1/2" NPT	1.1
27	1	408-350	GAUGE, VACUUM/PRESSURE, 3.5"	.45
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG	---
301	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25" LG	---
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	---
303	4	LW - 1/2	LOCK WASHER, 1/2	---
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
306	10	LW - 3/8	LOCK WASHER, 3/8"	---
310	12	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
311	24	FW - 3/8	FLAT WASHER, 3/8"	---
312	22	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---

NOTE: Item numbers 300 and above are listed for reference only.

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607 Top Frame Mount Belt & Pulley Drive Package | Parts Diagram



Photos and illustrations for references only.

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Challenger Series

VACUUM PUMPS & BLOWERS

607 Top Mount Belt & Pulley Drive Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-607-FD	607 CHALLENGER CW FAN COOLED, VAC PUMP	3.90
2	1	320-082-001	REMOTE OIL TANK KIT (INCLUDED WITH PUMP)	1.80
3	1	116-367-LTE	ELBOW, LONG, 3" 4-WAY	7.05
4	1	280-367-TM2	JACK SHAFT MOUNT, 367 TM	---
5	1	280-367-TM1	FRAME, 367 TM BELT DRIVE	---
6	4	146-215-15SHA	U-BOLT 3/4" X 15 LG, 4" CENTER	---
7	2	430-367-TM4	PILLOWBLOCK BEARING, 1 3/4", 367 TM	5.25
8	1	126-367-TM1	JACK SHAFT, 367 TM BELT DRIVE	23.00
9	2	430-367-TM1	6" SHEAVE, 4 BELT, SD STYLE BUSHING	11.20
10	1	430-367-TM2	BUSHINGS, 367 TM, SOX1.5	1.4
11	4	430-367-TM5	BX83 COG V-BELT 85.9 P.L.	.75
12	1	280-367-TM4	12" OCM W/WELD ON BRACKETS	---
13	2	280-367-TM6	BELT TENSIONER, 367 TM	---
14	1	280-367-TM5	UPPER BELT GUARD, 367 TM	---
15	1	280-367-TM3	OCM/OIL TANK MOUNT, 367	---
16	2	280-367-TM7	L MOUNTING BRACKET, 367 TM	---
17	1	426-300-TAR	3" T&A HOSE 15.5" LG	1.75
18	2	426-3875-TBC	CLAMP, T-BOLT 3.875"	.16
19	1	288-100	1" DRAIN VALVE BASS 1" IPS	1.0
20	1	430-367-TM3	BUSHING, 376 SD X 1.7	---
21	1	430-367-TM10	PILLOWBLOCK BEARING, GRIPTIGHT, 1 3/4"	---
300	19	HHCS - 3/8-16 UNC X 1.00	HHCS - 3/8-16 UNC X 1.00	---
301	8	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
302	4	HHCS - 1/2 X 2.25 UNF	HHCS - 1/2 X 2.25 UNF	---
303	4	HHCS - 5/8 UNC X 1.50	HHCS - 5/8 UNC X 1.50	---
304	8	HHCS - 5/8 X 2.25 UNC	HHCS - 5/8 X 2.25 UNC	---
305	4	HHCS - 5/8 X 2.25 UNF	HHCS - 5/8 X 2.25 UNF	---
306	2	ANSI B18.2.1 - 1/2-13 UNC - 4.5	HEX CAP SCREW	---
307	35	FW - 3/8	FLAT WASHER, 3/8"	---
308	8	FW - 1/2	FLAT WASHER, 1/2"	---
309	24	FW - 5/8	FLAT WASHER, 5/8"	---
310	4	LW - 5/8	LOCK WASHER, 5/8"	---
311	20	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---
312	4	NYLOCK NUT - 1/2 UNF	NYLOCK NUT - 1/2 UNF	---
313	8	NYLOCK NUT - 5/8 UNC	NYLOCK NUT - 5/8 UNC	---
314	4	NYLOCK NUT - 5/8 UNF	NYLOCK NUT - 5/8 UNF	---
315	4	HEX NUT - 5/8 UNC	HEX NUT - 5/8 UNC	---

NOTE: Item numbers 300 and above are listed for reference only.

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NVE

HEAVY-DUTY
866 Challenger

Heavy-Duty Vacuum Pumps & Packages

Designed and Manufactured for Extended Operations in Severe Conditions | Fan or Liquid-Cooled



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866 Challenger Series - Fan Cooled or Liquid Cooled

Our Challenger Series pumps are designed and built with the customer in mind – resulting in dependable, high performing pumps that are easy to install, operate and service. As the only industrial grade rotary vane vacuum pump designed, built and supported in the USA we are committed to also being the best pump period. Therefore each Challenger series vacuum pump features:

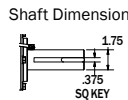
- Superior cooling for extended operations in severe conditions.
- Proven crash protection allowing all major components to survive a catastrophic failure.
- Oversized heavy duty roller bearings allowing more drive options.
- Precision pinned endplates for exact reassembly alignment.
- High strength castings poured in the USA.
- High temp Teflon oil lines allowing visual oil flow inspection.
- Remote mount 5 quart see through oil tank for constant oil level monitoring.
- Four point automatic lubrication system.
- Liquid or fan cooled versions of each model.
- Multiple drive options (gearbox, belt, hydraulic, direct).
- Integral, easily accessible final filter.
- Vane flush port with valve.
- Vane wear inspection port.
- Thermometer to monitor exhaust temperature.
- Vacuum/pressure change over valve.
- Flanged vacuum/pressure ports.
- Available in right hand or left hand rotation.
- Built in one way flow valve eliminates back spin.
- **Replacement parts always available.**

Challenger Series

VACUUM PUMPS & BLOWERS

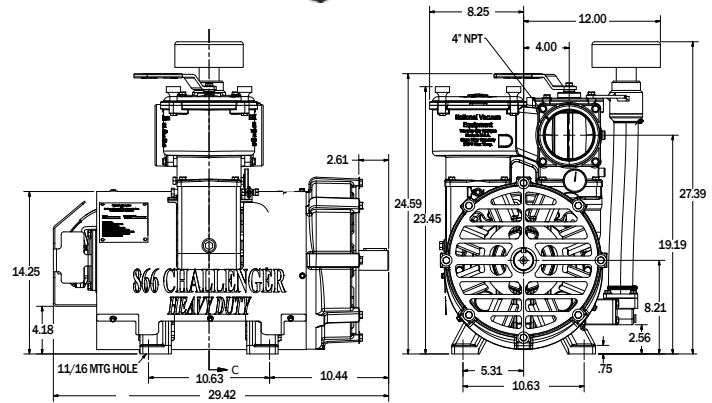
866 Challenger Fan Cooled

Dimensions: 20.25" W x 29.42" L x 27.39" H



866 Challenger Liquid Cooled

Dimensions: 20.25" W x 29.42" L x 27.39" H



866 Challenger Specifications

Porting Size Flanged NPT	4"
Maximum Air Flow-CFM	519
Maximum Intermittent Vacuum	27" hg
Maximum Intermittent Pressure	20 psi

Maximum 1150 RPM Intermittent operation only

RPM		Pressure (PSI)				Free flow	Vacuum (inches of Mercury)					
		20	15	10	5	0	6	12	15	18	21	27
1150	Hp.	NA	36	27	25	18	21	23	23	24	26	29
	CFM	NA	438	447	457	506	470	543	440	438	425	351
1000	Hp.	38	32	24	20	15	18	20	21	22	23	25
	CFM	375	381	389	398	452	409	394	390	381	370	306
800	Hp.	32	25	19	15	13	14	16	17	18	19	21
	CFM	319	324	331	342	385	348	333	331	324	315	242

The maximum allowable operating vacuum will vary depending on R.P.M., ambient temperature, altitude and time running. The basic principle to keep in mind is - faster R.P.M., higher air temperature and longer run time all equal more heat in the pump. When installing an NVE 866 we recommend a normal R.P.M. of 900. Exhaust gas temperatures read on the supplied thermometer **must not** exceed 375 degrees F.

866 Challenger Series Packages

Check out our competent design and engineering staff, our state of the art fabrication facility and quality powder coat painting capabilities all wrapped up in our unique pump packages. Each package is built around our quality Challenger vacuum pumps. These rugged and functional packages are designed to reduce installation time, ensure appropriate sized drive systems and vacuum system components, and provide accessible maintenance points. If you don't see what you are looking for, be sure to contact your NVE representative... *We Can Do That!*

VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

Hydraulic Motor Drive

- Heavy-duty automatic alignment bracket
- SAE 2 and 4 bolt flange
- Coupler set
- Properly sized hydraulic motor



Pump Stand Complete

- 400 series three-shaft gearbox accommodates CW and CCW rotation
- Coupler set with shear protection
- Rugged 3/8" construction, powder coat painted pump bracket
- Easy-align, adjustable gearbox bracket



866 Muffler Pak

All features included in the Standard Mounting Pak plus:

- Compact design square oil catch muffler
 - Effective baffle system
 - Stainless steel mesh filter
 - Drain valve
 - Exhaust deflector (other exhaust fittings available)
- All elbows, fittings and high temp hoses are factory connected
- Right-hand or left-hand muffler location available



866 Max Pak

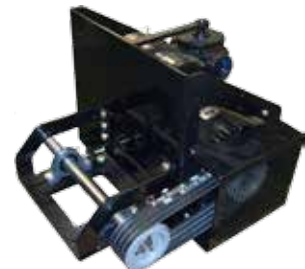
All features included in the Muffler Pak plus:

- High efficiency aluminum moisture trap
 - Accessible 6" stainless steel float ball
 - BUNA positive shut-off ball seat
 - 2" lever drain valve
 - Blind intake flange standard (other fittings available)
- Vacuum/pressure relief valve and gauge



Side Frame Mount Belt & Pulley Drive Package

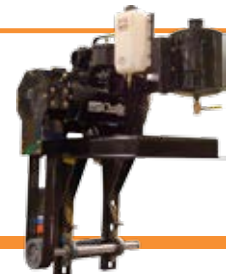
- Rugged, 3/8" steel construction mounting frame with powder coat finish
- Robust 1 3/4" CNC machined jack shaft
- Belt guard with expanded metal window to allow fan cooled pump some breathing room
- Intuitive belt tensioning system decreases installation time
- 3" of adjustable in slot travel for pump and jack shaft mount
- Heavy duty 1 3/4" pillow block bearings, 4 BX belts and 6" pulleys provided in an easy to service configuration
- Auxiliary gravity fed 5 quart oil tank provided to allow for a visual indication of oil tank level



Top Frame Mount Belt & Pulley Drive Package

All the features of the Side Mount Belt Drive plus:

- U-bolts and mounting brackets provided for custom fit to your truck
- Mounting bracket that includes 12" oil catch muffler with drain valve and remote oil tank



866 Belt Drive Deutz Engine Package

- Rugged, low-profile frame for belly-mount applications
- 60.6 HP Deutz power unit with tachometer and LOFA control panel
- 23 gallon fuel tank
- High efficiency oil catch muffler
- Vacuum pressure relief manifold and gauge
- Powder coat painted and factory assembled



System Requirements

Moisture Trap - Minimum 10 gallon capacity Moisture Trap (a larger trap may be required depending on volatility of product being pumped) which we provide in carbon steel, stainless steel or aluminum, and either horizontal or vertical orientation.

Oil Catch Muffler - 12" Diameter vertical. Our muffler features a serviceable pleated stainless steel filter element to protect the pump during pressure cycles.

Final Filter - 12" in line filter or integral final filter.

Primary Shutoff - Minimum 8" cage with 6" ball.

The 866 is also available with a self contained power unit and ready-to-install mounting bracket.

Challenger Series

VACUUM PUMPS & BLOWERS

DISTRIBUTED BY:

For over 25 years NVE has been providing quality vacuum system components to the liquid waste markets. From design, to development to product support, NVE IS the industry leader.

In addition to our team of engineers and highly qualified support staff, NVE has a state of the art machine shop, fabrication shop, and powder coat paint facility housed in two plants in Traverse City, Michigan. We also have a warehouse and sales support facility in Fayetteville Arkansas.

For questions and additional information please contact your dealer or NVE direct at 800.253.5500.

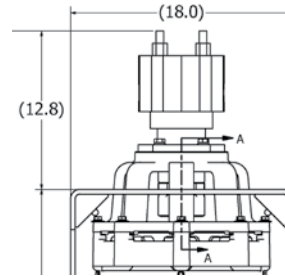
Thank you,

NVE

866 CHALLENGER SERIES PACKAGE GUIDE

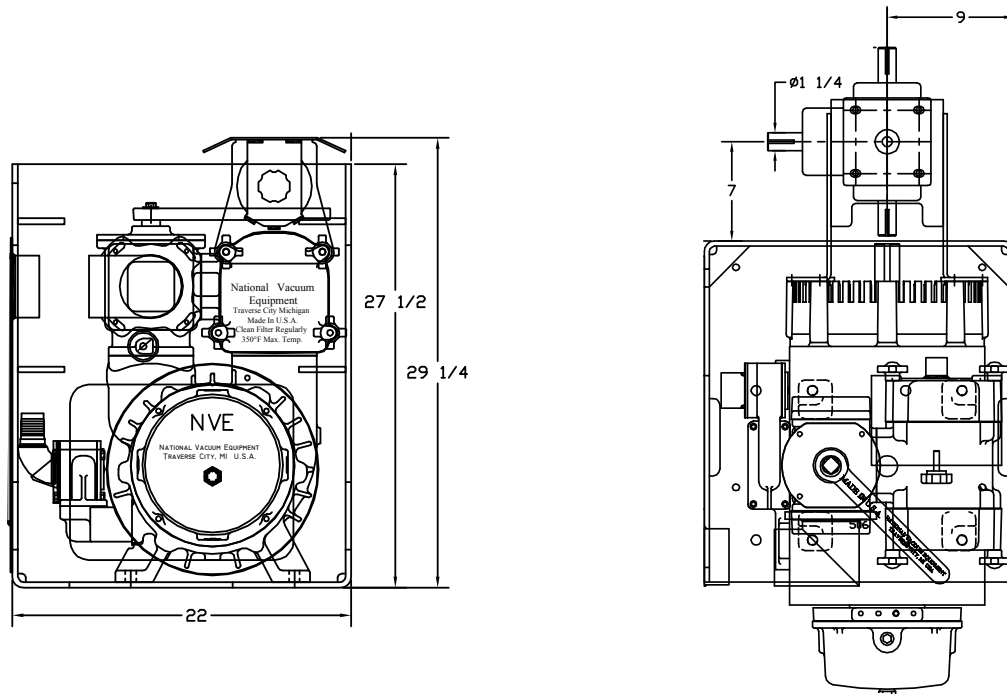
HYDRAULIC MOTOR DRIVE

Part Number	Product Description
<input type="checkbox"/> 117-866-HYD-FD	866 Fan Cooled W/Hydraulic Drive - CW
<input type="checkbox"/> 117-866-HYD-FS	866 Fan Cooled W/Hydraulic Drive - CCW
<input type="checkbox"/> 117-866-HYD-LD	866 Liquid Cooled W/Hydraulic Drive - CW
<input type="checkbox"/> 117-866-HYD-LS	866 Liquid Cooled W/Hydraulic Drive - CCW



PUMP STAND COMPLETE

Part Number	Product Description
<input type="checkbox"/> 117-866-001-FD	866 Fan Cooled W/Pump Stand - CW
<input type="checkbox"/> 117-866-001-FS	866 Fan Cooled W/Pump Stand - CCW
<input type="checkbox"/> 117-866-001-LD	866 Liquid Cooled W/Pump Stand - CW
<input type="checkbox"/> 117-866-001-LS	866 Liquid Cooled W/Pump Stand - CCW
<input type="checkbox"/> 117-866-001H-FD	866 Fan Cooled W/Pump Stand Hydraulic Drive - CW
<input type="checkbox"/> 117-866-001H-FS	866 Fan Cooled W/Pump Stand Hydraulic Drive - CCW
<input type="checkbox"/> 117-866-001H-LD	866 Liquid Cooled W/Pump Stand Hydraulic Drive - CW
<input type="checkbox"/> 117-866-001H-LS	866 Liquid Cooled W/Pump Stand Hydraulic Drive - CCW



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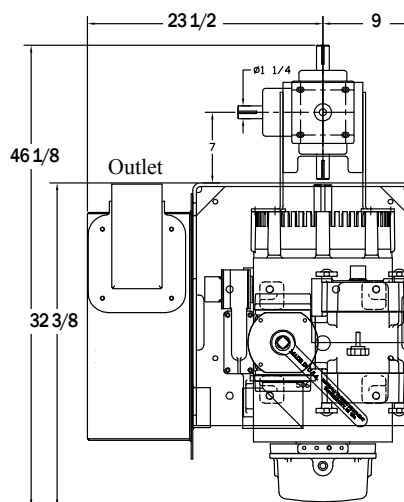
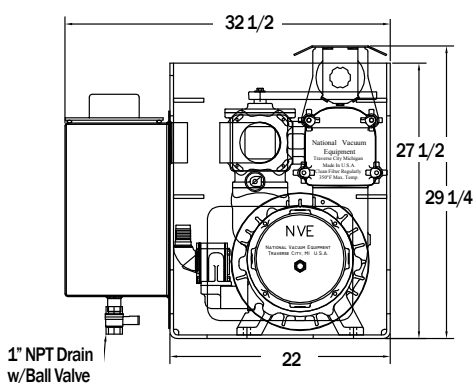
866 CHALLENGER SERIES PACKAGE GUIDE - CONTINUED

866 MUFLER PAK

Part Number	Product Description
❑ 117-866-MUF-FD	866 Fan Cooled W/Muffler Pak - CW
❑ 117-866-MUF-FS	866 Fan Cooled W/Muffler Pak - CCW
❑ 117-866-MUF-LD	866 Liquid Cooled W/Muffler Pak - CW
❑ 117-866-MUF-LS	866 Liquid Cooled W/Muffler Pak - CCW
❑ 117-866-MUF-FDH	866 Fan Cooled W/Muffler Pak Hydraulic Drive - CW
❑ 117-866-MUF-FSH	866 Fan Cooled W/Muffler Pak Hydraulic Drive - CCW
❑ 117-866-MUF-LDH	866 Liquid Cooled W/Muffler Pak Hydraulic Drive - CW
❑ 117-866-MUF-LSH	866 Liquid Cooled W/Muffler Pak Hydraulic Drive - CCW

All elbows, fittings and high temp hoses are factory connected.
Choose right or left hand muffler location.

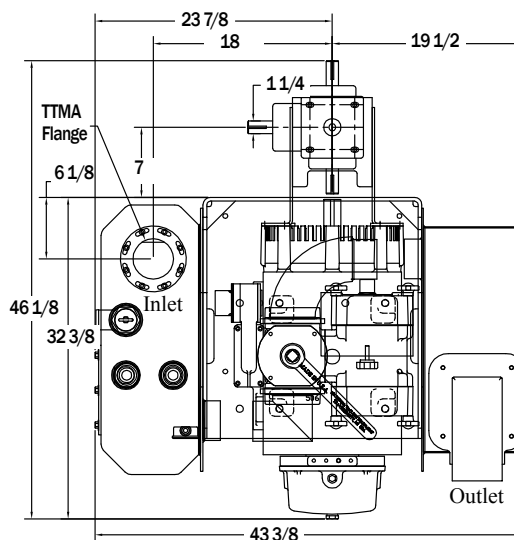
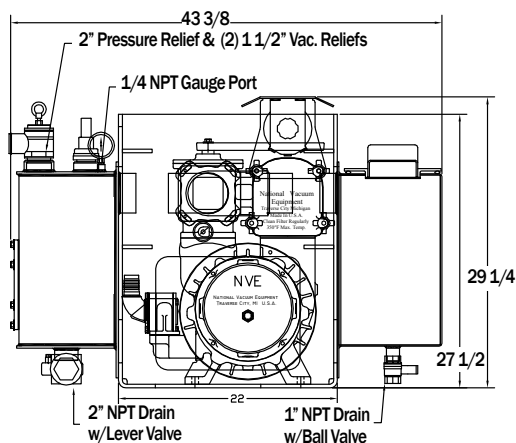
Counter Clockwise Rotation Shown.



866 MAX PAK

Part Number	Product Description
❑ 117-866-MAX-FD	866 Fan Cooled W/MAX Pak - CW
❑ 117-866-MAX-FS	866 Fan Cooled W/MAX Pak - CCW
❑ 117-866-MAX-LD	866 Liquid Cooled W/MAX Pak - CW
❑ 117-866-MAX-LS	866 Liquid Cooled W/MAX Pak - CCW
❑ 117-866-MAX-FDH	866 Fan Cooled W/MAX Pak Hydraulic Drive - CW
❑ 117-866-MAX-FSH	866 Fan Cooled W/MAX Pak Hydraulic Drive - CCW
❑ 117-866-MAX-LDH	866 Liquid Cooled W/MAX Pak Hydraulic Drive - CW
❑ 117-866-MAX-LSH	866 Liquid Cooled W/MAX Pak Hydraulic Drive - CCW

Counter Clockwise Rotation Shown.



Photos and illustrations for references only.

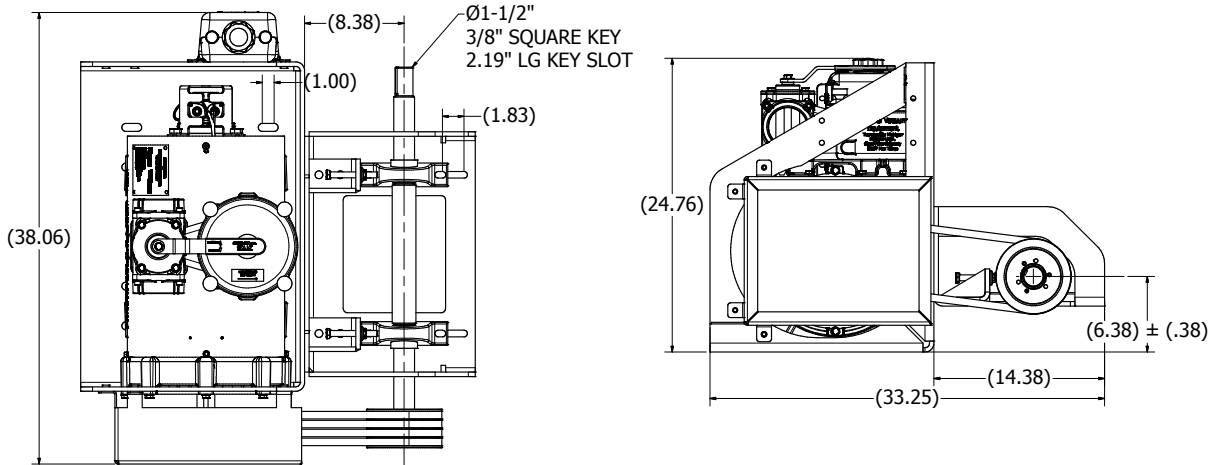
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866 CHALLENGER SERIES PACKAGE GUIDE - CONTINUED

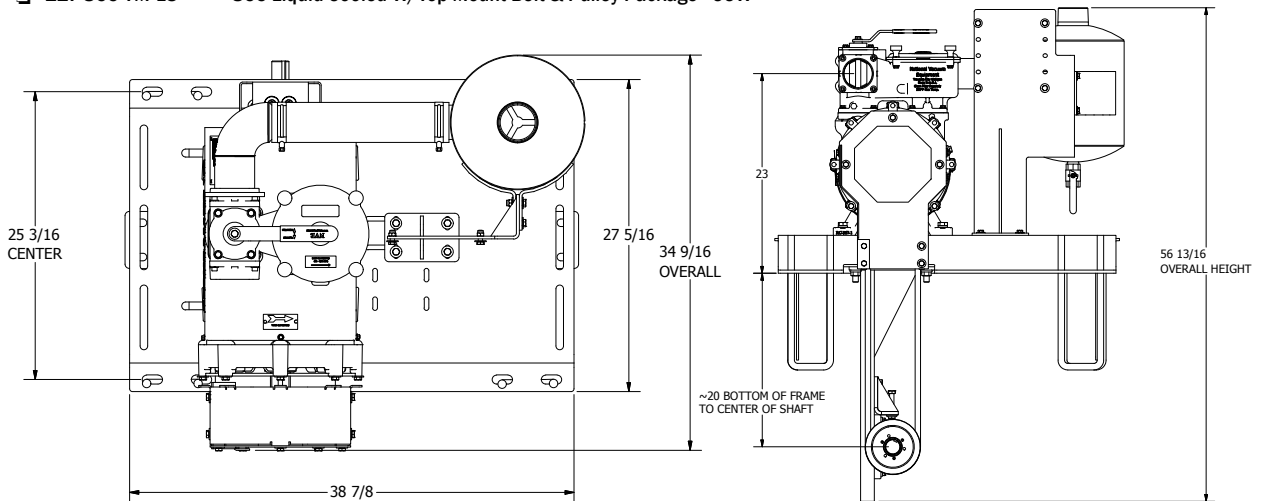
866 SIDE FRAME MOUNT BELT & PULLEY DRIVE PACKAGE

Part Number	Product Description
❑ 117-866-SM-FD	866 Fan Cooled W/Side Mount Belt & Pulley Package - CW
❑ 117-866-SM-FS	866 Fan Cooled W/Side Mount Belt & Pulley Package - CCW
❑ 117-866-SM-LD	866 Liquid Cooled W/Side Mount Belt & Pulley Package - CW
❑ 117-866-SM-LS	866 Liquid Cooled W/Side Mount Belt & Pulley Package - CCW



866 TOP FRAME MOUNT BELT & PULLEY DRIVE PACKAGE

Part Number	Product Description
❑ 117-866-TM-FD	866 Fan Cooled W/Top Mount Belt & Pulley Package - CW
❑ 117-866-TM-FS	866 Fan Cooled W/Top Mount Belt & Pulley Package - CCW
❑ 117-866-TM-LD	866 Liquid Cooled W/Top Mount Belt & Pulley Package - CW
❑ 117-866-TM-LS	866 Liquid Cooled W/Top Mount Belt & Pulley Package - CCW



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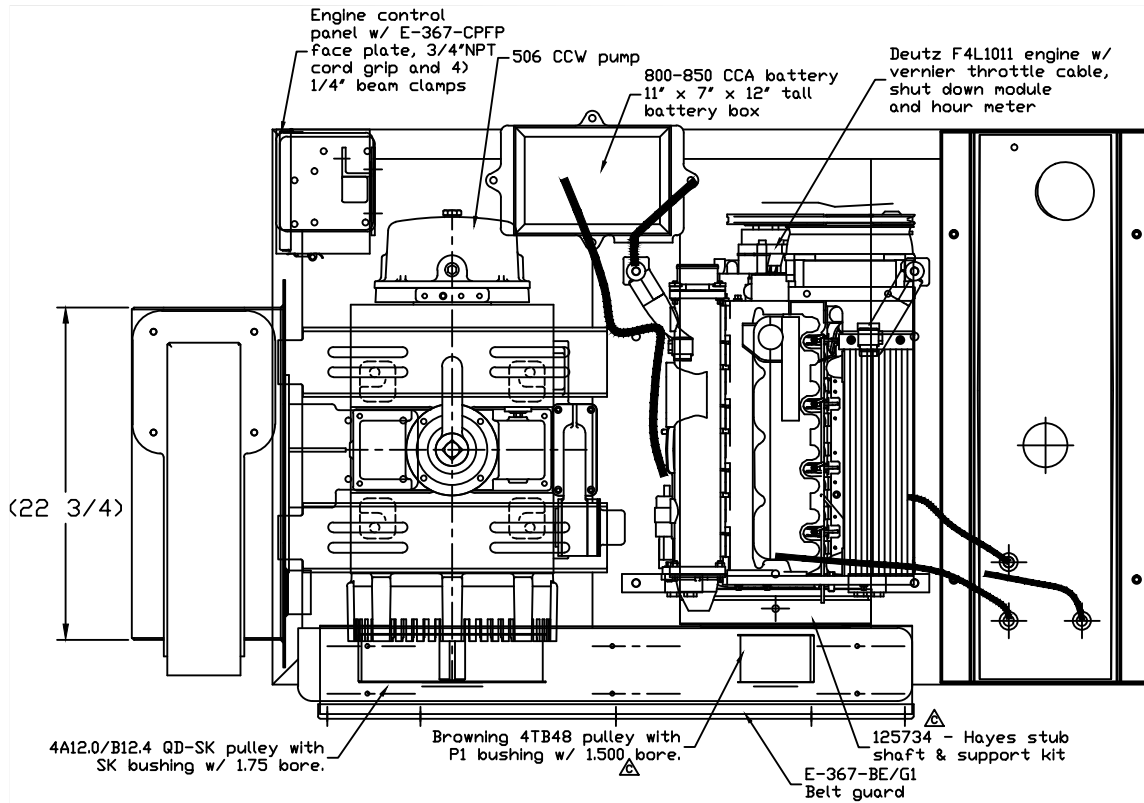
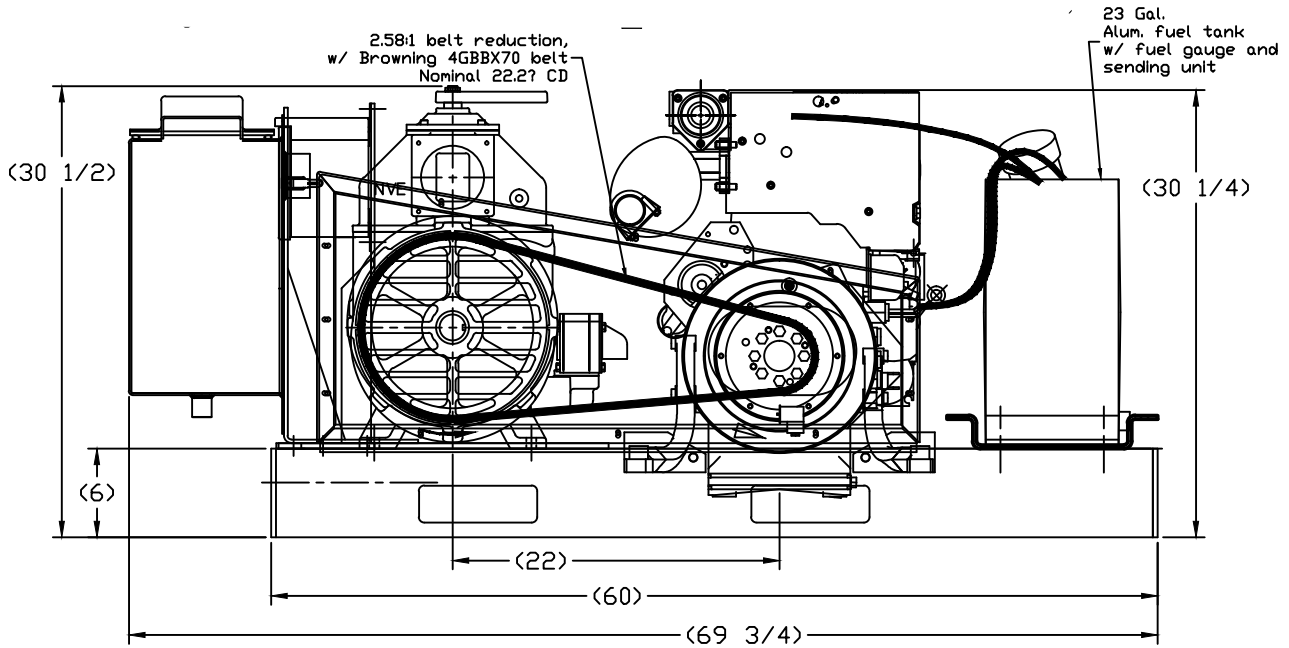
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866 CHALLENGER SERIES PACKAGE GUIDE - CONTINUED

866 BELT DRIVE DEUTZ ENGINE DRIVE PACKAGE

Part Number	Product Description
117-EDR-866	866 Fan Cooled Belt Driven Engine Drive W/60.6 HP Deutz - CCW

Pumps & Packages | 866 Challenger



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866 Challenger | Vacuum Pumps

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
NVE 866 Challenger - Fan Cooled CW	102-866-FD	507
NVE 866 Challenger - Fan Cooled CCW	102-866-FS	

NVE 866 Challenger - Liquid Cooled CW	102-866-LD	495
NVE 866 Challenger - Liquid Cooled CCW	102-866-LS	



866 Challenger | Repair Kits and Maintenance Items

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Repair Kit - NVE 866	115-866-0	10.2
Repair Kit - NVE 866 (Less Bearings)	115-866-0B	6.1

Comes with or without bearings and includes the seals, gaskets, and vanes.

Tool Kit - NVE Challenger Pumps	120-1T	4.3
---------------------------------	--------	-----

The Tool kit makes it easier to rebuild the Challenger vacuum pumps, comes with: Seal driver, Reamer, (2) T-Handles, and (2) Shims.

Essential Black Box - Pump Tool Kit	120-0T15	21
-------------------------------------	----------	----

The Essential Black Box - Complete pump tool kit makes it easier to rebuild the Challenger vacuum pumps and comes with: Heavy Duty Carrying Case, Vacuum/Pressure Testing Gauge, Reamer, Infrared Thermometer, Laser Tachometer, 607 & 866 Seal Drivers with Handles, (4) T-Handles, Coupler Alignment Tools, 607 & 866 Shaft Alignment Tools and (2) Shims. And to keep you up to date our USB drive filled with the latest technical information.

Remote Oil Tank Kit for 607 & 866	320-081	1.8
Diesel Flush Kit	320-081-002	1.9
Oil Line Kit - Plastic 367 3 Port	320-081-001	.55
Oil Line Kit - 4 Port 607/866	320-081-003	---

Alignment Tool	370-006-367	3.5
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Alignment tool helps you align the gearbox up with the vacuum pump.

NVE Challenger Pump Oil - ISO 68	150-220-VPOIL	7.5
----------------------------------	---------------	-----

The NVE Challenger Pump Oil is ISO 68 Turbine oil. This oil is recommended to keep your vacuum pump lubricated properly. Sold by the case. 6 gallons in each case.



VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

866 | Hydraulic Motor Drive

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Fan Cooled W/Hydraulic Drive - CW	117-866-HYD-FD	624
866 Fan Cooled W/Hydraulic Drive - CCW	117-866-HYD-FS	624
866 Liquid Cooled W/Hydraulic Drive - CW	117-866-HYD-LD	612
866 Liquid Cooled W/Hydraulic Drive - CCW	117-866-HYD-LS	612



866 | Pump Stand Complete

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Pump Stand - Fan Cooled - CW	117-866-001-FD	730
866 Pump Stand - Fan Cooled - CCW	116-866-001-FS	730
866 Pump Stand - Liquid Cooled - CW	117-866-001-LD	718
866 Pump Stand - Liquid Cooled - CCW	117-866-001-LS	718
866 Pump Stand - Fan Cooled W/Hydraulic Drive - CW	117-866-001H-FD	847
866 Pump Stand - Fan Cooled W/Hydraulic Drive - CCW	117-866-001H-FS	847
866 Pump Stand - Liquid Cooled W/Hydraulic Drive - CW	117-866-001H-LD	835
866 Pump Stand - Liquid Cooled W/Hydraulic Drive - CCW	117-866-001H-LS	835



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Challenger Series

VACUUM PUMPS & BLOWERS

VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

866 | Muffler Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Muffler Pak Fan Cooled - CW	117-866-MUF-FD	954
866 Muffler Pak Fan Cooled - CCW	117-866-MUF-FS	954
866 Muffler Pak Liquid Cooled - CW	117-866-MUF-LD	878
866 Muffler Pak Liquid Cooled - CCW	117-866-MUF-LS	878
866 Muffler Pak Fan Cooled W/Hydraulic Drive - CW	117-866-MUF-FDH	957
866 Muffler Pak Fan Cooled W/Hydraulic Drive - CCW	117-866-MUF-FSH	957
866 Muffler Pak Liquid Cooled W/Hydraulic Drive - CW	117-866-MUF-LDH	995
866 Muffler Pak Liquid Cooled W/Hydraulic Drive - CCW	117-866-MUF-LSH	995



866 | MAX Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 MAX Pak Fan Cooled - CW	117-866-MAX-FD	912
866 MAX Pak Fan Cooled - CCW	117-866-MAX-FS	912
866 MAX Pak Liquid Cooled - CW	117-866-MAX-LD	916
866 MAX Pak Liquid Cooled - CCW	117-866-MAX-LS	916
866 MAX Pak Fan Cooled W/Hydraulic Drive - CW	117-866-MUF-FDH	928
866 MAX Pak Fan Cooled W/Hydraulic Drive - CCW	117-866-MAX-FSH	928
866 MAX Pak Liquid Cooled W/Hydraulic Drive - CW	117-866-MAX-LDH	919
866 MAX Pak Liquid Cooled W/Hydraulic Drive - CCW	117-866-MAX-LSH	919



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VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

866 | Side Frame Mount Belt & Pulley Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Fan Cooled W/Side Mount Belt & Pulley Package - CW	117-866-SM-FD	779
866 Fan Cooled W/Side Mount Belt & Pulley Package - CCW	117-866-SM-FS	779
866 Liquid Cooled W/Side Mount Belt & Pulley Package - CW	117-866-SM-LD	770
866 Liquid Cooled W/Side Mount Belt & Pulley Package - CCW	117-866-SM-LS	770



866 | Top Frame Mount Belt & Pulley Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Fan Cooled W/Top Mount Belt & Pulley Package - CW	117-866-TM-FD	977
866 Fan Cooled W/Top Mount Belt & Pulley Package - CCW	117-866-TM-FS	977
866 Liquid Cooled W/Top Mount Belt & Pulley Package - CW	117-866-TM-LD	---
866 Liquid Cooled W/Top Mount Belt & Pulley Package - CCW	117-866-TM-LS	---



866 | Belt Driven Deutz Engine Drive Package

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
866 Fan Cooled Belt Driven Engine Drive W/60.6 HP Deutz Package - CCW	117-EDR-866-FS	2127

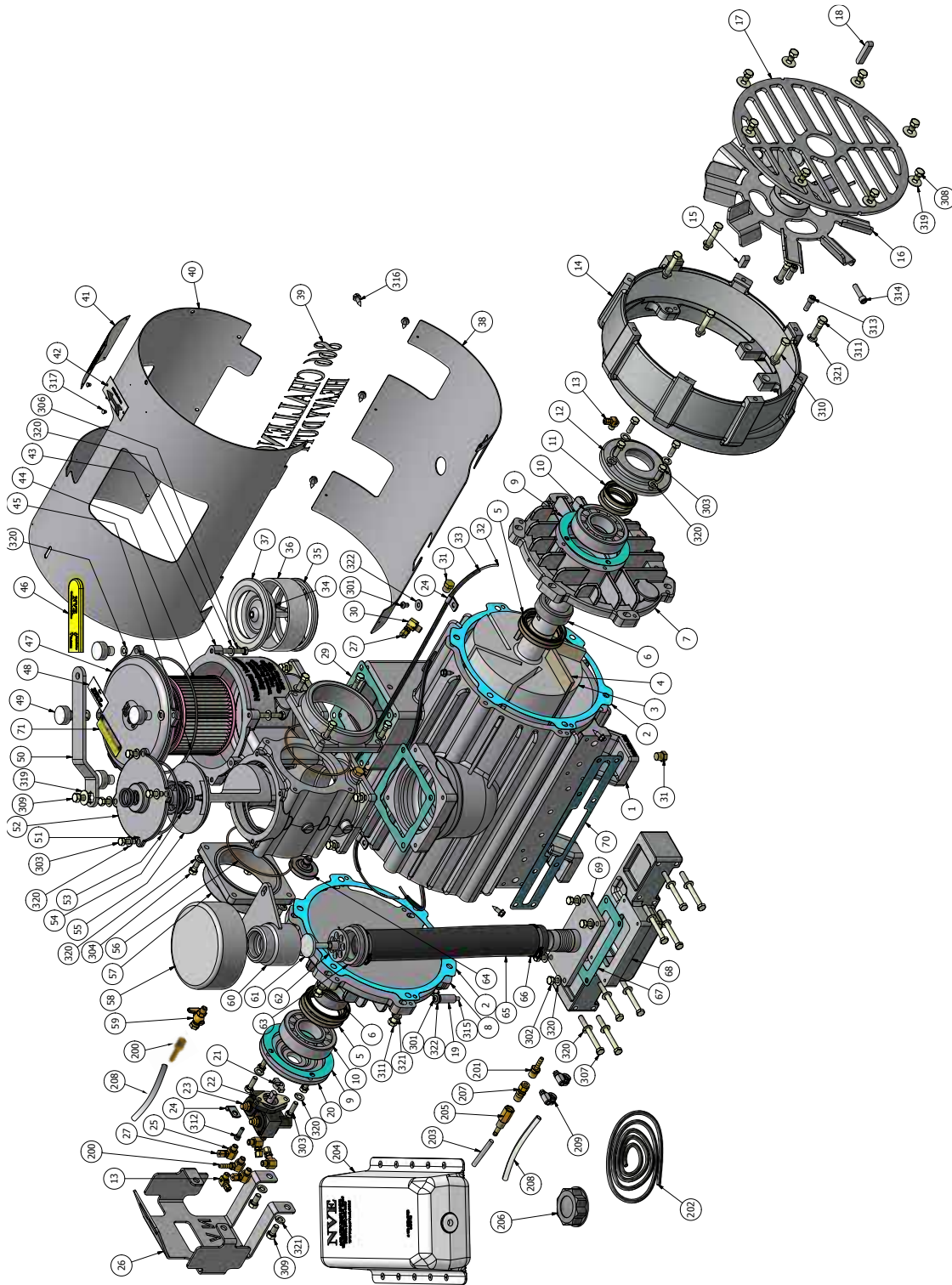


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866 Challenger Series Fan Cooled | Parts Diagram



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Challenger Series

VACUUM PUMPS & BLOWERS

866 Challenger Series Fan Cooled | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-001-506	HOUSING, 466	136
2	2	120-004-460	GASKET, END PLATE 460	.01
3	1	120-005-506-D/S	ROTOR, 506 CW OR CCW	---
4	6	120-007-506	VANE: 506	.75
5	4	120-018-506	SEAL, 65 X 85 X 8 VITON	.09
6	2	120-009-506	Seal Sleeve, 460, 466 & 506	.60
7		120-003-506-D	ENDPLATE, GEN 466 & 506	21.01
8	1	120-003-506-S	ENDPLATE, GEN 466 & 506	21.01
9	2	120-055-506	GASKET, BEARING COVER	.01
10	2	120-019-506	BEARING, NJ309	2.05
11	2	120-053-506	SEAL, 45X62X8 VITON	.06
12	1	120-054-506	BEARING COVER	2.65
13	2	320-408-005	FITTING, ELBOW 1/8 NPT-TUBE	.05
14	1	120-074-506	FAN SHROUD, 466/506/866	10
15	1	120-076	KEY, 3/8" X 3/8" X 1"	---
16	1	120-084-002 120-084-001	FAN ASSY, CW, 866 FAN ASSY, CCW, 866	4.7 4.7
17	1	120-073	FAN GUARD, 367, 460, 466 & 506	9.65
18	1	120-006	KEY, 3/8" X 3/8" X 2	---
19	1	120-077-506	SHROUD SUPPORT	---
20	1	120-080-506	BEARING COVER, 506 OIL PUMP	2.0
21	1	320-LF8	DRIVE TAB	.03
22	1	320-R31	GASKET, OIL PUMP	.01
23	1	320-LW32-BD 320-LW32-BS	OIL PUMP, 4 PORT CW OIL PUMP, 4 PORT CCW	2.32
24	3	320-409-003	P-CLIP, OIL LINE 1/4" X 5/16	---
25	4	320-408-001	ADAPTER, ELBOW 1/8 BSPTM-NTPF	---
26	1	120-079-002	GUARD, OIL PUMP 866	3.0
27	6	320-408-004	FITTING, STRT 1/8 NPT-TUBE	---
28	1	320-006	FITTING, ELBOW 1/4" OD X 1/8" NPTF WORLD	---
29	2	120-039-506	GASKET, 4" INT/EXH FLANGE	.01
30	2	320-408-002	ADAPTER, ELBOW 1/8 MNPT-FNPT	---
31	4	120-059	PLUG, BRASS 1/4" NPT, HEX HD.	.05
32	6.458	320-407-001	OIL LINE, 1/8" OD PFA	.01
33	5.792	320-409-002	OIL LINE PROTECTOR, 1/4" FIBERGLASS	.01
34	1	120-041-506	CHECK VALVE, 4"	1.07
35	1	120-042-506	RETAINER, 4" CHECK VALVE	.65
36	1	120-041-001	INTERNAL CHECK VALVE, BODY, 866	---
37	1	120-041-002	INTERNAL CHECK VALVE, TOP PLATE, 866	---
38	1	120-070-506-D	SHROUD, LOWER	---
39	1	120-100-866	DECAL, 866 CHALLENGER HD	---
40	1	120-071-506-D	SHROUD, UPPER	---
41	1	120-105	TAG, LARGE, NVE SERIAL NUMBER	---

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866 Challenger Series Fan Cooled | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
42	1	120-106-367-D 120-106-367-S	PLATE , CW PLATE, CCW	---
43	1	120-320-002	MANIFOLD, 866, MACHINED	38
44	1	120-314-001	FILTER ELEMENT, 60 MESH	.80
45	1	120-064-004	O-RING, 2-265 VITON	.01
46	1	120-060-002	GRIP, HANDLE W/ LOGO	.01
47	1	120-310-001	COVER, FILTER 607/866	6.0
48	1	120-101-506-D 120-101-506-S	DECAL, RPM-CW 506/866 DECAL, RPM-CCW 506/866	---
49	4	120-312-002	KNOB, 5/16-18UNC	.14
50	1	120-060-001	HANDLE, 367 GEN 2	.83
51	2	120-064-002	O-RING, 2-214 VITON	.01
52	1	120-065-001	TOWER, 866, MACHINED	2.54
53	1	120-064-007	O-RING, 2-248 VITON	---
54	1	120-045	4-WAY FV SPRING (COMPRESSED)	.15
55	1	120-062-006	PLUG, 866, MACHINED	5.67
56	2	120-064-506	O-RING, 2-158 SILICONE	.01
57	2	120-063-506	FLANGE, 4" NPT	5.48
58	1	120-099-506-4	BALLAST FILTER ASSEMBLY, REMOTE	1.75
59	1	120-102	VALVE, DRAIN 1/8" NPT	.05
60	1	120-099-001	CHECK VALVE BODY, ASSEMBLY	1.71
61	1	120-099-002	CHECK VALVE, 1 1/2" POPPIT ASSEMBLY	.01
62	1	120-099-003	CHECK VALVE, 1 1/2", POPPIT GUIDE	.21
63	1	120-099-004	CHECK VALVE, 1 1/2", BARB END	.97
64	1	120-220	THERMOMETER, 50- 400 DEG, 2" FACE, 2.5" STEM, 1/4" - 18NPT	.20
65	1.25	426-150-TAR	HOSE, 1.5" OD, HOT TAR AND ASPHALT	---
66	2	416-100-1WC	CLAMP, WORM, 1"-2" DIA	---
67	1	120-097-506-E	GASKET, BALLAST ELBOW	---
68	1	120-090-506	LOWER BALLAST MANIFOLD	---
69	1	120-041-017	BALLAST PORT, HOSE CONNECTION WELDMENT	---
70	1	120-097-506-M	GASKET, LOWER BALLAST MANIFOLD	---
71	1	120-103-367	DECAL, IMPORTANT 375F	.01
200	1	310-LP5	HOSE BARB TO MALE PIPE	0.01
201	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
202	5	320-407-003	OIL LINE, BLK 1/4" ID 30R7	---
203	1	320-083-009	OIL TANK FILTER, 100 MESH	---
204	1	320-082-001	OIL TANK, 5QT, W/LOGO	1.65
205	1	320-083-010	FILTER FITTING, OIL TANK 1/4 NPT	.107
206	1	320-083-002	CAP, OIL TANK, BLACK 2 1/4"	.1016
207	1	320-408-010	FITTING, 1/4" TUBE X 1/4" MNPT	---
208	1	320-R102-6IN	OIL LINE, 3/8" X 1/4" ID X 6' LG	.05
209	2	416-025-1WC	CLAMP, WORM, .250" DIA	---

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Challenger Series

VACUUM PUMPS & BLOWERS

866 Challenger Series Fan Cooled | Parts List Continued

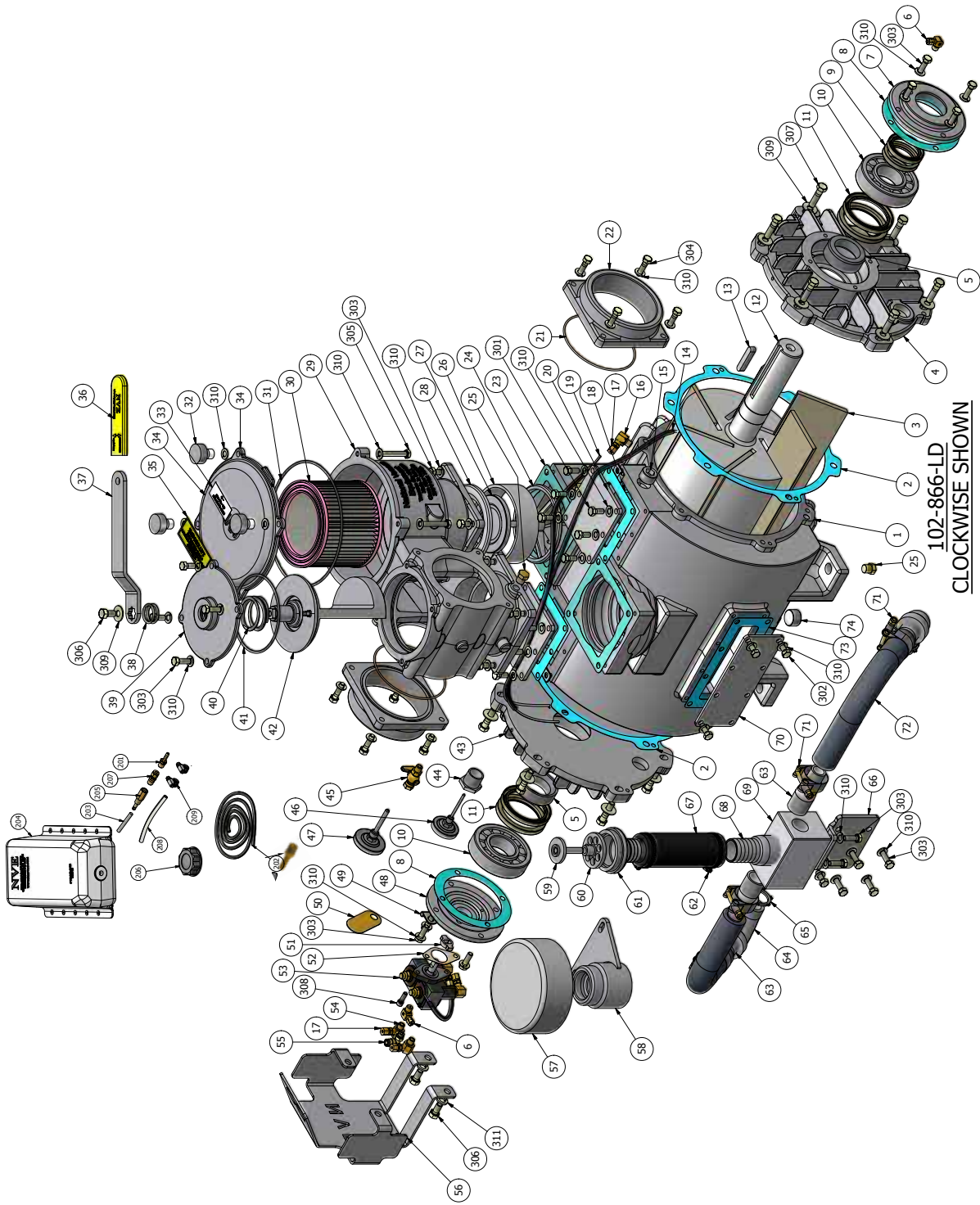
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
301	6	HHCS - 5/16-18 UNC x 0.75	HHCS - 5/16-18 UNC X 0.75	---
302	2	SHCS - 5/16-18 UNC X 0.875	SHCS - 5/16-18 UNC X 0.875	---
303	10	HHCS - 5/16-18 UNC x 1	HHCS - 5/16-18 UNC X 1	---
304	16	HHCS - 5/16-18 UNC X 1.25	HHCS - 5/16-18 UNC X 1.25	---
305	4	HHCS - 5/16-18 UNC X 2 FT	HHCS - 5/16-18 UNC X 2 FULL THREAD	---
306	3	HHCS - 3/8-16 UNC x 0.75	HHCS - 3/8-16 UNC X 0.75	---
307	8	HHCS - 3/8-16 UNC X 1.50	HHCS - 3/8-16 UNC X 1.50	---
308	2	SHCS - 1/4-20 UNC X 0.75	SHCS - 1/4-20 UNC X 0.75	---
309	9	FW - 3/8 USS	FLAT WASHER - 3/8 USS	---
310	48	LW - 5/16	LOCK WASHER, 5/16	---
311	14	LW - 3/8	LOCK WASHER, 3/8"	---
312	8	HHCS - 5/16-18 UNC X 3.25	HEX CAP SCREW - 5/16-18 UNC X 3.25	---
313	8	HHCS - 3/8-16 UNC X 0.50	HHCS - 3/8-16 UNC X 0.50	---
314	4	HHCS - 3/8-16 UNC X 2.00	HHCS - 3/8-16 UNC X 2.00	---
315	1	SHCS - 5/16-24 UNF X 1.25	SHCS - 5/16-24 UNF X 1.25	---
316	1	HSSS - 1/4-20 UNC X 0.75	HEX SOCKET SET SCREW 1/4-20 UNC X 0.75	---
317	7	TAPSCR - 1/4-14 X 0.75	HEX HEAD SELF TAPPING SCREW 1/4-14	---
318	6	RVT 1/8 D X 1/8L	BLIND RIVET, 1/8 DIA X 1/8 GRIP, ALUM	---
319	2	FW - 1/4 USS	FLAT WASHER - 1/4" USS	---
320	2	BHCS - 1/4-20 UNC X 0.38	BHCS - 1/4-20 UNC X 0.38	---

NOTE: Item numbers 300 and above are listed for reference only.

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Challenger Series

VACUUM PUMPS & BLOWERS

866 Challenger Series Liquid Cooled | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-001-506-L	HOUSING, 506 LIQUID COOLED	150.0
2	2	120-004-460	GASKET, END PLATE 460	.01
3	6	120-007-506	VANE: 506	.75
4	1	120-003-506-LD	END PLATE, GEN 477 & 506	20.92
5	2	120-009-506	SEAL SLEEVE, 460, 466 & 506	.60
6	2	320-408-005	FITTING, ELBOW 1/8 NPT-TUBE	.05
7	1	120-054-506	BEARING COVER	2.65
8	2	120-055-506	GASKET, BEARING COVER	.01
9	2	120-053-506	SEAL, 45" X 62" X 8" VITON	.06
10	2	120-019-506	BEARING, NJ309	2.05
11	2	120-018-506	SEAL, 65" X 85" X 8" VITON	.09
12	1	120-005-506 D/S	ROTOR, 506 CW OR CCW	---
13	1	120-006	KEY, 3/8" X 3/8" X 2"	---
14	5.78	320-409-002	OIL LINE PROTECTOR, 1/4" FIBERGLASS	.01
15	3	120-047	DRAIN PLUG, 3/4 NPT	.10
16	2	320-408-002	ADAPTER, ELBOW 1/8 MNPT-FNPT	.05
17	6	320-408-004	FITTING, STRT 1/8 NPT-TUBE	.05
18	2	120-022-506	GASKET, 506 TOP COVER PLATE	---
19	6.44	320-407-001	TUBE, 1/8" OD PFA	.01
20	2	120-039-506	GASKET, 4" INT/EXT FLANGE	.01
21	2	120-065-506	O-RING, 2-158 SILICONE	---
22	2	120-063-506	FLANGE, 4" NPT	5.48
23	2	120-039-506	GASKET, 4" INT/EXT FLANGE	.01
24	1	120-042-506	RETAINER, 4" CHECK VALVE	.87
25	4	120-059	PLUG, BRASS 1/4": NPT, HEX HD.	.05
26	1	120-041-001	INTERNAL CHECK VALVE, BODY, 866	---
27	1	120-041-506	CHECK VALVE, 4"	1.07
28	1	120-041-002	INTERNAL CHECK VALVE, TOP PLATE, 866	---
29	1	120-320-002	MANIFOLD, 866, MACHINED	37.99
30	1	120-314-001	FILTER ELEMENT, 60 MESH	.80
31	1	120-064-004	O-RING, 2-265 VITON	.01
32	4	120-312-002	KNOB, 5/16-18UNC	.06
33	1	120-101-506-D 120-101-506-S	DECAL, RPM-CW 506/866 (102-866-LD) DECAL, RPM-CCW 506/866 (102-866-LS)	---
34	1	120-310-001	CVER, FILTER RM	4.40
35	1	120-103-367	DECAL, IMPORTANT 375F	.01
36	1	120-060-002	GRIP, HANDLE W/LOGO	.01
37	1	120-060-001	HANDLE, 367 GEN 2	.83
38	2	120-064-002	O-RING, 2-214 VITON	.01
39	1	120-065-001	TOWER, 866, MACHINED	2.54
40	1	120-045	4-Way FV SPRING (COMPRESSED)	.15
41	1	120-064-007	O-RING, 2-248 VITON	---
42	1	120-062-006	PLUG, 866, MACHINED	5.67
43	1	120-003-506-LS	END PLATE, GEN 466 & 506	20.92
44	1	120-049	BUSHING, 3/4" NPT X 1/8" NPT	.19
45	1	120-102	VALVE, DRAIN 1/8 NPT	.05
46	1	120-220-1	1/8" NPT THERMOMETER 220 F	.15
47	1	120-220	THERMOMETER, 50- 400 DEG, 2" FACE, 2.5" STEM, 1/4" - 18NPT	.20
48	1	120-080-506	BEARING COVER, 506 OIL PUMP	---
49	4	320-409-003	P-CLIP, OIL LINE 1/4" X 5/16"	---
50	1	120-107	TAG, SERIAL NUMBER, BRASS	---

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866 Challenger Series Liquid Cooled | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
51	1	320-LF8	DRIVE TAB	.03
52	1	320-R31	GASKET, OIL PUMP	.01
53	1	320-LW32-BD 320-LW32-BS	OIL PUMP, 4 PORT CW (102-866-LD) OIL PUMP, 4 PORT CCW (102-866-LS)	2.32
54	5	320-408-001	ADAPTER, ELBOW 1/8 BSPTM-NTPF	.05
55	1	310-LP5	1/4" HOSE BARB X 1/8" NPT STRAIGHT	.01
56	1	120-079-002	GUARD, OIL PUMP 866	3.00
57	1	120-099-506-4	BALLAST FILTER ASSEMBLY, REMOTE	1.75
58	1	120-099-001	CHECK VALVE BODY ASSEMBLY	1.71
59	1	120-099-002	CHECK VALVE 1 1/2", POPPET ASSEMBLY	.11
60	1	120-099-003	CHECK VALVE 1 1/2", POPPET GUIDE	.21
61	1	120-099-004	CHECK VALVE 1 1/2", BARB END	.97
62	2	416-100-1WC	CLAMP, WORM, 1"-2" DIA	.05
63	4	440-100	NIPPLE, KING 1" NPT	.05
64	2	428-100-E	STREET ELBOW	---
65	2	CPF-1.00D	1" CONDUIT LOCKNUT	---
66	1	120-088-506	BRACKET BALLAST BLOCK, LIQUID	---
67	0.5	426-150-TAR	HOSE, 1.5" TAR AND ASPH	1.25
68	1	428-150-KN	1/2 KING NIPPLE, 1.5" NPT STEEL PL	---
69	1	120-089-866	BALLAST BLOCK 866 LIQ COOLED	1.2
70	1	120-021-367	COVER PLATE, 367 WATER JACKET	1.13
71	4	120-015	CLAMP, T-BOLT 1.5"	.11
72	2	426-100-TAR	HOSE, 1" TAR AND ASPH	---
73	1	120-022-376	GASKET, 367/506 COVER PLATE	---
74	1	120-047-1	DRAIN PLUG, 3/4" NPT MAGNETIC	---
200	1	310-LP5	HOSE BARB TO MALE PIPE	0.01
201	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
202	5	320-407-003	OIL LINE, BLK 1/4" ID 30R7	---
203	1	320-083-009	OIL TANK FILTER, 100 MESH	---
204	1	320-082-001	OIL TANK, 5QT, W/LOGO	1.65
205	1	320-083-010	FILTER FITTING, OIL TANK 1/4 NPT	.107
206	1	320-083-002	CAP, OIL TANK, BLACK 2 1/4"	.1016
207	1	320-408-010	FITTING, 1/4" TUBE X 1/4" MNPT	---
208	1	320-R102-6IN	OIL LINE, 3/8" X 1/4" ID X 6" LG	.05
209	2	416-025-1WC	CLAMP, WORM, .250" DIA	---
301	14	HHCS - 5/16-18 UNC x 0.75	HHCS - 5/16-18 UNC x 0.75	---
302	4	HHCS - 5/16-18 UNC X 0.875"	HHCS - 5/16-18 UNC X 0.875"	---
303	24	HHCS - 5/16-18 UNC x 1	HHCS - 5/16-18 UNC x 1	---
304	8	HHCS - 5/16-18 UNC X 1.25	HHCS - 5/16-18 UNC X 1.25	---
305	4	HHCS - 5/16-18 UNC X 2 FT	HHCS - 5/16-18 UNC X 2 FULL THREAD	---
306	3	HHCS - 3/8-16 UNC x 0.75	HHCS - 3/8-16 UNC x 0.75	---
307	12	HHCS - 3/8-16 UNC X 1.50	HHCS - 3/8-16 UNC X 1.50	---
308	2	SHCS - 1/4-20 UNC X 0.75	SHCS - 1/4-20 UNC X 0.75	---
309	13	FW - 3/8 USS	FLAT WASHER - 3/8 USS	---
310	58	LW - 5/16	LOCK WASHER, 5/16	---
311	2	LW - 3/8	LOCK WASHER, 3/8"	---

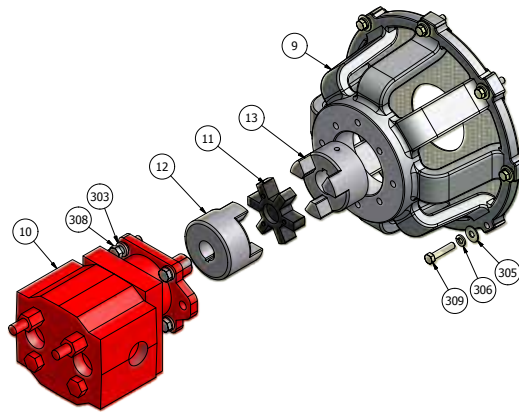
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866 Hydraulic Motor Drive | Parts Diagram

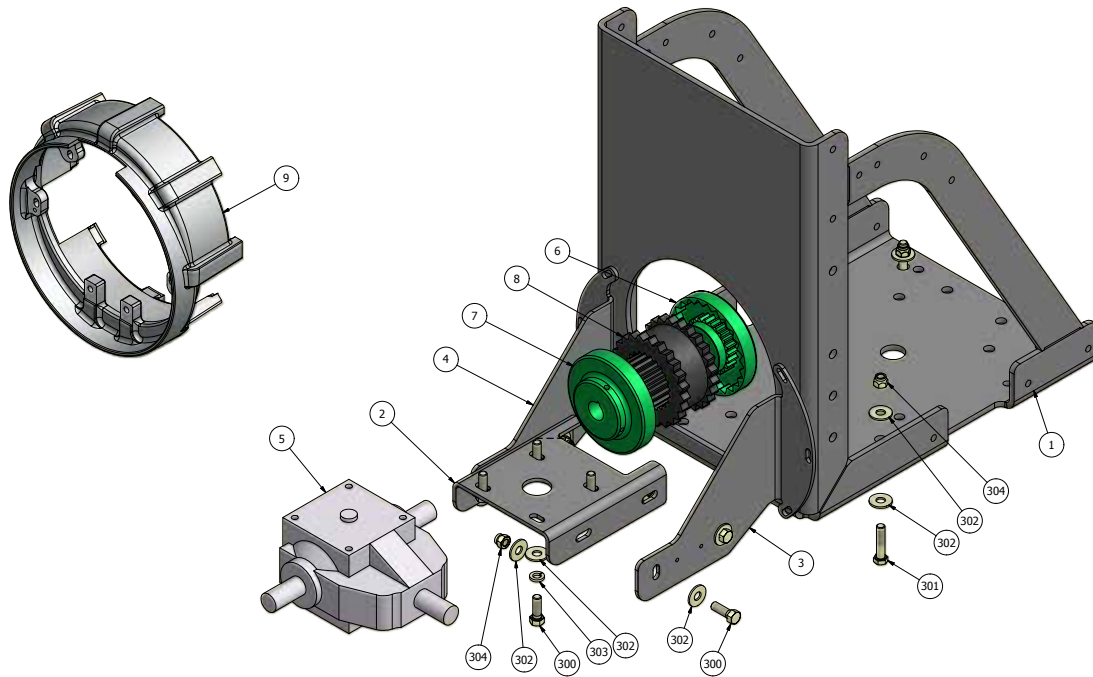


866 Hydraulic Motor Drive | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
9	1	120-400-001	HYDRAULIC ADAPTER 866, ASSY	16.00
10	1	440-2500-506	HYDRAULIC MOTOR, 2 1/2 GEAR	55.75
11	1	424-150-S	SPIDER, LOVEJOY 150, EPDM	0.21
12	1	424-150-125-HYD	COUPLER FLANGE, LOVEJOY 1.25" X 5/16 KEY	3.96
13	1	424-150-175	COUPLER FLANGE, LOVEJOY 1.75" X 3/8 KEY	3.64
305	8	FW - 3/8 USS	FLAT WASHER - 3/8 USS	0.01
306	8	LW - 3/8	LOCK WASHER, 3/8"	0.01
308	4	ANSI B18.2.1 - 1/2-13 UNC - 1.75	HEX CAP SCREW	0.14
309	8	HHCS - 3/8-16 UNC X 1.75	HHCS - 3/8-16 UNC X 1.75	0.08

NOTE: Item numbers 300 and above are listed for reference only.

866 Pump Stand Complete | Parts Diagram



866 Pump Stand Complete | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-506-PS1	PUMP STAND, 376	126
2	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7.00
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6.00
4	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6.00
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-010-175	COUPLER FLANGE, 10S X 1 3/4"	12.25
7	1	424-010-125	COUPLER FLANGE, 10S X 1 1/4"	12.97
8	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	3.17
9	1	120-074-506L	FAN SHROUD, 466, 506, 866	---
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	0.13
301	4	HHCS - 1/2-13 UNC - 2.25	HEX CAP SCREW	0.17
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	0.04
303	4	LW - 1/2	LOCK WASHER, 1/2	0.02
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	0.05
310	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	0.11

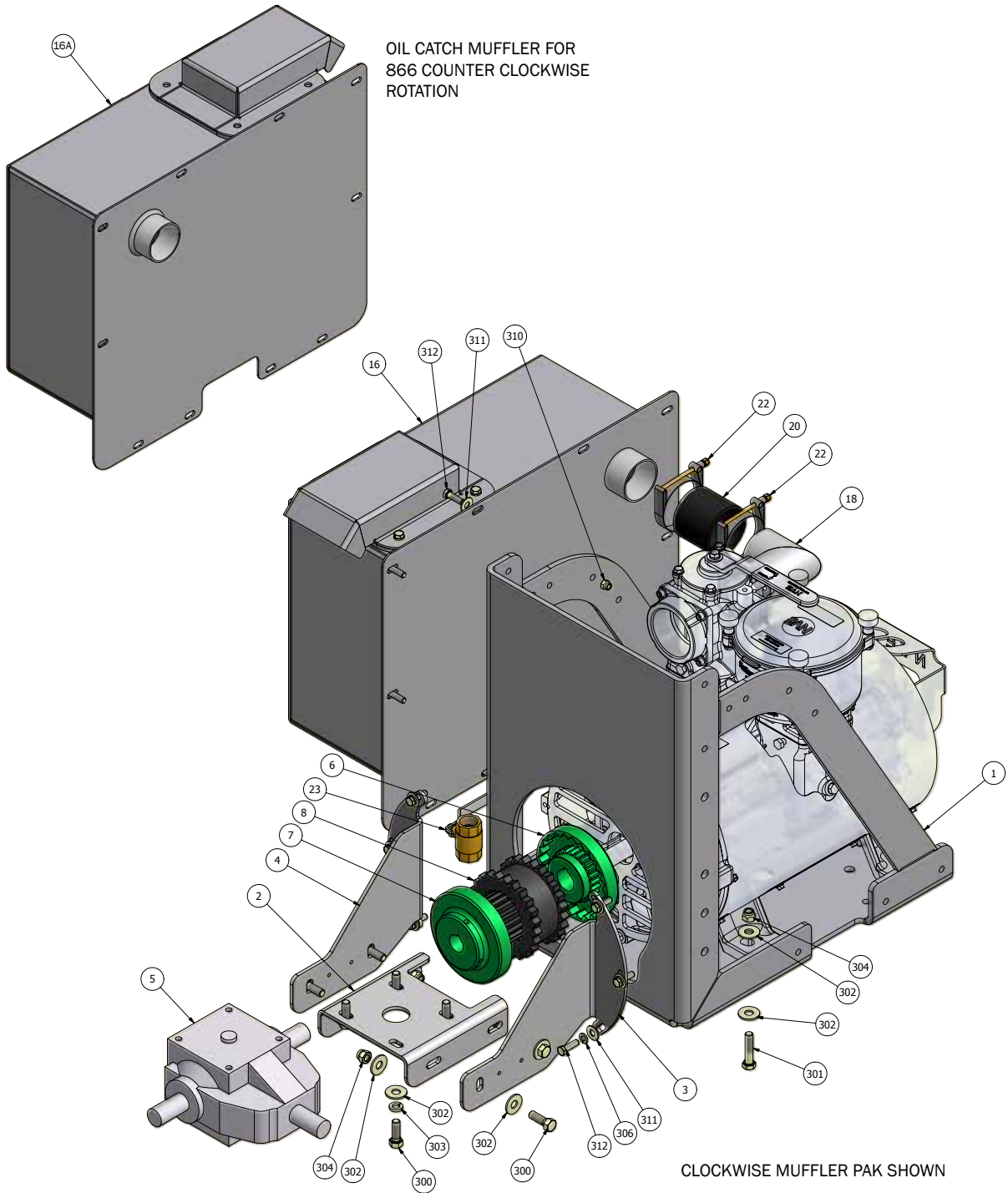
NOTE: Item numbers 300 and above are listed for reference only.

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866 Muffler Pak | Parts Diagram



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866 Muffler Pak | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-506-PS1	PUMP STAND, 866	126
2	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7.00
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6.00
4	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6.00
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-010-175	COUPLER FLANGE, 10S X 1 3/4	12.25
7	1	424-010-125	COUPLER FLANGE, 10S X 1 1/4	12.97
8	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	3.17
16 16A	1	214-001-4R (866CW MAX) 214-001-4L (866CCW MAX)	OCM, BOLT ON, 4" RH SQUARE OCM, BOLT ON, 4" LH SQUARE	77.00
18	1	116-506-STE	ELBOW, SHORT, 4" 866 4-WAY, 3" TUBE	---
20	1	426-400-TAR	HOSE, 4" TAR & ASPHALT, 3" LG	---
22	2	426-4625-TBC	CLAMP, T-BOLT 4.625"	.15
23	1	288-100	BALL VALVE, 2" IPT	1.00
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
301	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25" LG	---
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	---
303	4	LW 1/2	LOCK WASHER, 1/2	---
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
306	6	LW - 3/8	LOCK WASHER, 3/8"	---
310	6	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
311	13	FW - 3/8	FLAT WASHER, 3/8"	---
312	12	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---

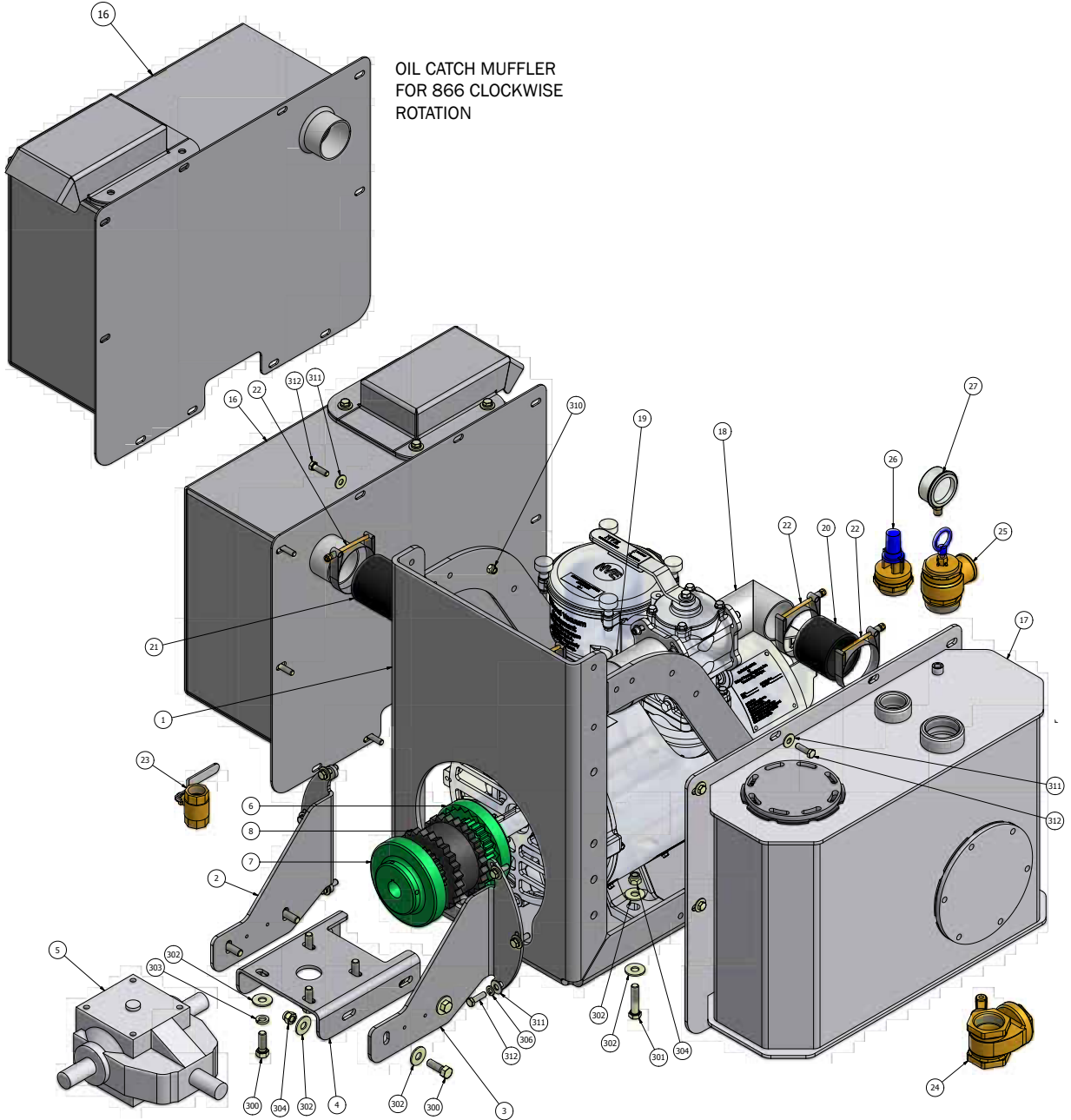
NOTE: Item numbers 300 and above are listed for reference only.

Photos and illustrations for references only.

North America's Leading Manufacturer & Wholesaler of Industrial Vacuum Equipment

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866 Max Pak | Parts Diagram



OIL CATCH MUFFLER
FOR 866 CLOCKWISE
ROTATION

COUNTER CLOCKWISE MAX PAK SHOWN



866 Max Pak | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-506-PS1	PUMP STAND, 866	126
2	1	280-367-GBB-1	GEARBOX BRACKET, 367 LH	6.00
3	1	280-367-GBB-2	GEARBOX BRACKET, 367 RH	6.00
4	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7.00
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-010-175	COUPLER FLANGE, 10S X 1 1/2"	12.25
7	1	424-010-125	COUPLER FLANGE, 10S X 1 1/4"	12.97
8	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	3.17
16 16A	1	214-001-4R (866CW MAX) 214-001-4L (866CCW MAX)	OCM, BOLT IB, 4" RH SQUARE OCM, BOLT IB, 4" LH SQUARE	77.00
17	1	218-001-3R (866CW MAX) 218-001-3L (866CCW MAX)	MT, BOLT ON, 4" RH, ALU MT, BOLT ON, 4" LH, ALU	64.00
18	1	124-506-STE	ELBOW, SHORT, 4" 4-WAY, 4" TUBE	3.15
19	1	124-506-LTE	ELBOW, LONG, 4" 866 4-WAY, 4" TUBE	8.00
20	1	426-400-TAR	HT&A HOSE, 4" ID, 3" LG	---
21	1	426-400-TAR	HT&A HOSE, 4" ID, 9" LG	---
22	4	426-4625-TBC	CLAMP, T-BOLT 4.625"	.15
23	1	288-100	DRAIN VALVE, BRASS, 1" IPS	1.00
24	1	362-301-2	LEVER VALVE, 2"	3.5
25	1	364-306-2	PRESSURE RELIEF, 2"	2.4
26	1	366-150	VACUUM RELIEF, 1 1/2" NPT	1.1
27	1	408-350	GAUGE, VACUUM/PRESSURE, 3.5"	.45
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
301	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25" LG	---
302	20	FW 1/2 USS	FLAT WASHER 1/2" USS	---
303	4	LW - 1/2	LOCK WASHER, 1/2	---
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
306	10	LW - 3/8	LOCK WASHER, 3/8"	---
310	12	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
311	24	FW - 3/8	FLAT WASHER, 3/8"	---
312	22	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---

NOTE: Item numbers 300 and above are listed for reference only.

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NVE



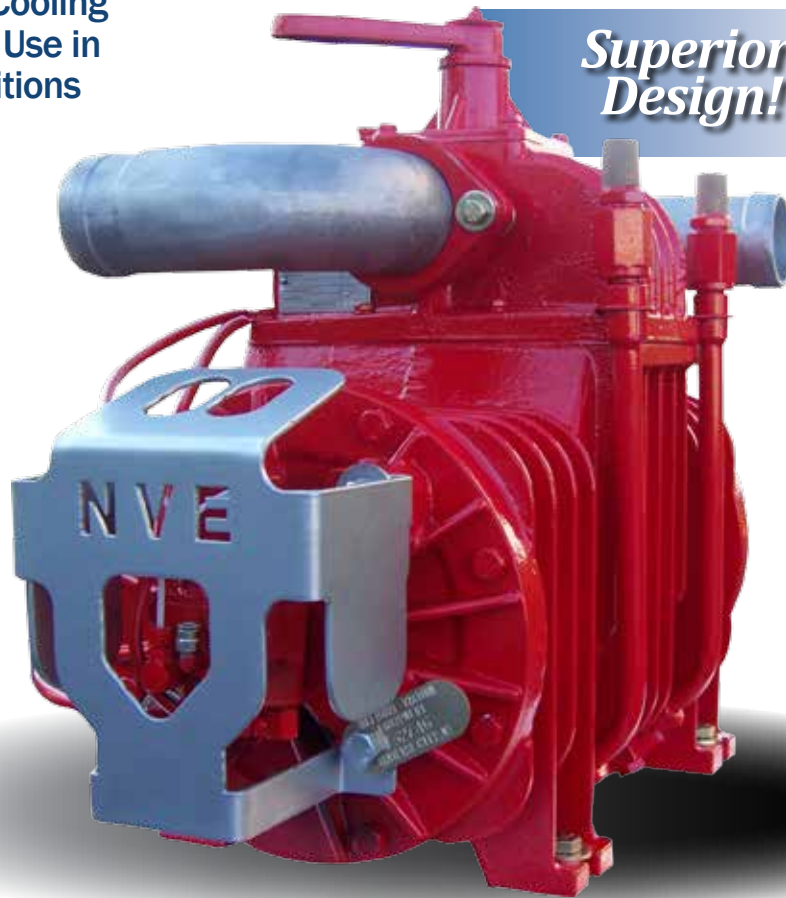
COMMERCIAL DUTY

Defender 500

VACUUM PUMP

Ballast Port Cooling
for Extended Use in
Severe Conditions

*Superior
Design!*



Ballast Port Cooled



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Fayetteville, AR 72701
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Challenger Series Defender 500

Our Challenger Series pumps are designed and built with the customer in mind – resulting in dependable, high performing pumps that are easy to install, operate and service. As the only industrial grade rotary vane vacuum pump designed, built and supported in the USA we are committed to also being the best pump period. Compare and you will see that our superior design beats the competition on the following:

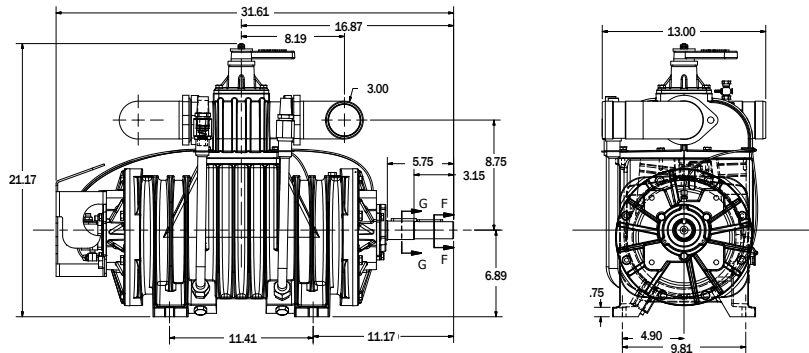
- Ballast port cooling for extended use in severe conditions.
- One piece shaft design
- Oiled bearings, front & back
- Heat resistant Viton seals
- 4 port oil pump for controlled delivery
- 310 cfm at 1200 rpm
- RPM range 1000 - 1200
- Max Intermittent pressure 21 psi
- 18 horsepower
- Automatic lubrication
- 4-way change over valve
- 3" swivel elbows
- Heat resistant Kevlar vanes
- Built and supported in the USA
- **Replacement parts always available**

Challenger Series

VACUUM PUMPS & BLOWERS

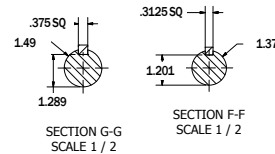
Defender 500 Cooled

Dimensions: 13" W x 31.61" L x 21.72" H



Defender 500 by Challenger Specifications

Porting Size Flanged NPT	3"
Maximum Air Flow-CFM	364
Maximum Intermittent Vacuum	28" hg
Maximum Intermittent Pressure	21.76 psi



Maximum
1200 RPM
Intermittent
operation only

PUMP SPECIFICATIONS	PERFORMANCE AT 1200 RPM MAX SPEED
Air Flow - CFM free air	301
Air Flow - CFM 60% vacuum	257
Max vacuum - %	92
Max absolute pressure-PSI	21.8
Weight-LBS	397
Oil consumption g/h=(drops / min) total	135 (80)
Remote Oil tank capacity - QT	5
Sound level at 60% vac. 7 m, dist - db(A) - with silencer	84

The maximum allowable operating vacuum will vary depending on R.P.M., ambient temperature, altitude and time running. The basic principle to keep in mind is - faster R.P.M., higher air temperature and longer run time all equal more heat in the pump. When installing a Defender 500 By Challenger we recommend a normal R.P.M. of 1200. Other speeds are OK as long as exhaust gas temperatures read on the supplied thermometer do not exceed 375 degrees F.

Challenger Series Defender 500 Packages

Check out our competent design and engineering staff, our state of the art fabrication facility and quality powder coat painting capabilities all wrapped up in our unique pump packages. Each package is built around our quality Challenger vacuum pumps. These rugged and functional packages are designed to reduce installation time, ensure appropriate sized drive systems and vacuum system components, and provide accessible maintenance points. If you don't see what you are looking for, be sure to contact your NVE representative... We Can Do That!

VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).

All elbows, fittings and high temp hoses are factory connected.

Pump Stand Complete

- 400 series three-shaft gearbox accommodates CW and CCW rotation
- Coupler set with shear protection
- Rugged 3/8" construction, powder coat painted pump bracket
- Easy-align, adjustable gearbox bracket



Defender 500 Muffler Pak

All features included in the Standard Mounting Pak plus:

- Compact design square oil catch muffler
 - Effective baffle system
 - Stainless steel mesh filter
 - Drain valve
 - Exhaust deflector (other exhaust fittings available)
- All elbows, fittings and high temp hoses are factory connected
- Right-hand or left-hand muffler location available



Defender 500 Max Pak

All features included in the Muffler Pak plus:

- High efficiency aluminum moisture trap
 - Accessible 6" stainless steel float ball
 - BUNA positive shut-off ball seat
 - 2" lever drain valve
 - Blind intake flange standard (other fittings available)
- Vacuum/pressure relief valve and gauge

System Requirements

Moisture Trap - Minimum 10 gallon capacity Moisture Trap (a larger moisture trap may be required depending on volatility of product being pumped) which we provide in carbon steel, stainless steel or aluminum, and either horizontal or vertical orientation.

Oil Catch Muffler - 12" Diameter vertical. Our muffler features a serviceable pleated stainless steel filter element to protect the pump during pressure cycles.

Final Filter - 12" in line filter or integral final filter.

Primary Shutoff - Minimum 8" cage with 6" ball.

The Defender 500 by Challenger is also available with a self contained power unit and ready-to-install mounting bracket.

Challenger Series

VACUUM PUMPS & BLOWERS



We design, build and service the best pumps and packages on the planet... And we do it in the USA.

For over 25 years NVE has been providing quality vacuum system components to the liquid waste markets. From design, to development to product support, NVE IS the industry leader.

In addition to our team of engineers and highly qualified support staff, NVE has a state-of-the-art machine shop, fabrication shop, and powder coat paint facility housed in two plants in Traverse City, Michigan. We also have a warehouse and sales support facility in Fayetteville Arkansas.

For questions and additional information please contact your dealer or NVE direct at 800.253.5500.

Thank you,

NVE

National Vacuum Equipment

Challenger Series

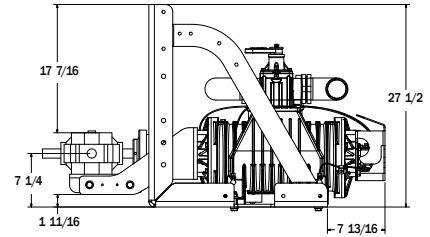
VACUUM PUMPS & BLOWERS

DISTRIBUTED BY:

DEFENDER 500 PACKAGE GUIDE

PUMP STAND COMPLETE

Part Number	Product Description
□ 117-500-001-FD	Defender 500 W/Pump Stand - CW
□ 117-500-001-FS	Defender 500 W/Pump Stand - CCW



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Defender 500 | Vacuum Pumps

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Defender 500 - CW	108-500-D	395
Defender 500 - CCW	108-500-S	



Defender 500 | Repair Kits and Maintenance Items

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Repair Kit - Defender 500	115-500-0	6.8
Repair Kit - Defender 500 (Less Bearings)	115-500-0B	4.2

Comes with or without bearings and includes the seals, gaskets, and vanes.



NVE Challenger Pump Oil - ISO 68	150-220-VPOIL	7.5
----------------------------------	---------------	-----

The NVE Challenger Pump Oil is ISO 68 Turbine oil. This oil is recommended to keep your vacuum pump lubricated properly. Sold by the case. Six gallons in each case.



Photos and illustrations for references only.

North America's Leading Manufacturer & Wholesaler of Industrial Vacuum Equipment

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Challenger Series

VACUUM PUMPS & BLOWERS

VACUUM PUMP INCLUDED. Specify direction of rotation, cooling type and muffler location (right or left).
All elbows, fittings and high temp hoses are factory connected.

Defender 500 | Pump Stand Complete

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Defender 500 Pump Stand Complete - CW	117-500-001-D	---
Defender 500 Pump Stand Complete - CCW	117-500-001-S	---



Defender 500 | Muffler Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Defender 500 W/Muffler Pak - CW	117-500-MUF-FD	---
Defender 500 W/Muffler Pak- CCW	117-500-MUF-FS	---



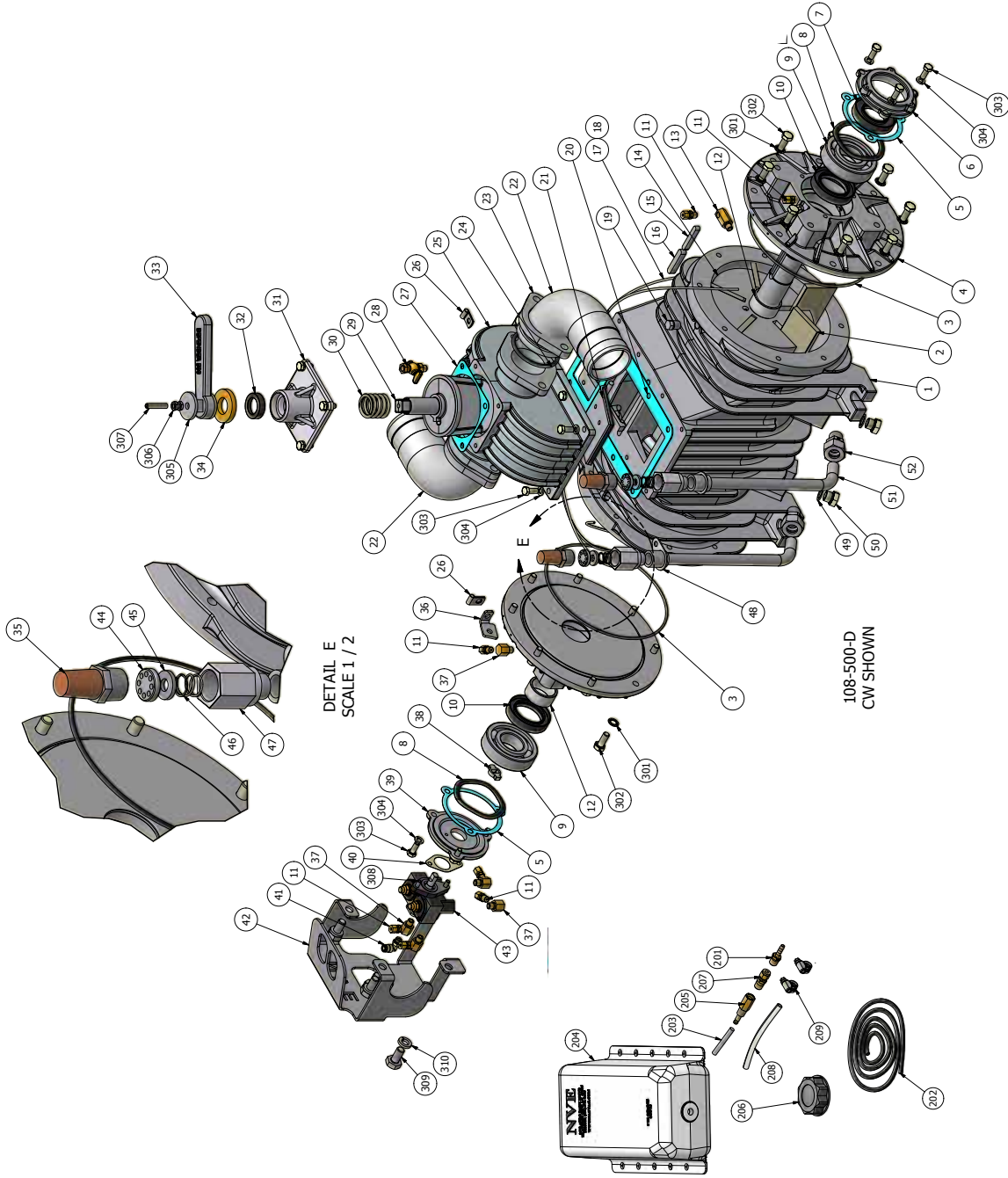
Defender 500 | MAX Pak

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Defender 500 W/MAX Pak - CW	117-500-MAX-FD	---
Defender 500 W/MAX Pak- CCW	117-500-MAX-FS	---

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Defender 500 | Parts Diagram



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VACUUM PUMPS & BLOWERS

Defender 500 | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-001-260	D500, HOUSING, MACHINED	---
2	5	120-007-260	VANE, DEFENDER 500	---
3	2	120-064-010	O-RING, 2-267 VITON	---
4	2	120-003-500	D500 GEN2, ENDPLATE, MACHINED	19.48
5	2	120-056-2601	GASKET, END CAP, 260	---
6	1	120-054-004	D500 BEARING COVER, MACHINED	---
7	1	120-018-500-3	SEAL, 40 X 72 X 15 DC, VITON	.019
8	2	120-055-506	WAVE WASHER, D500	.01
9	2	120-019-406	BEARING, BALL-6308	1.35
10	2	120-018-260-2	SEAL, 48 X 72 X 15 DC, VITON	---
11	9	320-408-004	FITTING, STRT 1/8 NPT-TUBE	.05
12	2	120-009-260	SEAL SLEEVE, D500	---
13	2	320-408-003	ADAPTER, LONG ELBOW 1/8 MBSPT-FNPT	.104
14	1	120-005-500	ROTOR, D500 STUFFED	163.00
15	1	120-006-500	KEY, 5/16 X 5/16 X 2 1018 BER	---
16	1	120-006	KEY, 3/8 X 3/8 X 2	---
17	6.865	320-407-001	OIL LINE, 1/8 OD PFA	.01
18	6.198	320-409-002	OIL LINE PROTECTOR, 1/4"	.01
19	1	120-059-001	PLUG, 1/4" BSPT	---
20	1	120-039-260	GASKET, MANIFOLD, 260	---
21	1	120-041-260	D500, CHECK VALVE, EXHAUST	---
22	2	802-063-500	ELBOW, ALUM D500	.80
23	2	120-063-001	FLANGE, D500 4-WAY	1.65
24	2	120-064-009	O-RING, 2-336 VITON	.72
25	1	120-309-260	D500 MANIFOLD, MACHINED	---
26	3	320-409-003	P-CLIP, OIL LINE 1/4 X 5/16"	---
27	1	120-040-260	GASKET, TOWER 260	.01
28	1	120-102	VALVE, DRAIN 1/8" NPT	.05
29	1	120-062-260	D500, PLUG, MACHINED	4.20
30	1	120-045-260	SPRING, 4-WAY VALVE, 260	.15
31	1	120-065-260	D500, TOWER, MACHINED	.90
32	1	120-018-260	SEAL, 27 X 41 X 10 ADL, NITRILE (27 X 41 X 7 ADL OPTIONAL)	.01
33	1	120-060-260	D500, HANDLE, 4-WAY	---
34	1	120-099-260-B	WASHER, BRASS VALVE HANDLE, D500	.25
35	2	120-099-406-S	FILTER, 3/4" NPT	.10
36	1	320-083-007	BRACKET, OIL LINE D500	.063
37	6	320-408-001	ADAPTER, ELBOW 1/8" BSPTM-NTPF	.05
38	1	320-LF8	DRIVE TAB	.03
39	1	120-054-500	D500, OIL PUMP MOUNT, MACHINED	.952
40	1	320-R31	GASKET, OIL PUMP	.01
41	1	310-LP5	1/4" HOSE BARB X 1/8" NPT STRAIGHT	.01
42	1	120-079-001	GUARD, OIL PUMP 607 POWDERCOAT	3.40
43	1	320-LW32BD 320-LW32BS	OIL PUMP, 4 PORT CW OIL PUMP, 4 PORT CCW	2.32
44	2	120-099-406-4	BALLAST PORT CHECK VALVE VENT	.01
45	2	120-099-406-3	WASHER, .920" OD X .406" ID X .135"	.01
46	2	120-099-406-6	SPRING, 406 BALLAST PORT CHECK	.01
47	2	120-099-406-5	BODY, BALLAST PORT CHECK	.05
48	2	120-088-260	BRACKET, BALLAST TUBE, 260	---
49	2	120-099-260-1	SEALING WASHER, ALUM 3/8" BSPP	---
50	2	120-047-002	PLUG, 3/8" BSPP	---
51	2	120-096-001	BALLAST TUBE WELDMENT, D500	---
52	2	120-186-260C	FITTING, COMPRESSION 18 MM X 1/2" NPT	---

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Defender 500 | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
200	1	310-LP5	HOSE BARB TO MALE PIPE	0.01
201	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
202	5	320-407-003	OIL LINE, BLK 1/4" ID 30R7	---
203	1	320-083-009	OIL TANK FILTER, 100 MESH	---
204	1	320-082-001	OIL TANK, 5QT, W/LOGO	1.65
205	1	320-083-010	FILTER FITTING, OIL TANK 1/4 NPT	.107
206	1	320-083-002	CAP, OIL TANK, BLACK 2 1/4"	.1016
207	1	320-408-010	FITTING, 1/4" TUBE X 1/4" MNPT	---
208	1	320-R102-6IN	OIL LINE, 3/8" X 1/4" ID X 6" LG	.05
209	2	416-025-1WC	CLAMP, WORM, .250" DIA	---
301	16	DIN 6797 - J 10.5	TOOTHED LOCK WASHER	---
302	16	ANSI B18.2.3.1M - M10 X 1.5 X 25	METRIC HEX CAP SCREW	---
303	18	ANSI B18.2.3.1M - M8 X 1.25 X 20	METRIC HEX CAP SCREW	---
304	18	DIN 127 - A8	SPRING WASHER	---
305	1	FN 3/8 X 1.75	WASHER, FENDER 3/8" X 1 3/4" X 3/16 THICK, PLATED	---
306	2	ANSI B18.2.4.5M - M8 X 1.25	HEX JAM NUT	---
307	1	AN 1421 - M8 X 40 FLAT POINT	ISO METRIC HEXAGON SOCKET SET SCREWS	---
308	2	SHCS 1/4-20 UNC X 0.75	SHCS 1/4-20 UNC X 0.75	---
309	4	HHCS - 1/2-13 UCN X 1.00	HHCS - 1/2-13 UCN X 1.00	---

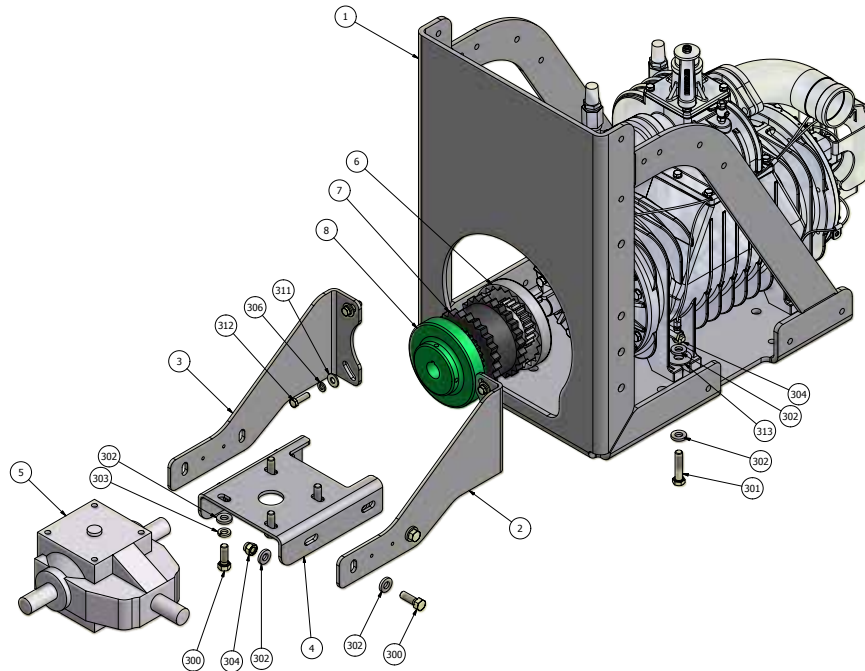
NOTE: Item numbers 300 and above are listed for reference only.

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Defender 500 Pump Stand Complete | Parts Diagram



Defender 500 Pump Stand Complete | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	280-367-PS1	PUMP STAND, 367	126
2	1	280-401-002	GEARBOX BRKT, RH LIQ	5.90
3	1	280-401-001	GEARBOX BRKT, LH LIQ	5.90
4	1	280-367-GBB-3	GEARBOX MOUNTING PLATE	7.00
5	1	422-400-1	GEARBOX, 400 SERIES 1:1 RATIO	28.24
6	1	424-009-138	COUPLER FLANGE, 9S X 1 3/8"	7.79
7	1	424-009-JE	COUPLER SLEEVE, 9JE EPDM	1.95
8	1	424-009-125	COUPLER FLANGE, 9S X 1 1/4"	8.01
300	8	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
301	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25" LG	---
302	20	FW - 1/2	FLAT WASHER - 1/2	---
303	4	LW - 1/2	LOCK WASHER, 1/2	---
304	8	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
306	4	LW - 3/8	LOCK WASHER, 3/8"	---
311	4	FW - 3/8	FLAT WASHER, 3/8"	---
312	4	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
313	4	FW - 5/8	FLAT WASHER - 5/8"	---

NOTE: Item numbers 300 and above are listed for reference only.

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Challenger Series

VACUUM PUMPS & BLOWERS

4307 BLOWER

High Vacuum Tri-Lobe Blower Packages

Continuous Duty At Full Vacuum | Capable of Airflow to 535 CFM | Environmentally Friendly - No Oil Mess



Convenient and Ready to Install Blower Packages!

National Vacuum Equipment

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VACUUM PUMPS & BLOWERS

4307 High Vacuum Tri-Lobe Blower with Complete Manifold

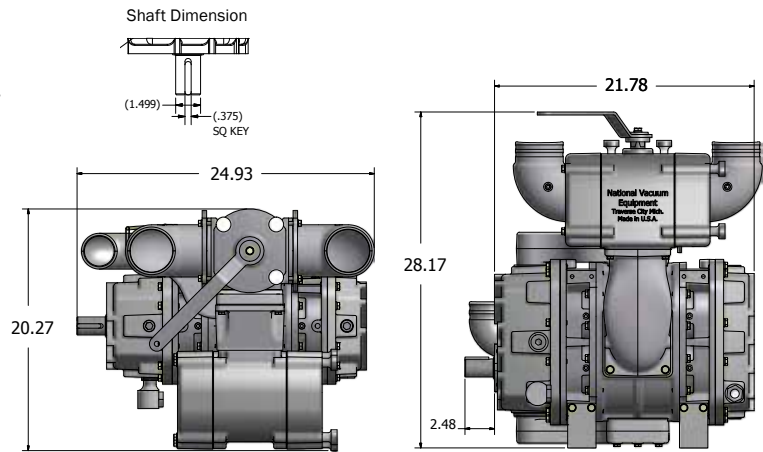
Designed, built and supported in our state-of-the-art Michigan manufacturing plant. This ultra quiet, environmentally friendly machine will make any ordinary pump truck extraordinary. Our unique ballast cooling and porting design allows for continuous pumping at full vacuum without over heating. In addition to the

blower, we design and manufacture each precision component used in the manifold and silencing system. You can take comfort in knowing that you have the leaders in high vacuum blower technology standing firmly behind your purchase, just as we have for over 30 years.

4307 High Vacuum Tri-Lobe Blower Features:

- Continuous Duty Performance at Maximum Vacuum
- Tri-lobe Design with Precision Machining
- Ballast Port Manifold - Cools blower through air injection
- Range of Airflow - Performance available to accommodate power
- Oil less Operation
- Maximum Air Flow 535 CFM
- 4" Hose Barbed Adjustable Porting for Intake and Exhaust
- Recommended Operating Range 2700-4000 RPM
- Integral Final Filter with Easy Access for Cleaning
- 4-Way Pressure/Vacuum Change Over Valve
- Pressure to 18 PSI (*Depending on Set Up and Conditions*)
- *Designed, Built and Supported in the USA*

4307 High Vacuum Tri-Lobe Blower



Dimensions: 20.27" W x 28.17" H x 24.93" D | Weight 371

Lowest total cost of ownership... *period.*

RPM		Vacuum (Inches of Mercury)							Pressure (PSI)			
		0	9	15	18	21	24	27	5	10	15	18
2000	HP	2.0	7.4	11.0	12.8	14.6	16.4	-	8.1	14.2	20.3	24.0
	CFM	280	171	114	77	26	-	-	183	143	113	97
2500	HP	2.5	9.2	13.7	16.0	18.2	20.5	-	10.1	17.7	25.4	29.9
	CFM	349	241	184	147	96	17	-	253	213	183	167
3000	HP	3.0	11.1	16.5	19.2	21.9	24.6	27.3	12.1	21.3	30.4	35.9
	CFM	419	311	254	217	166	87	-	323	283	253.0	237.0
3500	HP	3.5	12.9	19.2	22.4	25.5	28.7	31.8	14.2	24.8	35.5	41.9
	CFM	489	381	324	286	236	157	-	393	353	322.0	307.0
4000	HP	4.0	14.8	22.0	25.6	29.2	32.8	36.4	16.2	28.4	40.6	47.9
	CFM	559	451	394	356	306	227	57	463	423	392	376

When installing a NVE 4307 blower we recommend a normal R.P.M. range from 2700 to 4000. Other speeds are o.k. as long as exhaust gas temperatures read on the supplied thermometer do not exceed 290 degrees F over ambient temperature.

PUMP DEEPER

- Continuous duty in maximum vacuum

REDUCED MAINTENANCE

- No oil needed in operation
- No vanes
- Overflow friendly

LOAD FASTER

- Air flow to 535 CFM

REDUCED OPERATOR ERROR

- No overheating
- No vane breakage

Challenger Series 4307 Blower Packages

All packages contain:

- 535 CFM 4307 tri-lobe blower with complete manifold
- Stainless steel intake and ballast air silencers
- Powder coat painted 3/8" steel mounting brackets
- All elbows, fittings and high temp hoses are factory connected
- Diesel flush kit

4307 Frame Mount Gearbox Drive Package also includes:

- 500 series 1:2 ration gearbox with synthetic lube and viton seals
- Easily adjustable gearbox bracket and coupling set

Dimensions: 45.69" W x 29.83" H x 36.83" D | Weight 840

4307 Frame Mount Gearbox Drive W/Moisture Trap Package also includes:

- Bolt on 4" Aluminum Moisture Trap

Dimensions: 46.40" W x 29" H x 30.81" D | Weight 1029

FOR Hydraulic Drive Packages;

- Auto align SAE 2 and 4 bolt mount
- Drive coupling set

Dimensions: 45.69" W x 29.83" H x 31.64" D | Weight 814

4307 Top Mount Package also includes:

- U-bolt fastening system for all corners, and

FOR Belt Drive Packages;

- Lower pulley mount with jack shaft and pillow bearings
- Drive and driven pulleys with 4 groove banded belt
- Ample adjustment for belt replacement and tensioning
- Belt guard, and

Dimensions: 52.23" W x 60.52" H x 36.98" D | Weight 1132

FOR Hydraulic Drive Packages;

- Auto align SAE 2 and 4 bolt mount
- Drive coupling set

Dimensions: 52.23" W x 33.33" H x 36.98" D | Weight 980

4307 Frame Mount Gearbox Drive



Available with Hydraulic Drive

4307 Top Mount Belt Drive



4307 Top Mount Hydraulic Drive



Challenger Series

VACUUM PUMPS & BLOWERS



We design, build and service the best pumps and packages on the planet... And we do it in the USA.

For over 25 years NVE has been providing quality vacuum system components to the liquid waste markets. From design, to development to product support, NVE IS the industry leader.

In addition to our team of engineers and highly qualified support staff, NVE has a state-of-the-art machine shop, fabrication shop, and powder coat paint facility housed in two plants in Traverse City, Michigan. We also have a warehouse and sales support facility in Fayetteville Arkansas.

For questions and additional information please contact your dealer or NVE direct at 800.253.5500.

Thank you,

NVE

National Vacuum Equipment

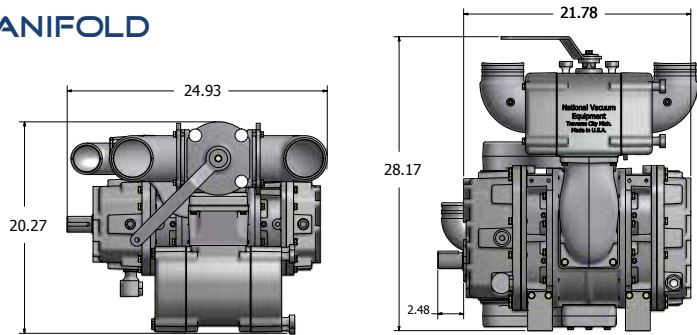
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VACUUM PUMPS & BLOWERS

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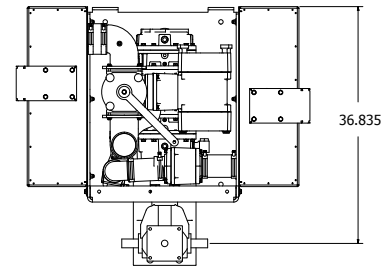
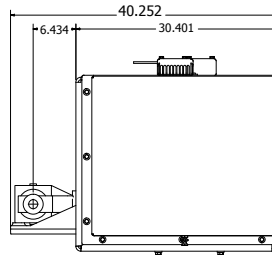
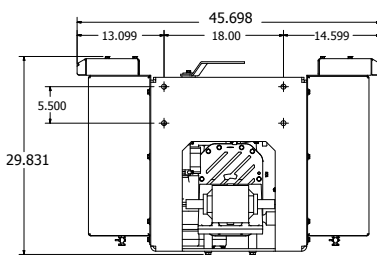
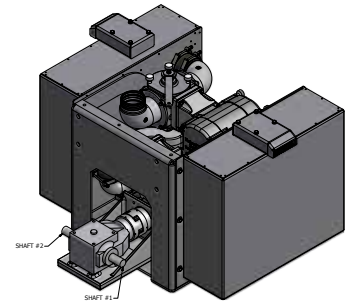
4307 BLOWER W/INTAKE MANIFOLD

Part Number	Product Description
131-4307-LDM	4307 Blower w/Intake Manifold CW



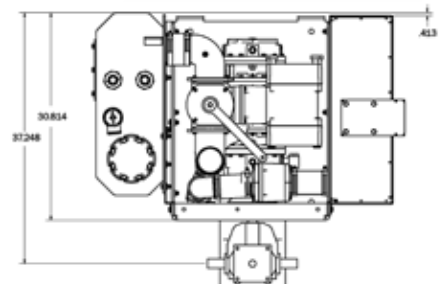
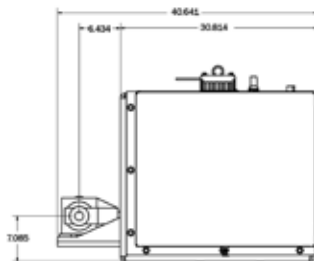
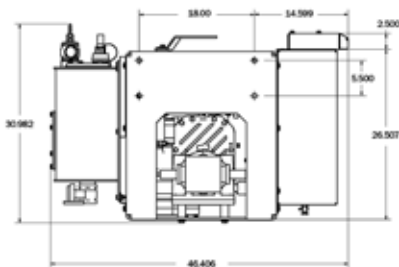
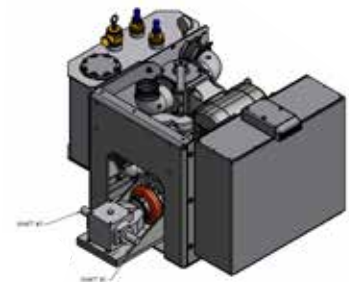
4307 FRAME MOUNT GEARBOX DRIVE

Part Number	Product Description
147-4307-001	4307 Frame Mount Gearbox Drive



4307 FRAME MOUNT GEARBOX DRIVE W/MOISTURE TRAP

Part Number	Product Description
147-4307-005	4307 Frame Mount Gearbox Drive W/Moisture Trap

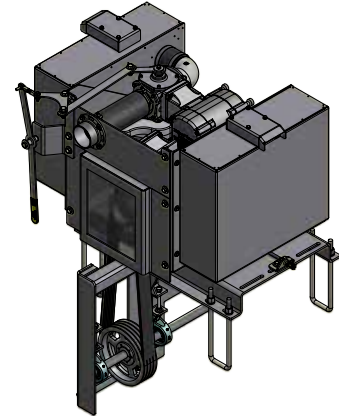
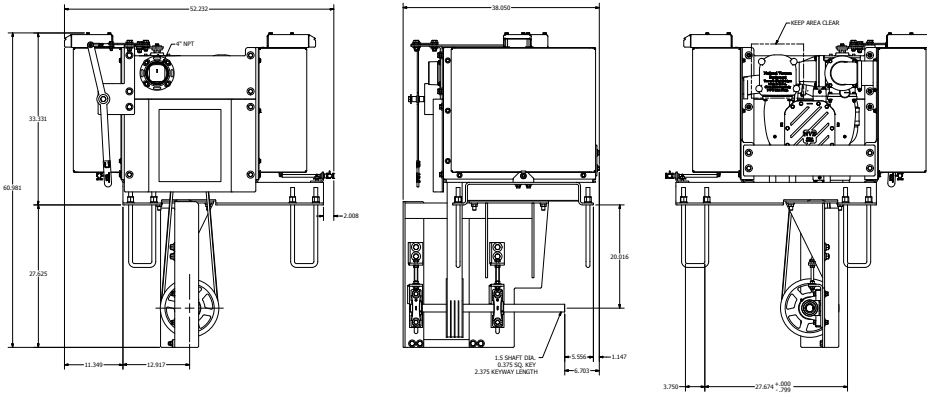


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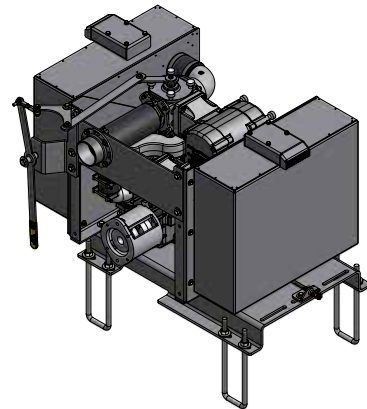
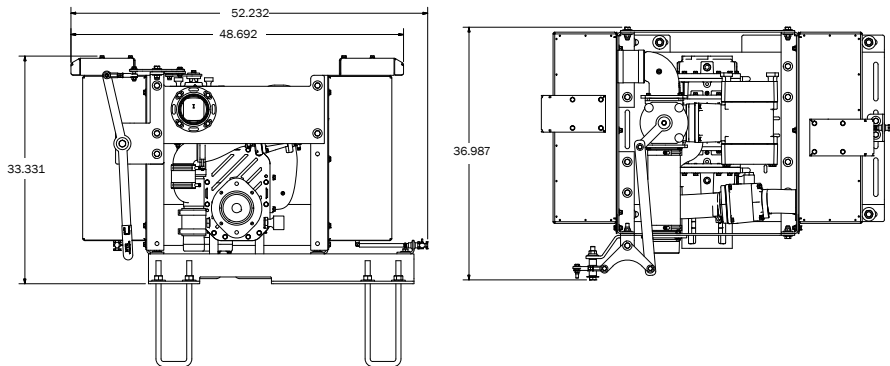
4307 TOP MOUNT BELT DRIVE

Part Number	Product Description
147-4307-002	4307 Top Mount Belt Drive



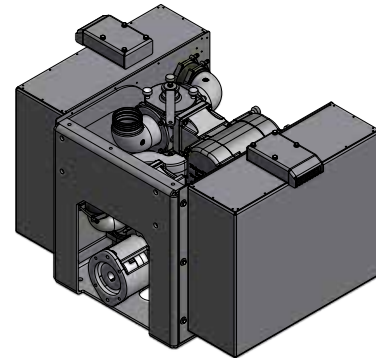
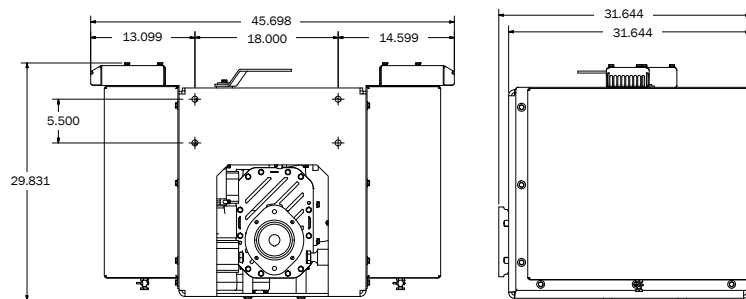
4307 TOP MOUNT HYDRAULIC DRIVE

Part Number	Product Description
147-4307-003	4307 Top Mount Hydraulic Drive



4307 FRAME MOUNT HYDRAULIC DRIVE

Part Number	Product Description
147-4307-004	4307 Frame Mount Hydraulic Drive



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NVE 4307 Blower w/Intake Manifold

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
NVE 4307 Blower Low Shaft - CW	131-4307-LD	321
NVE 4307 Blower w/Intake Manifold - CW	131-4307-LDM	---

Package prices includes 4307 Blower with intake manifold installed.

All elbows, fittings and high temp hoses are factory connected.

4307 Frame Mount Gearbox Drive

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Frame Mount Gearbox Drive	147-4307-001	840

4307 Frame Mount Gearbox Drive w/Moisture Trap

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Frame Mount Gearbox Drive W/Moisture Trap	147-4307-005	1029

4307 Top Mount Belt Drive

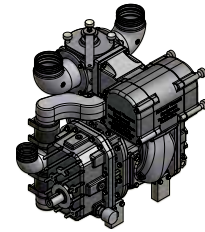
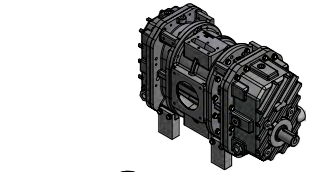
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Top Mount Belt Drive	147-4307-002	1132

4307 Top Mount Hydraulic Drive

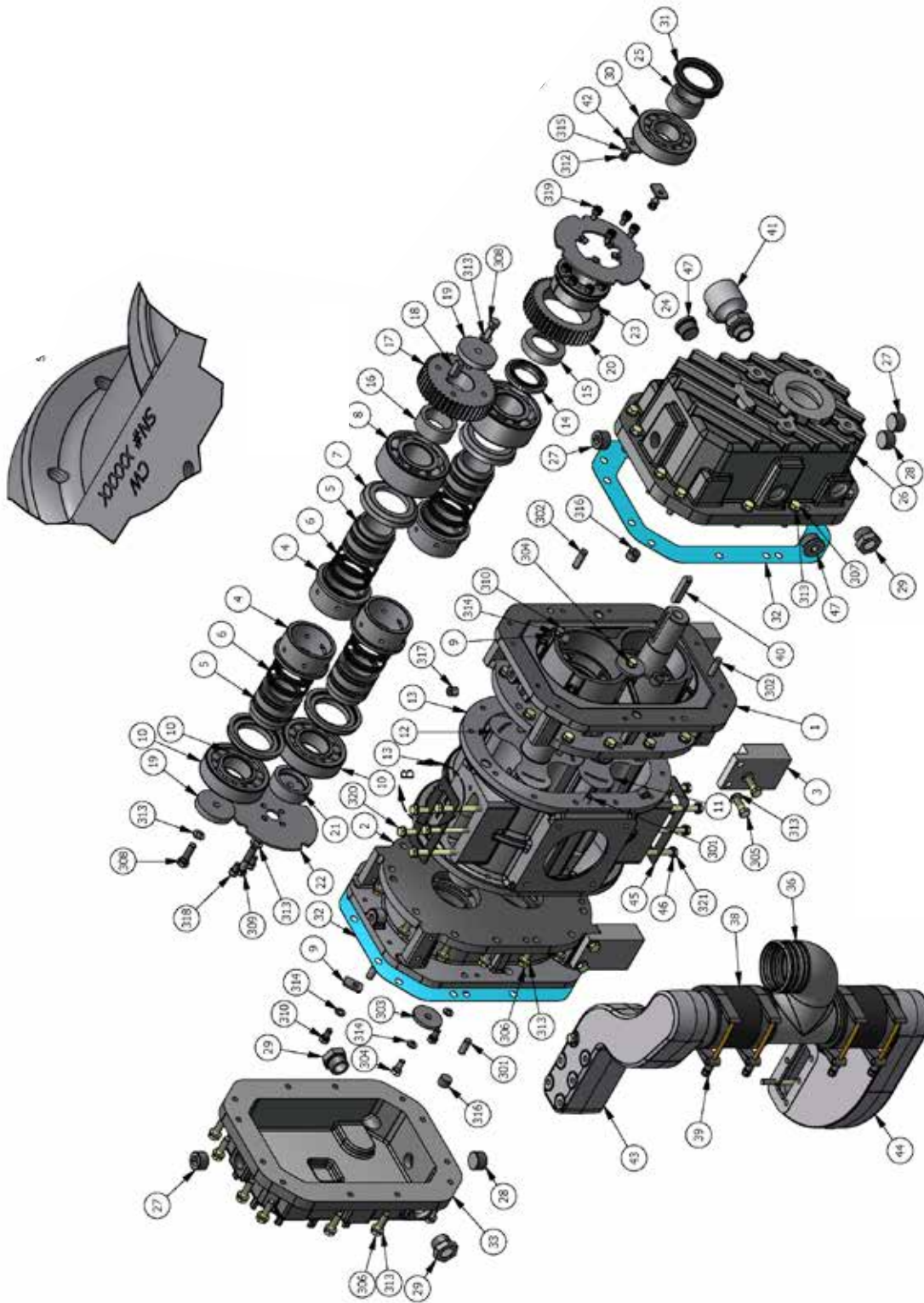
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Top Mount Hydraulic Drive	147-4307-003	980

4307 Frame Mount Hydraulic Drive

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Frame Mount Hydraulic Drive	147-4307-004	814



4307 Blower | Parts Diagram



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Challenger Series

VACUUM PUMPS & BLOWERS

4307 Blower | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	150-003-4310-1	ENDPLATE, DRIVE 4310 MACH	---
2	1	150-003-4310-2	ENDPLATE, NON-DRIVE 4310 MACH	---
3	4	150-652-001	MOUNTING FOOT, 4310	---
4	4	150-630-747	SEAL SLEEVE, OD 4310/747	---
5	4	150-629-4310	SEAL SLEEVE, ID 4310	---
6	16	150-618-747	SEAL RING, 2.5 OD CAST IRON	---
7	4	150-631-747	SLINGER, SHAFT GUARD, 747	---
8	2	150-621-747	BEARING, 5309 (45 X 100 X 39.7)	---
9	4	150-047-957	BEARING RETAINER, 957	---
10	2	150-622-747	BEARING, NU309 (45 X 100 X 25)	---
11	1	150-005-4307-D	ROTOR, DRIVE 4307	---
12	1	150-005-4307-I	ROTOR, IDLER 4307	---
13	1	150-001-4307	HOUSING MAIN 4307	---
14	1	150-645-747	LOCK NUT DRIVE, ROTOR, 747	---
15	1	150-641-747	RETAINER, LOCKNUT 747	---
16	1	150-633-747	SPACER, DRIVE END, FOLLOWER 747	---
17	1	150-613-747	TIMING GEAR, IDLER, 747	---
18	1	150-006-001	KEY, .375 SQ X 2" 1018 +.001/-0.000	---
19	2	150-638-747	RETAINER, IDLER ROTOR 747	---
20	1	150-612-747	TIMING GEAR, DRIVE, 747	---
21	1	150-636-747	RETAINER, NONDRIVE END, 747	---
22	1	150-637-747	OIL SLINGER, NON-DRIVE END 747	---
23	1	150-624-747	B-LOC, RETAINING RING, FLANGED	---
24	1	150-635-747	OIL SLINGER, DRIVE END 747	---
25	1	150-009-747	SEAL SLEEVE, OUTER	---
26	1	150-627-747	END COVER, DRIVE END 4310	---
27	3	120-047	DRAIN PLUG, 3/4" NPT	---
28	2	120-047-1	DRAIN PLUG, 3/4" NPT MAGNETIC	---
29	3	150-048	SIGHT EYE, 1 1/16"-12 SAE	---
30	1	150-623-747	BEARING, NU308 (40 X 90 X 23)	---
31	1	150-620-747	SEAL, 50 X 72 X 10 AS FMK	---
32	2	150-639-747	GASKET, END COVER 747	---
33	1	150-628-747	OIL COVER, NON-DRIVE 747/4310	---
36	1	802-650-009	BALLAST TEE W/ RISER, 4307 CAST	---
38	2	426-300-TAR-4	HOSE, 3", TAR & ASPHALT-4 IN LG	---
39	4	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
40	1	120-006	KEY, 3/8" X3/8" X 2	---
41	1	150-048	SIGHT EYE, 90 DEG-1 1/16-12 SAE	---
42	2	150-047-4310	BEARING RETAINER, 4310	---
43	1	150-650-006	BALLAST MANIFOLD, LH 4307 MACH	---
44	1	150-650-007	BALLAST MANIFOLD, RH 4307 MACH	---
45	2	150-616-4307	GASKET, BALLAST MANIFOLD, 4307	---
46	12	150-099-008	WASHER, 5/16 SEALING BUNA	---
47	2	150-047-003	PLUG SAE ORB -12	---

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4307 Blower | Parts List *Continued*

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
301	4	DP - 3/8 X 1.00	DOWEL PIN - 3/8 X 1.00 LG	---
302	2	DP - 3/8 X 1.25	DOWELL PIN - 3/8 X 1.25 LG	---
303	2	FW - 3/8 X 1.75	WASHER, FENDER 3/8 X 1 3/4 X 3/16 THICK PLATE	---
304	2	HHCS - 5/16-18 UCN x 0.75	HEX HEAD CAP SCREW 5/16-18 UCN X 0.75	---
305	8	HHCS - 3/8-16 UNC X 1.125	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.125	---
306	36	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
307	12	HHCS - 3/8-16 UNC X 1.50	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.50	---
308	2	HHCS - 3/8-24 UNF X 1.25	HEX HEAD CAP SCREW - 3/8-24 UNF X 1.25	---
309	1	HHCS - 3/8-24 UNF X 1.75	HEX HEAD CAP SCREW - 3/8-24 UNF X 1.75	---
310	4	HHCS - 5/16-18 UNC X 0.625	HEX HEAD CAP SCREW - 5/16-18 UNC X 0.625	---
312	2	HHCS - 1/4-20 UNC X 0.75	HEX HEAD CAP SCREW - 1/4-20 UNC X 0.75	---
313	59	LW - 3/8	LOCK WASHER, 3/8"	---
314	6	LW - 5/16	LOCK WASHER, 5/16"	---
315	2	LW - 1/4	LOCK WASHER, 1/4"	---
316	4	PLUG - 3/8 NPT SH	SOCKET HEAD PLUG - 3/8 NPT	---
317	10	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT	---
318	2	SHCS - 5/16-18 UNC X 0.50	SHCS - 5/16-18 UNC X 0.50	---
319	4	SHCS - M8 X 12MM	SHCS - M8 X 12MM	---
320	6	HHCS - 5/16-18 UNC X 3.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 3.25	---
321	6	HHCS - 5/16-18 UNC X 3	HEX HEAD CAP SCREW - 5/16-18 UNC X 3	---

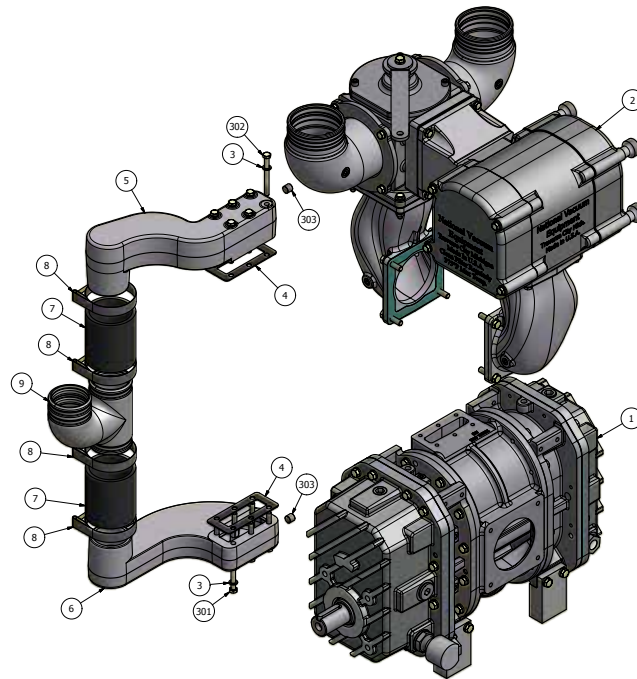
NOTE: Item numbers 300 and above are listed for reference only.

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4307 Blower with Intake Manifold | Parts Diagram

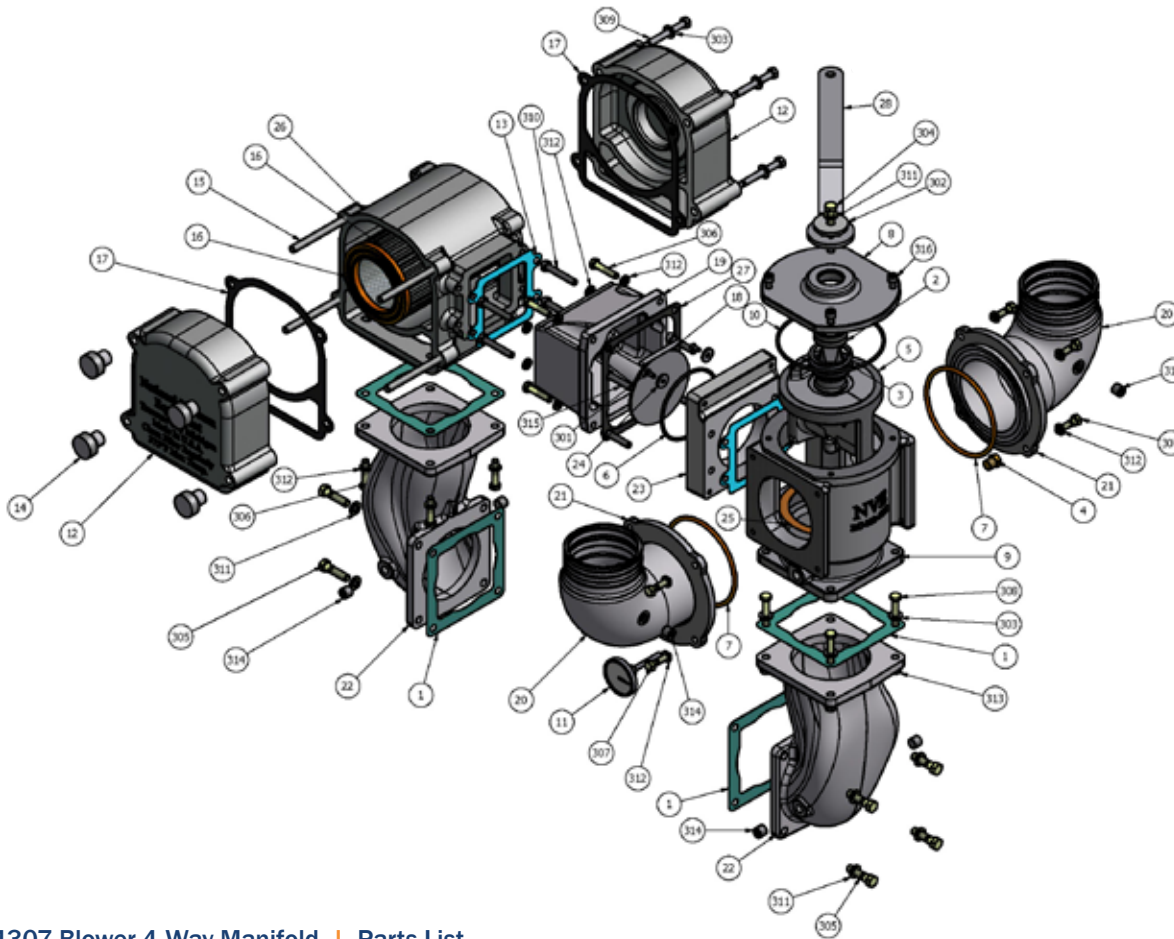


4307 Blower with Intake Manifold | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	131-4307-LD	BLOWER, 4307 CW LOW SHAFT	---
2	1	148-4307-002	MANIFOLD, CW CAST AL 4307	---
3	12	150-099-008	WASHER, 5/16 SEALING BUNA	---
4	2	150-616-4307	GASKET, BALLAST MANIFOLD, 4307	---
5	1	150-650-006	BALLAST MANIFOLD, LH 4307 MACH	---
6	1	150-650-007	BALLAST MANIFOLD, RH 4307 MACH	---
7	2	426-300-TAR-4	HOSE, 3", TAR & ASPHALT-4 IN LG	---
8	4	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
9	1	803-650-009	E-COAT BALLAST TEE W/ RISER, 4307 CAST	---
301	6	HHCS - 5/16-18 UNC X 3	HEX HEAD CAP SCREW - 5/16-18 UNC X 3	---
302	6	HHCS - 5/16-18 UNC X 3.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 3.25	---
303	2	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT	---

NOTE: Item numbers 300 and above are listed for reference only.

4307 Blower 4-Way Manifold | Parts Diagram



4307 Blower 4-Way Manifold | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	4	120-039-506	GASKET, 4" INT/EXH FLANGE	---
2	2	120-040	4-WAY VALVE SEAL 3" & 4" VITON	---
3	1	120-045	4-WAY FV SPRING (COMPRESSED)	---
4	1	120-059	PLUG, BRASS 1/4" NPT, HEX HD.	---
5	1	120-062-367	PLUG, 4-WAY W/ FILTER	---
6	1	120-064-003	O-RING, 2-240 VITON	---
7	2	120-064-012	O-RING, 2-350 VITON	---
8	1	120-065	TOWER, 4-WAY W/ FILTER	---
9	1	120-067-506	4-WAY HOUSING, 4" W/ FILTER	---
10	1	120-068	O-RING, 2-252 VITON	---
11	1	120-220	THERMOMETER, 50- 400 DEG, 2" FACE, 2.5" STEM, 1/4" - 18NPT	---
12	2	120-310	FILTER COVER	---

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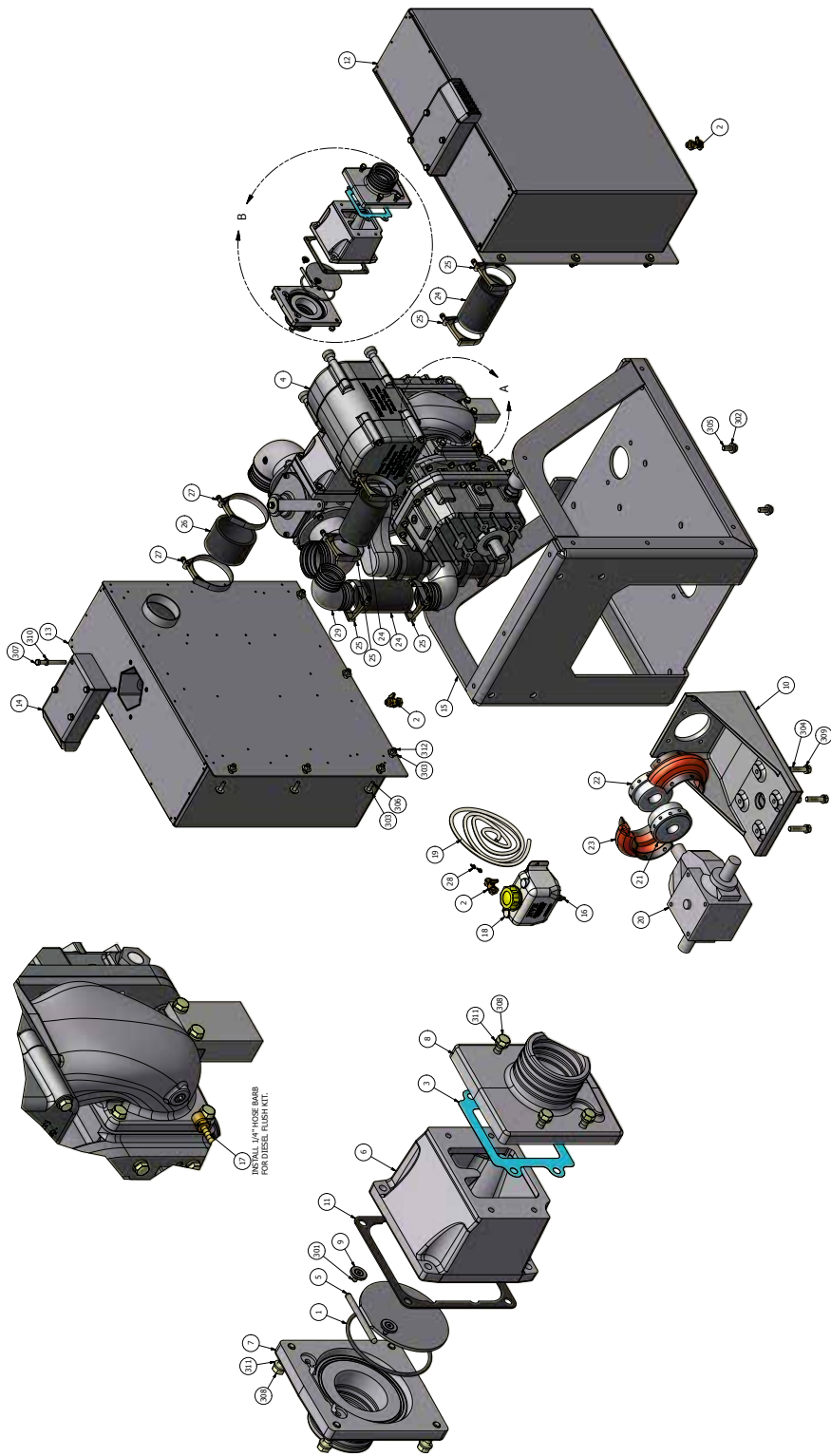
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4307 Blower 4-Way Manifold | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
13	2	120-311	GASKET, FILTER HOUSING, 4-WAY	---
14	4	120-312	KNOB, 3/8-16 UNC	---
15	4	120-313	STUD, 3/8-16UNC-2A x 4-3/8" SS	---
16	1	120-314	FILTER ELEMENT, INLET 367/506	---
17	2	120-315	GASKET, FILTER COVER	---
18	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
19	1	150-041-008	CHECK VALVE HOUSING 4307	---
20	2	150-063-001	ELBOW, ADJ 4" W/ 1/4 NPT	---
21	2	150-063-005	FLANGE, 4" ADJ-ELBOW	---
22	2	150-063-008	ELBOW MANIFOLD 4307 MACH	---
23	1	150-063-009	CHECK VALVE FLANGE MANIFOLD 4307 MACH	---
24	2	150-099-007	WASHER, #10 FLAT HD	---
25	1	150-099-010	WASHER, THRUST BRONZE, 5.25" OD .06"	---
26	1	150-309-4307	FILTER HOUSING, 4"	---
27	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
28	1	412-060-005	HANDLE, 4307, OFFSET 4-WAY ADJ	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	1	FW - 3/8 X 1.75	WASHER, FENDER 3/8" x 1 3/4" X 3/16" THICK, PLATED	---
303	8	FW - 5/16 SAE	FLAT WASHER, 5/16 SAE	---
304	1	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
305	8	HHCS - 3/8-16 UNC X 1.50	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.50	---
306	8	HHCS - 5/16-18 UNC - 1.50	HEX HEAD CAP SCREW - 5/16-18 UNC - 1.50	---
307	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
308	4	HHCS - 5/16-18 UNC X 1.75	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.75	---
309	4	HHCS - 5/16-18 UNC X 3.75	HEX HEAD CAP SCREW - 5/16-18 UNC X 3.75	---
310	4	HHCS - 5/16-18 UNC x 2.25	HEX HEAD CAP SCREW - 5/16-18 UNC x 2.25 FULL THREAD	---
311	9	LW - 3/8	LOCK WASHER, 3/8"	---
312	20	LW - 5/16	LOCK WASHER, 5/16"	---
313	4	NYLOCK NUT - 5/16 UNC	NYLOCK NUT - 5/ 16 UNC	---
314	8	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT	---
315	4	SHCS - 5/16-18 UNC X 1.50	SHCS - 5/16-18 UNC X 1.50	---
316	4	SHCS - 5/16-18 UNC X 0.875	SHCS - 5/16-18 UNC X 0.875	---

NOTE: Item numbers 300 and above are listed for reference only.

4307 Frame Mount Gearbox Package | Parts Diagram



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Challenger Series

VACUUM PUMPS & BLOWERS

4307 Frame Mount Gearbox Drive Package | Parts List

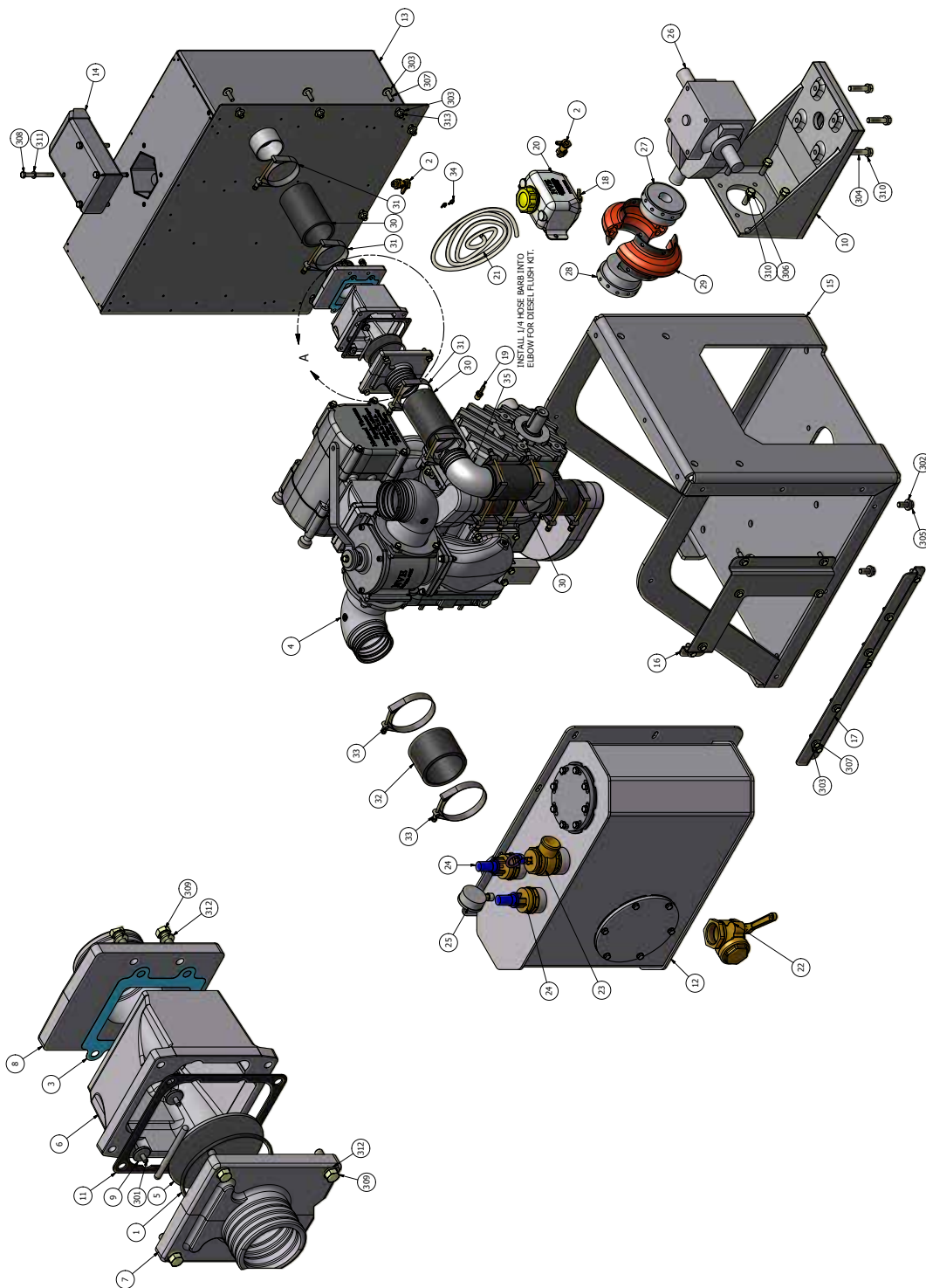
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-064-003	O-RING, 2-240 VITON	---
2	3	120-103	VALVE, DRAIN 1/4" NPT	---
3	1	120-311	GASKET, FILTER HOUSING, 4-WAY	---
4	1	131-4307-LDM	BLOWER, 4307 CW W/ BALLAST	---
5	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
6	1	150-041-008	CHECK VALVE HOUSING 4307	---
7	1	150-063-010	FLANGE, CHECK 3" 4307	---
8	1	150-063-013	FLANGE, CHECK 3" 4307 NARROW	---
9	2	150-099-007	WASHER, #10 FLAT HD	---
10	1	150-500-002	BRKT GEARBOX 4307	---
11	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
12	1	224-4307-01	BALLAST SILENCER	---
13	1	224-4307-02	EXHAUST SILENCER	---
14	2	280-214-004	EXHAUST SCOOP, SILENCER	---
15	1	280-400-012	4307 BLOWER STAND	---
16	1	310-LP4	HOSE BARB, 1/4" NPT X 1/4" ELBOW	---
17	1	310-LP6	HOSE BARB, 1/4 TO 1/4 NPT STRT	---
18	1	320-082-003	DIESEL TANK ASSY, HDPE, 1 QT	---
19	1	320-R102-6FT	OIL LINE, 3/8" X 1/4" ID	---
20	1	422-500-1	GEARBOX, 500 SERIES 1:2 RATIO	---
21	1	424-200-1375	COUPLER HUB E20 1 3/8" BORE	---
22	1	424-200-150	COUPLER HUB E20 1 1/2" BORE	---
23	1	424-200-E20	COUPLER FLEX ELEMENT E20	---
24	3	426-300-TAR-5.5IN	HOSE, 3", TAR & ASPHALT-5.5 IN LG	---
25	6	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
26	1	426-400-TAR-3IN	HOSE, 4", TAR & ASPHALT-3 IN LG	---
27	2	426-4625-TBC	CLAMP, T-BOLT, 4.625"	---
28	2	440-100-038	CLAMP, 3/8" HOSE, SPRING	---
29	1	802-063-011	ELBOW 90 DEG 3" CAST	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	4	FW - 1/2	FLAT WASHER - 1/2"	---
303	24	FW - 3/8	FLAT WASHER, 3/8"	---
304	4	HHCS - 1/2-13 UNC - 2.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 2.25	---
305	4	HHCS - 1/2-13 UNC X 1.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.25	---
306	12	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
307	8	HHCS - 3/8-16 UNC X 3.00 SS	HEX HEAD CAP SCREW - 3/8-16 UNC X 3.00 SS	---
308	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
309	4	LW - 1/2	LOCK WASHER, 1/2	---
310	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
311	8	LW - 5/16	LOCK WASHER, 5/16"	---
312	12	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---

NOTE: Item numbers 300 and above are listed for reference only.

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4307 Frame Mount Gearbox W/Moisture Trap Package | Parts Diagram



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4307 Frame Mount Gearbox Drive W/Moisture Trap Package | Parts List

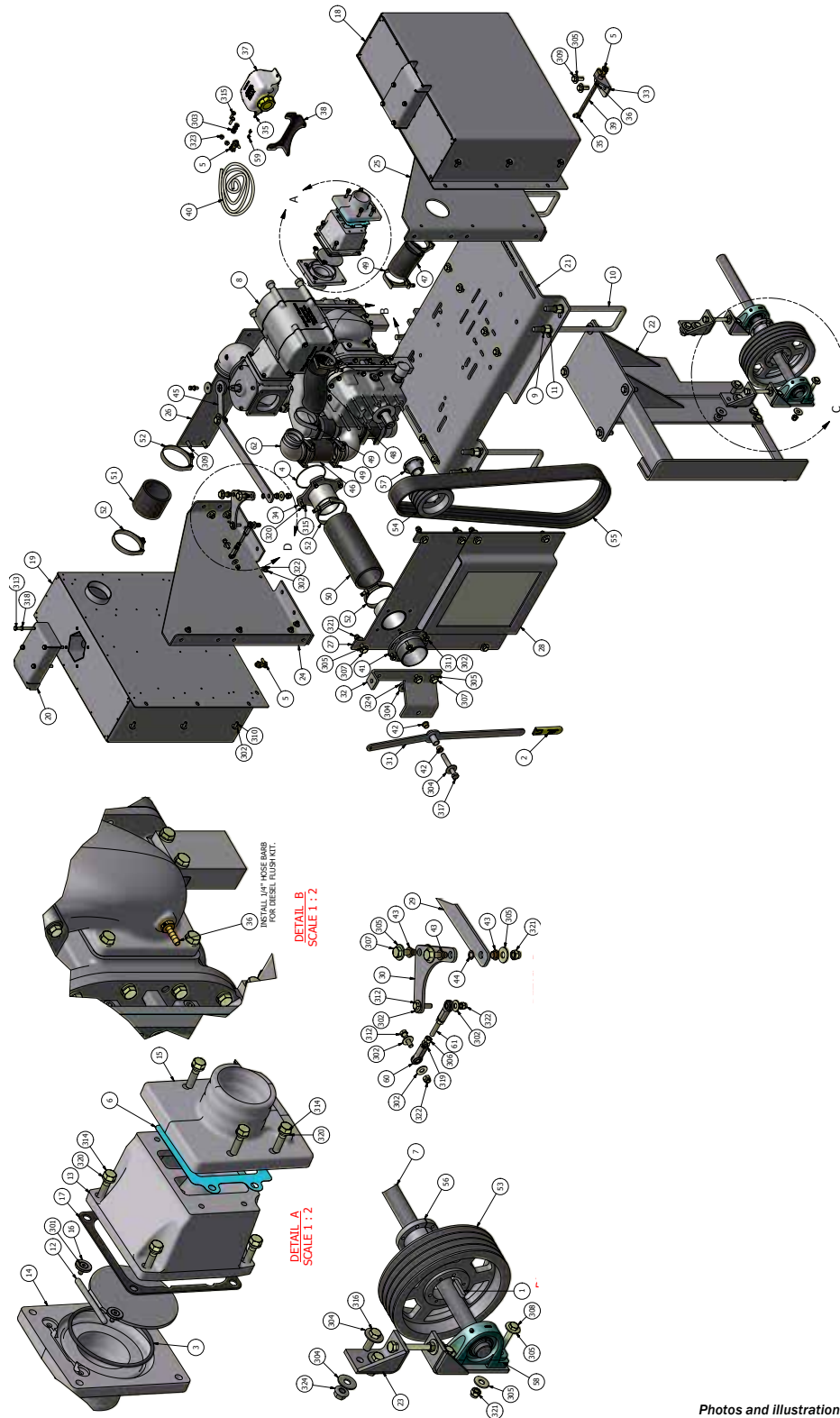
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-064-003	O-RING, 2-240 VITON	---
2	2	120-103	VALVE, DRAIN 1/4" NPT	---
3	1	120-311	GASKET, FILTER HOUSING, 4-WAY	---
4	1	131-4307-LDM	BLOWER, 4307 CW W/ BALLAST	---
5	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
6	1	150-041-008	CHECK VALVE HOUSING 4307	---
7	1	150-063-010	FLANGE, CHECK 3" 4307	---
8	1	150-063-013	FLANGE, CHECK 3" 4307 NARROW	---
9	2	150-099-007	WASHER, #10 FLAT HD	---
10	1	150-500-002	BRKT GEARBOX 4307	---
11	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
12	1	218-001-4R	M.T. BOLT ON, 4" RH ALUM	---
13	1	224-4307-01	BALLAST SILENCER	---
14	1	280-214-004	EXHAUST SCOOP, SILENCER	---
15	1	280-400-012	4307 BLOWER STAND	---
16	1	280-400-017	MOISTURE TRAP BRACKET UPPER	---
17	1	280-400-018	MOISTURE TRAP BRACKET LOWER	---
18	1	310-LP4	HOSE BARB, 1/4" NPT X 1/4" ELBOW	---
19	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
20	1	320-082-003	DIESEL TANK ASSY, HDPE, 1 QT	---
21	1	320-R102-6FT	OIL LINE, 3/8" X 1/4" ID	---
22	1	362-301-2	LEVER VALVE 2"	---
23	1	364-306-2	PRESSURE RELIEF, 2"	---
24	2	366-150	VACUUM RELIEF, 1 1/2" NPT	---
25	1	408-250-LF	GAUGE, 2.5" VAC/PRESS, LIQ BOTTON CONN	---
26	1	422-500-1	GEARBOX, 500 SERIES 1:2 RATIO	---
27	1	424-200-1375	COUPLER HUB E20 1 3/8" BORE	---
28	1	424-200-150	COUPLER HUB E20 1 1/2" BORE	---
29	1	424-200-E20	COUPLER FLEX ELEMENT E20	---
30	3	426-300-TAR-5.5IN	HOSE, 3", TAR & ASPHALT-5.5 IN LG	---
31	6	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
32	1	426-400-TAR-3.5IN	HOSE, 4", TAR & ASPHALT-3.5 IN LG	---
33	2	426-4625-TBC	CLAMP, T-BOLT, 4.625"	---
34	2	440-100-038	CLAMP, 3/8" HOSE, SPRING	---
35	1	802-063-011	ELBOW 90 DEG 3" CAST	---
306	4	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50	---
307	19	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
308	4	HHCS - 3/8-16 UNC X 3.00 SS	HEX HEAD CAP SCREW - 3/8-16 UNC X 3.00 SS	---
309	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
310	8	LW - 1/2	LOCK WASHER, 1/2	---
311	4	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
312	8	LW - 5/16	LOCK WASHER, 5/16"	---
313	19	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---

NOTE: Item numbers 300 and above are listed for reference only.

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4307 Top Mount Belt Drive Package | Parts Diagram



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Challenger Series

VACUUM PUMPS & BLOWERS

4307 Top Mount Belt Drive Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-006	KEY, 3/8" X3/8" X 2	---
2	1	120-060-002	GRIP, HANDLE W/ LOGO	---
3	1	120-064-003	O-RING, 2-240 VITON	---
4	1	120-064-018	ORING, 2-158 VITON	---
5	3	120-103	VALVE, DRAIN 1/4" NPT	---
6	1	120-311	GASKET, FILTER HOUSING, 4-WAY	---
7	1	126-367-TM2	JACK SHAFT 607 TM	---
8	1	131-4307-LDM	BLOWER, 4307 CW W/ BALLAST	---
9	8	146-215-15DN34	3/4" DEEP NUT	---
10	4	146-215-15SHA	U-BOLT 3/4" X 15 LG, 4" CENTERS	---
11	8	146-215-SUW34	3/4" WASHER	---
12	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
13	1	150-041-008	CHECK VALVE HOUSING 4307	---
14	1	150-063-010	FLANGE, CHECK 3" HB	---
15	1	150-063-013	FLANGE, CHECK 3" NARROW	---
16	2	150-099-007	WASHER, #10 FLAT HD	---
17	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
18	1	224-4307-01	BALLAST SILENCER	---
19	1	224-4307-02	EXHAUST SILENCER	---
20	2	280-214-004	EXHAUST SCOOP, SILENCER	---
21	1	280-367-TM1	FRAME, 367 TM	---
22	1	280-367-TM8	JACK SHAFT MOUNT 607/866 TOP MOUNT BELT DRIVE	---
23	2	280-367-TM9	PILLOW BLOCK TENSIONER	---
24	1	280-400-001	EXHAUST SILENCER SUPPORT	---
25	1	280-400-002	BALLAST SILENCER SUPPORT	---
26	1	280-400-003	CROSS SUPPORT BACK	---
27	1	280-400-004	CROSS SUPPORT	---
28	1	280-400-005	PULLEY COVER	---
29	1	280-400-006	VALVE LINKAGE	---
30	1	280-400-007	PIVOT BAR	---
31	1	280-400-008	HANDLE	---
32	1	280-400-009	HANDLE BRACKET	---
33	1	280-400-010	DRAIN BRACKET	---
34	1	280-400-011	FLANGE W/ TUBE 4" OD X 3" L	---
35	2	310-LP4	HOSE BARB, 1/4" NPT X 1/4" ELBOW	---
36	2	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
37	1	320-082-003	DIESEL TANK ASSY, HDPE, 1 QT	---
38	1	320-083-006	BRACKET, DIESEL FLUSH	---
39	1	320-407-003-6	OIL LINE BLK 1/4 ID 30R7	---
40	1	320-R102-10.5FT	OIL LINE, 3/8" X 1/4" ID	---
41	1	404-400-4NPT	TTMA FLANGE 4" MALE NPT 4"	---
42	2	412-020-005	BRONZE FLANGED SLEEVE BEARING 5/8 ID 3/4 OD	---
43	6	412-020-006	BRONZE FLANGED SLEEVE BEARING 1/2 ID 5/8 OD	---
44	3	412-020-007	BEARING THRUST BRONZE 1/2 ID 3/4 OD	---
45	1	412-060-006	HANDLE 4307 4-WAY TOP ADJ LINKAGE	---
46	1	426-300-TAR-3.5IN	HOSE, 3", TAR & ASPHALT-3.5 IN LG	---

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4307 Top Mount Belt Drive Package | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
47	1	426-300-TAR-C6.25IN	HOSE, 3", TAR & ASPHALT-6.25 IN LG	---
48	1	426-300-TAR-C7.5	HOSE, 3", TAR & ASPHALT-7.5 IN LG	---
49	6	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
50	1	426-400-TAR-12IN	HOSE, 4", TAR & ASPHALT-12 IN LG	---
51	1	426-400-TAR-4IN	HOSE, 4", TAR & ASPHALT-4 IN LG	---
52	4	426-4625-TBC	CLAMP, T-BOLT, 4.625"	---
53	1	430-100-005	PULLEY 4B 11.0 PD SK	---
54	1	430-100-018	PULLEY 4B 5.8 PD SD	---
55	1	430-200-013	BELT BX87 COG V-BELT 88.8" PD	---
56	1	430-300-006	BUSHING SK X 1.5" .375" KEYWAY	---
57	1	430-367-TM2	BUSHING, 367 TM, SD X 1.5	---
58	2	430-400-004	BEARING 1.5 PILLOW BLOCK	---
59	2	440-100-038	CLAMP, 3/8" HOSE, SPRING	---
60	2	490-500-001	BALL JOINT ROD END 3/8	---
61	1	612-003-003	THREADED ROD 3/8-24 UNF X 3" L SS	---
62	1	802-063-011	ELBOW 90 DEG 3" CAST	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	39	FW - 3/8	FLAT WASHER, 3/8"	---
303	4	FW - 5/16 SAE	FLAT WASHER, 5/16 SAE	---
304	10	FW - 5/8	FLAT WASHER - 5/8"	---
305	58	FW 1/2 USS	FLAT WASHER 1/2" USS	---
306	2	HEX NUT - 3/8 UNF	HEX NUT - 3/8 UNF	---
307	6	HHCS - 1/2-13 UNC - 1.75	HEX HEAD CAP SCREW - 1/2-13 UNC - 1.75	---
308	4	HHCS - 1/2-13 UNC X 2.50	HEX HEAD CAP SCREW - 1/2 -13 UNC x 2.50	---
309	19	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50	---
310	12	HHCS - 3/8-16 UNC X 1.00	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.00	---
311	4	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
312	2	HHCS - 3/8-16 UNC X 1.50	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.50	---
313	8	HHCS - 3/8-16 UNC X 3.00 SS	HEX HEAD CAP SCREW - 3/8-16 UNC X 3.00 SS	---
314	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
315	6	HHCS - 5/16-18 UNC x 1	HEX HEAD CAP SCREW - 5/16-18 UNC x 1	---
316	4	HHCS - 5/8-11 UNC X 1.75	HEX HEAD CAP SCREW - 5/8-11 UNC x 1.75	---
317	1	HHCS - 5/8-11 UNC X 4.5	HEX HEAD CAP SCREW - 5/8-11 UNC X 4.5	---
318	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
319	2	LW - 3/8	LOCK WASHER, 3/8"	---
320	12	LW - 5/16	LOCK WASHER, 5/16"	---
321	29	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
322	18	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---
323	2	NYLOCK NUT - 5/16 UNC	NYLOCK NUT - 5/16 UNC	---
324	5	NYLOCK NUT - 5/8 UNC	NYLOCK NUT - 5/8 UNC	---

NOTE: Item numbers 300 and above are listed for reference only.

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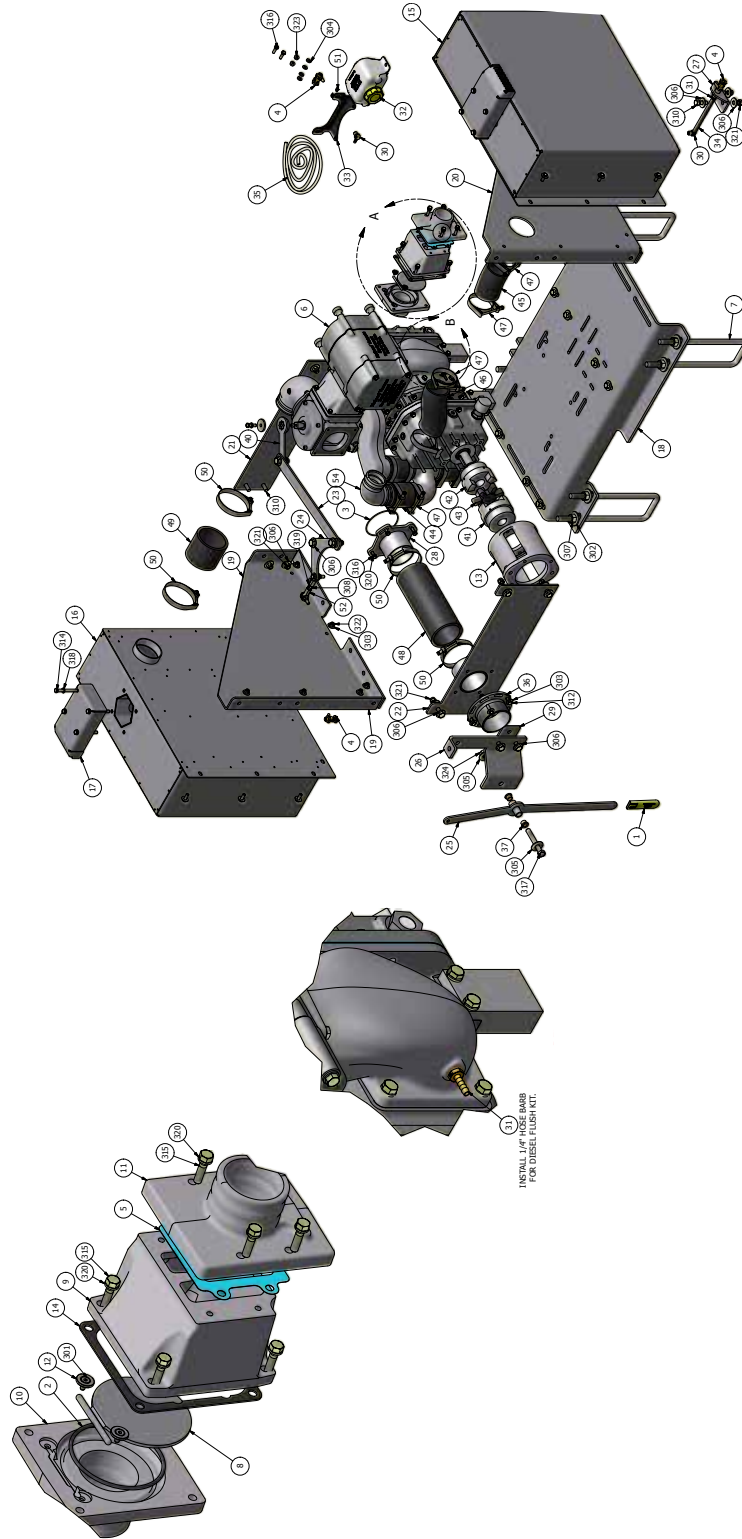
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Challenger Series

VACUUM PUMPS & BLOWERS

Blowers & Packages | 4307 Blower

4307 Top Mount Hydraulic Drive Package | Parts Diagram



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4307 Top Mount Hydraulic Drive Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-060-002	GRIP, HANDLE W/ LOGO	---
2	1	120-064-003	O-RING, 2-240 VITON	---
3	1	120-064-018	O-RING, 2-158 VITON	---
4	3	120-103	VALVE, DRAIN 1/4" NPT	---
5	1	120-311	GASKET, FILTER HOUSING, 4-WAY	---
6	1	131-4307-LDM	BLOWER, 4307 CW W/ BALLAST	---
7	4	146-215-15SHA	U-BOLT 3/4" X 15 LG, 4" CENTERS	---
8	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
9	1	150-041-008	CHECK VALVE HOUSING 4307	---
10	1	150-063-010	FLANGE, CHECK 3" 4307	---
11	1	150-063-013	FLANGE, CHECK 3" 4307 NARROW	---
12	2	150-099-007	WASHER, #10 FLAT HD	---
13	1	150-466-002	HYDRAULIC ADAPTER 4307	---
14	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
15	1	224-4307-01	BALLAST SILENCER	---
16	1	224-4307-02	EXHAUST SILENCER	---
17	2	280-214-004	EXHAUST SCOOP, SILENCER	---
18	1	280-367-TM1	FRAME, 367 TM	---
19	1	280-400-001	EXHAUST SILENCER SUPPORT	---
20	1	280-400-002	BALLAST SILENCER SUPPORT	---
21	1	280-400-003	CROSS SUPPORT BACK	---
22	1	280-400-004	CROSS SUPPORT	---
23	1	280-400-006	VALVE LINKAGE	---
24	1	280-400-007	PIVOT BAR	---
25	1	280-400-008	HANDLE	---
26	1	280-400-009	HANDLE BRACKET	---
27	1	280-400-010	DRAIN BRACKET	---
28	1	280-400-011	FLANGE W/ TUBE 4" OD X 3" L	---
29	1	280-400-013	SHIM	---
30	1	310-LP4	HOSE BARB, 1/4" NPT X 1/4" ELBOW	---
31	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
32	1	320-082-003	DIESEL TANK ASSY, HDPE, 1 QT	---
33	1	320-083-006	BRACKET, DIESEL FLUSH	---
34	1	320-407-003-6	OIL LINE BLK 1/4 ID 30R7	---
35	1	320-R102-10.5FT	OIL LINE, 3/8" X 1/4" ID	---
36	1	404-400-4NPT	TTMA FLANGE 4" MALE NPT 4"	---
37	2	412-020-005	BRONZE FLANGED SLEEVE BEARING 5/8 ID 3/4 OD	---
38	6	412-020-006	BRONZE FLANGED SLEEVE BEARING 1/2 ID 5/8 OD	---
39	3	412-020-007	BEARING THRUST BRONZE 1/2 ID 3/4 OD	---
40	1	412-060-006	HANDLE 4307 4-WAY TOP ADJ LINKAGE	---
41	1	424-190-1375	COUPLER FLANGE L190 1 3/8" BORE 5/16" KEY	---
42	1	424-190-150	COUPLER FLANGE L190 1 1/2" BORE 3/8" KEY	---
43	1	424-190-S	SPIDER, L190, NBR	---
44	1	426-300-TAR-3.5IN	HOSE, 3", TAR & ASPHALT-3.5 IN LG	---

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VACUUM PUMPS & BLOWERS

4307 Top Mount Hydraulic Drive Package | Parts List Continued

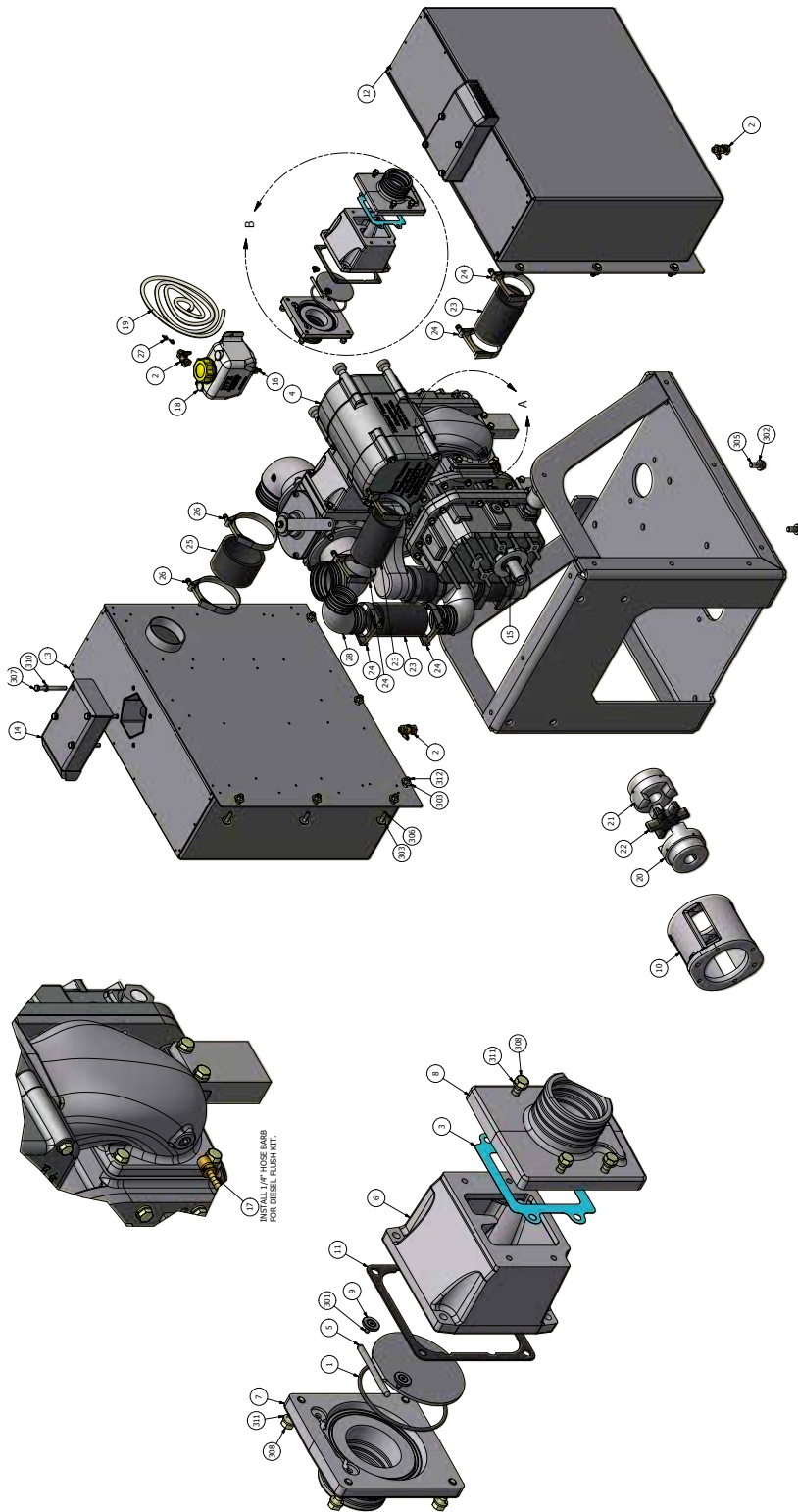
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
45	1	426-300-TAR-C6.25IN	HOSE, 3", TAR & ASPHALT-6.25 IN LG	---
46	1	426-300-TAR-C7.5	HOSE, 3", TAR & ASPHALT-7.5 IN LG	---
47	6	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
48	1	426-400-TAR-12IN	HOSE, 4", TAR & ASPHALT-12 IN LG	---
49	1	426-400-TAR-4IN	HOSE, 4", TAR & ASPHALT-4 IN LG	---
50	4	426-4625-TBC	CLAMP, T-BOLT, 4.625"	---
51	2	440-100-038	CLAMP, 3/8" HOSE, SPRING	---
52	2	490-500-001	BALL JOINT ROD END 3/8	---
53	1	612-003-003	THREADED ROD 3/8-24 UNF X 3" L SS	---
54	1	802-063-011	ELBOW 90 DEG 3" CAST	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	8	FW - 3/4 USS	FLAT WASHER - 3/4 USS	---
303	39	FW - 3/8	FLAT WASHER, 3/8"	---
304	4	FW - 5/16 SAE	FLAT WASHER, 5/16 SAE	---
305	2	FW - 5/8	FLAT WASHER - 5/8"	---
306	44	FW 1/2 USS	FLAT WASHER 1/2" USS	---
307	8	HEX NUT - 3/4 UNC	HEX NUT - 3/4 UNC	---
308	2	HEX NUT - 3/8 UNF	HEX NUT - 3/8 UNF	---
309	6	HHCS - 1/2-13 UNC - 1.75	HEX HEAD CAP SCREW - 1/2-13 UNC - 1.75	---
310	16	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50	---
311	12	HHCS - 3/8-16 UNC X 1.00	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.00	---
312	4	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
313	2	HHCS - 3/8-16 UNC X 1.75	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.75	---
314	8	HHCS - 3/8-16 UNC X 3.00 SS	HEX HEAD CAP SCREW - 3/8-16 UNC X 3.00 SS	---
315	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
316	6	HHCS - 5/16-18 UNC x 1	HEX HEAD CAP SCREW - 5/16-18 UNC x 1	---
317	1	HHCS - 5/8-11 UNC X 4.5	HEX HEAD CAP SCREW - 5/8-11 UNC X 4.5	---
318	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
319	2	LW - 3/8	LOCK WASHER, 3/8"	---
320	12	LW - 5/16	LOCK WASHER, 5/16"	---
321	22	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
322	18	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---
323	2	NYLOCK NUT - 5/16 UNC	NYLOCK NUT - 5/16 UNC	---
324	1	NYLOCK NUT - 5/8 UNC	NYLOCK NUT - 5/8 UNC	---

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4307 Frame Mount Hydraulic Drive Package | Parts Diagram



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Challenger Series

VACUUM PUMPS & BLOWERS

4307 Frame Mount Hydraulic Drive Package | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	120-064-003	O-RING, 2-240 VITON	---
2	4	120-103	VALVE, DRAIN 1/4" NPT	---
3	1	120-311	GASKET, FILTER HOUSING, 4-WAY	---
4	1	131-4307-LDM	BLOWER, 4307 CW W/ BALLAST	---
5	1	150-041-007	CHECK VALVE FLAPPER, 4 IN SS	---
6	1	150-041-008	CHECK VALVE HOUSING 4307	---
7	1	150-063-010	FLANGE, CHECK 3" 4307	---
8	1	150-063-013	FLANGE, CHECK 3" 4307 NARROW	---
9	2	150-099-007	WASHER, #10 FLAT HD	---
10	1	150-466-002	HYDRAULIC ADAPTER 4307	---
11	1	150-616-002	GASKET, 4" SQ INTAKE CHECK	---
12	1	224-4307-01	BALLAST SILENCER	---
13	1	224-4307-02	EXHAUST SILENCER	---
14	2	280-214-004	EXHAUST SCOOP, SILENCER	---
15	1	280-400-012	4307 BLOWER STAND	---
16	1	310-LP4	HOSE BARB, 1/4" NPT X 1/4" ELBOW	---
17	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
18	1	320-082-003	DIESEL TANK ASSY, HDPE, 1 QT	---
19	1	320-R102-6FT	OIL LINE, 3/8" X 1/4" ID	---
20	1	424-190-1375	COUPLER FLANGE L190 1 3/8" BORE 5/16" KEY	---
21	1	424-190-150	COUPLER FLANGE L190 1 1/2" BORE 3/8" KEY	---
22	1	424-190-S	SPIDER, L190, NBR	---
23	3	426-300-TAR-5.5IN	HOSE, 3", TAR & ASPHALT-5.5 IN LG	---
24	6	426-3875-TBC	CLAMP, T-BOLT 3.875"	---
25	1	426-400-TAR-3IN	HOSE, 4", TAR & ASPHALT-3 IN LG	---
26	2	426-4625-TBC	CLAMP, T-BOLT, 4.625"	---
27	2	440-100-038	CLAMP, 3/8" HOSE, SPRING	---
28	1	802-063-011	ELBOW 90 DEG 3" CAST	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	4	FW - 1/ 2	FLAT WASHER - 1/2"	---
303	24	FW - 3/8	FLAT WASHER, 3/8"	---
304	4	HHCS - 1/2-13 UNC X 1.25	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.25	---
305	12	HHCS - 3/8-16 UNC X 1.25	HEX HEAD CAP SCREW - 3/8-16 UNC X 1.25	---
306	8	HHCS - 3/8-16 UNC X 3.00 SS	HEX HEAD CAP SCREW - 3/8-16 UNC X 3.00 SS	---
307	8	HHCS - 5/16-18 UNC X 1.25	HEX HEAD CAP SCREW - 5/16-18 UNC X 1.25	---
308	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
309	8	LW - 5/16	LOCK WASHER, 5/16"	---
310	12	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC	---

NOTE: Item numbers 300 and above are listed for reference only.

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Challenger Series

VACUUM PUMPS & BLOWERS

4310 BLOWER

High Vacuum Tri-Lobe Blower Packages

Continuous Duty At Full Vacuum | Capable of Airflow to 931 CFM | Environmentally Friendly - No Oil Mess



Convenient and Ready to Install Blower Packages!

National Vacuum Equipment

P.O. Box 685
Traverse City, MI 49685 USA
800-253-5500 | sales@natvac.com



Arkansas Distribution Center

1612 Warehouse Drive
Fayetteville, AR 72701
479-409-7331, 479-409-6748 | Fax 479-444-8211

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Challenger Series

VACUUM PUMPS & BLOWERS

4310 High Vacuum Tri-Lobe Blower with Complete Manifold

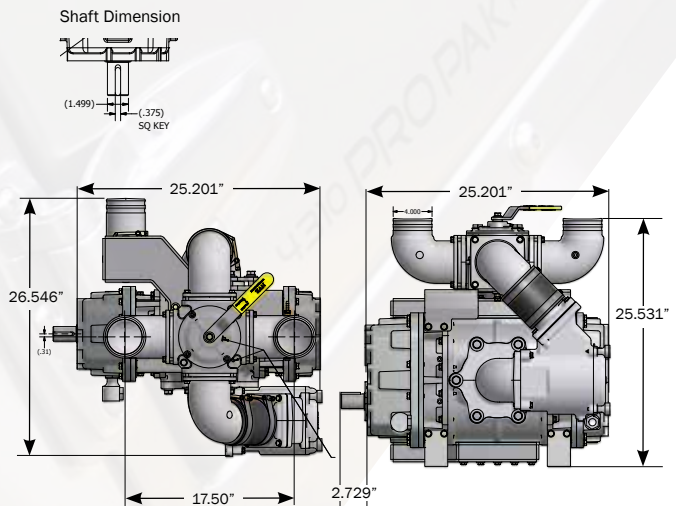
Designed, built and supported in our state-of-the-art Michigan manufacturing plant. This ultra quiet, environmentally friendly machine will make any ordinary pump truck extraordinary. Our unique ballast cooling and porting design allows for continuous pumping at full vacuum without over heating. In addition to the blower, we design and manufacture each precision component used in the manifold and silencing system. You can take comfort in knowing that you have the leaders in high vacuum blower technology standing firmly behind your purchase, just as we have for over 30 years.



Dimensions: 26.546" W x 25.201" L x 25.531" H

4310 High Vacuum Tri-Lobe Blower Features:

- Continuous Duty Performance at Maximum Vacuum
- Tri-lobe Design with Precision Machining
- Ballast Port Manifold - Cools pump through air injection
- Range of Airflow - Performance available to accommodate power
- Oil less Operation
- Designed, Built and Supported in the USA



4310 High Vacuum Tri-Lobe Blower Specifications:

- Maximum Air Flow 931 CFM
- 4" Hose Barbed Adjustable Porting
- Recommended Operating RPM 4000
- Integral Final Filter
- 4-Way Pressure/Vacuum Change Over Valve
- Creating Pressure to 18 PSI Depending on Set Up and Conditions
- Ballast Air Intake Manifold
- Weight 449

RPM		Inches of Vacuum (Hg)				Pressure (PSI)
		0	18	24	27	10
2400	Hp.	2	17.8	23.1		24.8
	CFM	500	407	255		324
4000	Hp.	4	35.6	46.1	51.4	39.7
	CFM	826	661	528	182	631
4500	Hp.	4.5	40	51.9	57.8	44.7
	CFM	931	763	660	270	733

Maximum 4500 RPM Intermittent Operation Only

The maximum allowable operating vacuum will vary depending on R.P.M., ambient temperature, altitude and time running. The basic principle to keep in mind is - faster R.P.M., higher air temperature and longer run time all equal more heat in the pump. When installing an NVE 4310 blower we recommend a normal R.P.M. of 4000. Other speeds are o.k. as long as exhaust gas temperatures read on the supplied thermometer do not exceed 375 degrees F.



natvac.com

Lowest total cost of ownership... *period.*

PUMP DEEPER

- Continuous duty in maximum vacuum

LOAD FASTER

- Air flow to 931 CFM

REDUCED MAINTENANCE

- No oil needed in operation
- No vanes
- Overflow friendly

REDUCED OPERATOR ERROR

- No overheating
- No vane breakage

4310 Challenger Blower included with all packages!

Challenger Series 4310 Blower Packages

All packages contain:

- 931 CFM 4310 High Vacuum Tri-lobe Blower with Ballast Air Manifold
- Stainless Steel Cabinet with Removable Panels
- Sound Deadening Lining
- Built-in Ballast Air Silencer/Tuner
- Anti-back Spin Check Valve
- 4-way Change Over Valve
- Pressure Relief Valve
- Gauge Package
- LED Lighting
- Powder coat painted 3/8" steel mounting brackets
- Easy to Access Maintenance Points
- All elbows, fittings and high temp hoses are factory connected

4310 Pro Pak Side Mount Package:

- Mounts Directly to Truck Frame

Optional:

- Aluminum Moisture Trap w/Manifold Pipe
#216-250-026-3

Dimensions: 31.312" W x 49.375" L x 27.187" H

4310 Pro Pak Top Mount Package includes:

- Front and Sides Plumbing
- Complete with Stand

Optional:

- Tank Mount 25 Gallon Steel Moisture Trap
#216-250-4NPT-C

Dimensions: 39.25" W x 46.77" L x 32" H

4310 Pro Pak Side Mount



Mounts to truck frame and accommodates right angle gear box or hydraulic drive adapter. (Shown with moisture trap option.)

4310 Pro Pak Top Mount



Mounts behind the cab (headache mount), or on the trailer (porch or belly), with hydraulic drive adapter. (Hydraulic motor not included.)

Challenger Series

VACUUM PUMPS & BLOWERS

Challenger Series 4310 Max Pak Blower Packages

All packages contain:

- 931 CFM 4310 High Vacuum Tri-lobe Blower with Ballast Air Manifold
- Built-in Ballast Air Silencer/Tuner
- Anti-back Spin Check Valve
- 4-way Change Over Valve
- Pressure Relief Valve
- Powder coat painted 3/8" steel mounting brackets
- Easy to Access Maintenance Points
- All elbows, fittings and high temp hoses are factory connected

4310 Max Pak Side Mount Package:

- Mounts Directly to Truck Frame
- Pressure Relief Valves Ships Loose

Optional:

- Tank Mount 25 Gallon Steel Moisture Trap
#216-250-4NPT-C

Dimensions: 31.312" W x 49.375" L x 27.187" H (Without Moisture Trap)

4310 Max Pak Top Mount Package:

- Front and Sides Plumbing
- Complete with Stand
- Pressure Relief Valves Ships Loose

Optional:

- Aluminum Moisture Trap w/Manifold Pipe
#216-250-026-3

4310 Max Pak Side Mount



Mounts to truck frame and accommodates right angle gear box or hydraulic drive adapter. (Shown with moisture trap option.)

4310 Max Pak Top Mount



4310 Max Pak Top Mount package mounts behind the cab (headache mount), with hydraulic drive adapter. (Shown with moisture trap option. Hydraulic motor not included.)

Challenger Series

VACUUM PUMPS & BLOWERS

DISTRIBUTED BY:

For over 25 years NVE has been providing quality vacuum system components to the liquid waste markets. From design, to development to product support, NVE IS the industry leader.

In addition to our team of engineers and highly qualified support staff, NVE has a state-of-the-art machine shop, fabrication shop, and powder coat paint facility housed in two plants in Traverse City, Michigan. We also have a warehouse and sales support facility in Fayetteville Arkansas.

For questions and additional information please contact your dealer or NVE direct at 800.253.5500.

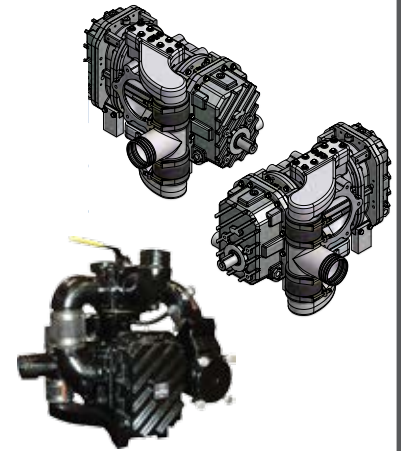
Thank you,

NVE

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4310 Blower w/Complete Manifold

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
NVE 4310 Blower w/Complete Manifold - CW	131-4310-LDM - CW	---
NVE 4310 Blower w/Complete Manifold - CCW	131-4310-LSM - CCW	---

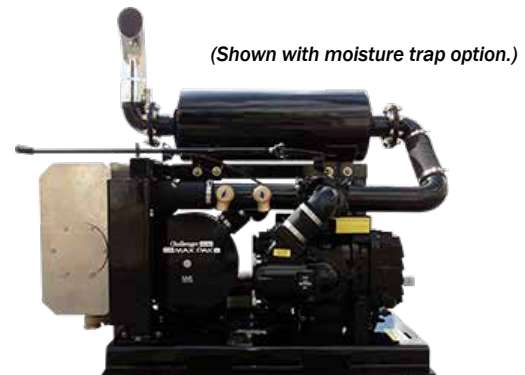


Package prices include blower.

All elbows, fittings and high temp hoses are factory connected. **Moisture trap is required.**

4310 MAX PAK PACKAGES

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4310 Max Pak Side Mount w/Blower	147-4310-011	---
4310 Max Pak Top Mount w/Blower	147-4310-012	---



4310 PRO PAK PACKAGES

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4310 Pro Pak Side Mount w/Blower	147-4310-001	---
4310 Pro Pak Top Mount w/Blower	147-4310-002	---



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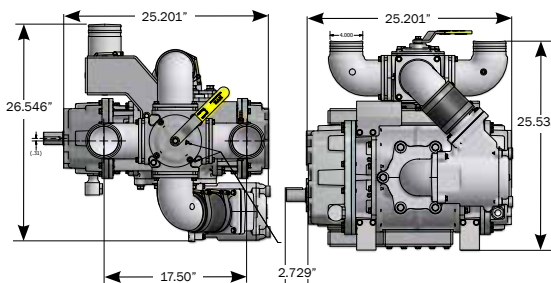
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4310 Blower Packages Order Form

Customer Name: _____ Contact Name: _____

PO Number: _____ Promised Ship Date: _____

Check	Part Number	Description
<input type="checkbox"/>	131-4310-LDM	4310 Blower w/Complete Manifold - CW
<input type="checkbox"/>	131-4310-LSM	4310 Blower w/Complete Manifold - CCW <ul style="list-style-type: none"> • Ballast Air Cooling Manifold • 4-way Change Over Valve • Intake Air Filter • Intake Air Check Valve • Manifold Bracket



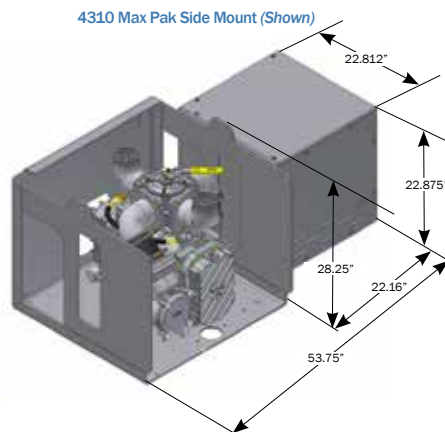
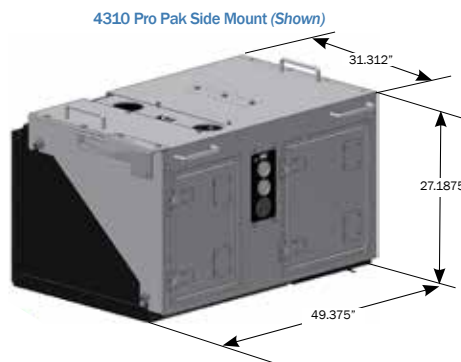
ORDER EASY AS 1, 2, 3!

- 1 Select Package
- 2 Choose your options:
 - Mounting Kits (2 options)
 - Exhaust Silencers (3 options)
 - Moisture Traps (2 options)
 - Grit Ridder
- 3 Place your order

4310 Blower Included. Moisture trap is required.

- | | | |
|--------------------------|--------------|--|
| <input type="checkbox"/> | 147-4310-001 | 4310 Pro Pak Side Mount <ul style="list-style-type: none"> • Durable Powder Coat Paint & Brushed Stainless Finish • Stainless Steel Cabinet • Mounts Directly to Truck Frame • Built in Ballast Air Silencer/Tuner • Ballast Air Check Valve • LED Lighting Package • Gauge Package |
| <input type="checkbox"/> | 147-4310-011 | 4310 Max Pak Side Mount <ul style="list-style-type: none"> • Durable Powder Coat Paint & Brushed Stainless Finish • Mounts Directly to Truck Frame • Built in Ballast Air Silencer/Tuner • Ballast Air Check Valve |

Top Mount Dimensions: 39.25" W x 46.77" L x 32" H



Photos and illustrations for references only.

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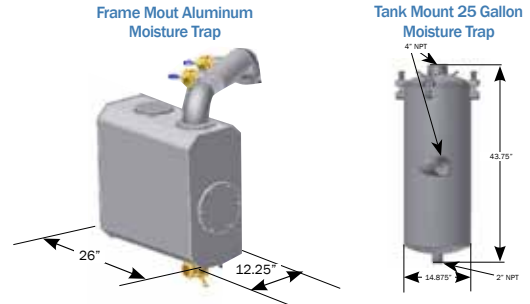
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4310 Blower Packages Options

Check Part Number Description

Moisture Trap Options

- 218-027** Frame Mount Aluminum Moisture Trap w/Connenction Kit
- 216-250-4NPT-C** Tank Mount 25 Gallon Steel Moisture Trap



Mounting Options

- 148-4310-015** Gearbox and Mounting Kit
 - 600 Series 1:2 Ratio Gearbox
 - Renxord Coupling Set
 - Gearbox Mounting Bracket
- 148-4310-016** Hydraulic Motor Mounting Kit

Motor NOT Included

 - SAE B 2 or 4 Bolt Hydraulic Motor Adaptor
 - Coupler Set - Hayes L190

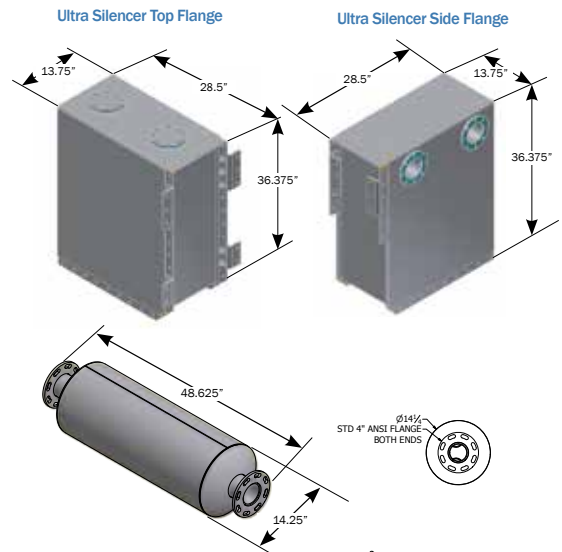
(Please specify coupler half for Hydraulic Motor)

 - 424-190-875 7/8" Keyed Shaft
 - 424-190-875-S 7/8" Spline Shaft
 - 424-190-100 1" Keyed Shaft



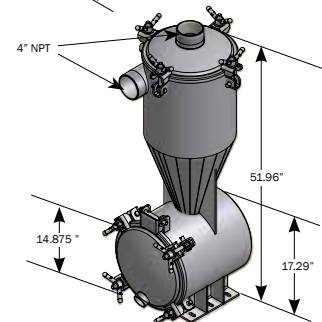
Exhaust Silencer Options

- 224-4310-01** Ultra Silencer Top Flange
- 224-4310-06** Ultra Silencer Side Flange
 - Quietest Silencer in the Business
 - Versatile Mounting Brackets
 - Mounts Top or Side of Frame
 - Durable Powder Coat Paint
 - TTMA Flanged For Easy Plumbing
- 224-4310-02** Round Silencer Flanged Ends
 - Mounts In Any Position
 - No Brackets Or Paint
 - TTMA Flange For Easy Plumbing



Additional Accessories

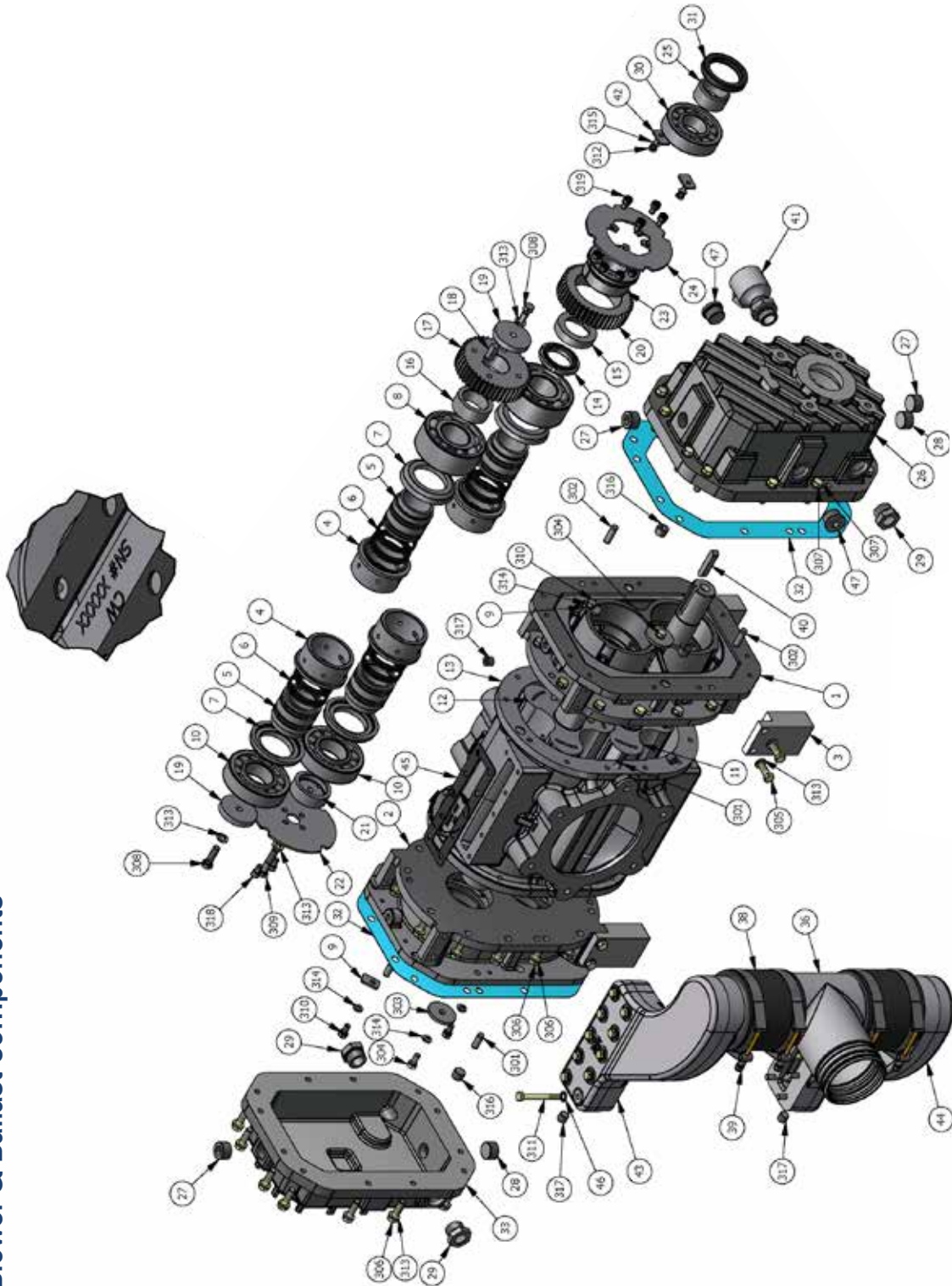
- 222-900-1** Grit Ridder - 4" NPT



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4310 Blower Complete | Parts Diagram
Blower & Ballast Components



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4310 Blower Complete | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	150-003-4310-1	ENDPLATE, DRIVE 4310 MACH	---
2	1	150-003-4310-2	ENDPLATE, NON-DRIVE 4310 MACH	---
3	4	150-652-001	MOUNTING FOOT, 4310	---
4	4	150-630-747	SEAL SLEEVE, OD 747/4310	1.07
5	4	150-629-4310	SEAL SLEEVE, ID 4310	---
6	16	150-618-747	SEAL RING, 2.5 OD CAST IRON	.02
7	4	150-631-747	SLINGER, SHAFT GUARD, 747	.63
8	2	150-621-747	BEARING, 5309 (45 X 100 X 39.7)	---
9	4	150-047-957	BEARING RETAINER, 957	---
10	2	150-622-747	BEARING, NU309 (45 X 100 X 25)	---
11	1	150-005-4310-D	ROTOR, DRIVE 4310	---
12	1	150-005-4310-I	ROTOR, IDLER 4310	---
13	1	150-001-4310	HOUSING, 4310 BLOWER, MACHINED	69.69
14	1	150-645-747	LOCK NUT DRIVE, ROTOR, 747	---
15	1	150-641-747	RETAINER, LOCKNUT, 747	---
16	1	150-633-747	SPACER, DRIVE END FOLLOWER 747	---
17	1	150-613-747	TIMING GEAR, IDLER, 747	---
18	1	150-006-001	KEY, 3/8" SQ X 2 1018 + .001/-0.000	---
19	2	150-638-747	RETAINER, IDLER ROTOR 747	---
20	1	150-612-747	TIMING GEAR, DRIVE, 747	---
21	1	150-636-747	RETAINER, NONDRIVE END, 747	.68
22	1	150-637-747	OIL SLINGER, NON-DRIVE END 747	.83
23	1	150-624-747	B-LOC, RETAINING RING, FLANGED	1.74
24	1	150-635-747	OIL SLINGER, DRIVE END 747	.70
25	1	150-009-747	SEAL SLEEVE, OUTER	---
26	1	150-627-4310	END COVER, DRIVE END 4310	---
27	3	120-047	DRAIN PLUG, 3/4" NPT	.10
28	2	120-047-1	DRAIN PLUG, 3/4" NPT MAGNETIC	---
29	4	150-048	SIGHT EYE, 1 1/16"-12 SAE	.10
30	1	150-623-747	BEARING, NU308 (40 X 90 X 23)	---
31	1	150-620-747	SEAL, 50 X 72 X 10 AS FMK	---
32	2	150-639-747	GASKET, END COVER	---
33	1	150-628-747	OIL COVER, NON-DRIVE 747/4310	---
36	1	802-650-003A	BALLAST T, CAST	---
38	2	426-400-TAR	HOSE, 4", TAR & ASPHALT-4 IN LG	---
39	4	426-4625-TBC	CLAMP T-BOLT, 4.625"	---
40	1	120-006	KEY, 3/8" X3/8" X 2" 1018UN	---
41	1	150-048-001	SIGHT EYE, 90 DEG-1 1/16-12 ASE	---
42	1	150-047-4310	BEARING RETAINER, 4310	---
43	1	150-650-004	BALLAST MANIFOLD, LH 4310 MACH	---
44	1	150-650-005	BALLAST MANIFOLD, RH 4310 MACH	---
45	2	150-616-4310	GASKET-BALLAST, 4310	---
46	20	150-099-008	WASHER, 5/16 SEALING BUNA	---

Photos and illustrations for references only.

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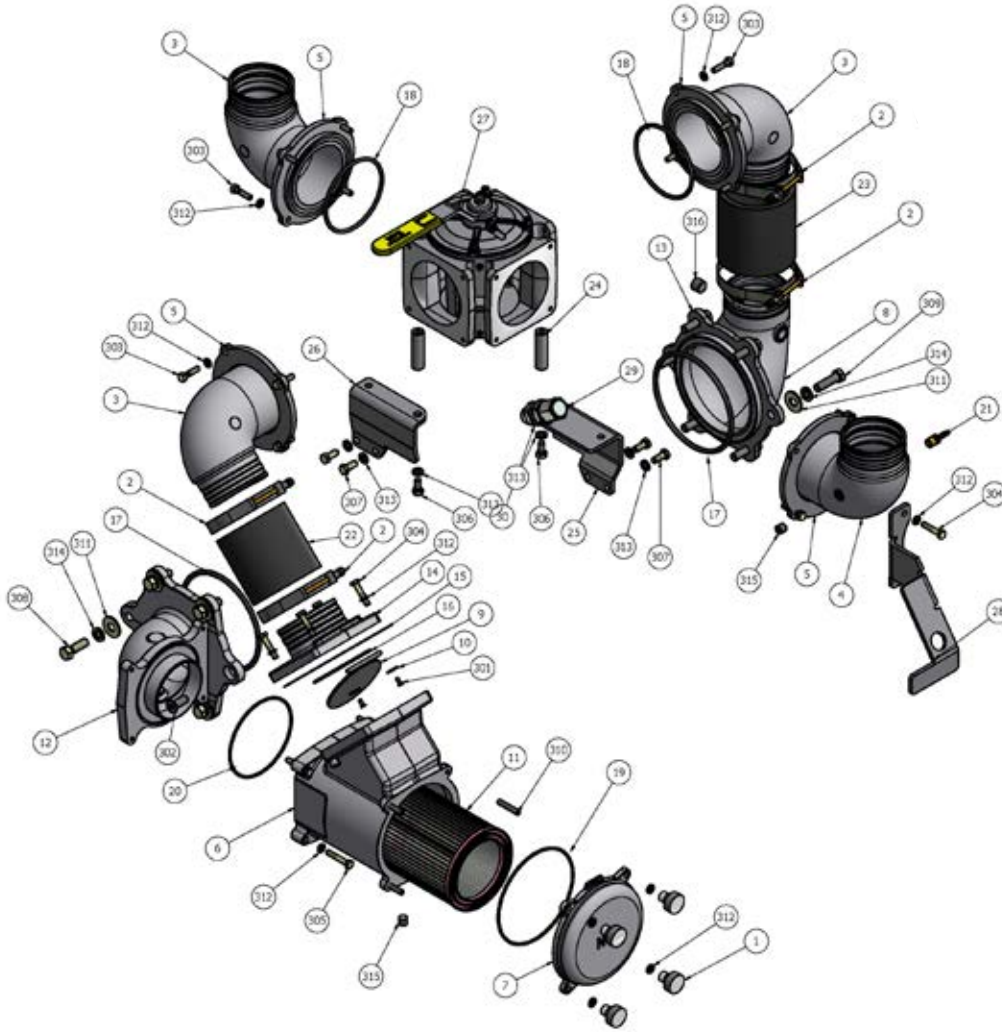
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4310 Blower Complete | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
301	4	DP - 3/8 X 1.00	DOWEL PIN - 3/8 X 1.00 LG	---
302	2	DP - 3/8 X 1.25	DOWEL PIN - 3/8 X 1.25 LG	---
305	8	HHCS - 3/8-16 UNC X 1.125	HHCS - 3/8-16 UNC X 1.125	---
304	2	HHCS - 5/16-18 UCN x 0.75	HEX HEAD CAP SCREW 5/16-18 UCN X 0.75	---
305	8	HHCS - 3/8-16 UNC X 1.125	HHCS - 3/8-16 UNC X 1.125	---
306	36	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
307	12	HHCS - 3/8-16 UNC X 1.50	HHCS - 3/8-16 UNC X 1.50	---
308	2	HHCS - 3/8-24 UNF X 1.25	HHCS - 3/8-24 UNF X 1.25	---
309	1	HHCS - 3/8-24 UNF X 1.75	HHCS - 3/8-24 UNF X 1.75	---
310	4	HHCS - 5/16-18 UNC X 0.625	HHCS - 5/16-18 UNC X 0.625	---
311	20	HHCS - 5/16-18 UNC X 3.75	HHCS - 5/16-18 UNC X 2.75	---
312	2	HHCS - 1/4-20 UNC X 0.75	HHCS - 1/4-20 UNC X 0.75	---
313	59	LW - 3/8	LOCK WASHER, 3/8"	---
314	6	LW - 5/16	LOCK WASHER, 5/16"	---
315	2	LW - 1/4	LOCK WASHER, 1/4"	---
316	4	PLUG - 3/8" NPT SH	SOCKET HEAD PLUG - 3/8 NPT	---
317	10	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT	---
318	2	SHCS - 5/16-18 UNC X 0.50	SHCS - 5/16-18 UNC X 0.50	---
319	4	SHCS - M8 X 12MM	SHCS - M8 X 12MM	---

NOTE: Item numbers 300 and above are listed for reference only.

4310 Blower 4-Way Intake Manifold | Parts Diagram



4310 Blower 4-Way Intake Manifold | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	4	120-312-002	KNOB, 5/16-18UNC	.06
2	4	426-4625-TBC	CLAMP, T-BOLT, 4.625"	.15
3	3	802-063-001	ELBOW, 4" 90 DEG ALUM	---
4	1	150-063-001	ELBOW, ADJ 4" W/ 1/4 NPT	---
5	4	150-063-005	FLANGE, 4" ADJ-ELBOW	1.37
6	1	150-309-001	HOUSING, FILTER MACHINED 4310	7.16
7	1	150-310-002	COVER, FILTER 4310	4.59
8	1	150-063-002	ELBOW, ADJ 6" TO 4" MACH	---

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4310 Blower 4-Way Intake Manifold | Parts List Continued

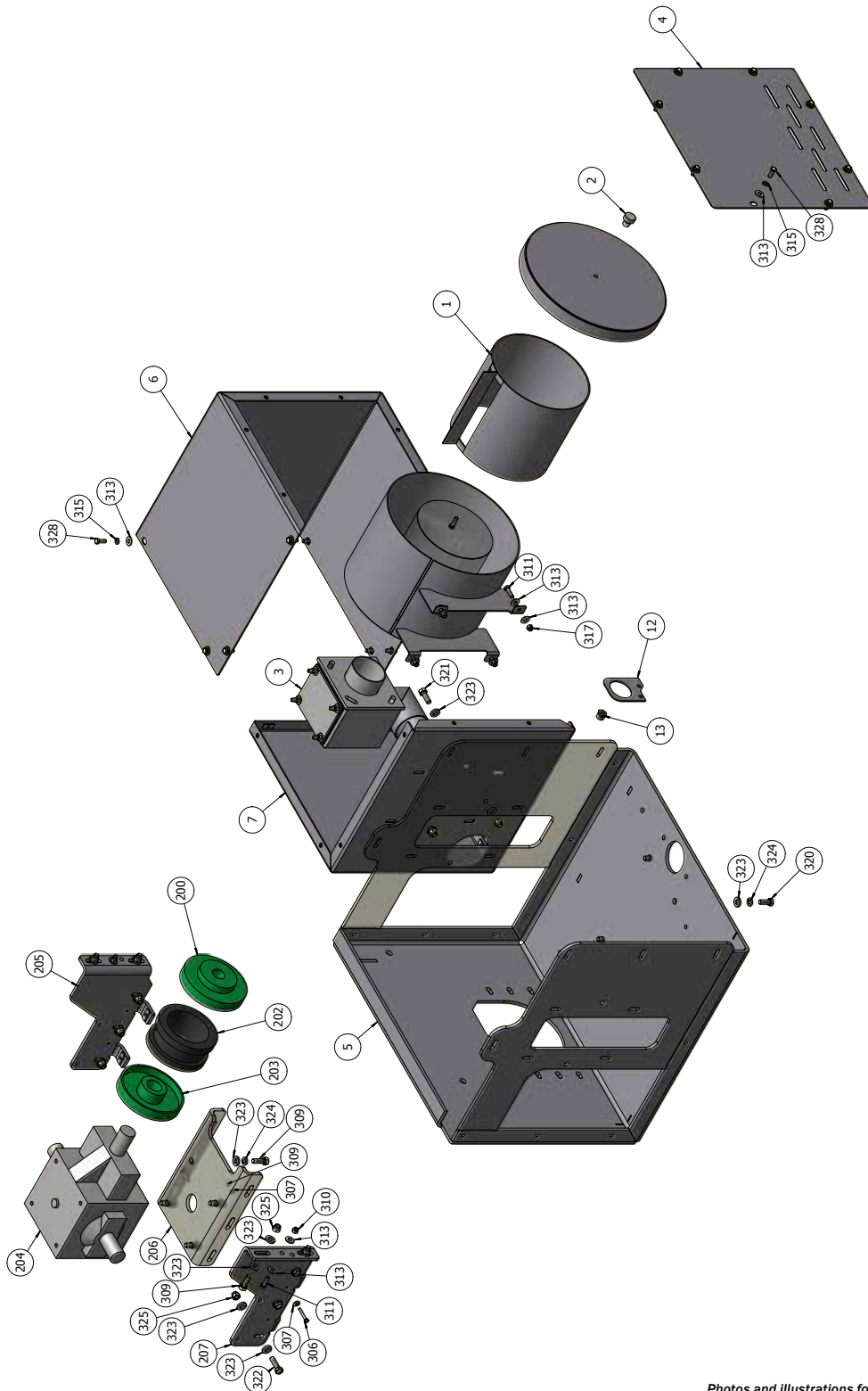
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
9	1	150-041-007	CHECK VALVE FLAPPER, 4" SS	.571
10	2	150-099-007	WASHER, #10 FLAT HD	.01
11	1	150-314-002	FILTER, STAINLESS 4310	---
12	1	150-063-003	ELBOW, INTAKE 4310	5.561
13	1	150-063-006	FLANGE, RETAINING 6" ADJ ELBOW	2.767
14	1	150-063-004	FLANGE, CHECK 4" 4310	---
15	1	150-616-001	GASKET, 4" SQ INTAKE CHECK	---
16	1	120-064-003	O-RING, 2-240 VITON	---
17	2	120-064-011	O-RING, 2-438 VITON	---
18	4	120-064-012	O-RING, 2-350 VITON	---
19	1	120-064-013	O-RING, 2-259 VITON	---
20	1	412-102-251	O-RING, 2-251, FPM	---
21	1	310-LP6	HOSE BARB, 1/4 TO 1/4NPT STRT	---
22	1	426-400-TAR-4 IN	HOSE, 4", TAR & ASPHALT-4 IN LG	---
23	1	426-400-TAR-5 IN	HOSE, 4", TAR & ASPHALT-5 IN LG	---
24	2	150-122-001	STANDOFF, 3/8 UNC X 2.6"L STL	.289
25	1	150-644-001	BRACKET, CW 4-WAY 4310 EXH	2.374
	1	150-644-003	BRACKET, CCW 4-WAY 4310 EXH	
26	1	150-644-002	BRACKET, CW 4-WAY 4310 INT	1.857
		150-644-004	BRACKET, CCW 4-WAY 4310 INT	
27	1	410-004-002-NF	VALVE, 4" 4-WAY, ASSEMBLY NO FLANGES	35.0
28	1	150-644-005	BRACKET, OIL FILL 4310 CW	---
		150-644-006	BRACKET, OIL FILL 4310 CCW	
29	1	440-001-051	FITTING, CAP 3/4" JIC	---
30	1	440-001-050	FITTING, BULKHEAD, 3/4" JIC W/LOCKNUT	---
31	1	320-602	FITTING, OIL GAGE TANK 747	
32	1	440-001-052	REMOTE FILL TUBE, 4310 MANIFOLD, 19" OAL, 1/2" JIC FEMALE ONE END, 3/4" JIC FEMALE OTHER END	
33	2	ANSI/ASME B18.2.1 - 5/16-18 UNC - 1.5	HEX BOLT - UNC (REGULAR THREAD - INCH)	---
301	2	FSCS - 10-24 UNC X 0.50	FLAT SOCKET CAP SCREW - 10-24 UNC X 0.50	---
302	1	FSCS - 1/2-13 UNC X 1.25	FLAT SOCKET CAP SCREW - 1/2-13 UNC X 1.25 ZINC	---
303	16	HHCS - 5/16-18 UNC X 1.25	HHCS - 5/16-18 UNC X 1.25	---
304	4	HHCS - 5/16-18 UNC - 1.50	HEX CAP SCREW	---
305	4	HHCS - 5/16-18 UNC X 1.75	HEX CAP SCREW	---
306	2	HHCS - 3/8-16 UNC x 0.75	HHCS - 3/8-16 UNC x 0.75	---
307	4	HHCS - 3/8-16 UNC X 0.875	HEX HD CAP SCREW - 3_8-16 UNC X 0.875	---
308	5	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
309	6	ANSI B18.2.1 - 1/2-13 UNC - 1.75	HEX CAP SCREW	---
310	4	SS - 5/16-18 UNC X 1.75	HEXAGON SOCKET SET SCREW - CUT POINT ZINC	---
311	11	FW 1/2 USS	FLAT WASHER 1/2" USS	---
312	30	LW - 5/16	LOCK WASHER, 5/16	---
313	6	LW - 3/8	LOCK WASHER, 3/8"	---
314	11	LW - 1/2	LOCK WASHER, 1/2	---
315	2	PLUG - 1/4 NPT SH	SOCKET HEAD PLUG - 1/4 NPT	---
316	1	PLUG - 1/2 NPT SH	SOCKET HEAD PLUG - 1/2 NPT	---

NOTE: Item numbers 300 and above are listed for reference only.

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4310 Max Pak Side Mount | Parts Diagram



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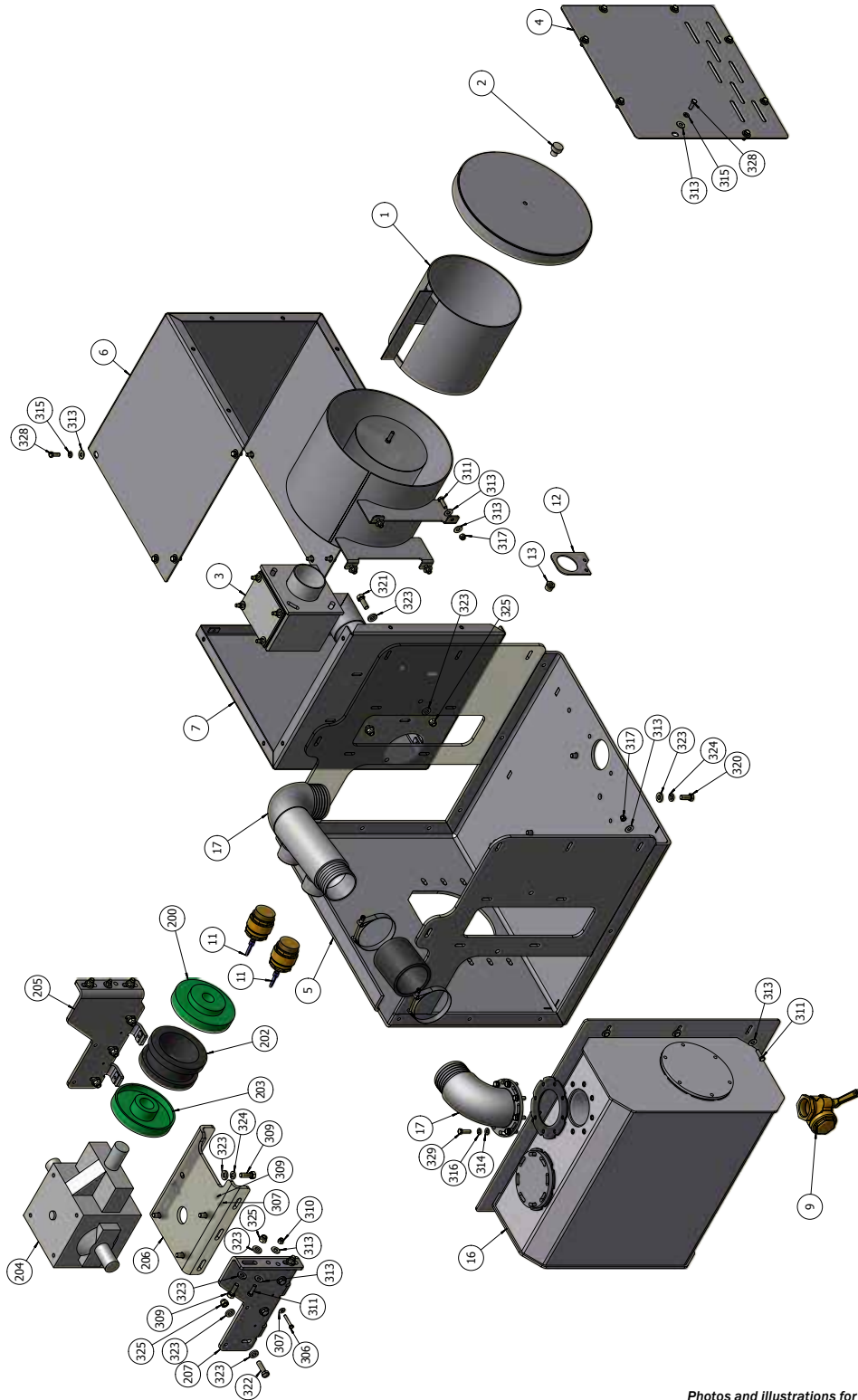
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4310 Max Pak Side Mount | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	224-4310-05	TUNABLE SILENCER, 4310, PWDRCT	---
2	1	120-312-002	KNOB, 5/16-18UNC	---
3	1	146-041-4310-3	BALLAST CHECK, 4310 PROPAK PLUS	---
4	1	147-4310-021-4	MAX PACK BALLAST BOX COVER	---
5	1	147-4310-021-5	STAND, WELDED AND GROUND, 4310 CAST MANI MAX PACK	---
6	1	147-4310-021-7	MAX PACK BALLAST BOX TOP AND BOTTOM, WELDED	---
7	1	147-4310-021-6	MAX PACK BALLAST BOX SIDE, WELDED	---
12	1	150-644-007	BRACKET, GAUGE-4310	---
13	1	120-049-001	BUSHING, 1/2 MNPT TO 1/4 FNPT BRASS	---
200	1	424-010-150	COUPLER FLANGE, 10S X 1 1/2"	---
202	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	---
203	1	424-010-175	COUPLER FLANGE, 10S X 1 7/8"	---
204	1	422-600-1	GEARBOX, 600 SERIES 2:1 RATIO	---
205	1	147-4310-001-13	BRACKET, GB SIDE SUPPOT, LH	---
206	1	147-4310-001-11	GEARBOX MOUNTING PLATE, 600 4310 PRO PAK	---
207	1	147-4310-001-12	BRACKET, GB SIDE SUPPOT, LH	---
306	2	HHCS 1/4-20 UNC X 1.75	HEX CAP SCREW	---
307	4	FW-1/4 USS	FLAT WASHER, 1/4" USS	---
309	2	NYLOCK NUT, 1/4 UNC	NYLOCK NUT, 1/4 UNC	---
310	2	NYLOCK NUT, 3/8 UNC	NYLOCK NUT, 3/8 UNC-GR	---
311	12	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
313	42	FW - 3/8	FLAT WASHER, 3/8"	---
314	8	FW - 3/8 SS	FLAT WASHER, 3/8" SS	---
315	18	LW - 3/8	LOCK WASHER, 3/8"	---
316	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
317	12	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
320	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	---
321	2	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
323	8	FW - 1/2	FLAT WASHER - 1/2	---
324	4	LW - 1/2	LOCK WASHER, 1/2	---
325	2	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
328	18	HHCS - 3/8-16 UNC X 1.00	HHCS - 3/8-16 UNC X 1.00	---

NOTE: Item numbers 300 and above are listed for reference only.

4310 Max Pak Side Mount with Optional Moisture Trap | Parts Diagram



Photos and illustrations for references only.

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4310 Max Pak Side Mount with Optional Moisture Trap | Parts List

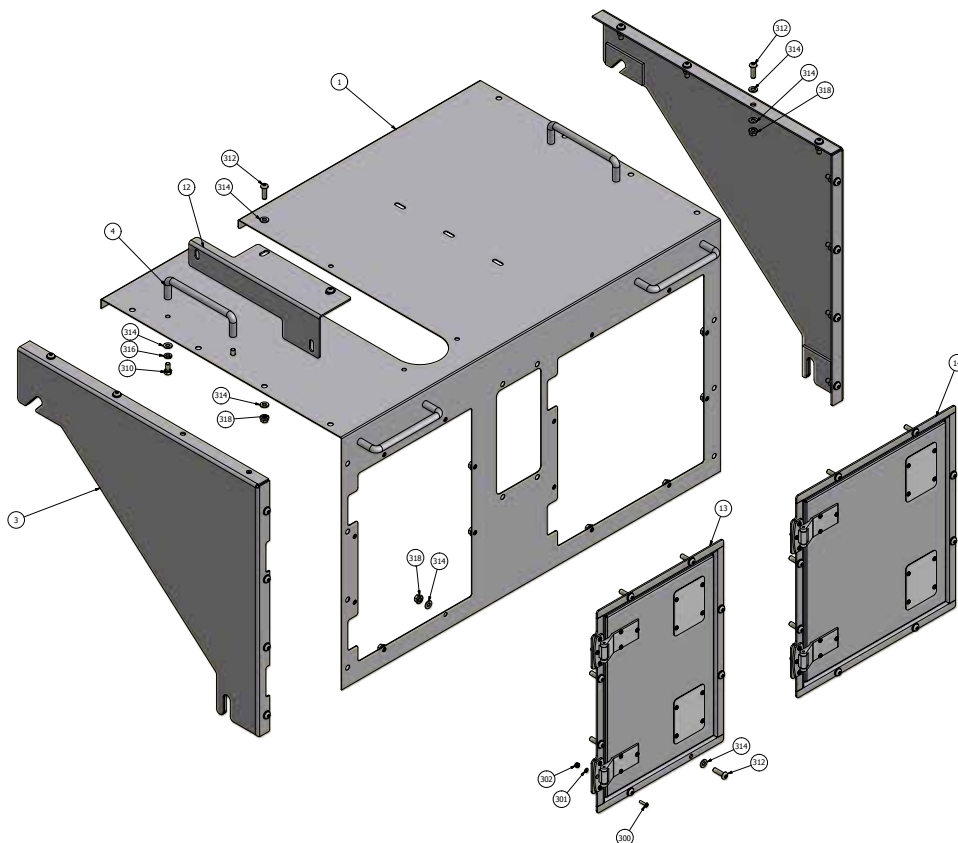
ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	224-4310-05	TUNABLE SILENCER, 4310, BALLAST	---
2	1	120-312-002	KNOB, 5/16-18UNC	.60
3	1	146-041-4310-3	BALLAST CHECK, PROPAK PLUS	---
4	1	147-4310-021-4	MAX PACK BALLAST BOX COVER	---
5	1	147-4310-021-5	STAND, WELDED AND GROUND, 4310 CAST MANI MAX PACK	---
6	1	147-4310-021-7	MAX PACK BALLAST BOX TOP AND BOTTOM, WELDED	---
7	1	147-4310-021-6	MAX PACK BALLAST BOX SIDE, WELDED	---
8	1	218-026	ALUM MT, 4310 FRAME MOUNT	---
9	1	362-301-2	LEVER VALVE, 2"	3.5
10	1	148-4310-017	MT CONNECTION KIT, 4310 PROPAK	---
11	2	364-306-2	PRESSURE RELIEF, 2"	2.4
12	1	150-644-007	BRACKET, GAUGE-4310	---
13	1	120-049-001	BUSHING, 1/2 MNPT TO 1/4 FNPT BRASS	---
16	1	218-026	ALUMINUM MT, 4310 FRAME MOUNT	---
17	1	148-4310-017	MT CONNECTION KIT, 4310 PROPAK	---
200	1	424-010-150	COUPLER FLANGE, 10S X 1 1/2"	---
202	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	---
203	1	424-010-175	COUPLER FLANGE, 10S X 1 7/8"	---
204	1	422-600-1	GEARBOX, 600 SERIES 2:1 RATIO	---
205	1	147-4310-001-13	BRACKET, GB SIDE SUPPORT, LH	---
206	1	147-4310-001-11	GEARBOX MOUNTING PLATE, 600 4310 PRO PAK	---
207	1	147-4310-001-12	BRACKET, GB SIDE SUPPORT, LH	---
311	12	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
313	42	FW - 3/8	FLAT WASHER, 3/8"	---
314	8	FW - 3/8 SS	FLAT WASHER, 3/8" SS	---
315	18	LW - 3/8	LOCK WASHER, 3/8"	---
316	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
317	12	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
320	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	---
321	2	HHCS - 1/2-13 X 1.50	HEX HEAD CAP SCREW - 1/2-13 UNC X 1.50" LG.	---
323	8	FW - 1/2	FLAT WASHER - 1/2"	---
324	4	LW - 1/2	LOCK WASHER, 1/2"	---
325	2	NYLOCK NUT - 1/2 UNC	NYLOCK NUT - 1/2 UNC	---
328	18	HHCS - 3/8-16 UNC X 1.00	HHCS - 3/8-16 UNC X 1.00	---
329	8	HHCS - 3/8-16 UNC X 1.25 SS	HHCS - 3/8-16 UNC X 1.25 SS	---

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4310 Pro Pak Side Mount Cover | Parts Diagram



4310 Pro Pak Side Mount Cover | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	147-4310-001-18	COVER, 4310 PRO PAK PLUS	---
2	1	147-4310-001-19	COVER, RIGHT SIDE, 4310 PRO PAK PLUS	---
3	1	147-4310-001-20	COVER, LEFT SIDE, 4310 PRO PAK PLUS	---
4	4	147-4310-001-23	LIFT HANDLE, 4310 PRO PAK PLUS	---
12	1	147-4310-001-35	MOISTURE TRAP MOUNTING BRACKET, 4310 PRO PAK PLUS	---
13	1	262-1913-001	DOOR PACK, 19" X 13",SS	---
14	1	262-1917-001	DOOR PACK, 19" X 17", SS	---
300	46	PHCS #10 - 24 - 3/4 SS	PHILLIP PAN HEAD SCREW - #10-24 X 3/4" LG SS	---
301	42	FW - NO. 10 SS	FLAT WASHER, #10, 18-8 STAINLESS	---
302	42	NYLOCK NUT - 10-24 UNC SS	LOCK NUT, NO. 10-24 UNC, 18-8 STAINLESS, NYLON INSERT	---
310	8	HHCS - 3/8-16 UNC x 0.75 SS	HHCS - 3/8-16 UNC X 0.75 SS	---
312	32	490-800-002	BOLT, HEX PIN, TAMPERPROOF, 3/8"-16 X 1 1/4"	---
314	96	FW - 3/8 SS	FLAT WASHER, 3/8" SS	---
316	8	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
318	41	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC SS	---

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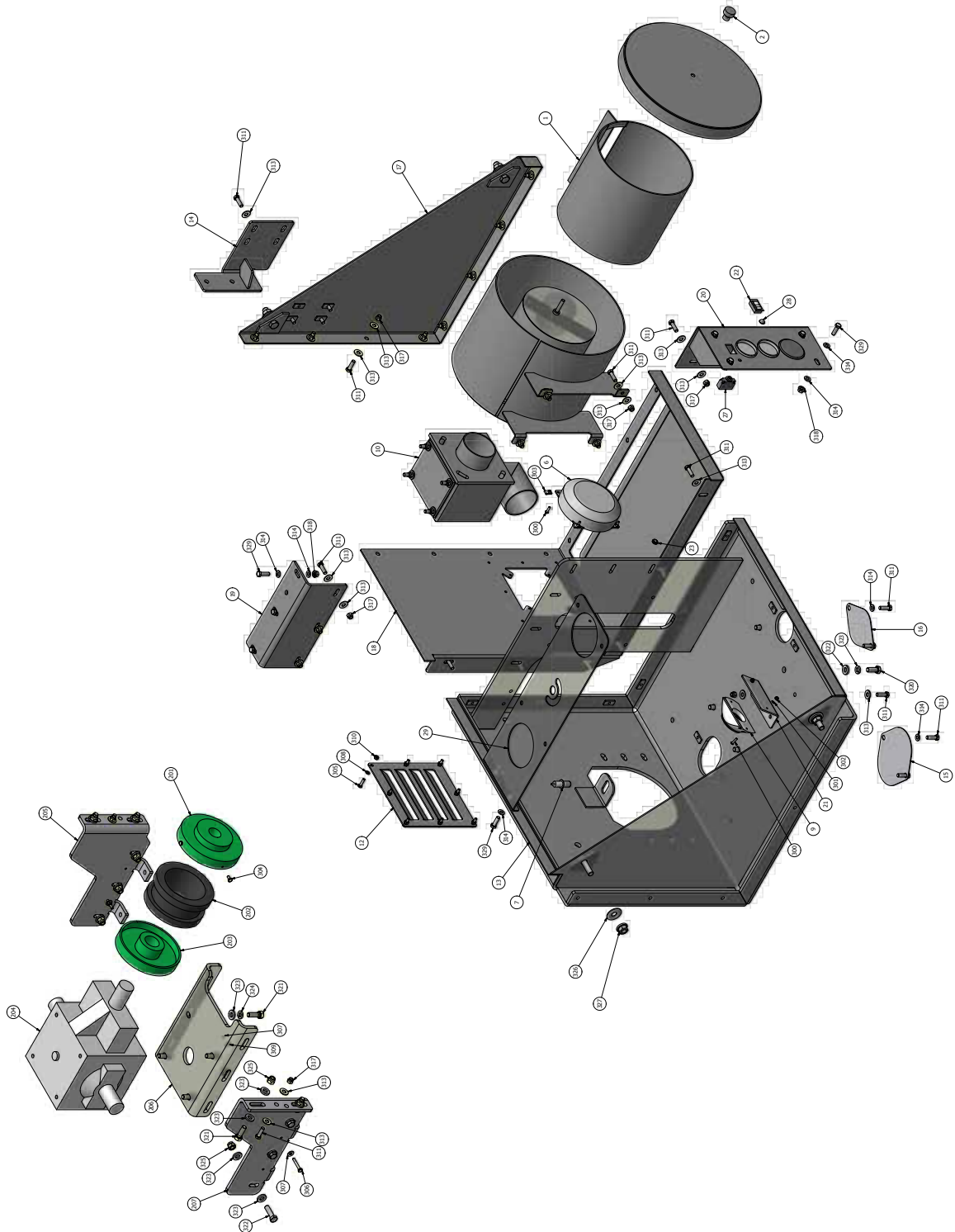
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Challenger Series

VACUUM PUMPS & BLOWERS

Blowers & Packages | 4310 Blower

4310 Pro Pak Side Mount Cabinet | Parts Diagram



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4310 Pro Pak Side Mount Cabinet | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	224-4310-05	TUNABLE SILENCER, 4310, PWDRCT	---
2	1	120-312-002	KNOB, 5/16-18UNC	.60
3	1	408-200-001	GAUGE, TEMP, REMOTE READ	---
4	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT	.55
5	1	408-200-005	GAUGE, TACHOMETER	.40
6	1	445-100-001	E-FAN, 4310 PRO PAK, PULL TYPE	---
7	1	408-200-006	SENSOR/PIGTAIL, TACHOMETER	.35
9	1	490-300-022	MOUNTING BRKT AND GROMMET, FOR 2" LAMP	---
10	1	146-041-4310-3	BALLAST CHECK, PROPAK PLUS	---
12	1	147-4310-001-16	FAN LOUVER PANEL, 4310 PRO PAK	---
13	1	147-4310-001-1	STAND, 4310 PRO PAK PLUS	---
14	1	147-4310-001-24	SIDE SUPPORT BRACKET, 4310 PRO PAK	---
15	1	147-4310-001-27	COVER, FRONT OIL HOLE, 4310 PRO PAK	---
16	1	147-4310-001-28	COVER, FRONT OIL HOLE, 4310 PRO PAK	---
17	1	147-4310-001-29	SIDE PANEL, STAND 4310 PRO PAK	---
18	1	147-4310-001-14	STAND, TUNEABLE SILENCER, 4310 PRO PAK	---
19	1	147-4310-001-31	GUSSET, 4310 STAND	---
20	1	147-4310-001-32	GUAGE BRACKET, 4310 PRO PAK	---
21	1	147-4310-001-36	LIGHT BRACKET, 4310 PRO PAK	---
22	1	490-300-025	SWITCH, SEALED LED, LIGHTED, SPST	---
23	1	490-300-024	GROMMET, RUBBER, 3/8" ID	---
24	1	490-300-017	CONN, TOWER HALF, 3 CONTACT, WEATHER PACK	---
25	1	490-300-016	CONN, SHROUD HALF, 3 CONTACT, WEATHER PACK	---
26	1	490-300-023	PIGTAIL, SEALED MARKER LAMP	---
27	1	490-300-026	BREAKER, THERMAL, PUSH BUTTON, 20A, MARINE GRADE	---
28	1	490-300-027	BOOT, CLEAR, PUSHBUTTON BREAKER	---
29	1	147-4310-001-9	COVER, 4-WAY VALVE ADJ	---
200	1	424-010-150	COUPLER FLANGE, 10S X 1 1/2"	---
202	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	---
203	1	424-010-175	COUPLER FLANGE, 10S X 1 7/8"	---
204	1	422-600-1	GEARBOX, 600 SERIES 2:1 RATIO	---
205	1	147-4310-001-13	BRACKET, GB SIDE SUPPORT, LH	---
206	1	147-4310-001-11	GEARBOX MOUNTING PLATE, 600 4310 PRO PAK	---
207	1	147-4310-001-12	BRACKET, GB SIDE SUPPORT, LH	---
300	46	PHCS #10 - 24 - 3/4 SS	PHILLIP PAN HEAD SCREW - #10-24 X 3/4" LG SS	---
301	42	FW - NO. 10 SS	FLAT WASHER, #10, 18-8 STAINLESS	---
302	42	NYLOCK NUT - 10-24 UNC SS	LOCK NUT, NO. 10-24 UNC, 18-8 STAINLESS, NYLON INSERT	---

NOTE: Item numbers 300 and above are listed for reference only.

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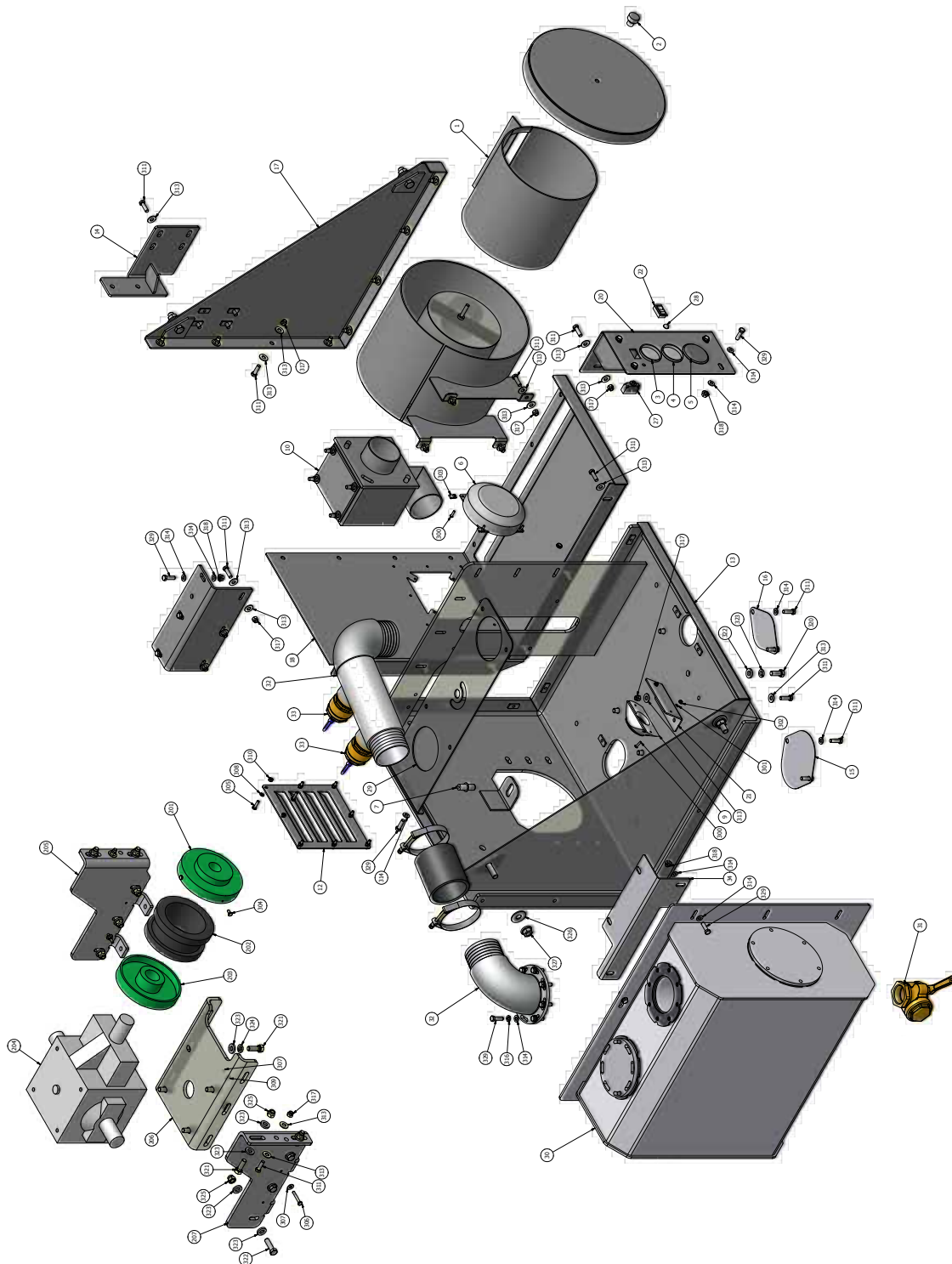
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4310 Pro Pak Side Mount Cabinet | List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
303	4	94850A120	#10-24 NUT CLIP-ON	---
304	4	HHCS - 1/4-20 UNC - 0.50	HHCS - 1/4-20 UNC - 0.50	---
305	8	ANSI B18.2.1 - 1/4-20 UNC - 1	HEX CAP SCREW	---
307	4	FW - 1/4 USS	FLAT WASHER - 1/4 USS	---
308	8	LW - 1/4	LOCK WASHER, 1/4	---
309	2	NYLOCK NUT - 1/4 UNC	NYLOCK NUT - 1/4 UNC	---
310	8	HEX NUT 1/4-20 UNC	HEX NUT 1/4-20 UNC	---
311	34	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
313	50	FW - 3/8	FLAT WASHER, 3/8"	---
314	115	FW - 3/8 SS	FLAT WASHER, 3/8" SS	---
316	16	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
317	20	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
318	46	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC SS	---
320	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	---
322	4	FW - 1/2	FLAT WASHER - 1/2	---
323	4	LW - 1/2	LOCK WASHER, 1/2	---
326	4	FW - 5/8	FLAT WASHER - 5/8	---
327	4	NYLOCK NUT - 5/8 UNC	NYLOCK NUT - 5/8 UNC	---
329	27	HHCS - 3/8-16 UNC X 1.25 SS	HHCS - 3/8-16 UNC X 1.25 SS	---

NOTE: Item numbers 300 and above are listed for reference only.

4310 Pro Pak Side Mount with Optional Moisture Trap | Parts Diagram



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4310 Pro Pak Side Mount with Optional Moisture Trap | Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
1	1	224-4310-05	TUNABLE SILENCER, 4310, PWDRCT	---
2	1	120-312-002	KNOB, 5/16-18UNC	.60
3	1	408-200-001	GAUGE, TEMP, REMOTE READ	---
4	1	408-200-009	GAUGE, VAC/PRESSURE, BACK CONNECT	.55
5	1	408-200-005	GAUGE, TACHOMETER	.40
6	1	445-100-001	E-FAN, 4310 PRO PAK, PULL TYPE	---
7	1	408-200-006	SENSOR/PIGTAIL, TACHOMETER	---
9	1	490-300-022	MOUNTING BRKT AND GROMMET, FOR 2" LAMP	---
10	1	146-041-4310-3	BALLAST CHECK, PROPAK PLUS	---
12	1	147-4310-001-16	FAN LOUVER PANEL, 4310 PRO PAK	---
13	1	147-4310-001-1	STAND, 4310 PRO PAK PLUS	---
14	1	147-4310-001-24	SIDE SUPPORT BRACKET, 4310 PRO PAK	---
15	1	147-4310-001-27	COVER, FRONT OIL HOLE, 4310 PRO PAK	---
16	1	147-4310-001-28	COVER, FRONT OIL HOLE, 4310 PRO PAK	---
17	1	147-4310-001-29	SIDE PANEL, STAND 4310 PRO PAK	---
18	1	147-4310-001-14	STAND, TUNEABLE SILENCER, 4310 PRO PAK	---
19	1	147-4310-001-31	GUSSET, 4310 STAND	---
20	1	147-4310-001-32	GUAGE BRACKET, 4310 PRO PAK	---
21	1	147-4310-001-36	LIGHT BRACKET, 4310 PRO PAK	---
22	1	490-300-025	SWITCH, SEALED LED, LIGHTED, SPST	---
23	1	490-300-024	GROMMET, RUBBER, 3/8" ID	---
24	1	490-300-017	CONN, TOWER HALF, 3 CONTACT, WEATHERPACK	---
25	1	490-300-016	CONN, SHROUD HALF, 3 CONTACT, WEATHERPACK	---
26	1	490-300-023	PIGTAIL, SEALED MARKER LAMP	---
27	1	490-300-026	BREAKER, THERMAL, PUSHBUTTON, 20A, MARINE GRADE	---
28	1	490-300-027	BOOT, CLEAR, PUSHBUTTON BREAKER	---
29	1	147-4310-001-9	COVER, 4-WAY, ADJ VALVE	---
30	1	218-026	ALUM MT, 4310 PRO PAK	---
31	1	362-301-2-1	LEVER VALVE, 2", BODY	---
32	1	148-4310-017	MT CONNECTION KIT, 4310 PROPAK	---
33	2	364-306-2	PRESSURE RELIEF, 2"	2.4
34	1	147-4310-001-35	MOUNTING BRACKET, MOISTURE TRAP	---
200	1	424-010-150	COUPLER FLANGE, 10S X 1 1/2"	---
202	1	424-010-JE	COUPLER SLEEVE, 10S EPDM	---
203	1	424-010-175	COUPLER FLANGE, 10S X 1 7/8"	---
204	1	422-600-1	GEARBOX, 600 SERIES 2:1 RATIO	---
205	1	147-4310-001-13	BRACKET, GB SIDE SUPPORT, LH	---
206	1	147-4310-001-11	GEARBOX MOUNTING PLATE, 600 4310 PRO PAK	---
207	1	147-4310-001-12	BRACKET, GB SIDE SUPPORT, LH	---
300	46	PHCS #10 - 24 - 3/4 SS	PHILLIP PAN HEAD SCREW - #10-24 X 3/4" LG SS	---
301	42	FW - NO. 10 SS	FLAT WASHER, #10, 18-8 STAINLESS	---
302	42	NYLOCK NUT - 10-24 UNC SS	LOCK NUT, NO. 10-24 UNC, 18-8 STAINLESS, NYLON INSERT	---
303	4	94850A120	#10-24 NUT CLIP-ON	---
305	8	ANSI B18.2.1 - 1/4-20 UNC - 1	HEX CAP SCREW	---

NOTE: Item numbers 300 and above are listed for reference only.

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4310 Pro Pak Frame Mount with Optional Moisture Trap | Parts List Continued

ITEM	QTY	PART NUMBER	DESCRIPTION	WEIGHT
308	8	LW - 1/4	LOCK WASHER, 1/4"	---
310	8	HEX NUT 1/4-20 UNC	HEX NUT 1/4-20 UNC	---
311	34	HHCS - 3/8-16 UNC X 1.25	HHCS - 3/8-16 UNC X 1.25	---
313	50	FW - 3/8	FLAT WASHER, 3/8"	---
314	115	FW - 3/8 SS	FLAT WASHER, 3/8" SS	---
316	16	LW - 3/8 SS	LOCK WASHER, 3/8" SS	---
317	20	NYLOK NUT - 3/8 UNC	NYLOK NUT - 3/8 UNC - GR 8 - ZINC	---
318	46	NYLOCK NUT - 3/8 UNC	NYLOCK NUT - 3/8 UNC SS	---
320	4	HHCS - 1/2-13 UNC X 1.25	HHCS - 1/2-13 UNC X 1.25	---
322	4	FW - 1/2	FLAT WASHER - 1/2	---
323	4	LW - 1/2	LOCK WASHER, 1/2	---
326	4	FW - 5/8	FLAT WASHER - 5/8"	---
327	4	NYLOCK NUT - 5/8 UNC	NYLOCK NUT - 5/8 UNC	---
329	27	HHCS - 3/8-16 UNC X 1.25 SS	HHCS - 3/8-16 UNC X 1.25 SS	---

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