

# NVE

National Vacuum Equipment, Inc.



## 43 SERIES HEAVY DUTY VACUUM BLOWERS PRODUCT CATALOG

**Challenger** Series  
VACUUM PUMPS & BLOWERS



MADE IN THE USA

Designed. Built. Supported in The USA.

800-253-5500 | [www.natvac.com](http://www.natvac.com)

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**CONDITION OF SALES**

To view NVE’s Condition of Sales, scan the QR Code to the right of this text with your phone’s camera or visit <https://natvac.com/ordering-information/>





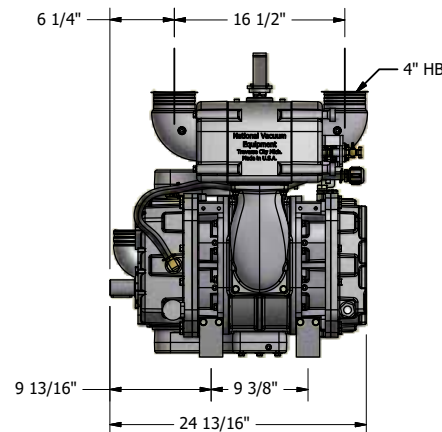
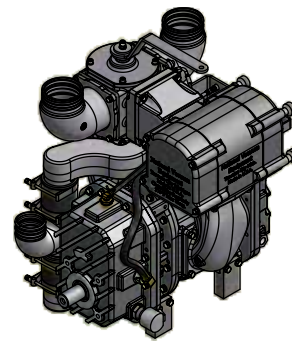
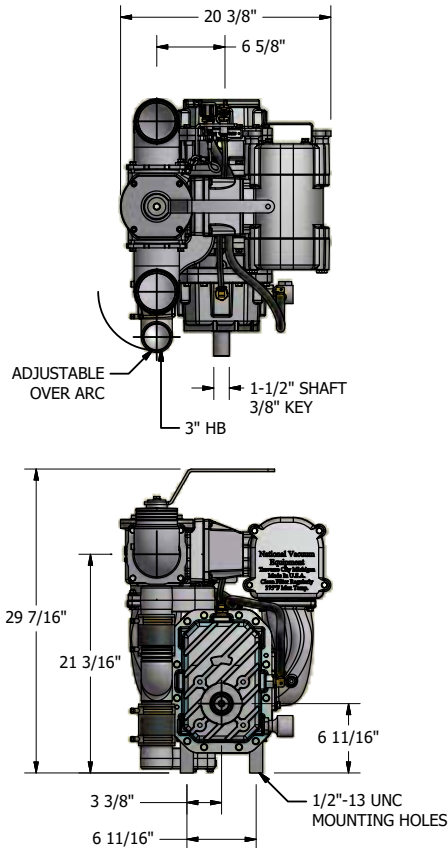
# 4307 High Vacuum Tri-Lobe Blowers

## 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
- 4" hose barbed adjustable porting for intake and exhaust
- Integral final filter with easy access cleaning
- 4-Way pressure/vacuum change over valve
- Designed, built, and supported in the USA

## 4307 CHALLENGER BLOWER | SPECIFICATIONS

Air Flow - Free Air	560 CFM
*Full Vacuum	
Maximum Intermittent Pressure	15 PSI
*Operating Speed - Recommended	4000 RPM
Hp Required @ 27" HG	36.4
Hp Required @ 10 PSI	28.4
Hp Required @ 15 PSI	40.6
Porting Size	4"
Shaft Size (3/8" key)	1 1/2"



## PRODUCT DESCRIPTION

Challenger 4307 Blower with Ballast - CW

## PART NUMBER

131-4307-LDB

## WEIGHT

308 lbs

Challenger 4307 Blower with Manifold and Ballast - CW (Pictured Above)

131-4307-LDM

421 lbs

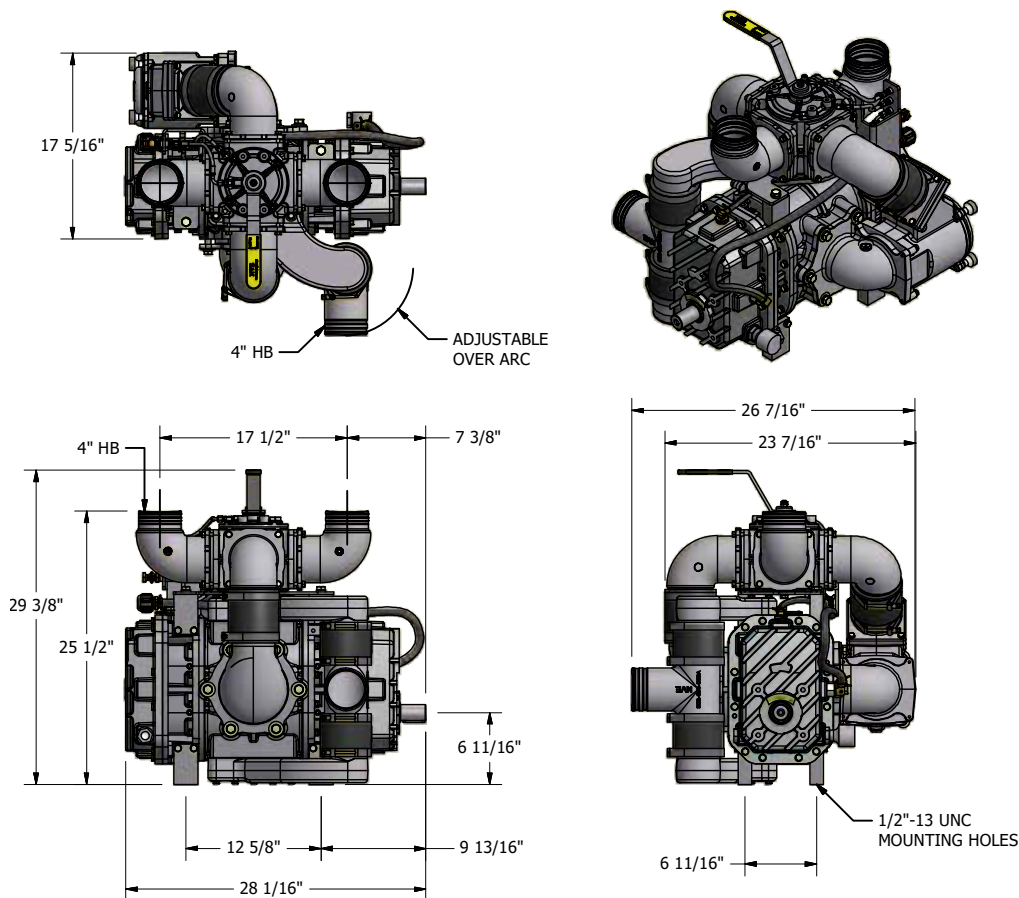
\*The maximum allowable operating vacuum will vary depending on R.P.M., ambient temperature, altitude and time running. The basic principle to keep in mind is - faster R.P.M., higher air temperature and longer run time all equal more heat in blower. When installing an NVE 4307 or 4310 blower we recommend a normal R.P.M. of 4000. Other speeds are ok as long as exhaust gas temperatures read on the supplied thermometer do not exceed 380 degrees F.

## 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
- 4" hose barbed adjustable porting for intake and exhaust
- Integral final filter with easy access cleaning
- 4-Way pressure/vacuum change over valve
- Designed, built, and supported in the USA

## 4310 CHALLENGER BLOWER | SPECIFICATIONS

Air Flow - Free Air	940 CFM at 4500 RPM	
*Full Vacuum		
Maximum Intermittent Pressure	15 PSI	
*Operating Speed - recommended	4000 RPM	4500 RPM
HP Required @ 27" Hg	51.4	58
HP Required @ 10 psi	39.7	44
HP Required @ 15 PSI	65.5	
Porting Size	4"	
Shaft Size (3/8" Key)	1 1/2"	
Approximate Weight	456 lbs	



## PRODUCT DESCRIPTION

PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Challenger 4310 Blower and Ballast (Bare Shaft) - CW	131-4310H-LDB	349 lbs
Challenger 4310 Blower and Ballast (Bare Shaft) - CCW	131-4310H-LSB	349 lbs
Challenger 4310 Blower with Manifold and Ballast - CW (Pictured Above)	131-4310H-LDM	456 lbs
Challenger 4310 Blower with Manifold and Ballast - CCW	131-4310H-LSM	456 lbs

\*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 blower. When installing an NVE 4307 or 4310 blower we recommend a normal R.P.M. of 4000. Other speeds are ok as long as exhaust gas temperatures read on the supplied thermometer do not exceed 380 degrees F. Maximum of 4500 R.P.M is for intermittent use only.

# 43 Series Packages

## Pro Pak - Frame Mount Gearbox Drive

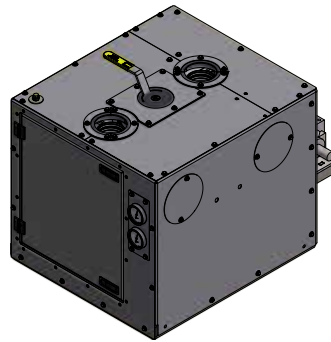
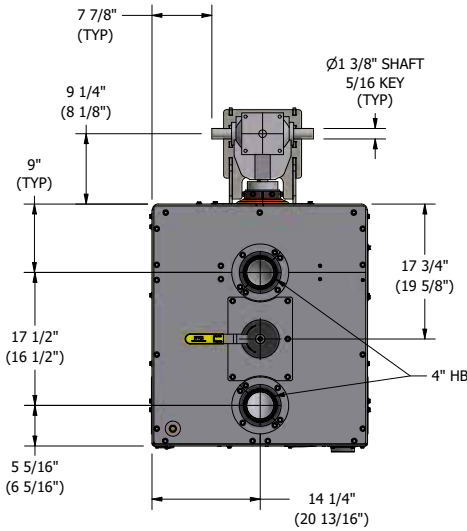


### Features

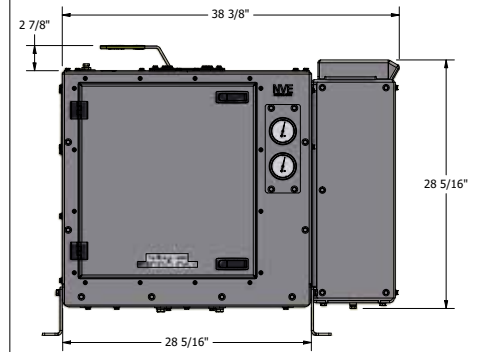
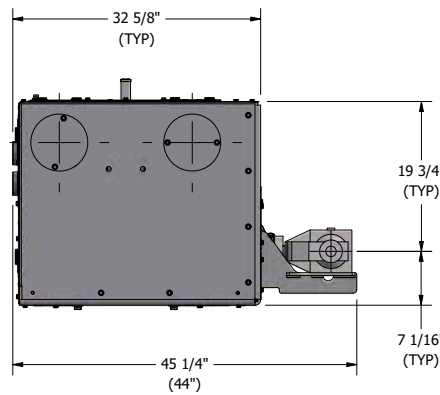
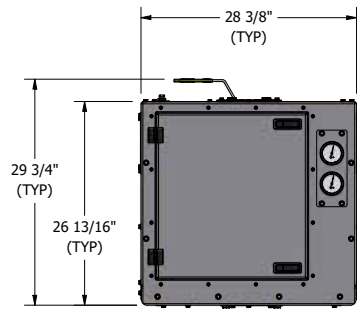
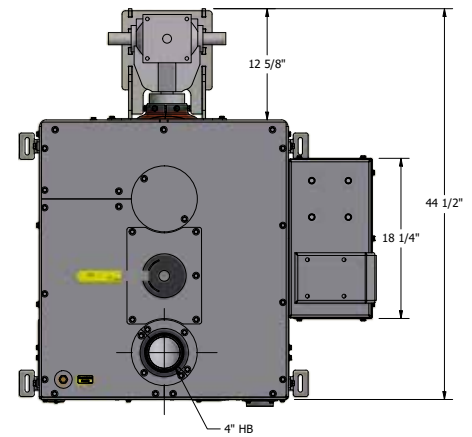
- Improved slim design
- 3/8" powder coat painted frame
- Stainless steel cabinet
- Easily accessible service points
- Blower flush kit
- Internal ballast silencing
- Ballast check valve for pressure operation
- 500 series right angle 1:2 ratio gearbox
  - 4310 - spiral beveled gear
- Designed, built, and supported in the USA

### DIMENSION KEY

**XX** 4310 DIMENSIONS  
**(XX)** 4307 DIMENSIONS  
**(TYP)** SAME DIMENSIONS



*Blower is available with  
Pneumatic Actuator  
Call sales representative for  
part number.*



### PRODUCT DESCRIPTION

### PART NUMBER

### WEIGHT

4307 Frame Mount Gearbox Drive Enclosed (Pictured Left)	147-4307-400-2	----
4307 Frame Mount Gearbox Drive Enclosed High Shaft	147-4307-400-2HS	----
4307 Frame Mount Gearbox Drive Enclosed Ultra Right	147-4307-405-2	----
4307 Frame Mount Gearbox Drive Enclosed Ultra Right High Shaft	147-4307-405-2HS	----
4310 Frame Mount Gearbox Drive Enclosed (Pictured Left)	147-4310H-400-2	950 lbs
4310 Frame Mount Gearbox Drive Enclosed High Shaft	147-4310H-400-2HS	----
4310 Frame Mount Gearbox Drive Enclosed Ultra Right (Pictured Right)	147-4310H-425-2	1090 lbs
4310 Frame Mount Gearbox Drive Enclosed Ultra Right	147-4310H-425-2	----
4310 Frame Mount Gearbox Drive Enclosed Ultra Left	147-4310H-430-2	1090 lbs
4310 Frame Mount Gearbox Drive Enclosed Ultra Left and Actuator	147-4310H-430-2	----

# 43 Series Packages

## Pro Pak - Frame Mount Hydraulic Drive

# Challenger Series

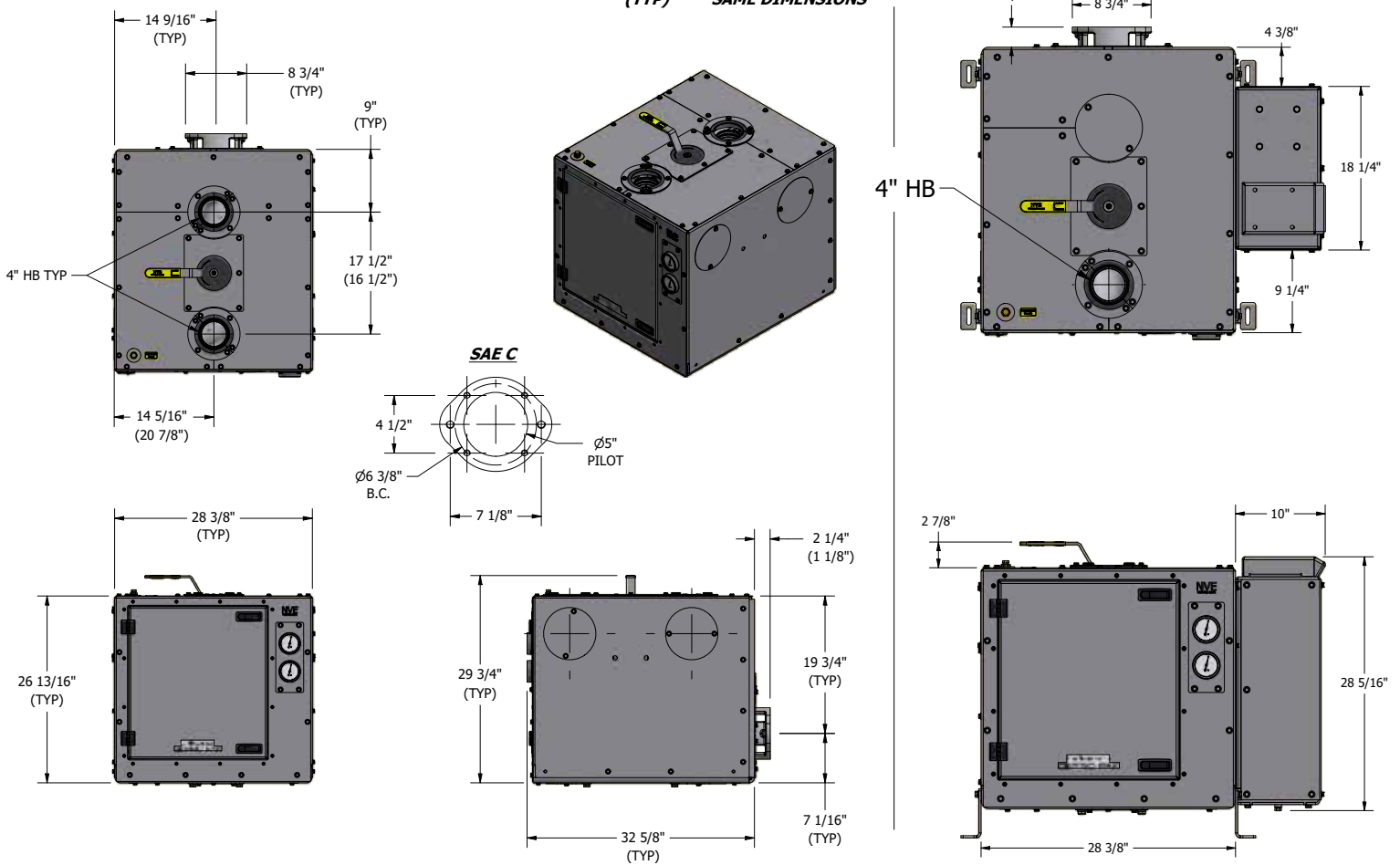
### Features

- Improved slim design
- 3/8" powder coat painted frame
- Stainless steel cabinet
- Easily accessible service points
- Blower flush kit
- Internal ballast silencing
- Ballast check valve for pressure operation
- SAE C face hydraulic adapter
- Designed, built, and supported in the USA

*Blower is available with  
Pneumatic Actuator.  
Call sales Representative  
for part number.*

### DIMENSION KEY

**XX** 4310 DIMENSIONS  
**(XX)** 4307 DIMENSIONS  
**(TYP)** SAME DIMENSIONS



### PRODUCT DESCRIPTION

4310 Frame Mount Hydraulic Drive Enclosed (Pictured Left)

### PART NUMBER

147-4310H-435-2

### WEIGHT

----

4310 Frame Mount Hydraulic Drive Enclosed

147-4310H-435-2

----

4310 Frame Mount Hydraulic Drive Enclosed Ultra Right (Pictured Right)

147-4310H-460-2

----

4310 Frame Mount Hydraulic Drive Enclosed Ultra Right

147-4310H-460-2

----

4310 Frame Mount Hydraulic Drive Enclosed Ultra Left

147-4310H-465-2

----

4310 Frame Mount Hydraulic Drive Enclosed Ultra Left

147-4310H-465-2

----

4307 Frame Mount Hydraulic Drive Enclosed

147-4307-435-2

----

4307 Frame Mount Hydraulic Drive Enclosed Ultra Right

147-4307-460-2

----

# 43 Series Packages

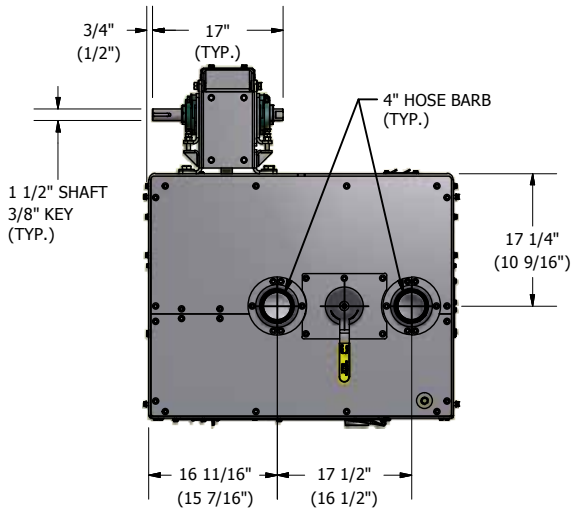
## Pro Pak - Frame Mount Belt Drive



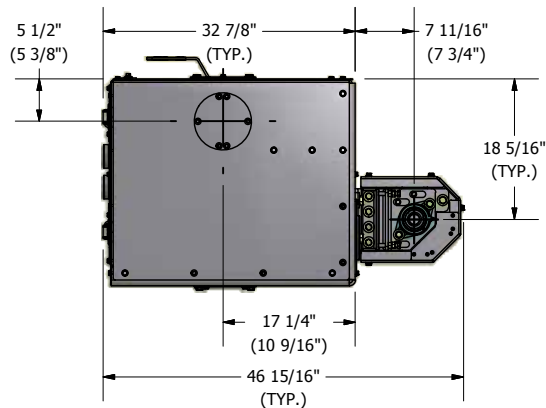
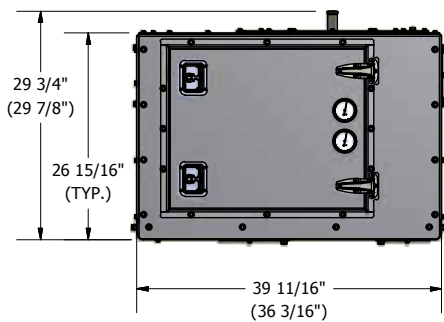
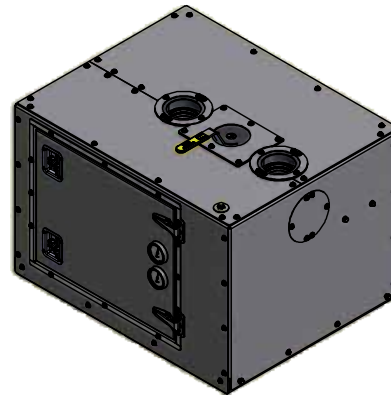
### Features

- 3/8" powder coat painted frame
- Stainless steel cabinet
- Easily accessible service points
- Blower flush kit
- Internal ballast silencing
- Ballast check valve for pressure operation
- Belt drive is 2.5:1 speed up ratio
- Designed, built, and supported in the USA

*Blower is available with  
Pneumatic Actuator.  
Call sales Representative  
for part number.*



KEY: 4310 DIMENSIONS  
(4307) DIMENSIONS  
TYP. - SAME FOR 4307 & 4310



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Frame Mount Belt Drive CCW Enclosed	147-4307-505	980 lbs
4310 Frame Mount Belt Dr CW Enclosed (Pictured Above)	147-4310H-500	1027 lbs
4310 Frame Mount Belt Dr CCW Enclosed	147-4310H-505	1027 lbs
4310 Frame Mount Belt Dr CW Enclosed and Actuator	147-4310H-500-A	- - -

# 43 Series Packages

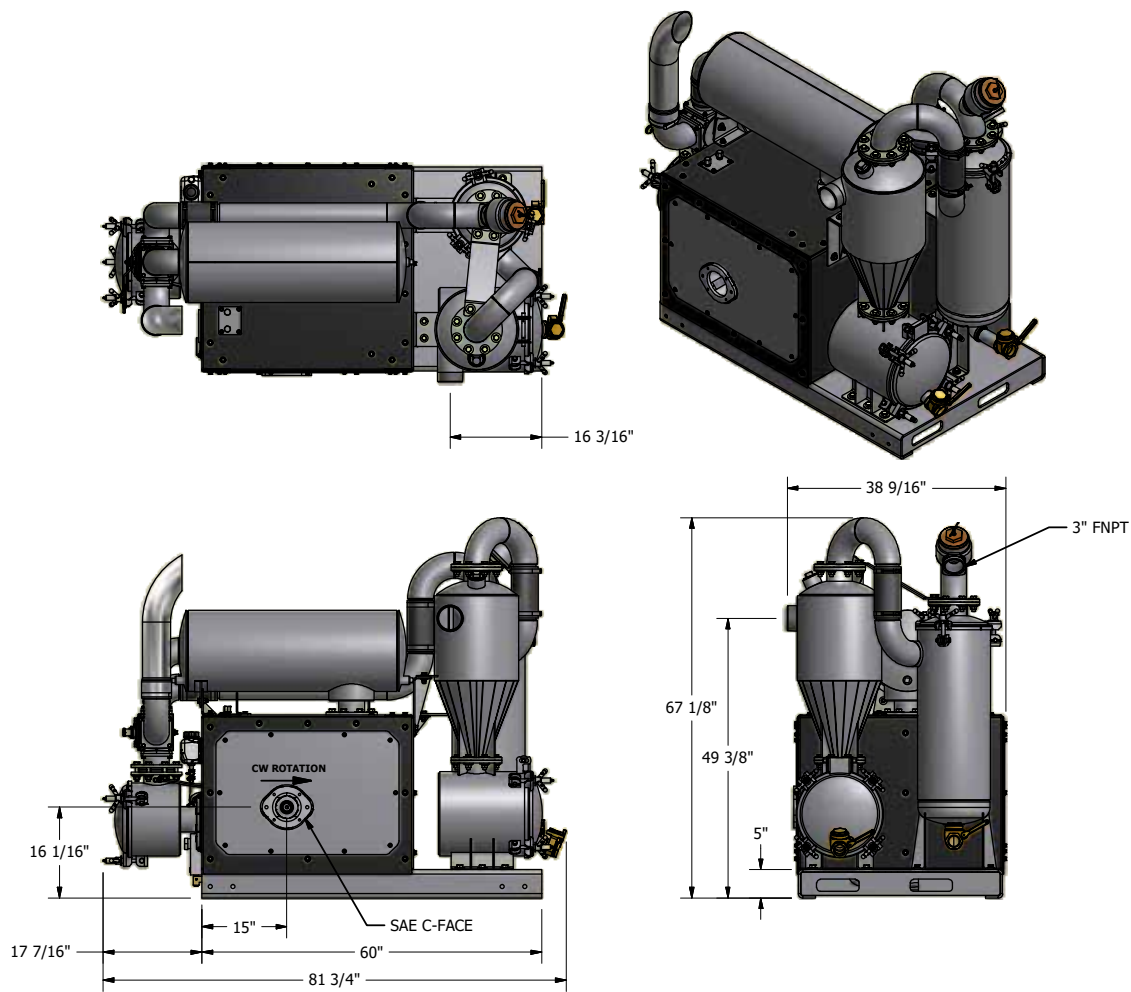
## Pro Pak - Top Mount Hydraulic or Belt Drive

# Challenger Series

### Features

- 3/8" powder coat painted frame
- Stainless steel cabinet
- Easily accessible service points
- Blower flush kit
- Internal ballast silencing
- Ballast check valve for pressure operation
- SAE C face hydraulic adapter
- Designed, built, and supported in the USA

*Blower is available with  
Pneumatic Actuator.  
Call sales Representative  
for part number.*



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4310 Top Mount Hydraulic Drive Enclosed	147-4310H-470	1539 lbs
4310 Top Mount Hydraulic Drive Mount Cyclone Enclosed (Pictured Above)	147-4310H-475	2483 lbs
4310 Top Mount Belt Drive Low Shaft Enclosed	147-4310H-485	2584 lbs
4310 Top Mount Belt Drive High Shaft Enclosed	147-4310H-486	2584 lbs



# 43 Series Packages

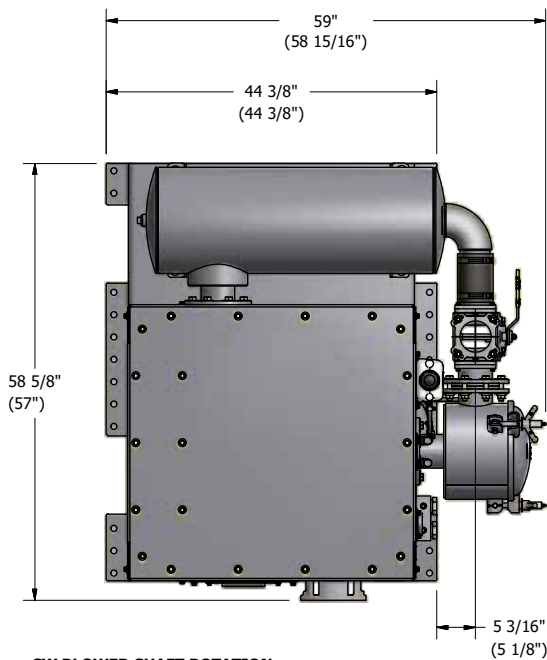
## Pro Pak - Belly Mount Trailer Package Hydraulic Drive



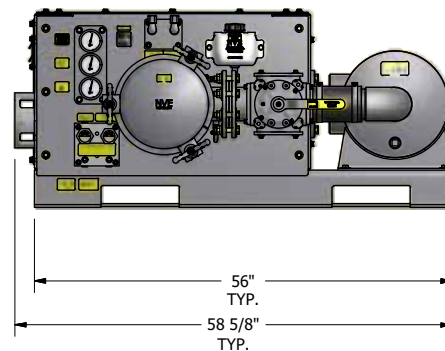
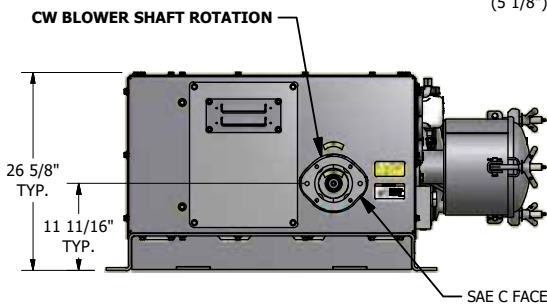
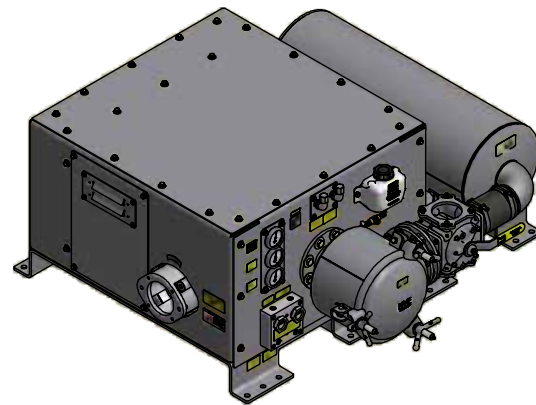
### Features

- 3/8" powder coat painted frame
- Stainless steel cabinet
- Easily accessible service points
- Blower flush kit
- Internal ballast silencing
- Ballast check valve for pressure operation
- Belt drive is 2.5:1 speed up ratio
- Designed, built, and supported in the USA

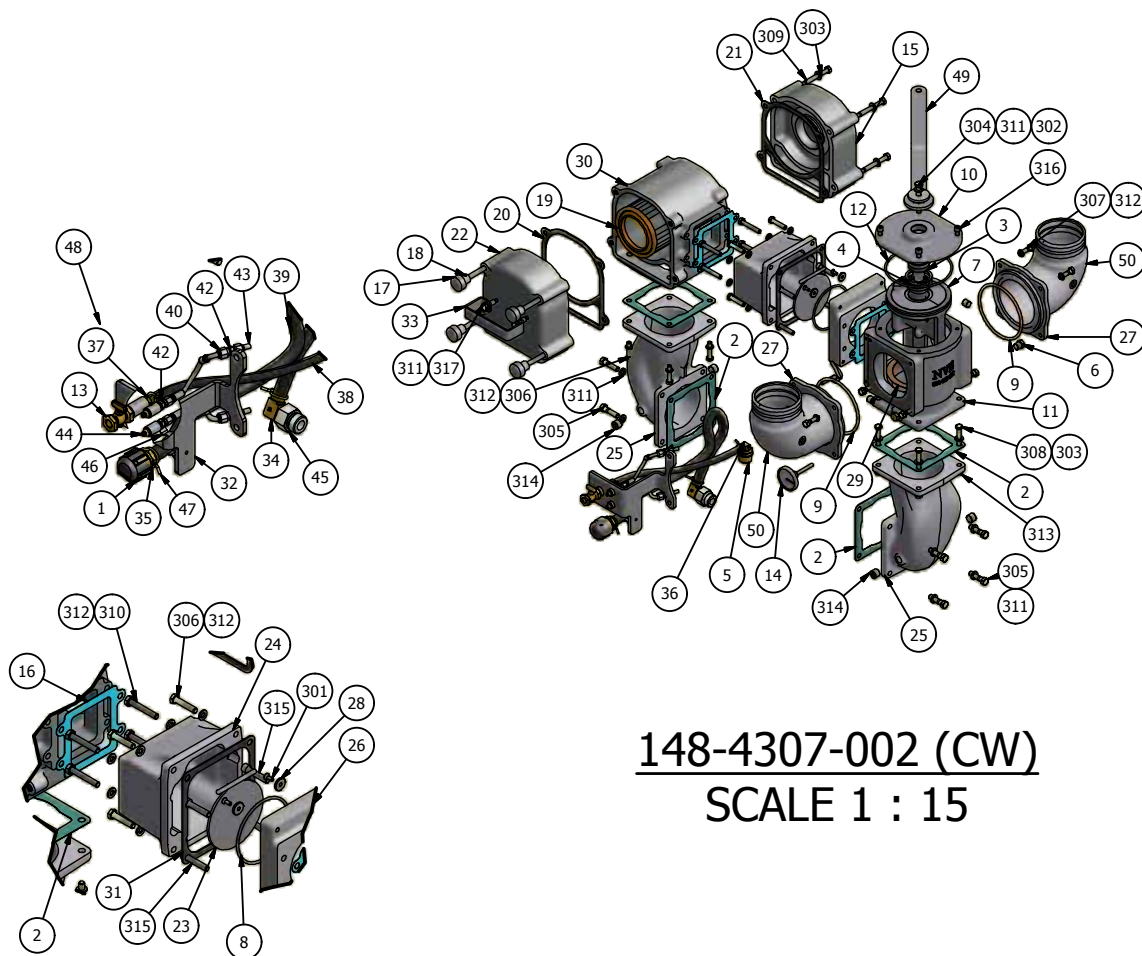
*Blower is available with  
Pneumatic Actuator.  
Call sales Representative  
for part number.*



KEY: 4310 DIMENSIONS  
(4307) DIMENSIONS  
TYP. - SAME FOR 4307 & 4310



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Belly Mount Hydraulic Drive Enclosed	147-4307-490	1378 lbs
4310 Belly Mount Hydraulic Drive Enclosed	147-4310H-490	1448 lbs

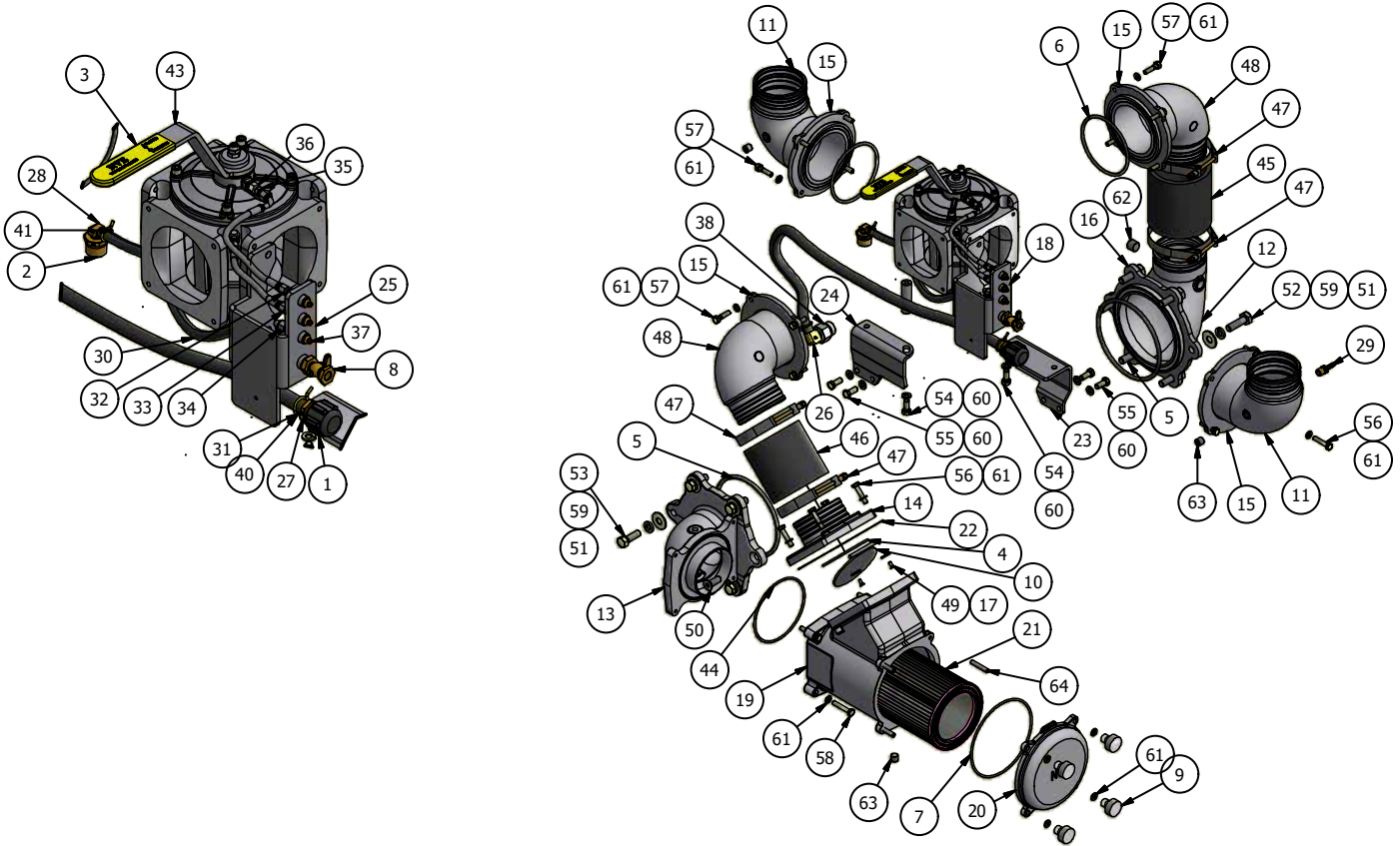


**148-4307-002 (CW)**  
**SCALE 1 : 15**

## 4307 Manifold | Parts List

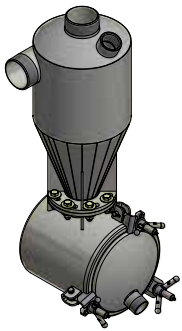
DESCRIPTION	ITEM	QTY	PART NUMBER
Gasket Exhaust Flange	2	4	120-039-506
O-Ring, 2-240 Viton	8	1	120-064-003
O-Ring, 2-350 Viton	9	2	120-064-012
O-Ring, 2-252 Viton	12	1	120-068
Thermometer, 50-400 Deg, 2" Face	14	1	120-220
Gasket, Filter Housing	16	2	120-311
Knob, 3/8"-16 UNC	17	4	120-312
Filter Element, Inlet	19	1	120-314
Gasket, Filter Cover	20	1	120-315
Check Valve Flapper, 4" SS	23		150-041-007
Gasket, 4" Sq Intake Check	31	1	150-616-002
Handle, 4307 Offset 4-Way Adj	49	1	412-060-005
Flange, 4" Adj-Elbow Narrow	27	1	150-063-014
Elbow, Adj 4" W/ 1/4 NPT	50	2	150-063-001

# 4310 Manifold | Parts Diagram

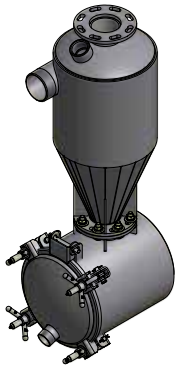


## 4310 Manifold | Parts List

DESCRIPTION	ITEM	QTY	PART NUMBER
O-Ring, 2-240 Viton	4	1	120-064-003
O-Ring, 2-438 Viton	5	2	120-064-011
O-Ring, 2-350 Viton	6	4	120-064-012
O-Ring, 2-259 Viton	7	1	120-064-013
Knob, 5/16-18 UNC	9	4	120-312-002
Check Valve Flapper, 4 In SS	10	1	150-041-007
Filter, Stainless 4310	21	1	150-314-002
Gasket, 4" Sq Intake Check	22	1	150-616-001
Handle 4310 Enclosed	43	1	412-060-009
O-Ring, 2-251, FPM	44	1	412-102-251
Elbow, Adj 4" W/ 1/4 NPT	11	2	150-063-001
Flange, 4" Adj-Elbow Narrow	15	1	150-063-014



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Grit Ridder 600 - for 4307 Blower	222-600-2	154 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Grit Ridder 900 - for 4310 Blower	222-900-1	240 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Round Silencer	224-4310-03	194 lbs

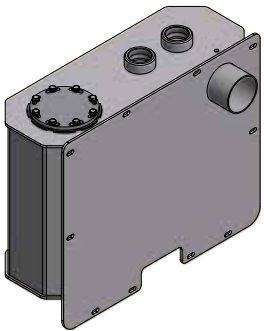


PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Ultra Silencer	224-360-002	243 lbs

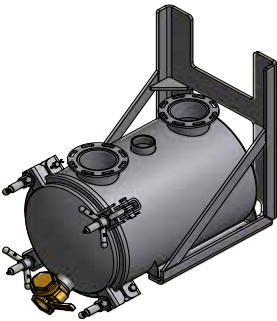


PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Ultra Frame Mount	224-360-016	----
Ultra Package Mount	224-360-017	----

# 43 Series Components & Accessories



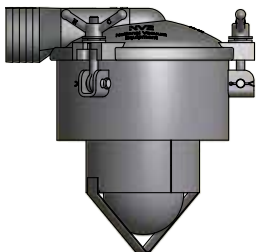
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Aluminum Moisture Trap - (for 4307 only)	218-001-003	83 lbs
Gauge 2.5" Vac/Pres Liquid Bot Conn 1/4" NPT	408-250-LF	0.45 lbs
Pressure Relief 2"	364-306-2	2.7 lbs
Drain Valve Brass 1" IPS	288-100	0.85 lbs



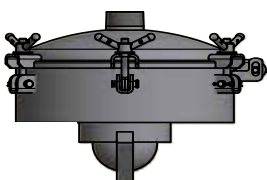
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Horizontal Moisture Trap	218-140-001	97 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
14 Gal Moisture Trap Alu 4" NPT	216-140-4NPT-A	70 lbs
14 Gal Moisture Trap Carbon 4" NPT	216-140-4NPT-C	131 lbs
14 Gal Moisture Trap SS 4" NPT	216-140-4NPT-S	131 lbs
25 Gal Moisture Trap Alu 4" NPT	216-250-4NPT-A	93 lbs
25 Gal Moisture Trap Carbon 4" NPT	216-250-4NPT-C	171 lbs
25 Gal Moisture Trap SS 4" NPT	216-250-4NPT-S	171 lbs



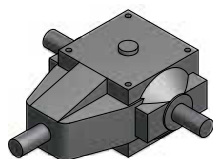
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
PSO 12" X 6" Carbon Base Alu Lid 4" HB 10" Cage	200-1206-4HB-10	50 lbs
PSO 12" X 6" Alu Base Alu Lid 4" HB 10" Cage	204-1206-4HB-10	42 lbs
PSO 12" X 6" Alu Base SS Lid 4" NPT 10" Cage	204-1206-4NPT-10	55 lbs
PSO 12" X 6" SS Base Alu Lid 4" HB 10" Cage	208-1206-4HB-10	55 lbs



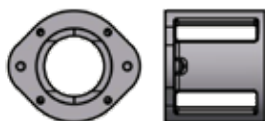
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
PSO 20" X 6" Carbon Base And Lid 4" NPT 10" Cage	202-2006-4NPT-10	95 lbs



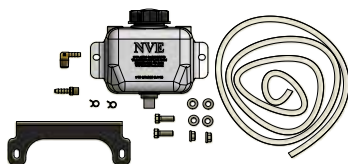
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Coupler Hub E20 1 3/8"	424-200-1375	7.25 lbs
Coupler Hub E20 1 1/2"	424-200-150	7.25 lbs
Coupler Flex Element E20	424-200-E20	4.15 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Gearbox 500 Series 1:2 ratio with 1 3/8" shaft	422-500-1	27.75 lbs
4310 Gearbox 500 Series 1:2 ratio spiral bevel gears with 1 3/8" shaft *Please verify series before ordering	422-500-2	28.3 lbs
Gearbox 600 Series 1:2 Ratio Spiral Bevel *Please verify series before ordering	422-600-3	61.3 lbs
4307/4310 Welded Gearbox Bracket	280-401-005	31 lbs



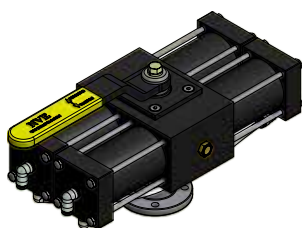
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Hydraulic Adapter - Aluminum SAE C-Face	150-466-002	17 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Blower Package Flush Kit (Remote)	320-081-013	2 lbs
Diesel Tank Assy HDPE 1QT	320-082-003Z	2 lbs
Oil Tank Cap Black W/Tether	320-083-002	0.10 lbs
Oil Line Blk 1/4" ID 30R7 Per Ft.	320-407-003	0.4 lbs



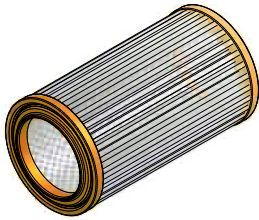
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Flange 4" Adjustable Elbow	150-063-014	1.50 lbs
O-ring Viton for Elbow	120-064-012	.01 lbs
Elbow 4" 90 Degree Alum. Hose Barb x O-Ring	803-063-001	2.00 lbs
Elbow 4" 90 Degree Alum. Hose Barb x Hose Barb	803-063-012	.69 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
3 Position Pneumatic Actuator for 4307 Blower	409-200-200	25 lbs
3 Position Pneumatic Actuator for 4310 Blower	409-200-100	25 lbs



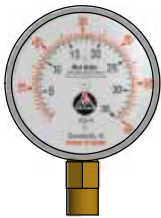
# 43 Series Components & Accessories



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Inlet Filter	120-314	0.90 lbs
Gasket Cover Fltr 4-Way On 4307	120-315	0.04 lbs
4310 Inlet Filter	150-314-002	1.10 lbs
4307/4310 filter for remote 12" Final Filter	150-314-008	7 lbs



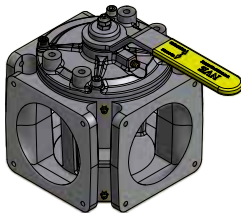
PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
4307 Knob - Filter Cover 3/8-16 UN	120-312	0.10 lbs
4310 Knob - Filter Cover 5/16-18 UN	120-312-002	0.10 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Thermometer Remote 200-400F 6' Copper Lead 3/8" UNC	408-200-006	1.25 lbs
Gauge 2.5" Vac/Pres Liq Back Connection 1/4 NPT	408-200-007	0.45 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Handle 4307 Enclosed	412-060-010	2 lbs
Handle 4310 Enclosed	412-060-009	2 lbs
Yellow Grip 1/4" Handle W/ Logo	120-060-002	0.05 lbs



PRODUCT DESCRIPTION	PART NUMBER	WEIGHT
Valve 4" 4-Way Assy No Flanges	410-004-002-NF	35.3 lbs

# DESIGNED. BUILT. SUPPORTED.

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