



National Vacuum Equipment | Quick Reference Guide




ROTARY VANE PUMPS

	304 	607 PRO 	887 PRO 
Maximum Airflow - CFM	210 CFM	380 Cfm	532 Cfm
*Full vacuum	18" Hg	29" HG	28" Hg
Maximum pressure	20 psi	30 PSI	30 psi
*Operating Range - RPM	1200 - 1400	1100 - 1250	1100 - 1200
Hp required @ Full Vacuum	10.16	25	33
Hp required	12.24 @ 10 PSI	28 @ 20 PSI	42 @ 20 PSI
Porting size	2"	3"	4"
Shaft size	1 1/4" (1/4" key)	1 1/2" (3/8" key)	1 3/4" (3/8" key)
Pump dimension	L 21 5/16" W 9 3/8" H 15 7/8"	L 29 5/8" W 14 9/16" H 32 11/16"	L 30 7/16" W 21 7/8" H 27 3/8"
Approximate weight	179 lbs.	390 lbs.	620 lbs.

TRI - LOBE BLOWERS

	B250 	B500 
Maximum Airflow - CFM	285 CFM	431 CFM
*Operating Range - RPM	1800 - 2600	2400
Maximum Horsepower	20	30
*Full Vacuum	15" HG	24" HG
Maximum Pressure	15 PSI	15 PSI
Porting Size	2"	3"
Shaft Size	1 3/8" (5/16" Key)	1 3/8" (5/16" Key)
Pump Dimensions	L19 3/18" W 13 1/16" H 20 15/16"	L 24" W 19 15/16" H 24 3/16"
Approximate weight	241 LBS.	370 LBS.

TRI - LOBE BLOWERS

	4307 	4310 	4310 PRO 
Maximum Airflow - CFM	560 CFM	940 CFM @ 4500 RPM	940 CFM @ 4500 RPM
*Operating Range - RPM	2500-4000	4000 4500	4000 4500
Hp Required @ 27" Hg	36.4	51.4 58	51.4 58
Hp Required @ 10 psi	28.4	39.7 44	39.7 44
Maximum Pressure	15 PSI	15 PSI	15 PSI
Full Vacuum	26 - 27" HG	26 - 27" HG	26 - 27" HG
Porting Size	4"	4"	4"
Shaft Size	1 1/2" (3/8" key)	1 1/2" (3/8" key)	1 1/2" (3/8" key)
Pump Dimensions	L 24 15/16" W 20 1/4" H 29 1/2"	L 27 11/16" W 23 7/16" H 26 15/16"	L 27 11/16" W 23 7/16" H 26 15/16"
Approximate weight	421 LBS.	456 LBS.	456 LBS.





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Challenger Series
VACUUM PUMPS & BLOWERS
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TRI - LOBE BLOWERS




	1600 	6819 
Maximum Airflow - CFM	1600 CFM	3000 CFM
*Operating Range - RPM	3600	2850
Hp Required @ 27" Hg	95.4	173
Hp Required @ 10 psi	72.9	-
Maximum Pressure	10 PSI	-
Full Vacuum	26 - 27" HG	26 - 27" HG
Porting Size	6"	8"
Shaft Size	1 7/8" (1/2" key)	2 1/2" (5/8" key)
Pump Dimensions	L 32 13/16" W 19 3/16" H 17"	L 41 3/4" W 16 1/8" H 19 3/4"
Approximate weight	604 LBS.	1300 LBS.

LIQUID RING PUMPS

	WR800 	WR1600 	WR2500 	WR3100 	WR4000 
Maximum Airflow	470 CFM	941 CFM	1470 CFM	1825 CFM	2391 CFM
Operating Range	1000-1600	1000-1600	800-1600	800-1600	800-1300
Estimated Ultimate Vacuum	24"	26"	26"	26"	26"
Ultimate Vacuum	39 HP @ 1600 RPM	74	105	128	176
7.25 PSI Pressure	46 HP @ 1600 RPM	70.7	105	128	176
Weight (lbs.)	165	240	385	422	657












CVS ENGINEERING

LIQUID COOLED PUMPS

	W900 	W1300 	W1600 
Maximum Airflow	530 CFM	765 CFM	942 CFM
Maximum Operating Pressure	29	29	29
Recommended Operating Speed	27	27	27
Ultimate Vacuum	1500	1500	1500
Hp required @ 7.25 PSI	35	51	63.5
Weight (lbs.)	485	615	747

CVS ENGINEERING

*CODE OR NON CODE
**AVAILABLE IN ALUMINUM, CARBON AND STAINLESS STEEL

NVE VALVES	RIV	TANK COMPONENTS	
 <p>VALVES WITH ACTUATORS HYDRAULIC SPRING CLOSED</p>	 <p>BALL VALVE</p>	 <p>12" PRIMARY SHUTOFF</p>	 <p>20" PRIMARY SHUTOFF</p>
 <p>VALVES WITH ACTUATORS PNEUMATIC SPRING CLOSED</p>	 <p>LEVER GATE</p>	 <p>12" PORTAL</p>	 <p>20" MANWAY</p>
 <p>SINGLE GATE VALVES MANUAL ACTUATION</p>	 <p>PISTON GATE</p>	 <p>FLOAT LEVEL INDICATOR</p>	



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Hp & RPM Quick Reference Guide

Model	CFM	Recommended RPM	HP Required	Gearbox on package	RPM input speed at gearbox
304	187	1250	13	1:1 ratio	1250
304	210	1400	15	1:1 ratio	1400

304 hydraulic information: Mount = SAE 2 BOLT 'A' MOUNTING FLANGE, Hyd Motor Shaft = 5/8" with 5/32" Keyway, Side Ports = 1" ORB, Cubic Inch Displacement = 2.48 IN³. Permco model # M124A882UMDA20-86 Hydraulic pump should supply 16 gpm @ 2000 psi to turn the 304 at 1250 rpm or Hydraulic pump should supply 17 gpm @ 2000 psi to turn the 304 at 1400 rpm. Customer must install a case drain and plumb back to tank.

304 Packages available: 304 pump stand complete, 304 combo package, 304 horizontal package, 304 vertical package, 304 engine drive.

Model	CFM	Recommended RPM	HP Required	Gearbox on package	RPM input speed at gearbox
607	380	1250	34	1:1 ratio	1250

607 Hydraulic Information: Mount = SAE 4 BOLT FLANGE, Hydraulic Motor Shaft = 1.25" with 5/16" Keyway Side Ports = 1.25" ORB, Cubic Inch Displacement = 5.15IN³/REV Permco model # M5151A731NMZK20-00, Max working pressure = 2500 psi. Hydraulic pump should supply 29 gpm @ 2000 psi to turn the 607 at 1250 rpm. Customer must install a case drain and plumb back to tank.

607 Packages Available: 607 pump stand complete, 607 muffler package, 607 max package, 607 top mount belt drive or hydraulic drive, 607 engine drive.

Model	CFM	Recommended RPM	HP Required	Gearbox on package	RPM input speed at gearbox
866	520	1000	45	1:1 ratio	1000

866 hydraulic information: Mount = SAE 4-BOLT "B" Flange, Hydraulic Motor Shaft = 1.25" with 5/16" Keyway, Side Ports = 1-1/2" NPT, Cubic Inch Displacement = 8.088³/rev, Permco model # M7600A731A0XQ2000, Max working pressure = 2500 psi, Hydraulic pump should supply 38-40 gpm @ 2000 psi to turn the 866 at 900 - 1000 rpm. Customer must install a case drain and plumb back to tank.

866 Packages Available: 866 pump stand complete, 866 muffler package, 866 max package, 866 top mount belt drive or hydraulic drive, 866 engine drive.

Model	CFM	Recommended RPM	HP Required	Gearbox on package	RPM input speed at gearbox
887	532	1200	54	1:1 ratio	1200

887 Hydraulic Information: Mount = SAE 4-BOLT "SAE 4-BOLT "B" Flange, Hydraulic Motor Shaft = 1.25" with 5/16" Key way, Side Ports = 1-1/2" NPT, Cubic Inch Displacement = 8.088³/rev, Permco model #M7600A731A0XQ2000, Max working pressure = 3000 psi, Hydraulic pump should supply 45-46 gpm @ 2000 psi to turn the 877 at 1150 rpm. Customer must install a case drain and plumb back to tank.

887 Packages Available: 887 pump stand complete, 887 muffler package, 887 max package, 887 top mount belt drive or hydraulic drive, 887 engine drive.

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Model	CFM	Recommended RPM	HP Required	RPM input speed at gearbox	PTO Recommendation
4307	560	4000	40.6	2000	Soft start with high torque
4307 Packages Available: 4307 Propak Frame Mount Gearbox Drive, 4307 Propak Frame Mount Hydraulic Drive, 4307 Propak Frame Mount Belt Drive, 4307 Propak Top Mount Hydraulic and Belt Drive, 4307 Propak Belly Mount Hydraulic Drive, Diesel Engine Drive.					
4307 Hydraulic Information: Recommend a closed loop high pressure system.					

Model	CFM	Recommended RPM	HP Required	RPM input speed at gearbox	PTO Recommendation
4310	940	4000	65.5	2000	Soft start with high torque
4310 Packages Available: 4310 Propak Frame Mount Gearbox Drive, 4310 Propak Frame Mount Hydraulic Drive, 4310 Propak Frame Mount Belt Drive, 4310 Propak Top Mount Hydraulic and Belt Drive, 4310 Propak Belly Mount Hydraulic Drive, 4310 Diesel Engine Drive.					
4310 Hydraulic Information: Recommend a closed loop high pressure system.					

Model	CFM	Recommended RPM	HP Required	RPM input speed at gearbox	PTO Recommendation
5314 / 1600	1600	3600	95.4	3200	High Torque
5314 packages available: 5314 Propak Top Mount hydraulic drive, 5314 Propak Side Mount Gearbox or Hydraulic Drive, 5314 Propak Top Mount Hydraulic or Belt Drive, 5314 Diesel Engine Drive					

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